

SQL Compliance Manager ®

Version 5.5.1

I D E R A

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Monitor, audit and alert on SQL Server user activity and data changes

- **Audit sensitive data.** See who did what, when, where, and how
- **Track and detect.** Monitor and alert on suspicious activity
- **Satisfy audits.** For PCI, HIPAA, FERPA, SOX, DISA/STIG, NERC, and CIS requirements
- **Generate reports.** 25 built-in reports to validate SQL Server audit trails
- **Minimize overhead.** Light data collection agent minimizes server impact





SQL Compliance Manager Release Notes

Designed in partnership with major auditing firms and leading security experts, IDERA SQL Compliance Manager provides a powerful auditing and compliance solution for Microsoft SQL Server users. SQL Compliance Manager is a secure, lightweight auditing and reporting solution for Microsoft SQL Server designed to meet the needs of enterprise-scale SQL Server implementations. SQL Compliance Manager provides unparalleled auditing and reporting services that help you meet the stringent requirements of today's internal and external security standards.

To get a quick glimpse into the newest features, fixed issues, and known issues in this release of SQL Compliance Manager, review the following sections of the Release Notes:

- [Learn about key new features in this release](#)
- [Review issues fixed by this release](#)
- [Review previous features and fixed issues](#)
- [See known issues](#)



New features and fixed issues

IDERA SQL Compliance Manager provides the following new features and fixed issues.

⚠ IDERA, Inc. customers have the sole responsibility to ensure their compliance with the laws and standards affecting their business. IDERA, Inc. does not represent that its products or services ensures that customer is in compliance with any law. It is the responsibility of the customer to obtain legal, accounting, or audit counsel as to the necessary business practices and actions to comply with such laws.

5.5.1 Fixed issues

Administration issues

- IDERA SQL Compliance Manager 5.5.1 process version 4.5 traces files. After upgrading the Collection Server to version 5.5.1, the agent must be upgraded to the same version. Once upgrades of both, the Agent and the Collection Server is complete, SQL Compliance Manager will process trace files. For more information, see [Upgrade to this build](#).
- Resolved an issue in which the SQL Compliance Manager Collection Server was not processing trace files, or processing them slowly, causing backlog files to get accumulated in the Collection Trace Directory in large transactional databases.
- IDERA SQL Compliance Manager 5.5.1 installation no longer fails if TLS 1.0 is disabled and if SQL Server 2012 Native Client is not available.
- IDERA SQL Compliance Manager 5.5.1 no longer shows the "Violation of PRIMARY KEY constraint" error nor terminates the statement when performing an archive of a highly transactional database.
- Integrity check runs for archived databases performed through stored procedures.
- IDERA SQL Compliance Manager 5.5.1 installation no longer fails due to an error setting up permissions if the username used has special characters (e.g. ", ", space characters, etc.).
- IDERA SQL Compliance Manager 5.5.1 supports user names longer than 20 characters as well as special characters for the user's password, such as £.

For more information about new features and fixed issues in versions 5.5.x, see [Previous new features and fixed issues](#).



Previous features and fixed issues

This build of IDERA SQL Compliance Manager includes many fixed issues, including the following updates.

5.5.0 New features

Includes updated and new regulation guidelines

IDERA SQL Compliance Manager 5.5 includes updates on PCI DSS and HIPAA regulation guidelines templates. It also includes new sets of regulation guidelines, allowing users to perform data audits according to the corresponding security rules.

The new regulation guidelines are the following:

- Defense Information Security Agency (DISA STIG)
- North American Electric Reliability Corporation (NERC)
- Center for Internet Security (CIS)
- Sarbanes-Oxley Act (SOX)
- Family Educational Rights and Privacy Act (FERPA)

For more information about this feature, see [Comply with specific Regulations](#).

Auditing available via SQL Server Audit Logs

IDERA SQL Compliance Manager 5.5 includes the ability to track your alerts via SQL Server Audit Logs for Agents running on SQL Server 2017 or above. Users can now decide if they want to track events via Trace Files, Extended Events (SQL Server 2015 and above) or Audit Logs (SQL Server 2017 or above). This new feature is supported in both the Web console and the Windows Management Console.

For more information about this feature, see [Using SQL Server Audit Logs](#).

Includes a Row Count feature

IDERA SQL Compliance Manager 5.5 includes the row count feature which captures and reports on the frequency that users access Event types and SQL Statements, alerting database administrators about suspicious behavior.

i As part of the row count functionality in SQL Compliance Manager 5.5 and above, we are now capturing Statement Completed instead of Statement Start. In some cases, if a SQL statement is run but not executed (e.g. SET SHOWPLAN_XML), SQL Compliance Manager may pick up those events.

For more information about this feature, see [Control data access - Row count](#).



Enable SQL Extended Events Auditing from the Windows Management Console

SQL Extended Events auditing can now be enabled from both the Web Console and the Windows Management Console.

For more information about this feature, see [Using SQL Server Extended Events](#).

Supports SQL Server 2017

IDERA SQL Compliance Manager 5.5 now supports installation of the Database Repository for Collection Server, deployment of the SQL Compliance Manager Agent, and auditing events for SQL Server 2017.

For more information, see [Software requirements](#).

Supports Windows Server 2016

The user can install IDERA SQL Compliance Manager 5.5 and deploy the SQL Compliance Manager Agent in Windows Server 2016.

For more information, see [Software requirements](#).

Allows users to create Sensitive Column data sets

IDERA SQL Compliance Manager 5.5 allows users to create Sensitive Column data sets that can be monitored as a group of sensitive information. Users can also add Sensitive Column data sets to any regulation guideline applied in servers or databases.

For more information, see [Sensitive Column window](#).

BAD Alerts

IDERA SQL Compliance Manager 5.5 allows users to add Host Name, Login, and Before-After data values to the alert message templates.

Agent Deployment method

IDERA SQL Compliance Manager 5.5 allows users to see the agent deployment method in the Registered SQL Servers window of the Administration view.



Allows users to install or upgrade on a non default drive

IDERA SQL Compliance Manager 5.5 allows users to install and/or upgrade in a non default drive path.

5.5.0 Fixed issues

Administration issues

- Audit thresholds appear enabled in the ReportCard even after removing and/or archiving an instance.
- SQL Compliance Manager 5.5 no longer fails to reach the Collection service on the active node after a successful failover in a clustered environment.
- Resolved the issue preventing SQL Scripts files with Supplementary Characters to work on the Collation SQL Server.
- Resolved the issue causing unexpected behavior during the manual upgrade of the SQL Compliance Manager Agent on a remote machine.
- Resolved an issue causing overwritten permissions on the Agent Trace folder after deploying the SQL Compliance Manager Agent.

Auditing issues

- SQL Compliance Manager Agent no longer recreates stored procedures every second.
- Resolved an issue in which SQL Compliance Manager was not showing Before-After data when enabling capture DML events using Extended Events.
- Resolved an issue causing DDL Events to display twice for the same event.
- Resolved an issue in which SQL Compliance Manager was not saving changes made in privileged users when applying regulation guidelines.
- Resolved the issue preventing the user to capture SQL Statements for DDL and Security changes.
- Resolved the issue preventing the capture of Before-After Data when using Extended Events auditing to capture DML events.

Reporting issues

- Email notifications for Event Alerts now display the date and time in the Collection Server time zone.
- SQL Compliance Manager alerts users about the limit of SQL Statements when exporting reports.
- Resolved an issue preventing users to view and report on audit data or see events.

5.4.2 New features



⚠ IDERA SQL Compliance Manager 5.4 and later depend on certain Microsoft components that did not ship with SQL Server versions prior to SQL Server 2012 SP1. ***If you are installing SQL Compliance Manager's Collection Service on a Repository running on SQL Server 2012 or below***, you must install these components manually. For more information about this process, see [Important installation steps for SQLCM 5.4.x and above](#).

Supports TLS 1.2 with SQL CM 5.4.2

IDERA SQL Compliance Manager 5.4.2 includes support for Transport Layer Security (TLS) version 1.2. The TLS protocol provides encryption, authentication, and data privacy and integrity when transferring information over a network, including VPN, VOIP, and instant messaging.

5.4.2 Fixed issues

Administration issues

- Resolved an issue causing both Primary and Secondary nodes to list the AlwaysOn database as Secondary.
- Resolved an issue preventing email from working for certain servers and types of events.

Auditing issues

- Resolved an issue preventing audit of the Availability Group listener if a non-default port is used.
- Database-level Privileged User Auditing settings are no longer overwritten by instance-level Privileged User Auditing settings.
- Resolved the following integrity check issues:
 - users received an integrity check issue message although the scheduled integrity checks all passed
 - SQL Server startup events caused an integrity check failure
 - Integrity checks didn't match the Audit events in the SQLCM Repository
- Resolved an issue causing the database name to return blank for Login Events in some places.
- SELECT statements no longer appear as UPDATE statements.
- Resolved an error that occurred when the eventId reached the max limit of Integer. The error was, "Cannot insert duplicate key row in object 'dbo.Events' with unique index 'IX_Events_eventId'".
- No longer generates the Column Value Changed Data alert twice for Before-After auditing events.



- Resolved an issue causing an error when updating a table that contains an image and the table name contains a hyphen.
- The default Events view now displays data for a single day rather than 30 days.
- Resolved an issue preventing the proper function of the Exporting/Importing Database DML Filter audit settings.

Archiving issues

- During archiving, users no longer receive a "Violation of PRIMARY KEY" error during archiving.

Reporting issues

- Resolved an issue that prevented users from running the DML Activity (Before-After) report.

5.4.0 New features

⚠ IDERA SQL Compliance Manager 5.4 depends on certain Microsoft components that did not ship with SQL Server versions prior to SQL Server 2012 SP1. ***If you are installing SQL Compliance Manager's Collection Service on a Repository running on SQL Server 2012 or below***, you must install these components manually. For more information about this process, see [Important installation steps for SQLCM 5.4.x and above](#).

Improves archiving through the availability of SQL Server Extended Events

IDERA SQL Compliance Manager 5.4 includes support for event handling with SQL Server Extended Events. This optional feature is available for use in auditing instead of using SQL Trace. Running Extended Events offers a performance improvement over the default SQL Trace audit event gathering system and is available for instances running SQL Server 2012 and later. For more information about using the Extended Events option, see [Using SQL Server Extended Events](#).

Includes new Sensitive Column Search

Included in this release is integration with a free tool from IDERA called [SQL Column Search](#). Available from the IDERA SQL Compliance Manager Instance Details view, this feature allows you to search tables and columns on a targeted database to discover the location of sensitive data needing to be audited. For more information about using the Sensitive Column Search, see [Sensitive Column Search window](#).



Offers SQL Compliance Manager Windows Console functionality in the Web Console

The following features previously available only through the IDERA SQL Compliance Manager Windows Console now are available in the Web Console as well:

- [Importing sensitive columns](#)
- [Importing audit settings](#) including instance and database templates
- [Exporting audit settings](#) including instance and database templates

Includes updated regulatory guideline templates

IDERA SQL Compliance Manager includes a number of regulatory guideline templates for customer use. IDERA SQL Compliance Manager 5.4 includes updates for these templates. For more information about this feature, see [Comply with specific regulations](#).

5.4.0 Fixed issues

Installation and upgrade issues

- Enabled **Capture Transaction Status for DML Activity** no longer replaces SQL statement values with variables.
- This release resolves an issue that prevented auditing when two tables has the same name but different schema
- An error no longer occurs while updating the audit configuration file due to duplicate database IDs.
- Improves Collection Server performance while processing trace files.
- Corrects an issue preventing the Collection Trace directory from being created when the user chooses a non-default installation path.
- IDERA SQL Compliance Manager 5.3 now supports SQL Compliance Manager Agent silent installation.
- Resolves an issue causing heartbeat alerts for instances after they are archived.
- Resolves an error that appeared when a user added privileged users while applying a custom Audit Collection Level.
- Fixed an error causing the collection of non-audited database data when **Capture SQL statements for DML and SELECT activity** is enabled.
- Before-After data now works during an update when auditing selected columns.
- Non-AlwaysOn Availability Group databases can no longer be added to an AG server for auditing.
- Resolves an issue causing an invalid object name error with 'sys.dm_os_window_info' for SQL Server 2005 agents.



5.3.1 New features

Supports SQL Server 2016

IDERA SQL Compliance Manager 5.3.1 and later support audited and collection servers using Microsoft SQL Server 2016. For more information about supported platforms, see [Software requirements](#).

5.3.1 Fixed issues

There are no fixed issues in this release.

5.3.0 New features

Expanded the SQL Compliance Manager Web console to provide a richer set of capabilities online

IDERA SQL Compliance Manager 5.3 continues to build on the work developed by prior versions to bring a richer set of capabilities to the web console. New web capabilities include:

- an ability to set up notifications for auditing thresholds; allowing a user to set up a threshold and select the delivery method such as email, Windows event log, or SNMP traps.
- additional views such as the Enhanced Audited Database, Enhanced Alert, and New Logs views.
- the ability to export views to PDF, CSV, and XML formats.
- additional new widgets that show different activities and audited SQL Server instances.

Integration with IDERA Dashboard 2.2

IDERA Dashboard integration began with SQL Compliance Manager 5.0, which centralizes the common administration, tasks, and views across all IDERA SQL products. This release of SQL Compliance Manager expands this integration by supporting IDERA Dashboard 2.2, which includes the following widgets specific to SQL Compliance Manager:

- **SQL Compliance Manager Audited Instances Widget.** Displays a list of audited SQL Server instances.
- **SQL Compliance Manager Enterprise Activity Report Card.** Displays your SQL Compliance Manager enterprise activity in a line graph.

For more information about using SQL Compliance Manager widgets within the IDERA Dashboard, see [Use SQL Compliance Manager widgets in the IDERA Dashboard](#).



Limited Support for SQL Server 2016

IDERA supports installation of SQL Compliance Manager 5.3 on Microsoft SQL Server 2016 with limited technical support. Full technical support is available a short period after SQL Server 2016 is generally available.

5.3.0 Fixed issues

General

- Resolved an issue that did not properly update group permissions after modification and honored group settings over the individual user account in some situations.
- Improved Permissions Check functionality to prevent false or inconsistent results.

Installation

- Renamed the SQL Compliance Processing database from `SQLCompliance.Processing` to `SQLComplianceProcessing`.
- Corrected an issue preventing the ... button from properly working in the Add SQL Compliance Manager Agent Service window on Windows 2012/2012 R2 installations.

Licensing

- Resolved an issue causing users with AlwaysOn Availability Groups to receive a message that the maximum number of servers is reached while they actually had less than that limit.

Services

- Improved the Collection Service performance to be able to process a substantially large number of trace files.

Auditing

- SQL Compliance Manager now can log events that are accessed through a view.
- Sensitive column traces no longer include events from databases not configured for sensitive column auditing.



- Resolved an issue that prevented SQL Compliance Manager from discovering and auditing new users added to the list of Trusted Users / Privileged Users within a domain group without manually updating the audit settings.
- Exported audit settings now include database level privileged users.

5.0.0 New features

Fully supports the SQL Server AlwaysOn Availability Groups feature

SQL Compliance Manager 5.0 now allows DBAs to monitor their availability groups, availability replicas, and availability databases through AlwaysOn Availability in SQL Server 2012 and newer. AlwaysOn automatically switches auditing from the primary to the secondary replica in the event of failure as well as failback to primary when it comes back online. This advantage prevents a loss of audit data trail in the event of failure.

Support for this feature also comes with:

- An Availability Group Statistics report that allows you view the historical health of your availability groups, availability replicas, and availability databases.
- An Availability Group Topology report that allows you to view the current topology of your availability groups configuration.
- Monitoring of key metrics specific to the AlwaysOn Availability Groups feature.
- Queue Size and Transfer Rates charts.

For additional information on SQL Compliance Manager and the AlwaysOn Availability Groups feature, see [Enable automatic failover using AlwaysOn Availability Groups](#).

Offers a technology preview of a new web-based SQL Compliance Manager Dashboard

Along with the integration of the IDERA Dashboard, SQL Compliance Manager 5.0 includes a preview of a newly-designed web console that offers quick views of key audit trail activities on your SQL Servers from any web browser. Identify key compliance issues quickly and provide an easy access point to non-DBAs without giving them access to the entire Management Console.

Added integration with the IDERA Dashboard

SQL Compliance Manager 5.0 now integrates with the IDERA Dashboard, a common technology framework designed to support the IDERA product suite. Users are able to obtain an overview of the status of their SQL Servers and hosted databases all in a consolidated view and navigate to individual product dashboards for details. The IDERA Dashboard provides a central set of services for managing users, product



registry, instance registry, aggregated alerts across IDERA applications, a central web server, and tags for grouping instances. For more information about the IDERA Dashboard, see [Navigate the IDERA Dashboard web console](#).

Moved to the Windows .NET 4.0 framework

SQL Compliance Manager 5.0 supports Microsoft Windows operating systems using .NET 4.0. Note that .NET 4.0 or later must be installed on the audited server. For more information about requirements, see [Software requirements](#).

5.0.0 Fixed issues

- Active Trace is now properly cleared when necessary.
- A change to the SQL Compliance Manager login filter settings from minutes to seconds fixes an issue that allowed new user events such as failed login attempts to be missed in reports.
- You can now view Reports in .CSV format.
- SQL Compliance Manager 5.0 includes an update that clarifies alert email triggers when users to have two alert rules for Sensitive Columns.
- SQL Compliance Manager no longer displays conflicting data by including a fix that forces the collection of object names while processing trace file records.
- Regular user accounts are no longer able to capture SQL text used in admin activities without enabling additional options.
- When you have multiple columns selected for a particular table in Before-After Data (BAD), SQL Compliance Manager no longer labels events that update other columns as BAD events.
- SQL Compliance Manager now includes descriptions for ALTER ANY SCHEMA and ALTER ANY USER in the tracejob.cs file.
- The permissions check process is updated in SQL Compliance Manager 5.0 to avoid any issues when performing a check.
- Event types 158 and 258 now include expanded details that display when these types of events occur.
- SQL Compliance Manager Integrity Check now properly tracks and reports on deleted rows.



Known issues

IDERA strives to ensure our products provide quality solutions for your SQL Server needs. The following known IDERA SQL Compliance Manager issues are described in this section. If you need further assistance with any issue, please contact [Support](http://www.idera.com/support) (www.idera.com/support).

Installation and configuration issues

IDERA Dashboard 3.0.3 and later does not support SQL Server 2005 SP1

Users should not attempt to install SQL Compliance Manager with IDERA Dashboard 3.0.3 and later on a SQL Server 2005 SP1 as that version of SQL Server is not supported by IDERA Dashboard.

Verify SQL Compliance Manager repository database size before upgrading

It is important to check the size of the SQL Compliance Manager repository databases on the Collection Server before proceeding with an upgrade. There are [four databases](#) created by SQL Compliance Manager: SQLcompliance; SQLcompliance.Processing; SQLcompliance.<Instance>; SQLcompliance.<Instance>_Time_Partition. Each database should be under 20 GB to complete a successful upgrade. In order to avoid problems during the upgrade due to database size, IDERA recommends that you regularly archive the repository data to maintain the audit history. For more information about archiving, see [Manage Audit Data](#). If archiving the data through SQL Compliance Manager is not an option at the time of the upgrade, it is recommended to back up the repository databases and delete unneeded records from the Events and EventSQL tables of the event databases.

Case-sensitivity required when specifying the Repository database name

When specifying the location and name of your Repository database, SQL Compliance Manager requires that you use proper capitalization.



IDERA SQL Compliance Manager does not capture Linked Server Trace Events for SQL Server 2005

Linked server events are not present in the trace files for SQL Server 2005, therefore linked server events are not captured in IDERA SQL Compliance Manager and no alerts will trigger. Microsoft has ended extended support for this version.

Create/Drop index events recorded as "Alter User Table" event

SQL Compliance Manager records Create/Drop index events as "Alter User Table" events.

IDERA SQL Compliance Manager is not loading events accessed through a View

SQL Compliance Manager does not display Sensitive Column events when accessed from a view. To access the information using views gather and filter out all SELECT statements.

Note that this action will cause extra collection.

SQL Compliance Manager is not able to process alerts when a Group of users is set as a Privileged User

If a group is set as a Privileged User, the triggered alert is not able to detect individual users within a group. To process the alerts, users can set up the alert settings to detect the individual user logins.

SQL Compliance Manager displays incorrect Database name for event type "Create Database"

When users capture a "Create Database" event, SQL Compliance Manager changes the Database name to "Dynamic SQL".

Issues loading BAD auditing information

IDERA SQL Compliance Manager is not able to capture BAD auditing information when two objects with the same name exist in the same schema.

SQL Text is not captured for DDL Statements

When monitoring an instance for DDL event, SQL Compliance Manager is not able to capture SQL Statements for DDL activities unless a user is added to the Privileged



User Group. Users can also capture SQL Text by selecting **Capture SQL statements for DDL and Security changes** at Database Level.

Known issues in version 5.5

General issues

- **(Fixed in version 5.5.1)** When users try to upgrade from SQL Compliance Manager 4.5 to 5.5, trace files are not processed. If you currently work with SQL Compliance Manager 4.5, before upgrading stop the Collection Service, Agent Service, and disable auditing to stop trace file processing, then proceed to upgrade to SQL Compliance Manager 5.5, and configure and enable auditing. Upon upgrading to SQL Compliance 5.5, users must upgrade all agents to a 5.x version first. For more information, see [Upgrade to this build](#).
- **(Fixed in version 5.5.1)** The SQL Compliance Manager Collection Server is not processing trace files, or processing them slowly, causing backlog files to get accumulated in the Collection Trace Directory in large transactional databases. The workaround for this issue is to increase the tamper detection interval and the Collection interval.
- **(Fixed in version 5.5.1)** IDERA SQL Compliance Manager installation fails if TLS 1.0 is disabled and if SQL Server 2012 Native Client is not available. IDERA SQL Compliance Manager 5.5 installs SQL Server 2012 native client (version 11.0.2100.60) which does not support TLS 1.2 enabled as per Microsoft. <https://support.microsoft.com/en-us/help/3135244/tls-1-2-support-for-microsoft-sql-server>
Users with SQL Server versions prior to SQL Server 2012 R2 SP3 need to enable TLS 1.0 or update the native client to the supported version (11.4.7001.0) following the link below:
<https://www.microsoft.com/en-us/download/details.aspx?id=50402>
- **(Fixed in version 5.5.1)** SQL Compliance Manager does not process trace files generated by an older Agent after upgrading versions of the Collection Server and the Agent.

Auditing issues

- **(Fixed in version 5.5.1)** When performing an archive of a highly transactional database with SQL Compliance Manager, the application shows a “violation of PRIMARY KEY constraint” error and terminates the statement. The workaround for this issue is to rename the current archive database, along with the database files associated to it and perform a new archive operation. The operation should create a new archive database and database files.



Known issues in version 5.4.x

General issues

- **(Fixed in version 5.5.1)** SQL Compliance Manager does not accept user names longer than 20 characters and does not support some special characters for the user password, such as £.
- Removing databases using the Administration pane in the Management Console does not work. You can remove databases using the Explorer Activity panel.
- **(Fixed in version 5.5)** During an Agent-only installation, if you accept the default destination path for SQL Compliance Manager, and then select a different destination drive and use a sub-folder in the Agent Trace Directory dialog box, the installer does not create the Agent Trace Directory during installation. If this issue occurs, reinstall the Agent specifying a folder instead of a sub-folder as the destination path or use the default path specified in the installer.

Auditing issues

- If the audit settings are configured to audit DML events for a selected table, and extended events is enabled for DML and Select on the Instance, SQL Compliance Manager collects audit data for all tables and not only the selected table. If you turn off extended events, auditing correctly collects data for the selected table only.
- **(Fixed in version 5.5)** Execute events are captured when extended events is enabled. There may be some extra events captured and shown through the Extended Events auditing than the events shown through the Trace method.
- **(Fixed in version 5.4.2)** Cannot insert duplicate key row in object 'dbo.Events' with unique index 'IX_Events_eventId'.
- **(Fixed in version 5.4.2)** DatabaseName appears as empty for Login Events. SQL Compliance Manager 5.4 traces do capture the DatabaseID, but do not include the database name.
- **(Fixed in version 5.5)** Applying a regulation guideline does not work when there is a Privileged User defined.
- **(Fixed in version 5.4.2)** Case-sensitive collation may prevent some trusted and privileged users from being captured.
- **(Fixed in version 5.4.2)** Auditing an AlwaysOn database using the Node method causes the Registered SQL Servers list to display both nodes as Secondary.
- Audit Snapshot does not include setting to capture DDL SQL statements.
- Before-After data does not appear for Binary Collation SQL Server instances when extended events is enabled.
- **(Fixed in version 5.4.2)** Audit settings at an instance level take precedence over database-level settings for a Privileged User.



- **(Fixed in version 5.5)** Agent trace folder permissions are overwritten when the Agent is deployed.
- **(Fixed in version 5.4)** SQL Compliance Manager attempts to contact the Agent (heartbeat check) on attached archive databases.
- **(Fixed in version 5.5)** Users who export reports to Microsoft Excel fail when the SQL text contains more than 32,767 characters.
- **(Fixed in version 5.4.2)** Some SQL Server startup/stop events may cause the integrity check to fail.
- The Audit Events tab may display an incorrect user name in the Login column when auditing start and stop server events.
- **(Fixed in version 5.4.2)** A known SQL Server issue causes some SQL Compliance Manager SELECT statements to appear as DML events. This issue occurs when a user audits both SELECT and DML. SQL Compliance Manager captures many events when certain columns are selected from certain system tables from a single SELECT statement query and shows them as individual DML events. Specifically, the SELECT statement which uses the `permissions()` function generates only DML event traces and not a SELECT event trace. This step results in SQL Compliance Manager reporting the SELECT statement as a DML event. In addition, the `permissions()` function is deprecated. Microsoft recommends in MSDN documentation that users implement the `Has_Perms_By_Name()` function instead of the `permissions()` function. The difference between these two functions is that the `permissions()` function always generates the DML event traces while the `Has_Perms_By_Name()` function generates event traces according to permission type used. For example, SELECT event traces for SELECT permission types, and DML event traces for EXECUTE or DELETE permission types.
- **(Fixed in version 5.4.2)** Users who change the default port for the AlwaysOn Availability Group from the default may experience the following issues. To avoid these issues, change the listener to the default port.
 - SQL Compliance Manager does not accept the name format when attempting to add the listener name using the Cluster Configuration Console.
 - If the port is not added, the agent cannot connect to the SQL Server instance. You can manually add the port to the registry setting later and it will then connect to the instance after restarting the SQLComplianceAgent.
 - Users cannot connect to the SQL Server instance even when adding the listener with the port in the SQL CM console.
 - The Permissions Check also fails.
- When you change the definition of a table you are auditing to include BLOB data types, the Before-After data trigger prevents UPDATE, DELETE, and INSERT operations from modifying the table, such as through stored procedures or third-party applications. This issue is most likely to occur when you are auditing all columns in the target table. This issue occurs because Before-After auditing



does not support BLOB data types (such as text, image data, or XML code). To correct this issue, change the data definition of the table.

- SQL Compliance Manager does not support collecting and processing events from encrypted SQL Server trace files. This issue is most likely to occur in environments that use third-party encryption software. For example, some applications can be configured to automatically encrypt all new files created on a specific computer. If you are running encryption software in your SQL Server environment, verify the encryption settings to ensure the application does not encrypt trace files on the audited SQL Server instances.
- After removing a server from auditing and leave registered databases archived, the user is able to right-click the archived database 'server' and register databases to audit.
- Users can select "Capture SQL statements for DDL activities" only if the "Database Definition DDL" option is saved first.

Alerting issues

- Filtering by time does not work properly on the Alerts view.
- Some status alerts including Agent trace directory reached size limit and Collection Server trace directory reached size limit do not display properly in the Web Console.
- Status alerts are not generated for alert rules of the **Agent cannot connect to audited instance** Rule Type.
- **(Fixed in version 5.5)** SQL Statement is not captured or displayed when viewing Event Properties for Create SQL Login and Create Windows Login events.
- **(Fixed in version 5.4.2)** A Column Value Changed data alert is generated twice for each Before-After audit event.

Reporting issues

- **(Fixed in version 5.4.2)** The DML Activity (Before-After) report, when deployed to SQL Server Reporting Services, does not run properly. You can view the report in the Console.





Welcome to SQL Compliance Manager

IDERA SQL Compliance Manager is a secure, lightweight auditing and reporting solution for enterprise-level Microsoft SQL Server environments.

Need help using SQL Compliance Manager? See the following sections:

- [Start auditing events](#)
- [Alert on suspicious audit data](#)
- [Alert on SQL Compliance Manager status](#)
- [Report on audit data](#)



What is SQL Compliance Manager?

Designed in partnership with major auditing firms and leading security experts, IDERA SQL Compliance Manager provides a powerful auditing and compliance solution for Microsoft SQL Server users. SQL Compliance Manager is a secure, lightweight auditing and reporting solution for Microsoft SQL Server designed to meet the needs of enterprise-scale SQL Server implementations. SQL Compliance Manager provides unparalleled auditing and reporting services that help you meet the stringent requirements of today's internal and external security standards.

SQL Compliance Manager provides many critical features:

- Low overhead data collection
- Central Repository of audit data
- Central Management Console
- Pre-defined compliance reports
- Secure ad-hoc queries for auditors
- Forensic analysis
- Efficient, secure data archival
- Comprehensive reporting to satisfy audit requirements (PCI DSS, HIPAA)

SQL Compliance Manager is the only solution that lets you quickly, easily, and securely answer the demands of on-the-spot reports, routine audits, and long-term event trending across your SQL Server environment.



How SQL Compliance Manager helps

As a database administrator, you need a comprehensive and easy-to-use auditing and reporting solution that helps ensure continuous compliance while protecting the integrity of your audit data and SQL Server environment. IDERA SQL Compliance Manager is specifically designed to meet these requirements. SQL Compliance Manager helps you meet multiple goals, whether you are fulfilling the requirements of internal auditors or simply need to feel comfortable with your database security model.

Ensure continuous compliance

SQL Compliance Manager goes beyond traditional auditing approaches by providing monitoring and auditing of all data access, updates, data structure modifications, and changes to security permissions. The audit data captured is stored in a central Repository for reporting, querying, and analysis.

You can easily configure SQL Compliance Manager to audit only the events you need to track. This flexibility ensures you have a continuous stream of audit data to ensure continual compliance with internal and external security standards.

Achieve low overhead data collection

SQL Compliance Manager employs an efficient, low overhead data collection technology. A light agent monitors the SQL Server trace data stream, collects the audit data, and sends it back to the Repository. You can configure the type and detail of audit data you want to collect on an individual SQL Server instance or database. No changes to applications or production databases are required.

Leverage powerful reporting and analytics

SQL Compliance Manager is the only solution that provides secure and comprehensive reporting on and analysis of your audit data. SQL Compliance Manager provides many pre-defined reports that you can immediately use to track audited events. SQL Compliance Manager also leverages the flexibility and power of Microsoft SQL Server Reporting Services (Reporting Services). Through Reporting Services, you can modify the pre-defined reports or create custom reports that meet your specific auditing needs.

Protect integrity of audited data

SQL Compliance Manager leverages your existing SQL Server security model to enforce data access. You can easily and securely control who has the ability to



configure, view, or report on audit data. SQL Compliance Manager integrates with and conforms to your internal security policies, allowing granular access control at the database level.

SQL Compliance Manager is engineered to provide a trusted, immutable source of audit data. Its powerful self-auditing features ensure that you are alerted to any changes to data collection settings or attempts to tamper with the audit data repository.

Realize rapid deployment and scalability

With DynamicDeployment™ technology, a light agent is dynamically deployed to the specific SQL Server instances you want to audit. This approach enables you to configure and deploy SQL Compliance Manager in minutes. There is no need to perform time-consuming software installs on each target server. The agent eliminates risk and increases performance by running as a separate process outside the SQL Server process space.

SQL Compliance Manager is specifically designed to support large SQL Server installations. SQL Compliance Manager scales from auditing a single SQL Server instance to thousands of SQL servers around the globe, from databases with only a few tables to databases with thousands of tables and large volumes of data.

Satisfy regulation requirements

When a user accesses sensitive data or when breach occurs, SQL Compliance Manager identifies the content of the event including the date, time, data accessed, and by whom, providing a clear audit trail and alerting those individuals who may need to take action.

SQL Compliance Manager provides comprehensive reporting to satisfy audit requirements with regulatory and data security rules such as PCI DSS and HIPAA. SQL Compliance Manager audits all SQL Server activity including login access (successful/failed) and permission activity, and provides tracking reports to help you detect abnormal access to the data. All SQL Compliance Manager audit data is stored in a tamper-proof repository.



Find answers

This documentation set includes a comprehensive online Help system as well as additional resources that support you as you install and use the product. You can also search the IDERA Solutions knowledge base, available at the IDERA Customer Service Portal (<https://idera.secure.force.com/>).



Document conventions

IDERA documentation uses consistent conventions to help you identify items throughout the printed online library.

Convention	Specifying
Bold	Window items
<i>Italics</i>	Book and CD titles Variable names New terms
Fixed Font	File and directory names Commands and code examples Text typed by you
Straight brackets, as in [value]	Optional command parameters
Curly braces, as in {value}	Required command parameters
Logical OR, as in value 1 value 2	Exclusively command parameters where only one of the options can be specified



How to use this Help system

The IDERA wiki includes a comprehensive online Help system as well as additional resources that support you as you install and use IDERA products. You can also search multiple IDERA support solutions in the IDERA Customer Portal, available at <https://idera.secure.force.com/>.

Additionally, IDERA helps you by providing:

- 24/7 technical support for critical issues.
- Availability to report cases and access a web-based customer portal for update status.
- Access to our [Knowledge center](#) where you can find FAQs, How To's, Best Practices, and Webcasts.

This wiki includes the following Web browser minimum requirements:

- Internet Explorer 9.0
- Mozilla Firefox
- Google Chrome
- Microsoft Edge

You can access the IDERA SQL Compliance Manager Help system through the **Help** icon on the top right section of your window or by pressing F1 on the section where you need more information.

You can print a help topic from the wiki using the Print function in your browser.



About IDERA

IDERA is a leading provider of application and server management solutions. We have a wide variety of performance management products for Microsoft SQL Server, and award-winning server backup solutions for both managed service providers and enterprise customers. IDERA products install in minutes and start solving server problems immediately, giving administrators more time, reduced overhead and expenses, and increased server performance and reliability. We are a Microsoft Gold Certified partner, headquartered in Houston, Texas, with offices in Asia Pacific, Australia, New Zealand, Europe, Africa, and Latin America. So we're everywhere your IT needs are.



Contact IDERA

Please contact IDERA with your questions and comments. We look forward to hearing from you. For support around the world, please contact us or your local partner.

For a complete list of our partners, please visit our IDERA website.

Sales	713.523.4433 1.877.GO.IDERA (464.3372) (only in the United States and Canada)
Sales Email	sales@idera.com
Support	713.533.5144 1.877.GO.IDERA (464.3372) (only in the United States and Canada) www.idera.com/support
Website	www.idera.com



IDERA products

Our tools are engineered to scale from managing a single server to enterprise deployments with thousands of servers. IDERA products combine ease of use with a design that installs in minutes, configures in hours, and deploys worldwide in days. To learn more about IDERA products, visit the IDERA Web site at www.idera.com.



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Getting started


Use the following checklist to get started using IDERA SQL Compliance Manager. For more information about how to best configure auditing for your environment, see the [Auditing checklist](#).


✓	Get started with these steps ...
✓	Learn how auditing works .
✓	Learn about the SQL Server events that you can audit .
✓	Register the SQL Server instances you want to audit, and set your server and database settings.
✓	Apply regulation guidelines to the audited databases on your registered SQL Server instances.
✓	Track the collected SQL Server events over time and fine tune your audit settings as needed.
✓	Configure Event Alerts to notify you when suspicious events occur in your environment.
✓	Configure Status Alerts to notify you when SQL Compliance Manager experiences an issue.











Upgrade to this build

You can quickly and easily upgrade to this version of IDERA SQL Compliance Manager from version 4.5 and later. All versions prior to 4.5 must upgrade to version 4.5 before upgrading to this version. Upgrading SQL Compliance Manager allows you to take advantage of the [new features](#) available in this latest version.

 For IDERA SQL Compliance Manager 5.5, you must upgrade to version 4.5 and then to 5.0 before upgrading to this version.

 SQL Compliance Manager 5.0 and later require that you upgrade the SQL Compliance Manager Agents to the same version, i.e. version 5.0 requires Agent version 5.0.

Upgrade checklist

	Follow these steps ...
	Ensure the computers on which you want to upgrade SQL Compliance Manager meet or exceed the hardware , software , and permissions requirements for this version. For example, ensure .NET 4.0 or later is running on the target computer.
	Ensure your Windows logon account has the following permissions: <ul style="list-style-type: none"> • Permission to agent and collection trace file directories • Permission to uninstall/install a windows service • Permission to start a service (Logon as a service)
	Close all open applications on the computers running the SQL Compliance Manager components.
	Back up your trace directories, especially the Collection Server Trace Directory.
	Upgrade your SQL Compliance Manager Repository, Collection Server, and Console.
	When prompted, schedule a time for SQL Compliance Manager to perform maintenance on your Repository databases.
	Upgrade your license key .



✓	Follow these steps ...
✓	Upgrade your previously deployed SQL Compliance Agents.
✓	Ensure your upgrade includes any new reports by redeploying the SQL Compliance Manager reports . <i>If you are upgrading from version 3.0 or earlier and you use Microsoft Reporting Services</i> , you must redeploy the SQL Compliance Manager Reports in order to generate reports using the upgraded Repository databases as the data source.
✓	Ensure the computers on which you want to upgrade SQL Compliance Manager have VC redistributable 2010 installed. <i>You can download</i> the Microsoft Visual C++ 2010 Redistributable Package for 32 Bit OS (x86) here , and the Microsoft Visual C++ 2010 Redistributable Package for 64 Bit OS (x64) here .
✓	Ensure the computers on which you want to upgrade SQL Compliance Manager have the latest version of Microsoft Windows Installer Driver installed. <i>You can find and download</i> the latest Windows Installer here .
✓	Test your upgrade by collecting and reporting on your audit data.



Upgrade from SQL Compliance Manager 4.5 to version 5.0

IDERA SQL Compliance Manager has unique instructions for upgrading from version 4.5 to version 5.0. If you have any installation issues, please contact [Support](#).

Preparing to upgrade

Request a new license key

IDERA SQL Compliance Manager version 5.0 and later use a new license key. You must update your existing product license key to complete installation of IDERA SQL Compliance Manager 5.0 or later. To request a new license, contact licensing@idera.com. Provide the host name of the server/SQL Server instance hosting IDERA SQL Compliance Manager. If using the default name MSSQLSERVER for SQL, simply provide the server host name.

Key notes

- **Verify .NET 4x is installed on all your servers.*** All IDERA SQL Compliance Manager 5.0 and later versions require .NET 4.0 components. Previous versions of IDERA SQL Compliance Manager require at least .NET 3.5.
* Beginning with version 5.0, IDERA SQL Compliance Manager does not support Windows Server 2000 or the .NET 2.0 framework. While IDERA SQL Compliance Manager 4.5 and prior versions continue to operate with Windows Server 2000, IDERA SQL Compliance Manager 5.0 and later require the .NET 4.0 Full framework to take advantage of the additional features. For additional information about supported versions, see the IDERA SQL Compliance Manager [Software requirements](#).
- **You must upgrade the Agent.** IDERA SQL Compliance Manager 5.0 and later require that you upgrade the IDERA SQL Compliance Manager Agents to the same version, i.e. version 5.0 requires Agent version 5.0.
- **You do not have to enable the default trace or use ID 1.** IDERA SQL Compliance Manager 5.0 requires that the default trace is enabled and it is also ID 1. This requirement was removed for IDERA SQL Compliance Manager 5.3.x. Contact [Support](#) if you have any questions.

Upgrade

To upgrade IDERA SQL Compliance Manager:

1. Close the IDERA SQL Compliance Manager Management Console, if running.



2. Stop the SQL Compliance Collection Service.
3. Back up all of the SQLcompliance databases.
 - a. SQLcompliance and SQLcompliance.Processing are the core databases.
 - b. SQLcompliance_[instance name] contains the live audit data.
 - c. SQLcmArchive_[instance name]_[date] contains the archive data.
4. Check the CollectionServerTraceFiles folder on the collection server for trace files.
 - a. **If there are any files**, make a copy in another location.
 - b. **If there are lots of files older than 1 day**, please contact support for help with these older trace files.
5. Run the setup.exe for IDERA SQL Compliance Manager using **Run as Administrator**.
 - a. The setup.exe is a two-part installer.
 - i. The IDERA Dashboard is installed first.
 - ii. The SQL Compliance Manager upgrade will be started after the Dashboard installation has completed.
 - b. To bypass installing the IDERA Dashboard, run the SQLcompliance-x64.exe found in the Installation kit x64 folder. (default location: C:\Program Files\IDERA\SQLcompliance x64 Installation Kit\Full\x64.
6. Run the IDERA SQL Compliance Manager Management Console. Verify the console loads and the servers and data are displayed.
7. Manually update the SQL Compliance Agent on the audited servers.
 - a. No agents have been updated yet, so all the servers will report as DOWN (except for the SQL Compliance Agent that is running on the IDERA SQL Compliance Manager Collection server).
 - b. Run the SQLcompliance-x64.exe using **Run as Administrator** (not setup.exe).
 - c. Follow the prompts then select **Agent Only** install.



Upgrade the product components

ⓘ These instructions are only valid for upgrades from 4.5 to the current version. All versions prior to 4.5 must upgrade to version 4.5, and then to this version.
 If you are upgrading to SQL Compliance Manager version 5.5, you must upgrade to version 4.5 and then to 5.0 before upgrading to 5.5.
 For upgrade instructions for version 4.5, see [Upgrade from SQL Compliance Manager 4.5 to 5.0](#).

You can use the setup program to upgrade all components or any individual component. The setup program detects whether IDERA SQL Compliance Manager components are running or installed on the local computer. The setup program automatically upgrades the Management Console, the Collection Server, and the SQL Compliance Agent according to your implementation.

ⓘ The Repository must reside on a version of SQL Server that is greater than or equal to the highest audited SQL Server version.

To upgrade from SQL Compliance Manager 4.5 and later to current version:

1. Log on with an administrator account to the computer on which you want to upgrade IDERA SQL Compliance Manager components.
2. Run `SQLCMInstall.EXE` in the root of the installation kit.
3. The IDERA SQL Compliance Manager welcome window shows you the components you can upgrade to the current version or the ones that require a fresh installation. Click **Next** to begin the upgrade process.
4. On the Repositories window, select the authentication type and enter the SQL credentials, if necessary, and click **Next**.
5. Type the appropriate credentials in the provided fields under which the IDERA Dashboard services run, and then click **Next**.
6. Review the installation settings and click **Install**.
7. Start the Management Console. When prompted, [schedule](#) a time for SQL Compliance Manager to perform maintenance on your Repository databases.
8. [Upgrade your SQL Compliance Agents](#)

ⓘ If you currently use the latest version of IDERA SQL Compliance Manager, it is not possible to upgrade the IDERA Dashboard only. To upgrade the IDERA Dashboard only, you need to use the CWF installer.
 For more information, see [IDERA Dashboard](#).





Upgrade your product license key

IDERA SQL Compliance Manager version 5.0 and later use a new license key. You must update your existing product license key to complete installation of SQL Compliance Manager 5.0 or later. To request a new license, contact licensing@idera.com. Provide the host name of the server/SQL Server instance hosting SQL Compliance Manager. If using the default name MSSQLSERVER for SQL, simply provide the server host name.


Upgrade your deployed SQL Compliance Agents

Before upgrading your SQL Compliance Agents, review the [permissions requirements](#) and [how the SQL Compliance Manager Agent works](#).

Consider the scenarios described below for SQL Compliance Manager Agent installation and upgrade.

If the SQL Compliance Manager Agent was:

- installed and deployed [via SQL Compliance Manager console](#), it has to be upgraded using the application console. Alternatively, it can be upgraded via command line.
- installed and deployed with the [main installer](#), it has to be upgraded using the main installer.
- installed and deployed manually using the [install command line](#), it has to be upgraded using the [upgrade command line](#).

 To upgrade the agent manually with the command line, it is required to use **only** the SQL Compliance Manager Agent **MSI**.

Upgrade an agent deployed to a remote server

You can upgrade the SQL Compliance Agent remotely using the Management Console. Use this approach to upgrade agents on any registered SQL Server where you remotely installed the agent.

To upgrade a remote SQL Compliance Agent:

1. In the Navigation pane, click **Administration**, and then select **Registered SQL Servers** in the Administration tree.
2. In the view pane, right-click the SQL Server instance for which you want to upgrade the SQL Compliance Agent.
3. Select **Upgrade Agent** from the context menu.



i If you deployed an agent on a remote server via the SQL Compliance Manager console and want to upgrade it to this build, you can also use the upgrade command of the [SQL Compliance Manager silent installer](#).

Upgrade an agent locally

You can use the SQL Compliance Manager setup program to upgrade the SQLcompliance Agent on the local computer that is running the registered SQL Server instance. Use this approach when you are upgrading the SQLcompliance Agent on a registered SQL Server where you manually installed the agent.

Upgrade an agent with a command line

To upgrade the IDERA SQL Compliance Manager Agent for versions 5.5 and later, use the following command:

```
msiexec /i "<Path_to_Agent_MSI>\SQLcomplianceAgent-x64.msi" /l*v InstallAgent.log
COLLECT_SERVER="IderaCollectionServerName" INSTANCE="AgentSQLServerInstanceName"
TRACE_DIRECTORY="C:\Program Files\Idera\SQLcompliance\AgentTraceFiles"
SERVICEUSERNAME="Domain\Username" PASSWORD="!mySec@tP@55w0rD" STARTSERVICE="TRUE"
SILENT="1" REINSTALLMODE=vamus REINSTALL=All AllUsers=1 /qb+
```

To upgrade the IDERA SQL Compliance Manager Agent from 4.5 to this version and later, use the following command:

```
msiexec /i "\SQLcomplianceAgent-x64.msi" /l*v InstallAgent.log
SERVICEUSERNAME="Domain\Username" PASSWORD="!mySec@tP@55w0rD" STARTSERVICE="TRUE"
SILENT="1" AllUsers=1 /qb+
```

Upgrade an agent in a clustered environment

You can easily upgrade a SQLcompliance Agent for a SQL Server instance located in a Windows cluster by running the setup program. Perform the following steps on each node (computer) of the cluster.

⚠ When you upgrade the SQLcompliance Agent, the associated CLI trigger is deleted and recreated. This update can take several minutes. During this time, the SQLcompliance Agent status will show that it is unavailable due to a CLR error. Use the [Activity Log](#) to track when the new CLI trigger install completes.




To upgrade an agent on a cluster node:

1. Log on with an administrator account to the cluster node. Start with the currently active node.
2. Bring the SQLcompliance Agent generic service for this SQL Server resource group offline.
3. Run SQLCMInstall.EXE in the root of the installation kit.
4. After completing the [upgrade on a clustered environment](#), go to the SQL Compliance Manager install path. Unless you have specified a different path, the one by default is C:\Program Files\IDERA\SQLCompliance.
5. Run SQLcomplianceClusterSetup.EXE.
6. The installer displays a confirmation message. Click **Yes** if you want to upgrade the IDERA Cluster Configuration Console.
7. Once the setup wizard launches, click the **Next** to complete the upgrade.
8. After the upgrade completes, the **Cluster Configuration Console** automatically starts.
9. When prompted, specify the directory location you want SQL compliance manager to use to store CLR trigger assemblies.
10. In Windows Services, stop the SQL Compliance Manager Agent service and set the Startup type to **Manual**.
11. Open Microsoft Failover Manager, right-click the SQL Compliance Manager Agent service, and select **Properties**.
12. Go to the **Registry Replication** tab, set the Root Registry Key to Software\Idera\SQLCM, save the changes and close the **Properties** window.
13. Right-click the SQL Compliance Manager Agent service and bring the generic service online.




Upgrade to the latest SQL Compliance Manager version in a clustered environment

Use the following steps if you are upgrading SQL Compliance Manager 4.0 or older in a clustered environment. The steps support upgrading in a clustered environment using Windows Server 2003 and later.

 Be sure to back up your Repository and all databases and archives before upgrading SQL Compliance Manager.

Upgrade the SQL Compliance Manager Collection Service on Cluster Nodes

You must upgrade the SQL Compliance Manager Collection Service on each cluster node for the service to work correctly when a failure occurs on the primary cluster node hosting the Collection Service.

 Before upgrading, changing, or uninstalling SQL Compliance Manager on the passive node, you must delete the following registry entry:
HKEY_LOCAL_MACHINE\Software\Idera\SQLcompliance\CollectionService\TraceDirectory. This step is unnecessary for new installations.

To upgrade the SQL Compliance Manager Collection Service on cluster nodes:

1. In the Microsoft Cluster Administrator tool (Windows Server 2003) or Microsoft Failover Cluster Management Console (Windows Server 2008 and later), select the *SQLComplianceCollectionService* resource and take the service offline.
2. Log on with an administrator account to the computer on which you want to upgrade SQL Compliance Manager.
3. Run *SQLCMInstall.exe* in the root of the SQL Compliance Manager installation kit on the first cluster node.
4. Review the information you need to start the upgrade and click **Next**.
5. Select the **SQL Compliance Manager** setup type and uncheck the **IDERA Dashboard** setup type. Review and accept the license agreement by selecting the ***I accept the terms and conditions of the End User License Agreement*** checkbox.
6. Specify if you want to register SQL Compliance Manager with an existent IDERA Dashboard.
If you select Yes, you need to provide the IDERA Dashboard location and administrator credentials.
If you want to use the IDERA Dashboard, see how to [Deploy the IDERA Dashboard in clustered environments](#).



7. Specify the location in which you want to upgrade SQL Compliance Manager.
8. Enable the **Clustered Environment** checkbox and select whether you are upgrading SQL Compliance Manager in an active or a passive node.
Verify that the repository is the same SQL Server Instance name hosting the current repository and **specify** a form of authentication.
Test Connections to make sure the information is correct and click **Next**.
9. **If you upgrade on the currently active node**, verify that the trace directory is the same location in which your current directory resides, and click **Next**.
If you upgrade on a passive node, the wizard skips this step.
10. Type the appropriate credentials in the provided fields under which the IDERA services run, and then click **Next**.
 IDERA uses this account to connect, discover, and gather configuration information from SQL Servers in your Business environment, the installer grants the "Log on as a Service" right to the account that you specify.
11. Review the upgrade settings and click **Install**.
12. In Windows Services, **stop** the *SQL Compliance Manager Collection service* and **set** the Startup type to **Manual**.

Repeat the previous steps on each cluster node. Point to the SQL Compliance Manager Repository installed on the first node.

After upgrading SQL Compliance Manager in all nodes, follow the steps below:

1. Log on to the active node and launch the Microsoft Cluster Administrator tool (Windows Server 2003) or the Microsoft Failover Cluster Management Console (Windows Server 2008 and later), right-click the *SQLComplianceCollectionService* resource, and select **Properties**.
2. Go to the **Registry Replication** tab and set the Root Registry Key to Software\Idera\SQLCM.
3. Close the **Properties** window, right-click the *SQLComplianceCollectionService* resource, and bring the service online.
4. Log on to the passive node, launch the Microsoft Cluster Administrator tool (Windows Server 2003) or the Microsoft Failover Cluster Management Console (Windows Server 2008 and later), and verify if the *SQLComplianceCollectionService* resource is online.



Installation and deployment

⚠ IDERA SQL Compliance Manager 5.5.x depends on certain Microsoft components that did not ship with SQL Server versions prior to SQL Server 2012 SP1. ***If you are installing SQL Compliance Manager's Collection Service on a Repository running on SQL Server 2012 or below, see [Important installation steps for SQLCM 5.4.x and above.](#)***

Installing IDERA SQL Compliance Manager is both quick and easy, allowing you to take immediate advantage of SQL Compliance Manager auditing technologies. Use the following checklist to help you prepare your environment to successfully install and deploy SQL Compliance Manager.

✔ Follow these steps ...
✔ Ensure the computer on which you want to install SQL Compliance Manager meets or exceeds the hardware requirements. For more information, see Hardware requirements .
✔ Ensure the computer on which you want to install SQL Compliance Manager meets or exceeds the software requirements for both the IDERA Dashboard and SQL Compliance Manager. For more information, see IDERA Dashboard requirements and Software requirements .
✔ Ensure your Windows logon account has administrator permissions on the computers where you want to install SQL Compliance Manager components.
✔ Review the supported installation scenarios to understand how to set up IDERA Dashboard and SQL Compliance Manager in your environment. For more information, see Implementation scenarios .
✔ Review the deployment considerations for implementation best practices. For example, if you plan to audit databases that sustain a heavy workload, install the Collection Server on a dedicated computer .
✔ Identify the Windows account under which the SQL Compliance Agent should run. <i>Account Name:</i> <i>Password:</i> For more information, see Permissions requirements .



✓	Follow these steps ...
✓	<p>Identify the Windows account under which the Collection Server should run. <i>Account Name:</i> <i>Password:</i> For more information, see Permissions requirements.</p>
✓	<p>Ensure you understand how licensing of your SQL Server instances works with SQL Compliance Manager. For more information, see How licensing works.</p>
✓	<p>Ensure you install IDERA Dashboard and SQL Compliance Manager as instructed. For more information, see How to install SQL Compliance Manager. <i>If you are installing SQL Compliance Manager on a Windows cluster</i>, see how to audit a virtual SQL Server instance.</p>
⚠	<p>It is possible to install and use IDERA SQL Compliance Manager without installing the IDERA Dashboard. The IDERA Dashboard works as a complement of SQL Compliance Manager, allowing you to monitor SQL Server instances remotely. To learn more about this product, visit IDERA Dashboard.</p>
i	<p>Due to changes in product registry with CWF, IDERA SQL Compliance Manager 5.5 installer increased in size.</p>



Troubleshooting: Missing Extended Events-related DLL files

IDERA SQL Compliance Manager 5.4 includes support for SQL Server Extended Events. Users installing or upgrading to this version of SQL Compliance Manager may receive a message similar to the following:

The files `Microsoft.SqlServer.XEvent.Linq.dll` and `Microsoft.SqlServer.XE.Core.dll` are missing. Please download and install the Shared Management Objects and corresponding CLR Types from the SQL Server 2016 Feature Pack. Learn more.

For more information, see [Important installation steps for SQLCM 5.4.x and above](#).

Also visit the following Microsoft links:

- [Download the Microsoft SQL Server 2016 Feature Pack](#)
- [Installing SMO for SQL Server 2016](#)
- [CLR User-Defined Types for SQL Server 2016](#)



Important installation steps for SQLCM 5.4.x and above

IDERA SQL Compliance Manager 5.4.x and above, depend on certain Microsoft components that did not ship with SQL Server versions prior to SQL Server 2012 SP1. If you are installing SQL Compliance Manager's collection service on a repository running on SQL Server 2012 or below, these components are necessary.

For your convenience, these components are included in the SQL Compliance Manager 5.5.x installer.

Installation or upgrade instructions

SQL Compliance Manager Windows Desktop Client or Collection Service

SQL Server 2012 SP1, SQL Server 2014, SQL Server 2016, or SQL Server 2017

- Run `SQLCMInstall.EXE` to upgrade or install IDERA SQL Compliance Manager 5.5.x.

SQL Server 2012 or below

- Run `SQLCMInstall.EXE` to upgrade or install IDERA SQL Compliance Manager 5.5.x.
 - a. After completing the installation configuration, the installer will detect the SQL Server version.
 - b. If needed, the installer will automatically install the Microsoft components and proceed to finish the SQL Compliance Manager 5.5.x installation or upgrade.

SQL Compliance Manager Agent

You may deploy the SQL Compliance Manager agents from the SQL Compliance Manager desktop client.



Product components and architecture

The IDERA Dashboard and IDERA SQL Compliance Manager consist of a light, unobtrusive architecture that easily runs in your SQL Server environment with minimal configuration. All components run outside and separate from SQL Server processes.

- Learn about the [IDERA Dashboard components and architecture](#).
- Learn about the [SQL Compliance Manager components and architecture](#).

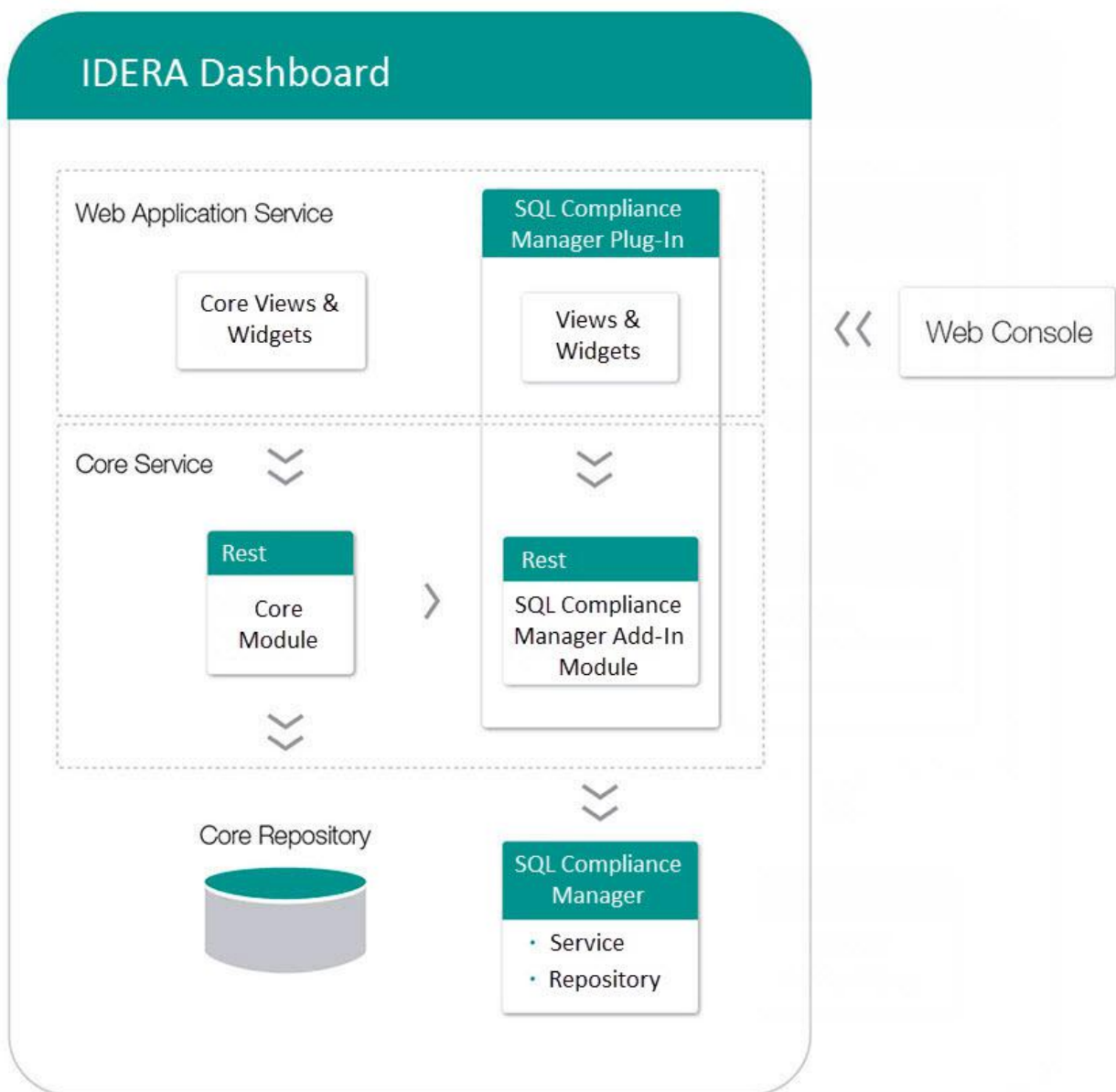


IDERA Dashboard components and architecture

The IDERA Dashboard provides web and back end services, shared across multiple Idera products. To learn more about what the IDERA Dashboard is and how it works, see [Navigate the Idera Dashboard](#).

The IDERA Dashboard consists of the following components:

- [Web Application Service](#)
- [Core Service](#)
- [Core Repository](#)





Web Application Service

The Web Application Service is a Windows service that wraps Apache Tomcat server. The Web Application Service serves up dashboard (IDERA Dashboard) and SQL Compliance Manager views and widgets that are displayed in the web console. The Web Application Service requires three ports:

- Standard HTTP port (by default 9290)
- Monitor port (9094)
- SSL port (9291)

Core Service

The Core Service is a C# (.NET 4.0 Framework) based Windows service that hosts dashboard and SQL Compliance Manager REST APIs that are used by the Web Application Service to configure and retrieve data. In addition, the Core Service handles product registration, security, configuration, product data, and event aggregation.

The Core Service uses two ports, one for REST API and the other for .NET remoting:

- Core Service REST API port (by default 9292)
- .NET remoting port (by default 9293)

Core Repository

The Core Repository is a database where all IDERA Dashboard's configuration and aggregated data is stored. The Core Repository database is hosted on a SQL Server instance and is accessed by the Core Service to retrieve data.



SQL Compliance Manager components and architecture

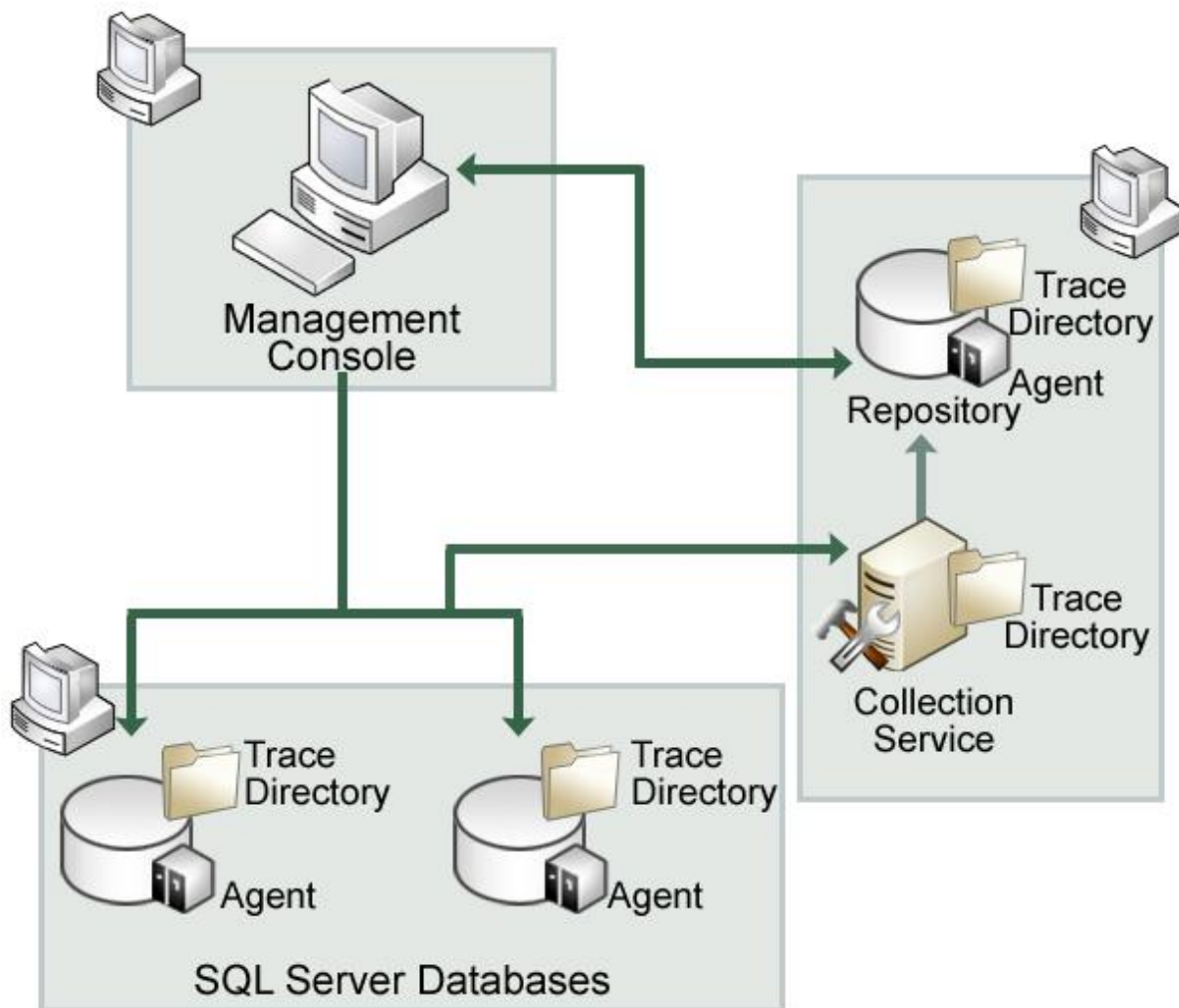
IDERA SQL Compliance Manager consists of a light, unobtrusive architecture that easily runs in your SQL Server environment with minimal configuration. All SQL Compliance Manager components run outside and separate from SQL Server processes. SQL Compliance Manager does not add to or modify any of your native SQL Server files or services.

Architecture

SQL Compliance Manager provides a robust, easy-to-use SQL Server audit and reporting solution. Behind a friendly user interface, SQL Compliance Manager offers a unique, loosely coupled architecture that is both flexible and extremely powerful. SQL Compliance Manager fits your environment, no matter how simple or complex.

The following diagram illustrates the components of the SQL Compliance Manager architecture.

IDERA



Management Console

The Management Console is a centralized, intuitive user interface that allows you to easily and quickly modify audit settings, monitor events, and report on audit data. This user interface also provides the following information:

- Real-time status of audited SQL Server instances
- SQL Server login permissions
- Detailed logging of change activity
- Track and prove continual compliance using reports

Repository databases

The SQL Compliance Manager Repository is the central repository that tracks:



- SQLcompliance configurations, such as audit settings, server registrations, and console security
- Audited SQL Server events
- Alert messages
- SQL Compliance Manager Agent activity

The Repository consists of the following databases. For more information, see [How auditing works](#).

Repository Database Name	Description
SQLcompliance	Stores alert messages, audit settings, SQL Compliance Manager Agent events, Activity Report Card statistics, and other SQL Compliance Manager configurations.
SQLcompliance.Processing	Stores processing event data received from the SQL Compliance Manager Agent.
SQLcompliance.Instance	Stores processed events collected from a registered instance.
SQLcompliance.Instance_Time_Partition	Stores archived events collected from a registered instance.

Collection Server

The Collection Server processes trace files received from the SQL Compliance Manager Agent, stores audit data in the events and archive databases, and sends audit setting updates to the SQL Compliance Manager Agent. The Collection Server runs under the Collection Service account. By default, the Collection Server communicates with the Repository every five minutes (heartbeat) to write processed audit data to the event databases associated with the registered SQL Server instances.

SQLcompliance Agent

The SQL Compliance Manager Agent gathers SQL Server events written to the SQL trace, caching these audited events in trace files. By default, the SQLcompliance Agent calls the Collection Server every five minutes (heartbeat) to receive audit setting updates, and sends trace files for processing every two minutes. The SQL Compliance Agent runs under the SQL Compliance Agent Service account. For more information, see [How the SQL Compliance Manager Agent works](#).



i Sensitive Column auditing is supported by SQL Compliance Manager Agent 3.5 or later. To use this feature, please ensure you upgrade your agent to at least version 3.5.

Command line interface

The command line interface (CLI) provides an interface for third-party tools so you can automate and schedule regular tasks, such as audit data archival and grooming, and perform diagnostic tasks. You can also perform integrity checks through the CLI. The CLI supports the following operations.

CLI Operations	Description
agentsettings	Lists the settings for the SQL Compliance Manager Agent running on a specific SQL Server instance.
archive	Archives audited events collected for registered SQL Server instances.
auditdatabase	Enables auditing on a new database, allowing to specify either a regulation guideline or a custom audit template.
checkintegrity	Verifies the integrity of audited events collected for a specific registered SQL Server instance.
collect	Collects trace data from the agent.
groom	Deletes audited events older than a specified age.
help	Displays the CLI Help.
listtriggers	Lists the CLR triggers for DML auditing on a specific registered SQL Server instance.
registerinstance	Registers a new SQL Server instance and applies audit settings.
removetriggers	Removes the CLR triggers from the subscriber table on the specific SQL Server instance.
serversettings	Lists the settings for the Collection Server.



CLI Operations	Description
timezones	Displays the time zones recognized by the computer hosting the Collection Server.
updateindex	Applies optimized Repository index configurations to existing events and archive databases.

Trace files and the trace directory

Trace files contain audited SQL Server events collected by the SQL Compliance Manager Agent. The SQL Compliance Manager Agent stores these temporary files in a secure directory on the audited SQL Server instance. When the set directory size threshold is reached, the SQL Compliance Manager Agent stops the SQL trace until the trace files are sent to the Collection Server for processing. When the set file size threshold is met, the trace file is cycled. You can configure the SQL Compliance Manager Agent trace file directory location as well as how the SQL Compliance Manager Agent manages these files, such as how often the agent sends trace files to the Collection Server. For more information, see [How the SQL Compliance Manager Agent works](#).



Product requirements

The IDERA Dashboard and IDERA SQL Compliance Manager consist of a light, unobtrusive architecture that easily runs in your SQL Server environment with minimal configuration.

Prior to the installation of the products, it is important for you to review the system requirements for SQL Compliance Manager and the IDERA Dashboard.


- Learn about the [IDERA Dashboard requirements](#).
- Learn about the SQL Compliance Manager requirements:
 - [Hardware requirements](#)
 - [Permissions requirements](#)
 - [Port requirements](#)
 - [Software requirements](#)



IDERA Dashboard requirements

To successfully install the IDERA Dashboard, you need to comply with the following requirements:

Type	Requirement
Operating System	Windows XP SP2+ Windows Server 2003 SP2 Windows Server 2008 SP1+ Windows Vista SP2+ Windows 7 Windows 2008 R2 Windows 8 Windows 2012
Repository	SQL Server 2005 SP1+ SQL Server 2008 SQL Server 2008 R2 SQL Server 2012 SQL Server 2014 SQL Server 2016
Microsoft .NET Framework version	4.0 or later
Browser	Internet Explorer IE 9.x+ Google Chrome Mozilla Firefox Microsoft Edge
Web Server	Apache Tomcat 7.0

 The [IDERA Dashboard](#) does not support SQL Server 2005. You can install SQL Compliance Manager on SQL Server 2005 and use a remote IDERA Dashboard installation on SQL Server 2005 SP1+ and above. For more information, see SQL Compliance Manager [Software requirements](#).



Port requirements

The IDERA Dashboard uses the following ports:

- IDERA Dashboard Core Services port: **9292**
- IDERA Dashboard Web Application Service port: **9290**
- IDERA Dashboard Web Application Monitor port: **9094**
- IDERA Dashboard Web Application SSL port: **9291**

ⓘ The IDERA Dashboard Web Application service comes with SSL already set up. For more information on running the IDERA Dashboard over SSL, see [Run the Idera Dashboard over SSL \(HTTPS\)](#).



Hardware requirements

The following sections provide the hardware requirements for each IDERA SQL Compliance Manager component. For more information, see [Product components and architecture](#).

Audited SQL Server

The audited SQL Server computer is the computer that hosts the SQL Server databases you want to audit. In a clustered environment with virtual SQL Servers, the audited SQL Server is the virtual SQL Server. However, each node (physical computer) in the cluster that hosts the virtual SQL Server must meet or exceed these requirements.

To achieve optimal performance, ensure each SQL Server computer meets or exceeds the following hardware requirements.

Hardware Type	Requirement
CPU	1 GHz
Memory	512 MB
Hard Disk Space	2 GB

Collection Server

The Collection Server computer is the computer that hosts the Collection Service and processes trace files. This computer also hosts the Repository databases.

To achieve optimal auditing performance and data storage, ensure the Collection Server computer meets or exceeds the following hardware requirements.

Hardware Type	Requirement
CPU	2 GHz
Memory	8 GB
Hard Disk Space	20 GB for trace directory 75 GB for Repository

For more information, see [SQL Compliance Manager Hardware Sizing guidelines](#).



Management Console

The Console computer is the computer that hosts the SQL Compliance Manager Management Console. You can install the console on the Collection Server computer, or any client computer for remote access to your audit data.

Ensure each console computer meets or exceeds the following hardware requirements.

Hardware Type	Requirement
CPU	1 GHz
Memory	512 MB
Hard Disk Space	150 MB



SQL Compliance Manager Hardware Sizing guidelines

The following guidelines provide an estimation of the hardware resources required to deploy SQL Compliance Manager depending on the number of servers you want to monitor with SQLCM.

Installs under 20 Servers

Less than 20 SQL Servers being audited and 10,000 events per hour.

SQL Compliance Manager Repository and Collection Service reside on:

Type	Requirement
Operating System	Windows Server 2003 or above
Memory	6-12 GB
CPU	Intel® Xeon® E3-1240 v5 3.5GHz 8M cache (4 Core)
SQLcm Repository Size	40-60 GB (Pre-allocate this space)

i These hardware and configuration requirements are basic requirements and can be interpreted differently depending on each environment's audit requirements and event activity scenarios. The expected repository growth is approximately 1GB per every 1 million transactions.

Installs 20-50 Servers

20-50 SQL Servers being audited and 20,000 events per hour.

SQL Compliance Manager Repository and Collection Service reside on:

Type	Requirement
Operating System	Windows Server 2003 or above (64 bit)
Memory	12-24 GB
CPU	Dual Intel® Xeon® E3-1240 v5 3.5 GHz 8M cache (4 Core)
SQLcm Repository Size	250 GB or more (Pre-allocate this space)



i These hardware and configuration requirements are basic requirements and can be interpreted differently depending on each environment’s audit requirements and event activity scenarios.
The expected repository growth is approximately 1GB per every 1 million transactions

Installs 200 Servers or more

200 SQL Servers being audited and 30,000 events per hour.

SQL Compliance Manager Repository and Collection Service reside on:

Type	Requirement
Operating System	Windows Server 2003 or above (64 bit)
Memory	24-48 GB or more
CPU	4-6 Dual Intel® Xeon® E3-1240 v5 3.5 GHz 8M cache (4 Core)
SQLcm Repository Size	1TB or more (Pre-allocate this space)

i These hardware and configuration requirements are basic requirements and can be interpreted differently depending on each environment’s audit requirements and event activity scenarios.
The expected repository growth is approximately 1GB per every 1 million transactions

⚠ The SQL Compliance Manager Collection Service should not reside on a virtual machine.



Permissions requirements

IDERA SQL Compliance Manager requires specific permissions and rights to successfully audit events. By default, the setup program assigns the Collection Service and SQL Compliance Manager Agent Service accounts read and write permissions on the respective trace directory.

Management Console user permissions

Actions	Permissions Requirements
Administer SQL Compliance Manager and configure audit settings	sysadmin rights on the Repository databases
Generate and view audit reports	Read permissions (public rights) on the Repository databases
Deploy SQL Compliance Manager Agent to registered SQL Server instance	Administrator permissions on the computer hosting the target instance
Connect to the SQL Server that hosts the Repository databases	SQL Server login

Collection service permissions

Actions	Permissions Requirements
Store audit settings and manage archive databases in the Repository	sysadmin rights on each Repository database
Process trace files	Read, write, and delete permissions on the Collection Server trace directory
Manage trace directory	Local Administrator permissions on the computer that hosts the Collection Service
Run as a service	Log on as a Service right on the computer that is running the audited SQL Server instance



SQL Compliance Manager Agent service permissions

Actions	Permissions Requirements
Starting and stopping traces, and managing SQLcompliance stored procedures	sysadmin rights on the audited SQL Server instance or database
Manage trace files	Read, write, and delete permissions on the SQL Compliance Manager Agent trace directory
Manage trace directory for an audited SQL Server instance	Local Administrator permissions on the computer that hosts the registered SQL Server
Manage trace directory for an audited virtual SQL Server	Administrator permissions on each node in the cluster hosting the virtual SQL Server
Run as a service	Log on as a Service right on the computer that is running the audited SQL Server instance


SQL Server service permissions on the Collection Server

Actions	Permissions Requirements
Load trace files so the Collection Server can process these events	Read permissions on the Collection Server trace directory

SQL Server service permissions on the registered SQL Server

Actions	Permissions Requirements
Write events to trace files for the registered SQL Server instance and audited databases	Write permissions on the SQL Compliance Manager Agent trace directory



-  To successfully run and pass the Permissions Check, make sure you are logged in as one of the following users:
- SQL Compliance Agent Service User
 - SQL Server Service User
 - Current Logged-in User

Using Windows Authentication

The SQL Compliance Manager Management Console and Agent require Windows authentication. Windows authentication uses the logged on user account to establish trusted connections through the operating system. The credentials of the logged on user account are passed to the SQL Server database servers. Your database server then verifies the user matches an established SQL Server login account that has the appropriate permissions. Only after verification will a connection open.

When using Windows authentication, the account logged on to the Management Console computer must have the appropriate SQL Compliance Manager permissions.

Using SQL Server Authentication

The SQL Compliance Collection Service leverages existing SQL Server logins that contain the appropriate SQL privileges. However, SQL Compliance Manager does not support SQL Server authentication.



Port requirements

To ensure the SQL Compliance Manager Agent and Collection Server can successfully audit instances in your environment, open the following ports. For more information, see [Supported installation scenarios](#).

Environment Type	Port Requirements
Typical	<ul style="list-style-type: none">• Port 5201 on the Collection Server computer• Port 5200 on each computer hosting an audited SQL Server instance
Clustered	<ul style="list-style-type: none">• Port 5201 on the Collection Server computer• Port 5200 on each cluster node hosting a virtual SQL Server you want to audit
Non-trusted	<ul style="list-style-type: none">• Port 5201 on the Collection Server computer• Port 5200 on each computer hosting an audited SQL Server instance in a non-trusted domain or workgroup



Software requirements

The following sections provide the software requirements for each IDERA SQL Compliance Manager component. For more information, see [Product components and architecture](#).

Support for MS SQL Server software includes case-sensitive servers and databases. Support for Windows operating systems includes English and international versions. ***If an operating system service pack is not mentioned***, a service pack is not required for that version of the operating system.

All SQL Compliance Manager 5.0 and later versions require .NET 4.0 components. Previous versions of SQL Compliance Manager require at least .NET 3.5.

i **IDERA SQL Compliance Manager 5.5 requires .NET Framework 3.5**
Windows Server 2016 and above do not install .NET Framework 3.5 by default, therefore users must install or enable .NET Framework 3.5 from the windows components in the server manager.

w IDERA SQL Compliance Manager 5.5.x depends on certain Microsoft components that did not ship with SQL Server versions prior to SQL Server 2012 SP1. Before starting the installation process, please review some [important installation steps](#).

i Sensitive Column auditing is supported by SQL Compliance Manager Agent 3.5 or later. To use this feature, please ensure you upgrade your agent to at least version 3.5.

SQL Compliance Manager Windows cluster support

You can install SQL Compliance Manager on a Windows cluster 2008, 2012 and later. For more information, review the [supported installation scenarios](#) and [Audit a virtual SQL Server instance](#).

Audited SQL Server

The audited SQL Server computer should meet or exceed the software requirements recommended by Microsoft to run and manage SQL Server databases. Note that .NET 4.0 or later must be installed on the audited server.

In a clustered environment with virtual SQL Servers, the audited SQL Server is the virtual SQL Server. However, each node (physical computer) in the cluster that hosts the virtual SQL Server must meet or exceed these requirements.

SQL Compliance Manager supports auditing the following Microsoft SQL Server versions.




SQL Server Version	Operating System
SQL Server 2017	Windows Server 2008, Windows Server 2012, Windows Server 2012 R2, Windows Server 2016
SQL Server 2016	Windows Server 2008, Windows Server 2012, Windows Server 2012 R2, Windows Server 2016
SQL Server 2014	Windows Server 2008, Windows Server 2012
SQL Server 2012 SP1	Windows Server 2008 SP2
SQL Server 2008 R2	Windows Server 2008 R2, Windows Server 2008
SQL Server 2008	Windows Server 2008

Collection Server

Ensure each Collection Server computer meets or exceeds the following software requirements. The Collection Server hosts the Collection Service and the Repository databases, which store SQL Compliance Manager configuration and audit data.

If you plan to audit instances running SQL Server 2005 or later, install the Collection Server on a computer hosting the highest version of SQL Server running in your environment. For example, to accept event data from audited instances running SQL Server 2012 SP1, the Repository databases must reside on a SQL Server 2012 SP1 instance.

 The Repository must reside on a version of SQL Server that is greater than or equal to the highest audited SQL Server version.



Software Type	Requirement
Operating System	The Collection Server requires one of the following operating systems: <ul style="list-style-type: none"> • Windows Server 2016 • Windows Server 2012 • Windows Server 2008 R2 • Windows Server 2008 SP1 • Windows 10 • Windows 8.1 • Windows 8 • Windows 7 SP1+
Microsoft SQL Server	The Collection Server requires one of the following versions of Microsoft SQL Server and supports all editions except SQL Server Express: <ul style="list-style-type: none"> • SQL Server 2017 • SQL Server 2016 • SQL Server 2014 • SQL Server 2012 SP1 • SQL Server 2008 R2 SP1+ • SQL Server 2008 SP1+


Management Console

Ensure each console computer meets or exceeds the following software requirements. You can install the console on the Collection Server computer, or any client computer for remote access to your audit data.



Software Type	Requirement
Operating System	<p>The Collection Server requires one of the following operating systems:</p> <ul style="list-style-type: none"> • Windows Server 2016 • Windows Server 2012 • Windows Server 2008 R2 • Windows Server 2008 SP1 • Windows 10 • Windows 8.1 • Windows 8 • Windows 7 SP1+ <p>The Management Console computer also requires Microsoft Data Access Components (MDAC) 2.6 or later. If you plan to audit SQL Server 2005 instances, upgrade to MDAC 2.8 or later. SQL Server 2005 requires MDAC 2.8 to communicate with other applications.</p>
Documentation	Internet Explorer 7.0 or later

Agent

 SQL Compliance Manager 5.5.x requires you to upgrade the SQL Compliance Manager agents to the same version.

Ensure the computer where the agent resides meets or exceeds the following software requirements.


Software Type	Requirement
Operating System	<p>The agent requires one of the following operating systems:</p> <ul style="list-style-type: none"> • Windows Server 2016 • Windows Server 2012 • Windows Server 2008 R2 • Windows Server 2008 SP1 • Windows 10 • Windows 8.1 • Windows 8 • Windows 7 SP1+



Web Console

Supported web browsers for the IDERA SQL Compliance Manager Web console include:

- Internet Explorer 9.x+
- Microsoft Edge
- Google Chrome
- Mozilla Firefox

 It is important for you to review the [IDERA Dashboard requirements](#) before installing SQL Compliance Manager.



Supported installation scenarios

You can install and deploy IDERA SQL Compliance Manager to meet your unique auditing and SQL Server environment needs. For example, you can select which specific databases on your SQL Server instances you want to audit.

Typical environment

The following figure illustrates a typical SQL Compliance Manager implementation scenario. This configuration includes the following installations:

- Management Console on your workstation (and, optionally, the Collection Server computer)
- Collection Service and Repository on a SQL Server database server
- SQL Compliance Manager Agents on each computer hosting databases you want to audit

Clustered environment

You can install and configure SQL Compliance Manager to audit virtual SQL Servers. A virtual SQL Server is a SQL Server running on a Microsoft failover cluster managed by Microsoft Cluster Services.

This configuration includes the following installations:

- Management Console on your workstation
- Collection Service and Repository on a SQL Server Database server
- SQL Compliance Manager Agents on each cluster node hosting the virtual SQL Server you want to audit

For more information, see [Deploying SQL Compliance Manager in a clustered environment](#).

Non-trusted environment

You can install and configure SQL Compliance Manager to audit SQL Server instances running in non-trusted domains or workgroups. This configuration includes the following installations:

- Management Console on your workstation
- Collection Service and Repository on a SQL Server database server
- SQL Compliance Manager Agents on each SQL Server instance you want to audit in a non-trusted domain or workgroup



Deployment considerations

Before implementing IDERA SQL Compliance Manager, review the following guidelines to ensure optimal performance, security, and disaster recovery. For example, ***if you anticipate collecting large numbers of events (several hundred thousand or more) in a short time period***, consider incorporating one or more of these guidelines in your SQL Compliance Manager deployment.

- [Identify how much audit data you expect to collect](#)
- [Use a dedicated computer for the Collection Server](#)
- [Optimize the model database settings](#)
- [Optimize the tempdb database settings](#)
- [Preserve audit data using archives](#)
- [Implement a disaster recovery strategy](#)



Identify audit data volume

Estimate the amount of audit data your compliance needs may generate, and ensure the Collection Server computer has ample memory and database space. Consider the following examples:

- A data set of one million events may require 1 GB of database space to store the audit data
- A trace file that is 5 MB may require 100 MB of memory to process the collected events

The amount of audit data you collect and process depends on your audit settings. Test your audit settings to identify a baseline and set your memory and hardware needs accordingly.

To estimate your audit data volume, perform a test audit of your SQL Servers for 7 days, and track how much space is used by the Repository databases. Use the resultant event collection rate to estimate the database size you will need to store and process audit data over time. Also consider how often you plan to archive or groom data. For example, **if you collect an average of 500 MB of audit data per day and you plan to archive events every 14 days**, then the database size should be set to 7 GB. Ensure you set the Repository databases to automatically grow. For more information, see [Optimize tempdb settings](#).



Use a dedicated computer

Install the Collection Server on a dedicated physical computer running SQL Server. For optimal performance, implement the following recommended configurations:

- Configure the trace directory to use a different disk than what the operating system uses
- Run 64-bit versions of the Windows operating system and the SQL Server software
- Ensure the Repository databases are the only databases hosted on this SQL Server
- Set the default database file locations so these files are stored on a different disk than what the operating system uses

This configuration also helps you ensure minimal access to the SQL Server instance and your audit data. For more information, see [Product components and architecture](#).



Optimize model settings

Change the following model system database properties to ensure optimal performance and complete backups of the IDERA SQL Compliance Manager Repository databases. The Repository databases store your audit settings and collected audit data. Whenever the Collection Server creates an events or archive database, SQL Server uses the model database as a template for the new database, applying the same property values.

Use the following guidelines to optimize performance in a typical environment. For best results, monitor your audit data collection over a period of time, and then set these model properties to reflect your needs. For more information, see [Identify audit data volume](#).

Property Name	Benefits	Value
Automatically grow file	Allows the tempdb database to expand as needed, accommodating cases when the collected audit data set is larger than expected	Selected
File growth	Allows SQL Server to efficiently handle any required file growth	25%
Recovery Model	Allows you to perform full backups of the Repository database	Simple
Space allocated	Allows ample database space for audit data collection, so file growth occurs less frequently	200 MB



Optimize tempdb settings

Change the following tempdb system database properties to ensure optimal performance when the Collection Server processes and archives audit data.

Use the following guidelines to optimize performance in a typical environment. For best results, monitor your audit data collection over a period of time, and then set these tempdb properties to reflect your needs. For more information, see [Identify audit data volume](#).

Property Name	Benefits	Value
Automatically grow file	Allows the tempdb database to expand as needed, accommodating cases when the collected audit data set is larger than expected	Selected
File growth	Allows SQL Server to efficiently handle any required file growth	25%
Space allocated	Allows ample database space for audit data collection, so file growth occurs less frequently	200 MB



Preserve audit data using archives

Include frequent archiving in your audit data maintenance strategy. Archiving lets you store audit data in separate databases that you can access for future reporting. For more information about archiving, see [How archives work](#).



Implement a disaster recovery strategy

A disaster recovery strategy allows you to plan for unexpected outages to ensure you can continue auditing SQL Server activity and policy compliance.

When you implement IDERA SQL Compliance Manager in your production SQL Server environment, consider preparing a disaster recovery strategy to minimize audit data loss should the Collection Server become unavailable. Use the following procedures and guidelines to implement a new disaster recovery strategy or modify an existing disaster recovery strategy.

Identify how often to back up the Repository databases

The frequency at which you back up the [Repository databases](#) depends on the following factors:

- How often your audit settings change
- How often your SQL Server environment changes as you add new servers and databases or remove older servers and databases
- How much audit data you collect in a given time period
- How much risk you are willing to incur

The backup frequency should reflect your maintenance needs and allow you to meet future compliance requirements.

Schedule routine backups of the Repository databases

After you identify the appropriate backup frequency for your compliance needs, use a tool such as Idera SQL Safe to schedule routine backups of the [Repository databases](#).



Deploy the IDERA Dashboard and SQL Compliance Manager

Use the following links to prepare for your SQL Compliance Manager and IDERA Dashboard deployment:


- Check the [supported installation scenarios](#)
- Learn about the [components and architecture](#)
- Review [system requirements](#) for the IDERA Dashboard and SQL Compliance Manager
- View the [installation instructions](#)
- Log in to the IDERA Dashboard



Deploying SQL Compliance Manager in a clustered environment

IDERA SQL Compliance Manager allows you to audit and report on your clustered SQL Server environment. See [Deploy SQL Compliance Manager in a clustered environment using Windows Server 2008 and later](#) for installation and configuration instructions.

The IDERA Dashboard does not provide support for clustered environments, you need to install it in a stand-alone machine first. For more information on installation and configuration instructions, see [Deploy the IDERA Dashboard in clustered environments](#).

 It is possible to install and use IDERA SQL Compliance Manager **without** installing the IDERA Dashboard.
The IDERA Dashboard works as a **complement** of SQL Compliance Manager, allowing you to monitor SQL Server instances remotely.
To learn more about this product, visit [IDERA Dashboard](#).



Deploy the IDERA Dashboard in a clustered environment and register SQL Compliance Manager

If you want to use the IDERA Dashboard in a clustered environment, you need to install this product in a stand-alone server first.

1. Log on with an administrator account to the stand-alone server in which you want to install the IDERA Dashboard.
2. Run SQLCMInstall.EXE in the root of the installation kit.
3. Review the information you need to start the installation and click **Next**.
4. Review and accept the license agreement by selecting the ***I accept the terms and conditions of the End User License Agreement*** checkbox. Select the **IDERA Dashboard** setup type and click **Next**.
5. Specify the location in which you want to install the IDERA Dashboard and click **Next**.
6. Specify a SQL Server Instance and a form of authentication to create the IDERA Dashboard repository, and click **Next**.
7. Type the appropriate credentials in the provided fields under which the IDERA services run, and click **Next**. IDERA uses this account to connect, discover, and gather configuration information from SQL Servers in your Business environment. The installer grants the "Log on as a Service" right to the account that you specify.
8. Review the installation settings and click **Install**.

Once the IDERA Dashboard installation is complete, you can use it to register SQL Compliance Manager.

You can install SQL Compliance Manager and register the product with an existent IDERA Dashboard. For more information, see [Deploying SQL Compliance Manager in a clustered environment](#).

If you install the IDERA Dashboard after installing SQL Compliance Manager in your clustered environment, you can register the product through the web console.

Registering SQL Compliance Manager with IDERA Dashboard allows users to access SQL Compliance Manager using a web browser.

1. Log into the IDERA Dashboard using an administrator account.
2. Go to **Administration** and select **Manage Products**.
3. Click on **Register a Product** and specify:
 - a. **Product install location:** select whether the product is installed locally or remotely.
 - b. **Host (Machine or IP address):** type the cluster name where SQL Compliance Manager is located.
 - c. **Host User Name and password:** type the cluster hosting SQL Compliance Manager credentials.



- d. **Product:** type SQLCM to register SQL Compliance Manager.
 - e. **Display Name:** type a unique name under which the Dashboard will show SQL Compliance Manager.
 - f. **Port:** specify the port number SQL Compliance Manager uses.
 - g. **User Name and password:** type the credentials of a Dashboard administrator account.
4. Click **Register**.
 5. Click **Yes** to confirm the registration of the product.

For more information about the IDERA Dashboard configuration, see [Manage the IDERA Dashboard](#).



Deploy SQL Compliance Manager in a clustered environment using Windows Server 2008 and later

The following instructions guide you through the installation of IDERA SQL Compliance Manager in a Windows Server 2008 and later based clustered environment. Be sure to have the following information available before creating the generic service:

- Name of the disk containing the folder
- SQL IP address
- SQL network name
- SQL Server service


Follow the steps described in the links below to complete the installation of SQL Compliance Manager in a Windows Server 2008 and later clustered environments

1. [Install SQL Compliance Manager Collection server on cluster nodes](#)
2. [Register SQL Compliance Manager Collection server as a clustered resource](#)
3. [Install the IDERA Cluster Configuration Console](#)
4. [Deploy the SQLcompliance Agent to cluster nodes](#)




Install SQL Compliance Manager Collection service on cluster nodes

You must install the SQL Compliance Manager Collection Service on each cluster node for the service to work correctly when a failure occurs on the primary cluster node hosting the Collection Service.

 Before upgrading, changing, or uninstalling SQL Compliance Manager on the passive node, you must delete the following registry entry:
 HKEY_LOCAL_MACHINE\Software\Idera\SQLCompliance\CollectionService\TraceDirectory. This step is unnecessary for new installations.

To install SQL Compliance Manager services on cluster nodes:

1. Log on with an administrator account to the computer on which you want to install SQL Compliance Manager.
2. Run SQLCMInstall.exe in the root of the SQL Compliance Manager installation kit on the first cluster node.
3. Review the information you need to start the installation and click **Next**.
4. Select the **SQL Compliance Manager** setup type and uncheck the **IDERA Dashboard** setup type.

 The IDERA Dashboard does not provide support for clustered environment installations. If you want to use the IDERA Dashboard, review [Deploy the IDERA Dashboard in a clustered environment](#).

Review and accept the license agreement by selecting the ***I accept the terms and conditions of the End User License Agreement*** checkbox.


5. Specify if you want to register SQL Compliance Manager with an existent IDERA Dashboard.
If you select Yes, you need to provide the IDERA Dashboard location and administrator credentials.
6. Specify the location in which you want to install SQL Compliance Manager.
7. Enable the **Clustered Environment** checkbox and select whether you are installing SQL Compliance Manager in an active or a passive node.
 Specify a SQL Server Instance and a form of authentication to create the SQL Compliance Manager repository.
Test the connections to make sure the information is correct and click **Next**.
8. **If you install on the currently active node**, specify a trace directory on a shared disk, and click **Next**.
If you install on a passive node, the wizard skips this step.
9. Type the appropriate credentials in the provided fields under which the IDERA services run, and click **Next**.

IDERA uses this account to connect, discover, and gather configuration information from SQL Servers in your Business environment, the installer grants the "Log on as a Service" right to the account that you specify.



10. Review the installation settings and click **Install**.
11. In Windows Services, stop the SQL Compliance Manager Collection service and set the Startup type to **Manual**.

Repeat the previous steps on each cluster node. Point to the SQL Compliance Manager Repository installed on the first node.

 You cannot perform the installations concurrently, as the installers collide when checking the repository. You must perform the installations sequentially.

Once the installation of SQL Compliance Manager is completed, proceed to [Register the SQL Compliance Manager Collection Service as a clustered resource](#).



Register the SQL Compliance Manager Collection service as a clustered resource

After installing the SQL Compliance Manager components on your cluster nodes, create the clustered service resources to allow SQL Compliance Manager to recognize the cluster nodes.

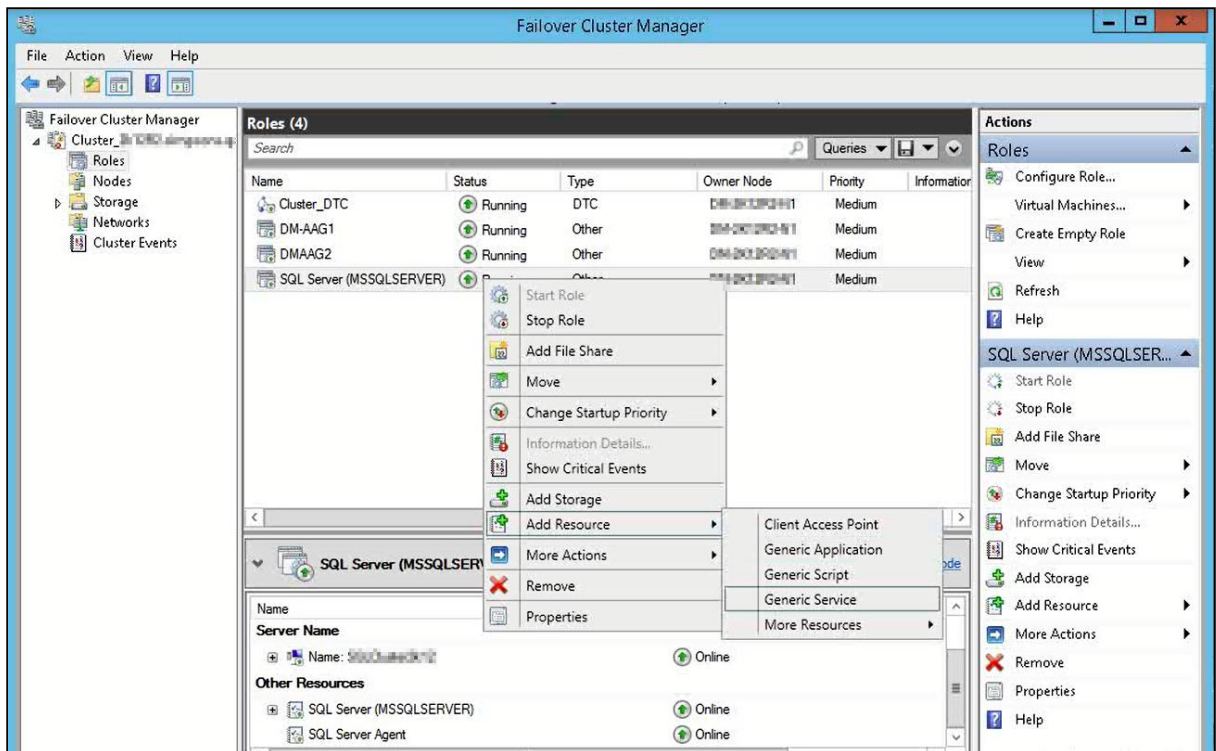
Registering SQL Compliance Manager services with Microsoft Failover Cluster Manager allows the Microsoft Cluster Service to manage the services in failover situations. The following configuration ensures the high availability of the services during a failover.

Below you can find a set of instructions to register the SQL Compliance Manager services as a clustered resource:

Adding SQL Compliance Manager Collection service to an existing role

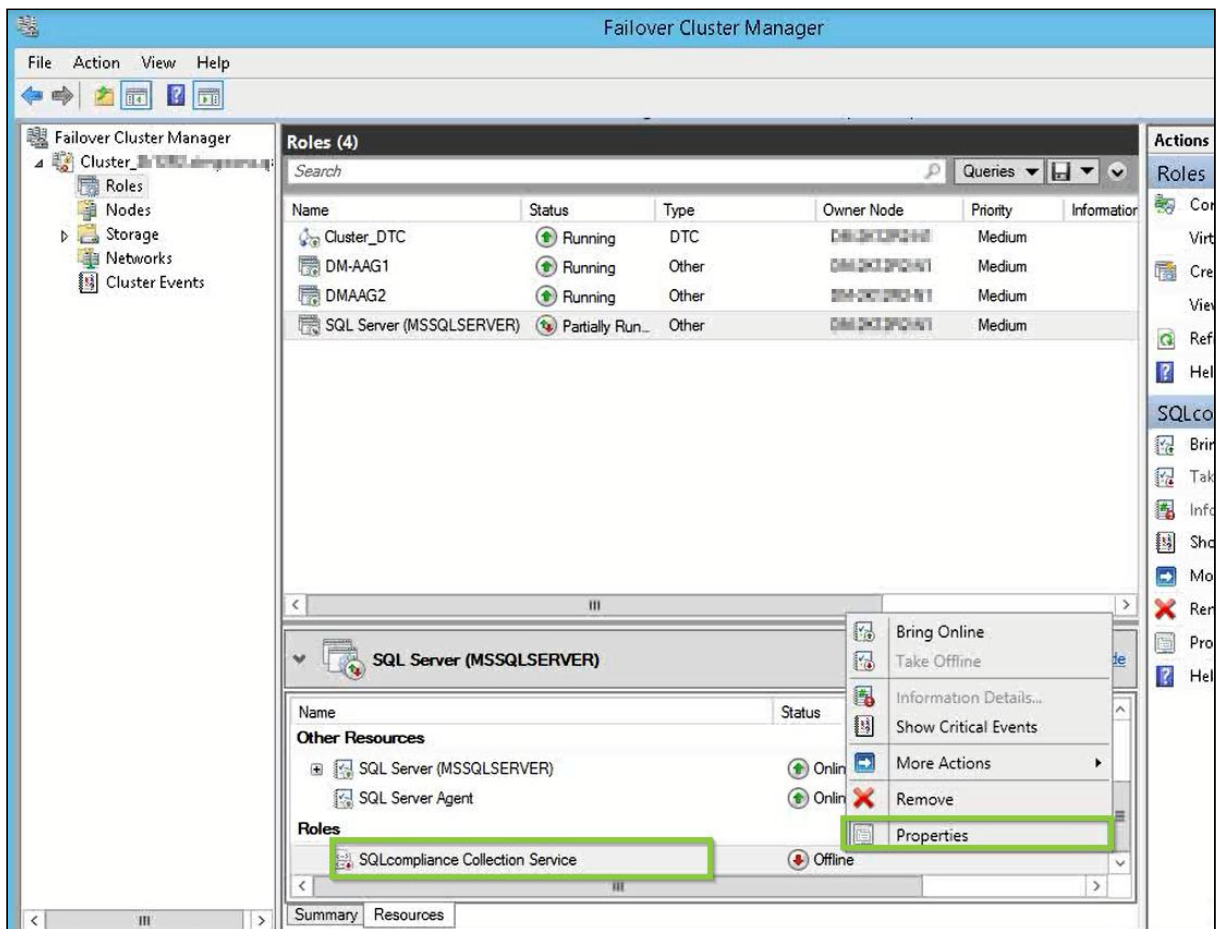
After finishing the installation in all nodes, go to the active node and follow the steps below.

1. Open the Microsoft Failover Cluster Manager and select **Roles**
2. Right-click on the SQL Server role, point to **Add Resource**, and select **Generic Service**





3. Microsoft Failover Cluster Manager displays the **New Resource** Wizard
4. **Select** *SQLcompliance Collection Service*, click **Next**, review the generic service configuration summary, and click **Finish**
5. In the Roles section, right-click the *SQLcompliance Collection Service*, and select **Properties**



6. On the General tab, check the **Use Network Name for computer name** box, and click **Apply**

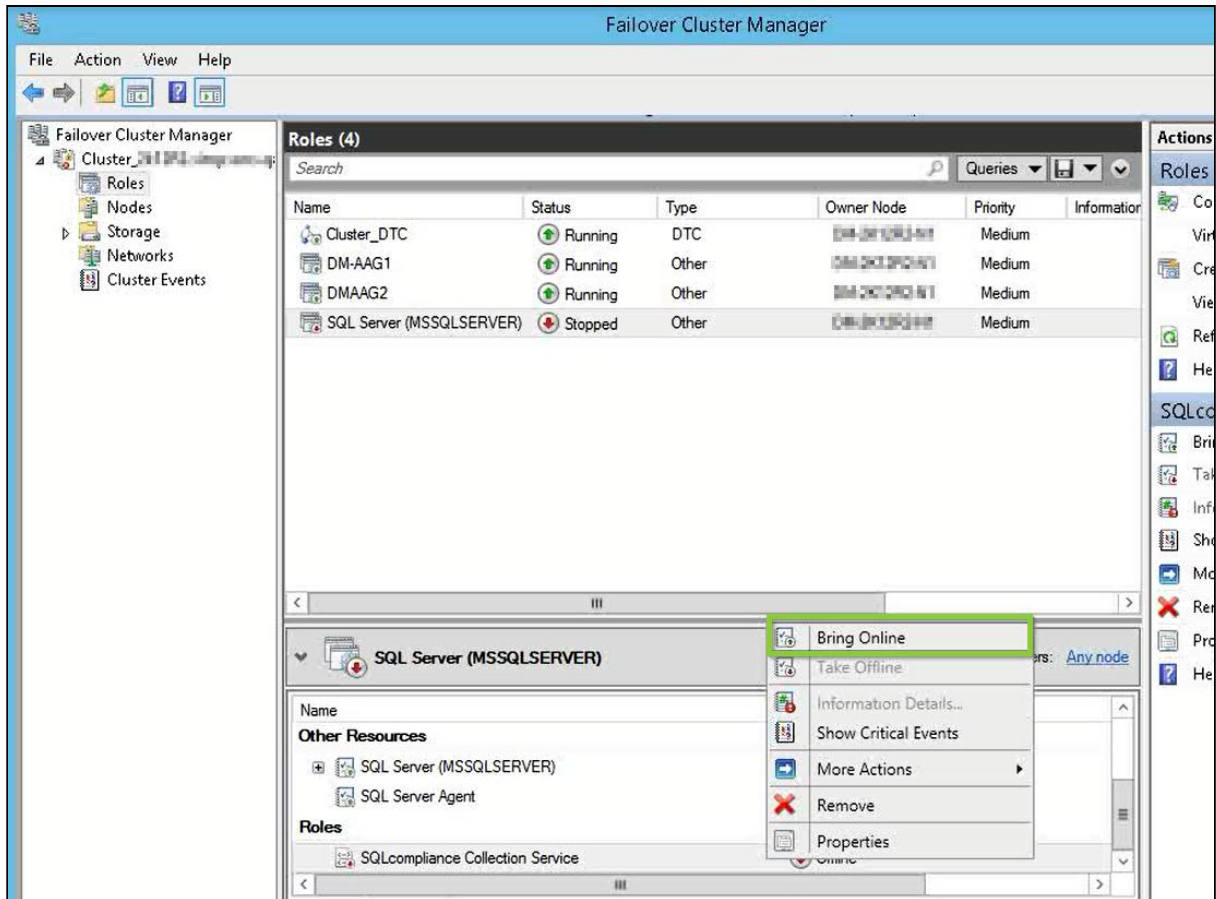
i If this action throws an error, try again after configuring the following information:
 Go to the **Dependencies** tab, add the following resources: *SQL Server* and *SQL Server Agent*, and click **Apply**.

7. On the Registry Replication tab, click **Add**
8. **Type** Software\Idera\SQLCM and click **OK**



⚠ The **Registry Replication** tab is not available in Windows Server 2012. If you are using Windows Server 2012, you must use the *"Add-ClusterCheckpoint"* PowerShell cmdlet to add the necessary setting. For more information, see [Add ClusterCheckpoint](#).

- In the Roles section right-click the SQLcompliance Collection Service and **Bring** the resource **Online**.



- Open the Microsoft Failover Cluster Manager on the other nodes and verify if the SQLcompliance Collection Service is online.

After registering the collection service as a clustered resource, proceed to [install the IDERA Cluster Configuration Console](#) to configure the SQL Compliance Manager Agent.

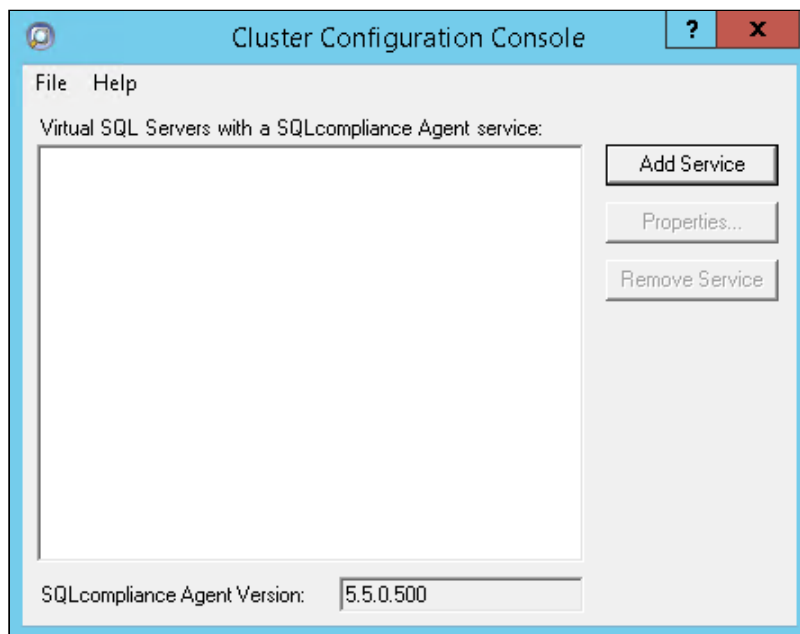


Install the IDERA Cluster Configuration Console

Once the installation of SQL Compliance Manager is complete, you need install the IDERA Cluster Configuration Console.

i You must perform these steps on **all nodes** of the cluster.

1. Go to the SQL Compliance Manager install path. Unless you have specified a different path, the one by default is C:\Program Files\IDERA\SQLCompliance.
2. Run SQLcomplianceClusterSetup.EXE.
3. Once the setup wizard launches, click **Next** to proceed to the License Agreement.
4. Read the license agreement, select the option to accept the terms of the license agreement, and click **Next**.
5. Select the destination path in which you want to install the IDERA Cluster Configuration Console. Define the permissions for the software and click **Next**.
6. Click **Install** to complete the installation.



Once the Cluster Configuration Console is installed, review [Deploy the SQL Compliance Manager Agent to cluster nodes](#).



Deploy the SQL Compliance Manager Agent to cluster nodes

Now that the IDERA Cluster Configuration Console is installed, you need to add the SQL Compliance Manager Agent to the clustered instance that is to be audited.

Use the following checklist to help you deploy and configure SQL Compliance Manager in a clustered environment.

<input checked="" type="checkbox"/>	Follow these steps ...
<input type="checkbox"/>	Install SQL Compliance Manager .
<input type="checkbox"/>	Identify which virtual SQL Server instances you want to audit .
<input type="checkbox"/>	Identify which cluster nodes host each virtual SQL Server instance. Make sure that you identify the currently active node as well as any passive nodes in the same cluster.
<input type="checkbox"/>	On each cluster node, open port 5200 for SQL Compliance Manager Agent communication.
<input type="checkbox"/>	For each cluster node, identify the folder you want to use for the SQL Compliance Manager Agent trace directory. <i>If a cluster node hosts more than one virtual SQL Server instance</i> , identify a trace directory for each additional instance you want to audit.
<input type="checkbox"/>	For each cluster node, identify the account you want to use for the SQL Compliance Manager Agent Service. Verify that this account can access the computer where you installed the Collection Server. Also make sure that this account belongs to the Administrators group on each node. Review the SQL Compliance Manager Agent Service permission requirements .
<input type="checkbox"/>	Deploy the SQL Compliance Manager Agent to each cluster node using the Cluster Configuration setup program.
<input type="checkbox"/>	Add the SQL Compliance Manager Agent service on each cluster node using the Cluster Configuration Console.
<input type="checkbox"/>	Register the SQL Compliance Manager Agent as a generic service using the Microsoft Cluster Administrator tool.



<input checked="" type="checkbox"/>	Follow these steps ...
<input type="checkbox"/>	Register each virtual SQL Server instance with SQL Compliance Manager using the Management Console. Note that you must choose manual deployment for the SQL Compliance Manager Agent.
<input type="checkbox"/>	Specify the SQL Server events you want to audit on each registered virtual SQL Server instance using the Management Console.
<input type="checkbox"/>	Run SQL Compliance Manager. Use report cards and the Audit Events tab to ensure you are auditing the correct SQL Server events.

1. Add the SQL Compliance Manager Agent

You must perform these steps on **all nodes** of the cluster.

1. Once the **Cluster Configuration Console** launches, click **Add Service**.
2. On the **General** dialog window, specify the name of the clustered instance to be audited by IDERA SQL Compliance Manager and click **Next**.
3. On the **Collection Server** dialog window, specify the name of the server hosting the SQLcompliance Collection Service and click **Next**.
4. On the **SQLcompliance Agent Trace Directory** dialog window, specify the path on which trace files will temporarily reside before being transferred to the SQLcompliance Collection Service.
The path specified should be on a drive that is a part of the same resource group as the SQL Server instance to be audited.
5. On the **CLR Trigger Location** dialog window, specify the path on which trigger assembly files will reside. The path specified should be on a drive that is a part of the same resource group as the SQL Server instance to be audited.
Click **Next**.

Ensure the Agent Trace directory and the CLR Trigger location specified exist by creating the folder structure manually through Windows Explorer.

6. Review the configuration and click **Finish**.
7. The IDERA Cluster Configuration Console displays a confirmation message stating that you have successfully added the SQL Compliance Manager Agent. Click **OK**.

2. Register the SQL Compliance Manager Agent as a clustered service

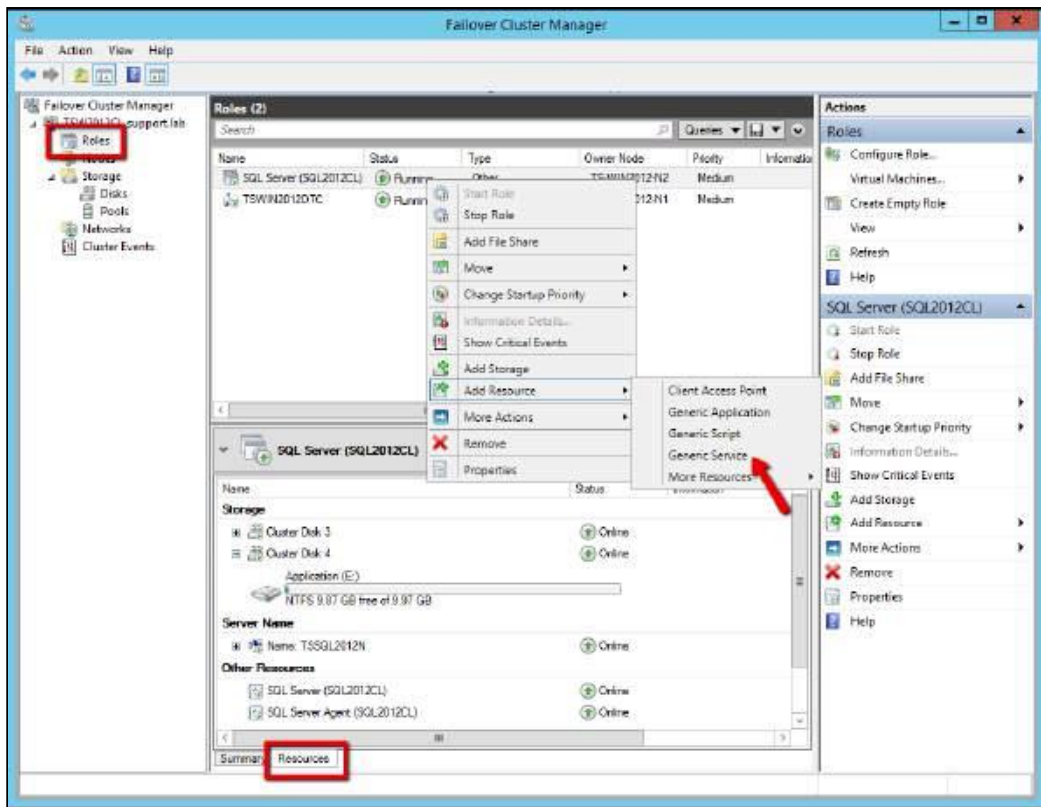
Registering the SQL Compliance Manager Agent service with Microsoft Failover Cluster Manager allows the Microsoft Cluster Service to manage the SQL Compliance Manager



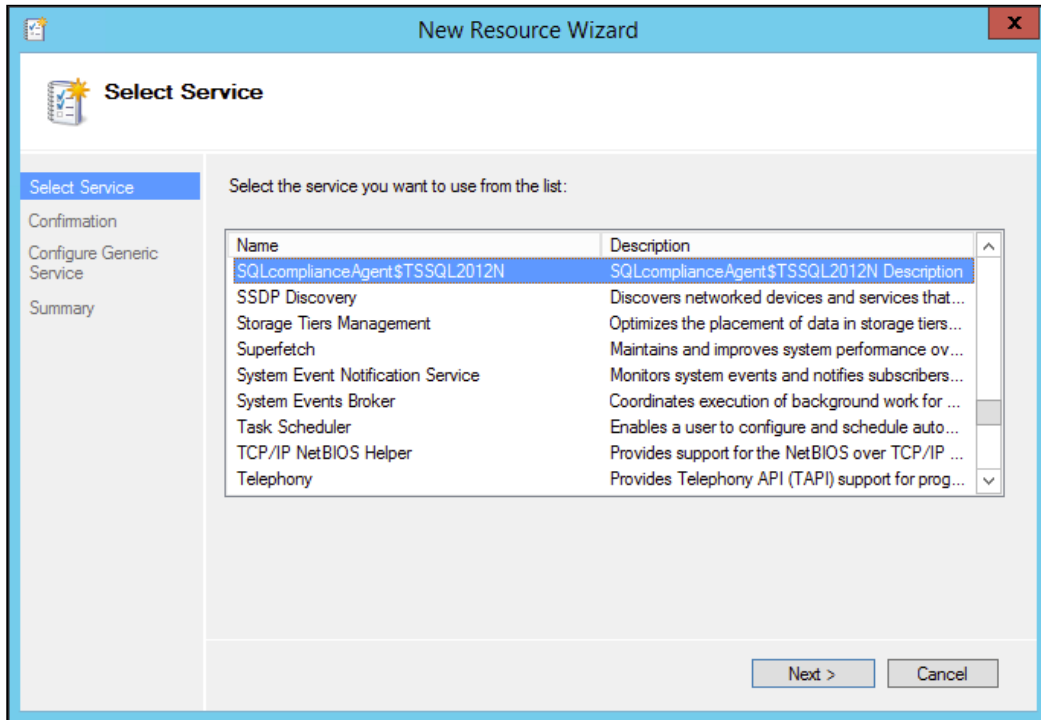
Agent service in failover situations. This configuration ensures that auditing will continue during a failover and no audit data is lost.

i You must perform these steps only **once**, in the **active node**.

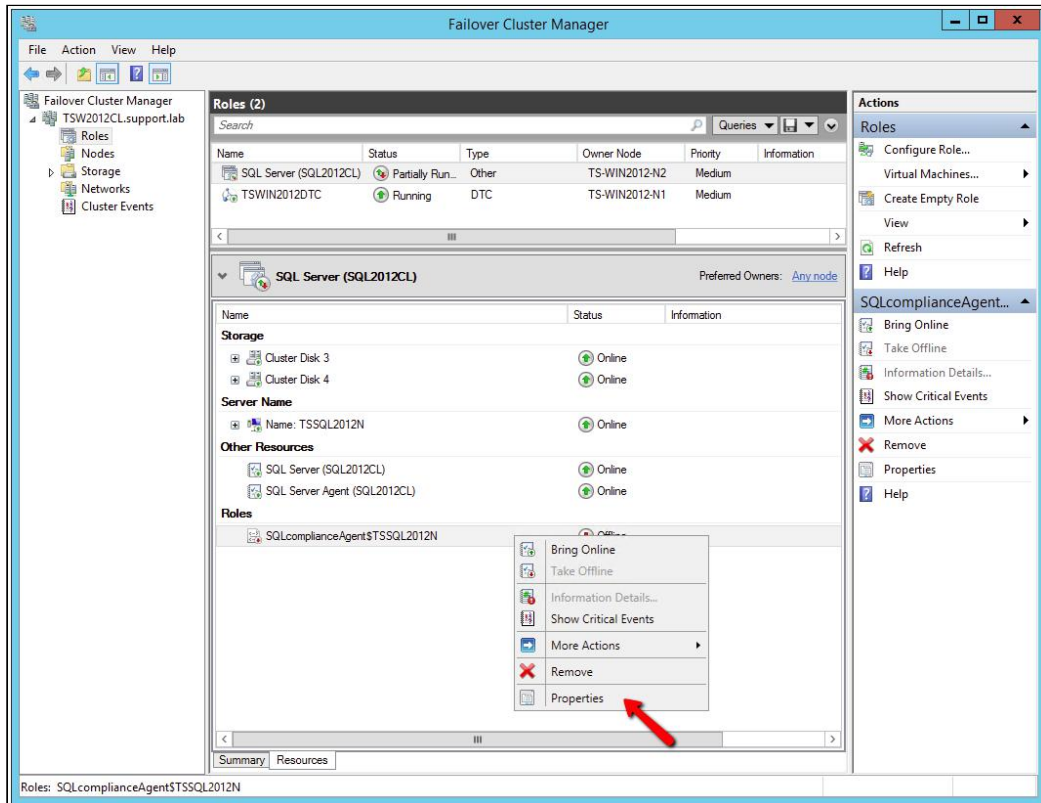
1. Log onto the active cluster node using an administrator account and launch the Microsoft Failover Cluster Manager.
2. Right-click the role created for the clustered instance, point to **Add a Resource**, and select **Generic Service**.



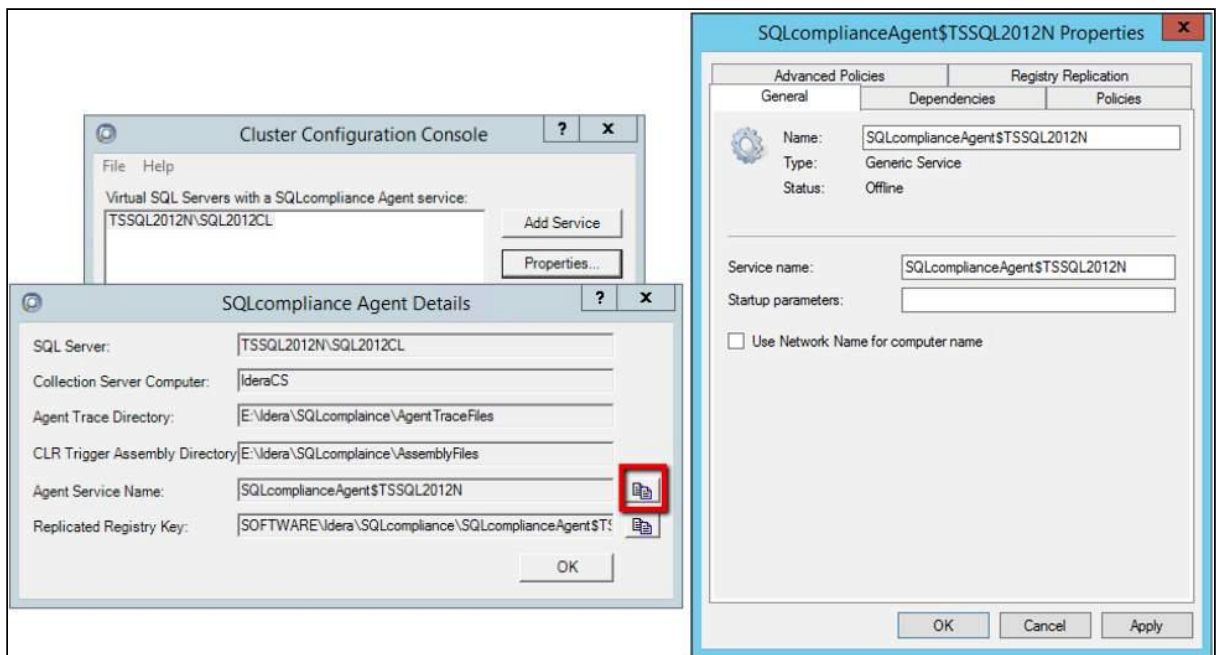
3. On the **Select Service** dialog window, **select** the SQL Compliance Manager Agent service created previously, continue following the wizard, and click **Finish**.



4. The Failover Cluster Manager displays the new resource in the resources tab. Right-click the new resource and select **Properties**.



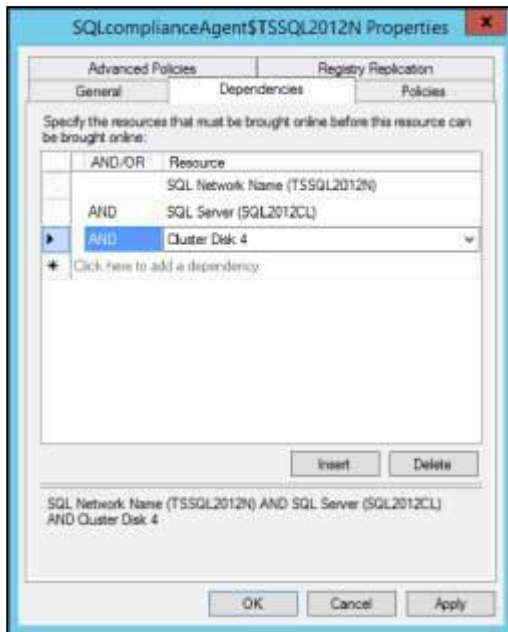
- In the **General** tab, specify the **Service name** as the Agent Service name found in the **SQLcompliance Agent details**.



- Clear the **Startup parameters**.



7. Go to the **Dependencies** tab and add the following dependencies:
 - a. *SQL Network Name*: name of the cluster hosting the SQL instance to be audited.
 - b. *Cluster Disk(s)*: the disk(s) on which the agent trace directory and the CLR trigger assemblies reside.
 - c. *SQL Server*: the SQL Server instance to be audited by SQL Compliance Manager.

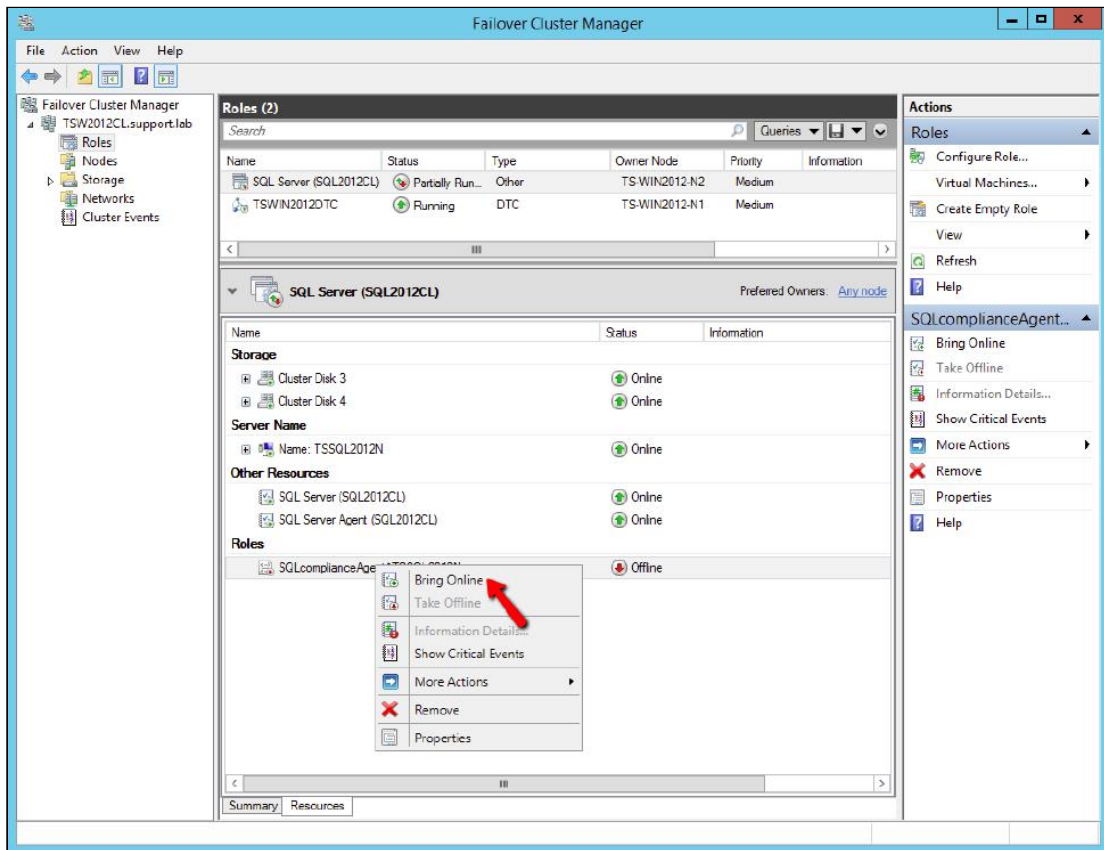


8. Once the dependencies are configured, click **Apply**.
9. Return to the **General** tab, check the **Use Network Name for computer name** box and click **Apply**.
10. Go to the **Registry Replication** tab.

⚠ The Registry Replication tab is not available in Windows Server 2012. If you are using Windows Server 2012, you must use the "Add-ClusterCheckpoint" PowerShell cmdlet to add the necessary setting. For more information, see [Add ClusterCheckpoint](#).

Add a specific registry path. To obtain the correct path, go to the IDERA Cluster Configuration Console and copy the **Replicated Registry Key** from the **SQLcompliance Agent details**. Click **OK**.

11. On the **Properties** window, click **Apply** to save the changes, and click **OK** to return to the **Resources** tab.
12. Right-click the *SQLcompliance Agent* resource and click **Bring Online**.



After successfully deploy the SQL Compliance Manager Agent, you can start [auditing your virtual SQL Server instances](#).



How to install SQL Compliance Manager

** IDERA SQL Compliance Manager versions 4.5 and older. For installations of SQL Compliance Manager 5.0 and newer, including the IDERA Dashboard, see [How to install SQL Compliance Manager and the IDERA Dashboard](#).

Before installing IDERA SQL Compliance Manager, consider the following best-practices:

- Ensure you review the [hardware](#), [software](#), [permissions](#), and [port](#) requirements.
- Decide whether you should [install the Collection Server on a dedicated SQL Server instance](#).
- ***If you plan to audit instances running SQL Server 2005 or later***, install the Collection Server on a computer hosting the highest version of SQL Server running in your environment. For example, to accept event data from audited instances running SQL Server 2012, the Repository databases must reside on a SQL Server 2012 or higher instance.

By default, SQL Compliance Manager installs with a trial license. For more information about trial licenses or upgrading your license, see [Licensing](#).

To install SQL Compliance Manager:

1. Log on with an administrator account to the computer on which you want to install SQL Compliance Manager.
2. Run `SETUP.EXE` in the root of the installation kit.
3. On the IDERA SQL Compliance Manager Quick Start window, click **SQL Compliance Manager** to begin the installation process.
4. On the Welcome to the Setup Wizard for IDERA SQL Compliance Manager window, click **Next**.
5. Read the Trial Software License Agreement, select **I accept the terms in the license agreement** and click **Next** to continue.
6. Accept the default folder for your SQL Compliance Manager installation, or click **Browse** to specify a different folder.
7. Select whether you want the SQL Compliance Manager application to be available to all users who log on to this computer, and then click **Next**.



If you select this option ...	Setup configures the user logon profile to ...
Anyone who uses this computer	Display icon on desktop when anyone logs onto this computer using a valid domain user account
Only for me	Display icon on desktop only when the current user account logs onto this computer

8. Select the appropriate setup type, and then click **Next**.

Setup Type	Description
Typical	Allows you to install all SQL Compliance Manager components on this computer
Console Only	Allows you to install only the SQL Compliance Manager Management Console
Agent Only	Allows you to install only the SQL Compliance Manager Agent
Custom	Allows you to select the individual SQL Compliance Manager components you want to install

9. **If you chose the Custom type**, select one or more SQL Compliance Manager components, and then click **Next**. Using the Custom setup type, you can install SQL Compliance Manager components in the following ways:

- Collection Server and Repository with SQL Compliance Manager Agent
 - Collection Server and Repository
 - Management Console with SQL Compliance Manager Agent
 - Management Console only
 - SQL Compliance Manager Agent only
- The setup program installs the Repository when you install the Collection Server.
- To install all SQL Compliance Manager components at the same time, use the **Typical** setup type.

10. **If you chose to install the Collection Server and SQL Compliance Manager Agent using the Typical or Custom setup**, complete the following procedure:

- a. Specify the location where you want the Collection Server to store audit data received from the SQL Compliance Manager Agent, and then click **Next**. The specified folder is the trace file directory on the Collection Server.



- b. Specify the Windows user account that you want the Collection service and SQL Compliance Manager Agent to run as to access the Repository, and then click **Next**.
 - c. Click **Browse** to select the SQL Server instance on which you want to install the Repository. The setup program creates the Repository databases on the specified instance.
 - d. Specify the authentication the setup program should use to connect to the selected SQL Server and create the Repository, and then click **Next**.
 - e. **If you want to audit the Repository or other databases associated with the selected SQL Server instance**, click **Yes**, and then click **Next**.
 - f. Specify the location where the SQL Compliance Manager Agent should store collected audit data, and then click **Next**. The specified folder will be the trace file directory on the audited SQL Server instance.
 - g. Select whether you want to start the services immediately after install, and then click **Next**.
11. **If you chose the Agent Only setup**, complete the following procedure:
 - a. Specify the location where the SQL Compliance Manager Agent should store collected audit data, and then click **Next**. The specified folder will be the trace file directory on the audited SQL Server instance.
 - b. Specify the Windows user account the SQL Compliance Manager Agent service should run as to access databases associated with the audited SQL Server instance, and then click **Next**. **If you are installing the agent on a computer that belongs to a workgroup or non-trusted domain**, specify a valid local account (MyComputer\AccountName).
 - c. Type the name of the computer on which the Collection Server is installed, and then click **Next**. **If you are installing the SQL Compliance Manager Agent on a workstation or a computer that belongs to a non-trusted domain**, the setup program is unable to validate a connection to the specified computer. Click **No** when prompted to specify another Collection Server computer.
 - d. Click **Browse** to select the SQL Server instance you want to audit, specify the authentication the SQL Compliance Manager Agent should use to connect to associated databases, and then click **Next**.
 - e. Select whether you want to start the SQL Compliance Manager Agent service immediately after install, and then click **Next**.
 12. Click **Install**.
 13. Click **Finish**. **If you chose a typical setup**, select **Launch Idera SQL Compliance Manager** to begin auditing your SQL Server environment.




How to install SQL Compliance Manager and the IDERA Dashboard

** IDERA SQL Compliance Manager versions 5.0 and newer only.

Before installing IDERA SQL Compliance Manager, consider the following best practices:

- Ensure you review the [product requirements](#).
- Decide whether you should [install the Collection Server on a dedicated SQL Server instance](#).
- **If you plan to audit instances running SQL Server 2005 or later**, install the Collection Server on a computer hosting the highest version of SQL Server running in your environment. For example, to accept event data from audited instances running SQL Server 2012, the Repository databases must reside on a SQL Server 2012 instance.

This procedure guides you through the installation of SQL Compliance Manager and the IDERA Dashboard.

 It is possible to install and use IDERA SQL Compliance Manager without installing the IDERA Dashboard. The IDERA Dashboard works as a complement of SQL Compliance Manager, allowing you to monitor SQL Server instances remotely. To learn more about this product, visit [IDERA Dashboard](#).

By default, SQL Compliance Manager installs with a trial license. For more information about trial licenses or upgrading your license, see [Licensing](#).

Start your SQL Compliance Manager installation

You can install SQL Compliance Manager and the IDERA Dashboard on any computer that meets or exceeds the [product requirements](#).

To install SQL Compliance Manager:

1. Log on with an administrator account to the computer on which you want to install SQL Compliance Manager.
2. Run SQLCMInstall.EXE in the root of the installation kit.
3. Review the information you need to start the installation and click **Next**.
4. Review and accept the license agreement by selecting the **I accept the terms and conditions of the End User License Agreement** checkbox. Select the appropriate setup type and then click **Next**.



Setup Type	Description
All SQL Compliance Manager components and IDERA Dashboard	Allows you to install all SQL Compliance Manager components and the IDERA Dashboard on this computer
SQL Compliance Manager Management console only	Allows you to install only the SQL Compliance Manager Management console
SQL Compliance Manager Agent only	Allows you to install only the SQL Compliance Manager Agent
IDERA Dashboard only	Allows you to install only the IDERA Dashboard

5. **If you chose All SQL Compliance Manager components and IDERA Dashboard setup**, complete the following procedure:

- a. Specify the following information and click **Next**.
 - i. Location in which you want to install SQL Compliance Manager.
 - ii. Display name for this installation.
The IDERA Dashboard displays this name for the current installation. **The name can only contain letters, numbers, or hyphen - characters.**
 - iii. Whether you want to install or upgrade the IDERA Dashboard locally or use a remote installation.
If you chose to use a remote installation, you need to provide an existing IDERA Dashboard URL and Dashboard administrator credentials.
- b. Specify a SQL Server Instance and a form of authentication to create the SQL Compliance Manager and the IDERA Dashboard repositories.
At this point, you can enable the **Clustered Environment** checkbox. If you select this option, you have to select whether you are working on an active or passive node, and specify the same information mentioned above for the environment. For more information, see [Deploying SQL Compliance Manager in a Clustered Environment](#).
Test the connections to make sure the information is correct and click **Next**.
- c. Specify where the SQL Compliance Manager Agent should store collected audit data, and click **Next**. The specified folder will be the trace file directory on the audited SQL Server instance.
- d. Type the appropriate credentials in the provided fields under which IDERA services run, and click **Next**. IDERA uses this account to connect, discover, and gather configuration information from SQL Servers in your Business



environment. The installer grants the "Log on as a Service" right to the account that you specify.

- e. Review the installation settings and click **Install**.
6. **If you chose the SQL Compliance Manager Console setup**, complete the following procedure:
 - a. Specify the location in which you want to install the console and click **Next**.
 - b. Review the installation settings and click **Install**.
7. **If you chose the SQL Compliance Manager Agent setup**, complete the following procedure:
 - a. Specify the location in which you want to install the console and click **Next**.
 - b. Select a SQL Server instance to audit and the appropriate credentials. Click **Next**.
 - c. Specify where the SQL Compliance Manager Agent should store collected audit data, and click **Next**. The specified folder will be the trace file directory on the audited SQL Server instance.
 - d. Specify the SQL Server hosting the SQL Compliance Manager collection service and click **Next**.
 - e. Review the installation settings and click **Install**.
8. **If you chose the IDERA Dashboard setup**, complete the following procedure:
 - a. Specify the location in which you want to install the IDERA Dashboard and click **Next**.
 - b. Specify a SQL Server Instance and a form of authentication to create the IDERA Dashboard repository and click **Next**.
 - c. Type the appropriate credentials in the provided fields under which IDERA services run, and then click **Next**. IDERA uses this account to connect, discover, and gather configuration information from SQL Servers in your Business environment. The installer grants the "Log on as a Service" right to the account that you specify.
 - d. Review the installation settings and click **Install**.
9. **If you chose the SQL Compliance Manager Agent and the IDERA Dashboard setup**, complete the following procedure:
 - a. Specify the location in which you want to install the SQL Compliance Manager Agent and the IDERA Dashboard, then click **Next**.
 - b. Specify a SQL Server Instance and a form of authentication to create the IDERA Dashboard repository and click **Next**.
 - c. Type the appropriate credentials in the provided fields under which the IDERA services run, and then click **Next**. IDERA uses this account to connect, discover, and gather configuration information from SQL Servers in your Business environment. The installer grants the "Log on as a Service" right to the account that you specify.
 - d. Specify where the SQL Compliance Manager Agent should store collected audit data, and then click **Next**. The specified folder will be the trace file directory on the audited SQL Server instance.



- e. Specify the SQL Server hosting the SQL Compliance Manager collection service and click **Next**.
- f. Review the installation settings and click **Install**.
10. **If you chose the SQL Compliance Manager Management Console and the IDERA Dashboard setup**, complete the following procedure:
 - a. Specify the location in which you want to install the SQL Compliance Manager Console and the IDERA Dashboard, then click **Next**.
 - b. Specify a SQL Server Instance and a form of authentication to create the IDERA Dashboard repository and click **Next**.
 - c. Type the appropriate credentials in the provided fields under which IDERA services run, and then click **Next**. IDERA uses this account to connect, discover, and gather configuration information from SQL Servers in your Business environment. The installer grants the "Log on as a Service" right to the account that you specify.
 - d. Review the installation settings and click **Install**.

i If you are installing SQL Compliance Manager's collection service on a repository running on SQL Server 2012 or below, the wizard will automatically install necessary Microsoft components to finish the SQL Compliance Manager installation.
For more information, see these [important installation steps](#).

11. To launch SQL Compliance Manager, you can select the **Launch the SQL Compliance Manager Windows Console** checkbox.
To access the IDERA Dashboard, open the URL provided in the completed installation window. Ensure to review [Log in to IDERA Dashboard](#).

w If you want to install the SQL Compliance Manager Management Console and the SQL Compliance Manager Agent, you must install them together; otherwise, you will need to install the console with the installation wizard first, and then use the *SilentInstaller* to install the agent.
For more information, see [Perform a silent installation of the SQLCM Agent](#).

i If you wish to uninstall the IDERA Dashboard, make sure to un-register all products by clicking the **Manage Products** link of the Products widget in the Administration view. For additional information, see [Managing product registry in the IDERA Dashboard](#).



Perform a silent installation of the SQLCM Agent

Use the following commands to perform a silent installation or upgrade of the IDERA SQL Compliance Manager Agent for **versions 5.5.1 and later**.

For a fresh installation:

```
msiexec /i "\\SQLcomplianceAgent-x64.msi" /l*v InstallAgent.log
COLLECT_SERVER="IderaCollectionServerName" INSTANCE="AgentSQLServerInstanceName"
TRACE_DIRECTORY="C:\Program Files\Idera\SQLcompliance\AgentTraceFiles"
SERVICEUSERNAME="Domain\Username" PASSWORD="!mySec@tP@55w0rD" STARTSERVICE="TRUE"
SILENT="1" /qb+
```

Minor/Maintenance Upgrade (from 5.x to this version):

```
msiexec /i "\\SQLcomplianceAgent-x64.msi" /l*v InstallAgent.log
COLLECT_SERVER="IderaCollectionServerName" INSTANCE="AgentSQLServerInstanceName"
TRACE_DIRECTORY="C:\Program Files\Idera\SQLcompliance\AgentTraceFiles"
SERVICEUSERNAME="Domain\Username" PASSWORD="!mySec@tP@55w0rD" STARTSERVICE="TRUE"
SILENT="1" REINSTALLMODE=vamus REINSTALL=All AllUsers=1 /qb+
```

Major upgrade (from 4.5 to this version):

```
msiexec /i "\\SQLcomplianceAgent-x64.msi" /l*v InstallAgent.log
SERVICEUSERNAME="Domain\Username" PASSWORD="!mySec@tP@55w0rD" STARTSERVICE="TRUE"
SILENT="1" AllUsers=1 /qb+
```

Use the following commands to perform a silent installation or upgrade of the IDERA SQL Compliance Manager Agent for **version 5.5**.

For a fresh installation:



```
msiexec /i "<Path_to_Agent_MSI>\SQLcomplianceAgent-x64.msi" /l*v InstallAgent.log
COLLECT_SERVER="IderaCollectionServerName" INSTANCE="AgentSQLServerInstanceName"
TRACE_DIRECTORY="C:\Program Files\Idera\SQLcompliance\AgentTraceFiles"
SERVICEUSERNAME="Domain\Username" PASSWORD="!mySec@tP@55w0rD" STARTSERVICE="TRUE"
SILENT="1" /qb+
```

For an upgrade:

```
msiexec /i "<Path_to_Agent_MSI>\SQLcomplianceAgent-x64.msi" /l*v InstallAgent.log
COLLECT_SERVER="IderaCollectionServerName" INSTANCE="AgentSQLServerInstanceName"
TRACE_DIRECTORY="C:\Program Files\Idera\SQLcompliance\AgentTraceFiles"
SERVICEUSERNAME="Domain\Username" PASSWORD="!mySec@tP@55w0rD" STARTSERVICE="TRUE"
SILENT="1" REINSTALLMODE=vamus REINSTALL=All AllUsers=1 /qb+
```

Associated parameters include:

Parameter	Description
COLLECT_SERVER	The machine where the Collection server is installed and where you want to collect audited data.
INSTANCE	The SQL Server instance name where you want to install the Agent.
TRACE_DIRECTORY	The Agent trace file directory where you want to generate the trace files on the Agent server.
SERVICEUSERNAME	The Windows service account used to run the Agent service. This account must be local admin and have sa rights to the monitored SQL Server.
PASSWORD	The password for the service account.
STARTSERVICE	Denotes whether to start the service.
SILENT	Indicates to the installer that it is installed silently.
REINSTALLMODE	Vamus , indicates the type of reinstall to perform.
REINSTALL	All , instructs the installer to reinstall all pre installed features.



- i** The login and password must be encrypted strings. On IDERA SQL Compliance Manager 3.0 and later, you can encrypt the login and password using the encrypt command on the command line to get an encrypted version of the string that can then be used:
- ```
sqlcmcmd encrypt THESTRING
```



## Log in to IDERA Dashboard

Once you have installed and configured your IDERA Dashboard and IDERA SQL Compliance Manager deployments, you can login to the IDERA Dashboard by doing the following:

1. Open your selected Browser and make sure it is compatible with the IDERA Dashboard console requirements.
2. Type the IDERA Dashboard product URL: **http://<machinename>:<port>** where **<machinename>** is the name of your host or machine, and **<port>** is the port specified during installation. The default URL is **http://<localhost>:9290** or **http://<machinename>:9290**.
3. When the IDERA Dashboard launches on your browser, use your Windows user account **<domain\user>** with the respective password to log into the product.

⚠ The IDERA Dashboard Web Application service comes with SSL already set up. For more information on running the IDERA Dashboard over SSL, see [Run the Idera Dashboard over SSL \(HTTPS\)](#)



## Configure your deployment

After your initial installation and set up, you may want to perform the following tasks to further customize and streamline your deployment.

- [Identify audit data volume](#)
- [Export your audit settings](#)
- [Manage the SQLcompliance Agent](#)
- [Optimize model settings](#)
- [Optimize tempdb settings](#)
- [Preserve audit data using archives](#)
- [Register your SQL Servers](#)



## Check the product version

You can check the IDERA SQL Compliance Manager version at any time. The product version consists of the release number assigned to SQL Compliance Manager.

To check the product version:

1. Start SQL Compliance Manager.
2. On the Help menu, click **About SQL Compliance Manager**.
3. Click **OK**.



## Check the SQL Server version

You can quickly check the version of a SQL Server instance you are auditing.

To check the SQL Server version:

1. Navigate to **Registered SQL Servers** in the **Administration** tree.
2. Right-click the SQL Server instance you want to check, and then select **Properties**.
3. On the General tab, review the SQL Server version number, and then click **OK**.  
For more detailed information to help troubleshoot an issue, use the native SQL Server Tools to check your SQL Server instance configuration settings.



## Export your audit settings

You can export audit settings for an audited SQL Server instance or database. Exported audit settings are saved in an XML format and can be applied to other registered SQL Server instances. This flexibility saves you time when you are configuring audit settings on multiple SQL Server instances or databases, and helps ensure consistent audit settings across your environment. In addition, exporting allows you to back up your audit settings to use should you need to reinstate an audited SQL Server instance. As you configure audit settings, consider which settings you would like to save for future use, and export the settings configured for that particular SQL Server instance or database. You can later import these settings through the Console or apply them to a new registered instance and database through the CLI.

To export your audit settings:

1. Navigate to target SQL Server instance or database in the **Explore Activity** tree.
2. On the Summary tab, click either **Server Settings** or **Database Settings** to verify that the audit settings are correct. Close that window when done viewing.
3. Click **Export**.
4. Specify the file name or use the default name.
5. Select the location to save the output file. Considering saving the output file to a central location, such as a network share.
6. Click **Save**.



## Import your audit settings

As you configure or modify audit settings for your SQL Server instances, you may want to apply the same settings across multiple SQL Server instances in your environment. You can import audit settings through previously exported XML files, allowing you to:

- Use previously configured audit settings as a baseline, or template, you deploy to multiple instances and databases so that the same events are audited across your environment
- Ensure all SQL Server databases used by regulated applications, such as SAP, are consistently audited and held to the same level of compliance
- Streamline and automate your configuration workflow

***If a user is assigned privileged status as part of the alert rule you are importing, and that user does not yet exist in the environment you are importing to, the privileged user status will apply if the user is ever added to your environment.***

**i** To execute a T-SQL script that applies previously exported audit settings, [use the auditdatabase CLI command](#).

## Auditing the same events across multiple instances and databases

You can import previously configured audit settings to use as a baseline, or template. By deploying this baseline to multiple instances and databases, you can ensure the same events are audited across your environment.

To audit the same events across multiple instances or databases:

1. Navigate to **Registered SQL Servers** in the **Administration** tree.
2. On the **Registered SQL Servers** tab, click **Import**.
3. On the Select File to Import window, click **Browse** and locate the audit settings file, and then click **Open**.
4. Click **Next**.
  - ***If you want to audit events at the server level as well as events initiated by privileged users***, select these import options.
  - ***If you want to audit events at the database level***, click **Database Audit Settings**, and then select the database you want to use as your baseline or template.
5. On the Target Servers window, select the registered SQL Server instances to which you want to apply the selected audit settings, and then click **Next**.
6. On the Import Audit Settings window, select the audit settings you want to import, and then click **Next**.
7. On the Target Databases window, select the audited databases to which you want to apply the selected audit settings, and then click **Next**.





8. On the Summary window, choose whether you want your imported audit settings to overwrite the settings on the target SQL Server instances and databases or be added to the settings already present. Click **Finish** to import your audit settings.

## Auditing regulated applications across your environment

You can import previously-configured audit settings to ensure all SQL Server databases used by regulated applications, such as SAP, are consistently audited and are held to the same level of compliance.

To audit regulatory applications across your environment:

1. Navigate to **Registered SQL Servers** in the **Administration** tree.
2. On the Registered SQL Servers tab, click **Import**.
3. On the Select File to Import window, click **Browse** and locate the audit settings file, and then click **Open**.
4. Click **Next**.
5. On the Import Audit Settings window, specify which databases are configured with the audit settings you want to import. Complete the following steps:
  - a. Click **Database Audit Settings**, and then select the **Only import for matching database names** option.
  - b. Select the databases whose audit settings you want to apply.
  - c. ***If you also want to audit events at the server level as well as events initiated by privileged users***, select these options, and then click **Next**.
6. On the Target Servers window, select the audited SQL Server instances you want to apply the audit settings to from the list, and then click **Next**.
7. On the Target Databases window, ensure the target database list matches the database names you specified to match. Select the audited databases to which you want to apply the imported audit settings, and then click **Next**.
8. On the Summary window, select whether you want your imported audit settings to overwrite the settings on the target SQL Server instances and databases or added to the settings already present. Click **Finish** to import your audit settings.



## Manage the SQLcompliance Agent

The SQL Compliance Manager Agent collects SQL events for the Collection Server to process. Your audit and agent property settings control which audit data is collected, and how the audit data is managed and processed. Deploy a SQL Compliance Manager Agent to each SQL Server computer that hosts the instances and databases you want to audit.

- [How the SQL Compliance Manager Agent works](#)
- [SQL Compliance Manager Agent version compatibility](#)
- [Deploy the SQL Compliance Manager Agent manually](#)
- [Deploy the SQL Compliance Manager Agent remotely](#)
- [Upgrade the SQL Compliance Manager Agent locally](#)
- [Upgrade the SQL Compliance Manager Agent remotely](#)
- [Ensure the SQL Compliance Manager Agent has current audit settings](#)
- [Check trace file integrity](#)
- [Check the SQL Compliance Manager Agent status](#)
- [Check the SQL Compliance Manager Agent version](#)
- [Configure how the SQL Compliance Manager Agent manages trace files](#)



## How the SQL Compliance Manager Agent works

The SQL Compliance Manager Agent runs under the SQL Compliance Manager Agent Service account on each registered SQL Server computer that hosts the audited instances and databases. To audit events, the SQL Compliance Manager Agent starts SQL Server traces that run on the target SQL Server. Once a trace starts, SQL Compliance Manager copies events from the SQL trace to trace files, providing a raw audit record.

Trace files are stored in the AgentTraceFiles folder under the install directory (C:\Program Files\Idera\SQLcompliance) on the computer that hosts the SQL Server instance. This folder is secured using ACL settings. You can specify a different location for the trace directory.

The SQL Compliance Manager Agent compresses the trace files and sends them to the Collection Server. After a trace file is successfully sent, the SQL Compliance Manager Agent deletes the file.

You can configure how the SQL Compliance Manager Agent manages these trace files. For example, you can set the maximum trace directory size to limit how much storage space is consumed by unprocessed audit data. When the directory size is reached, the SQL Compliance Manager Agent stops the SQL trace until the existing trace files can be sent to the Collection Server.

By default, the SQL Compliance Manager Agent communicates with the Collection Server every 5 minutes. This communication is a heartbeat. During a heartbeat, the SQL Compliance Manager Agent confirms its health and receives audit setting updates. You can manually apply audit setting updates as needed using the Management Console.

### NOTE

During the heartbeat, the Collection Service requests a list of the Database Names and ID's in order to update the table stored in the event database.

**If the SQL Compliance Manager Agent continues to run without a heartbeat**, IDERA SQL Compliance Manager considers the agent to be unattended. By setting the unattended time limit, you can control how long traces are allowed to run until SQL Server stops the trace. Use this setting to automatically stop auditing when the SQL Compliance Manager Agent is not responding or is deleted.

When you deploy the SQL Compliance Manager Agent, SQLcompliance installs the SQL Compliance Manager Agent service on the computer hosting the target SQL Server instance. You can install the agent manually through the setup program or dynamically through the Management Console.



## SQL Compliance Manager Agent version compatibility

The 3.0 or later version of the Management Console and the Collection Server supports all earlier versions of the SQL Compliance Manager Agent. This compatibility allows you to upgrade your IDERA SQL Compliance Manager implementation in stages according to your change control policies.



## Deploy the SQL Compliance Manager Agent manually

To deploy the SQL Compliance Manager Agent manually, run an Agent Only or Custom setup to install the agent on the physical computer that hosts the SQL Server instance or database you want to audit. Use manual deployment when you want to install the SQL Compliance Manager Agent in a unique environment, such as on a workstation or a computer that belongs to a non-trusted domain.

***If you want to audit a virtual SQL Server***, use the Cluster Configuration Console to deploy and configure the SQL Compliance Manager Agent on each cluster node hosting the server. For more information about installing and configuring the SQL Compliance Manager Agent for a virtual SQL Server, see [Deploy the SQL Compliance Manager Agent to cluster nodes](#).



## Deploy the SQL Compliance Manager Agent remotely

You can deploy the SQL Compliance Manager Agent to a registered SQL Server instance using the Management Console. Deploying the agent allows you to begin auditing server and database activity on the selected SQL Server instance.

***If you want to audit a virtual SQL Server***, you must manually deploy the SQLcompliance Agent to each cluster node hosting the server. Use the Cluster Configuration Console to deploy and configure the SQLcompliance Agent. For more information about installing and configuring the SQL Compliance Manager Agent for a virtual SQL Server, see [Deploy the SQL Compliance Manager Agent to cluster nodes](#).

***If you want to audit a SQL Server instance hosted by a computer that belongs to a non-trusted domain or a workgroup***, you must manually deploy the SQL Compliance Manager Agent to the host computer using the IDERA SQL Compliance Manager setup program.

### To deploy the SQL Compliance Manager Agent:

1. Navigate to **Registered SQL Servers** in the Administration tree.
2. Right-click the SQL Server instance to which you want to deploy the SQL Compliance Manager Agent.
3. Select **Deploy Agent** from the context menu.
4. Type and confirm the account name and password. You want the SQL Compliance Manager Agent service account to use the connect to your audited instances.
5. Specify the trace directory and click **Next**.
6. Review your settings, and then click **Finish** to deploy the SQL Compliance Manager Agent.



## Upgrade the SQL Compliance Manager Agent locally

You can use the IDERA SQL Compliance Manager setup program to upgrade the SQL Compliance Manager Agent on the local computer that is running the registered SQL Server instance. Use this approach when you are upgrading the SQL Compliance Manager Agent on a registered SQL Server where you manually installed the agent. For more information, see [Upgrade to this build](#).



## Upgrade the SQL Compliance Manager Agent remotely

You can upgrade the SQL Compliance Manager Agent remotely using the Management Console. Use this approach to upgrade agents on any registered SQL Server where you remotely installed the agent.

**If you manually installed the SQL Compliance Manager Agent**, use the IDERA SQL Compliance Manager setup program to manually upgrade the agent. For more information, see [Upgrade the SQL Compliance Manager Agent locally](#).

To upgrade the SQL Compliance Manager Agent:

1. Navigate to **Registered SQL Servers** in the **Administration** tree.
2. Right-click the SQL Server instance to which you want to upgrade the SQL Compliance Manager Agent.
3. **If the Agent is not up to date**, you can select **Upgrade Agent** from the context menu. **If the Agent is up-to-date**, the option **Upgrading the Agent** is unavailable.





## Ensure the SQL Compliance Manager Agent has current audit settings

You can ensure the SQL Compliance Manager Agent is using your most recent audit settings by performing a manual update. This update does not impact the heartbeat interval. By default, the agent receives updates every five minutes.

To ensure the SQL Compliance Manager Agent has current audit settings:

1. Navigate to **Registered SQL Servers** in the **Administration** tree.
2. Select the SQL Server instance to which you want to update the SQLcompliance Agent.
3. Click **Update Now** on the **Audit Settings** ribbon.



## Check trace file integrity

The SQL Compliance Manager Agent manages the SQL trace that collects audit data. ***If the SQL trace is stopped, modified, paused, or deleted by another application***, the SQL Compliance Manager Agent restarts the trace and checks the trace status. The Collection Server then logs an event indicating the current trace status.

You can set the trace tamper detection interval from the SQL Compliance Manager Agent Properties window. For more information, see [Configure how the SQL Compliance Manager Agent manages trace files](#).

***If an issue has occurred***, one of the following events will display on the Agent Events tab of the SQL Compliance Manager Activities tab.

| This Agent Event ... | Means ...                                                                                                                                 |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Trace stopped        | The SQL trace was stopped but still exists on the audited SQL Server instance.                                                            |
| Trace missing        | The SQL trace that was running no longer exists on the audited SQL Server instance. The SQL Compliance Manager Agent started a new trace. |
| Trace altered        | A SQL trace setting was altered.                                                                                                          |



## Check the SQL Compliance Manager Agent status

You can quickly check the status of a SQL Compliance Manager Agent that is deployed to a registered SQL Server instance you are auditing. This feature provides a summary of the agent health. For more detailed information to help troubleshoot an issue, see the agent properties.

To check the SQL Compliance Manager Agent status:

1. Navigate to **Registered SQL Servers** in the **Administration** tree.
2. Select the SQL Server instance that hosts the SQL Compliance Manager Agent you want to check.
3. Click **Check Agent Status** on the **Agent** ribbon.
4. Review the status, and then click **OK**. To obtain more detailed information about the agent, review the agent properties. To refresh the status displayed in the Registered SQL Servers tab, click Refresh on the View menu.



## Check the SQL Compliance Manager Agent version

You can quickly check the version of a SQL Compliance Manager Agent that is deployed to a registered SQL Server instance you are auditing. The SQL Compliance Manager Agent version consists of the release number and build number assigned to SQL Compliance Manager. The SQL Compliance Manager Agent version should be the same as the product version. For more information, see [Check the product version](#).

### To check the SQL Compliance Manager Agent status:

1. Navigate to **Registered SQL Servers** in the **Administration** tree.
2. Select the SQL Server instance that hosts the SQL Compliance Manager Agent you want to check.
3. On the Agent menu, click **Agent Properties**.
4. On the General tab, review the SQL Compliance Manager Agent version number, and then click **OK**. For more detailed information to help troubleshoot an issue, see additional agent properties on the Deployment and Trace Options tabs.



## Configure how the SQL Compliance Manager Agent manages trace files

You can configure how the SQL Compliance Manager Agent manages trace files. These settings include file size thresholds and how often the SQL Compliance Manager Agent calls the Collection Server with a heartbeat.

**If you specify a different location for the trace directory**, ensure the SQL Compliance Manager Agent Service account has read and write privileges on that folder. IDERA SQL Compliance Manager does not change the security settings on existing folders.

**If you are auditing a virtual SQL Server**, ensure the specified folder is located on a shared data disk for the specified virtual SQL Server. SQL Compliance Manager applies this change to the active node in the cluster hosting the virtual SQL Server. SQL Compliance Manager Agent properties are later replicated from the active node to the passive nodes.

To configure how the SQL Compliance Manager Agent manages trace files:

1. Navigate to **Registered SQL Servers** in the **Administration** tree.
2. Select the SQL Server instance that hosts the SQL Compliance Manager Agent you want to check.
3. On the **Agent** menu, click **Agent Properties**.

| If you want to ...                                            | Use this tab ... |
|---------------------------------------------------------------|------------------|
| Change heartbeat interval                                     | General          |
| Change logging level                                          | General          |
| Configure trace collection settings                           | Trace Options    |
| Limit trace directory size                                    | Trace Options    |
| Review agent status, version, and last heartbeat time         | General          |
| Review current trace directory path                           | Trace Options    |
| Review how the agent was deployed on this SQL Server instance | Deployment       |
| Review which SQL Server instances the agent audits            | SQL Servers      |
| Set how long the agent can run unattended                     | Trace Options    |



| If you want to ...                                                                                       | Use this tab ... |
|----------------------------------------------------------------------------------------------------------|------------------|
| Set how long the agent waits before restarting a SQL trace that is stopped, modified, paused, or deleted | Trace Options    |
| Verify agent service account                                                                             | Deployment       |

4. ***If you want to designate a different folder for the SQL Compliance Manager Agent trace directory***, complete the following steps.
  - a. On the **Agent** menu, click **Change Trace Directory**.
  - b. Specify the path for the new agent trace directory location.
5. Click **OK**.



## Licensing

IDERA SQL Compliance Manager provides an intuitive, simple to use interface for license key management. You can view the status of the license key associated with each SQL Server instance and upgrade licenses to audit additional instances. SQL Server instances are the only licensed components in the SQL Compliance Manager architecture.

- [How licensing works](#)
- [Upgrade your license](#)



## How licensing works

By default, IDERA SQL Compliance Manager installs with a limited-time, limited-instance trial license key. The Management Console displays your trial license statistics in the Manage SQL Compliance Manager Licenses window.

When you decide to move from a trial implementation of SQL Compliance Manager to your production environment, contact and obtain a license key from Idera. You enter the license key using the Manage SQL Compliance Manager Licenses window. This license key is stored in the Repository.

SQL Compliance Manager checks for a valid license key each time you register a SQL Server instance. ***If the SQL Server instance is not currently licensed***, and you have enough licenses to proceed, SQL Compliance Manager associates the instance with an available license. ***If the attempted registration exceeds your licensed limit***, SQL Compliance Manager does not register the specified instance and you cannot initiate auditing.

When you reach your license limit, SQL Compliance Manager disallows the registration of additional SQL Server instances. ***If your license expires***, SQL Compliance Manager disables all auditing of new events and disallows registration of additional SQL Server instances. You can continue to view and report on previously-collected audit data.





## Upgrade your license

You may need to upgrade your IDERA SQL Compliance Manager license due to any number of circumstances. For example, consider the following scenarios:

- You exhaust your trial license and have decided to use SQL Compliance Manager to audit and report on database activity
- You exhaust your purchased license due to company growth or the need to audit additional SQL Server instances to remain in compliance

### To upgrade your license:

1. Click **File** on the menu bar, and then select **Manage Licenses**.
2. On the Manage Licenses window, click **Add** and enter your new license key.
3. Click **OK**.



## Register your SQL Servers

Registering a SQL Server instance allows you to audit this instance and the associated databases. For each database you want to audit, register the corresponding SQL Server instance. When you register the instance, you can also deploy the SQL Compliance Manager Agent to begin auditing SQL events on this instance.

### Use the Console to register your SQL Servers

To register your SQL Server instance:

1. Ensure the SQL Server instance you want to register meets the [hardware](#) and [software](#) requirements.
2. Decide which [SQL Server events](#) you want to audit on this instance.
3. Start the Management Console, and then click **New > Registered SQL Server**.
4. Specify or browse to the SQL Server instance you want to register with SQL Compliance Manager, and then click **Next**. You can also specify the description SQL Compliance Manager uses when listing this instance in the Management Console.
5. **If the SQL Server instance is hosted by a Microsoft SQL Server Cluster virtual server**, select the checkbox. Click **Next**.
6. Indicate whether you want to deploy the SQL Compliance Manager Agent now or later, and then click **Next**. You can also choose to deploy the SQL Compliance Manager Agent manually, allowing you to install the agent at the physical computer that is hosting the registered SQL Server instance.

**i** **If you are auditing a virtual SQL Server or a SQL Server instance running in a non-trusted domain or workgroup**, you must manually deploy the SQL Compliance Agent to the computer hosting the instance. For more information, see [Deploy the SQL Compliance Manager Agent manually](#).

7. **If you chose to deploy the SQL Compliance Agent now**, specify the appropriate service account credentials for the agent, and then click **Next**. For more information, see [Permissions requirements](#).
8. **If you chose to deploy the SQL Compliance Agent now**, indicate whether you want the SQL Compliance Manager Agent to use the default trace directory, and then click **Next**. By default, the trace directory path is:  
C:\Program Files\Idera\SQLcompliance\AgentTraceFiles  
**If you designate a different directory path**, ensure the SQL Compliance Manager Agent Service account has read and write privileges on the specified folder.
9. Select the server databases you want to audit, and then click **Next**. **If you do not want to audit any databases**, clear the **Audit Databases** check box.



10. Select the collection level of server activities you want to audit, and then click **Next**.
11. **If you chose to create a custom audit collection**, select the server activities you want to audit, and then click **Next**. You can also indicate whether you want to audit successful or failed access checks.
12. **If you chose to create a custom audit collection**, specify which privileged users you want to audit, and then click **Next**. **If you are auditing a virtual SQL Server or a SQL Server instance running in a non-trusted domain or workgroup**, configure privileged user audit settings after you have deployed the SQL Compliance Manager Agent.
13. **If you chose to create a custom audit collection**, select the database activities you want to audit, and then click **Next**. You can also indicate whether you want to audit successful or failed access checks, capture SQL statements for DML and SELECT activity, or capture the transaction status for DML activity.
14. **If you chose to create a custom audit collection**, specify which privileged users you want to audit, and then click **Next**.
15. Specify whether you want to grant the assigned SQL logins read access to events audited on this SQL Server instance, and then **Next**. For more information, see [How Console security works](#).
16. Click **Finish**.

## Use the CLI to register a SQL Server instance

You can use the command line interface to register a new SQL Server instance and apply audit settings. The audit settings can be configured using the Typical auditing settings or an audit template (audit settings you exported to an XML file).

Keep in mind the following requirements and limitations:

- This process requires manually deploying the SQL Compliance Manager Agent to this instance.
- You cannot apply the built-in HIPAA or PCI regulation guidelines at the server level using the CLI.
- The `register` command supports case-sensitive named instances. Ensure you are using the appropriate case when you cite the instance name.
- The `registerinstance` command does not support registering a virtual SQL Server instance hosted on a Windows cluster.

SQL Compliance Manager includes a sample instance audit settings template (Sample\_Server\_AuditSettings.xml) for your convenience. Use this sample template to familiarize yourself with how specific audit settings are defined. By default, the sample template is located under `C:\Program Files\Idera\SQLcompliance`.



To register an instance and apply the Typical (default) audit settings:

1. Use the SQL Compliance Manager setup program to the target instance.
2. In Windows Command Prompt, use the following syntax: `SQLcmCmd [-host CollectionServer] [-port number] registerinstance instance.`

To register an instance and apply a FERPA regulation guideline:

**i** The FERPA regulation guideline is provided as an XML template (FERPA\_Server\_Regulation\_Guideline.xml) stored in the SQL Compliance Manager installation directory (C:\Program Files\Idera\SQLcompliance). Ensure the path you cite for the FERPA template reflects the directory you chose during installation.

1. Use the SQL Compliance Manager setup program to [manually deploy the SQL Compliance Manager Agent](#) to the instance that hosts the target database.
2. In Windows Command Prompt, use the following syntax: `SQLcmCmd [-host CollectionServer] [-port number] registerinstance instance -config "FERPA regulation guideline file path".`

To register an instance and apply a SOX regulation guideline:

**i** The SOX regulation guideline is provided as an XML template (SOX\_Server\_Regulation\_Guideline.xml) stored in the SQL Compliance Manager installation directory (C:\Program Files\Idera\SQLcompliance). Ensure the path you cite for the SOX template reflects the directory you chose during installation.

1. Use the SQL Compliance Manager setup program to [manually deploy the SQL Compliance Manager Agent](#) to the instance that hosts the target database.
2. In Windows Command Prompt, use the following syntax: `SQLcmCmd [-host CollectionServer] [-port number] registerinstance instance -config "SOX regulation guideline file path".`

To register an instance and apply a custom audit template:

1. Determine which currently audited SQL Server instance has the audit settings you want to apply to the new instance.
2. [Export your audit settings](#) from the source instance.
3. Use the SQL Compliance Manager setup program to [manually deploy the SQL Compliance Manager Agent](#) to the target instance.
4. In Windows Command Prompt, use the following syntax: `SQLcmCmd [-host CollectionServer] [-port number] registerinstance instance -config "exported audit settings file path".`





## Manage the registry key

IDERA SQL Compliance Manager checks the permissions available on each SQL Server instance you want to monitor. This check runs automatically each time you register a new instance.

If the check fails, review the issue, and then access the `HKEY_LOCAL_MACHINE\Software\Idera\SQLcompliance` to make the permission changes. For more information about the required permissions, see [Configuration wizard - Permissions Check window](#).

To make a change to the registry key:

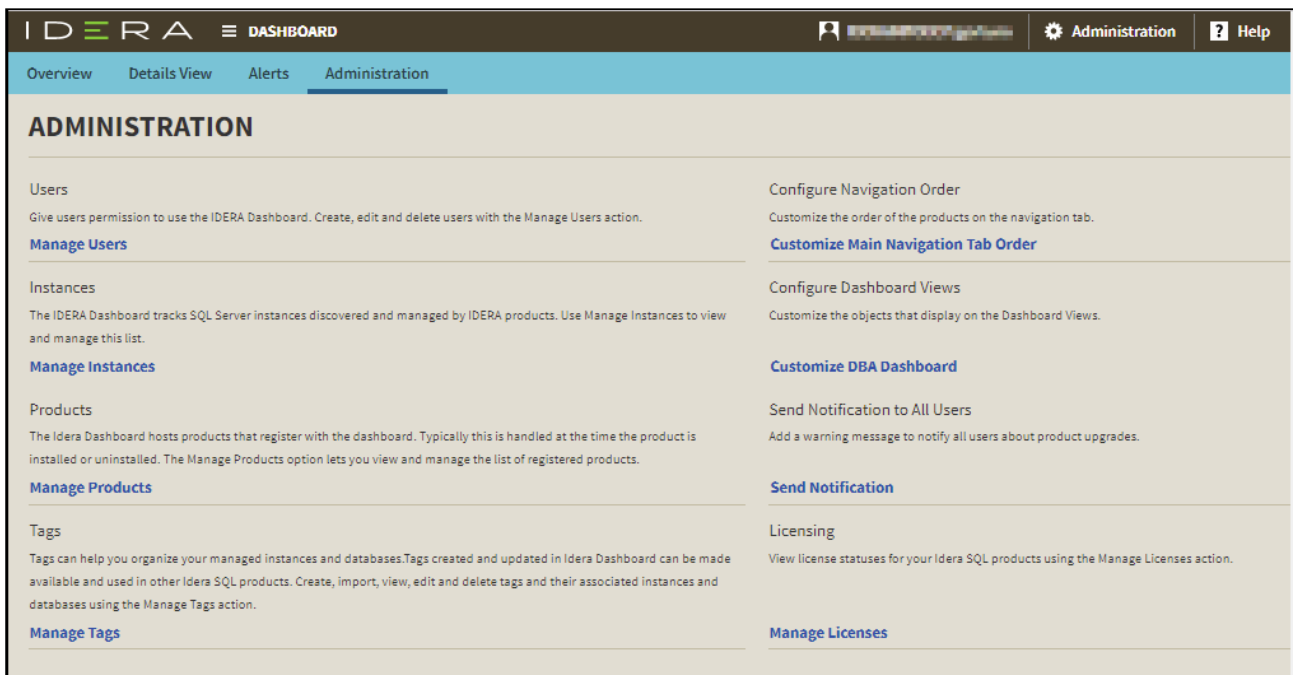
1. Start `services.msc` using the Run command. The system displays the Services window.
2. Right-click the **SQLcompliance Collection Service**, and then select **Properties**.
3. In the SQLcompliance Collection Service Properties dialog box, click the Log On tab.
4. Log on to the SQL Compliance Manager Service by typing the service account credentials, and then clicking **OK**.
5. Open the registry editor by typing **regedit** in the Run command window, and then clicking **OK**. The system displays the Registry Editor window.
6. In the directory tree, expand `HKEY_LOCAL_MACHINE\SOFTWARE\Idera\SQLcompliance`.
7. Right-click the **SQLcompliance** folder, and then select **Permissions**. The system displays the Permissions for SQLcompliance dialog box.
8. On the Security tab, click **Add**. This step allows you to add a user or group.
9. In the Select Users or Groups dialog box, search for the appropriate account by clicking **Advanced > Find Now**. The Select Users or Groups dialog box displays a list of relevant results.
10. In the **Search Results** field, select the service account used by SQL Compliance Manager Services, and then click **OK**. The system adds the object to the list.
11. Click **OK**. Note that the account you selected appears in the **Group or user names** field of the Permissions for SQLcompliance dialog box.
12. Select the account name, and then add the appropriate permissions by checking the **Allow** checkbox for the permission(s).
13. Click **OK** after you make your selections. You can verify the permissions by right-clicking **SQLcompliance** in the Registry Editor, selecting **Permissions**, and then viewing the allowed permissions.





## Navigate the IDERA Dashboard web console

The IDERA Dashboard is a common technology framework designed to support the entire IDERA product suite. The IDERA Dashboard allows users to get an overview of the status of their SQL Server instances and hosted databases all in a consolidated view, while providing users the means to drill into individual product overviews for details. The IDERA Dashboard supports multiple copies of each product installation. Click image to view full size.



In the IDERA Dashboard, all products show a common Administration tab, granted the logged-in user has administrator privileges. Selecting this tab displays the Administration view which hosts a range of options for performing administration-related actions.

## Available actions in the Administration view of the IDERA Dashboard

The Administration view of the IDERA Dashboard provides a central set of services related to specific actions such as:

- [User management](#)
- [Instance management](#)
- [Product registry](#)
- [Dashboard navigation](#) and configuration
- [Product notification management](#)





For more information on each service and what configuration settings are available, visit each respective section.



## Use SQL Compliance Manager widgets in the IDERA Dashboard

The IDERA Dashboard Overview provides an area for users to quickly view top metrics regarding their monitored SQL Server instances.

By default, the following IDERA SQL Compliance Manager widget appears on the IDERA Dashboard Overview:



- [SQL Compliance Manager Environment Alerts](#)
- [SQL Compliance Manager Enterprise Activity Report Card](#)
- [SQL Compliance Manager Audited Instances](#)

You can export any of the detail on this view by clicking the **Export** button on the right side of the window.

### SQL Compliance Manager Environment Alerts widget

The SQL Compliance Manager Environment Alerts widget displays the number of active alerts for the entire environment with Severe, High, Medium, or Low status along with the:

- Total number of audited *instances* in your environment. Click **Instances** to access the Audited Instances view within SQL Compliance Manager.
- Total number of audited *databases* in your environment. Click **Audited Databases** icon to access the Audited Databases view within SQL Compliance Manager.

| SQLCM ENVIRONMENT ALERTS (CM420)                                                    |                  | Total | Severe | High | Medi... | Low |
|-------------------------------------------------------------------------------------|------------------|-------|--------|------|---------|-----|
|  | INSTANCES        | 0     | 0      | 0    | 0       | 0   |
|  | AUDITED DATAB... | 0     | 0      | 0    | 0       | 0   |

### SQL Compliance Manager Enterprise Activity Report Card

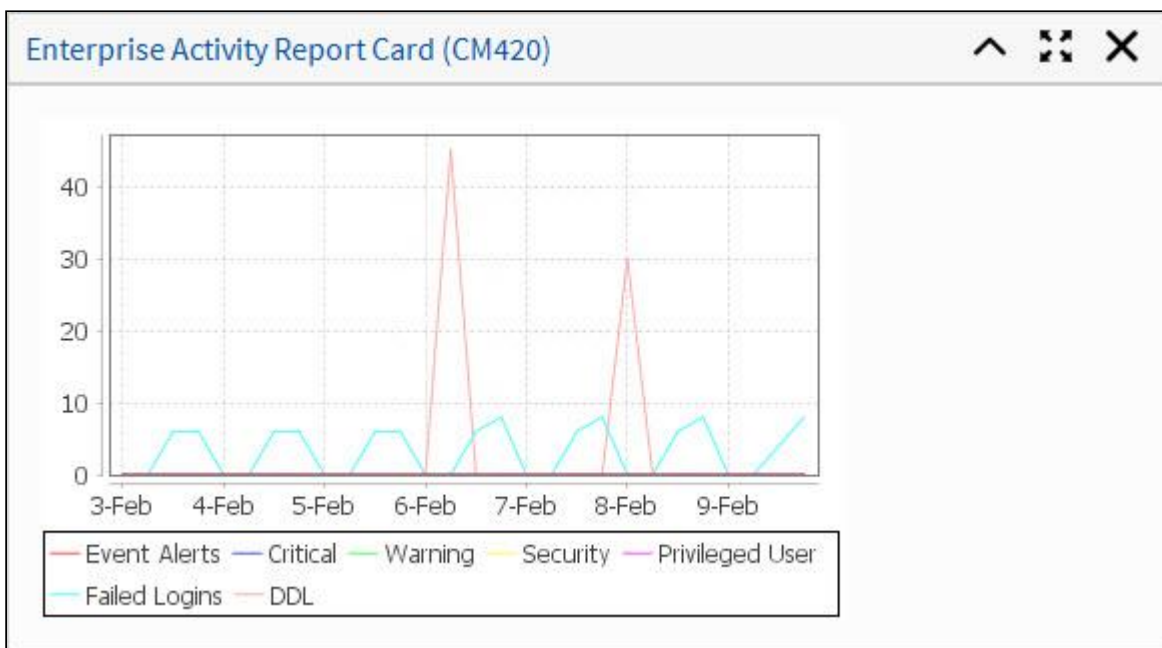
The SQL Compliance Manager Enterprise Activity Report Card widget displays your SQL Compliance Manager enterprise activity in a line graph based on the Overall



Activity graph on the SQL Compliance Manager Enterprise Activity report Card. This graph displays activity for the past seven days and includes:

- Critical Alerts
- DDL
- Event Alerts
- Failed Logins
- Privileged User
- Security
- Warning Alerts

For more information about the Enterprise Activity report Card, see [Explore Activity - Audited SQL Servers Summary](#) tab.




## SQL Compliance Manager Audited Instances

The SQL Compliance Manager Audited Instances widget displays a list of audited SQL Server instances. This widget includes:

- Status icon: green check for okay (successful connection and the SQL Server Agent is running) or red x for error (instance connection failed or the SQL server Agent is not running)
- Instance name
- Agent Status text
- Any available alerts
- Number of audited databases per instance (scroll right if not available)



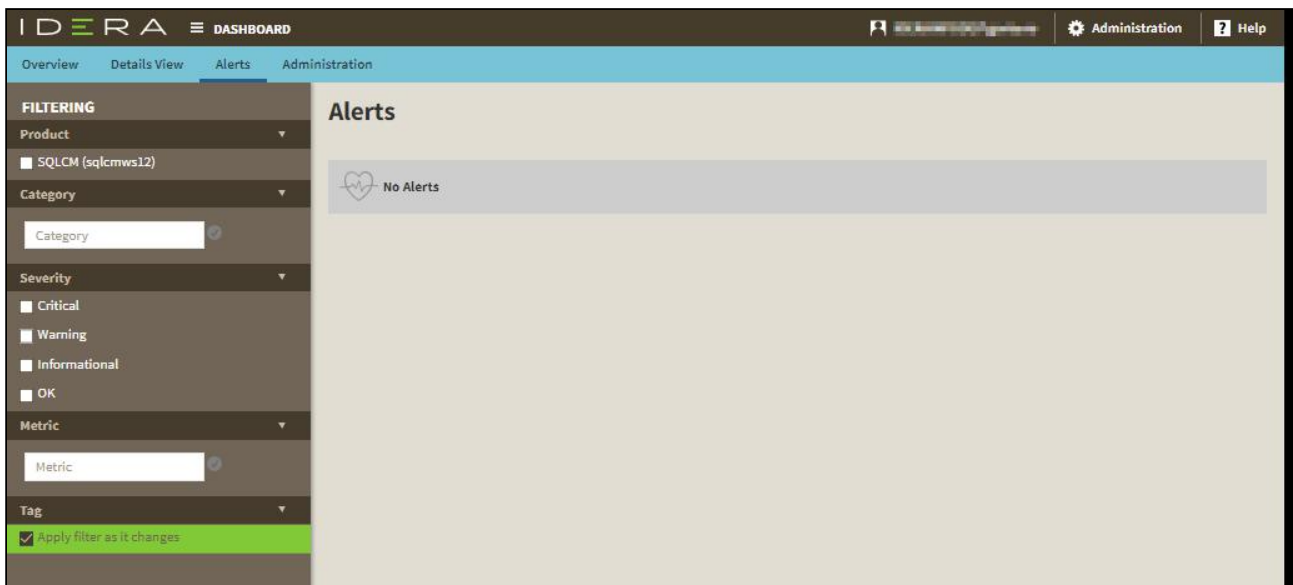
| SQLCM   Audited Instances (CM420)                                                                       |                   |        |
|---------------------------------------------------------------------------------------------------------|-------------------|--------|
| Instance Name                                                                                           | Agent Status Text | Alerts |
|  QA-ZB-WK2K12\SQLBI... | OK                |        |



## Viewing alerts in the IDERA Dashboard

The IDERA Dashboard Alerts view displays any alerts generated by the monitored SQL Server instances in your environment. You can filter by:

- **Product.** Select one or more of your installed IDERA products to view generated alerts.
- **Category.** Add category filters to view alerts associated with a specific type.
- **Severity.** Select one or more severities to view alerts corresponding to those levels. Options include Critical, Warning, Info, and OK.
- **Metric.** Add metric filters to view alerts associated with a specific metric.





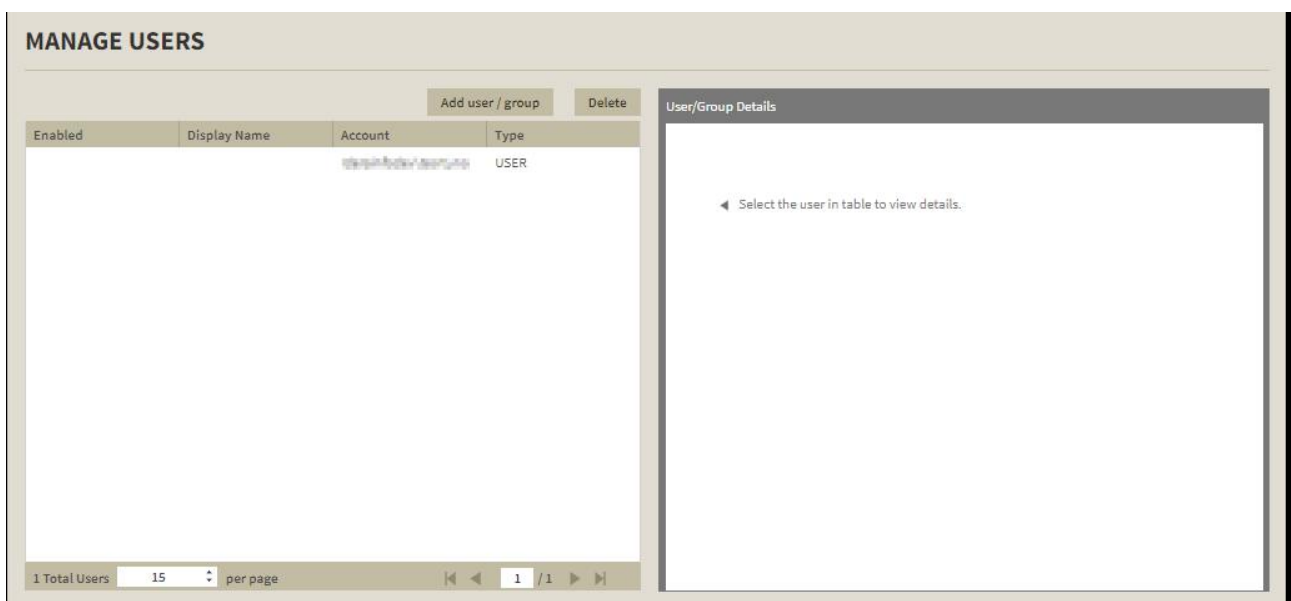
## Managing users in the IDERA Dashboard

The Users section of the IDERA Dashboard Administration view allows users to grant access to other team members or groups, and manage their roles. For more information about user roles, see [Understanding user roles](#). Users with administrative privileges are divided into two groups:

- **Dashboard administrators.** Capability to manage access over IDERA Dashboard functions as well as individual product functions.
- **Product administrators.** Capability to grant access to individual products for which they have administrative rights.

⚠ Users must be existing **Active Directory users**. Newly-added users should use their Windows user account with their respective passwords to log in to the SQL Compliance Manager.

To add new users, edit their details (name, subscription, or email address), or remove them, select **Manage Users** in the Administration view, and the Manage Users window displays:



## Adding a user in the IDERA Dashboard

In the IDERA Dashboard, access is granted to Windows users or groups.



To add a user account:

1. Click **Add User / Group**. IDERA Dashboard displays the Add User/Group dialog.

2. Type the name of the user to which you want to grant access. Enter a Windows user name in the format `<domain\accountname>`.
3. *Optional.* In **Display name**, type a name for the user account that you want SQL Compliance Manager to display within the product.
4. In the **Account Type** field, select **User** or **Group**.
5. *Optional.* Check **Do not timeout the browser session for this account** if you want the user to be able to remain logged in to SQL Compliance Manager after a period of inactivity.
6. Click **Add**. The IDERA Dashboard displays the *Add Permission* window.
7. In the **Product** field, select the product name to which you want to add this new user account.  
**If you select IDERA Dashboard in the Product field**, the **Role** field allows you to select from the Dashboard Administrator and Dashboard Guest roles.  
**If you select SQL Compliance Manager in the Product field**, the **Role** field allows you to select from the Product Administrator, Product User, and Product Guest roles.



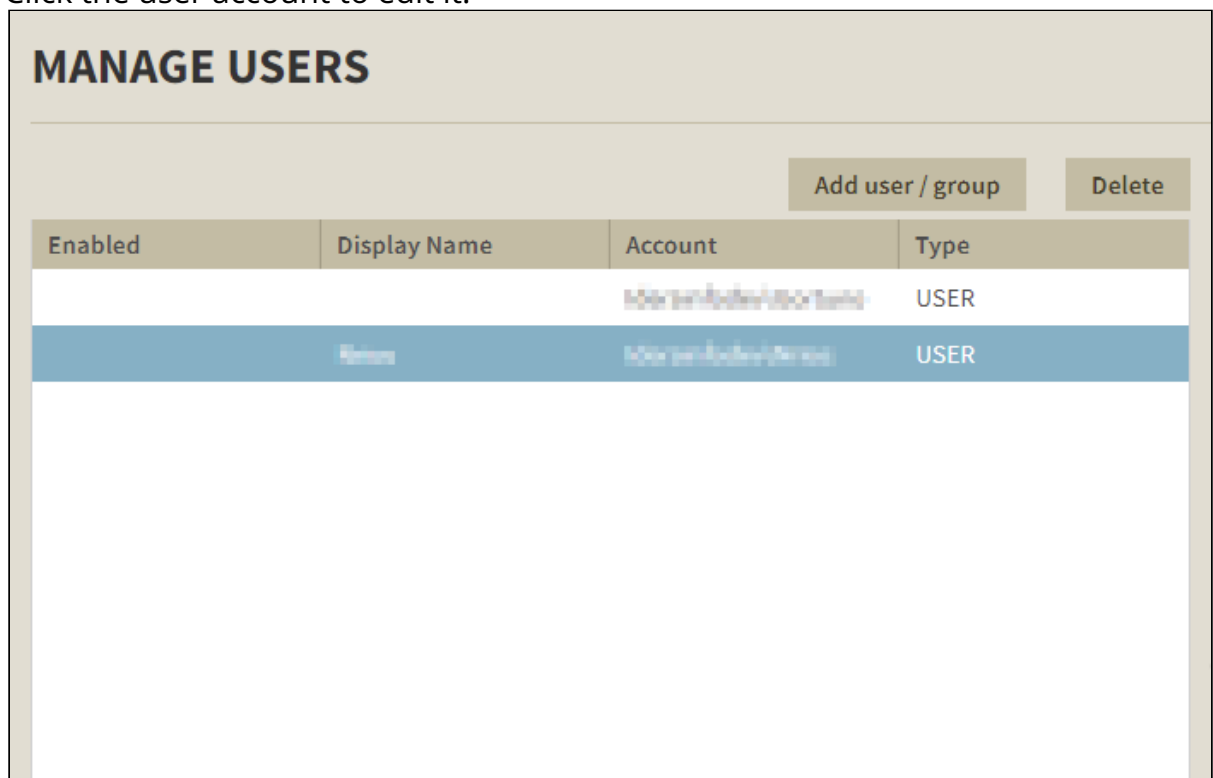
8. In the **Role** field, select the role you want to assign to this new user account.
9. Click **Save**.

## Editing a user in the IDERA Dashboard

Clicking the Edit icon for an existing user account allows you to edit the account name, enable or disable the user account, and add new permissions.

To edit a user or group:

1. Click the user account to edit it.



The screenshot shows the 'MANAGE USERS' interface. At the top right, there are two buttons: 'Add user / group' and 'Delete'. Below these is a table with the following structure:

| Enabled | Display Name | Account      | Type |
|---------|--------------|--------------|------|
|         |              | XXXXXXXXXXXX | USER |
|         |              | XXXXXXXXXXXX | USER |

IDERA Dashboard displays the Edit User / Group dialog.



# IDERA

**User/Group Details**

Account name: \*   
 Windows user account in form "domain\accountname".

Display name:

Enabled Account

| <input type="checkbox"/> | Products         | Role        |
|--------------------------|------------------|-------------|
| <input type="checkbox"/> | SQLCM(Sqlcmws12) | ProductUser |

2. Make the necessary changes.
3. **If you want to disable a user account**, clear the **Account Enabled** checkbox. To enable the account, simply check the box.
4. **If you want to add more roles to this user account or group**, click **Add**. IDERA Dashboard displays additional **Product** and **Role** fields for you to add another role.
5. Click **Save**.

## Removing a user from the IDERA Dashboard

Clicking the Delete icon for an existing user account or group allows you to remove that account from access to the IDERA Dashboard.

To delete a user or group.

1. In the list of users, click the **Delete** button for the user account or group that you want to delete. IDERA Dashboard displays a warning message that requires a confirmation whether you want to delete that selection.



**MANAGE USERS**

| Enabled | Display Name         | Account                                  | Type |
|---------|----------------------|------------------------------------------|------|
|         |                      | <a href="#">idm@idera.com/John Jones</a> | USER |
|         | <a href="#">John</a> | <a href="#">idm@idera.com/John Jones</a> | USER |

2. Click **Yes**. IDERA Dashboard removes the user account or group and they can no longer access the IDERA Dashboard using the account. ***If you did not mean to delete the selected account, click No.***



## Understanding user roles

IDERA common framework provides the functionality to add, edit, and delete users and groups while also managing their roles. IDERA SQL Compliance Manager leverages this user role functionality to allow you to easily manage the instance permissions associated with your accounts. For more information about managing users, see [Managing users in the IDERA Dashboard](#).

There are three roles available:

- **Product Administrator.** Full access and control of SQL Compliance Manager.
- **Product User.** Cannot access the Dashboard Administration page, but can perform all job management and instance management actions.
- **Product Guest (Read-Only).** Cannot access the Dashboard Administration page, but can access all other pages in read-only mode. This user cannot perform any job management or instance management actions.

## Managing instances in the IDERA Dashboard

The IDERA Dashboard tracks SQL Server instances, discovered and managed by different IDERA products. The Instances widget of the Administration view allows users to view and delete registered instances.

To view coverage or remove registered instances that no longer exist in your SQL Server environment, select **Manage Instances** in the Administration view, and the Managed Instances window displays. The View filter allows you to select from:

- **All.** Lists all instances discovered in your SQL Server environment and network.
- **Managed.** Lists only those managed instances in various IDERA products.
- **Unmanaged.** Lists instances discovered on the network but not registered.



## MANAGE INSTANCES

SEARCH:

|                       | Instance                    | MSSQL Version             | Discovered                 | Last Seen                  | Status  |
|-----------------------|-----------------------------|---------------------------|----------------------------|----------------------------|---------|
| <input type="radio"/> | <a href="#">SQLSERVER01</a> | Microsoft SQL Server 2012 | Feb 20, 2018<br>7:52:47 AM | Feb 20, 2018<br>7:53:47 AM | Managed |



## Managing product registry in the IDERA Dashboard

The IDERA Dashboard hosts IDERA products that register with the dashboard. The Products widget of the Administration view allows users to view and manage registered products.

To edit or remove registered products, select **Manage Products** in the Administration view, and the Products window displays:

**Note**  
When you manually register the product it will use port 9292.

**MANAGE PRODUCTS**

SEARCH:

[Register a Product](#)

| Product                               | Version   | Registered:             | Location:                | Credentials       |
|---------------------------------------|-----------|-------------------------|--------------------------|-------------------|
| <input type="radio"/> ideraDashboard  | 4.2.0.29  | May 15, 2016 2:56:47 PM | www.atera.com            | idera\atera\atera |
| <input type="radio"/> SQLCM(Sqlcmrcz) | 5.5.0.511 | May 15, 2016 2:59:54 PM | www.atera.com<br>pliance | idera\atera\atera |

2 Total Products | 15 per page |

**Edit IDERA Registered Product**

Select the product in table to view details.

## Editing a product in the IDERA Dashboard

Clicking the **Edit** icon for an IDERA product allows you to edit the associated instance name, install location, user name and password for the account used to connect to the product, and the short or common name of the product. To edit a product, follow these steps:


1. Click one product in the list to edit it. IDERA Dashboard displays the the Edit IDERA Registered Product window.



**Edit IDERA Registered Product**

**Product Information**

Product:

Display Name: 

Version:

Registered:

Location:

**Product Administrator Credentials**

User Name:

Password:

2. Make the necessary changes.
3. Click **SAVE**.

## Removing a product from the IDERA Dashboard

Clicking the **Delete** icon for an IDERA product allows you to unregister that product. Use the following steps to delete a product.

1. Click one product in the list to delete it. IDERA Dashboard displays the Edit IDERA Registered Product window.



**Edit IDERA Registered Product**

**Product Information**

Product:

Display Name:

Version:

Registered:

Location:

**Product Administrator Credentials**

User Name:

Password:

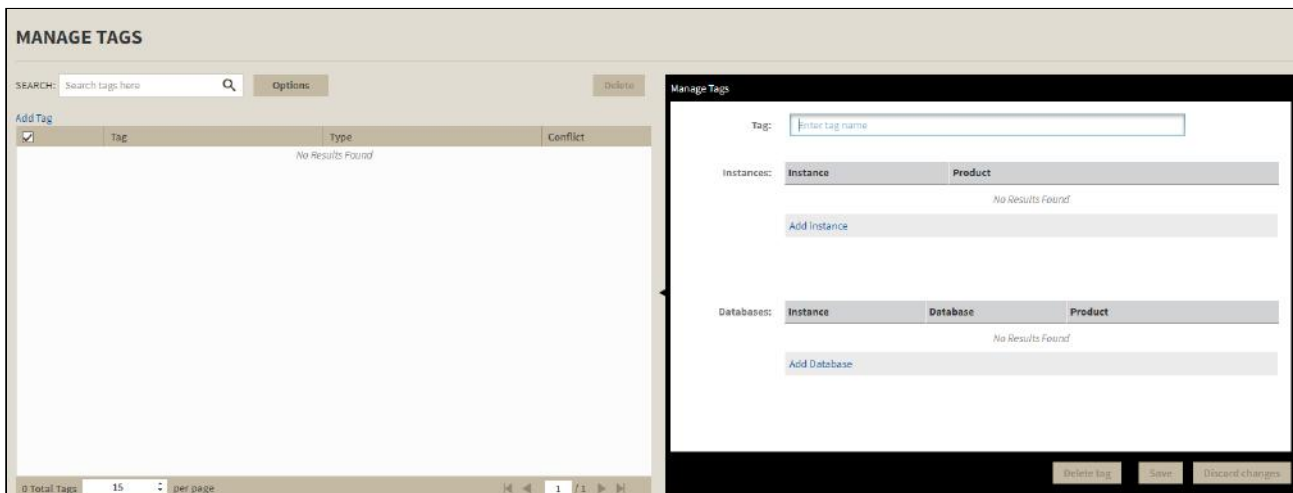
2. Click **Delete**. IDERA Dashboard displays the displays a warning message that requires a confirmation whether you want to delete that selection.
3. Click **Yes**. IDERA Dashboard unregisters and deletes the product and users can no longer access that product. ***If you did not mean to delete the selected account, click No.***




## Managing tags in the IDERA Dashboard

IDERA Dashboard tags help you organize and manage instances and databases within your environment. Created and updated are available to use with the IDERA SQL products.

You can add, view, edit, and delete tags and their associated instances and databases. Click **Manage Tags** in the **Administration** tab to display the configuration window.



 Global tags are managed only through the IDERA Dashboard.

### Adding, editing, and removing a tag

To add a tag and assign it to a specific instance and/or database, click **Add Tag**, type all required information, and click **Save**.

To edit an existing tag, select one from the list, make all necessary changes, and click **Save**.

To remove a tag, select one from the list, and click **Delete tag**. The IDERA Dashboard displays a confirmation dialog, click **Yes** to delete the tag.

You can search tags using filters by clicking on **Options** next to the **Search** box. Available filters are:

- Product
- Instance
- Database

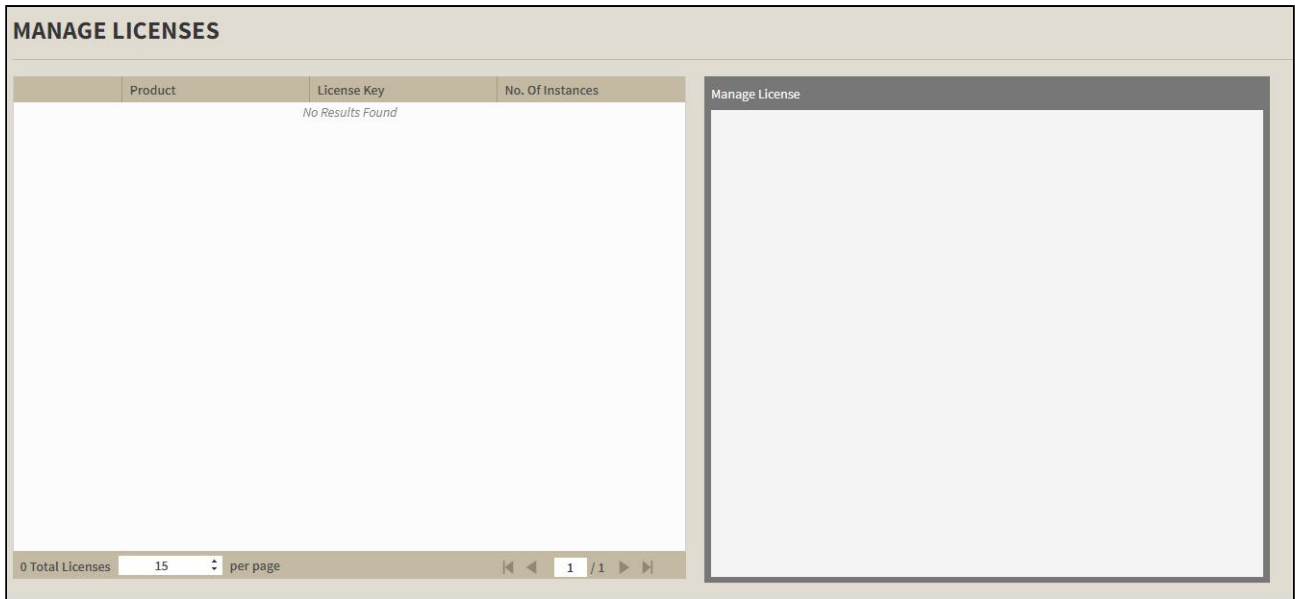




## Managing licenses in the IDERA Dashboard

The IDERA Dashboard allows you to manage licenses for the different IDERA SQL products.

To view and manage licenses, click **Manage Licenses** in the **Administration** tab.



In the **Manage Licenses** view, you can see the following information:

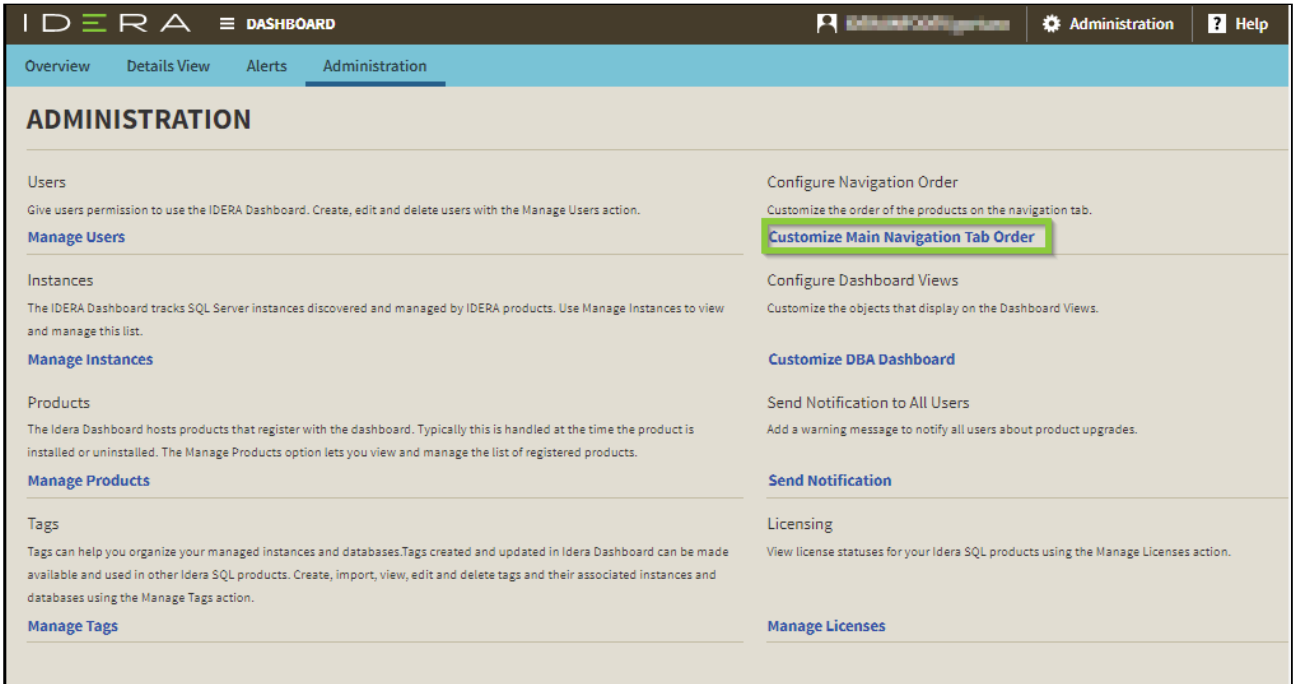
- Product
- License key
- No. Of Instances

To **Add**, **Edit**, and/or **Delete** a license, click on a license from the list and fill the required information or make the necessary changes.



## Configure navigation order in the IDERA Dashboard

The Configure Navigation Order widget of the Administration view, allows users to customize the order of the different IDERA products on the navigation tab.



To rearrange product tabs:

1. Click the **Customize Main Navigation Tab Order** link and a dialog displays.

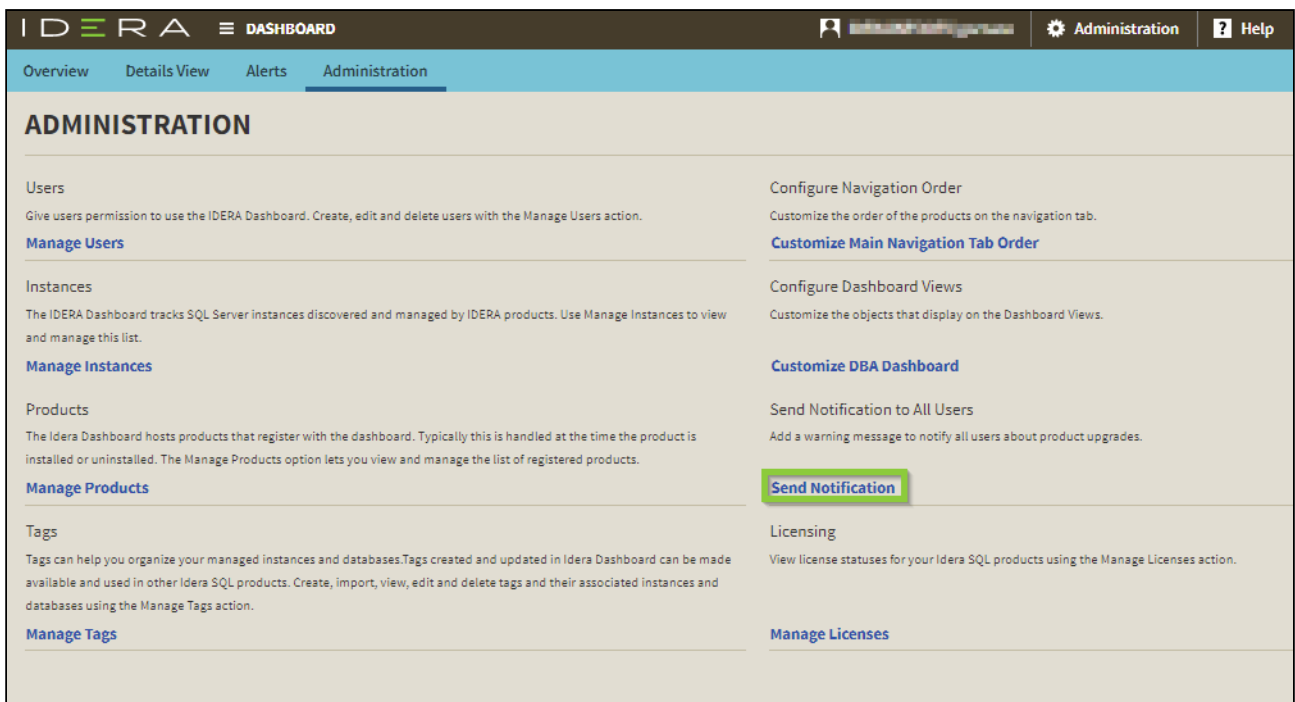


2. Move tabs using a drag-and-drop operation.
3. Click **Save** when done.



## Notifying users about product upgrades in the IDERA Dashboard

The Send Notification to All Users widget of the Administration view lets you send a notification to all user accounts added to IDERA Dashboard. Use this feature to notify users about product upgrades and other issues affecting product use.



To send notification to all users:

1. Click the **Send Notification** link and a pop-up window displays.

The pop-up window has a title 'Specify message to inform users' and a text input field. Below the input field is a 'Send' button.

2. Type the message you want to send, and click **Send**.







## Navigate the SQL Compliance Manager Web Console

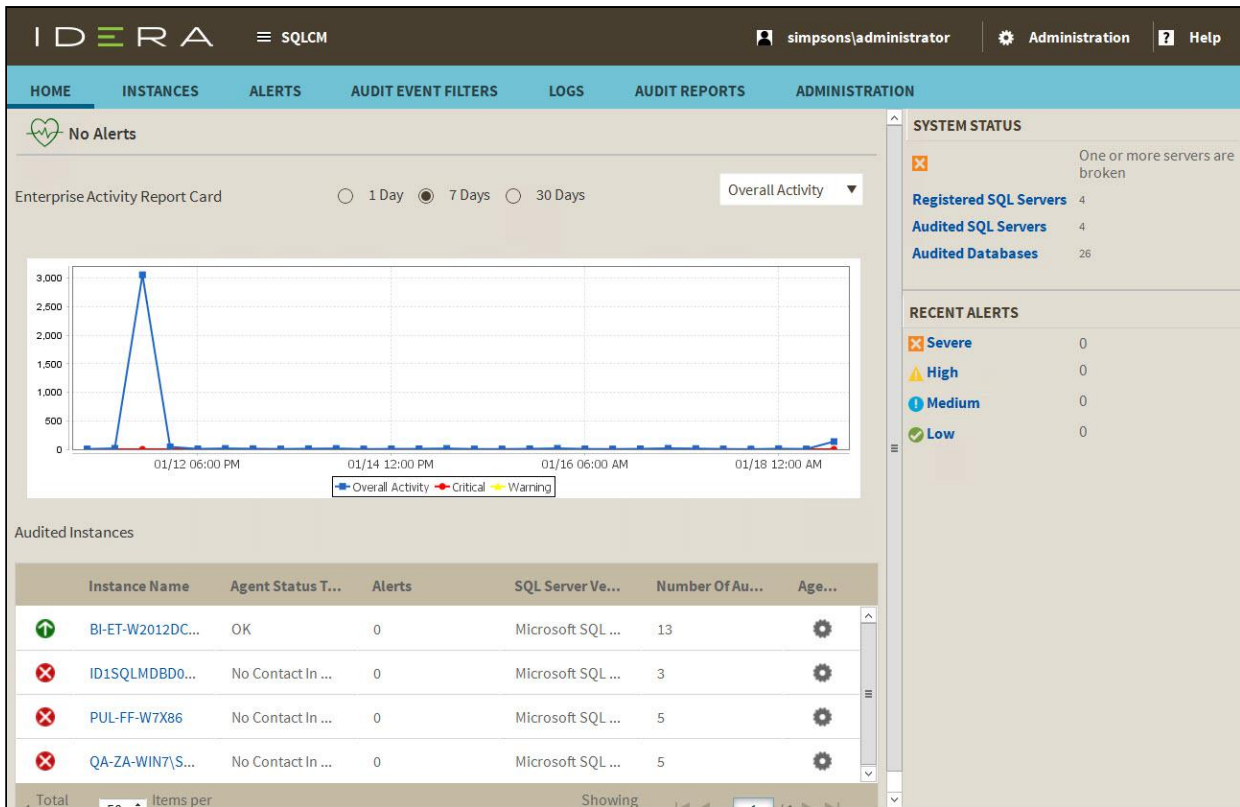
The IDERA Dashboard SQL Compliance Manager Web Console provides a browser-based interface for many of the features within the SQL Compliance Manager Management (Windows) Console. the following topics help you explore what features are available to you:

- [View the Home tab](#)
- [Manage audited instances](#)
- [View alerts and alert rules](#)
- [Manage audit event filters](#)
- [View logs](#)
- [Generate audit reports](#)
- [Administer SQL Compliance Manager](#)



## View the Home tab

The Home tab is the default overview page of the product. This tab provides a high-level status of your audited instances and enterprise activity occurring within your environment.



## Alerts

IDERA SQL Compliance Manager performs health checks on your registered instances to help you monitor the most important issues across your environment. On this section of the Overview tab, SQL Compliance Manager shows you the active alerts for your environment, grouped by alert type, and ordered by level of criticality, where:

- Level 4 = Severe
- Level 3 = Critical
- Level 2 = Warning
- Level 1 = Informational

**i** If you have no active alerts, you will see the message: **No alerts.**

You can click the options available for each alert to:

- **Show Details** of instances or databases affected by the respective alert.



- Individually **Acknowledge** the alert.
- Individually **Dismiss** the alert.
- Individually **Clear** the alert.

If you do not want to see these details, click **Hide Details**.

You can also get the most updated information for your alerts by clicking **Refresh**.

## Enterprise Activity Report Card

The Enterprise Activity Report Card allows you to review the status of your audited SQL Servers and the recent activity that has occurred on them for up to 30 days of SQL Server activity. Activity Report Cards allow you to view the SQL Server activity at the enterprise and individual SQL Server instance levels. These report cards allow you to quickly check activity in each event category audited, view SQL Server activity statistics, and short-term activity trends. Use Activity Report Cards to identify problems that might require more in-depth analysis based on:

- Overall Activity.
- Event Alerts.
- Failed Logins.
- Security.
- DDL.
- Privileged User.

For more information about the Enterprise Activity Report Card, see [Explore Activity - Audited SQL Servers Summary tab](#).

## Audited Instances

All audited SQL Server instances in your environment appear in the Audited Instances section of the Home tab. The default sort order displays the first five instances based on instance name. If you have more than five registered instances, SQL Compliance Manager allows you to page through the results. This table includes:

- **Instance Name.** Displays the name of the audited SQL Server instance.
- **Agent Status Text.** Displays the current status of the SQL Compliance Manager Agent. Options include OK, Informational, Warning, and Critical.
- **Alerts.** Displays the number of alerts associated with that instance.
- **SQL Server Version.** Displays the SQL Server version installed on that instance.
- **Number of Audited DBs.** Displays the number of databases audited by SQL Compliance Manager on that instance.
- **Agent Actions.** Displays a list of actions you can perform on the Agent associated with the instance. Options include Enable Auditing, Disable Auditing, and Upgrade Agent.





i Click the name of a SQL Server instance, and SQL Compliance Manager opens the Instance Details view for that instance.

## System Status and Recent Alerts area

On the right side of the IDERA Dashboard SQL Compliance Manager Home page, you can view the number of SQL Server instances and databases needing your immediate attention in addition to a count of recent alerts by severity.

### System Status

Indicates whether IDERA SQL Compliance Manager encountered any issues while auditing your SQL Server environment. Click the status link to open the more detailed Audited Instances view. Use view to see the status of the audited databases on this instance, validate audit settings, and check the SQL Compliance Manager Agent status.

#### Registered SQL Servers

Displays the number of SQL Server instances that are registered with SQL Compliance Manager.

#### Audited SQL Servers

Displays the number of instances currently audited. This number does not include instances where auditing is not yet configured or is disabled.

#### Audited Databases

Displays the number of databases currently audited. These databases are hosted by SQL Server instances that are registered with SQL Compliance Manager. This number does not include databases where auditing is not yet configured or is disabled.

For more information about the System Status area, see [Explore Activity - Audited SQL Servers Summary tab](#).

### Recent Alerts

The Recent Alerts pane displays the number of alerts that are generated for each alert category in the selected time span. ***If you see an unexpected number of alerts,*** consider reviewing the current alert messages and then modifying your alert rules to better fit your compliance and auditing needs.

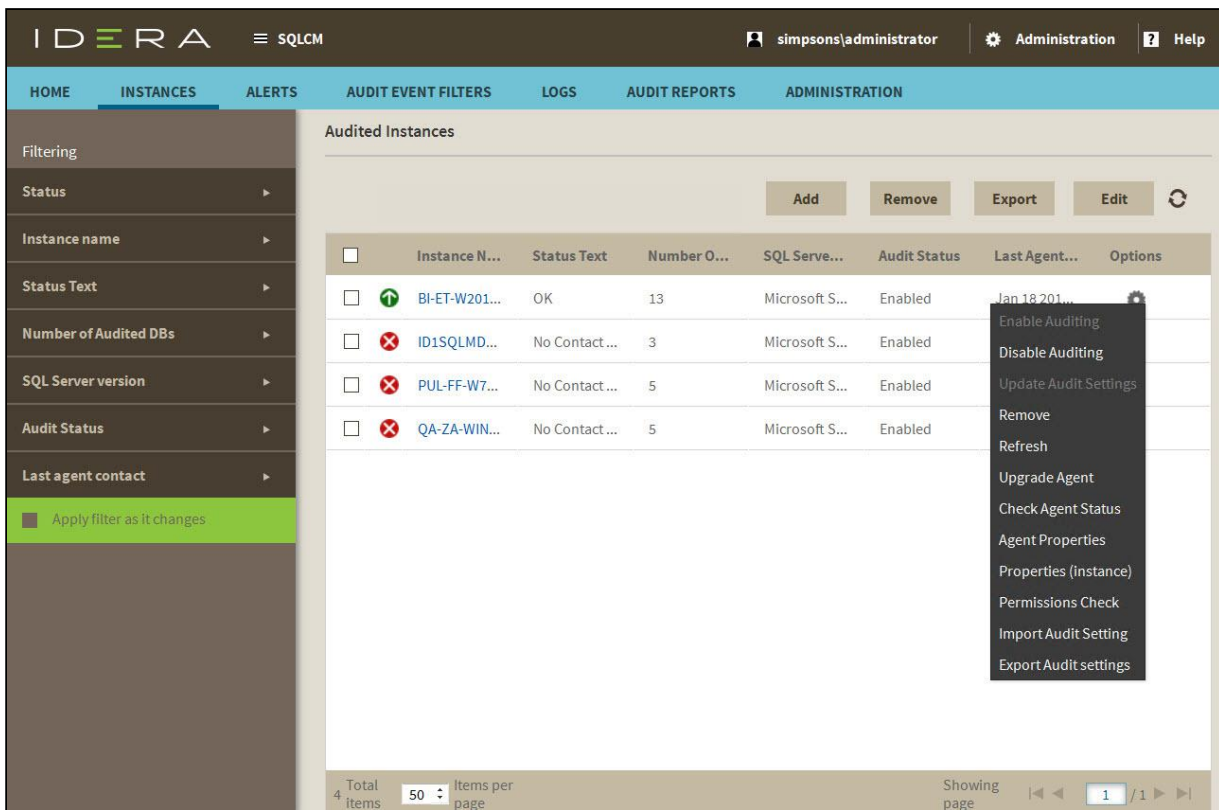
For more information about specific alerts, see [View alerts and alert rules](#). You can view which alerts are generated from multiple instances across your environment or from a particular instance.



## Manage audited instances

The IDERA SQL Compliance Manager Instances view displays the status of audit activity across your SQL Server environment. Use the statistics and graphs on this view to quickly and easily identify issues so you can continue to ensure the correct level of compliance. Be sure to review the associated topics about managing properties for the registered SQL Server instance and the Agent:

- [Manage instance properties](#)
- [Manage Agent properties](#)
- [Viewing instance details](#)



## Available actions

### Filtering

Allows you to filter the listed instances by status, instance name, status text, number of audited databases, SQL Server version, audit status, and timestamp for the last time the agent was contacted.

### Add

Starts the Server Configuration wizard, allowing you to enable and configure auditing on another SQL Server instance.



## Remove

Allows you to unregister the selected SQL Server instance. When you remove a SQL Server instance, SQL Compliance Manager disables all auditing at the server and database levels on the SQL Server instance. ***If the selected instance is the last instance to be audited on this SQL Server, SQL Compliance Manager also uninstalls the SQL Compliance Manager Agent. If you manually deployed the SQL Compliance Manager Agent, you must manually uninstall it from the SQL Server computer.***

## Export / Import

Allows you to export or import the list of audited SQL Server instances in PDF, XLS, or XML format.

## Edit

Allows you to manage the properties for the selected SQL Server instance. For more information about this dialog, see [Manage instance properties](#).

## Enable Auditing / Disable Auditing

Allows you to enable or disable auditing on the selected SQL Server instance. When auditing is enabled, the SQL Compliance Manager Agent collects new event data and stores the data in a protected subdirectory of the Agent installation directory. When you disable auditing, the SQL Compliance Manager Agent stops collecting event data, and stops the corresponding SQL trace. You can continue to view and report on previously audited events or archived events.

## Update Audit Settings

Allows you to change the audit settings for the selected SQL Server instance.

## Refresh

Allows you to update the Audited Instances list with current data.

## Upgrade Agent

Allows you to upgrade the SQL Compliance Manager Agent on the selected SQL Server instance to the current version. This option is available if the agent was remotely deployed through the Management Console. To upgrade an agent that was manually deployed, run setup.exe from the SQL compliance manager installation kit on the target SQL Server computer.

## Check Agent Status

Allows you to check the status of the SQL Compliance Manager Agent on the selected SQL Server instance, such as whether the agent is active.

## Agent Properties



Allows you to manage the properties for the Agent associated with the selected SQL Server instance. This action launches the SQL Compliance Manager Agent Properties window. For more information about using this window, see [Manage Agent properties](#).

### **Properties (instance)**

Allows you to manage the properties for the selected SQL Server instance. This action launches the New Event Filter wizard, each window populated with event criteria from the selected filter. For more information about using this window, see [Manage instance properties](#).

### **Permissions Check**

Allows you to view the results of a check of the permissions required by IDERA SQL Compliance Manager on the selected SQL Server instance. For more information about necessary permissions, see [Permissions requirements](#).



## Manage instance properties

The IDERA SQL Compliance Manager Instance Properties window allows you to view and manage settings on the server hosting your SQL Server instance.

This topic reviews the following tabs:

- [General tab](#)
- [Audited Activities tab](#)
- [Privileged User Auditing tab](#)
- [Auditing Thresholds tab](#)
- [Threshold Notification window](#)
- [Advanced tab](#)

### General tab

The General tab of the Registered SQL Server Properties window allows you to change the description of this registered SQL Server instance, and view general properties such as audit settings.



**Registered SQL Server Properties** ✕

**General**
Audited Activities
Privileged User Auditing
Auditing Thresholds
Advanced

SQL Server:  Version:

Description:

Status:

Date created:

Last modified:

Last heartbeat:

Events received:

**Audit Settings**

Audit status:

Last agent update:

Audit settings status:

**Update now**

**Events Database Information**

Events database:

Database integrity:

Last integrity check:

Last integrity check result:

**Archive Summary**

Time of last archive:

Last archive results:

[Learn how to optimize performance with audit settings.](#)

## Available actions

### Update now

Allows you to send audit setting updates to the SQL Compliance Manager Agent running on this SQL Server instance. This action is available when you update audit settings between heartbeats, and the Collection Server has not yet sent your changes to the SQL Compliance Manager Agent.

To diagnose SQL Compliance Manager Agent issues, check the SQL Compliance Manager Agent status and review the SQL Compliance Manager Agent properties.



## Available fields

### SQL Server

Provides the name of the selected SQL Server instance. ***If you are auditing a local instance***, the SQL Server instance name is the name of the physical computer hosting this instance.

### Version

Provides the version number of SQL Server running on this registered instance.

### Description

Allows you to specify a description for this instance. The Management Console uses this description when you view SQL Server properties or report on audit data. Consider including information about the databases hosted on this instance, or the organization to which this instance belongs.

### Status

Provides the current status of this instance. The current status indicates whether SQL Server is available and the SQL Compliance Manager Agent Service and Collection Service are running. Use the Registered SQL Servers tab to see an overview of the status of all registered SQL Server instances.

### Date created

Provides the date and time when this instance was registered. By default, auditing is enabled when the instance is registered with SQL Compliance Manager.

### Last modified

Provides the date and time when audit settings were last modified in this instance.

### Last heartbeat

Provides the date and time when the SQL Compliance Manager Agent auditing this instance contacted the Collect Server. This communication is called a heartbeat. Typically, the SQL Compliance Manager Agent receives audit setting updates during a heartbeat.

### Events received

Provides the date and time when the Collection Server last received audited events (SQL trace files) from the SQL Compliance Manager Agent.

### Audit Settings

Provides the following information about the status of your audit settings:

- Whether auditing is enabled on this instance
- When the SQL Compliance Manager Agent auditing this instance received the last audit setting updates



- Whether the audit settings are current

***If the audit settings are not current***, you can send your updates to the SQL Compliance Manager Agent by clicking **Update now**.

### **Event Database Information**

Provides the following information about audited events collected on this instance:

- Name of the database where audited events processed by the Collection Server are stored
- Whether the Repository databases passed the last audit data integrity check
- When the last audit data integrity check was performed

### **Time of last archive**

Provides the date and time when audited events collected for this SQL Server instance were last archived.

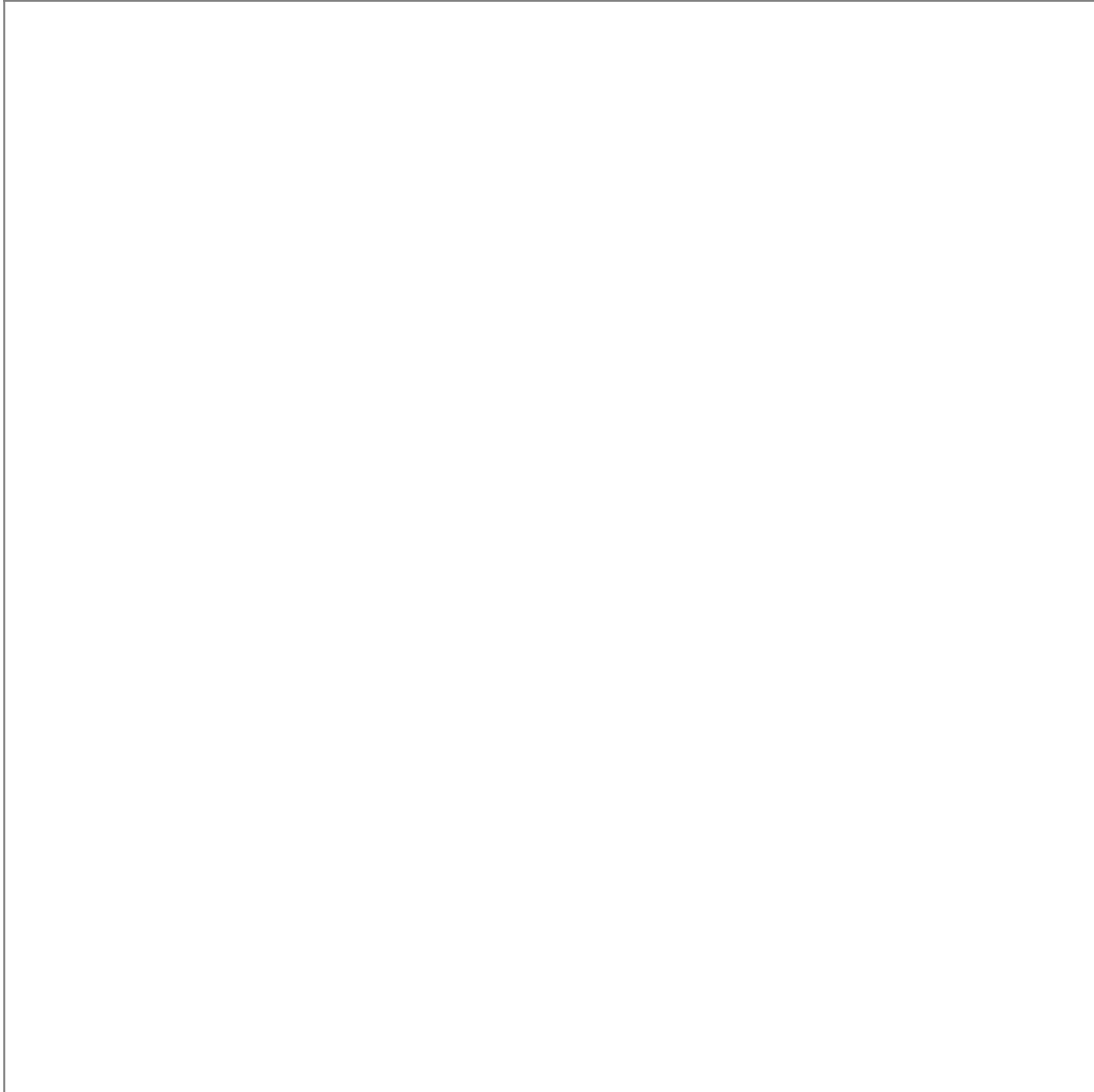
### **Last archive results**

Provides the results of the data integrity check. SQL Compliance Manager automatically performs a data integrity check each time you archive audited events from the Repository databases.

## **Audited Activities tab**

The Audited Activities tab allows you to change which types of SQL Server events you want to audit on the selected instance. IDERA SQL Compliance Manager audits these events at the server level only.





## Available fields

### **Audited Activity**

Allows you select the type of activity you want to audit. Based on your selections, SQL Compliance Manager collects and processes the corresponding SQL Server events.

You can choose to audit event categories and user defined events. An event category includes related SQL Server events that occur at the server level. A user defined event is a custom event you create and track using the `sp_trace_generateevent` stored procedure.

### **Capture DML and SELECT Activities**



**Via Trace Events** - Allows you to select Trace Events as your event handling system for DML and SELECT activities. For more information about this feature see, [Understanding Traces](#).

**Via Extended Events** - Allows you to select SQL Server Extended Events as your event handling system for DML and SELECT events for SQL Server 2012 and later versions. For more information about this feature, see [Using SQL Server Extended Events](#).

**Via SQL Server Audit Specifications** - Allows you to select SQL Server Audit Logs as your event handling system for DML and SELECT events for SQL Server 2017 and later versions. For more information about this feature, see [Using SQL Server Audit Logs](#).

### Access Check Filter

Allows you to refine your audit trail for SQL Server login data by collecting events that better reflect your auditing requirements for security and user processes.

SQL Server validates login permissions and access rights when a user attempts to execute an operation or SQL statement on the audited SQL Server instance. **If the access check filter is enabled for a registered instance**, SQL Compliance Manager collects access check events at the server level.

Select this filter to help identify logins that may have inappropriate access rights or permissions. This filter may also help reduce the size of your audit data.

| Type of Event Filter                        | Description                                                           |
|---------------------------------------------|-----------------------------------------------------------------------|
| Audit only actions that passed access check | Omits events that track failed access checks performed by SQL Server. |
| Audit only actions that failed access check | Omits events that track passed access checks performed by SQL Server. |

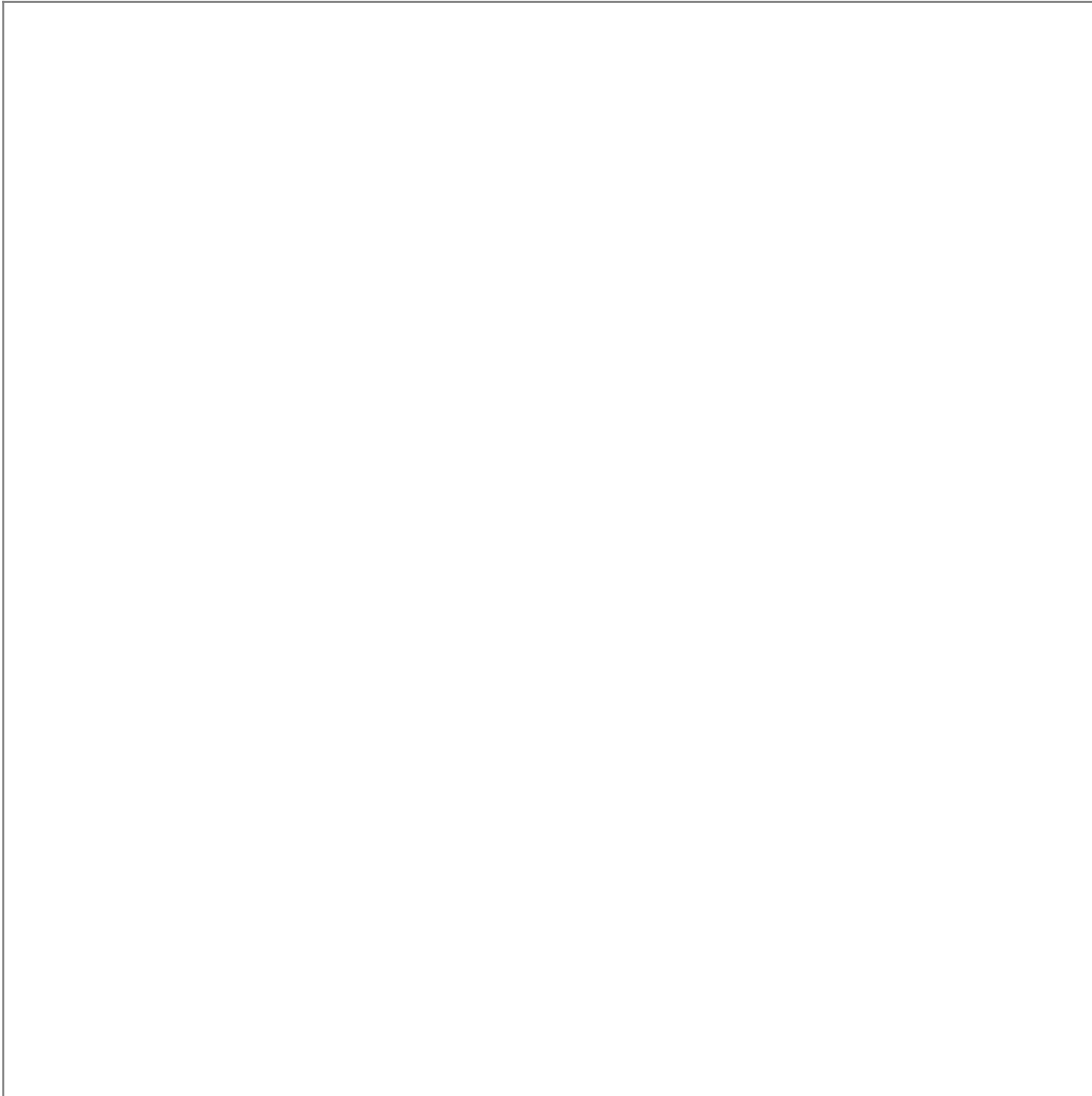
### Privileged User Auditing tab

The Privileged User Auditing tab of the Registered SQL Server Properties window allows you to change the audit settings currently applied to privileged users on this SQL Server instance. You can choose to audit event categories and user defined events. An event category includes related SQL Server events that occur at the server level. A user defined event is a custom event you create and track using the `sp_trace_generateevent` stored procedure.

For example, you can audit individual SQL Server logins with privileged access, logins that belong to specific fixed server roles, all activities, or specific activities.



When you update audit settings to audit privileged user activities, these changes are not applied until the SQL trace is refreshed. The SQL trace is refreshed when the SQL Compliance Manager Agent sends the trace files to the Collection Server. To ensure an immediate application of your new audit settings, click **Update Audit Settings Now** on the Agent menu.



## Available actions

### **Add**

Allows you to select one or more privileged users to audit. You can select privileged users by login name or by membership to a fixed server role.

### **Remove**



Allows you to remove the selected SQL Server login or fixed server role from the list of audited privileged users. When you remove the login or role, the SQL Compliance Manager Agent no longer collects events recorded for that login or the role members.

## Available fields

### Privileged users and roles to be audited

Lists the audited privileged users by login name or fixed server role. ***If you are auditing privileged users in a fixed server role***, the SQL Compliance Manager Agent collects activities executed by all members of the selected role.

### Audited Activity

Allows you to specify which activities (events) you want to audit for the selected privileged users.

### Capture SQL statements for DML and SELECT activity

Allows you to specify whether you want to collect SQL statements associated with audited DML and SELECT activities. To capture these statements, you must also enable DML or SELECT auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit SQL statements.

### Capture Transaction Status for DML activity

Allows you to specify whether you want to collect the status of all DML transactions that are executed by T-SQL scripts run on your audited database. This setting captures begin, commit, rollback, and savepoint statuses. To capture these statuses, you must enable DML auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit transaction status, such as rollbacks.

### Capture SQL statements for DDL and Security Changes

Allows you to specify whether you want to collect SQL statements associated with audited database definition (DDL) activities. To capture these statements, you must also enable DDL auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing.



Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit SQL statements.

## Add Users window

The Add Users window is accessed by clicking **Add** on the Privileged User Auditing tab while viewing Registered SQL Server Properties. Use this window to include selected login accounts and roles as privileged. Added logins/roles may be removed by selecting the item in the Privileged User Auditing tab, and then clicking **Remove**.

The screenshot shows the 'Add Users' dialog box. At the top, there is a title bar with the text 'Add Users' and a close button (X). Below the title bar, there is a section labeled 'Show Logins/Roles from:' with a dropdown menu currently set to 'Server Roles'. Underneath, there is a section labeled 'Available Logins/Roles:' containing a list of three items: 'Bulk Insert Administrators', 'Database Creators', and 'Disk Administrators'. Each item has a red key icon to its left. To the right of this list is an 'Add' button. Below the list is an 'Add Users list:' which is currently empty. To the right of this list is a 'Remove' button. At the bottom of the dialog, there is a note: 'Note: Specifying large numbers of users may have a performance impact on the audited SQL Server.' and two buttons: 'Ok' and 'Cancel'.



## Auditing Thresholds tab

The Auditing Thresholds tab of the Registered SQL Server Properties window allows you to set auditing thresholds to identify unusual activity on the selected SQL Server instance. IDERA SQL Compliance Manager reports threshold violations through the Activity Report Cards on the Summary tabs.

Use auditing thresholds to display critical issues or warnings when a particular activity, such as privileged user events, is higher than expected. These thresholds can notify you about issues related to increased activity levels, such as a security breach, that may be occurring on this instance. Auditing thresholds can also inform you when an audited SQL Server instance is becoming non-compliant. Use thresholds to supplement the alert rules you have configured for your environment.

×
Registered SQL Server Properties

General
Audited Activities
Privileged User Auditing
Auditing Thresholds
Advanced

|                  | Warning | Critical | Period     | Enabled                  |
|------------------|---------|----------|------------|--------------------------|
| Event Alerts     | 100     | 150      | per hour ▼ | <input type="checkbox"/> |
| Failed Logins    | 100     | 150      | per hour ▼ | <input type="checkbox"/> |
| Security         | 100     | 150      | per hour ▼ | <input type="checkbox"/> |
| DDL              | 100     | 150      | per hour ▼ | <input type="checkbox"/> |
| Privileged User  | 100     | 150      | per hour ▼ | <input type="checkbox"/> |
| Overall Activity | 100     | 150      | per hour ▼ | <input type="checkbox"/> |

**Threshold Notification**

Auditing thresholds can indicate when event activity is unusually high. If a threshold is exceeded, its status displays on the Activity Report Card tab for the event category.

[Learn how to optimize performance with audit settings.](#)

Ok
Cancel



## Available fields

### **Warning**

Allows you to specify the number of events you expect to occur in a given event category for the selected time period. When the warning threshold is exceeded, this violation indicates an unusually high number of events. A warning threshold violation can lead to a non-compliant database or SQL Server instance.

### **Critical**

Allows you to specify the maximum number of events that should occur in a given event category for the selected time period. When the critical threshold is exceeded, this violation indicates a serious issue, such as a security breach, which is compromising your ability to remain in compliance with your corporate and regulatory policies.

### **Period**

Allows you to set an acceptable rate, or time span, for the warning and critical thresholds. For example, you may expect overall activity to be no more than 200 events per day on this instance.

### **Enabled**

Allows you to enable (select) or disable (clear) auditing thresholds for a particular event category.

## Threshold Notification window

The Threshold Notification window is accessed by clicking **Threshold Notification** on the Auditing Threshold tab while viewing Registered SQL Server Properties. Use this window to set up notifications for when thresholds are exceeded. Set up notifications independently for each event threshold. Note that notifications are sent only if both the threshold and notification are enabled.



Threshold Notification
✕

Select Notification Actions

Send notification when the following thresholds have been exceeded

Warning

Critical

Email Notification

**Threshold Message**

Specify email address

Windows Event Log Entry

SNMP Trap

Address

Port

Community

## Available fields

### Event alert level

Allows you to select whether you want the notification sent when the threshold is at **Warning** and/or **Critical** level.

### Notification type

Allows you to select whether you want notifications by email, Windows event log, and/or SNMP traps. **If you select to receive an email notification**, you must include a valid email address. **If you select to receive SNMP trap notification**, you must include the SNMP trap address, port, and community. **If you select to**





*receive Windows event log notification*, note that the event is logged as informational.

### **Threshold message**

Allows you to create and manage alert notification messages in the Alert Message Template window and then sent to the email address included in the **Email Notification** area of the Threshold Notification window. Use the list of available variables to help you create an alert notification message that contains all of the important information for the recipient to understand what is affected and how.

### **Alert Message Template window**

The Alert Message Template window is accessed by clicking **Threshold Message** on the Threshold Notification window while viewing Registered SQL Server Properties. Use this window to create an effective message to be sent to the email address in the Threshold Notification window when thresholds are exceeded. Use the list of available variables to help you create an alert notification message that contains all of the important information for the recipient to understand what is affected and how.



**Alert Message Template** [X]

**Title**

**Message**

Double-click a variable to add it to the email subject or message.

- Alert Level
- Alert Time
- Alert Type Name

## Advanced tab

The Advanced tab of the Registered SQL Server Properties window allows you to configure the following settings:

- Control the default permission settings on the databases that contain audit data for this SQL Server instance.
- Indicate whether collected SQL statements should be truncated if they pass the specified character limit. This option is only available if you are auditing SQL statements executed at the server level on this instance.



**Registered SQL Server Properties** ✕

General
Audited Activities
Privileged User Auditing
Auditing Thresholds
**Advanced**

**Default Database Permissions**

Select the default level of access you want to grant users on the database containing audit data for this SQL Server instance.

Grant right to read events and their associated SQL statements.

Grant right to read events only - to allow users to view the associated SQL statements, you will need to explicitly grant users read access to the database.

Deny read access by default - to allow users to view events and the associated SQL , you will need to explicitly grant users read access to the database.

**SQL Statement Limit**

In most cases, the high level event information gathered is sufficient for meeting audit requirements. However, some users may find that they need the extra details afforded by the collection of the actual SQL statement associated with each audited event.

Be aware that collecting SQL statement will significantly increase the amount of data gathered and should be used sparingly. Gathered SQL statements may also contain confidential information. The option to gather SQL statements is available on each audited database.

Use the following option to specify the maximum size of stored SQL statements. Statements exceeding this maximum are truncated.

Store entire text of SQL statements

Truncate stored SQL statements after  characters

[Learn how to optimize performance with audit settings.](#)

Ok
Cancel

## Available fields

### Default Database Permissions

Allows you to set the default permissions on the databases that contain audit data for this instance. Keep in mind that login permissions specified at the database are applied along with the default permissions you set here. You can select one of the following default permissions:

- Grant permission to view events and associated SQL statements
- Grant permission to view events only
- Deny permission to view events or SQL statements

### SQL Statement Limit



Allows you to specify whether you want to truncate collected SQL statements associated with audited events. You can set the character limit for collected SQL statements. By default, this limit is 512 characters. The Collection Server truncates SQL statements that are longer than the specified character limit.



## Manage Agent properties

The IDERA SQL Compliance Manager Agent Properties window allows you to view and manage settings on your SQL Compliance Manager Agent computer.

### General tab

The General tab of the SQL Compliance Manager Agent Properties window allows you to monitor the health of the SQL Compliance Manager Agent that is auditing the selected SQL Server instance.

**If you are modifying properties for a SQL Compliance Manager Agent that is auditing a virtual SQL Server**, IDERA SQL Compliance Manager applies your changes to the active node in the cluster hosting the virtual SQL Server. SQL Compliance Manager Agent properties are later replicated from the active node to the passive nodes.

The screenshot shows the 'SQL compliance Agent Properties' dialog box with the 'General' tab selected. The 'SQL compliance Agent Computer' field contains 'BI-ET-W2012DCENT'. The 'Agent Settings' section includes: Agent status (Deployed), Last heartbeat (Jan 18, 2017 8:15:11 PM), Agent version (5.4.0.420), Heartbeat interval (5 min), Agent port (5200), and Logging level (Normal). The 'Audit Settings' section includes: Last agent update (Jan 18, 2017 7:11:56 AM), Audit settings level at agent (32), Audit settings status (Current), and Current audit settings level (32). There is an 'Update now' button and 'Ok'/'Cancel' buttons at the bottom.

### Available actions

#### Update now



Allows you to send any audit setting changes to the SQL Compliance Manager Agent. The SQL Compliance Manager Agent service applies your updates immediately.

## Available fields

### **SQL Compliance Manager Agent Computer**

Provides the name of the computer on which the SQL Compliance Manager Agent is installed. This computer hosts the selected SQL Server instance and audited databases.

### **Agent Status**

Provides the status of the agent, such as **OK** or **Not deployed**.

### **Agent version**

Provides the version number for the agent. This version number should reflect the product version number.

### **Agent port**

Provides the port number used by the agent to communicate with the Collection Server.

### **Last heartbeat**

Provides the last date and time when the agent successfully communicated with the Collection Server.

### **Heartbeat interval (min)**

Allows you to specify the interval (in minutes) at which the SQL Compliance Manager Agent calls the Collection service and receives audit setting updates. By default, the heartbeat interval is five minutes.

### **Logging level**

Allows you to select the logging level at which the SQL Compliance Manager Agent writes events to the Application log on the computer hosting the registered SQL Server instance.

### **Last agent update**

Provides the last date and time when the agent received audit setting updates.

### **Audit settings status**

Indicates whether the agent is using the most current audit settings available.

### **Audit settings level at agent**



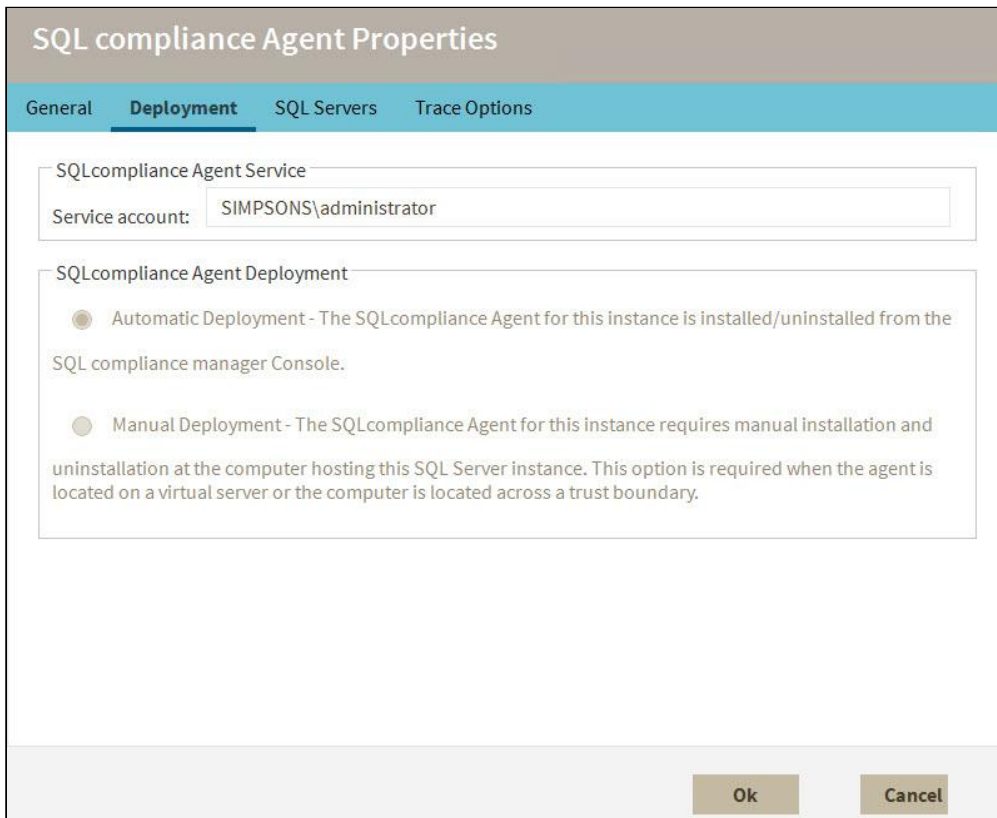
Provides the version of the audit settings applied at the agent. ***If the agent audit settings level does not match the current audit settings level***, consider performing an immediate update.

**Current audit settings level**

Provides the version of the audit settings available at the Collection Server.

Deployment tab

The Deployment tab of the SQL Compliance Manager Agent Properties window allows you to verify how the SQL Compliance Manager Agent was deployed on the selected SQL Server instance. You can view the account used by the SQL Compliance Manager Agent Service as well as the deployment method used.



Available fields

**SQL Compliance Manager Agent Service**

Provides the name of the user account under which the SQL Compliance Manager Agent is running on this SQL Server instance. The displayed account name uses the format *DomainName\LogonName*.

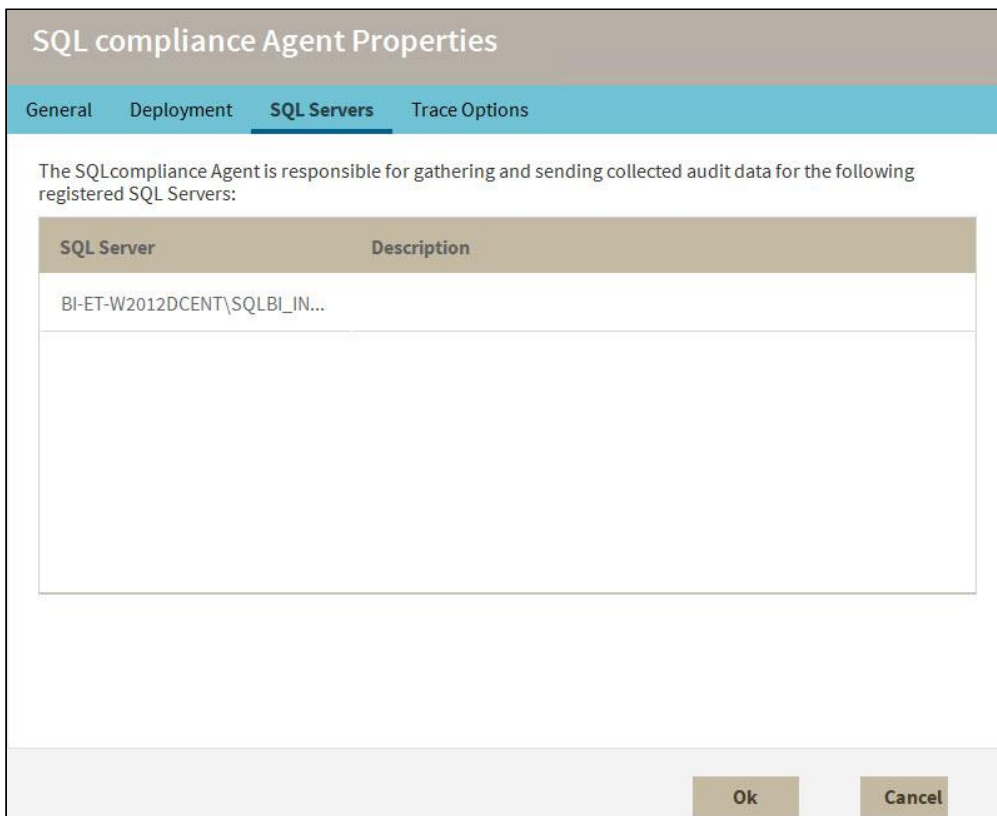
**SQL Compliance Manager Agent Deployment**



Indicates which deployment method (automatic or manual) was used to install the SQL Compliance Manager Agent on this SQL Server instance.

## SQL Servers tab

The SQL Servers tab of the SQL Compliance Manager Agent Properties window allows you to verify which SQL Server instances are currently audited by the SQL Compliance Manager Agent. This list includes instances that are virtual SQL Servers or are running in non-trusted domains and workgroups.



## Available columns

### SQL Server

Provides the name of the SQL Server instance, using the format *SQLServerName\InstanceName*.

### Description

Provides the description you specified when you registered the selected SQL Server instance.





## Trace Options tab

The Trace Options tab of the SQL Compliance Manager Agent Properties window allows you to configure how the SQL Compliance Manager Agent manages the trace files that contain collected events for auditing.

**If you are modifying properties for a SQL Compliance Manager Agent that is auditing a virtual SQL Server**, SQL Compliance Manager applies your changes to the active node in the cluster hosting the virtual SQL Server. SQL Compliance Manager Agent properties are later replicated from the active node to the passive nodes.

The screenshot shows the 'SQL compliance Agent Properties' dialog box with the 'Trace Options' tab selected. The dialog has four tabs: General, Deployment, SQL Servers, and Trace Options. The Trace Options tab contains the following settings:

- SQLcompliance Agent Trace Directory:** Trace directory: C:\Program Files\Idera\SQLcompliance\AgentTraceFiles
- Trace Collection Options:**
  - Trace file rollover size (MB): 5
  - Collection interval (min): 2
  - Force collection interval (min): 6
  - Trace start timeout (sec): 30
- Trace Tamper Detection Options:** Tamper detection interval (sec): 60
- Trace Directory Size Limit:**
  - Unlimited
  - Limit trace directory to 2 GB
- Unattended Auditing Time Limit:**
  - Unlimited
  - Limit unattended auditing to 7 days

At the bottom right, there are 'Ok' and 'Cancel' buttons.

## Available fields

### SQL Compliance Manager Agent Trace Directory

Provides the directory path under which the SQL Compliance Manager Agent stores trace files.

### Trace Collection Options

Allows you to specify the following settings:



- The rollover size (MB) at which the SQL Compliance Manager Agent should send the current trace file to the Collection Server, and create a new trace file to continue collecting events
- Time interval (minutes) at which the SQL Compliance Manager Agent should send full trace files to the Collection Server
- Maximum time (minutes) that should elapse before the SQL Compliance Manager Agent sends existing trace files to the Collection Server (if no trace files are received during the normal collection interval)
- Maximum time (seconds) that should elapse before the SQL Compliance Manager Agent's attempt to stop or start a trace file times out and returns a failure. By default, the timeout value is 30 seconds. Ensure this setting does not exceed the specified collection interval.

### **Trace Tamper Detection Options**

Allows you to specify the amount of time (seconds) that should pass before the SQL Compliance Manager Agent automatically restarts the SQL trace. The SQL Compliance Manager Agent detects whether the trace is stopped, modified, paused, or deleted by another application. After the specified tamper detection interval, the SQL Compliance Manager Agent restarts the trace and records the trace status to the application event log.

### **Trace Directory Size Limit**

Allows you to specify the maximum size threshold (GB) for the directory where you are storing the trace files. The directory size is checked at each heartbeat. To effectively manage the directory size, ensure you allow ample room to accommodate your auditing needs and set the SQL Compliance Manager Agent heartbeat interval at a low frequency.

### **Unattended Auditing Time Limit**

Allows you to specify the maximum time threshold (days) for allowing the SQL Compliance Manager Agent to run without receiving a heartbeat.



## Viewing instance details

After you register an instance in IDERA SQL Compliance Manager, you can access the Instance Details view by clicking an instance name.

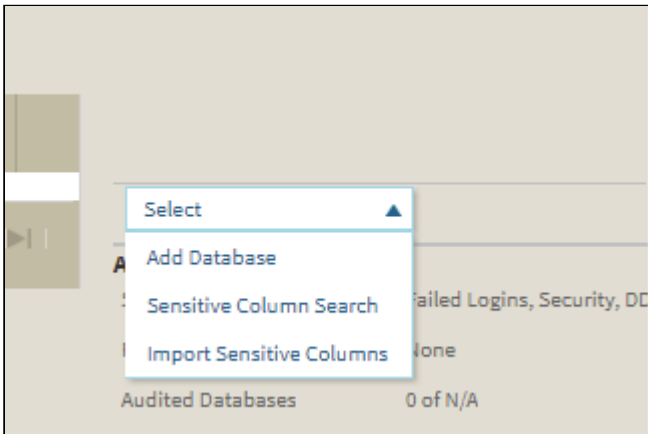
The screenshot displays the IDERA SQL Compliance Manager interface for instance CMWIN8X64-S2. The main content area includes a 'Server Activity Report Card' with a line graph showing activity over time, and a table of 'Audit Events' with columns for Database, Category, Event, Date, Time, and Login. The right-hand sidebar provides 'SERVER STATUS' (OK), 'AUDITED DATABASES' (master, model, msdb, testdblocal), and 'AUDIT CONFIGURATION' details.

| Database | Category | Event         | Date       | Time         | Login                   |
|----------|----------|---------------|------------|--------------|-------------------------|
| Master   | DDL      | Alter Secu... | 05/09/2017 | 07:14:19 ... | SIMPSONS\CMWIN8X64-S2\$ |
| Master   | DDL      | Drop Sec...   | 05/09/2017 | 08:44:15 ... | SIMPSONS\CMWIN8X64-S2\$ |
| Master   | DDL      | Alter Secu... | 05/09/2017 | 06:39:14 ... | SIMPSONS\CMWIN8X64-S2\$ |
| Master   | DDL      | Alter Secu... | 05/09/2017 | 06:34:13 ... | SIMPSONS\CMWIN8X64-S2\$ |
| Master   | DDL      | Alter Secu... | 05/09/2017 | 06:34:13 ... | SIMPSONS\CMWIN8X64-S2\$ |
| Master   | DDL      | Alter Secu... | 05/09/2017 | 08:29:13 ... | SIMPSONS\CMWIN8X64-S2\$ |
| Master   | DDL      | Alter Secu... | 05/09/2017 | 08:29:13 ... | SIMPSONS\CMWIN8X64-S2\$ |

The Instance Details view allows you to view a list of audit events occurring on the databases for that instance, information about its databases, bar graphs, other relevant information, and also get access to audit configuration details.

Other functions available in this view include the ability to:

- [add databases](#)
- [perform a Sensitive Column Search](#)
- [import Sensitive Columns](#)





## Sensitive Column Search window

The Sensitive Column Search window allows you to search all of the tables and columns on a targeted database to discover the location of sensitive data that needs to be audited. You can access this window from the Instance Details view by selecting Sensitive Column Search from the drop-down list available in the Audited Databases section.

WIN-B5VL79U2ADV

Active Search Profile: None Selected

Database Name: Select a database (blank for all)

Table Name: Select a table (blank for all)

Buttons: Perform search, Export report, Configure search

| Database and Table Summary |              |          |           |                   | Column Details |      |           |
|----------------------------|--------------|----------|-----------|-------------------|----------------|------|-----------|
| Database                   | Schema.Table | Size(MB) | Row Count | Column Identified | Name           | Type | Max Value |
|                            |              |          |           |                   |                |      |           |

Cancel

## Performing a search

To search for Sensitive Columns within one or more databases:

1. Select the target database name from the available list. To search all databases, leave the list at the default **Select a database** option.
2. **If you selected a specific database**, select a target table name. Note that you cannot select a table if you did not select a target database.
3. Select a search profile, and then continue with the next step. **If no profiles are configured or if you want to edit an existing profile**, click **Configure Search**. SQL Compliance Manager displays the SQL Column Search Settings window for you to configure a search profile. Use the following subset of steps to configure a



search profile.

SQL Column Search Settings
×

Active Search Profile

None Selected

Select All
SETTINGS HELP

| Category  | Search String Name | Definition      | Select                   |
|-----------|--------------------|-----------------|--------------------------|
| Dates     | Birth Date         | %Date%,%dob%    | <input type="checkbox"/> |
| Dates     | Generic Date       | %Dob%           | <input type="checkbox"/> |
| Email     | Email Address      | %Email%         | <input type="checkbox"/> |
| Financial | Code               | %Code%          | <input type="checkbox"/> |
| Financial | Credit Card Number | %Credit%,%card% | <input type="checkbox"/> |
| Financial | Income             | %Income%        | <input type="checkbox"/> |

Close
Delete Profile
Open Profile
Save New Profile
Save Profile

Edit
New
Delete
Save
Discard

- a. In the SQL Column Search Settings window, select one or more search strings you want to include in the search profile. Click **Select All** to include all of the available search strings in this profile.
  - b. **If the search string you want to use does not exist and you want to create a new search string**, click **New**. This option allows you to select a category, type a name for the search string, and then include the string definition. Click **Save** to retain the search string you just created.
  - c. Once you select all of the search string you want in the profile, click **Save Profile**. The profile is now available for you to select on the Sensitive Column Search window.
4. Click **Perform Search** to execute the search on the selected database(s) and table(s) based on the selected **Active Search Profile**. IDERA SQL Compliance Manager runs the Sensitive Column search and displays the results.
  5. Click **Export Report** to export the results in .csv format. This function allows you to save the data in a format that is compatible with the Import Sensitive Columns feature.



## Import Sensitive Columns window

The Import Sensitive Columns window allows you to import a list of sensitive columns from a .csv file to speed the process of configuring your sensitive column auditing. Note that the .csv file must have a row for each database you want to add for sensitive column auditing. The first row value must be the **database name**, the second value must be the **table name** followed by values for table's **column names**. If a row has only two values, first for database name and second for table name, all the columns will be selected for sensitive columns. A row with only one value is invalid and will be ignored. See the following examples:

Database1, Table1, Column1, Column2 (Valid Row)

Database2, Table2 (Valid Row)

Database3 (Invalid Row)

You can access this window from the Instance Details view by selecting Import Sensitive Columns from the drop-down list available below the Audited Databases section.

## Importing Sensitive Columns from .CSV

To import a .csv file containing sensitive column search details:



1. Click **Browse** to search for and then select the .csv file you want to import.
2. Check the table columns you want to include as sensitive columns and uncheck those table columns you want to ignore.
3. Click **OK** to import the file.






## Import or export your audit settings using the Web Console

As you configure or modify audit settings for your SQL Server instances, you may want to apply the same settings across multiple SQL Server instances in your environment. You can import audit settings through previously exported XML files, allowing you to:

- Use previously configured audit settings as a baseline, or template, you deploy to multiple instances and databases so that the same events are audited across your environment
- Ensure all SQL Server databases used by regulated applications, such as SAP, are consistently audited and held to the same level of compliance
- Streamline and automate your configuration workflow

***If a user is assigned privileged status as part of the alert rule you are importing, and that user does not yet exist in the environment you are importing to, the privileged user status will apply if the user is ever added to your environment.***

 To execute a T-SQL script that applies previously exported audit settings, [use the auditdatabase CLI command](#).

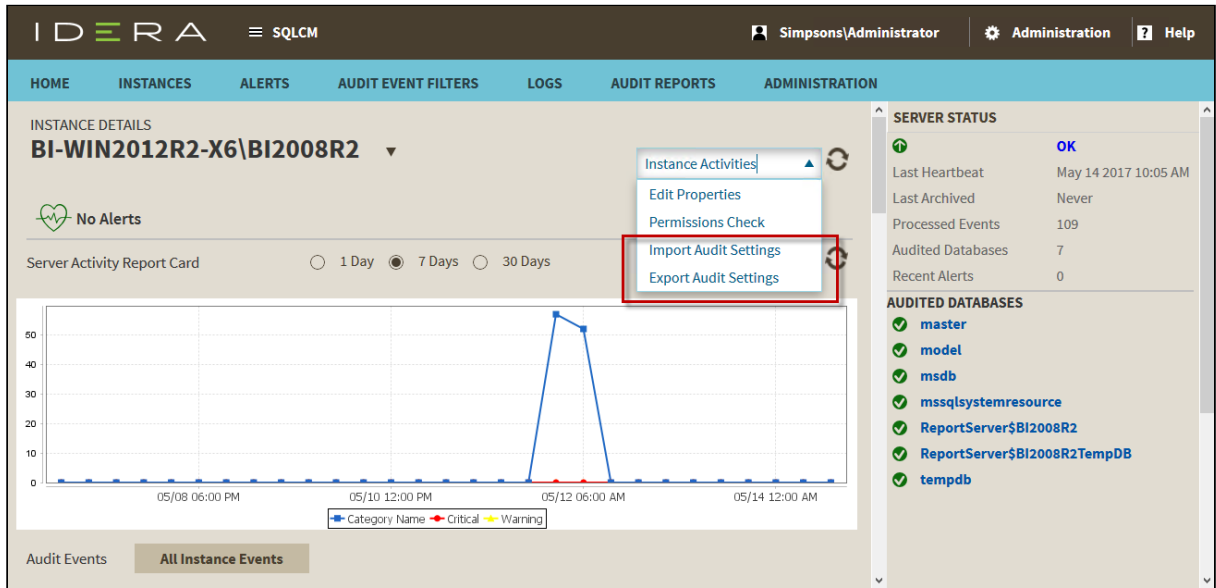
## Auditing the same events across multiple instances and databases

You can import previously configured audit settings to use as a baseline, or template. By deploying this baseline to multiple instances and databases, you can ensure the same events are audited across your environment.

To audit the same events across multiple instances or databases:

### Step 1: Export

1. Navigate to the **Instance details** view for the SQL Server instance that has the audit settings you want to apply to other instances.
2. In the drop-down list at the top of the view, select **Export Audit Settings**.



IDERA SQL Compliance Manager automatically exports the .xml file to the default name and location **c:\Users\administrator\documents\[instance name]\_AuditSettings.xml**.

## Step 2: Import

1. Navigate to the **Instance details** view for the appropriate SQL Server instance.
2. In the drop-down list at the top of the view, select **Import Audit Settings**. On the Import Audit Settings - Select File to Import window, click **Browse** and locate the audit settings file, and then click **Open**.
3. Once the appropriate file appears in the field, click **Next**. The Import Audit Settings - Settings Selection window appears.
  - **If you want to audit events at the server level as well as events initiated by privileged users**, select these import options.
  - **If you want to audit events at the database level**, click **Database Audit Setting**, and then select the database you want to use as your baseline or template.
4. Click **Next**.
5. On the Target Servers window, select the registered SQL Server instances to which you want to apply the selected audit settings, and then click **Next**.
6. On the Target Databases window, select the audited databases to which you want to apply the selected audit settings, and then click **Next**.
7. On the Summary window, choose whether you want your imported audit settings to overwrite the settings on the target SQL Server instances and databases or be added to the settings already present. Click **Finish** to import your audit settings.



## Auditing regulated applications across your environment

You can import previously-configured audit settings to ensure all SQL Server databases used by regulated applications, such as SAP, are consistently audited and are held to the same level of compliance.

To audit regulatory applications across your environment:

1. Navigate to **Registered SQL Servers** in the **Administration** tree.
2. On the Registered SQL Servers tab, click **Import**.
3. On the Select File to Import window, click **Browse** and locate the audit settings file, and then click **Open**.
4. Click **Next**.
5. On the Import Audit Settings window, specify which databases are configured with the audit settings you want to import. Complete the following steps:
  - a. Click **Database Audit Settings**, and then select the **Only import for matching database names** option.
  - b. Select the databases whose audit settings you want to apply.
  - c. ***If you also want to audit events at the server level as well as events initiated by privileged users***, select these options, and then click **Next**.
6. On the Target Servers window, select the audited SQL Server instances you want to apply the audit settings to from the list, and then click **Next**.
7. On the Target Databases window, ensure the target database list matches the database names you specified to match. Select the audited databases to which you want to apply the imported audit settings, and then click **Next**.
8. On the Summary window, select whether you want your imported audit settings to overwrite the settings on the target SQL Server instances and databases or added to the settings already present. Click **Finish** to import your audit settings.



## View alerts and alert rules

The IDERA SQL Compliance Manager Alerts view allows you to view the current alerts and create and manager alert rules throughout your environment. An alert rule is a set of criteria that determines when an alert should be generated as the Collection Server processes SQL Server events collected from your audited instances. Use alert rules to detect events that occur on specific databases, users, or instances.

Available actions include:

### **Page through alerts and alert rules**

Allows you to page through the list of alerts and rules. Use the previous and next arrows to navigate from page to page, up and down the list.

### **Filtering**

Allows you to filter the listed alerts and rules by rule, rule type, server name, alert level, user email address, event log, and SNMP traps. Filtering includes a **Save View** feature that lets you select all of your filtering options, and then save the settings for future use. Click **Load View** to select a previously-saved view for use.

### **View By**

Allows you to select whether Alerts or Alert Rules appear in this view.

### **Filtered By**

Allows you to select the type of Alerts displayed in this view. You can view all Alerts, only your Event Alerts, only Data Alerts, or only Status Alerts based on this selection.

### **Add New Rule**

*(Only available on the Alert Rules view)* Allows you to create a new alert rule using the New Alert Rule wizard. IDERA SQL Compliance Manager stores this alert rule in the Repository.

### **Import / Export**

Export Alert Rules created for the associated SQL Server instance to an XML file. You can later use the exported file to import Alert Rules across multiple SQL Server instances, ensuring consistent filtering of specific events throughout your environment. Allows you to export Alert Rules created for the associated SQL Server instance to an XML file. You can later use this file to import Alert Rules across multiple SQL Server instances, ensuring consistent filtering of specific events throughout your environment.

### **Enable / Disable Alert Rule**



Allows you to enable or disable the selected rule. When an alert rule is enabled, SQL Compliance Manager processes audited events using the selected criteria in this rule. ***If an event matches the alert criteria and an alert action is configured***, SQL Compliance Manager writes an alert message to the application event log or email it to the specified addresses. Alert messages are also available using the Alerts tab. When an alert rule is disabled, you temporarily stop using the selected rule. SQL Compliance Manager no longer uses this alert rule when processing events. All alert messages previously generated by this rule will remain available through the Management Console and the application event log, if event log notification was configured. To reinstate this alert, enable the alert rule.

### **Delete**

Allows you to permanently delete the selected Alert Rule. This option removes the Alert Rule from the Repository. SQL Compliance Manager will no longer use this Alert Rule when processing events. All previously processed audit data stored in the Repository remains intact.

### **Export**

Allows you to export the Activity Log and Change Log information to a CSV, PDF, or XML file.

### **Refresh**

Allows you to update the Alert Rules list with current data.

### **Import**

Allows you to import Alert Rules previously exported from another SQL Server instance. By default, the imported Alert Rules are disabled.

### **Edit Alert Rules**

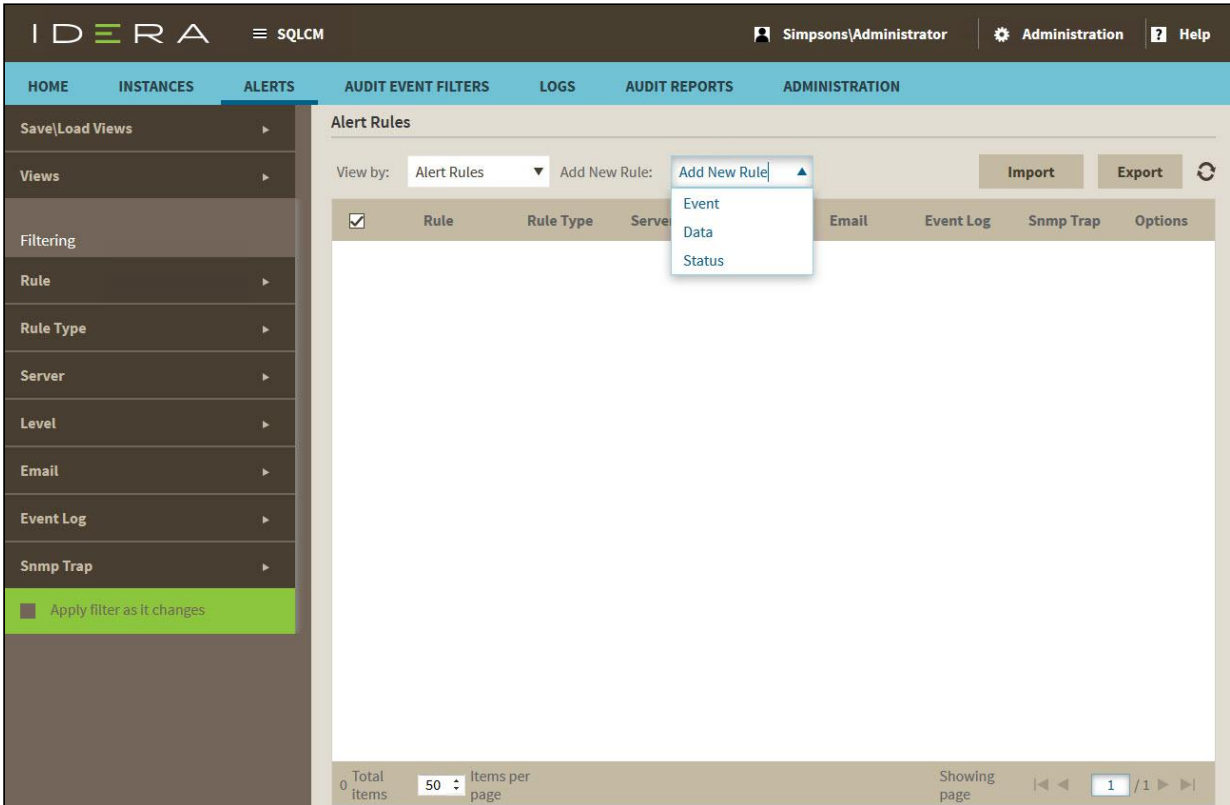
Allows you to change an existing alert rule using the New Alert Rule wizard.

### **From Existing**

Allows you to create a new Alert Rule using a selected rule as a template. This action launches the New Alert Rule wizard, each window populated with event criteria from the selected alert rule. You can change any event criterion to meet the goals of your new Alert Rule. SQL Compliance Manager stores the new Alert Rule in the Repository. The selected Alert Rule remains unchanged.



## Alerts view



### Default columns

#### Instance name

Provides the name of the audited SQL Server instance where this event occurred.

#### Date

Provides the date when the alert was generated.

#### Time

Provides the time when the alert was generated.

#### Level

Indicates the type of alert, such as Severe or Low. Use the alert level to help you identify critical issues, sort alerts by severity, and understand the overall health of your environment. You can define the alert using the Edit Alert Rule wizard.

#### Source Rule

Provides the name of the alert rule that generated this alert.

#### Event



Provides the name of the audited event that triggered this alert.

### Detail


Provides additional information about the alert.

### Event Alerts view

The Event Alerts view, available from the **Filtered By** selection, allows you to view previously generated Event Alerts. An Event Alert is generated when the Collection Server processes a SQL Server event that matches the alert rule criteria. Use Event Alerts to identify and investigate suspicious activity on specific databases, users, or instances.

### Data Alerts view

The Data Alerts view, available from the **Filtered By** selection, allows you to view previously generated Data Alerts. A Data Alert is generated when the Collection Server processes a SQL Server event that matches the alert rule criteria. Use Data Alerts to identify and investigate data manipulation on specific databases, tables, or columns.

 The Collection Server generates one alert per SELECT event, even though the query may have accessed multiple audited columns.

### Status Alerts view

The Status Alerts view, available from the **Filtered By** selection, allows you to view previously generated Status Alerts. A Status Alert is generated when the status of the specified product components matches the alert rule criteria. Use Status Alerts to identify and investigate possible issues with IDERA SQL Compliance Manager operations, such as deployed agents that may have stopped running.



## Alert Rules view

## Default columns

### Rule

Provides the name you specified when you created each alert rule. By default, SQL Compliance Manager names each new rule **New Rule**.

### Rule Type

Indicates whether this rule generates an Event Alert or a Status Alert.

### Server

Provides the name of the registered SQL Server instance associated with this alert rule. By default, Event and Status Alerts apply to all registered SQL Server instances. For better focused Event Alerts, you can specify a different target SQL Server using the Edit Alert Rule wizard.

### Level

Provides the alert level, such as High. Depending on the rule type, you can change the alert level using either the Edit Event Alert Rule or Edit Status Alert Rule wizard.

### Email





Indicates whether the alert rule criteria includes email notification. When email notification is configured, SQL Compliance Manager sends an alert message to the specified addresses. Depending on the rule type, you can set up email notification using either the Edit Event Alert Rule or Edit Status Alert Rule wizard.

### Event Log

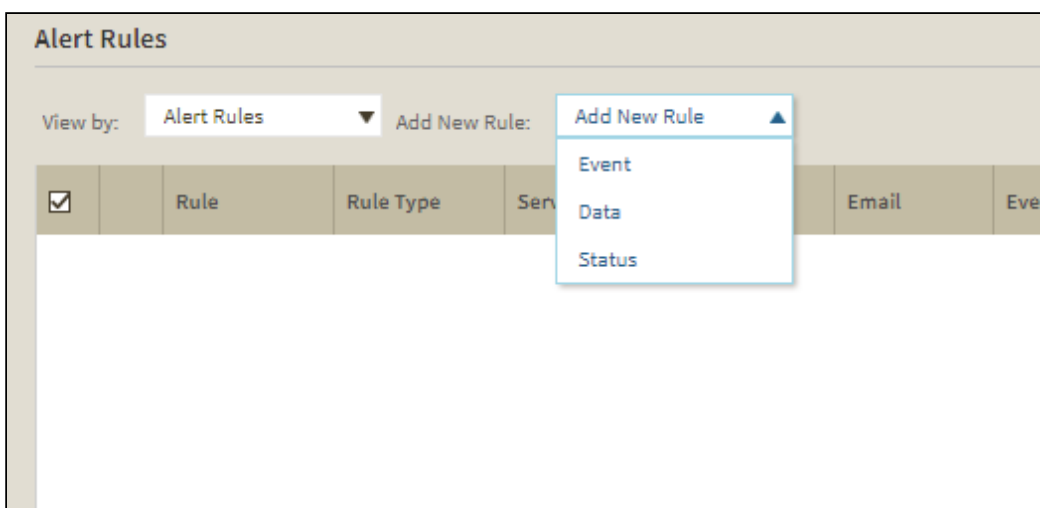
Indicates whether the alert rule criteria includes event log notification. When event log notification is configured, SQL Compliance Manager writes an alert message to the application event log. Depending on the rule type, you can set up event log notification using either the Edit Event Alert Rule or Edit Status Alert Rule wizard.

### SNMP Trap

Indicates whether the alert rule criteria includes sending SNMP Trap messages to a specified network management console. When SNMP Trap is configured, SQL Compliance Manager sends an alert message to the specified network management console. Depending on the rule type, you can set up SNMP Trap notification using either the Edit Event Alert Rule or Edit Status Alert Rule wizard.

## New Event / Data / Status Alert Rule wizard

When you select to create a new alert rule, IDERA SQL Compliance Manager allows you to select whether you want to create an event alert rule, a data alert rule, or a status alert rule. The **Add New Rule** option allows you to create a new alert using the New Alert Rule wizard. SQL Compliance Manager stores this alert rule in the Repository.





## New Event Alert Rule

The Alerts view allows you to specify on which type of SQL Server event you want to alert.

### SQL Server Event Type window

The SQL Server Event Type tab allows you to specify on which type of SQL Server event you want to alert.

### Available actions

#### **Specify a name**

Type a short but descriptive name for the new alert. Remember that this name appears when you are searching for or viewing a list of alerts, so keep that in mind when implementing any sort of naming convention.

#### **Specify alert level**

Select the level of criticality for this alert where:

- Level 4 = Severe
- Level 3 = High
- Level 2 = Medium
- Level 1 = Low

#### **Select type of event that triggers this alert**

Allows you to select the SQL Server event type that should trigger this alert. When the Collection Server processes an audited event that matches the specified event type, the alert rule is run to see whether the identified event matches the other alert rule criteria.

You can also select a specific event or a user defined event. A specific event can be any supported SQL Server event that occurs at the server or database level. A user defined event is a custom event you create and track using the `sp_trace_generateevent` stored procedure. Note that additional selections activate when you select **Specific Events**.



New Event Alert Rule
✕

Specify a name for this Rule

Specify alert level

2-Medium
▼

Description

Select the Event Type

|                                                   |                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="radio"/> Security Changes | <input type="radio"/> Data Definition(DDL)                                                                                                                                                                                                                                                                                                                                |
| <input type="radio"/> Administrative Activity     | <input type="radio"/> Data Manipulation(DML)                                                                                                                                                                                                                                                                                                                              |
| <input type="radio"/> Login Activity              | <input type="radio"/> User Defined Events                                                                                                                                                                                                                                                                                                                                 |
| <input type="radio"/> Specific Events             | <div style="display: flex; gap: 10px;"> <div style="border: 1px solid #ccc; padding: 2px; display: flex; align-items: center;"> <span>DDL</span> <span style="font-size: 0.8em;">▼</span> </div> <div style="border: 1px solid #ccc; padding: 2px; display: flex; align-items: center;"> <span>Create index</span> <span style="font-size: 0.8em;">▼</span> </div> </div> |

Prev

Next

Finish

Cancel

## SQL Server Object Type and Additional Event Filters window

The SQL Server Object Type and Additional Event Filters window allows you to specify the type of SQL Server object that should be monitored by this alert rule. Select from the additional event filters to narrow your results. You can generate alerts for objects on currently audited databases and SQL Server instances.

### Available actions

#### Select type of event that triggers this alert

Allows you to specify the SQL Server object type that should trigger this alert. When the Collection Server processes an audited event associated with the specified object type, the alert rule is run to see whether the identified event matches the other alert rule criteria.

By default, the alert rule applies your alert criteria against events on any audited SQL Server instance.

You can specify one or more objects:



| Type of Object       | You can specify ...                                                                                                                                                    |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SQL Server instance  | <ul style="list-style-type: none"> <li>• Any instance</li> <li>• A specific instance by name</li> </ul>                                                                |
| Database             | <ul style="list-style-type: none"> <li>• A specific database by name</li> <li>• Any database whose name matches a naming convention or phrase</li> </ul>               |
| Database object name | <ul style="list-style-type: none"> <li>• A specific database object by name</li> <li>• Any database object whose name matches a naming convention or phrase</li> </ul> |
| Host name            | <ul style="list-style-type: none"> <li>• A specific database host by name</li> <li>• Any database object whose name matches a naming convention or phrase</li> </ul>   |

For example, you can specify the following objects:

- Any database whose name contains the word test on the LABSERVER instance
- The model database on any audited instance
- The Salary table in the HR01 database hosted by the Chicago instance

### Edit rule details

Allows you specify the word or phrase the alert rule should use to identify events associated with the object you want to alert on.

The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Event Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting



## New Event Alert Rule ✕

**Select the SQL Server Objects**

|                                        |                     |
|----------------------------------------|---------------------|
| <input type="checkbox"/> SQL Server    | Specify SQL Servers |
| <input type="checkbox"/> Database Name | Specify Databases   |
| <input type="checkbox"/> Object Name   | Specify Objects     |
| <input type="checkbox"/> Host Name     | Specify Words       |

**Select additional event filters**

|                                                     |                    |
|-----------------------------------------------------|--------------------|
| <input type="checkbox"/> Application Name           | Specify Words      |
| <input type="checkbox"/> Login Name                 | Specify Words      |
| <input type="checkbox"/> Exclude Certain Event Type | Select Event Types |
| <input type="checkbox"/> Is Privileged User         | False ▼            |
| <input type="checkbox"/> Access Check Passed        | False ▼            |

Prev
Next
Finish
Cancel

## Alert Actions window

The Alert Actions window of the New Event Alert Rule wizard allows you to select the action you want this alert rule to perform when an audited event matches the specified criteria. Depending on the actions you select, IDERA SQL Compliance Manager writes an alert message to the application event log and email it to a specific email address or distribution list. You can use the default alert message or customize it to display the information you need most.

To successfully use email notification, ensure SQL Compliance Manager is configured to connect to your mail server.



## Available actions

### Select alert action

Allows you to select whether you want an alert message to be generated when this alert is triggered. You can configure an alert message to be written to the application event log and emailed to a specific address or distribution list. SQL Compliance Manager uses the same alert message content for the event log entry and email notification.

### Edit rule details

Allows you to specify one or more of the following attributes, depending on the alert action you selected:

- Content of the alert message
- Type of event log entry that should be written (Warning, Error, Information)
- Addresses to which the alert message should be emailed

The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Event Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



**New Event Alert Rule**
✕

**Select Alert Actions**

Email Notification

Alert Message  
Specify email address

Windows Event Log Entry

Information ▼

SNMP Trap

Address

Port

Community

Prev
Next
Finish
Cancel

## Finish Status Alert Rule window

The Finish Alert Rule window of the New Event Alert Rule wizard allows you to specify a name for the new Event Alert rule, review the rule details, and then click **Finish**. When you finish this wizard, IDERA SQL Compliance Manager enables the alert rule and begins applying your alert criteria against audited events associated with the selected objects.

## Available actions

### Enable rule now



Indicates that you want SQL Compliance Manager to begin monitoring audited events using this alert rule criteria immediately after you finish creating the rule. By default, all alert rules are enabled upon creation.

The image shows a dialog box titled "New Event Alert Rule" with a close button (X) in the top right corner. Inside the dialog, there is a checked checkbox labeled "Enable this rule now." Below this is a text area containing the text: "Generate a **Medium** alert for **Security Changes** events on any SQL Server". At the bottom of the dialog, there are four buttons: "Prev", "Next", "Finish", and "Cancel".





## Manage audit event filters

The IDERA SQL Compliance Manager Audit Event Filters view allows you to filter out specific SQL events in the audit data collected from the SQL Server instances and databases you are auditing. Use audit event filters to refine your audit data trail so that it contains only the events you need to track.



### Available actions

#### Filtering

Allows you to filter the listed event filters by status, instance name, and description. Filtering includes a **Save View** feature that lets you select all of your filtering options, and then save the settings for future use. Click **Load View** to select a previously-saved view for use.

#### Add New Filter

Allows you to create a new event filter using the New Event Filter wizard. IDERA SQL Compliance Manager stores this event filter in the Repository.

#### Export

Allows you to export a list of the Event Filters created for the associated SQL Server instance to a PDF, XLS, or XML file.

#### Refresh

Allows you to update the Audit Event Filters list with current data.

#### Import

Allows you to import Event Filters previously exported from another SQL Server instance. By default, the imported Event Filters are disabled.

#### Enable / Disable

Allows you to enable or disable the associated event filter. When an event filter is enabled, SQL Compliance Manager processes audited events using the selected criteria in this filter. ***If an event matches the filter criteria***, SQL Compliance Manager removes the event from the audit data. Use the Audit Events tab to see the resultant set of processed events. When an event filter is disabled, you temporarily stop using the selected event filter. SQL Compliance Manager no longer uses this filter when processing events. All previously processed audit data stored in the Repository remains intact. To reinstate this filter, enable it.

#### Delete



Allows you to permanently delete the selected event filter. This option removes the filter from the Repository. SQL Compliance Manager will no longer use this filter when processing events. All previously processed audit data stored in the Repository remains intact.

### **Export filter**

Allows you to export Event Filters created for the associated SQL Server instance to an XML file. You can later use this file to import Event Filters across multiple SQL Server instances, ensuring consistent filtering of specific events throughout your environment.

### **Properties**

Allows you to manage the properties of the selected event filter. This action launches the New Event Filter wizard, each window populated with event criteria from the selected filter.

### **Copy**

Allows you to copy an event filter and all its configuration. You can also create a new event filter using a selected filter as a template. This action launches the New Event Filter wizard, each window populated with event criteria from the selected filter. You can change any event criterion to meet the goals of your new filter. SQL Compliance Manager stores the new event filter in the Repository. The selected filter remains unchanged.

## New Event Filter wizard

### SQL Server Event Type window

The SQL Server Event Type window of the New Event Filter wizard allows you to specify the type of SQL Server event you want to filter from your audit data.

### Available actions

#### **Select type of event to filter from your audit data**

Allows you to select the specific SQL Server event category or type you want to filter from your audit data. When the Collection Server processes an audited event that matches the specified event type, the filter is run to see whether the identified event matches the other filter criteria.

#### **Edit filter details**

Allows you to change your specified criteria at any time as you create your new filter. As you specify criteria using the New Event Filter wizard, the filter



details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.

## SQL Server Object Type window

The SQL Server Object Type window of the New Event Filter wizard allows you to specify the type of SQL Server object affected by the filtered event. You can filter events that occur on specific audited databases and SQL Server instances.

### Available actions

#### Select the SQL Server Objects

Allows you to specify the SQL Server object type that is affected by the event you want to filter. For example, you can filter out all DDL activity on a specific database. When the Collection Server processes an audited event associated with the specified object type, the filter is run to see whether the identified event matches the other filter criteria.

By default, the filter will apply your criteria against events on any audited SQL Server instance.



You can specify one or more objects:

| Type of Object      | You can specify ...                                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SQL Server instance | <ul style="list-style-type: none"> <li>• Any instance</li> <li>• A specific instance by name</li> </ul>                                                                |
| Database            | <ul style="list-style-type: none"> <li>• A specific database by name</li> <li>• Any database whose name matches a naming convention or phrase</li> </ul>               |
| Database object     | <ul style="list-style-type: none"> <li>• A specific database object by name</li> <li>• Any database object whose name matches a naming convention or phrase</li> </ul> |

For example, you can specify the following objects:

- Any database whose name contains the word test on the LABSERVER instance
- The model database on any audited instance
- The Salary table in the HR01 database hosted by the Chicago instance

### Select the Event Type

Allows you specify the word or phrase the filter should use to identify objects affected by the event you want to filter from your audit data.



Edit Filter
×

Select the SQL Server Objects

|                                     |               |                                     |
|-------------------------------------|---------------|-------------------------------------|
| <input checked="" type="checkbox"/> | SQL Server    | <a href="#">Specify SQL Servers</a> |
| <input type="checkbox"/>            | Object Name   | Specify Objects                     |
| <input type="checkbox"/>            | Database Name | Specify Databases                   |

Filter events generated by

|                                     |                    |                               |
|-------------------------------------|--------------------|-------------------------------|
| <input checked="" type="checkbox"/> | Application Name   | <a href="#">Specify Names</a> |
| <input type="checkbox"/>            | Login Name         | Specify Names                 |
| <input type="checkbox"/>            | Host Name          | Specify Words                 |
| <input type="checkbox"/>            | Session Login      | Specify Words                 |
| <input type="checkbox"/>            | Is Privileged User | True ▼                        |

Prev
Next
Finish
Cancel

### Finish Status Alert Rule window

The Finish Status Alert Rule window of the New Event Filter wizard allows you to review the filter details, select whether you want to **Enable this filter now**, and then click **Finish**. When you enable and complete this wizard, IDERA SQL Compliance Manager begins applying your filter criteria against audited events associated with the selected objects.



New Event Filter ×

Enable this filter now

Filter **All Events**  
on any SQL Server

Prev Next Finish Cancel



## View logs

The IDERA SQL Compliance Manager Logs view lists events and alerts initiated by SQL Compliance Manager components, allowing you to monitor operations and diagnose issues within your environment. The Logs view consists of the Activity Log and Change Log areas, toggled by the option at the top of the page.

Available actions include:

### **Page through activities**

Allows you to page through the list of activities. Use the previous and next arrows to navigate from page to page, up and down the list.

### **Filtering**

Allows you to filter the listed activities by date, time, instance name, event, user name, and description. Filtering includes a **Save View** feature that lets you select all of your filtering options, and then save the settings for future use. Click **Load View** to select a previously-saved view for use.

### **Enable Groups**

Allows you to group activities by a specific property, such as the computers on which the activities occurred or the times the activities occurred. Enable groups when you want to sort the activities or focus on a particular activity attribute.

### **Export**

Allows you to export the Activity Log and Change Log information to a CSV, PDF, or XML file.

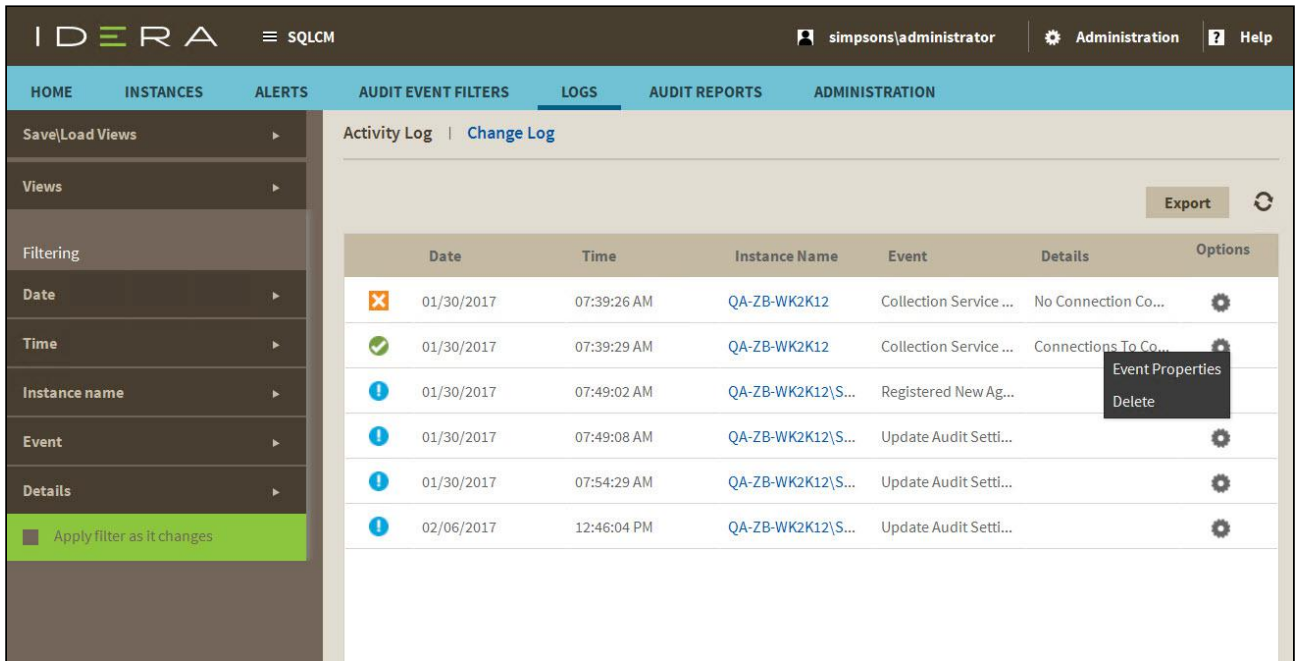
### **Refresh**

Allows you to update the activity list with current data.

For more information about the Activity Log and Change Log tabs in the SQL Compliance Manager Monitoring Console, see [Activity Log tab](#) and [Change Log tab](#).



## Activity Log view



The Activity Log view displays a list of activity and system alerts across all registered instances. SQL Compliance Manager generates the following types of system alerts:

| System Alert                        | Caused by ...                                                                                                  | Resolves when ...                                                                                |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Agent Configuration Error           | Error saving the SQL Compliance Manager Agent configuration file (.bin)<br>Error loading the new configuration | File is successfully saved<br>SQL Compliance Manager Agent configuration is successfully updated |
| Collection Service Connection Error | Collection Server is offline or the SQL Server instance hosting the Repository is offline                      | Connection to the collection service is established                                              |
| CLR Error                           | Error when enabling CLR, creating or modifying the before-after data trigger, or performing a health check     | SQL Compliance Manager Agent configuration update or health check is successful                  |





| System Alert            | Caused by ...                                                                                                 | Resolves when ...                                                                                     |
|-------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Server Connection Error | Error when connecting to the audited instances, due to invalid permissions or the offline SQL Server instance | Connection is established                                                                             |
| SQL Trace Error         | Error when starting or stopping the audit traces                                                              | Audit traces are started or stopped                                                                   |
| Trace Directory Error   | Error when creating trace directory or when reaching the maximum size allocated for the trace directory       | Trace directory is created or the trace files are transferred to the Collection Server for processing |

Available columns include:

**Date**

Provides the date that the event occurred.

**Time**

Provides the time that the event occurred.

**Instance Name**

Provides the name of the SQL Server instance, using the format SQLServerName\InstanceName.

**Event**

Provides the type of event that occurred.

**Detail**

Displays the first line of the event details.

## Activity Log Properties

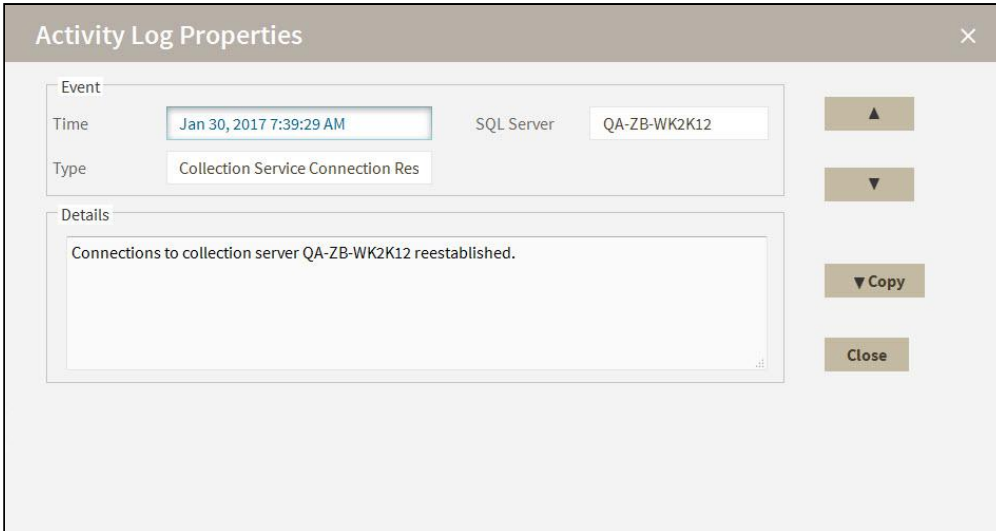
For each event, you can view properties by clicking **Event Properties** under the gear icon for the associated event. The Activity Log Properties window allows you to view details about an individual event in the Activity Log. You can view the following information:

- Date and time the event occurred
- Type of event
- SQL Server instance on which the event occurred

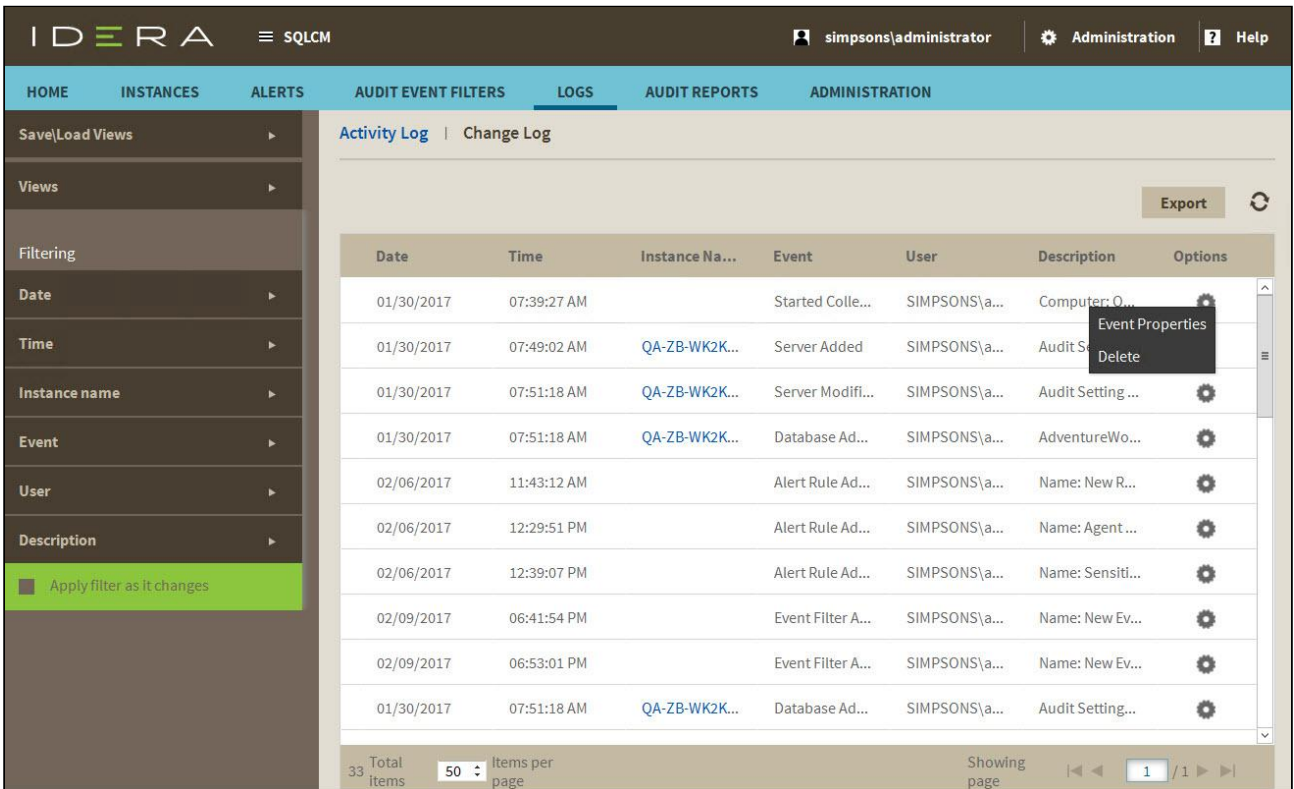
To scroll from one event to the next, use the up and down arrows.



To copy the event details to another application, click **Copy to**. This action copies the event details to your clipboard, allowing you to paste the contents into another application such as Microsoft Word.



## Change Log view





The Change Log view lists changes and events initiated through the Management Console and the Collection Server, allowing you to monitor IDERA SQL Compliance Manager operations and diagnose issues.

Available columns include:

**Date**

Provides the date that the event occurred.

**Time**

Provides the time that the event occurred.

**Instance Name**

Provides the name of the SQL Server instance, using the format `SQLServerName\InstanceName`.

**Event**

Provides the type of event that occurred.

**User**

Provides the name of the user account associated with the event.

**Description**

Displays the first line of the event details.

## Change Log Properties

The Change Log Properties window allows you to view details about an individual event in the Change Log. You can view the following information:

- Date and time the event occurred
- Type of event
- SQL Server instance on which the event occurred
- User who executed the event

To scroll from one event to the next, use the up and down arrows.

To copy the event details to another application, click **Copy**. This action copies the event details to your clipboard, allowing you to paste the contents into another application such as Microsoft Word.



**Change Log Properties** [X]

**Event**

|      |                                                        |            |                                                     |                                  |
|------|--------------------------------------------------------|------------|-----------------------------------------------------|----------------------------------|
| Time | <input type="text" value="Jan 30, 2017 7:39:27 AM"/>   | SQL Server | <input type="text"/>                                | <input type="button" value="▲"/> |
| Type | <input type="text" value="Started Collection Server"/> | User       | <input type="text" value="SIMPSONS\administrator"/> | <input type="button" value="▼"/> |

**Details**



## Generate audit reports

The IDERA SQL Compliance Manager Audit Reports view contains a simple interface that allows you to generate audit reports. Each report is based on a template file that is stored in the Reports folder in the SQLcompliance installation directory. When you generate a report, you are able to determine what is displayed by selecting from the options on each individual report. This allows you to generate reports tailored to your needs.

For additional information about SQL Compliance Manager reporting, see [Report on Audit Data](#).



Available reports include:

- **Application Activity.** The Application Activity report lists the amount of activity that occurred on the SQL Server instance or designated database, on an hourly basis, for the dates specified. Use this report to audit overall activity levels on your SQL Server instances and databases.
- **DML Activity (Before-After).** The DML Activity (Before-After) report lists DML events for which before and after data is available. Use this report to audit UPDATE, INSERT, and DELETE activity on critical or sensitive databases.
- **Login Creation History.** The Login Creation History report lists a history of login creation activities performed on a specific SQL Server instance. Use this report to audit user behavior and login management.
- **Login Deletion History.** The Login Deletion History report lists a history of login deletion activities performed on a specific SQL Server instance. Use this report to audit user behavior and login management.
- **Object Activity.** The Object Activity report lists activities performed on a specific SQL Server instance. Use this report to audit object behavior and settings.
- **Permission Denied Activity.** The Permission Denied Activity report lists unauthorized attempts to execute activities. Use this report to audit your SQL Server security settings and identify misconduct.
- **Table/Data Access by Row Count.** The Row Count reports on the frequency data is accessed. Use this report to audit sensitive data access and identify suspicious behavior.
- **User Activity History.** The User Activity History report lists activities performed by user account. Use this report to audit your user account settings and identify misconduct.



## Administer SQL Compliance Manager

The **Administration** tab gives you easy access to manage IDERA SQL compliance Manager options such as users, licenses, and instances, which all must be added to SQL Compliance Manager if they are not already added.

The screenshot shows the IDERA SQL Compliance Manager interface. At the top, the IDERA logo is on the left, and the user 'simpsons|administrator' is logged in. The navigation menu includes HOME, INSTANCES, ALERTS, AUDIT EVENT FILTERS, LOGS, AUDIT REPORTS, and ADMINISTRATION. The ADMINISTRATION tab is selected. The main content area is titled 'ADMINISTRATION' and contains three sections:

- Users**: Give users permission to use SQL Compliance Manager. Create, edit and delete users and subscribe to alerts using the Manage Users action. [Manage Users](#)
- Licensing**: A license is required to access SQL Compliance Manager features. View license status and add a license key using the Manage License action. [Manage License](#)
- Instances**: SQL Compliance Manager monitors SQL Server instances and their host computers. Add instances to be monitored using the Add SQL Server Instance action. [Add SQL Server Instance](#), [Import SQL Servers](#), [Manage SQL Servers Instances](#)
- Configuration**: Allows configuration of Web Console. [Web Console Refresh Rate](#)

For more information about each option and what configuration settings are available for you, go to each respective topic:

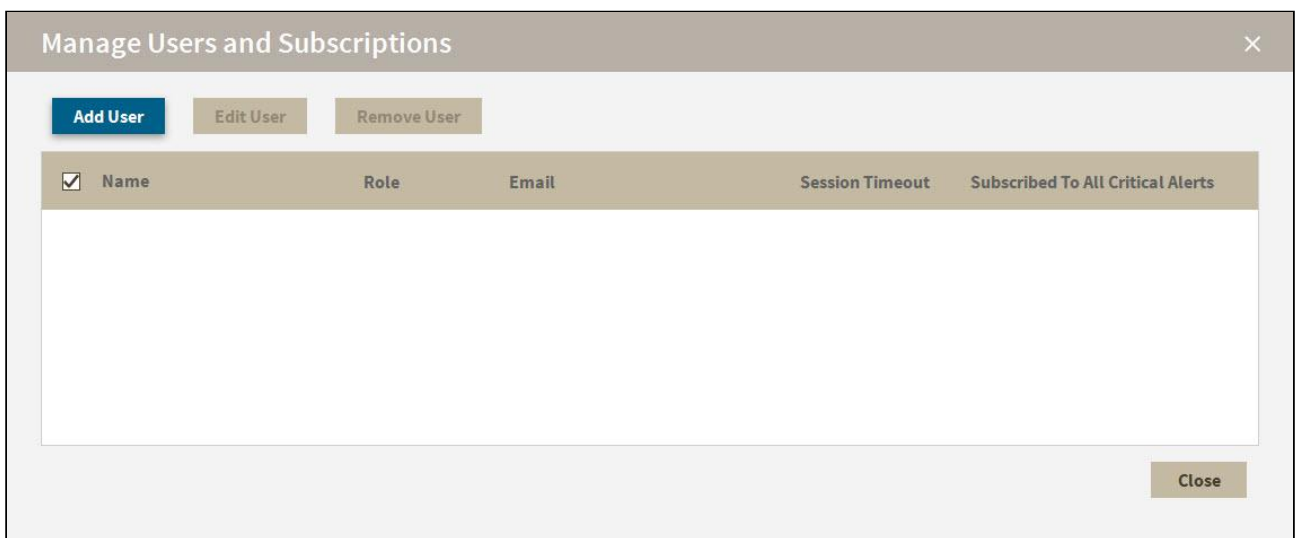
- [Managing users in SQL Compliance Manager](#)
- [Manage licenses](#)
- [Adding SQL Server instances](#)
- [Import SQL Server instances](#)
- [Manage SQL Server Instances](#)
- [Configure Web Console refresh rate](#)



## Managing users in SQL Compliance Manager

In order for users to access IDERA SQL Compliance Manager, you need to add their accounts and grant them access. Additionally, if they want to receive alert emails, you have to enable this option for each user and type the email addresses where they will receive these notifications.

To create, edit, and delete user accounts and manager user details, such as the account name, product access, account role, alert subscriptions, email address, or instance permissions, click **Users > Manage Users** on the SQL Compliance Manager Administration tab.



On this window you can see a list of all registered users, their respective email addresses, and whether they are subscribed to alerts.

### Add User

While your users may already exist in the IDERA Dashboard, they must be added to SQL Compliance Manager to have access to the features of this product. To add a user account:

1. Click **Add User**. SQL Compliance Manager displays the Add User dialog.



**Add User**

User Name:

Note: Enter user's Windows account using the form "domain\username"

Role:

Email:

Session Time Out:   HH:MM

Subscribed To All Critical Alerts

Receive SQL Compliance Manager Alerts email for critical issues such as availability or failure problems

2. Type the name of the user to which you want to grant access. Enter a Windows user name in the format `<domain\accountname>`.
3. In the **Role** field, select the role within SQL Compliance Manager you want to assign to this user account. For more information about the permissions available to each user role, see [User role permissions](#).
4. Type the email address where you want the system to send alert email messages to this user account.
5. In the **Session time out** fields, check the box if you want the SQL Compliance Manager session to log off the user after the specified period of inactivity. Clear the check box if you do not want the session to time out.
6. *Optional*. Check the **Subscribed to All Critical Alerts** box if you want the user to receive an alert email when a critical alert is generated. You must also enter an email account when using this feature.
7. Click **OK**.

## Edit User

This option allows you to edit the user name, change the role, modify the user's session timeout and alert subscriptions, and change the email address to where they receive alerts. To edit a user account:

1. Check the appropriate box for the user account you want to edit, and then click **Edit User**. SQL Compliance Manager displays the Edit User dialog.





**Edit User**

User Name:   
Note: Enter user's Windows account using the form "domain\username"

Role:

Email:

Session Time Out:   HH:MM

Subscribed To All Critical Alerts

Receive SQL Compliance Manager Alerts email for critical issues such as availability or failure problems

2. Make the appropriate changes.
3. *Optional.* In the **Session time out** area, check the available check box to time out the user account's session after the entered period of inactivity.
4. Click **OK**.



## Manage licenses

A license key is required to access all IDERA SQL Compliance Manager features and determines the number of SQL Server instances that you can monitor.

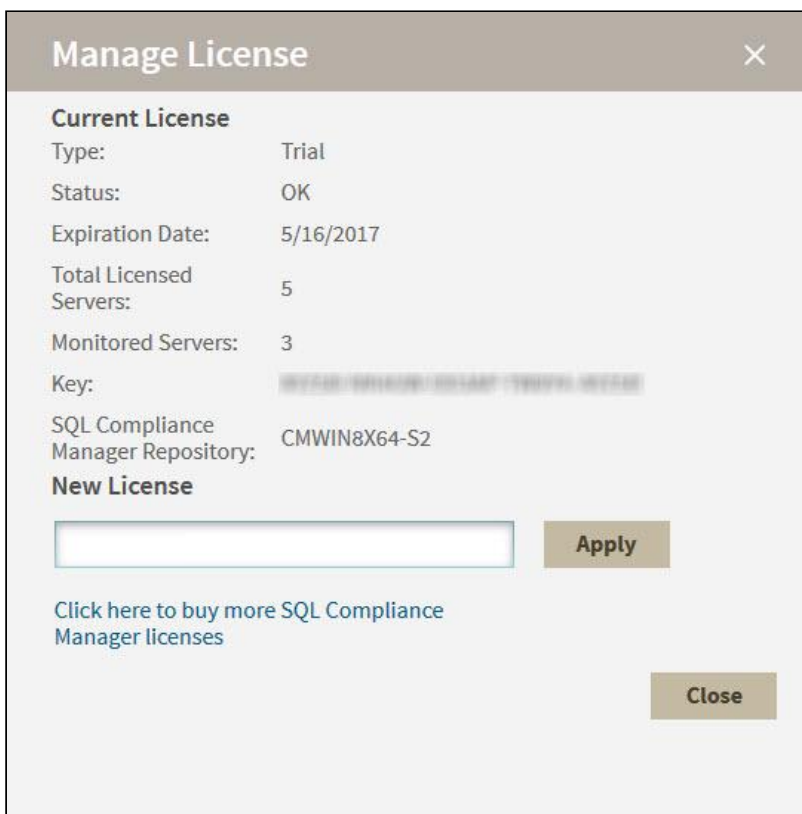
View your license status, add, or buy a new license key using the Manage License action.

To access this option, go to the **Administration** tab, and then click **Manage License** on the **Licensing** section.

SQL Compliance Manager opens a new window that displays information relevant to your current license such as type of license, status, expiration date, total licensed servers, monitored servers, license key, and SQL Compliance Manager repository.

If you want to add a new license key, type this key under the **New License** section, and then click **Apply**.

If you need to buy another license, go to the [IDERA store](#).





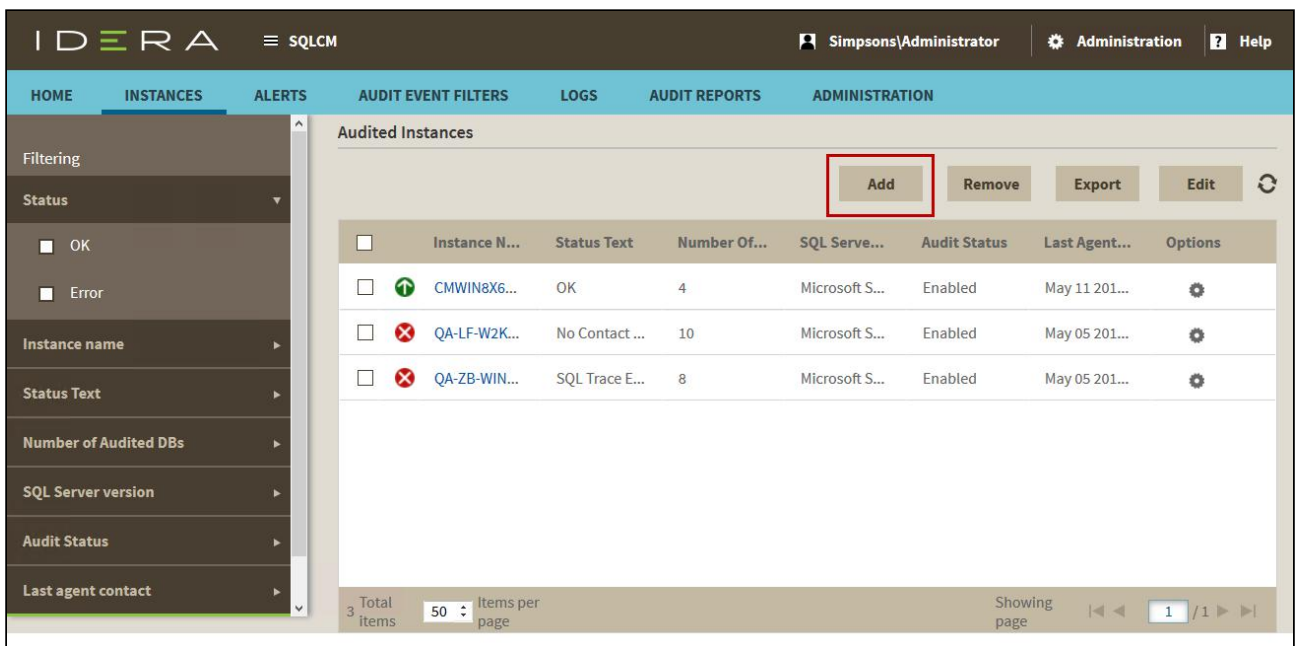
## Adding SQL Server instances

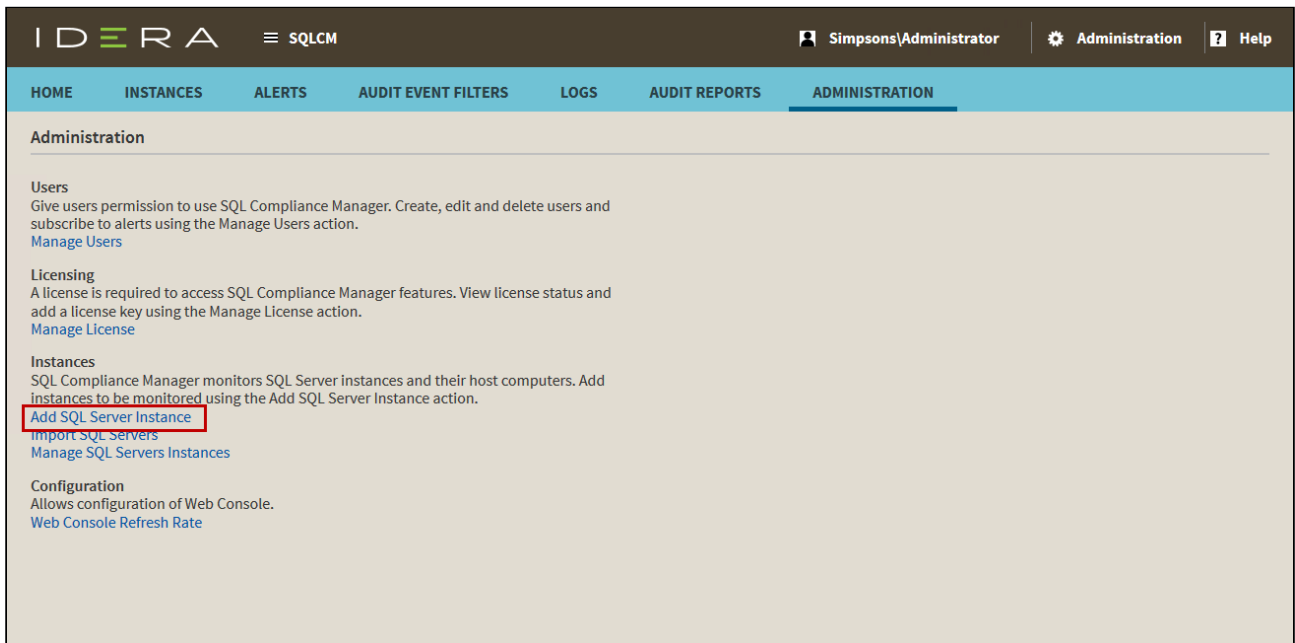
In order to manage an instance, access its details, and add it to your monitored environment, you need to register it with IDERA SQL Compliance Manager.

You can find the **Add** or **Add SQL Server Instance** option on the following views:

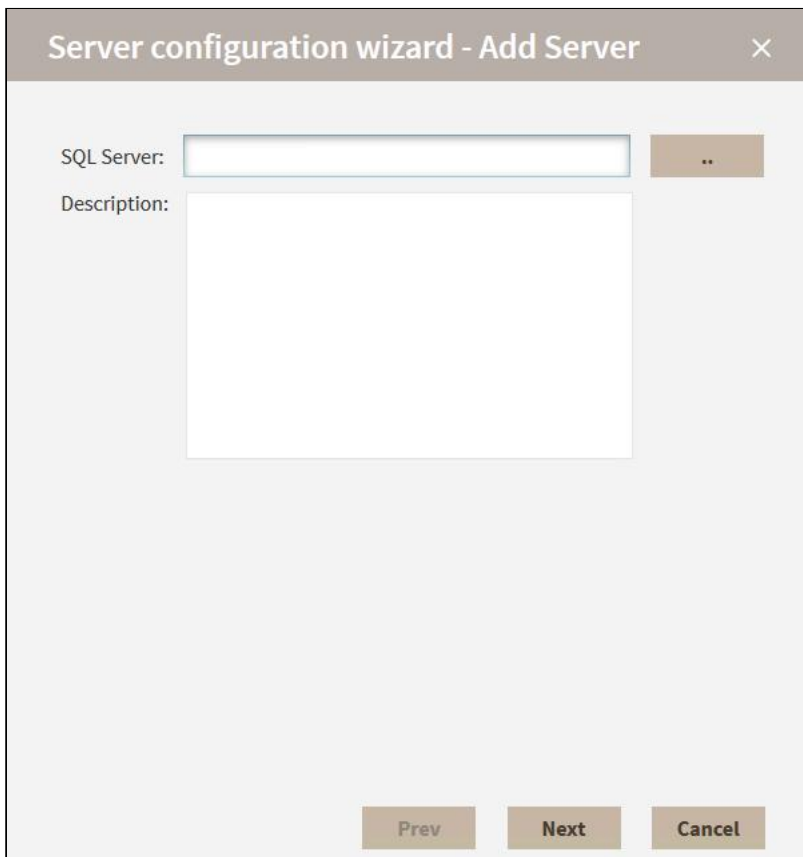
- **Instances** - The **Add** button is located in the action items bar.
- **Administration** - Located in the Instances section.

Below you can see the tabs and sections where you can find **Add** or **Add SQL Server Instance**.



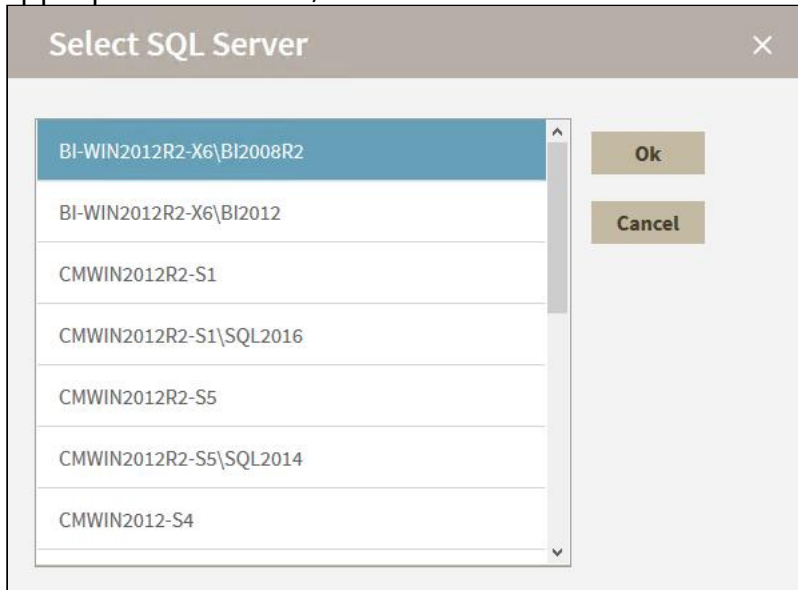


The Add Server window of the Server Configuration wizard allows you to specify the SQL Server instance you want to register with IDERA SQL Compliance Manager. Once you register an instance, you can begin auditing database activity on that server.

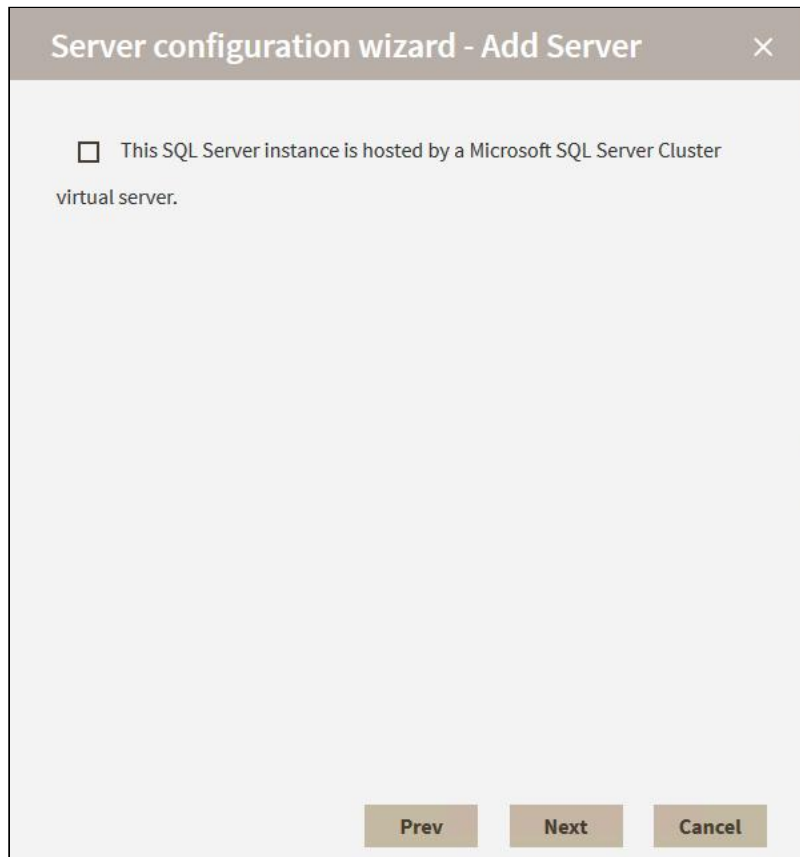


**To add an instance:**

1. In the Add Server page of the Server Configuration wizard, type the name of the target SQL Server instance you want to register in the **SQL Server** field, and then click **Next**. To browse through the instances in your environment, click the available search button. The Select SQL Server dialog appears. Select the appropriate instance, and then click **OK**.



2. In the Cluster Server window, check **This SQL Server instance is hosted by a Microsoft SQL Server Cluster virtual server** if the instance is part of a clustered environment, and then click **Next**. Leave this box clear if the instance is not in a clustered environment.

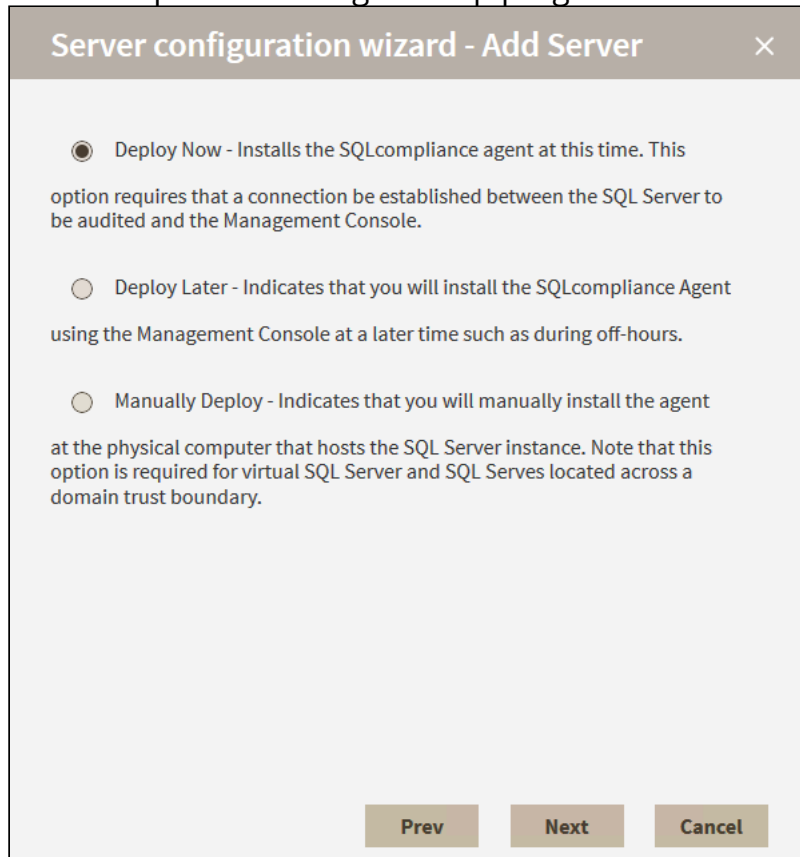


3. In the SQLcompliance Agent Deployment window, select whether you want to deploy the SQLcompliance Agent now or later, or if you want to manually install the Agent.
  - **Deploy Now.** Installs the SQLcompliance Agent when you complete the wizard. You must have a connection between the SQL Server that you want to audit and the Management Console.
  - **Deploy Later.** Does not install the SQLcompliance Agent. Select this option when you plan to install the SQLcompliance Agent later using the Management Console, such as installing during off-hours.
  - **Manually Deploy.** Does not install the SQLcompliance Agent. Select this option when you want to manually install the agent directly on the physical computer hosting the SQL Server instance. Note that this option is required for virtual SQL Server instances and instances located across a domain trust boundary.

***If you are auditing a virtual SQL Server,*** you must manually deploy the SQLcompliance Agent to each cluster node hosting the server. Use the Cluster Configuration Console to deploy and configure the SQLcompliance Agent. For more information about installing and configuring the SQLcompliance Agent for a virtual SQL Server, see [Deploy the SQL Compliance Agent to cluster nodes.](#)



***If you are auditing a SQL Server instance hosted by a computer that belongs to a non-trusted domain or a workgroup, you must manually deploy the SQLcompliance Agent to the host computer using the SQL Compliance Manager setup program.***



4. Click **Next**.
5. In the SQLcompliance Agent Service Account window, type the service account name and password, confirm the password, and then click **Next**. The SQLcompliance Agent Service uses this account to stop and start SQL Server traces, execute stored procedures, manage trace files, and communicate with the Collection Server. Ensure you specify a valid Windows account that has SQL Server System Administrator privileges on the target SQL Server instance as well as read and write access to the specified trace directory.

A screenshot of a software dialog box titled "Server configuration wizard - Add Server". The dialog has a close button (X) in the top right corner. Inside the dialog, there is a section titled "SQLcompliance Agent Service Account" which contains three input fields: "Login account", "Password", and "Confirm password". At the bottom of the dialog, there are three buttons: "Prev", "Next", and "Cancel". The "Next" button is highlighted in blue, while "Prev" and "Cancel" are in a light grey color.

6. In the SQLcompliance Agent Trace Directory window, choose whether you want to use the default path for the agent trace directory, and then click **Next**. **If you specify a different directory path**, ensure the SQLcompliance Agent Service account has read and write privileges on that folder. SQL Compliance Manager does not change the security settings on existing folders.





The screenshot shows a dialog box titled "Server configuration wizard - Add Server" with a close button (X) in the top right corner. The dialog contains two radio button options:

- Use default trace directory - By default, the SQLcompliance Agent will store collected audit data in a protected subdirectory of the agent installation directory.
- Specify alternate trace directory

Below the second option is a text input field, which is currently empty. Below the input field is a note: "Note: This directory will be created by the agent installation." At the bottom of the dialog are three buttons: "Prev" (disabled), "Next" (active/highlighted), and "Cancel" (disabled).

7. In the Database Selection window, select the database(s) you want to be audited, and then click **Next**. Note that you can click **Select All** as a shortcut.



Server configuration wizard - Add Server ×

Audit Databases

**Select All**

**Unselect All**

|                              |
|------------------------------|
| Master                       |
| Model                        |
| Msdb                         |
| Mssqlsystemresource          |
| ReportServer\$BI2008R2       |
| ReportServer\$BI2008R2TempDB |
| Tempdb                       |
|                              |

**Prev** **Next** **Cancel**

8. In the Server Audit Settings window, specify which types of SQL Server events you want to audit on the selected instance, and then click **Next**. Based on your selections, SQL Compliance Manager collects and processes the corresponding SQL Server events. You can choose to audit event categories and user defined events. An event category includes related SQL Server events that occur at the server level. A user defined event is a custom event you create and track using the `sp_trace_generateevent` stored procedure.
- **Default.**
  - **Custom.**
  - **Regulation.**



**Server configuration wizard - Add Server** ×

**Audit Collection Level**

**Default** - Audits events and activities most commonly required by auditors. This collection level meets most auditing needs.

**Custom** - Allows you to specify specific audit settings. This collection level is recommended for advanced users only. Before selecting specific audit settings, review the events gathered by the Custom collection level and review the help to better understand your choices.

**Regulation** - Configures your audit settings to collect the event data required by specific regulatory guidelines, such as PCI or HIPAA.

[Tell me more](#)

Prev
Next
Cancel

9. The Permissions Check window of the Configuration wizard displays the results of a check of the permissions required by IDERA SQL Compliance Manager on the SQL Server instance you want to monitor. If the check fails, review the issue, make the required change to the target SQL Server instance, and then click **Re-check**. Once the check is complete, click **Next** to continue.

Required permissions include:

- Collection Service must have rights to the Repository databases
- Collection Service must have rights to read the registry at HKEY\_LOCAL\_MACHINE\Software\Idera\SQLcompliance
- Collection Service must have permissions to the collection trace directory
- Agent Service must have permissions to the agent trace directory
- Agent Service must have rights to read the registry at HKEY\_LOCAL\_MACHINE\Software\Idera\SQLcompliance
- Agent Service must have rights to the SQL Server instance
- SQL Server must have permissions to the agent trace directory
- SQL Server must have permissions to the collection trace directory



**i** You can make changes to the registry at HKEY\_LOCAL\_MACHINE\Software\Idera\SQLcompliance to update permissions for your services. for more information about the registry key, see [Manage the registry key](#).  
 Re-check allows you to re-check the required permissions after making an update to the target SQL Server instance in case the preliminary check fails.

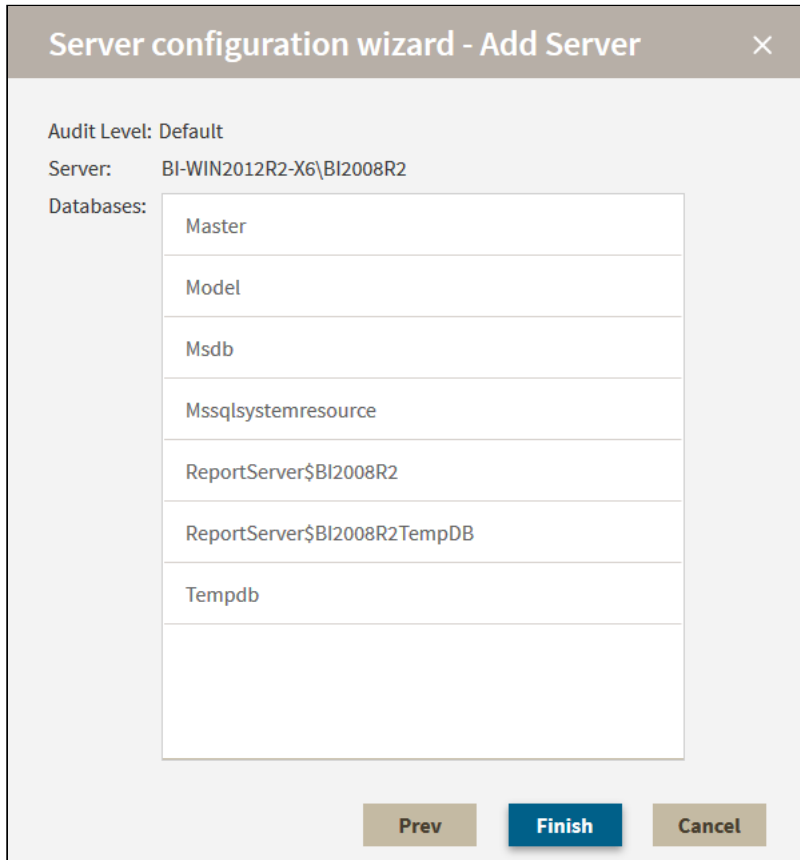
**Server configuration wizard - Add Server** [X]

Operation Complete Total 8, Passed 8, Failed 0 **Re-check**

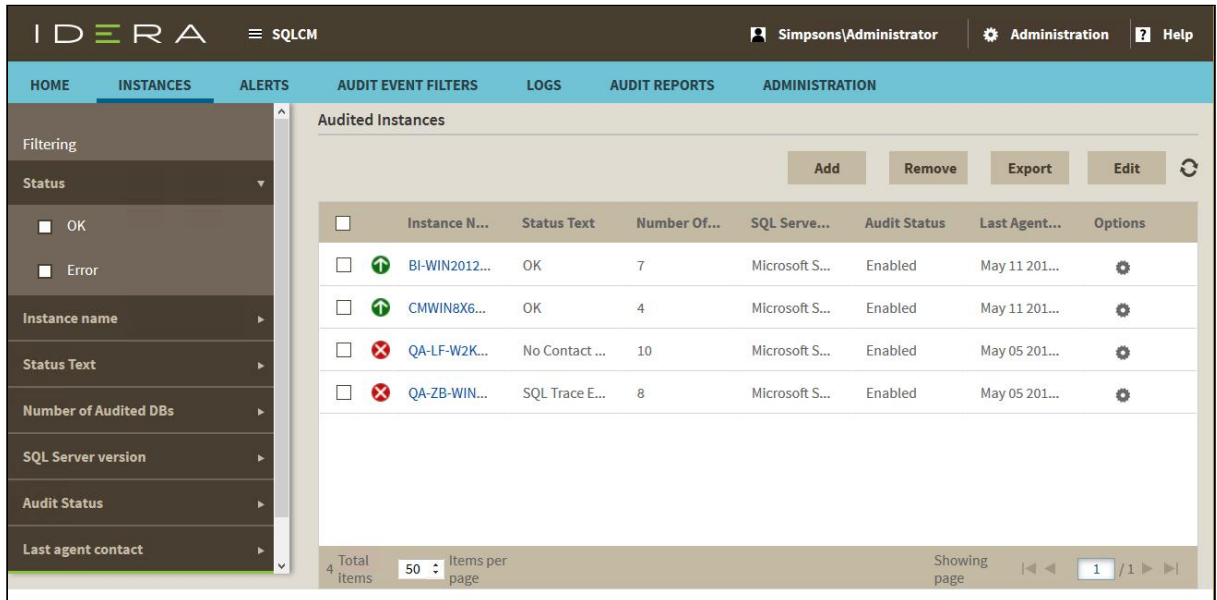
| Check                                          | Status |
|------------------------------------------------|--------|
| ✓ Collection Service Has Rights To Read Reg... | Passed |
| ✓ Collection Service Has Rights To The Repo... | Passed |
| ✓ Collection Service Has Permissions To Col... | Passed |
| ✓ SQL Server Has Permissions To The Collec...  | Passed |
| ✓ SQL Server Has Permissions To The Agent ...  | Passed |
| ✓ Agent Service Has Rights To Read Registry... | Passed |
| ✓ Agent Service Has Permissions To Agent T...  | Passed |
| ✓ Agent Service Has Rights To The Instance.    | Passed |

Prev Next Cancel

- In the Summary window, review the provided summary, and then click **Finish**. When you complete this wizard, SQL Compliance Manager enables auditing on the selected databases. The Collection Server uses the settings you specified to process the raw audit data (SQL Server events) collected from the SQL Server instance.  
**If you want to change a setting now**, click **Prev** to return to the appropriate window. You can also change audit settings later using the Audited Database Properties window.



Once complete, the newly-added SQL Server instance appears in the Audited Instances list.



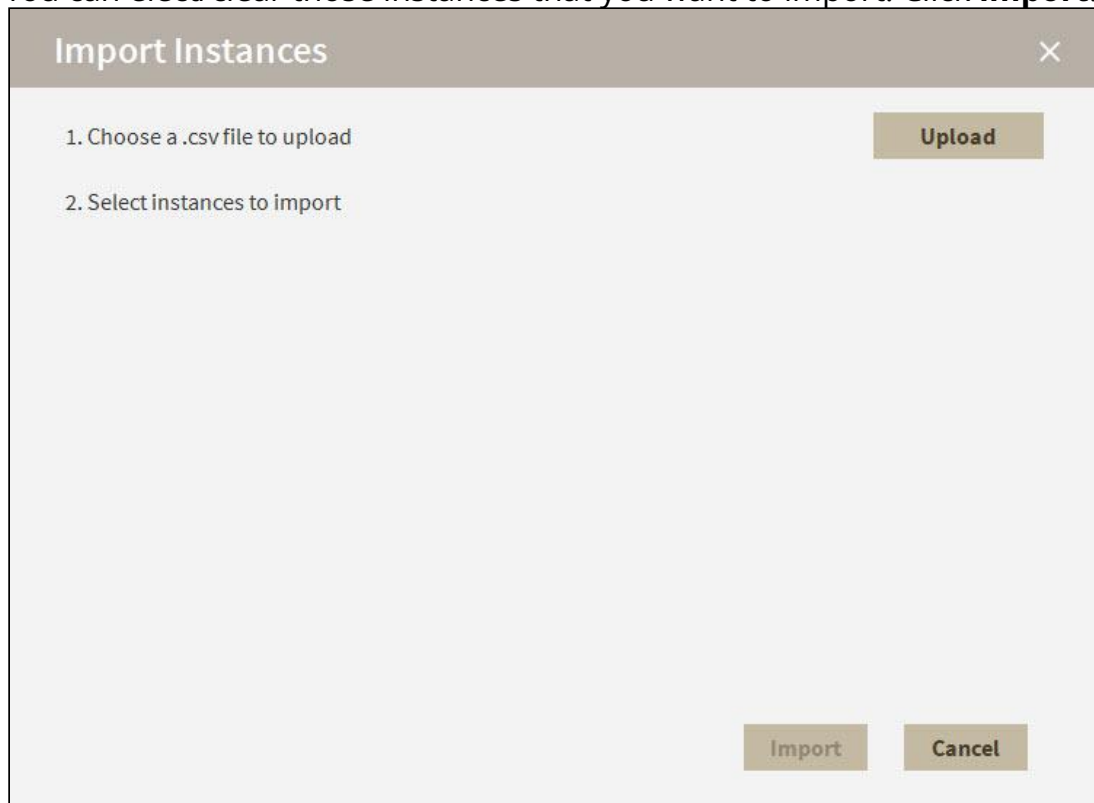


## Import SQL Server instances

IDERA SQL Compliance Manager constantly discovers SQL Server instances so you can select those ones that you want to audit. When you open the Add SQL Sever Instance wizard, you can choose the ones you want to register with SQL Compliance Manager; however, you can also import a list of instances from your computer. Go to the **Administration** tab, on the **Instances** section you can find the option **Import SQL Servers**. Use this option to import a .csv file from your computer.

To import a file:

1. Click **Upload** to choose a .csv file from your computer.
2. SQL Compliance Manager displays the instances from your uploaded .csv file. You can elect/clear those instances that you want to import. Click **Import**.



### **CSV files**

Keep in mind that the .csv files you use to import must have only the names of the instances.



## Manage SQL Server Instances

IDERA SQL Compliance Manager allows you to manage registered and monitored instances from the **Administration** tab.

In order to manage an instance, access, and edit its details:

1. Click on **Manage SQL Server Instances**
2. Select a SQL Server Instance and click on **Edit**
3. SQL Compliance Manager displays the **Edit Instance Properties** window
4. You can edit the following information:

- a. **Instance Details and Ownership**

- i. Specify an **Owner** of the SQL Server Instance
- ii. Select a **Location** of the SQL Server Instance
- iii. Add any **Comments** on the SQL Server Instance

- b. **Data Collection Settings**

- i. Set a **Collection Interval** in minute(s) or day(s)
- ii. Set a number of days to **Keep Data for**

- c. **Credentials**

Specify an account to gather instance information. The **AccountType** can be one of the following:

- i. **Windows User account**
- ii. **SQL Compliance Manager service account**
- iii. **SQL Server Login account**

Set the appropriate **Login** and **Password** for the option you chose and click **Save**.

✔ **Test Credentials** to make sure the information entered is correct and allow SQL Compliance Manager to gather data for instances without any issue.



## Configure Web Console refresh rate

Users who want control of the Web Console refresh rate can manage the configuration using the Web Console Refresh Rate page. By default, the console refreshes every 30 seconds. The available range is between 30 and 3600 seconds.

To change the refresh rate, go to the **Administration** tab, and in the **Configuration** section, click **Web Console Refresh Rate**. Make the necessary change, and then click **Save**.

The screenshot shows a dialog box titled "Configure Web Console Refresh Rate" with a close button (X) in the top right corner. Below the title bar, there is a message: "The minimum refresh rate is 30 seconds and the maximum refresh rate is 3600 seconds." Below this message, there is a label "New Refresh Rate:" followed by a text input field containing the number "30" and the unit "sec". At the bottom right of the dialog, there are two buttons: "Save" and "Close".







## Audit SQL Server Events

Auditing your SQL Server instances and databases is the first step in ensuring your SQL Server environment remains in continuous compliance with federal and corporate security and privacy policies. You can also generate reports on the audit data you collect, allowing you to demonstrate compliance on demand. For more information, see [Report on Audit Data](#).

### Auditing checklist

Use the following checklist to help you prepare your environment to successfully audit your SQL Server instances and databases. ***If you plan to audit virtual SQL Servers running in Microsoft failover clusters***, see [Audit a virtual SQL Server instance](#) for detailed installation and configuration tasks.

1. Gather the information necessary to set up your auditing.

| ✓ | Task                                            | Description                                                                                                                            | For more information ...                 |
|---|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| ✓ | Verify privileges on your Windows login account | Ensure that your Windows login account has sysadmin privileges on all SQL Server instances you want to audit.                          | <a href="#">Permissions requirements</a> |
| ✓ | Review the list of auditable events             | Review how the audit process works and which SQL events you can audit. Note that you can audit events at the server or database level. | <a href="#">How auditing works</a>       |



| ✓ | Task                                                              | Description                                                                                                                                                                                                                                                                                                                                                                                                              | For more information ...                      |
|---|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| ✓ | Identify the items you want to audit on your SQL Server instances | Identify the audit settings you want to apply to individual <b>instances</b> in your SQL Server environment. These settings should specify which server events you want to collect and report. Remember that the more data you collect, the more overhead is required. SQL Compliance Manager allows you to change your auditing settings at any time to help you make sure you collect exactly what an auditor needs.   | <a href="#">Server-level audit settings</a>   |
| ✓ | Identify the items you want to audit on your databases            | Identify the audit settings you want to apply to individual <b>databases</b> in your SQL Server environment. These settings should specify which database events you want to collect and report. Remember that the more data you collect, the more overhead is required. SQL Compliance Manager allows you to change your auditing settings at any time to help you make sure you collect exactly what an auditor needs. | <a href="#">Database-level audit settings</a> |
| ✓ | Identify excluded events                                          | Identify any events you want to exclude from your audit data.                                                                                                                                                                                                                                                                                                                                                            | <a href="#">Event Filters</a>                 |

2. Register your SQL Server instances.

| ✓ | Task                               | Description                                                                   | For more information ...                  |
|---|------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------|
| ✓ | Register your SQL Server instances | Register each SQL Server instance that hosts the databases you want to audit. | <a href="#">Register your SQL Servers</a> |



### 3. Enable auditing.

| ✓ | Task                           | Description                                                                                         | For more information ...                        |
|---|--------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------|
| ✓ | Enable server-level auditing   | <b><i>If you want to audit your SQL Server instances</i></b> , enable auditing at the server level. | <a href="#">Enable auditing on a SQL Server</a> |
| ✓ | Enable database-level auditing | <b><i>If you want to audit your databases</i></b> , enable auditing at the database level.          | <a href="#">Enable auditing on a database</a>   |

### 4. Apply regulation guidelines.

| ✓ | Task                        | Description                                                       | For more information ...                         |
|---|-----------------------------|-------------------------------------------------------------------|--------------------------------------------------|
| ✓ | Apply regulation guidelines | Apply regulation guidelines to the appropriate audited databases. | <a href="#">Comply with specific regulations</a> |

### 5. Configure filters and test your settings.

| ✓ | Task                     | Description                                                                                                          | For more information ...                 |
|---|--------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| ✓ | Configure Event Filters  | Configure the appropriate Event Filters, depending on which event category you want to exclude from your audit data. | <a href="#">Event Filters</a>            |
| ✓ | Test your audit settings | Test your audit settings to ensure you will collect the SQL Server events you need.                                  | <a href="#">Test your audit settings</a> |

### 6. Monitor your settings.



| ✓ | Task                                                                    | Description                                                                                                                                                                                                                 | For more information ...                                                   |
|---|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| ✓ | Monitor event collection and adjust if necessary                        | Monitor how many events are collected on a daily basis. Depending on the growth rate of your audit data, consider creating Event Filters to better manage audit data in large environments.                                 | <a href="#">Event Filters</a>                                              |
| ✓ | Monitor the Repository database growth                                  | Monitor the growth of the SQL Compliance Manager Repository databases. <b><i>If the databases are growing too fast</i></b> , change your auditing settings to limit growth and optimize performance.                        | <a href="#">Reduce audit data to optimize performance</a>                  |
| ✓ | Determine whether you need alerts                                       | Determine whether you need to alert on the events you are collecting. SQL Compliance Manager allows you to build rules that provide real-time alert notifications to help you quickly identify and resolve security issues. | <a href="#">Alert on Audit Data and Status</a>                             |
| ✓ | Determine whether you need to capture before-and-after object values    | <b><i>If you are auditing DML activity</i></b> , determine whether you want to capture the value of the database object before and after a specific transaction.                                                            | <a href="#">Audited Database Properties window - Before-After Data tab</a> |
| ✓ | Determine who needs access rights to administer or report on audit data | Determine which SQL users should have access rights to administer or report on audit data. This security feature is important as both sensitive and audit data should be secure.                                            | <a href="#">Secure Audit Data</a>                                          |

## 7. Implement reports.



| ✓ | Task                         | Description                                                                                              | For more information ...             |
|---|------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------|
| ✓ | Review report implementation | Review how you can implement Reports in your SQL Server environment using SQL Server Reporting Services. | <a href="#">Report on Audit Data</a> |

8. Archive events.

| ✓ | Task                     | Description                                                                                                                                                                | For more information ...                 |
|---|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| ✓ | Archive collected events | Configure how you want SQL Compliance Manager to archive audit data. Note that SQL Compliance Manager creates an archive database for each registered SQL Server instance. | <a href="#">Archive collected events</a> |



## How auditing works

IDERA SQL Compliance Manager audits each registered SQL Server instance and the associated databases according to the audit settings you configure. Your audit settings should directly correlate with the SQL events you need to track in order to meet your compliance objectives. For example, you can register a SQL Server instance for auditing but not audit the hosted databases. Likewise, you can audit a single database on a registered SQL Server instance that hosts multiple databases.

## Complying with regulations

If you are subject to comply with regulations such as PCI DSS or HIPAA, you can use SQL Compliance Manager to configure your audit settings according to the specific guidelines of the regulation. SQL Compliance Manager then collects event data based on these guidelines and can provide a report that details the section of the regulation and the data collected using SQL Compliance Manager. You can apply the regulation guideline audit settings to one or more databases on a registered SQL Server instance. For more information, see [Comply with specific regulations](#).

## Understanding traces

On each registered SQL Server instance, the SQL Compliance Manager Agent starts a SQL Server trace to copy SQL event log entries, called audit events, to trace files. Trace files are temporary files that store audit events until these events can be sent to the Collection Server. Trace files are located in a trace file directory on the audited SQL Server computer. For more information, see [How the SQL Compliance Manager Agent works](#).

SQL Compliance Manager collects all events in the SQL trace that are related to the activity you want to audit. When choosing the activities you want to audit, be aware that activities performed through the SQL Server client tools, such as Management Studio, may log multiple events. For example, when you add a login to a role, the SQL trace records one event for the add login action and another event for changing the default language. In this case, SQL Compliance Manager collects each event as separate audit data according to the SQL trace.

## Using SQL Server Extended Events

IDERA SQL Compliance Manager 5.5.x includes support for event handling with SQL Server Extended Events. This optional feature is available for use in auditing instead of using SQL Trace. Running Extended Events offers a performance improvement over the default SQL Trace audit event gathering system and is available for instances



running SQL Server 2012 and later. For more information about using the Extended Events option, see [Using SQL Server Extended Events](#).

## Using SQL Server Audit Logs

IDERA SQL Compliance Manager 5.5.x includes support for event handling with SQL Server Audit Logs. This optional feature is available for use in auditing as an alternative to using SQL Server Extended Events or SQL Trace. Auditing via Audit Logs offers the ability to track your alerts for Agents running SQL Server 2017 and later. For more information about using the Audit Logs option, see [Using SQL Server Audit Logs](#).

## Using the Collection Server

The [Collection Server](#) stores the compressed trace files in the CollectionServerTraceFiles folder until the files can be processed. This folder is located under the install directory (C:\Program Files\Idera\SQLcompliance) on the computer that hosts the Collection Server. The CollectionServerTraceFiles folder is also called a trace file directory, and is secured using ACL settings. You can specify a different location for the trace directory.

The Collection Server processes the raw audit events according to your settings and then sends the results to the appropriate event database in the Repository. The Collection Server creates an event database for each registered SQL Server instance. You can specify which audit events you want to track. You can also configure how the Collection Server and SQL Compliance Manager Agent manage the trace files.

## Filtering and grooming data

For optimal data management, SQL Compliance Manager supports archiving and grooming of event data. Depending on the size of your environment, the amount of event data you audit, and your reporting cycles, you may want to archive and groom event data on a routine basis. For more information, see [Manage Audit Data](#).

## Understanding trusted and privileged users

Trusted users are SQL Server logins and members of SQL Server roles that you trust to read, update, or manage a particular audited database. As these users are trusted, the events generated by accounts are removed by the SQL Compliance Manager Agent from the audit trail before sending the trace file to the Collection Server for processing.

By designating trusted users, you can more efficiently audit databases used by third-party applications, such as SAP, that are self-auditing. Self-auditing applications are able to audit activity and transactions initiated by their service accounts. Because





service accounts can generate a significant number of login and database change events, omitting these expected events from your audit data trail lets you more easily identify unexpected activity.


When you designate trusted users, consider limiting your list to a few specific logins. This approach optimizes event processing performance and ensures you filter the intended accounts.

In comparison, privileged users are SQL Server logins and members of SQL Server roles that have certain privileges or authorization that you want to audit. You can audit individual SQL Server logins with privileged access as well as logins that belong to specific server roles. A sudden spike in privileged user activity could indicate a security breach. For more information about selecting privileged users for audit, see the [Configuration wizard - Privileged Users window](#) and the [Registered SQL Server Properties window - Privileged User Auditing tab](#).

If you are auditing privileged user activity and the trusted user is also a privileged user, SQL Compliance Manager will continue to audit this user because of its elevated privileges. For example, a service account that is a member of the sysadmin fixed SQL Server role will continue to be audited even though the account is designated as trusted. Keep in mind that trusted users are filtered at the database level whereas privileged users are audited at the server level.

## Understanding before and after data

Collect before and after data when it is critical to capture the exact data change in a table column. When this feature is enabled, you can evaluate the before value and after value for each change in the Audit Events view. Enabling this feature can impact your Collection Server and Management Console performance.

 It is important to note that the Before-After Data capture feature modifies the application schema by creating triggers on any table for which such data collection is enabled.



## Audit collection levels

When you add a database to audit, you can select the Default, Custom, or Regulation audit collection level. Use the audit collection level to control which SQL Server events you audit at the database level.

### Default collection level

Allows you to collect the SQL Server events most commonly requested by auditors. This collection level audits the following activities and SQL events:

- Security changes
- Database Definition (DDL)
- Administrative activities
- Successful operations only (operations that pass the SQL access check)

### Custom collection level

Allows you to select the specific activities and SQL events you want to audit on these databases. The Custom collection level is recommended for advanced users, or for cases in which only one type of data is required for compliance. Before using the Custom collection level, review the event data gathered by the Default collection level.

### Regulation

Configures your audit settings to collect the event data required by specific [regulatory guidelines](#), such as PCI DSS or HIPAA. You can review a list of the collected events on the Regulation Guidelines window of the SQL Compliance Manager Configuration wizard. On the Summary window at the end of the wizard, click **View the Regulation Guideline Details** to review a summary of all the regulation guidelines applied to the selected database.



## SQL Server events you can audit

IDERA SQL Compliance Manager allows you to audit specific types of SQL Server event data, and distinguish between successful operations and failed operations. Whether an operation succeeds or fails is dependent upon whether the login permissions are correct.

### Data types and corresponding events

SQL Compliance Manager captures the following types of event data.

| Data Type      | Events Audited                                                                                                                                                                         | Description                                                                                                                     |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Logins         | <ul style="list-style-type: none"> <li>• Successful logins</li> <li>• Failed logins</li> <li>• Impersonation</li> </ul>                                                                | Audits login activity if an access check is performed and the event status is recorded (success or failure) at the server level |
| Administration | <ul style="list-style-type: none"> <li>• Backups</li> <li>• Restores</li> <li>• DBCC</li> <li>• Change server settings</li> <li>• Alter trace</li> <li>• Database operation</li> </ul> | Audits common administrative tasks on the SQL Server instance                                                                   |



| Data Type                 | Events Audited                                                                                                                                                                                              | Description                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Security                  | <ul style="list-style-type: none"> <li>• Add login</li> <li>• Add role</li> <li>• Grant, Revoke, Deny</li> <li>• Change role password</li> <li>• Change login properties</li> <li>• Change owner</li> </ul> | Audits all SQL security model activity                                                                                                                                                                                                                                                                                                                                        |
| Database Definition (DDL) | <ul style="list-style-type: none"> <li>• Derived permission</li> <li>• SQL statement permission</li> <li>• Database access</li> </ul>                                                                       | Audits create, drop, and alter operations performed on SQL Server objects, database objects, and schema object                                                                                                                                                                                                                                                                |
| DML                       | Object permissions                                                                                                                                                                                          | Audits common database operations, such as: <ul style="list-style-type: none"> <li>• UPDATE</li> <li>• INSERT</li> <li>• DELETE</li> </ul>                                                                                                                                                                                                                                    |
| Select                    | SELECT                                                                                                                                                                                                      | Audits all SELECT statements executed on database table                                                                                                                                                                                                                                                                                                                       |
| Privileged User           | All                                                                                                                                                                                                         | Audits all privileged user activity at any level<br><b><i>If the privileged user is also a trusted user</i></b> , SQL Compliance Manager continues to audit this user because of its elevated privileges. For example, a service account that is a member of the sysadmin fixed SQL Server role will continue to be audited even though the account is designated as trusted. |



| Data Type    | Events Audited | Description                                                                                       |
|--------------|----------------|---------------------------------------------------------------------------------------------------|
| User defined | All            | Audits all custom events generated using the <code>sp_trace_generateevent</code> stored procedure |

## Data levels

You can capture different event data at one or more of the following levels:

- SQL Server instance
- Database
- Database object, such as a table

This flexibility allows you to achieve precise and granular compliance. For example, you can configure different audit settings for multiple databases hosted on a single registered SQL Server instance.



## Database-level audit settings

You can specify which SQL events you want to audit at the database level. IDERA SQL Compliance Manager applies these settings to the audited database on the registered SQL Server instance.

You can configure database audit settings when you add a new database or later as your auditing needs change. For more information about individual SQL events, see Microsoft SQL Server Books Online.

SQL Compliance Manager audits the following SQL events at the database level.

| Event class                    | SQL Server version        | Description                                                                                                                                                          |
|--------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Add DB User              | SQL Server 2000 only      | Records when a database user is added or dropped from the audited database. In SQL Server 2005 and later, this event class is Audit Database Principal Management    |
| Audit Add Member to DB Role    | SQL Server 2000 and later | Records when users are added to or removed from a database role                                                                                                      |
| Audit Add Role                 | SQL Server 2000 only      | Records when a database role is added to or removed from the audited database. In SQL Server 2005 and later, this event class is Audit Database Principal Management |
| Audit App Role Change Password | SQL Server 2000 and later | Records all application password changes                                                                                                                             |
| Audit Backup/Restore           | SQL Server 2000 and later | Records BACKUP and RESTORE operations, including backups and restores performed through SQLsafe                                                                      |
| Audit DBCC                     | SQL Server 2000 and later | Records all DBCC commands executed on the audited database                                                                                                           |
| Audit Database Object Access   | SQL Server 2005 and later | Records when an operation, login, or application accesses a database object                                                                                          |
| Audit Database Object GDR      | SQL Server 2005 and later | Records all GRANT, REVOKE, or DENY actions on permissions for executing T-SQL statements on the audited database object                                              |



| Event class                          | SQL Server version        | Description                                                                                                                                                                                                                          |
|--------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Database Object Management     | SQL Server 2005 and later | Records all DROP, ALTER, and CREATE operations on database objects<br>In SQL Server 2000, this event class is Audit Object Derived Permission                                                                                        |
| Audit Database Object Take Ownership | SQL Server 2005 and later | Records when ownership of an audited database object changes                                                                                                                                                                         |
| Audit Database Operation             | SQL Server 2005 and later | Records all operations executed on an audited database                                                                                                                                                                               |
| Audit Database Principal Management  | SQL Server 2005 and later | Records all DROP, ALTER, and CREATE operations on database principals                                                                                                                                                                |
| Audit Database Scope GDR             | SQL Server 2005 and later | Records all GRANT, REVOKE, or DENY actions on permissions for executing T-SQL statements on the audited database<br>In SQL Server 2000, this event class is Audit Statement GDR                                                      |
| Audit Object Derived Permission      | SQL Server 2000 only      | Records ALTER, CREATE, and DROP commands executed on a database object, such as CREATE TABLE or ALTER TABLE<br>In SQL Server 2005 and later, this event class is Audit Database Object Management and Audit Schema Object Management |
| Audit Object GDR                     | SQL Server 2000 only      | Records all GRANT, REVOKE, or DENY actions on user permissions for a database object<br>In SQL Server 2005 and later, this event class is Audit Schema Object GDR                                                                    |



| Event class                        | SQL Server version        | Description                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Object Permission            | SQL Server 2000 only      | Records whether a user is authorized to execute the following commands on a database object: <ul style="list-style-type: none"> <li>• SELECT ALL</li> <li>• UPDATE ALL</li> <li>• REFERENCE ALL</li> <li>• INSERT</li> <li>• DELETE</li> <li>• EXECUTE (stored procedures only)</li> </ul> In SQL Server 2005 and later, this event class is Audit Schema Object Access |
| Audit Schema Object Access         | SQL Server 2005 and later | Records whether a user is authorized to execute the following commands on a schema object: <ul style="list-style-type: none"> <li>• SELECT ALL</li> <li>• UPDATE ALL</li> <li>• REFERENCE ALL</li> <li>• INSERT</li> <li>• DELETE</li> <li>• EXECUTE (stored procedures only)</li> </ul> In SQL Server 2000, this event class is Audit Object Permission                |
| Audit Schema Object GDR            | SQL Server 2005 and later | Records all GRANT, REVOKE, or DENY actions on user permissions for a schema object<br>In SQL Server 2000, this event class is Audit Object GDR                                                                                                                                                                                                                          |
| Audit Schema Object Management     | SQL Server 2005 and later | Records ALTER, CREATE, and DROP commands executed on a server object<br>In SQL Server 2000, this event class is Audit Object Derived Permission and Audit Statement Permission                                                                                                                                                                                          |
| Audit Schema Object Take Ownership | SQL Server 2005 and later | Records when the ALTER AUTHORIZATION statement is used to change ownership of a schema object                                                                                                                                                                                                                                                                           |





| Event class                | SQL Server version        | Description                                                                                                                                                                                                             |
|----------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Statement GDR        | SQL Server 2000 only      | Records all GRANT, REVOKE, or DENY actions on permissions for executing T-SQL statements on the audited database<br>In SQL Server 2005 and later, this event class is Audit Database Scope GDR                          |
| Audit Statement Permission | SQL Server 2000 only      | Records when a user is authorized to execute a T-SQL statement on the audited database<br>In SQL Server 2005 and later, this event class is Audit Schema Object Management                                              |
| SQL Transaction            | SQL Server 2000 and later | Records the status of explicit and implicit DML transactions executed in T-SQL scripts, including: <ul style="list-style-type: none"> <li>• Begin</li> <li>• Commit</li> <li>• Rollback</li> <li>• Savepoint</li> </ul> |



## Server-level audit settings

You can specify which SQL events you want to audit at the server level. IDERA SQL Compliance Manager applies these settings to the registered SQL Server instance. These settings are not applied to the hosted databases.

You can configure server audit settings when you register a new SQL Server instance or later as your auditing needs change. For more information about individual SQL events, see Microsoft SQL Server Books Online.

| Event class                    | SQL Server version        | Description                                                                                                                                                                         |
|--------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Add Login                | SQL Server 2000 only      | Records when a SQL Server login is added to or dropped from a registered SQL Server instance<br>In SQL Server 2005 and later, this event class is Audit Server Principal Management |
| Audit Add Login To Server Role | SQL Server 2000 and later | Records when a login is added to or removed from a server role                                                                                                                      |
| Audit Change Database Owner    | SQL Server 2005 and later | Records when the ALTER AUTHORIZATION statement is used to specify a different database owner                                                                                        |
| Audit Database Management      | SQL Server 2005           | Records all DROP, ALTER, and CREATE operations on a database                                                                                                                        |
| Audit Login                    | SQL Server 2000 and later | Records all successful logins on the registered SQL Server instance                                                                                                                 |
| Audit Login Change Password    | SQL Server 2000 and later | Records all password changes for logins on the registered SQL Server instance                                                                                                       |
| Audit Login Change Properties  | SQL Server 2000 and later | Records changes in default database and language properties for all logins on the registered SQL Server instance                                                                    |
| Audit Login Failed             | SQL Server 2000 and later | Records all logins that failed an access check on the registered SQL Server instance                                                                                                |



| <b>Event class</b>                   | <b>SQL Server version</b> | <b>Description</b>                                                                                                                                                                    |
|--------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Login GDR                      | SQL Server 2000 only      | Records all GRANT, REVOKE, or DENY actions on Windows 2000 user account login rights<br>In SQL Server 2005 and later, this event class is Audit Server Principal Management           |
| Audit Object Derived Permission      | SQL Server 2000 only      | Records CREATE and DROP commands executed on a server object, such as CREATE DATABASE or DROP DATABASE<br>In SQL Server 2005 and later, this event class is Audit Database Management |
| Audit Server Alter Trace             | SQL Server 2005 and later | Records when an ALTER TRACE permission check is executed for a T-SQL statement that creates, configures, or filters a SQL trace                                                       |
| Audit Server Object GDR              | SQL Server 2005 and later | Records all GRANT, REVOKE, or DENY actions on permissions for executing T-SQL statements on the audited schema object, such as a table or function                                    |
| Audit Server Object Management       | SQL Server 2005 and later | Records all DROP, ALTER, and CREATE operations on server objects                                                                                                                      |
| Audit Server Object Take Ownership   | SQL Server 2005 and later | Records when ownership of an audited server object changes                                                                                                                            |
| Audit Server Operation               | SQL Server 2005 and later | Records all security operations executed on the audited server                                                                                                                        |
| Audit Server Principal Impersonation | SQL Server 2005 and later | Records when impersonation is used to access or act on a server object                                                                                                                |
| Audit Server Principal Management    | SQL Server 2005 and later | Records all DROP, ALTER, and CREATE operations on server principals                                                                                                                   |



| Event class                | SQL Server version        | Description                                                                                                                                                                         |
|----------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Server Scope GDR     | SQL Server 2005 and later | Records all GRANT, REVOKE, or DENY actions on permissions for executing T-SQL statements that change the server scope, such as creating a login                                     |
| Audit Statement Permission | SQL Server 2000 only      | Records when a user is authorized to execute a T-SQL statement on the registered SQL Server instance<br>In SQL Server 2005 and later, this event class is Audit Database Management |



## User-defined events

You can audit, alert on, and filter user-defined events. User-defined events are SQL events generated by the `sp_trace_generateevent` stored procedure. Use this stored procedure to create custom SQL events that track data that may not be available in a standard SQL trace. For more information, see Microsoft Books Online.



## Using SQL Server Extended Events

IDERA SQL Compliance Manager 5.4 and later allow you to take advantage of the SQL Server Extended Events (XEEvents) feature to track and archive specific events occurring in your monitored environment. SQL Server Extended Events is an event handling system that offers lower overhead and delivers performance gains over the default SQL trace method. In SQL Compliance Manager 5.4, only SELECT and DML events for SQL Server 2012 and later versions are supported by this feature. All functionality that works on top of these events, such as DML/Select filtering, Before-After data, sensitive column auditing, and more, work with this new method of capturing event data.

When Extended Events mode is enabled, events generate XEL files instead of trace files (.xel rather than .trc) but the files still are located in the Agent trace directory.

There are three ways to enable Extended Event capture:

- Through stored procedures.
- Through the [Manage Instance Properties - Audited Activities tab](#) in the Web Console.
- Through the [Registered SQL Server Properties window - Audited Activities tab](#) in the Windows Management Console.

### **Extended Events captures extra Execute events**

Due to differences in how Microsoft has implemented Extended Events compared to other auditing methods, when auditing via Extended Events the user will see extra Execute events as compared to the same data captured by other auditing methods.

### **Extended Events does not Support Auditing a specific table/object**

Due to technical limitations, Extended Events does not support auditing for a specific table/object. To audit a specific table/object please audit using SQL Trace or SQL Server Audit Logs

## Prerequisites and conditions for enabling auditing using Extended Events

IDERA SQL Compliance Manager supports Extended Events based auditing for SQL Server 2012 or above. The following prerequisites and conditions are required to switch auditing based on Extended Events.

- During installation
  - SQL Compliance Manager checks to make sure that Microsoft.SqlServer.XEvent.Linq.dll is available. If not, installation aborts.
- While enabling Extended Events from the web console
  - SQL Compliance Manager checks for the following conditions, which all must be met to successfully enable Extended Events:
    - Agent is reachable



- SQL Server 2012 or above
- SQL Compliance Manager Agent 5.4 or above
- Microsoft.SqlServer.XEvent.Linq.dll is available (along with Microsoft.SqlServer.XE.Core.dll if Linq.dll is obtained from SQL Server SMO 2014 or 2016)

Note that these conditions must be checked and confirmed manually if Extended Events is being enabled using a SQL stored procedure.

## Enable Extended Event mode using stored procedures

To enable Extended Event mode using stored procedures, go to the location where the IDERA SQL Compliance Manager Console application is installed, and then execute the stored procedure

[dbo].[sp\_enable\_ExtendedEvents]. For example:

```
EXEC [dbo].[sp_enable_ExtendedEvents] <SERVER_NAME>, <YES/NO>
```

## Enable Extended Event mode using the Web Console

Users wanting to take advantage of SQL Server Extended Events auditing capabilities can do so by completing the following steps:

1. In your IDERA SQL Compliance Manager Dashboard menu, Select the **Instances** tab.
2. Click the gear icon in the **Options** column for the instance you want to audit and select **Properties (instance)**.
3. Select the **Audited Activities** tab.
4. Under the **Capture DML and Select activities** options, select the **Via Extended Events** option to enable Extended Events auditing.
5. Click **OK**.

For more information about enabling this feature using the Web Console, see [Manage Instance Properties - Audited Activities tab](#).

## Enable Extended Event mode using the Windows Management Console

Users wanting to take advantage of SQL Server Extended Events auditing capabilities can do so by completing the following steps:

1. Right-click the instance you want to audit and select **Properties**.
2. In the **Registered SQL Server Properties** window, select the **Audited Activities** tab.
3. Under the **Capture DML and Select activities** options, select the **Via Extended Events** option.
4. Click **OK**.




For more information about enabling this feature using the Windows Management Console, see [Registered SQL Server Properties window - Audited Activities tab](#).





## Using SQL Server Audit Logs

IDERA SQL Compliance Manager 5.5 and later allows you to take advantage of the SQL Server Audit Logs feature to track specific events occurring in your monitored environment. SQL Server Audit Logs is an event handling system that helps you reduce the size of data gathered and deliver performance gains over the default SQL trace method. In SQL Compliance Manager 5.5, only SELECT and DML events for SQL Server 2017 and later versions are supported by this feature.

-  Capturing DML and SELECT activities via Audit Logs does not include the following features:
- Before-After Data
  - Sensitive Column
  - Row Count

There are two ways to enable Audit Logs capture:

- Through the [Manage Instance Properties - Audited Activities tab](#) in the Web Console.
- Through the [Registered SQL Server Properties window - Audited Activities tab](#) in the Windows Management Console.

## Prerequisites and conditions for enabling auditing using Audit Logs

IDERA SQL Compliance Manager supports Audit Logs based auditing for SQL Server 2017 and above. The following prerequisites and conditions are required to switch auditing based on Audit Logs.

- While enabling Audit Logs from Web or Windows Management console.
  - SQL Compliance Manager checks for the following conditions, which all must be met to successfully enable Audit Logs:
    - The Agent is reachable.
    - SQL Server 2017 or above.
    - SQL Compliance Agent 5.5 or above.

## Enable Audit Logs mode using the Web Console

Users wanting to take advantage of SQL Server Audit Logs auditing capabilities can do so by completing the following steps:

1. In your IDERA SQL Compliance Manager Dashboard menu, Select the **Instances** tab.
2. Click the gear icon in the **Options** column for the instance you want to audit and select **Properties (instance)**.
3. Select the **Audited Activities** tab.



4. Under the **Capture DML and Select activities** options, select the **Via SQL Server Audit Specifications** option.
5. Click **OK**.

For more information about enabling this feature using the Web Console, see [Manage Instance Properties - Audited Activities tab](#).

## Enable Audit Logs mode using the Windows Management Console

Users wanting to take advantage of SQL Server Audit Logs auditing capabilities can do so by completing the following steps:

1. Right-click the instance you want to audit and select **Properties**.
2. In the **Registered SQL Server Properties** window, select the **Audited Activities** tab.
3. Under the **Capture DML and Select activities** options, select the **Via SQL Server Audit Specifications** option.
4. Click **OK**.

For more information about enabling this feature using the Windows Management Console, see [Registered SQL Server Properties window - Audited Activities tab](#).



## Comply with specific regulations

IDERA SQL Compliance Manager audits and identifies events that affect SQL Server objects and data. By selecting a specific regulation guideline set, SQL Compliance Manager applies audit settings to your selected databases according to the corresponding data security rules. This audited data is collected and securely stored for forensic analysis and reporting. SQL Compliance Manager also provides tamper-proof data security features as well as methods for watching events without exposing account information.

You can apply a regulation guideline when you [register a new SQL Server instance](#) or [audit a database](#) through the Console or CLI. The following tables list each section of a regulation and the associated SQL Server events that SQL Compliance Manager audits, as well as specific audit features.

⚠ IDERA, Inc. customers have the sole responsibility to ensure their compliance with the laws and standards affecting their business. IDERA, Inc. does not represent that its products or services ensure that customer is in compliance with any law. It is the responsibility of the customer to obtain legal, accounting, or audit counsel as to the necessary business practices and actions to comply with such laws.

⚠ All Regulation Guidelines are available at both, the server level and the database level, except for the CIS Regulation Guideline. The CIS Regulation Guideline can be applied only at the server level.



## DISA/STIG Compliance

| Section                                                                                                 | Summary                                                                                                                                                                                 | Associated Audit Events and Features                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>DISA 2012 Database</b><br/>SQL2-00-011200</p> <p><b>DISA 2014 Database</b><br/>SQL4-00-011200</p> | <p>SQL Server must generate Trace or audit records for organization-defined auditable events. Audit records can be generated from various components within the information system.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security changes</li> <li>• DML</li> <li>• SELECT statements</li> <li>• Privileged users</li> <li>• Sensitive Columns</li> <li>• Before-After Data auditing</li> </ul> |



| Section                                                                                                                                                                                                                                                                                         | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Associated Audit Events and Features                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>DISA 2012 Instance</b></p> <p>SQL2-00-012400,<br/>SQL2-00-009700,<br/>SQL2-00-011800,<br/>SQL2-00-011900,<br/>SQL2-00-011400,<br/>SQL2-00-012000,<br/>SQL2-00-012100,<br/>SQL2-00-012200,<br/>SQL2-00-012300,<br/>SQL2-00-014700,<br/>SQL2-00-002300</p> <p><b>DISA 2014 Instance</b></p> | <p>SQL Server must include organization-defined additional, more detailed information in the audit records for audit events identified by type, location or subject.</p> <p>Audit record content which may be necessary to satisfy the requirement of this control includes: time stamps, source and destination addresses, user/process identifiers, event descriptions, success/fail indications, file names involved, and access control or flow control rules revoked.</p> <p>All use of privileged accounts must be audited.</p> <p>SQL Server must produce audit records containing sufficient information to establish what type of events occurred.</p> <p>SQL Server must produce audit records containing sufficient information to establish when (date and time) the events occurred.</p> <p>SQL Server must generate audit records for the DoD-selected list of auditable events.</p> <p>SQL Server must produce audit records containing sufficient information to establish where the events occurred.</p> <p>SQL Server must produce audit records containing sufficient information to establish the sources (origins) of events.</p> <p>SQL Server must produce audit records containing sufficient information to establish the outcome (success or failure) of events.</p> <p>SQL Server must produce audit records containing sufficient information to establish the identity of any user/subject associated with the event.</p> <p>SQL Server must support the employment of automated mechanisms supporting the auditing of the enforcement actions.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Successful and Failed Logins</li> <li>• Security changes</li> <li>• Privileged Users activity</li> <li>• User defined events</li> <li>• Privileged Users</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• None</li> </ul> |



| Section                                                                                                                                                                                                                                                                                                                                                                     | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Associated Audit Events and Features |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| SQL4-00-0119<br>00,<br>SQL4-00-0120<br>00,<br>SQL4-00-0121<br>00,<br>SQL4-00-0122<br>00,<br>SQL4-00-0123<br>00,<br>SQL4-00-0376<br>00,<br>SQL4-00-0379<br>00,<br>SQL4-00-0375<br>00,<br>SQL4-00-0376<br>00,<br>SQL4-00-0379<br>00,<br>SQL4-00-0380<br>00,<br>SQL4-00-0112<br>00,<br>SQL4-00-0362<br>00,<br>SQL4-00-0363<br>00,<br>SQL4-00-0381<br>00,<br>SQL4-00-0340<br>00 | <p>SQL Server must enforce access control policies to restrict Alter server state permissions to only authorized roles.</p> <p>SQL Server must generate Trace or audit records when unsuccessful logins or connection attempts occur.</p> <p>SQL Server must generate Trace or audit records when logoffs or disconnections occur.</p> <p>SQL Server must generate Trace or audit records when successful logons or connections occur.</p> <p>SQL Server must generate Trace or audit records when concurrent logins/connections by the same user from different workstations occur.</p> <p>SQL Server must produce Trace or audit records containing sufficient information to establish when the events occurred.</p> <p>SQL Server must produce Trace or audit records of its enforcement of access restrictions associated with changes to the configuration of the DBMS or database.</p> |                                      |



| Section            | Summary                                                                                                                      | Associated Audit Events and Features                                                                                                                              |
|--------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DISA 2014 0</b> | If SQL Server authentication, using passwords, is employed, SQL Server must enforce the DoD standards for password lifetime. | Server Events: <ul style="list-style-type: none"> <li>• Security changes</li> </ul> Database Events: <ul style="list-style-type: none"> <li>• Security</li> </ul> |



## NERC-CIP Compliance


| Section       | Summary                                                                                                                                                                                                                                                                                                                                                                                                                          | Associated Audit events and Features                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CIP-007-6 4.1 | <p>Log events at the BES Cyber System level (per BES Cyber System capability) or at the Cyber Asset level (per Cyber Asset capability) for identification of, and after-the-fact investigations of, Cyber Security Incidents that includes, as a minimum, each of the following types of events: detected successful login attempts, detected failed access attempts and failed login attempts; and detected malicious code.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Successful and Failed Logins</li> <li>• Security changes</li> <li>• User defined events</li> <li>• Privileged Users</li> <li>• Privileged Users events</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security changes</li> <li>• DDL</li> <li>• DML</li> <li>• Sensitive Columns</li> <li>• Before-After Data change</li> <li>• Privileged Users</li> </ul> |





## CIS Compliance

| Section | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Associated Audit Events and Features                                                                                                                                      |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.4     | Ensure 'SQL Server Audit' is set to capture both 'failed' and 'successful logins'. SQL Server Audit is capable of capturing both failed and successful logins and writing them to one of three places: the application event log, the security event log, or the file system. We will use it to capture any login attempt to SQL Server, as well as any attempts to change audit policy. This will also serve as a second source to record failed login attempts. | Server Events: <ul style="list-style-type: none"> <li>• Successful and Failed Logins</li> </ul> Database Events: <ul style="list-style-type: none"> <li>• None</li> </ul> |

 When selecting CIS regulation, default database level settings automatically apply. Logins and Failed Logins get captured to comply with this regulation and continue auditing the server.

## FERPA Compliance

| Section | Summary                                                                                                                                                                                                                                         | Associated Audit Events and Features                                                                                                                                                                              |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 99.2    | <p><b>What is the purpose of these regulations?</b></p> <p>The purpose of this part is to set out requirements for the protection of privacy of parents and students under section 444 of the General Education Provisions Act, as amended.</p> | Server Events: <ul style="list-style-type: none"> <li>• Successful and Failed Logins</li> <li>• Security changes</li> </ul> Database Events: <ul style="list-style-type: none"> <li>• Security changes</li> </ul> |



| Section     | Summary                                                                                                                                                                                                                                                                                                                                                                                      | Associated Audit Events and Features                                                                                                                                                                                                                                                                                           |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 99.31(a)(1) | <p><b>School officials</b></p> <p>Institutions that allow "school officials, including teachers, within the agency or institution" to have access to students' education records, without consent, must first make a determination that the official has "legitimate educational interests" in the information. The list of officials must be included in the annual FERPA notification.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Successful and Failed Logins</li> <li>• Security changes</li> <li>• Privileged Users activity</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• SELECT statements</li> <li>• Security changes</li> <li>• Sensitive Columns</li> </ul> |



| Section         | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Associated Audit Events and Features                                                                                                                                                                                                                                                                                                                                   |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 99.31(a)(1)(ii) | <p><b>Controlling access to education records by school</b></p> <p>Institutions are now required to use "reasonable methods" to ensure that instructors and other school officials (including outside service providers) obtain access to only those education records (paper or electronic) in which they have legitimate educational interests. Institutions are encouraged to restrict or track access to education records to ensure that they remain in compliance with this requirement. The higher the risk, the more stringent the protections should be (e.g., SSNs should be closely guarded).</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Successful and Failed Logins</li> <li>• Security changes</li> <li>• Privileged Users activity</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• DDL</li> <li>• DML</li> <li>• SELECT statements</li> <li>• Sensitive Columns</li> <li>• Before-After Data auditing</li> </ul> |



| Section     | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Associated Audit Events and Features                                                                                                                                                                                                                                                                                                                                                |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 99.31(a)(2) | <p><b>Student's new school</b></p> <p>An institution retains the authority to disclose and transfer education records to a student's new school even after the student has enrolled and such authority continues into the future so long as the disclosure is for purposes related to the student's enrollment/transfer. After admission, the American Disabilities Act (ADA) does not prohibit institutions from obtaining information concerning a current student with disabilities from any school previously attended by the student in connection with an emergency and if necessary to protect the health or safety of a student or other persons under FERPA. A student's previous school may supplement, update, or correct any records it sent during the student's application or transfer period and may identify any falsified or fraudulent records and/or explain the meaning of any records disclosed previously to the new school.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Successful and Failed Logins</li> <li>• Security changes</li> <li>• Privileged Users activity</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security changes</li> <li>• DML</li> <li>• SELECT statements</li> <li>• Sensitive Columns</li> <li>• Before-After Data auditing</li> </ul> |



| Section     | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Associated Audit Events and Features                                                                                                                                                                                                                                                                                                                                       |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 99.32(a)(1) | <p><b>What record keeping requirements exist concerning requests and disclosures?</b></p> <p>An educational agency or institution must maintain a record of each request for access to and each disclosure of personally identifiable information from the education records of each student, as well as the names of State and local educational authorities and Federal officials and agencies listed in § 99.31(a)(3) that may make further disclosures of personally identifiable information from the student's education records without consent under § 99.33(b)(2). The agency or institution shall maintain the record with the education records of the student as long as the records are maintained.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Successful and Failed Logins</li> <li>• Security changes</li> <li>• Privileged Users activity</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security changes</li> <li>• DML</li> <li>• SELECT statements</li> <li>• Sensitive Columns</li> <li>• SELECT statements</li> </ul> |



| Section                        | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Associated Audit Events and Features                                                                                                                                                                                                                                                                                                                         |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>99.35 (a)(1)(2), (b)(1)</p> | <p><b>What conditions apply to disclosure of information for Federal or State program purposes?</b></p> <p>Authorized representatives of the officials or agencies headed by officials listed in 99.31(a)(3) may have access to education records in connection with an audit or evaluation of Federal or State supported education programs, or for the enforcement of or compliance with Federal legal requirements that relate to those programs.</p> <p>Authority for an agency or official listed in § 99.31(a)(3) to conduct an audit, evaluation, or compliance or enforcement activity is not conferred by the Act or this part and must be established under other Federal, State, or local authority.</p> <p>Information that is collected under paragraph (a) of this section must:</p> <ul style="list-style-type: none"> <li>• Be protected in a manner that does not permit personal identification of individuals by anyone other than the officials or agencies headed by officials referred to in paragraph (a) of this section, except that those officials and agencies may make further disclosures of personally identifiable information from education records on behalf of the educational agency or institution in accordance with the requirements of 99.33(b).</li> </ul> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Successful and Failed Logins</li> <li>• Security changes</li> <li>• Privileged Users activity</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security changes</li> <li>• DML</li> <li>• DDL</li> <li>• Sensitive Columns</li> <li>• SELECT statements</li> </ul> |



## HIPAA Compliance

| Section        | Summary                                                                                                                                                 | Associated Audit Events and Features                                                                                                                                                                                                                                                 |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 164.306 (a, 2) | <p><b>Security Standards</b></p> <p>Protect against any reasonably anticipated threats or hazards to the security or integrity of such information.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• Security Changes</li> <li>• DDL</li> <li>• Privileged Users activity</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• DML</li> <li>• Sensitive Columns</li> </ul> |
| 164.308 (1, i) | <p><b>Security Management Process</b></p> <p>Implement policies and procedures to prevent, detect, contain and correct security violations.</p>         | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• Security Changes</li> <li>• DDL</li> <li>• Privileged Users activity</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• None</li> </ul>                             |



| Section     | Summary                                                                                                                                                                                                            | Associated Audit Events and Features                                                                                                                                                                                                                                                                                                                         |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 164.308 (B) | <p><b>Risk Management</b></p> <p>Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with 164.306(a).</p>                                   | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• Security Changes</li> <li>• DDL</li> <li>• Privileged User activity</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• None</li> </ul>                                                                                                      |
| 164.308 (D) | <p><b>Information System Activity Review</b></p> <p>Implement procedures to regularly review records of information system activity such as audit logs, access reports and security incident tracking reports.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• Security Changes</li> <li>• DDL</li> <li>• Privileged Users activity</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security</li> <li>• DDL</li> <li>• Administrative activities</li> <li>• DML</li> <li>• Sensitive Columns</li> </ul> |





| Section        | Summary                                                                                                                                                                                                                                                                             | Associated Audit Events and Features                                                                                                                                                                                                                                                                                                                         |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 164.308 (3, C) | <p><b>Termination Procedures</b></p> <p>Implement procedures for terminating access to electronic protected health information when the employment of a workforce member ends or as required by determinations made as specified in paragraph (a) (3) (ii) (B) of this section.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Security Changes</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security</li> </ul>                                                                                                                                                                              |
| 164.308 (5, C) | <p><b>Implementation Specifications</b></p> <p>Log-in monitoring (Addressable). Procedures for monitoring log-in attempts and reporting discrepancies.</p>                                                                                                                          | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Logins</li> <li>• Failed Logins</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• None</li> </ul>                                                                                                                                                                   |
| 164.312 (b)    | <p><b>Technical Standard</b></p> <p><b>Audit controls.</b> Implement hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information.</p>                                      | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• Security Changes</li> <li>• DDL</li> <li>• Administrative activities</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security</li> <li>• DDL</li> <li>• Administrative activities</li> <li>• DML</li> <li>• Sensitive Columns</li> </ul> |



| Section             | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Associated Audit Events and Features                                                                                                                                                             |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 164.404 (a) (1) (2) | <p><b>Security and Privacy</b></p> <p><b>General rule.</b> A covered entity shall, following the discovery of a breach of unsecured protected health information, notify each individual whose unsecured protected health information has been, or is reasonably believed by the covered entity to have been, accessed, acquired, used, or disclosed as a result of such breach.</p> <p><b>Breaches treated as discovered.</b> For purposes of paragraph (a)(1) of this section, §§ 164.406(a), and 164.408(a), a breach shall be treated as discovered by a covered entity as of the first day on which such breach is known to the covered entity, or, by exercising reasonable diligence would have been known to the covered entity. A covered entity shall be deemed to have knowledge of a breach if such breach is known, or by exercising reasonable diligence would have been known, to any person, other than the person committing the breach, who is a workforce member or agent of the covered entity (determined in accordance with the federal common law of agency).</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security</li> <li>• Sensitive Columns</li> </ul> |



| Section                             | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Associated Audit Events and Features                                                                                                                                         |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>164.404 (c) (1)<br/>(A), (B)</p> | <p><b>Security and Privacy</b></p> <p>(c) Implementation specifications:<br/>Content of notification</p> <p>(1) Elements. The notification required by (a) of this section shall include, to the extent possible:<br/>(A) A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known;<br/>(B) A description of the types of unsecured protected health information that were involved in the breach (such as whether full name, social security number, date of birth, home address, account number, diagnosis, disability code, or other types of information.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Sensitive Columns</li> </ul> |



| Section                                   | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Associated Audit Events and Features                                                                                                                                         |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>HITECH 13402<br/>(a) (f), (1), (2)</p> | <p><b>Notification In the Case of Breach</b></p> <p>(a) In General. A covered entity that accesses, maintains, retains, modifies, records, stores, destroys, or otherwise holds, uses, or discloses unsecured protected health information (as defined in subsection (h)(1)) shall, in the case of a breach of such information that is discovered by the covered entity, notify each individual whose unsecured protected health information has been, or is reasonably believed by the covered entity to have been, accessed, acquired, or disclosed as a result of such breach.</p> <p>(f) Content of Notification. Regardless of the method by which notice is provided to individuals under this section, notice of a breach shall include, to the extent possible, the following:</p> <p>(1) A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.</p> <p>(2) A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Sensitive Columns</li> </ul> |



## PCI DSS Compliance

| Section | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Associated Audit Events and Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 2.1     | Always change vendor-supplied defaults and remove or disable unnecessary default accounts before installing a system on the network.                                                                                                                                                                                                                                                                                                                                                                                                    | Server Events: <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• Security Changes</li> <li>• DDL</li> <li>• Administrative activities</li> <li>• Privileged Users</li> <li>• User defined events</li> </ul> Database Events: <ul style="list-style-type: none"> <li>• Security</li> <li>• DDL</li> <li>• Administrative activities</li> <li>• DML</li> <li>• SQL statements</li> <li>• Sensitive columns</li> <li>• Before-After data change</li> <li>• Privileged users</li> </ul> |  |
| 2.2     | Develop configuration standards for all system components. Assure that these standards address all known security vulnerabilities and are consistent with industry-accepted system hardening standards.                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| 3.4     | Render PAN unreadable anywhere it is stored (including on portable digital media, backup media, and in logs) by using any of the following approaches: <ul style="list-style-type: none"> <li>• One-way hashes based on strong cryptography, (hash must be of the entire PAN)</li> <li>• Truncation (hashing cannot be used to replace the truncated segment of PAN)</li> <li>• Index tokens and pads (pads must be securely stored)</li> <li>• Strong cryptography with associated key-management processes and procedures.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| 6.2     | Ensure that all system components and software are protected from known vulnerabilities by installing applicable vendor-supplied security patches. Install critical security patches within one month of release.                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |



| Section | Summary                                                                                                                                                                                                                                                                                                    | Associated Audit Events and Features                                                                                                                                                                                                                                                                                                                                                                               |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8       | <p>Assigning a unique identification (ID) to each person with access ensures that each individual is uniquely accountable for his or her actions. When such accountability is in place, actions taken on critical data and systems are performed by, and can be traced to, known and authorized users.</p> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• Security Changes</li> <li>• DDL</li> <li>• Administrative activities</li> <li>• Privileged Users</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security</li> <li>• DDL</li> <li>• Administrative activities</li> <li>• DML</li> <li>• SQL statements</li> <li>• Sensitive Columns</li> </ul> |
| 8.5.4   | <p>Immediately revoke access for any terminated users.</p>                                                                                                                                                                                                                                                 | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Security Changes</li> <li>• Administrative activities</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security</li> </ul>                                                                                                                                                                                               |



| Section | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Associated Audit Events and Features                                                                                                                                                                                                 |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10      | Track and monitor all access to network resources and cardholder data-logging mechanisms and the ability to track user activities are critical. The presence of logs in all environments allows thorough tracking and analysis if something does go wrong. Determining the cause of a compromise is very difficult without system activity logs.                                                                                                                                                                                                                                                                       | See subsections                                                                                                                                                                                                                      |
| 10.1    | Implement audit trails to link all access to system components to each individual user.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Server Events: <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• Administrative activities</li> <li>• Privileged Users activity</li> </ul> Database Events: <ul style="list-style-type: none"> <li>• None</li> </ul> |
| 10.2    | Implement automated audit trails for all system components to reconstruct the following events: <ul style="list-style-type: none"> <li>• 10.2.1 All individual user accesses to cardholder data</li> <li>• 10.2.2 All actions taken by any individual with root or administrative privileges</li> <li>• 10.2.3 Access to all audit trails</li> <li>• 10.2.4 Invalid logical access attempts</li> <li>• 10.2.5 Use of identification and authentication mechanisms</li> <li>• 10.2.6 Initialization, stopping, or pausing of the audit logs</li> <li>• 10.2.7 Creation and deletions of system-level objects</li> </ul> | Server Events: <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• DDL</li> </ul> Database Events: <ul style="list-style-type: none"> <li>• DDL</li> <li>• DML</li> <li>• Sensitive Columns</li> </ul>                 |



| Section | Summary                                                                                                                                                                                                                                                                                                                                                                                                              | Associated Audit Events and Features                                                                                                                                                                                                                           |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.3    | Record at least the following audit trail entries for all system components for each event: <ul style="list-style-type: none"> <li>• 10.3.1 User identification</li> <li>• 10.3.2 Type of event</li> <li>• 10.3.3 Date and time</li> <li>• 10.3.4 Success or failure indication</li> <li>• 10.3.5 Origination of event</li> <li>• 10.3.6 Identify or name of affected data, system component, or resource</li> </ul> | Server Events: <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• Privileged Users activity</li> </ul> Database Events: <ul style="list-style-type: none"> <li>• Security</li> <li>• DDL</li> <li>• DML</li> <li>• Sensitive Columns</li> </ul> |
| 10.5    | Secure audit trails so they cannot be altered.                                                                                                                                                                                                                                                                                                                                                                       | SQL Compliance Manager Repository                                                                                                                                                                                                                              |
| 10.7    | Retain audit trail history for at least one year, with a minimum of three months online availability.                                                                                                                                                                                                                                                                                                                | Enable archive and groom to retain Repository data for a minimum of one year                                                                                                                                                                                   |





## SOX Compliance

| Section | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Associated Audit Events and Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 404     | <p>A statement of management's responsibility for establishing and maintaining an adequate internal control structure and procedures for financial reporting; and management's assessment, as of the end of the company's most recent fiscal year of the effectiveness of the company's internal control structure and procedures for financial reporting, Section 404 requires the company's auditor to attest to, and report on management's assessment of the effectiveness of the company's internal controls and procedures for financial reporting in accordance with standards established by the Public Company Accounting Oversight Board. (Source: Securities and Exchange Commission.)</p> <p><b>What does this mean from an Information Technology standpoint?</b></p> <p>The key is the reliability of financial reporting. Financial information resides in the database and it is the responsibility of IT to ensure the right personnel have access to that data at the right time. Any changes to the permissions must be tracked. Additionally, all access to that data (select, insert, update, and delete operations, plus before and after changes) must be audited down to the actual user and stored. If the need arises to determine where an individual has violated the accuracy of the financial data, an audit trail of activity will help to prove that the user:</p> <ul style="list-style-type: none"> <li>• Accessed the data</li> <li>• Changed permissions</li> <li>• Changed the data</li> </ul> | <p>Server Events:</p> <ul style="list-style-type: none"> <li>• Successful and Failed Logins</li> <li>• Security</li> <li>• DDL</li> <li>• Privileged User activity</li> </ul> <p>Database Events:</p> <ul style="list-style-type: none"> <li>• Security changes</li> <li>• Administrative activities</li> <li>• DML</li> <li>• SQL statements</li> <li>• SELECT statements on all DB objects</li> <li>• SELECT statements on specific tables</li> <li>• Before-After Data auditing</li> <li>• Sensitive Columns</li> <li>• Alerting</li> </ul> |



| Section    | Summary                        | Associated Audit Events and Features                                                                                                                                                          |
|------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 404<br>CDC | Implement change data capture. | Server Events: <ul style="list-style-type: none"><li>• None</li></ul> Database Events: <ul style="list-style-type: none"><li>• Sensitive columns</li><li>• Before-After data change</li></ul> |



## Control data access using Row Count

 This feature is only **available** for SQL Server 2008 and above.


 To capture row count information, **update** the SQL Compliance Manager Agent to version **5.5**.

IDERA SQL Compliance Manager audits and reports on the frequency that users access sensitive data, alerting about suspicious behavior.

The row count feature allows users to:

- Audit and capture row count for all event types and SQL statements.
- Audit and capture row count for joined query statements.
- Report on row count and access sensitive data.
- Set alerts based on thresholds for row counts, users, sensitive data, and specific queries.

Row count information is captured as part of an audit event and gathers information from both, traces and extended events.

 Row count information does not show when capturing DML and SELECT activities using SQL Server audit specifications.

### See row count information

The row count information is available in the [General tab](#) of any event properties, as well as the [Audit Events tab](#) in the [Explore Activity](#) view.



**Event Properties**

General | Details | Sensitive Columns

Event

Time: 4/19/2018 9:42:33 AM Login: sa

Category: Select Database: [redacted]

Type: Select Target: Persons

Application: Microsoft SQL Server Management Details: [redacted]

Before-After Data Summary

Rows Affected: Not Applicable

Columns Affected: Not Applicable

Row Count Summary

Rows Affected: 5 → **Row count information**

SQL Statement

```
SELECT TOP 1000 [PersonID]
, [LastName]
, [FirstName]
, [Address]
, [City]
FROM [redacted].[dbo].[Persons]
```

Copy

Close

**Event Properties**

General | Details | Sensitive Columns

Event

Time: Apr 19 2018 09:43 AM Login: sa

Category: Select Database: [redacted]

Type: Select Target: Persons

Application: Microsoft SQL Server Manager Event Details: [redacted]

Before-After Data Summary

Rows Affected: Not Applicable

Column Affected: Not Applicable

Row Count

Row Count: 5 → **Row count information**

SQL Statement

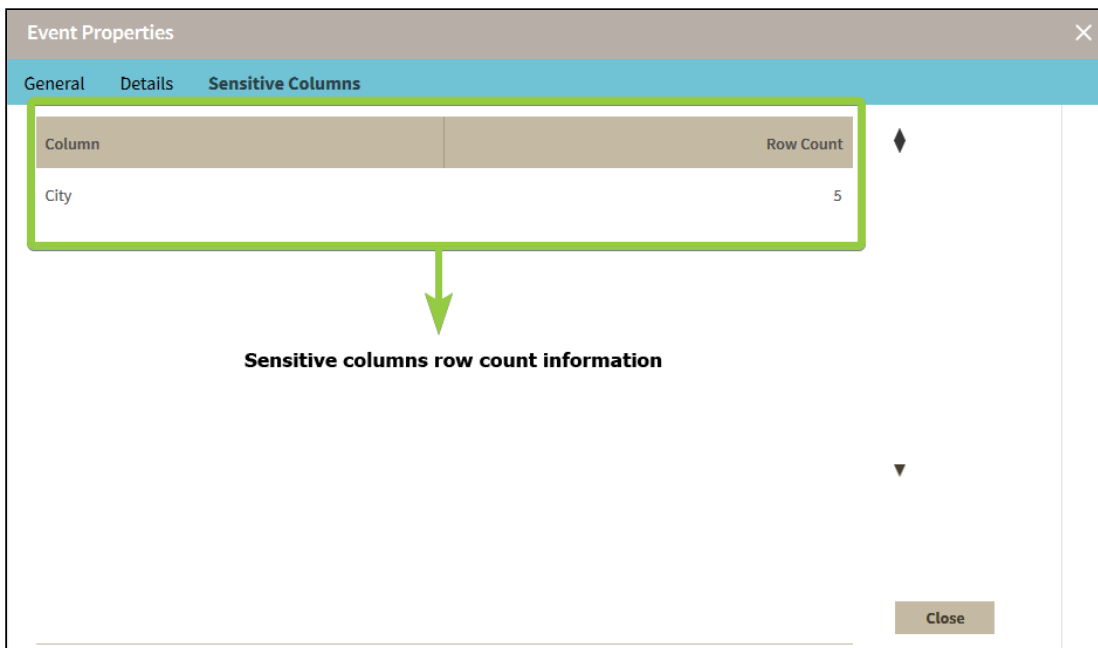
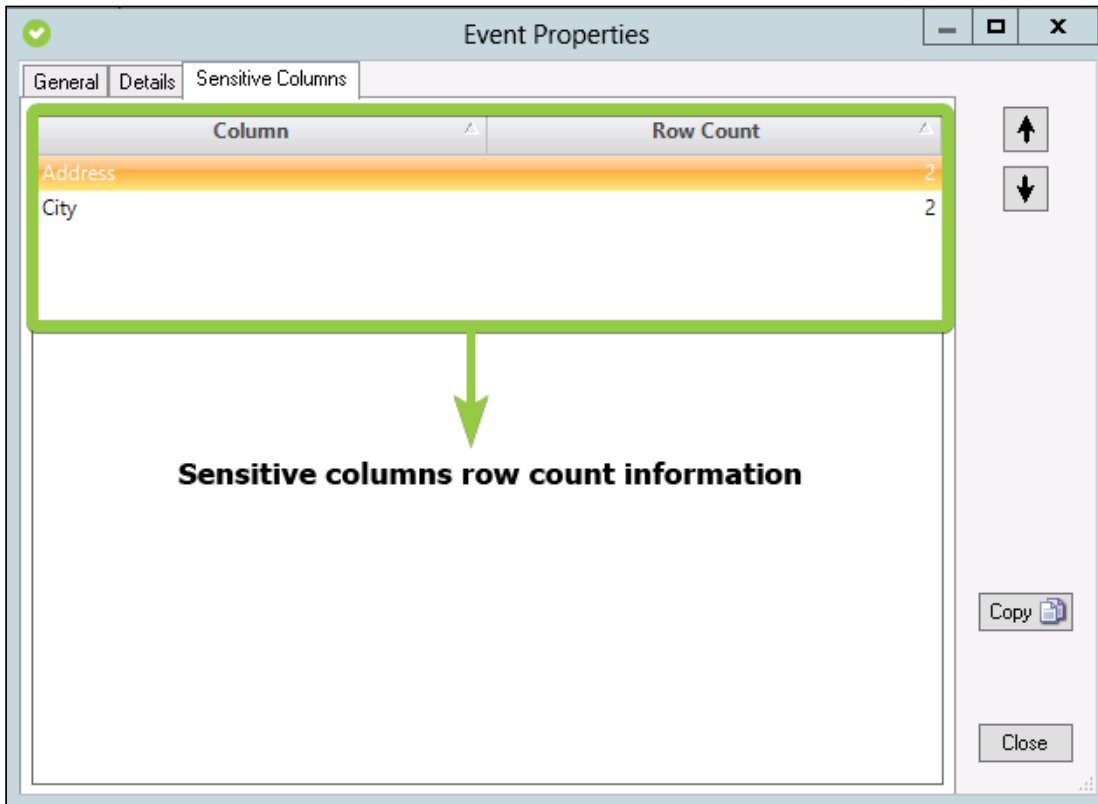
```
SELECT TOP 1000 [PersonID]
, [LastName]
, [FirstName]
, [Address]
, [City]
FROM [redacted].[dbo].[Persons]
```

Copy

Close



For select statements with sensitive columns, event properties contain a [Sensitive Columns](#) tab which shows the row count value for each audited sensitive column.



When you expand the audit events, the [Audit Events](#) tab shows the row count information in the event details.



The screenshot shows the 'Audit Events' interface. The main table lists several 'Select' events. One event at 8:09:03 AM is expanded to show a detailed view of the query results. This view includes a table with the following data:

| Column          | Row Count |
|-----------------|-----------|
| AddressLine1    | 1         |
| AddressLine2    | 1         |
| SpatialLocation | 1         |
| StateProvinceID | 1         |

A green box highlights this table, and a green arrow points to it with the text "Expanded audit event details".

**i** If you use SQL statements with joined queries, SQL Compliance Manager displays multiple (equivalent to the number of distinct queries joined) events, however, row count information is available only with the primary statement and not applicable with other statements.

### Row count Alerts

IDERA SQL Compliance Manager allows you to set alerts on row count and data access. Alerts can be set by row count alone or adding a specific time interval.

For more information, see [Alert on Audit Data and Status](#).



The screenshot shows the IDERA SQL Compliance Manager interface. The 'Administration' menu is highlighted with a red box and an arrow pointing to the text '1. Go to Administration'. The 'Alert Rules' section is also highlighted with a red box and an arrow pointing to the text '2. Go to Alert Rules'. Within the 'Alert Rules' section, the 'Event' and 'Data' buttons are highlighted with red boxes and an arrow pointing to the text '3. Select Event and/or Data alerts'. The interface includes a menu bar (File, Edit, View, Auditing, Alerting, Agent, Tools, Help), a toolbar with icons for New, Launch Web Console, and various actions like Event, Status, Data, Import, From Existing, Edit Details, Export, Enable, Disable, Delete, and Filter. A table of alert rules is visible, with columns for Rule, Rule Type, Server, Level, Email, EventLo, and SnmpTrap. The table contains two rows: 'Sensitive Data' (Event, WIN-B5VL79U2ADV, Medium, No, No, No) and 'Sensitive Column Accessed' (Data, WIN-B5VL79U2ADV, Medium, No, Yes, No). Below the table is a 'Rule Description' field.

**i** If you use SQL statements with joined queries, only the primary statement triggers any alert set for row count.

### Row count Reports

IDERA SQL Compliance Manager allows you to generate reports on data access, including the new row count feature. You can generate reports with the SQL Compliance Manager console and with Reporting Services.

For more information, see [Report on Audit Data](#).



**IDERA SQL Compliance Manager**

File Edit View Auditing Alerting Agent Tools Help

New [Icons] Launch Web Console

**Audit Reports**

- Alert Activity - Status
- Alert Rules
- Application Activity
- Application Activity Statistics
- Audit Control Changes
- Backup and DBCC Activity
- Change History (by object)
- Change History (by user)
- Daily Audit Activity Statistics
- Database Schema Change History
- DML Activity (Before-After)
- Host Activity
- Integrity Check
- Login Creation History
- Login Deletion History
- Object Activity
- Permission Denied Activity
- Regulation Guidelines
- Sensitive Column Activity
- Server Login Activity Summary
- Table/Data Access by Rowcount**
- User Activity History
- User Login History

Explore Activity

**Audit Reports**

Administration

**Table/Data Access by Rowcount**

Server Instance: <ALL> Database: <ALL>

Login: \* Table Name: \*

Column Name: \* Privileged User:

Start Date: 3/16/2018 End Date: 4/17/2018

Row Count Threshold: 0 Show SQL: False

Run Report

**3. Specify report criteria**

**2. Select Table/Data Access by Rowcount report**

**1. Go to audit reports**





## Event Auditing Matrix

IDERA SQL Compliance Manager offers different auditing options, each option allows you to audit specific types of SQL Server event data.

**i** If you choose to audit via Extended Events or Audit Logs, the unavailable information will be gathered from the Trace Events.

Depending on your auditing selection SQL Compliance Manager allows you to capture the following types of event data.

| Event             | Trace Events (.trc) | Extended Events (.xel) | Audit Logs (.audit) |
|-------------------|---------------------|------------------------|---------------------|
| ApplicationName   | Available           | Available              | Unavailable         |
| ColumnPermissions | Available           | Unavailable            | Available           |
| BeforeAfter       | Available           | Available              | Unavailable         |
| DatabaseID        | Available           | Available              | Available           |
| DatabaseName      | Available           | Available              | Available           |
| DBUserName        | Available           | Unavailable            | Available           |
| EventClass        | Available           | Available              | Available           |
| EventSequence     | Available           | -                      | Available           |
| EventSubClass     | Available           | Available              | Available           |
| FileName          | Available           | Unavailable            | Available           |
| HostName          | Available           | Available              | Unavailable         |
| IsSystem          | Available           | Available              | Unavailable         |
| LinkedServerName  | Available           | Unavailable            | Unavailable         |
| LoginName         | Available           | Available              | Available           |
| NestLevel         | Available           | Available              | Available           |



| Event            | Trace Events (.trc) | Extended Events (.xel) | Audit Logs (.audit) |
|------------------|---------------------|------------------------|---------------------|
| ObjectID         | Available           | Unavailable            | Available           |
| ObjectName       | Available           | Unavailable            | Available           |
| ObjectType       | Available           | Unavailable            | Available           |
| OwnerName        | Available           | Unavailable            | Unavailable         |
| ParentName       | Available           | Unavailable            | Unavailable         |
| Permissions      | Available           | Unavailable            | Available           |
| ProviderName     | Available           | Unavailable            | Unavailable         |
| RoleName         | Available           | Unavailable            | Unavailable         |
| RowCounts        | Available           | Available              | Unavailable         |
| ServerName       | Available           | Available              | Available           |
| SessionLoginName | Available           | Available              | Available           |
| SPID             | Available           | Available              | Available           |
| StartTime        | Available           | Available              | Available           |
| Success          | Available           | Unavailable            | Available           |
| TargetLoginName  | Available           | Unavailable            | Available           |
| TargetUserName   | Available           | Unavailable            | Available           |
| TextData         | Available           | Available              | Available           |

**⚠ Extended Events captures extra Execute events**  
 Due to differences in how Microsoft has implemented Extended Events compared to other auditing methods, when auditing via Extended Events the user will see extra Execute events as compared to the same data captured by other auditing methods.



**NOTE**

- The Extended Events auditing feature is only available with SQL Server 2012 and newer.
- The Audit Logs auditing feature is only available with SQL Server 2017 and newer.

SQL Compliance Manager Calculated Columns

Depending on your auditing selection SQL Compliance Manager allows you to capture the following calculated columns event data type.

| Event          | Trace Events (.trc) | Extended Events (.xel) | Audit Logs (.audit) |
|----------------|---------------------|------------------------|---------------------|
| alertLevel     | Available           | Available              | Available           |
| appName        | Available           | Available              | Unavailable         |
| details        | Available           | Unavailable            | Available           |
| endSequence    | Available           | Available              | Available           |
| endTime        | Available           | Available              | Available           |
| eventCategory  | Available           | Available              | Available           |
| hash           | Available           | Available              | Available           |
| hostId         | Available           | Available              | Unavailable         |
| loginId        | Available           | Available              | Available           |
| privilegedUser | Available           | Available              | Available           |
| startSequence  | Available           | Available              | Available           |



| Event        | Trace Events (.trc) | Extended Events (.xel) | Audit Logs (.audit) |
|--------------|---------------------|------------------------|---------------------|
| targetObject | Available           | Unavailable            | Available           |



## Audit snapshots

Audit snapshots provide a summary of the audit settings for each audited database hosted on the registered SQL Server instances. Routinely reviewing audit snapshots allows you to ensure audit settings are applied correctly and consistently across your SQL Server environment.

You can schedule audit snapshots on a regular basis (in days) or you can capture an audit snapshot to meet an immediate need.



## Capture an audit snapshot

You can take a snapshot of your audit settings on demand, to meet immediate audit needs or diagnose issues.

To capture an audit snapshot:

1. Click **Auditing** on the menu bar, and then select **Capture Audit Snapshot**.
2. Specify whether you want a snapshot of audit settings for all registered SQL Server instances or for a specific instance, and then click **OK**.
3. Review the newly captured snapshot.



## Schedule an audit snapshot

You can schedule IDERA SQL Compliance Manager to take a snapshot of your audit settings at a routine interval (in days), or you can configure SQL Compliance Manager to not take a snapshot.

### To schedule a routine audit snapshot:

1. Click **Auditing** on the menu bar, and then select **Audit Snapshot Preferences**.
2. Specify how often SQL Compliance Manager should take a snapshot of your audit settings, and then click **OK**.



## View the audit snapshot

You can view any audit snapshot you have previously captured. IDERA SQL Compliance Manager displays audit snapshots as entries in the SQL Compliance Manager Change Log.

To view the audit snapshot:

1. Select **Change Log** in the **Administration** tree.
2. Locate the audit snapshot you want to view.
3. Right-click the audit snapshot, and then select **Properties** from the context menu.
4. Review the audit snapshot contents, and then click **OK**.





## Control access to audit data

You can control who can access audit data by granting the appropriate IDERA SQL Compliance Manager permissions. You can grant these permissions using the Management Console. You can also create new SQL Server logins on-the-fly to address different auditing demands. For more information, see [Secure Audit Data](#).



## Enable auditing on a database

Enabling auditing on the database allows you to capture SQL events at the database level. You can enable database-level auditing when you register the SQL Server instance. For more information, see [Register your SQL Servers](#).

When you enable auditing on a database, you can control the [Audit collection levels](#) per each database, choosing whether to apply the built-in default audit settings, [enforce a regulatory guideline](#), or define custom audit settings.

**i** After you enable auditing on your databases, set up the audited database properties to enable more advanced auditing, such as [Sensitive Columns](#) and [Before-After Data](#) in tables.

**If you disable auditing for any reason**, you can easily re-enable database-level auditing. On the **Explore Activity** tree, expand the SQL Server instance on which the database resides. Right-click the name of the database on which you want to enable auditing, and then select **Enable Auditing**. This action enables auditing at the server and database levels.

## Use the SQL Compliance Manager Configuration wizard to enable auditing on a database

You can use the SQL Compliance Manager Configuration wizard to add a database and apply one of the following audit settings:

To enable database auditing through the Configuration wizard:

1. In the **Explore Activity** tree, select the SQL Server instance that hosts the new database.
2. Select **Audited Database** from the **New** drop-down.
3. Select the user databases you want to audit, and then click **Next**.
4. Select which audit collection level you want to use, and then click **Next**.
5. **If you chose to use the Custom audit collection level**, select the appropriate audit settings for these databases, and then click **Next**. SQL Compliance Manager audits only the activities and results you select. For information, see [Database-level audit settings](#).
6. **If you chose to use the Custom audit collection level and you are auditing DML and SELECT events**, select the objects SQL Compliance Manager should audit for these events, and then click **Next**.
7. **If you chose to use the Custom audit collection level**, select any trusted users you do not want to audit, and then click **Next**.
  - Trusted users are database users, SQL Server logins, or members of SQL Server roles that you trust to read, update, or manage a particular audited



database. SQL Compliance Manager does not audit trusted users. Trusted users are designated on the Add Trusted Users window of the New Audited Database wizard.

- ***If you are auditing privileged user activity and the trusted user is also a privileged user***, SQL Compliance Manager continues to audit this user because of its elevated privileges. For example, a service account that is a member of the sysadmin fixed SQL Server role will continue to be audited even though the account is designated as trusted.

8. Click **Finish**.

## Use the import audit settings feature to apply audit settings to a database

You can use the [Import your audit settings](#) feature to apply an audit template you [previously exported](#) from an audited database. To successfully apply the template, first add the database to SQL Compliance Manager.

## Use the CLI to enable auditing on a database

You can use the command line interface to enable auditing on a new database and apply audit settings. The audit settings can be configured using a [specific regulation](#) or an audit template (audit settings you exported to an XML file).

Keep in mind the following requirements and limitations:

- This process requires manually deploying the SQL Compliance Manager Agent to the instance that hosts this database.
- The auditdatabase command does not support enabling auditing of a database that belongs to a virtual SQL Server instance hosted on a Windows cluster.
- The auditdatabase command supports case-sensitive named instances. Ensure you are using the appropriate case when you cite the instance and database names.
- The CLI does not support configuring Before-After data auditing.
- You can apply either a built-in regulation guideline or an XML template file.

SQL Compliance Manager includes sample database audit settings templates (Sample\_Database\_AuditSettings.xml) for your convenience. Use this sample template to familiarize yourself with how specific audit settings are defined. By default, the sample template is located under C:\Program Files\Idera\SQLcompliance.

To enable database auditing and apply the Typical (default) audit settings:

1. Use the SQL Compliance Manager setup program to [manually deploy the SQL Compliance Manager Agent](#) to the instance that hosts the target database.



2. In Windows Command Prompt, use the following syntax: `SQLcmCmd [-host CollectionServer] [-port number] auditdatabase instance database.`

To enable database auditing and apply a HIPAA or PCI regulation guideline:

1. Use the SQL Compliance Manager setup program to [manually deploy the SQL Compliance Manager Agent](#) to the instance that hosts the target database.
2. In Windows Command Prompt, use the following syntax: `SQLcmCmd [-host CollectionServer] [-port number] auditdatabase instance database - Regulation {PCI | HIPAA | PCI, HIPAA}.`

To enable database auditing and apply a FERPA regulation guideline:

**i** The FERPA regulation guideline is provided as an XML templates (FERPA\_Database\_Regulation\_Guideline.xml) stored in the SQL Compliance Manager installation directory (C:\Program Files\Idera\SQLcompliance). Ensure the path you cite for the FERPA template reflects the directory you chose during installation.

1. Use the SQL Compliance Manager setup program to [manually deploy the SQL Compliance Manager Agent](#) to the instance that hosts the target database.
2. In Windows Command Prompt, use the following syntax: `SQLcmCmd [-host CollectionServer] [-port number] auditdatabase instance database - config "FERPA regulation guideline file path".`

## Use the CLI to enable auditing on a database

To enable database auditing and apply a SOX regulation guideline:

**i** The SOX regulation guidelines is provided as an XML template (SOX\_Database\_Regulation\_Guideline.xml) stored in the SQL Compliance Manager installation directory (C:\Program Files\Idera\SQLcompliance). Ensure the path you cite for the SOX template reflects the directory you chose during installation.

1. Use the SQL Compliance Manager setup program to [manually deploy the SQL Compliance Manager Agent](#) to the instance that hosts the target database.
2. In Windows Command Prompt, use the following syntax: `SQLcmCmd [-host CollectionServer] [-port number] auditdatabase instance database - config "SOX regulation guideline file path".`



To enable database auditing and apply a custom audit template:

1. Determine which currently audited database has the audit settings you want to apply to the new database.
2. [Export your audit settings](#) from the source database.
3. Use the SQL Compliance Manager setup program to [manually deploy the SQL Compliance Manager Agent](#) to the instance that hosts the target database.
4. In Windows Command Prompt, use the following syntax: `SQLcmCmd [-host CollectionServer] [-port number] auditdatabase instance database -config "exported audit settings file path".`



## Enable auditing on a SQL Server

Auditing is enabled when you register a SQL Server instance, and allows you to capture SQL events at the server level. For more information, see [Register your SQL Servers](#). You can configure server audit settings during registration or later as your auditing needs change. For more information, see [Server-level audit settings](#).

***If you disable auditing for any reason***, you can easily re-enable server-level auditing. On the **Explore Activity** tree, right-click the SQL Server instance on which you want to re-enable auditing, and then select **Enable Auditing**.



## Enable automatic failover using AlwaysOn Availability Groups

The AlwaysOn Availability Groups feature uses the availability of a set of databases within your enterprise to improve your failover options and general availability. This feature makes the database highly available using the Windows Failover Cluster Service for Windows Server 2008 and above. As a result, this feature requires Windows Failover Cluster as well as SQL Server on all cluster nodes.

When an availability group is configured using multiple SQL Servers, one of the servers is designated as the PRIMARY node and others are considered SECONDARY nodes. If the primary node SQL Server stops or shuts down, the failover automatically switches to the synchronized secondary node with no data loss. You also can manually perform a failover on the SQL Server.

SQL Compliance Manager provides auditing of the AlwaysOn-configured database and audits the events on the AlwaysOn database along with the failovers.

**i** The AlwaysOn Availability Groups feature is available for SQL Server 2012 and above only.

## How AlwaysOn integrates with SQL Compliance Manager

There are two scenarios of how SQL Compliance Manager can work with AlwaysOn availability group databases:

- **Listener.** Use this scenario when you want to audit a listener (virtual SQL server instance) that works only with a node in the PRIMARY role.
- **Nodes.** Use this scenario when you want to audit every node that can be in PRIMARY or SECONDARY roles. Note that the secondary role is read-only.

**!** You can use only one scenario at a time, it is not possible to use both of them at the same time on a cluster.

**i** Each node of the SQL Server instance used in the AlwaysOn Availability Group must have a license.

Review the following links to configure AlwaysOn Availability Groups:

### Configuring [Listener scenario](#):

1. Install cluster agent services on all Listener nodes using the SQL Compliance Manager Cluster Configuration Console
2. Install cluster agent services on all Listener nodes using the Failover Cluster Manager
3. Add the Listener to SQL Compliance Manager



**Configuring** [Nodes scenario](#):

- Manually deploy the SQL Compliance Manager Agent

Ensure to review [additional information](#) to start working with AlwaysOn Availability Groups:

- Removing a Listener from SQL Compliance Manager
- Exporting/importing audit settings for all AlwaysOn nodes
- Removing an AlwaysOn node from SQL Compliance Manager





## Configuring Listener scenario

The Listener scenario is recommended for users who want to audit only AlwaysOn databases on the Primary node using LISTENER. **If you want to audit read-only Secondary nodes**, use the Nodes scenario.

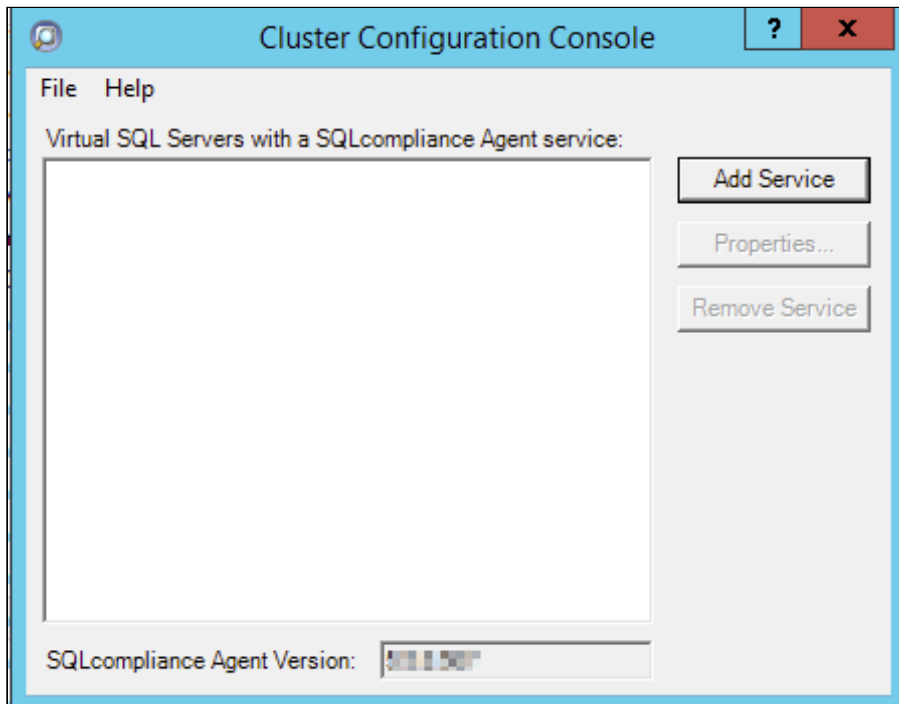
Review the following steps to successfully configure your Listener:

1. Install cluster agent services on all Listener nodes using the SQL Compliance Manager Cluster Configuration Console
2. Install cluster agent services on all Listener nodes using the Failover Cluster Manager
3. Add the Listener to SQL Compliance Manager


### 1. Install cluster agent services on all Listener nodes using the SQL Compliance Manager Cluster Configuration Console

Use the following steps on each node involved in the AlwaysOn group before adding the listener to SQL Compliance Manager for auditing.

1. Run SQLCMInstall.exe in the root of the SQL Compliance Manager installation kit.
2. Review the information you need to start the installation and click **Next**.
3. Follow the steps in the Setup wizard to install and configure [SQL Compliance Manager in a clustered environment](#).
4. Once the installation is complete, go to the SQL Compliance Manager install path. Unless you have specified a different path, the one by default is c:\Program Files\IDERA\SQLCompliance.
5. Run SQLcomplianceClusterSetup.EXE.
6. Once the setup wizard launches, click the **Next** button to proceed to the License Agreement.
7. Read the license agreement, select the option to accept the terms of the license agreement, and click **Next**.
8. Select the destination path in which you want to install the IDERA Cluster Configuration Console. Define the permissions for the software and click **Next**.
9. Click **Install** to complete the installation.
10. The Cluster Configuration Console launches automatically after installation.



11. Click **Add Service** to specify the listener. SQL Compliance Manager displays the **Add SQLcompliance Agent Service - General** window.
12. On the **General** dialog window, type the name of the clustered instance to be audited by SQL Compliance Manager and click **Next**. **If you receive a message stating that the selected SQL Server instance is not clustered**, click **Yes**. This is correct behavior when configuring a Listener scenario and confirms that the selected SQL Server instance is hosted on a Windows Failover Cluster.
13. On the **Collection Server** dialog window, specify the name of the server where SQL Compliance Manager is installed, and click **Next**.
14. On the **SQLcompliance Agent Service Account** dialog window, specify the login credentials for the Agent service account, and click **Next**. This account must have administrator privileges. IDERA recommends that you use the same account as used for the Collection Server.
15. On the **SQLcompliance Agent Trace Directory** dialog window, specify the path on which trace files will temporarily reside before being transferred to the SQL Compliance Collection Service and click **Next**. Note that the administrator account specified for the cluster agent service has read/write permissions for this trace directory folder.
16. On the **CLR Trigger Location** dialog window, Specify the location where you want the SQL Compliance Manager Agent to store the corresponding CLR trigger assemblies, and click **Next**. Note that the administrator account specified for the cluster agent service has read/write permissions for this assembly folder.
 

 Ensure the *Agent Trace directory* and the *CLR Trigger location* specified exist by creating the folder structure manually through *Windows Explorer*.
17. Review the configuration **Summary** and click **Finish**.



18. The IDERA Cluster Configuration Console displays a confirmation message stating that you have successfully added the SQL Compliance Manager Agent. Click **OK**.

**i** Repeat these steps on each node in your AlwaysOn Availability Group. When you are finished configuring all the nodes, proceed with the steps below.

## 2. Install cluster agent services on all Listener nodes using the Failover Cluster Manager

Use the following steps on each node involved in the AlwaysOn group before adding the listener to SQL Compliance Manager for auditing.

1. After installing the cluster agent service on all Listener nodes, open *Server Manager*.
2. On the Server Manager tree, click **Server Manager > Features > Failover Cluster Manager**. The system displays **Failover Cluster Manager**.
3. Select the clusters' **Service Group** (Windows Server 2008) or **Role** (Windows Server 2012 and later) created for the cluster agent service.
4. On the **Server Name** area, right-click the resource name and click **Properties**. Failover Cluster Manager displays the **Properties** window.
5. Click the **Dependencies** tab.
6. Verify that the **Resource** field displays the listener IP address.
7. On the **Other Resources** area of the **Failover Cluster Manager** window, right-click the resource within the role, and select **Properties**. Failover Cluster Manager displays the **Properties** window.
8. Click the **Dependencies** tab.
9. Verify that the **Resource** field displays the listener name. Click **Cancel** to close this window.
10. After adding the resource information, right-click the **Service Group** or **Role**, and point to **Add a resource**.
11. Click on **Generic Service**. Failover Cluster Manager displays the **New Resource Wizard**.
12. On the **Select Service** page, select the cluster service agent from the available list. The cluster service names are displayed in the format **SQLcomplianceAgent\$[listener name]** where **[listener name]** is a virtual SQL Server name.
13. Click **Next**, continue following the wizard, and click **Finish**.
14. On the **Other Resources** area of the Failover Cluster Manager window, right-click the **SQLcomplianceAgent\$[listener name]**, and **Bring Online** the **resource**.
15. While the cluster service is online, right-click the **SQLcomplianceAgent\$[listener name]** cluster service, and click **Properties**.
16. On the **General** tab verify that the Service Group or Role is added.
17. On the **Registry Replication** tab, click **Add**. Failover Cluster Manager displays the **Registry Key** window.



**⚠** The Registry Replication tab is not available in Windows Server 2012. If you are using Windows Server 2012, you must use the "Add-ClusterCheckpoint" PowerShell cmdlet to add the necessary setting. For more information, see [Add ClusterCheckpoint](#).

18. Type the specific registry path. To obtain the correct path, go to the **IDERA Cluster Configuration Console** and copy the Replicated Registry Key from the **SQLcompliance Agent details**.
19. Click **OK**. The new root registry key appears in the **Registry Replication** tab of the Properties window.
20. Close the **Properties** window by clicking **OK**.

### 3. Add the Listener to SQL Compliance Manager

Use the following steps to add the listener to SQL Compliance Manager for auditing.

1. Start the IDERA SQL Compliance Manager Management Console and click **New > Registered SQL Server**. SQL Compliance Manager displays the **SQLcm Configuration Wizard - Add Server**.
2. On the **SQL Server** window, specify or browse the listener you want to register with SQL Compliance Manager, and click **Next**.
3. On the **SQL Server Cluster** page, check **This SQL Server instance is hosted by a Microsoft SQL Server Cluster virtual server** box, and click **Next**. This step makes the listener into a virtual SQL Server name.
4. On the **SQLcompliance Agent Deployment** page, verify that the **Manually Deploy** is selected, and click **Next**. This option is required for all virtual SQL Servers.
5. On the **Select Databases** page, check the AlwaysOn database that you want to audit, and click **Next**.
6. SQL Compliance Manager displays the **AlwaysOn Availability Group Details** page including a list of all nodes where the AlwaysOn database is replicated.
 

**i** This step is valid only if the database selected for auditing is AlwaysOn. The wizard skips this page for regular databases.
7. **If the AlwaysOn Availability Group Details window is displayed**, click **Next** to continue.
8. On the **Audit Collection Level** page, select the desired audit collection level for the database, and click **Next**.
9. On the **Permissions Check** page, SQL Compliance Manager verifies that all the required permissions are in place on the SQL Server instance you want to audit.
10. After all operations are complete and all permissions checks pass, click **Next**. The **Summary** page displays the audit settings for the SQL Server instance.
11. Click **Finish** to close the wizard. SQL Compliance Manager displays the newly-added SQL Server instance and AlwaysOn database in the **Explore Activity** tree.



12. Make all necessary audit settings for the listener and AlwaysOn databases, and then update the configuration and begin collecting data. It is recommended to update the configuration before collecting data because users are unaware of which node is PRIMARY. After updating the configuration, be sure to click **Refresh** in the node context menu to apply the settings to the displayed information.

After configuration, review some [Additional information on SQL Compliance Manager and AlwaysOn Availability Groups](#).



## Configuring Nodes scenario

The Nodes scenario is recommended for users who want to audit regular databases and AlwaysOn databases on nodes that can be in PRIMARY or READ-ONLY SECONDARY nodes.

The SQL Compliance Manager administrator adds each node or instance of SQL Server involved in the availability group individually, which is the same process as with any regular SQL Server instance. You can then add any database that you want to audit. While you can automatically deploy the agent through the console, it is recommended that you manually deploy in case the automatic deployment fails. Note that the permissions requirements are the same as for the Listener scenario. For more information about permissions, see [Permissions requirements](#).

AlwaysOn databases running as the secondary replica do not appear in the Add Database wizard unless the replica is marked as read-only. Note that the default status is non-readable.

Review the following steps to manually deploy the agent service to all AlwaysOn node.

1. Start the SQL Compliance Manager Management Console.
2. Select the SQL Server instance to which you want to manually deploy the agent, and click **Add Server**. SQL Compliance Manager displays the **SQL Compliance Manager Configuration Wizard - Add Server**.
3. On the **Specify SQL Server** page, specify or browse the node, and click **Next**.
4. On the **Existing Audit Data** page, select the option to retain all of the previously-collected audit data and use the existing database, and click **Next**.
5. On the **SQL Server Cluster** page, check this option if the instance is a virtual SQL Server, and click **Next**.
6. On the **SQLcompliance Agent Deployment** page, verify that the **Manually Deploy** option is selected, and click **Next**.
7. On the **Select Databases** page, select the AlwaysOn database, and click **Next**.
8. SQL Compliance Manager displays the **AlwaysOn Availability Group Details** page. This page displays information about all nodes where the AlwaysOn database will be replicated. **Note that this page does not appear if the database is not AlwaysOn.**
9. Review the available information, and click **Next**.
10. On the **Audit Collection Level** page, select the **Default** audit level, and click **Next**.
11. On the **Permissions Check** page, verify that all permissions pass, and click **Next**.
12. SQL Compliance Manager displays the **Summary** page. Click **Finish**.

After adding all nodes, the SQL Compliance Manager displays the primary node, as shown in the following image. You also now can audit any AlwaysOn databases in the added nodes if they are in PRIMARY or READ-ONLY SECONDARY roles.



### Explore Activity

- [-] Audited SQL Servers
  - [-] AOAGNODE1 (Primary)
    - [-] TestBase
  - [-] AOAGNODE2
    - [-] TestBase

---

Explore Activity

Audit Reports

## Audited SQL Servers

Summary
Event Alerts
Data Alerts
Status Alerts

Register SQL Server
 Monitor
 Configure Access
 Self-Audit
 Configure Alerting

1 Day
7 Days
30 Days
Span

### System Status

✔ [All servers are OK](#)

|                        |       |
|------------------------|-------|
| Registered SQL Servers | 2     |
| Audited SQL Servers    | 2     |
| Audited Databases      | 2     |
| Processed Events       | 9,776 |

---

#### Recent Alerts

|                                              |       |
|----------------------------------------------|-------|
| <span style="color: red;">◆</span> Severe    | 0     |
| <span style="color: orange;">◆</span> High   | 0     |
| <span style="color: yellow;">◆</span> Medium | 3,720 |
| <span style="color: green;">◆</span> Low     | 0     |

### Enterprise Activity Report Card

Event Alerts

- Failed Logins
- Security
- DDL
- Privileged User
- Overall Activity

Event Alert Activity currently has no threshold enabled.

Chart FX License has Expired

| Event Alert Activity Per Server                               |          |                      |
|---------------------------------------------------------------|----------|----------------------|
| Server                                                        | Max      | Threshold            |
| <input checked="" type="checkbox"/> <a href="#">AOAGNODE1</a> | 1592/day | <a href="#">None</a> |
| <input checked="" type="checkbox"/> <a href="#">AOAGNODE2</a> | 426/day  | <a href="#">None</a> |



## Additional information on SQL Compliance Manager and AlwaysOn Availability Groups

After configuring the AlwaysOn Availability Groups on SQL Compliance Manager, review the following information to start auditing and modify your AlwaysOn databases.

- [Removing a Listener from SQL Compliance Manager](#)
- [Exporting/importing audit settings for all AlwaysOn nodes](#)
- [Removing an AlwaysOn node from SQL Compliance Manager](#)

### Removing a Listener from SQL Compliance manager

Use the following steps to remove the listener from SQL Compliance Manager auditing.

1. Open Server Manager.
2. In the Server Manager tree, click **Server Manager > Features > Failover Cluster Manager**. The system displays Failover Cluster Manager.
3. On the **Other Resources** area, right-click the *SQLcomplianceAgent\$[listener name]*, and select **Bring Offline**.
4. Verify in the confirmation message that you want to take the resource offline.
5. Keep Failover Cluster Manager open as you will return to this view after removing the listener from SQL Compliance Manager.
6. Open the SQL Compliance Manager Management Console.
7. Click the listener name on the **Explore Activity** panel, and click **Remove**. SQL Compliance Manager displays an error message concerning the inability to contact the agent when removing the listener.
8. Click **Yes** to confirm that you want to continue with the removal of the instance.
9. **If you want to re-add this listener for auditing at a later time, do not** continue with the next steps.  
**If you no longer want to use this listener, continue** with the following steps for all nodes included in the AlwaysOn Availability Group.
10. Return to Failover Cluster Manager.
11. On the **Other Resources** area, right-click the *SQLcomplianceAgent\$[listener name]*, and select **Delete**
12. Verify in the confirmation message that you want to delete the resource.
13. Open the Cluster Configuration Console by clicking **Start > IDERA > Cluster Configuration Console**.
14. Select the virtual SQL Server listener, and click **Remove Service**.
15. Click **Yes** in the confirmation message. The cluster service agent is removed.
16. **If you no longer need to add listeners**, uninstall the Cluster Configuration console.





## Exporting/importing audit settings for all AlwaysOn nodes

Users can select all of the appropriate audit settings for each AlwaysOn database and export these settings as XML files. You then can import the files into the remaining instances or nodes in the group.



To import the audit settings to each node, click **Import** on the Summary tab. Choose the exported XML file, the information you want to import, and the servers to which you want to apply the settings. Select all the other servers in the availability group as the target for audit settings. After users apply the settings from the file, each member of their availability group is set to audit in exactly the same way as noted in the exported file. This process also allows you to add additional databases that are the part of an availability group on these servers.

## Removing an AlwaysOn node from SQL Compliance Manager

To remove an AlwaysOn node from SQL Compliance Manager, first stop the agent service using the Failover Cluster Manager before attempting to remove a node instance from SQL Compliance Manager. This step must be performed if you may want to add back to SQL Compliance Manager the removed node using the Manual Deployment option without any agent deployment. In this case, ignore the error message that appears after you remove the node.



## Event Filters

You can use Event Filters to improve scalability, remove unwanted events from the audit data stream, and increase the granularity of your audit settings. Event Filters let you filter raw audit data from the collected trace files before processing begins. Use Event Filters to improve scalability and remove unwanted events from the audit data stream.

Event Filters allow you to further customize your audit data collection. For example, you can configure Event Filters to accommodate the following auditing needs:

- Exclude "noise" events and events generated from expected business activity, such as INSERTS and DELETES performed on a Sales database by a standard application
- Provide more precise data about specific database activity, such as collecting DDL and DML events for one table but only collecting DDL events for another table



## How Event Filters work

Event Filters determine which collected SQL events should be kept for processing by the Collection Server. Like your audit settings, the Event Filters should correlate with the SQL events you need to track in order to meet your compliance objectives.

After receiving the trace files from the SQL Compliance Manager Agent, the Collection Server applies your Event Filters. Any matching events are permanently deleted and eliminated from the data stream. All remaining events are processed for alerts and stored in the appropriate Repository database.

- i When you enable Sensitive Column auditing on a table, the Collection Server preserves all SELECT events associated with the audited columns even though you may have created an event filter to exclude SELECT events.



## Create an Event Filter

An Event Filter allows you to exclude specific events from your audit data. This approach helps you collect only the audit data you need. Event Filters can also help performance by reducing the size of the Repository databases and the processing load on the Collection Server.

To create an Event Filter:

1. Navigate to **Event Filters** in the **Administration** tree.
2. Click **New Event Filter** on the **Actions** ribbon.
3. Select the type of event (event category) that you want to exclude from your audit data, and then click **Next**.
4. Select the type of object affected by the selected event type, and then click **Next**. By default, the event filter will exclude events that occur on any registered SQL Server instance, database, or database object. Use the links provided in the filter details pane to narrow your event filter to specific objects or objects that match a naming convention.
5. Select the software application or SQL Server login that originates the event you want to filter, and then click **Next**.
6. Specify a name and description for this filter, review the summary, and then click **Finish**. By default, the new event filter is enabled.



## Use an Event Filter as a template

You can create a new Event Filter by using an existing filter as a template. Event filter templates allow you to more efficiently create multiple filters against the same instance, database, application, or SQL Server login. You can also use event filter templates to apply consistent filter criteria across multiple instances and databases. When you choose to use an Event Filter as a template, IDERA SQL Compliance Manager copies the existing filter criteria to the new filter. You can then use the Edit Event Filter wizard to customize the new filter.

### To use an Event Filter as a template:

1. Navigate to **Event Filters** in the **Administration** tree.
2. In the Event Filter tab, select the filter you want to use as a template, and then click **Use as Filter Template**, on the **Actions** ribbon.
3. On each wizard window, specify the criteria you want to use for this new filter, and then click **Next**.
4. On the Finish Event Filter window, specify a name and description for this filter, review the summary, and then click **Finish**. By default, the new filter is enabled.



## Export your Event Filters

Exported event filter settings are saved in an XML format and can be applied to other registered SQL Server instances. This flexibility saves you time when you are configuring Event Filters on multiple SQL Server instances, and helps ensure consistent Event Filters across your environment. In addition, exporting allows you to back up your Event Filters to use should you need to reinstate an audited SQL Server instance. As you configure your Event Filters, consider what you would like to save for future use, and export the filters for that particular SQL Server instance or database.

### To export your Event Filters:

1. Navigate to **Event Filters** in the **Administration** tree.
2. Click **Export Filters** on the **Event Filters** ribbon.
3. Specify a file name or use the default name.
4. Select the location to save the output file. Consider saving all Event Filters to a centralized location such as a network share.
5. Click **Save**.



## Import your Event Filters

As you configure or modify Event Filters for your SQL Server instances, you may want to apply the same filters across multiple SQL Server instances in your environment. You can import Event Filters through previously exported XML files and streamline your configuration workflow while reducing errors.

To import your Event Filters:

1. Navigate to **Event Filters** in the **Administration** tree.
2. Click **Import Filters**.
3. Locate the event filter you want to import and click **Open**. By default, the imported Event Filters are disabled.



## Change which audit data the filter excludes

Based on the criteria defined in your Event Filters, IDERA SQL Compliance Manager excludes events from your audit data stream. You can exclude events based on the event type (category), the SQL Server instance or database object affected by the event, or the software application or SQL Server login that initiated the event. For more information, see [How Event Filters work](#).

By changing the filter criteria, you can change the type of audit data that is excluded. You can also copy an existing Alert Rule and use it as a template to create a new rule.

To change the type of audit data that an event filter excludes:

1. Navigate to **Event Filters** in the **Administration** tree.
2. Select the filter you want to change, and then click **View Details** from the **Action** ribbon.
3. Select the type of event (event category) that you want to exclude from your audit data, and then click **Next**.
4. Select the type of object affected by the selected event type, and then click **Next**. By default, the event filter will exclude events that occur on any registered SQL Server instance, database, or database object. Use the links provided in the filter details pane to narrow your event filter to specific objects or objects that match a naming convention.
5. Select the software application or SQL Server login that originates the event you want to filter, and then click **Next**.
6. Click **Finish**.





## Enable an Event Filter

You can enable filtering on audit data from a specific SQL Server instance or database. By default, filtering is enabled when the event filter is created.

To enable an Event Filter:

1. Navigate to **Event Filters** in the **Administration** tree.
2. On the **Event Filters** tab, select the filter you want to enable, and then click **Enable Filter**.



## Disable an Event Filter

You can disable filtering on audit data from a specific SQL Server instance or database. When you disable filtering, IDERA SQL Compliance Manager stops excluding the specified events from your audit data and leaves the event filter intact. SQL Compliance Manager continues auditing SQL Server events on the specified instances and databases.

To permanently remove an Event Filter from the Repository, delete the filter.

To disable an Event Filter:

1. Navigate to **Event Filters** in the **Administration** tree.
2. On the **Event Filters** tab, select the filter you want to enable, and then click **Disable Filter**.



## Disable auditing on a database

You can disable auditing on any database associated with a registered SQL Server instance. When you disable auditing, IDERA SQL Compliance Manager stops the SQL trace but leaves the trace file directory intact. You can continue reporting on audit data stored in the Repository and archive databases.

Although alert rules that monitor this database will remain enabled, no alert messages will be generated because no new audit data will be collected.

**To disable auditing on a database**, select the database in the **Explore Activity** tree, and then click **Disable Auditing** in the Summary tab. This action disables auditing at the database level only.



## Disable auditing on a SQL Server

You can disable auditing on any registered SQL Server instance and the associated databases. When you disable auditing, IDERA SQL Compliance Manager stops the SQL trace but leaves the trace file directory intact. You can continue reporting on audit data stored in the Repository and archive databases.

Although alert rules that monitor this instance will remain enabled, no alert messages will be generated because no new audit data will be collected.

To disable auditing on a SQL Server instance, select the instance in the **Explore Activity tree**, and then click **Disable Auditing** in the Summary tab. This action disables auditing at the SQL Server instance level for all databases.



## Fine tune your audit settings

IDERA SQL Compliance Manager provides flexibility for your audit settings, allowing you to collect a wide range of SQL Server events. However, extensive auditing requires sufficient disk space, processing time, and a very stable network connection. Your environment may not provide the resources necessary to audit every event that occurs on a particular SQL Server instance.

The following auditing options possibly are resource-intensive and can cause significant growth in the Repository databases, thereby decreasing SQL Compliance Manager performance. For more information about avoiding performance issues, see [Reduce audit data to optimize performance](#).

### Auditing System Administrators or sa login as a privileged user


Many SQL Server environments are not hardened around the sysadmin fixed role. Consequently, when you audit this role as a privileged user, you can collect a significant number of events initiated by benign applications simply because they are designed to operate using a login in this role. **If you want to continue auditing System Administrator activity**, consider defining [Event Filters](#) to exclude the benign operations you do not need to monitor.

### Auditing the system databases for DML or SELECT activity

Gathering events directly from the system databases is useful only under very specific circumstances in an audited environment. Accidental collection of SQL Server internal operations can occur when you audit DML or SELECT events, resulting in the storage of unnecessary data. **If you want to continue auditing system databases**, consider routinely [archiving](#) or [grooming](#) your event databases.

### Auditing login events at the server level

Some third-party applications perform a login to the SQL Server instance before initiating any individual operation. This action can cause the collection of a large number of login events for your audit data trail. **If you have this type of activity in your environment**, consider specifying a [privileged user status](#) to those logins whose activity you need to collect.

 Auditing the Login Failed event category does not result in the collection of the same level of data. You can leave this action enabled.



## Monitor SQL Compliance Manager Agent activities

You can monitor IDERA SQL Compliance Manager change activity and SQL Compliance Manager Agent events. By default, SQL Compliance Manager automatically monitors changes applied to the Repository databases as well as SQL Compliance Manager Agent updates.

To track additional activities, such as failed logins, audit the Repository and archive databases. For more information, see [Register your SQL Servers](#).

### To monitor SQL Compliance Manager activities:

1. Select the SQL Server instance you want to monitor from the **Explore Activity** tree.
2. View the SQL Server activity summary on the Summary tab and view Alerts, Audit Events, and Archived Events information from each of the respective tabs.



## Reduce audit data to optimize performance

Use the following checklist to help you optimize IDERA SQL Compliance Manager performance by fine tuning your auditing settings to prevent excess data collection.

As SQL Compliance Manager collects audit data and stores this information in the Repository, the event databases grow. When SQL Compliance Manager is configured to audit all SQL Server events, the event databases can grow very large (up to several gigabytes) in a single 24-hour period, especially in larger environments or environments with high-volume traffic. For more information about event databases in the Repository, see [Product components and architecture](#).

|   |                                                                                                                                                                                                                                                                                                                                                     |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ✓ | <b>Follow these steps ...</b>                                                                                                                                                                                                                                                                                                                       |
| ✓ | Archive or groom stale audit data from the event databases on a regular basis. Archiving allows you to move older events whereas grooming allows you to delete older events. For more information, see <a href="#">How archives work</a> and <a href="#">How grooming works</a> .                                                                   |
| ✓ | Re-index and shrink each event database from which you have archived or groomed data. You can use native Microsoft SQL Server tools or other third-party tools such as IDERA <a href="#">SQL Defrag Manager</a> .                                                                                                                                   |
| ✓ | Carefully choose the events you need to audit. The growth and overall size of the event databases is a direct result of the auditing configuration you define. For more information, see <a href="#">Fine tune your audit settings</a> .                                                                                                            |
| ✓ | Consider configuring Event Filters. Event filters prevent collection and storage of unwanted events. For example, you can use Event Filters to exclude specific applications and operations that perform benign activities, and therefore do not require auditing, from your audit trail. For more information, see <a href="#">Event Filters</a> . |
| ✓ | Consider configuring trusted user filters. Trusted user filters sift out events initiated by specific user accounts on an individual database. In general, a trusted user filter will be more resource-efficient than an event filter when excluding non-useful or benign events from your audit data collection.                                   |



## Enable self-auditing and monitoring

Auditing your IDERA SQL Compliance Manager implementation is called self-auditing. Self-auditing consists of regularly checking the integrity of the Repository databases. You can also audit the Repository databases. For example, you can audit specific events, such as logins, on the Repository. For more information, see [Register Your SQL Servers](#) and [Verify Audit Data Integrity](#).

Tracking SQL Compliance Manager activities is called monitoring. By default, the Collection Server gathers specific event data on the Repository databases. SQL Compliance Manager automatically monitors change activity as well as SQL Compliance Manager Agent events. SQL Compliance Manager lists these activities and events in the Activity and Change Logs. For more information, see [Monitor SQL Compliance Manager Activities](#).

Using these built-in features, you can ensure your audit settings and data remain secure and uncompromised. You can also ensure your SQL Compliance Manager implementation complies with your internal and external policies.





## Test your audit settings

You can test your audit settings whenever you apply a change. Testing helps ensure you collect the audit data you need to maintain continuous compliance with internal and external standards.

### To test your audit settings:

1. Navigate to **Registered SQL Servers** in the **Administration** tree.
2. Select the SQL Server instance on which you want to test your audit settings.
3. Ensure the SQL Compliance Manager Agent for the target SQL Server instance is using your most recent audit settings.
4. On the **Auditing** menu, click **Collect Audit Data**. This action will collect SQL Server events based on your current auditing settings.



## Verify audit data integrity

IDERA SQL Compliance Manager allows you to verify the integrity of your audit data. This integrity check runs a validation algorithm that determines whether data in your Repository and archive databases is added, deleted, or modified since the last verification. The integrity check analyzes all collected events as well as additional data for Before-After and Sensitive Column auditing.

Use this integrity check to help ensure your audit data is not compromised. Consider running an integrity check on a routine basis, depending on the volume or sensitivity of your audit data.

When you run an integrity check, SQL Compliance Manager logs the event in the Change Log.

You can also run an integrity check using the command line interface. For more information about integrity checks, see [Use the CLI to verify audit data integrity](#).

### To verify audit data integrity:

1. Select **Check Repository Integrity** from the **Auditing** drop-down.
2. Select the Repository on which you want to run an integrity check, and then click **Check**.
3. Review the integrity status. *If your audit data fails the integrity check*, decide whether you want to mark each compromised event in the audit data. Marking these events changes the event class to reflect the type of compromise (event inserted, modified, deleted) and changes the event category to Integrity Check. For more information about integrity checks, see the help topic for the corresponding window.



## View audit data

You can view audit data from the Management Console and Reports.

- **View the Activity Summary.** Select a SQL Server instance in the **Explore Activity** tree. The Activity Summary appears on the **Summary** tab.
- **View recent audit events.** Select a SQL Server instance in the **Explore Activity** tree. Recent audit events appear on the **Summary** tab.
- **View audited events before archiving.** Select a SQL Server instance in the **Explore Activity** tree, and then select the **Audit Events** tab.
- **View archived events.** Select a monitored SQL Server instance or database from the **Explore Activity** tree and then select the **Archived Events** tab. For more information, see [Attach existing archives](#).
- **Report on events.** To report on events, click **Reports** in the console tree pane, and then select the report you want to view. For more information, see [Report on Audit Data](#).



## Use custom views

IDERA SQL Compliance Manager allows you to customize the way data is displayed on the Alerts tab, the Audit Events tab, and the Archived Events tab. These customized views can be saved and displayed later to allow you to more efficiently check for important alerts and audit events.

Custom views allow you to edit and save the following:

- Select which columns you want to display
- Select the order you want to group columns by
- Select the sort order of your columns
- Select the width of each column displayed
- Filter the data displayed

### Tabs that support custom views

- **Alerts tab.** You can customize the alerts view using the Views, Filters, and Group ribbons at the top of the tab. For example, consider creating a custom Alerts view to filter for severe alerts that have occurred today.
- **Audit Events tab.** You can customize the Audit Events view using the Views, Filters, and Group ribbons at the top of the tab. For example, consider creating a custom Audit Events view to display events created that have a particular login.
- **Archived Events tab.** You can customize the Archived Events view using the Archives, Views, Filters, and Group ribbons at the top of the tab. For example, you can customize your Archived Events tab to limit what is displayed to a particular login so that you can quickly locate problems.

### Add a custom view

To add a custom view:

1. Select the grid and filter options using the **Views** ribbon.
2. Click **Save As**.
3. Enter a name for your custom view in the field provide on the View Name window, and then click **OK**.
4. Select your custom view from the view drop-down list on the ribbon.



## Edit a custom view

### To edit a custom view:

1. Select the custom view you want to edit from the drop-down list on the **Views** ribbon at the top of the view.
2. Select the grid and filter options you would like to use, and then click **Save**.



## View your activity summary

IDERA SQL Compliance Manager allows you to view the summary across SQL Server activity on your enterprise, on individual SQL Server instances, and on individual databases. These summary tabs allow you to quickly check your compliance status and indicates whether any potential problems exist so that you can investigate them more thoroughly.

You can view the following summary tabs:

### **Audited SQL Servers Summary**

Displays the overall system status, the Enterprise Activity Report Card, and a breakdown of alert activity on all the SQL Server instances registered with SQL Compliance Manager.

### **Instance Summary**

Displays the overall server status, the Server Activity Report Card, audit configuration, and recent audit events that have occurred on the selected SQL Server instance.

### **Database Summary**

Displays the event distribution, recent database activity, audited activity, and recent audit events for the selected database.





## Alert on Audit Data and Status

You can receive alerts when IDERA SQL Compliance Manager detects a specific event or operational status. Alerting on event data collected from your audited SQL Server instances and databases provides the information you need to immediately correct issues that threaten your compliance with federal and corporate security and privacy policies. Alerting on operational status allows you proactively identify performance issues before your SQL Compliance Manager deployment is impacted.

You can also generate reports on alert activity, allowing you to provide forensic information and demonstrate policy enforcement. For more information, see [Report on Audit Data](#).

### Event alerting checklist

Use the following checklist to help you prepare your environment to successfully use Event Alerts to analyze audit data collected from your SQL Server instances and databases.

|   |                                                                                                                                                                                                                                                                                                                                                                       |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ✓ | <b>Follow these steps ...</b>                                                                                                                                                                                                                                                                                                                                         |
| ✓ | Ensure your Windows logon account has sysadmin privileges on the SQL Server instances hosting the Collection Server. For more information, see <a href="#">Hardware requirements</a> .                                                                                                                                                                                |
| ✓ | Review how the alert process works and which SQL events you can detect using alerts. For more information, see <a href="#">How Event Alerts work</a> .                                                                                                                                                                                                                |
| ✓ | Identify the types of audit data you want to be alerted on. Determine which events should generate alerts and the conditions under which the alert should be generated. Also consider whether you want an alert message written to the event log or emailed to a specific account. For more information, see <a href="#">Use Event Alerts to analyze audit data</a> . |
| ✓ | For each type of audit data you want to alert on, create an alert rule using the criteria you identified. For more information, see <a href="#">Create an Event Alert rule</a> .                                                                                                                                                                                      |
| ✓ | <b><i>If you want to receive alert notifications through your email account</i></b> , test your email configuration settings to ensure SQL Compliance Manager can access your SMTP server. For more information, see <a href="#">Receive alerts through email</a> .                                                                                                   |
| ✓ | Review how you can implement Reports in your SQL Server environment. For more information, see <a href="#">Report on Audit Data</a> .                                                                                                                                                                                                                                 |





## Status alerting checklist

Use the following checklist to help you prepare your environment to successfully use Status Alerts to identify performance or operational issues in your SQL Compliance Manager deployment.

|   |                                                                                                                                                                                                                                                                     |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ✓ | <b>Follow these steps ...</b>                                                                                                                                                                                                                                       |
| ✓ | Ensure your Windows logon account has sysadmin privileges on the SQL Server instances hosting the Collection Server. For more information, see <a href="#">Hardware requirements</a> .                                                                              |
| ✓ | Review how the alert process works and which SQL events you can detect using alerts. For more information, see <a href="#">How Status Alerts work</a> .                                                                                                             |
| ✓ | Identify the <a href="#">product components</a> whose status you want to audit.                                                                                                                                                                                     |
| ✓ | For each type of status data you want to alert on, create an alert rule using the criteria you identified. For more information, see <a href="#">Create a Status Alert</a> .                                                                                        |
| ✓ | <b><i>If you want to receive alert notifications through your email account</i></b> , test your email configuration settings to ensure SQL Compliance Manager can access your SMTP server. For more information, see <a href="#">Receive alerts through email</a> . |
| ✓ | Review how you can implement Reports in your SQL Server environment. For more information, see <a href="#">Report on Audit Data</a> .                                                                                                                               |



## Use Event Alerts to analyze audit data

You can use Event Alerts to identify any type of SQL Server event data you are currently auditing. Event Alerts allow you to track suspicious events collected in your audit data stream. You can use these alerts to warn about potentially malicious activity or record routine activity on an audited instance or database.

For example, when a suspicious event is discovered, you can be notified by email so you can immediately diagnose and resolve the issue. You can also configure IDERA SQL Compliance Manager to write a custom message to the application event log so you have an ongoing record.

### Event Alert rule examples

Use the following examples to help you identify the alert criteria you need to define in the corresponding Event Alert rule to monitor a specific action.

| Data you want to alert on ...                                           | Type of Event Alert rule criteria to set ...                                                                                                                                                                            |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| When a login fails to access a database containing customer information | <ul style="list-style-type: none"> <li>• Failed Logins</li> <li>• Instance named SalesServer</li> <li>• Database named Customers</li> </ul>                                                                             |
| When any login performs a password change                               | <ul style="list-style-type: none"> <li>• Security Changes</li> <li>• Any SQL Server instance</li> <li>• Successful Event is true</li> <li>• Exclude certain event types</li> </ul>                                      |
| When a non-privileged user attempts to add a login to role              | <ul style="list-style-type: none"> <li>• Security Changes</li> <li>• Any SQL Server instance</li> <li>• Successful Event is false</li> <li>• Privileged User is false</li> <li>• Exclude certain event types</li> </ul> |



| Data you want to alert on ...                         | Type of Event Alert rule criteria to set ...                                                                                                                                                                                                                  |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| When a login other than HR01 changes the Salary table | <ul style="list-style-type: none"> <li>• Data Manipulation</li> <li>• Instance named HRServer</li> <li>• Database object named Salary</li> <li>• Login Name is not HR01</li> <li>• Successful Event is true</li> <li>• Exclude certain event types</li> </ul> |



## How Event Alerts work

You can set IDERA SQL Compliance Manager to generate an event alert when it finds a suspicious event in your audit data. Alert rules define what a suspicious event is and how you want SQL Compliance Manager to respond. For example, create a rule to alert on DML events that occur on a sensitive database. You can configure SQL Compliance Manager to write a custom alert message to the application event log and send an alert email notification to your corporate and personal SMTP accounts when the alert is triggered. For more information about customizing alerts, see [Use Event Alerts to analyze audit data](#).

SQL Compliance Manager alerts only on the events you select for an audited SQL Server instance or database. After the Collection Server processes the raw event data sent by the SQL Compliance Manager Agent, the Collection Server uses the criteria defined by your alert rules to search for suspicious events. When the Collection Server finds a matching event, it triggers the alert. ***If you specified a message for this alert,*** SQL Compliance Manager saves the alert message in the SQLcompliance Repository database. You can view alert messages and the corresponding events using the Event Alerts tab on the Select SQL Server Instance view.

Depending on the amount of alert activity your environment generates, you may want to groom alert messages on a routine basis. For more information about aiding your system performance, see [Groom alerts from Repository](#).



## Create an Event Alert rule

Creating an Event Alert rule allows you to begin generating alerts on audit data across your SQL Server environment. To successfully generate an alert, the alert rule criteria you select must match SQL Server event data you are currently auditing on the specified instance or database. For more information, see [Use Event Alerts to analyze audit data](#).

To create an Event Alert:

1. Select **Alert Rules** in the **Administration** tree.
2. Click **Event** on the **New Rule** ribbon.
3. Select the type of event (event category) that you want to alert on, and then click **Next**.
4. Select the type of object you want to alert on for the selected event type, and then click **Next**. By default, the alert rule will generate an alert when the selected event occurs on any registered SQL Server instance, database, or database object. Use the links provided on the rule details pane to narrow your alert rule to specific objects or objects that match a naming convention.
5. Define the criteria under which the alert should trigger, and then click **Next**. Use the criteria to narrow your alert rule to generate alerts only under specific conditions. To specify values that the event should match, use the links provided on the rule details pane.
6. Select the action you want SQL compliance manager to take when this alert triggers, and then click **Next**. To configure the email notification message or event log entry, use the links provided on the rule details pane.
7. Specify a name and appropriate alert level for this alert, review the summary, and then click **Finish**. By default, the new alert rule is enabled.



## Change which event triggers the alert

Based on the criteria defined in your alert rules, IDERA SQL Compliance Manager generates alerts against your audit data stream for events that occur on a specified SQL Server instance, database, or database object. ***If a SQL Server instance, database, or database object is not specified***, the alert rule criteria is applied against all audit data collected from your SQL Server environment.

You can change the type of audit data that triggers an alert. For example, you can alert on a different event type or a different database. You can also copy an existing alert rule and use it as a template to create a new rule. For more information, see [Use an alert rule as a template](#).

To change the type of audit data that triggers an alert:

1. Select **Alert Rules** in the **Administration** tree.
2. Right-click the rule for the alert you want to change, and then select **Properties** on the context menu.
3. On the SQL Server Event Type window, select the type of event (event category) that you want to alert on, and then click **Next**.
4. On the SQL Server Object Type window, select the type of object you want to alert on for the selected event type, and then click **Next**. By default, the alert rule will generate an alert when the selected event occurs on any registered SQL Server instance, database, or database object. Use the links provided on the rule details pane to narrow your alert rule to specific objects or objects that match a naming convention.
5. On the Additional Event Filters window, define the criteria under which the alert should trigger. Use the criteria to narrow your alert rule to generate alerts only under specific conditions. To specify values that the event should match, use the links provided on the rule details pane.
6. Click **Finish**.



## View the event that triggered an alert

You can use the Management Console to view the properties of the SQL Server event that triggered a given alert.

To view the event data for an alert:

1. Select **Audited SQL Servers** or an individual SQL Server instance in the **Explore Activity** tree.
2. On the **Alerts** tab, right-click the alert for which you want to view event details, and then select **Event Properties** on the context menu.
3. Review the event details, and then click **Close**.



## Use Status Alerts to ensure compliance

You can use Status Alerts to identify issues and potential disruptions in your IDERA SQL Compliance Manager deployment. By enabling Status Alerts, you can:

- Confirm that your SQL Server instances are available to be audited.
- Ensure the SQL Compliance Manager Agent and Collection Server are operating as expected.
- Proactively know when the event databases are growing too large so you can [archive](#) or [groom](#) your audit data before too much disk space is consumed.

### Status Alerts best practices

| Alert                                    | What it means                                                                                                                                                 | What is the risk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | What might be wrong                                                                                                                                                                                                                                                                   |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agent cannot connect to audited instance | The SQL Compliance Manager Agent was unable to connect to the audited SQL Server instance. This alert is sent immediately after the failed connection occurs. | <p>You are in danger of filling the trace directory and losing important audit data.</p> <p>Updated audit settings are not applied to the SQL trace that is collecting events, and you will fail to collect the events you want. SQL Server continues to write trace files to the SQL Compliance Manager Agent trace directory, but the agent cannot send these files to the Collection Server. When the trace directory is full, auditing ceases, impacting SQL Server performance.</p> <p><b><i>If the database id changes</i></b>, the agent will not be able to detect this update, causing the SQL trace to stop.</p> <p><b><i>If communications between the agent and the instance are "down" for more than 7 days</i></b>, the SQL trace automatically stops.</p> | <ul style="list-style-type: none"> <li>• The audited SQL Server instance may be offline or unable to respond.</li> <li>• The SQL Compliance Manager Agent service account does not have the <a href="#">required permissions</a> to access the target SQL Server instance.</li> </ul> |





| Alert                            | What it means                                                                                                                     | What is the risk                                                                                                                                                                                                                                                           | What might be wrong                                                                                                                                                                                                                                                                                                          |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agent heartbeat was not received | The Collection Server has not received a heartbeat from the SQL Compliance Manager Agent within the specified heartbeat interval. | Auditing is not immediately affected by this issue; however, you cannot apply updated audit settings. Trace files continue to queue in the trace file directory until the SQL Compliance Manager Agent Service is able to send these trace files to the Collection Server. | <ul style="list-style-type: none"> <li>• The computer hosting the SQL Compliance Manager Agent may be offline.</li> <li>• Network firewall settings may be blocking communication between the SQL Compliance Manager Agent and the Collection Server.</li> <li>• The SQL Compliance Manager Agent may be stopped.</li> </ul> |



| Alert                                           | What it means                                                                                                                                                                       | What is the risk                                                                                                                                                                                                                                                                                                                                                                                                                                            | What might be wrong                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Agent trace directory reached size limit</p> | <p>The trace directory folder on the SQL Server computer where the SQL Compliance Manager Agent is deployed has exceeded the disk space percentage allocated in the alert rule.</p> | <p>You are in danger of filling the trace directory and losing important audit data.<br/>                     When the trace directory reaches its specified maximum size, the SQL Compliance Manager Agent ceases auditing the target instances. The SQL traces stop, and no subsequent events are collected.<br/>                     The size of the trace directory could also impact the performance of the SQL Server instances on this computer.</p> | <ul style="list-style-type: none"> <li>• The Collection Server may be offline, preventing the SQL Compliance Manager Agent from sending the trace files.</li> <li>• Network firewall settings may be blocking communication between the SQL Compliance Manager Agent and the Collection Server.</li> <li>• Your audit settings may be collecting more SQL Server events than you expected.</li> </ul> |



| Alert | What it means | What is the risk | What might be wrong                                                                                                                                                              |
|-------|---------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |               |                  | <ul style="list-style-type: none"> <li>• SQL Server traffic may have unexpectedly increased, causing more events to be collected and resulting in larger trace files.</li> </ul> |



| Alert                                                       | What it means                                                                                                                                             | What is the risk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | What might be wrong                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Collection Server trace directory reached size limit</p> | <p>The trace directory folder on the computer where the Collection Server is installed has exceeded the disk space limit specified in the alert rule.</p> | <p>You are in danger of filling the trace directory, which can impact the performance of the Collection Server, such as delaying alerts. In turn, a full trace directory on the Collection Server can cause the SQL Compliance Manager Agent trace directory to fill as the trace files queue up to be sent. When the SQL Compliance Manager Agent trace directory reaches its specified maximum size, the agent will cease auditing the target instances. The SQL traces stop, and no subsequent events are collected.</p> | <ul style="list-style-type: none"> <li>• You can manually stop the Collection Service and prevent trace file processing.</li> <li>• The Collection Service may be unable to access the Repository due to <a href="#">inadequate permissions</a> or an offline Repository database.</li> <li>• Your audit settings may be collecting more SQL Server events than you expected.</li> </ul> |



| Alert | What it means | What is the risk | What might be wrong                                                                                                                                                                         |
|-------|---------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |               |                  | <ul style="list-style-type: none"> <li>• A third-party application , such as an anti-virus scanner, may be preventing the Collection Service from accessing the trace directory.</li> </ul> |



| Alert                        | What it means                                                                                                    | What is the risk                                                                                                                      | What might be wrong                                                                                                                                                                                                                                                                                                                                             |
|------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Event data base is too large | The event database for an audited SQL Server instance is larger than the size limit specified in the alert rule. | Large event databases can significantly impact the performance of the Repository, and the SQL Server instance hosting the Repository. | <ul style="list-style-type: none"> <li>• Your audit settings may be collecting more SQL Server events than you expected.</li> <li>• SQL Server traffic may have unexpectedly increased, causing more events to be collected and resulting in larger trace files.</li> <li>• You may need to <a href="#">archive</a> or <a href="#">groom</a> events.</li> </ul> |



## How Status Alerts work

IDERA SQL Compliance Manager can generate a Status Alert when it receives a status update from the Collection Server or SQL Compliance Manager Agent that is unsafe and could disrupt your ability to audit your SQL Server instances. Alert rules define what type of status is considered unsafe and how SQL Compliance Manager should respond. You can configure SQL Compliance Manager to write a custom alert message to the application event log and send an alert email notification to your corporate and personal SMTP accounts when the alert is triggered. For more information, see [Use Status Alerts to ensure compliance](#).

There are two categories of Status Alerts:

- alerts that track the Collection Server status
- alerts that track the SQL Compliance Manager Agent status

In general, when the Collection Server or SQL Compliance Manager Agent communicates at their heartbeat intervals, each service confirms its health and compares its status information against the alert rules you have defined. An alert message is generated when the status is deemed unsafe. By default, each heartbeat occurs in five-minute intervals.

Depending on the amount of alert activity your environment generates, you may want to groom alert messages on a routine basis. For more information, see [Groom alerts](#).



## Create a Status Alert

Creating a Status Alert rule allows you to proactively identify potential issues in your IDERA SQL Compliance Manager deployment that could disrupt your ability to continue auditing. For more information, see [Use Status Alerts to ensure compliance](#).

To create a Status Alert:

1. Select **Alert Rules** in the **Administration** tree.
2. Click **Status** on the **New Rule** ribbon.
3. Select the type of SQL Compliance Manager status that you want to alert on.
4. In the **Edit rule details** pane, define the criteria under which the alert should trigger, and then click **Next**.
5. Select the action you want SQL Compliance Manager to take when this alert triggers, and then click **Next**. To configure the email notification message or event log entry, use the links provided on the rule details pane.
6. Specify a name and appropriate alert level for this alert, review the summary, and then click **Finish**. By default, the new alert rule is enabled.





## Use Data Alerts to perform forensics

You can use Data Alerts to track access to specific table columns that contain sensitive data, such as Social Security numbers. For example, when a user accesses a sensitive column, IDERA SQL Compliance Manager can notify you by email so you can immediately diagnose and resolve the issue. You can also configure SQL Compliance Manager to write a custom message to the application event log so you have an ongoing record.



## How Data Alerts work

IDERA SQL Compliance Manager can generate a Data Alert when it finds a suspicious data manipulation in your audit trail. Alert rules define what a suspicious data manipulation is and how SQL Compliance Manager should respond. For example, you can create a rule to alert you when data in sensitive columns has been accessed. You can configure SQL Compliance Manager to write a custom alert message to the application event log and send an alert email notification to your corporate and personal SMTP accounts when the alert is triggered. For more information, see [Use Data Alerts to perform forensics](#).

SQL Compliance Manager only alerts on the data you select for an audited SQL Server instance and database. After the Collection Server processes the raw event data sent by the SQL Compliance Manager Agent, the Collection Server uses the criteria defined by your alert rules to search for suspicious manipulations. When a matching event is found, the alert is triggered.

***If you specified a message for this alert***, SQL Compliance Manager saves the alert message in the SQLcompliance Repository database. You can view alert messages and the corresponding events using the Data Alerts tab on the Select SQL Server Instance view. Depending on the amount of alert activity your environment generates, you may want to groom alert messages on a routine basis. For more information, see [Groom alerts](#).



## Create a Data Alert

Creating a Data Alert rule allows you to begin generating alerts on audit data across your SQL Server environment. To successfully generate an alert, the alert rule criteria you select must match SQL Server event data you are currently auditing on the specified instance or database. For example, to alert on sensitive column access, first [enable auditing on sensitive columns](#).

To create a Data Alert:

1. Select **Alert Rules** in the **Administration** tree.
2. Click **Data** on the **New Rule** ribbon.
3. On the **Data Alert Type** window, note that you are creating an alert for sensitive column access, and then click **Next**.
4. Select the type of object you want to alert on, and then click **Next**. By default, the alert rule will generate an alert when the selected data is collected for an instance, database, table, or column. Use the links provided on the rule details pane to narrow your alert rule to specific objects or objects that match a naming convention.
5. Select the action you want SQL Compliance Manager to take when this alert triggers, and then click **Next**. To configure the email notification message or event log entry, use the links provided on the rule details pane.
6. Specify a name and appropriate alert level for this alert, review the summary, and then click **Finish**. By default, the new alert rule is enabled.



## Change the action an alert performs

Based on the criteria defined in your alert rules, IDERA SQL Compliance Manager will write a custom alert message to the application event log or email a custom alert message to the specified addresses when an alert is triggered. You can change which action SQL Compliance Manager takes when the event or Status Alert is triggered.

***If you want to receive alert email notifications***, configure SQL Compliance Manager to connect to your SMTP server. For more information, see [Receive alerts through email](#).

### To change the action an alert performs:

1. Select **Alert Rules** in the **Administration** tree.
2. Right-click the rule for the event or Status Alert you want to change, and then select **Properties** on the context menu.
3. Click **Next** to navigate to the Alert Actions window.
4. Select the action you want SQL Compliance Manager to take when this alert triggers. To configure the email notification message or event log entry, use the links provided on the rule details pane.
5. Click **Finish**.



## Disable an alert

Disabling an alert allows you to temporarily stop alerting on a specific event or status. For example, you can disable alerting on audit data from a specific SQL Server instance or database by disabling the corresponding Event Alert rule. When you disable alerting, IDERA SQL Compliance Manager stops generating alerts against the audit data or operational status specified by the alert rule criteria but leaves the alert rule and previously generated alert messages intact. For example, SQL Compliance Manager continues auditing SQL Server events on the specified instances and databases.

To permanently remove an alert rule from the Repository, delete the rule.

### To disable an alert:

1. Select **Alert Rules** in the **Administration** tree.
2. Select the rule you want to disable, and then click **Disable** on the **Rule Management** ribbon.



## Enable an alert

You can resume IDERA SQL Compliance Manager alerting on audit data or status by enabling the corresponding alert rule. By default, alerting is enabled when the Event or Status Alert rule is created.

### To enable an alert:

1. Select **Alert Rules** in the **Administration** tree.
2. Select the rule you want to enable, and then click **Enable** on the **Rule Management** ribbon.



## Export your alert rules

IDERA SQL Compliance Manager saves exported alert rules in XML format for you to apply to other registered SQL Server instances. This flexibility saves you time when you are configuring Event and Status Alert rules on multiple SQL Server instances, and helps ensure consistency across your environment. In addition, exporting allows you to back up your alert rules to use should you need to reinstate an audited SQL Server instance. As you configure alert rules, consider which settings you would like to save for future use, and export the rules configured for that particular SQL Server instance or database.

### To export your alert rules:

1. Select **Alert Rules** in the **Administration** tree.
2. Click **Export Rules**.
3. Enter a file name or use the default.
4. Select the location to save your alert rules file.
5. Click **Save**.



## Groom alerts

IDERA SQL Compliance Manager allows you to remove stale alert data and manage your alert storage requirements by grooming alert messages from the Repository databases. When you groom alerts, use an age threshold to delete alert messages no longer needed. Grooming ensures that your alert reports reflect the current state of your environment without compromising your database resources. For more information about grooming data, see [How grooming works](#) and [Groom alerts](#).





## Import your alert rules

As you configure or modify alert rules for your SQL Server instances in IDERA SQL Compliance Manager, you may want to apply the same rules across multiple SQL Server instances in your environment. You can import Event and Status Alert rules through previously-exported XML files to streamline your configuration workflow and reduce errors.

To import your alert rules:

1. Select **Alert Rules** in the **Administration** tree.
2. Click **Import Rules**.
3. Locate the alert rules file you want to import.
4. Click **Open**.



## Receive alerts through email

You can configure IDERA SQL Compliance Manager to email custom alert messages to yourself or others. To successfully receive alert messages through an email client, configure SQL Compliance Manager to connect to your SMTP server, and then configure the Event or Status Alert rule to send an email when the alert is triggered.

### To receive alerts through email:

1. On the **Alerting** menu, click **Configure Email Settings**.
2. Specify the following settings according to your SMTP server configuration:
  - Name of the physical computer hosting the SMTP server
  - Port used to connect to the SMTP server
  - Whether the SMTP server requires authentication to accept a connection from another computer or application
  - Whether the SMTP server uses Secure Sockets Layer (SSL)
  - Address that should display in the From field of the alert email
3. To verify that SQL Compliance Manager can connect to your SMTP server using the specified settings, click **Test**.
4. Click **OK**.
5. Depending on the alert rule type, use either the Edit Event Alert Rule wizard or the Edit Status Alert Rule wizard to enable email notification, specify recipient addresses, and create a custom alert message for existing alerts. For more information about alert actions, see [Change the action an alert performs](#).



## Report on alerts

You can use Report Cards to identify compliance problems, or track alert activity over a time period up to 30 days. When you identify spikes in alert activity, or potential issues, you can generate reports to view in-depth information on the associated alerts. This feature allows you to gather forensic information or demonstrate policy enforcement. For more information, see [Report on Audit Data](#).



## Use an alert rule as a template

You can create a new alert rule by using an existing event or status rule as a template. Alert rule templates allow you to more efficiently create multiple rules against the same instance or database. You can also use alert rule templates to apply consistent alert criteria across multiple instances and databases. When you choose to use an alert rule as a template, IDERA SQL Compliance Manager copies the existing alert rule criteria to the new rule. You can then use the Edit Alert Rule wizard to customize the new rule.

### To use an alert rule as a template:

1. Select **Alert Rules** in the **Administration** tree.
2. Select the event or status rule you want to use as a template, and then click **From Existing** on the **New Rule** ribbon.
3. On each wizard window, specify the criteria you want to use for this new rule, and then click **Next**.
4. On the Finish Alert Rule window, specify a name for this alert, review the summary, and then click **Finish**. By default, the new alert rule is enabled.



## View alerts

You can use the IDERA SQL Compliance Manager Management Console to view messages for previously generated alerts. To successfully view an alert message, the corresponding alert rule must be set to email the alert message or write the alert message to the application event log. For more information, see [Change the action an alert performs](#).

### To view alert messages:

1. Select **Audited SQL Servers** or an individual SQL Server instance in the **Explore Activity** tree.
2. Select the **Alerts** tab, right-click the alert for which you want to view the alert message, and then select **Alert Message** on the context menu.
3. Review the alert message, and then click **Close**.





## Secure Audit Data

IDERA SQL Compliance Manager allows you to control access to your audit data by leveraging the native SQL Server security model. The Management Console authenticates SQL Server login credentials and privileges to determine who can administer audit data and who can view audit data. SQL Compliance Manager seamlessly integrates with your existing SQL Server security settings, complying with your network security policies. This approach allows you to safely and securely deploy SQL Compliance Manager throughout your SQL Server environment with little or no configuration.



## How Console security works

IDERA SQL Compliance Manager controls user access by leveraging the SQL Server logins that exist on the SQL Server instance hosting the Repository databases. When you start the Management Console, SQL Compliance Manager automatically attempts to connect to the Repository. The Management Console validates your SQL Server privileges and restricts your access to the appropriate features. To be able to configure audit settings or report on audit data, your login must have the appropriate SQL Server privileges on the Repository databases.





## Security and existing logins

An existing Windows authentication login that is a member of the built-in Administrators group in SQL Server can configure and view audit data. Likewise, an existing SQL authentication login, such as the sa account, that is a member of the sysadmin fixed server role can configure and view audit data.

An existing Windows authentication login that is a member of the Public role on the SQL Server instance that hosts the Repository databases can view audit data.



## Security and login permissions

Ensure each IDERA SQL Compliance Manager user has a SQL Server login. When you grant SQL Compliance Manager permissions to a login, SQL Compliance Manager assigns either the System Administrators role or read privileges on the Repository databases. You can quickly and easily grant these permissions using the Management Console.

The System Administrators role allows the user to perform administrative activities in SQL Compliance Manager, such as:

- Registering SQL Server instances
- Enabling or disabling auditing
- Configuring audit settings

Read privileges allow the user to view collected audit data and generate reports on audited events.

You can also set default permissions on the registered SQL Server instance or an individual archive database. For more information about setting your default permissions, see [Understanding default permissions](#).



## Understanding default permissions

If your security policies require more granular access control, you can grant or deny IDERA SQL Compliance Manager permissions on each audited SQL Server instance and archive database. These permissions determine whether a user can view audited events and the corresponding SQL statements by default.

You can set default permissions when you register a SQL Server instance to audit. When you set default permissions, SQL Compliance Manager grants read privileges to the guest account on the selected Repository databases. This setting allows a SQL Server login to view audit data collected from that registered SQL Server instance only.

You can also specify the appropriate permissions on each archive database that contains audit data. You can grant or deny access per database. When you set default permissions, SQL Compliance Manager grants read privileges to the guest account on the selected archive database only.

As you assign permissions, keep in mind that permissions granted to a login are applied along side any default permissions you set at the server or database level.



## How to implement logins

Use the following checklist to help you implement and configure logins that meet your auditing and SQL Server security needs.

|                                     |                                                                                                                                                                                                                                             |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <b>Follow these steps ...</b>                                                                                                                                                                                                               |
| <input type="checkbox"/>            | Ensure your Windows logon account has sysadmin privileges on the SQL Server instance that hosts the Repository databases. For more information, see <a href="#">Permissions requirements</a> .                                              |
| <input type="checkbox"/>            | Review how IDERA SQL Compliance Manager enforces your native SQL Server security model. For more information, see <a href="#">How Console security works</a> .                                                                              |
| <input type="checkbox"/>            | Review the SQL Server privileges granted with SQL compliance manager permissions. For more information, see <a href="#">Available login permissions</a> .                                                                                   |
| <input type="checkbox"/>            | Create a login for each person who should generate reports using the Management Console, and then apply the Can view and report on audit data permission to each login. For more information, see <a href="#">Create a login</a> .          |
| <input type="checkbox"/>            | Create a login for each person who should administer auditing in the Management Console, and then apply the Can configure settings and view audit data permission to each login. For more information, see <a href="#">Create a login</a> . |



## Available login permissions

IDERA SQL Compliance Manager permissions allow a user to access specific SQL Compliance Manager features. When you assign a permission, SQL Compliance Manager applies specific SQL Server privileges to the login.

SQL Compliance Manager provides the following levels of permission:

### **Can configure SQL Compliance Manager settings and view audit data**

Allows the selected login to perform any administrative task in the Management Console. Administrative tasks include:

- Configuring audit settings and event filters
- Managing alerts
- Managing logins
- Monitoring SQL Compliance Manager activities
- Archiving and grooming audit data
- Enabling auditing on SQL Servers and databases

### **Logins with this permission can also view and report on audit data.**

When you assign this permission, SQL Compliance Manager grants the System Administrators role to the selected login. This role is granted on the SQL Server instance that hosts the Repository databases, applying this role along side any default permission settings.

### **Can view and report on audit data**

Allows the selected login to view and report on audited data using the Management Console. When you assign this permission, SQL Compliance Manager grants read privileges to the selected login. These privileges are granted on the SQL Server instance that hosts the Repository databases, applying these privileges along side any default permission settings.



## Create a login

Consider creating a login for each security administrator, database administrator, or auditor who uses the Management Console. Creating multiple logins allows you to enforce more granular security. When you create a login, IDERA SQL Compliance Manager also creates a SQL Server login on the SQL Server instance that hosts the Repository databases.

Assign the new login the appropriate SQL Compliance Manager permissions and database access rights. For more information, see [Available login permissions](#).

### To create a console login:

1. Select **Logins** in the **Administration** tree, and then click **New Login**.
2. Specify the name of a valid Windows user account and whether this account should have access to audit data, and then click **Next**. You can grant or change access later.
3. Specify which level of SQL Compliance Manager permissions you want to grant this login, and then click **Next**. For more information, see [Available login permissions](#).
4. Review the summary, and then click **Finish**.



## Assign permissions to a login

You can assign IDERA SQL Compliance Manager permissions to any login. When you assign permissions, SQL Compliance Manager applies the appropriate SQL Server privileges to the login. For more information, see [Available login permissions](#).

Because you are granting SQL Server privileges, applying permissions to a login also applies the same permissions in SQL Server. You can assign login permissions when you create a login, or modify permissions for existing logins. The following procedure allows you to modify permissions for existing logins.

### To assign SQL Compliance Manager permissions:

1. Select **Logins** in the Administration tree.
2. Select the login you would like to assign permissions to in the list and click **View Login Properties**.
3. On the General tab, select the appropriate permissions.
4. ***If your internal security policies require more granular access control***, use the Database Access tab to select the appropriate permissions on each database that contains audit data.
5. Click **OK**.







## Report on Audit Data

IDERA SQL Compliance Manager Reports provides several built-in reports that allow you to quickly and easily meet the demands of on-the-spot audits, routine audits, and long-term event trending. Each report gives detailed information about events in your SQL Server environment. Use SQL Compliance Manager Reports to track compliance on demand and provide self-service reporting to third-party auditors.



## How reports work

The Audit Reports window contains a reporting interface that allows you to generate audit reports. Each report is based on a template file that is stored in the Reports folder in the SQLcompliance installation directory. When you generate a report, you are able to determine what is displayed by selecting from the options on each individual report. This allows you to generate reports tailored to your needs.

In addition, you can integrate report template files into Microsoft SQL Server Reporting Services (Reporting Services) to allow you to further customize your reports when necessary. For more information about using Reporting Services, see [Customize reports](#).



## Available reports

The following report categories are included with IDERA SQL Compliance Manager. The activity, change, and history reports list events that passed the SQL Server access check. To audit events that failed the SQL Server access check, generate the Permission Denied Activity report for the appropriate SQL Server instance.

### **Audit Reports**

The Daily Audit Activity Statistics report lists the amount of activity that occurred on the SQL Server instance or designated database, on an hourly basis, for the dates specified. Use this report to audit overall activity levels on your SQL Server instances and databases.

### **Alerts Reports**

The Alert Activity report lists alert details, such as target object, event, and time of the alert. Use this report to audit alerts triggered over a specified time period.

### **Application Audit Reports**

These reports list activity details, such as login, event, and time of activity, per application and database. Use these reports to audit activity across multiple applications and databases.

- Application Activity
- Application Activity Statistics

### **Database Object Audit Reports**

The Backup and DBCC Activity report lists backup, restore, DBCC, and database object activities on specific databases. Use these reports to audit mass data movement or database object activity, such as SELECT or UPDATE, across multiple databases.

### **DDL Audit Reports**

The Database Schema Change History report lists schema changes applied to audited databases. Use these reports to audit data definition language (DDL) statements, such as dropped tables, executed against one or more databases on a SQL Server instance.

### **DML Audit Reports**

The DML Activity (Before-After) report lists DML events for which before and after data is available. Use this report to audit UPDATE, INSERT, and DELETE activity on critical or sensitive databases.

### **Host Audit Reports**



The Host Activity report lists all host computers from which specific logins executed an action. Use this report to audit user behavior from multiple client computers, identifying the host computer from which an activity request originated.

### **Policy Audit Reports**

These reports list changes and updates applied to the SQL Compliance Manager Agent deployed on a specific SQL Server, and any integrity violations in your audit data. Use these reports to diagnose audit data integrity issues and track agent configuration changes as well as agent activities, such as SQL Compliance Manager Agent service restarts.

- Agent History
- Alert Rules
- Audit Control Changes
- Integrity Check

### **Regulation Audit Reports**

The Regulation Guidelines report lists all of the regulations and their individual guidelines applied to one or more databases. Use this report to audit the regulatory guidelines applied to your SQL Server instance.

### **Row Count Reports**

The Row Count reports lists all information about data access. Use this report to audit the frequency in which data is accessed, identifying suspicious behavior.

### **Security Audit Reports**

These reports list permission changes by object type as well as unauthorized attempts to execute activities. Use these reports to audit your SQL Server security settings and identify misconduct.

- Change History (by object)
- Change History (by user)
- Permission Denied Activity
- User Login History

### **SELECT Audit Reports**

The Sensitive Column report lists all SELECT events that were initiated by applications to read specific columns that contain sensitive data. This report also includes the T-SQL statements that executed the corresponding commands. Use this report to audit columns that require high security, such as employee Social Security numbers (SSNs).

### **User Audit Reports**



These reports list user activities performed on a specific SQL Server instance, and provide a history of login creations and deletions. Use these reports to audit user behavior and login management.

- Login Creation History
- Login Deletion History
- Server Login Activity Summary
- User Activity History



## Customize reports

You can customize any of the integrated audit reports or develop new reports that fit your unique auditing needs. First, deploy the IDERA SQL Compliance Manager Reports to your existing Microsoft Reporting Services. Then select which reports you want to customize from the corresponding RDL files (by default, these files are stored in the Anytime folder under the SQL Compliance Manager Reports root folder on the Report Server). ***If you decide to customize these reports***, consider the following best practices:

- Save your new and modified reports to a separate folder
- Use a different filename for modified reports

For more information about deploying SQL Compliance Manager Reports, see [Generate reports with Reporting Services](#). For more information about developing custom reports, see the Reporting Services Books Online.



## Generate reports in the Console

IDERA SQL Compliance Manager includes many common audit reports. Create these reports using the Audit Reports view in the Management Console. You can select the SQL Server instances, date range, and other report-specific criteria to generate reports that meet your needs. Once generated, you can print the report or save it to Excel or PDF.

### To generate a report:

1. Select **Audit Reports** in the console tree.
2. Select the appropriate report from the **Audit Reports** list.
3. Click **Run Report**.

ⓘ Microsoft Excel supports only 32767 characters in a cell. If a SQL statement contains more than 32767 characters when exporting a report, Microsoft Excel truncates the additional characters.



## Generate reports with Reporting Services

You can integrate the reports included with IDERA SQL Compliance Manager into your Reporting Services Server using the Reports Installer accessible from the [Audit reports view](#). Integrating the SQL Compliance Manager audit reports with Microsoft SQL Server Reporting Services (Reporting Services) gives you the ability to completely customize your reports to fit your particular needs.





## Reporting Services requirements

IDERA SQL Compliance Manager allows you to use Microsoft SQL Server Reporting Services (Reporting Services) to provide on-the-spot reporting on your audit data. The Report Server computer should meet or exceed the hardware and software requirements recommended by Microsoft to run and manage the Reporting Services components.

***To successfully use Reporting Services in your SQL Server 2000 environment***, deploy Reporting Services version 1.0 SP1 or later (SP2 recommended). ***To successfully use Reporting Services in SQL Server 2005 or later environments***, deploy the Reporting Services components released with the current version of SQL Server.

***To successfully integrate SQL Compliance Manager reports with Microsoft Reporting Services***, ensure your logon account has Content Manager Rights on the Report Server.



## Deploy reports to Reporting Services

The Deploy Reports wizard allows you to integrate IDERA SQL Compliance Manager reports into Microsoft Report Services. Perform this deployment for each Repository that contains data you want to audit using Microsoft Reporting Services. The following procedure guides you through a remote install.

***If the Repository databases are located in a non-trusted domain***, deploy the reports to the same physical computer that is hosting the Repository databases (by default, this computer is also the Collection Server). To ensure successful authentication, ensure the target computer is running a local install of Microsoft Reporting Services.

To install reports:

1. Ensure your environment includes supported installations of Microsoft Report Services, and note the configuration settings. For more information, see [Reporting Services requirements](#).
2. Start the Management Console and navigate to the **Audit Reports** view.
3. Under **Reporting Services**, click **Deploy Reports**.
4. On the Welcome window, click **Next**.
5. Specify the name of the Report Server computer hosting Microsoft Reporting Services and any advanced configuration settings, such as a dedicated port, and then click **Next**.
6. Specify the following Repository connection settings, and then click **Next**.
  - Name of the SQL Server instance that is hosting the target Repository
  - Credentials of the Windows account the Report Server should use to connect to the Repository databases
7. Specify the name of the virtual folder Reporting Services will use to store the reports (RDL files) and choose whether to overwrite any previously deployed reports, and then click **Next**.
  - ***If you choose to not overwrite reports***, the wizard deploys only the new reports included in this release. The wizard will not deploy updated reports.
8. On the Summary window, click **Next**.
9. Review the progress. When deployment is complete, click **OK**.
10. To start using the deployed reports, click **View Deployed Reports** under Reporting Services on the Audit Reports view. This link opens the Report Manager interface on the Report Server.



## Test report deployment

Once you integrate IDERA SQL Compliance Manager reports into Microsoft Reporting Services, test your installation by loading Microsoft Reporting Services, and then generating each report. This step allows you to ensure that when you start generating reports, you get the results you anticipate.

For more information about generating reports in Microsoft Reporting Services, see the Reporting Services Books Online.



## Change the Reporting Services data source

Reporting Services leverages the Repository as the data source when generating reports. To use Reporting Services to report on your audit data, ensure that the data source is correctly configured, allowing Reporting Services to find and connect to the Repository.

For example, when you migrate the Collection Server to another computer, the Repository location changes accordingly, causing the data source configuration to become invalid.

You can configure Reporting Services using the Report Manager Web interface.



## Use reports to analyze trends over time

Use IDERA SQL Compliance Manager reports to track activity trends over a period of time. This allows you, for example, to check peaks in activity to be sure that they are only occurring in expected periods of time. If you use Microsoft Reporting Services, you can automate the generation of daily, weekly, monthly, and quarterly reports.

Using SQL Compliance Manager reports to track trends over time also allows you to see potential problems that are occurring with a higher frequency over time, and might require your attention. This can be a useful way to reinforce SQL Server compliance policies and catch problems before they become a bigger issue.



## Use reports to establish and maintain compliance

You can use IDERA SQL Compliance Manager reports to show that your organization is following SQL Server compliance policies or that the procedures you developed are having a positive impact on the way that SQL Server is used in your environment.

Once compliance is established, SQL Compliance Manager Reports allow you to track activity and identify problems so that you can resolve these issues and maintain compliance. In addition to the ability to generate compliance reports on your SQL Server environment, you can also assign read-only access to SQL Compliance Manager to designated users so they can generate necessary reports.



## Use report cards to track SQL Server activity

IDERA SQL Compliance Manager includes several Activity Report Cards that display up to 30 days of SQL Server activity. Activity Report Cards allow you to view the SQL Server activity at the enterprise and individual SQL Server instance levels. These report cards allow you to quickly check activity in each event category audited, view SQL Server activity statistics, and short-term activity trends. Use Activity Report Cards to identify problems that might require more in-depth analysis.

### To view report cards:

1. Select **Audited SQL Servers** from the **Explore Activity** tree to see the Enterprise Activity Report Card. The Enterprise Activity Report Card allows you to review the status of your audited SQL Servers and the recent activity that has occurred on them.
2. Select any SQL Server instance from the **Explore Activity** tree to see the Server Activity Report Card. The Server Activity Report Card allows you to review the activity status and recent audit event history on your SQL Server instance.
3. Select any database from the **Explore Activity** tree to see Recent Database Activity Summary. The Recent Database Activity Summary allows you to review the recent database activity and a listing of recent audit events that have occurred on the selected database.







## Manage Audit Data

You can optimize auditing performance and preserve your compliance history through IDERA SQL Compliance Manager archives. Archiving allows you to off-load collected and processed events from the Repository databases to an archive database. Your audit data remains available for reporting and viewing without impacting your collection and processing performance. To view or report on archived events, simply attach the archive database.

***If your environment requires more aggressive data management,*** consider implementing a maintenance plan for your archive databases to meet your storage and performance needs. Consider using tools such as IDERA [SQL Safe](#) to quickly and securely back up archive databases so that you maintain optimal performance on the host SQL Server instance. Also consider grooming older event data. You can groom audited events from selected archive databases using the Management Console.



## How archives work

When you archive audit data, the Collection Server moves audited events from the Repository (typically, the event database) to an archive database. IDERA SQL Compliance Manager creates an archive database for each registered SQL Server instance, according to the file naming conventions and event age limit you specify. Each archive database contains events collected from the audited databases hosted on the SQL Server instance. You can archive event data across all registered SQL Server instances or for a selected instance.

To ensure you are archiving uncompromised audit data, SQL Compliance Manager allows you to check the integrity of the collected events. ***If the audit data fails this integrity check***, SQL Compliance Manager does not archive the data.

During the archival process, the audited events are temporarily written to the tempdb before they are stored in the appropriate archive database. ***If you are archiving a large number of events, such as one million events***, the tempdb may run out of available space, resulting in an incomplete archive.

To ensure optimal event handling and performance, archive your audit data frequently. Monitor your Repository database consumption over the first few days of collecting audit data, so you can develop a maintenance strategy that best suits your needs. For more information, see [Back up and restore archive databases](#). For more information about archiving events, see [Archive collected events](#).

Also consider grooming older audit data. Grooming allows you to minimize your storage requirements and ensure your audit data remains relevant to your compliance needs. For more information, see [How grooming works](#).



## How grooming works

Grooming allows you to permanently delete event data from the Repository databases. You can groom Repository databases for all registered SQL Server instances or for specific SQL Server instances.

Use grooming to ensure your Repository databases contain only the event data you need. You can delete events and alerts older than a specified age (in days).

To increase storage on the host SQL Server instance, also consider archiving your audit data. Archiving provides additional storage flexibility and security. For example, you can back up archive databases, storing the backup files on a dedicated backup server computer, and then remove the archive databases. When you need to report on the archived data, you can use tools such as Idera SQLsafe to easily and quickly restore the archive databases, and then attach the archives.

For more information on how to groom events, see [Groom audit data](#).



## Archive collected events

When you archive your registered SQL Server instances, IDERA SQL Compliance Manager moves audited events from the Repository databases to an archive database. You can archive event data for all registered SQL Server instances or a particular SQL Server instance.

You can archive events using the [Management Console](#) or the [CLI](#). Note that SQL Compliance Manager does not automatically shrink the Repository databases after an archive is performed. After each archive operation, re-index and shrink the corresponding event databases in the Repository so that SQL Server can reclaim the space that was allocated due to the previous growth.



## Use the Management Console to archive events

When you archive events using the Management Console, IDERA SQL Compliance Manager can also perform the following actions:

- Check the integrity of the collected events to ensure you are archiving uncompromised data. ***If the audit data for the selected SQL Server instance fails this integrity check***, SQL Compliance Manager does not archive the data.
- Log the event in the Change Log.

You can also perform an integrity check using the command line interface (CLI), allowing you to schedule and automate your archive workflow.

To archive events using the Management Console:

1. Set your archive preferences. To set archive preferences, click **Auditing** on the menu bar, and then select **Archive and Retention > Archive Preferences**.
2. Click **Auditing** on the menu bar, and then select **Archive and Retention > Archive Audit Data Now**.
3. Choose whether you want to archive events for all registered instances. You can select a specific SQL Server instance.
4. ***If you want to generate a CLI command that uses your archival preferences***, click **Generate Script**. From the View Script window, you can save the command as a batch file or copy the command to another application.
5. To archive your audit data now, click **OK**.



## Use the CLI to archive events

You can use the command line interface to archive audited events for registered SQL Server instances across your environment.

The archive operation supports the following syntax:

```
SQLcmCmd [-host CollectionServer] [-port number] archive {instance | all}
[numberofdaysold] [-prefix phrase] [-partition {quarter | month | year}] [-timezone
timezonename] [-nointegrity]
```

***If you do not specify an optional parameter***, the Collection Server uses the settings you selected in your archive preferences. An integrity check is performed unless you use the `-nointegrity` parameter in your command.



## Attach existing archives

Attaching an archive allows you to view audited events that moved to an archive database. When you attach an archive, the Collection Server loads the database so you can view and report on the events. The audited events remain in the archive database, allowing you to manage the archived events without impacting the Repository databases.

By default, IDERA SQL Compliance Manager automatically attaches an archive when creating the corresponding database. ***If you do not report on audit data contained in an archive***, consider detaching the archive to prevent unwanted access. When you detach an archive, SQL Compliance Manager continues to audit the associated SQL Server instance and databases.

When you attach an archive database generated with an earlier version of SQL Compliance Manager, you can choose whether to update the database now or schedule a time off-hours. Updating the archive database allows you to take advantage of performance enhancements, such as optimized indexes.

### To attach archives:

1. In the **Explore Activity Tree**, select the SQL Server instance to which you want to attach an archive.
2. On the menu bar, click **File > Attach Archive Database**.
3. Specify the appropriate settings, and then click **OK**.



## Automate audit data management

IDERA SQL Compliance Manager supports the automation of audit data management activities such as archiving, grooming, and verifying data integrity. Use the corresponding command line interface operations to integrate these activities into your existing workflows.





## Groom alerts from Repository

You can groom alerts from the Repository. When you groom alerts, IDERA SQL Compliance Manager deletes all alert messages that are older than the age (in days) you specify. You can groom alerts generated by events from all registered SQL Server instances or from selected instances. Grooming ensures that the Repository contains only the alert data you need.

### To groom alerts:

1. Click **Alerting** on the menu bar, and then select **Groom Alerts Now**.
2. Specify the appropriate settings, and then click **OK**.



## Groom audit data

You can groom audited SQL events from the event databases in the Repository. When you groom audit data, IDERA SQL Compliance Manager deletes all events that are older than the age (in days) you specify. You can groom audit data collected from all registered SQL Server instances or from selected instances. Grooming ensures the Repository contains only the audit data you need.

***If your auditing needs require long-term storage***, consider implementing a maintenance plan. For more information, see [Manage Audit Data](#).

You can groom events using the [Management Console](#) or the [CLI](#). Note that SQL Compliance Manager does not automatically shrink the Repository databases after a groom is performed. After each groom operation, re-index and shrink the affected Repository databases so that SQL Server can reclaim the space that was allocated due to the previous growth.



## Use the Console to groom events

When you groom events using the Management Console, IDERA SQL Compliance Manager also performs the following actions:

- Checks the integrity of the collected events to ensure you are grooming uncompromised data. ***If the audit data for the selected SQL Server instance fails this integrity check***, SQL Compliance Manager does not groom the data.
- Logs the event in the Change Log.

To groom archived events:

1. Click **Auditing** on the menu bar, and then select **Archive and Retention > Groom Audit Data Now**.
2. Specify the appropriate settings, and then click **OK**.



## Use the CLI to groom events

You can use the command line interface to groom audited events for registered SQL Server instances across your environment.

The groom operation supports the following syntax:

```
SQLcmCmd [-host CollectionServer] [-port number] groom {instance | -all}
[numberofdaysold] [-nointegrity]
```

For example, to groom audited events older than 90 days for all registered instances without performing an integrity check, use the following command:

```
SQLcmCmd -host SERVER01 -port 5201 groom -all 90 -nointegrity
```



## Maintain the Repository databases

Maintaining the Repository databases helps you achieve optimal performance and ensure long-term audit data integrity. Repository database maintenance includes backup and restore operations, and should coincide with your established disaster recovery strategies.

Before you implement a disaster recovery strategy for the Repository databases, review the following supported recovery model settings.

| Repository Database                  | Supported Recovery Model                                    |
|--------------------------------------|-------------------------------------------------------------|
| SQLcompliance                        | Recovery model set for the model system database            |
| SQLcompliance.Processing             | Simple                                                      |
| SQLcompliance_Instance               | Simple, or recovery model set for the model system database |
| SQLcmArchive_instance_Time_Partition | Simple, or recovery model set for the model system database |

You can perform backups on a routine basis as a scheduled job or manually on an as-needed basis. Refer to your established disaster recovery strategies when implementing a backup or restore policy for the Repository databases. Tools such as IDERA [SQL Safe](#) allow you to schedule fast, secure backups using optimized compression and encryption settings.



## Back up event databases

Consider backing up the event databases frequently, depending on the volume of audit data you collect and your established disaster recovery strategies. For best results, use the following guidelines:

- Perform a full backup, including the transaction logs
- Schedule the backup during off-hours, or times when you expect the least audit activity
- Back up all event databases during the same backup procedure
- Save each database to a separate backup file
- Back up the SQLcompliance database during the same backup procedure to ensure audit data integrity remains intact

To back up the event databases:

1. Use SQL Server Enterprise Manager or Management Studio to take the SQLcompliance database offline. ***If you cannot take the SQLcompliance database offline***, stop the Collection Service.
2. Use a tool such as IDERA [SQL Safe](#) to perform a full backup, including transaction logs, of the SQLcompliance database.  
For each event database, perform a full backup, including the transaction logs. Each registered SQL Server instance has a corresponding event database. For more information, see [Product components and architecture](#).
3. Use SQL Server Enterprise Manager or Management Studio to bring the SQLcompliance database online.



## Back up and restore archive databases

To ensure optimal audit performance while minimizing storage requirements, consider implementing a maintenance plan to back up your archive databases on a routine basis using IDERA SQL Compliance Manager. Each archive database is independent, and you can maintain each on a different schedule.

Once you back up the archive, you can drop the archive from the SQL Server instance that hosts the Collection Server. When you need to access older audit data, restore the archive database to the Collection Server, and then attach the database using the Management Console. For more information about attaching archives, see [Attach existing archives](#).

When you restore an archive database generated by a previous version of SQL Compliance Manager, consider updating the database to use optimized indexes. Optimizing indexes enhances performance when working with larger archive databases. For more information about updating archive databases, see [Update your archive databases](#).



## Change the Repository recovery model

You can select which database recovery model you want the Collection Server to configure when creating databases to store audit data in the Repository. Typically, the recovery model is set on the model system database on the host SQL Server instance.

Changes made to the recovery model used by the Repository databases should reflect your disaster recovery strategies. You may need to change the Repository recovery model to address the following situations:

- You are moving IDERA SQL Compliance Manager into a production environment and now need to implement a full recovery model
- You no longer need to back up transaction logs for the Repository databases and can use a simple recovery model

Configure the model system database before installing the Repository. For more information, see [Deployment considerations](#). By default, the setup program installs the Repository on the Collection Server computer.

To change the Repository recovery model:

1. Click **Auditing** on the menu bar, and then select **Configure Repository Databases**.
2. Specify the appropriate recovery model, and then click **OK**. For more information, see [Microsoft SQL Server Books Online](#).





## Restore event databases

Restore the event databases to recover lost or damaged audit data, according to your established disaster recovery strategies. For best results, use the following guidelines:

- Perform a full restore, including the transaction logs
- Schedule the restore during off-hours, or times when you expect the least audit activity
- Restore all event databases during the same restore procedure
- Restore the SQLcompliance database during the same restore procedure to ensure audit data integrity remains intact

To restore the event databases:

1. Use SQL Server Enterprise Manager or Management Studio to close any open connections to the SQLcompliance database.
2. Use SQL Server Enterprise Manager or Management Studio to take the SQLcompliance database offline. ***If you cannot take the SQLcompliance database offline***, stop the Collection Service.
3. Use a tool such as IDERA [SQL Safe](#) to restore the SQLcompliance database using the appropriate backup file, including transaction logs.
4. Use a tool such as IDERA [SQL Safe](#) to restore each event database using the appropriate backup file, including the transaction logs. Each registered SQL Server instance has a corresponding event database. For more information, see [Product components and architecture](#).
5. Use SQL Server Enterprise Manager or Management Studio to bring the SQLcompliance database online.



## Update your archive databases

Updating your archive databases allows you to take advantage of the performance enhancements provided by optimized indexing in the latest version. When you update an archive database, IDERA SQL Compliance Manager locks the Repository and applies the new indexing scheme to the specified database.

You can update your archive databases using the Management Console or the command line interface (CLI).

## Update your archive database using the Management Console

To update archive databases using the Management Console:

1. [Attach existing archives](#).
2. Select **Auditing > Configure Repository Databases**.
3. On the Configure Repository Databases window, select the **Databases** tab.
4. Select the databases you want to update, and then click **Update Now**.

## Update your archive databases using the CLI

To update your archive databases using the CLI:

1. From a DOS prompt, navigate to your SQL Compliance Manager installation directory.
2. Enter the following at the prompt:

```
SQLcmCMD updateindex -all
```



## Use the CLI to verify audit data integrity

You can use the command line interface to verify and resolve the integrity of audited events for a specific registered SQL Server instance.

The checkintegrity operation supports the following syntax:

```
SQLcmCmd [-host CollectionServer] [-port number] checkintegrity instance [--fixintegrity]
```

For example, to verify the integrity of audited events for the test01\STD\_SQL\_2005 registered instance, use the following command:

```
SQLcmCmd -host TEST01 -port 5201 checkintegrity TEST01\STD_SQL_2005
```





## Management Console User Interface

The IDERA SQL Compliance Manager Management Console is a centralized, intuitive user interface that allows you to easily and quickly modify audit settings, monitor events, and report on audit data. This user interface also provides the following information:

- Real-time status of audited SQL Server instances
- SQL Server login permissions
- Detailed logging of change activity
- Track and prove continual compliance using reports



## Activity Log Properties window

The Activity Log Properties window allows you to view details about an individual event in the Activity Log. You can view the following information:

- Date and time the event occurred
- Type of event
- SQL Server instance on which the event occurred

To scroll from one event to the next, use the up and down arrows.

To copy the event details to another application, click **Copy**. This action copies the event details to your clipboard, allowing you to paste the contents into another application such as Microsoft Word.



## Activity Log tab

The Activity Log tab lists events and alerts initiated by the IDERA SQL Compliance Manager components, allowing you to monitor SQL Compliance Manager operations and diagnose issues.

### Available actions

#### View activity details

To view detailed information about a particular event, double-click the event entry in the Activity Log.

#### View system alerts

To view detailed information about a system alert, double-click the event entry in the Activity Log. SQL Compliance Manager generates the following types of system alerts.

| System Alert                        | Caused by ...                                                                                                  | Resolves when ...                                                                                |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Agent Configuration Error           | Error saving the SQL Compliance Manager Agent configuration file (.bin)<br>Error loading the new configuration | File is successfully saved<br>SQL Compliance Manager Agent configuration is successfully updated |
| Collection Service Connection Error | Collection Server is offline or the SQL Server instance hosting the Repository is offline                      | Connection to the collection service is established                                              |
| CLR Error                           | Error when enabling CLR, creating or modifying the before-after data trigger, or performing a health check     | SQL Compliance Manager Agent configuration update or health check is successful                  |
| Server Connection Error             | Error when connecting to the audited instances, due to invalid permissions or the offline SQL Server instance  | Connection is established                                                                        |



| System Alert          | Caused by ...                                                                                           | Resolves when ...                                                                                     |
|-----------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| SQL Trace Error       | Error when starting or stopping the audit traces                                                        | Audit traces are started or stopped                                                                   |
| Trace Directory Error | Error when creating trace directory or when reaching the maximum size allocated for the trace directory | Trace directory is created or the trace files are transferred to the Collection Server for processing |

### Page through activities

Allows you to page through the list of activities. Use the previous and next arrows to navigate from page to page, up and down the list.

### Filters

Allows you to filter the listed activities by time span (for example, last seven days).

### Enable Groups

Allows you to group activities by a specific property, such as the computers on which the activities occurred or the times the activities occurred. Enable groups when you want to sort the activities or focus on a particular activity attribute.

### Refresh

Allows you to update the activity list with current data.

## Available columns

### Date

Provides the date that the event occurred.

### Time

Provides the time that the event occurred.

### SQL Server

Provides the name of the SQL Server instance, using the format `SQLServerName\InstanceName`.

### Event

Provides the type of event that occurred.

### Details





Displays the first line of the event details.



## Add Privileged Users window

The Add Privileged Users window allows you to specify which trusted users you want to audit. You can specify trusted users by individual SQL Server login names or by the fixed server role. When you specify a fixed server role, the SQL Compliance Manager Agent collects events generated by any login who is a member of that role.

Select the logins or fixed server roles you want to audit, and then click **Add**. You can specify both individual logins and roles.



## Add User Tables window - Before and after data

The Add Users Tables window allows you to specify which user tables you want to audit for before and after data. This setting is available when you choose to audit before and after data at the database level.

Select the user tables you want to audit, and then click **Add**.

***If a table contains BLOB data***, then you must specify which columns you want to audit. Tables that include BLOB data are displayed in bold type. Note that IDERA SQL Compliance Manager does not support auditing BLOB data types. BLOB data includes:

- binary
- images
- ntext
- text
- varbinary
- XML code



## Add User Tables window - DML and SELECT statements

The Add User Tables window allows you to specify which user tables you want to audit for DML and SELECT statements. This setting is available when you choose to audit DML or SELECT statements at the database level. You can audit DML and SELECT events on one or more user tables.

Select the user tables you want to audit, and then click **Add**.



## Add User Tables window - Sensitive columns

The Add User Tables window allows you to specify which user tables you want to audit for sensitive columns. This setting is available when you choose to audit sensitive columns at the database level.

Select the user tables you want to audit, and then click **Add**.



## Alert Message Template window

The Alert Message Template window allows you to define a custom alert message. When an alert is triggered, IDERA SQL Compliance Manager writes this message to the application event log or emails this message to the specified addresses, depending on your alert rule criteria.

The alert message consists of variables that display specific alert and event properties, such as the alert timestamp, the event ID, and the database affected by the triggering event.

You can accept the default alert message or compose a custom message using the provided variables.



## Alert Rules tab

The Alert Rules tab in IDERA SQL Compliance Manager tab allows you to create new alert rules and manage existing alert rules. An alert rule is a set of criteria that determines when an alert should be generated as the Collection Server processes SQL Server events collected from your audited instances. Use alert rules to detect events that occur on specific databases, users, or instances.

## Available actions

### View alert rule description

Use the **Rule Description** pane to quickly see which parameters are configured as criteria for this alert.

### Set alert criteria

Use the links in the **Rule Description** pane to change the value or setting of a specific rule criterion.

### New Event Alert Rule

Allows you to create a new alert using the New Event Alert Rule wizard. SQL Compliance Manager stores this alert rule in the Repository.

### New Status Alert Rule

Allows you to create a new alert using the New Status Alert Rule wizard. SQL Compliance Manager stores this alert rule in the Repository.

### New Data Alert Rule

Allows you to create a new alert using the New Data Alert Rule wizard. SQL Compliance Manager stores this alert rule in the Repository.

### Create new alert rule from an existing rule

Allows you to create a new alert using the selected rule as a template. This action launches the New Alert Rule wizard, each window populated with alert criteria from the selected rule. You can change any alert criterion to meet the goals of your new alert rule. SQL Compliance Manager stores the new alert rule in the Repository. The selected rule remains unchanged.

### Enable Alert Rule

Allows you to enable the selected rule. When an alert rule is enabled, SQL Compliance Manager processes audited events using the selected criteria in this rule. ***If an event matches the alert criteria and an alert action is configured***, SQL Compliance Manager writes an alert message to the



application event log or email it to the specified addresses. Alert messages are also available using the Alerts tab.

### **Disable Alert Rule**

Allows you to temporarily stop using the selected rule. SQL Compliance Manager no longer uses this alert rule when processing events. All alert messages previously generated by this rule will remain available through the Management Console and the application event log, if event log notification was configured. To reinstate this alert, enable the alert rule.

### **Import Rules**

Allows you to import alert rules previously exported from another SQL Server instance. By default, the imported alert rules are disabled.

### **Export Rules**

Allows you to export all previously-created alert rules to an XML file. You can later use this file to import alert rules across multiple SQL Server instances, ensuring consistent alerting on activity throughout your environment.

### **View Details**

Allows you to view or change the alert criteria for the selected rule.

### **Delete**

Allows you to permanently delete the selected rule. Deleting an alert rule removes the rule from the Repository. SQL Compliance Manager no longer uses this alert rule when processing events. All alert messages previously generated by this rule will remain available through the Management Console and the application event log, if event log notification was configured. ***If you want to temporarily stop using an alert rule***, disable the alert rule.

### **Refresh**

Allows you to update the Alert Rules list with current data.

## Available columns

### **Rule**

Provides the name you specified when you created each alert rule. By default, SQL Compliance Manager names each new rule **New Rule**.

### **Rule Type**

Indicates whether this rule generates an Event Alert or a Status Alert.

### **SQL Server**





Provides the name of the registered SQL Server instance associated with this alert rule. By default, Event and Status Alerts apply to all registered SQL Server instances. For better focused Event Alerts, you can specify a different target SQL Server using the Edit Alert Rule wizard.

**Level**

Provides the alert level, such as High. Depending on the rule type, you can change the alert level using either the Edit Event Alert Rule or Edit Status Alert Rule wizard.

**Email**

Indicates whether the alert rule criteria includes email notification. When email notification is configured, SQL Compliance Manager sends an alert message to the specified addresses. Depending on the rule type, you can set up email notification using either the Edit Event Alert Rule or Edit Status Alert Rule wizard.

**Event Log**

Indicates whether the alert rule criteria includes event log notification. When event log notification is configured, SQL Compliance Manager writes an alert message to the application event log. Depending on the rule type, you can set up event log notification using either the Edit Event Alert Rule or Edit Status Alert Rule wizard.



## Archive Audit Data Now window

This window allows you to archive audit data (collected SQL Server events). Archiving moves the collected audit data from the event database to an archive database for each registered SQL Server you select. ***If an archive database does not exist for the selected SQL Server instance***, the Collection Server creates the archive database. You can continue to report on all audited events that you archive.

Your archive preferences determine which data is moved. Check your preferences before archiving the audit data.

When you archive audit data, you can choose to check the integrity of the collected events. ***If the audit data for the selected SQL Server instance fails this integrity check***, IDERA SQL Compliance Manager does not archive the data.

To change your archive settings, click **Archive Preferences**.

To generate a CLI command that includes your archive preferences, click **Generate Script**.

To archive collected audit data now, select the appropriate SQL Servers, and then click **OK**.

## Available actions

### Archive Preferences

Allows you to set the age at which audited events are archived, specify the time zone the Collection Server uses to determine when to partition an archive database, configure how the archive databases are named, and choose whether to perform an integrity check of the audit data. The Collection Server applies these settings whenever an archive operation is performed.

### Generate Script

Creates a CLI command that includes your archive preferences. You can save the command to a batch file or copy the command to another application. Use this command to schedule and automate your archive workflow through a third-party tool.

## Available fields

### Select SQL Servers to Archive

Allows you to archive audit data across all registered SQL Server instances or on a particular registered SQL Server instance.



## Archive Preferences window

The Archive Preferences window allows you to set the age at which audited events are archived, configure how the archive databases are partitioned and named, and schedule archiving to run automatically. You can continue to report on all audited events that you archive. IDERA SQL Compliance Manager uses these settings each time you archive audited events collected for a registered SQL Server instance.

### Available fields

#### Archive Options

Allows you to configure the following options to control which audit data is archived:

- How old events must be before they are moved to an archive database.
- Which time zone the Collection Server uses to determine when to partition an archive database

You can also skip the integrity check SQL Compliance Manager usually performs before archiving your collected events. ***If the audit data for the selected SQL Server instance fails this integrity check***, SQL Compliance Manager does not archive the data.

#### Archive Schedule

Allows you to configure the following options to control when archiving runs:

- The **Once Daily at** option lets you select the time of day you want archiving to run. The default value is 1:30 AM.
- The **Every week(s) on** options allow you to select one or more days of the week when you want archiving to run as well as the time archiving begins. Note that you cannot schedule different times for different days.
- The **Monthly** options allows you to select a specific day of a specific month and the time when you want archiving to run.

#### Archive Database Creation

Allows you to configure the following options to control how the archive database is created:

- How often the archive database is partitioned (by month, quarter, or year)
- Naming conventions for the archive databases
- Location where you want the archive database to reside



By default, the Collection Server creates a new archive database at midnight (GMT) when the specified time period (month, quarter, year) ends. For example, if you set archive creation to occur every month, the Collection Server creates a new archive database at midnight on the first day of each month. Each archive database represents a separate data set. You can report on audited events from each archive database.



## Archive Properties Window - Default Permissions tab

The Default Permissions tab of the Archive Properties window lets you control the default permission settings at the archive database.

### Available fields

#### **Default Database Permissions**

Allows you to set the default permissions on the selected archive database. Keep in mind that login permissions will be applied along with the permissions you grant at the archive database level. You can select one of the following default permissions:

- Grant permission to view events and associated SQL statements
- Grant permission to view events only
- Deny permission to view events or SQL statements



## Archive Properties Window - General tab

The General tab of the Archive Properties window provides the basic properties for the selected archive database. You can specify a different display name or description.

### Available fields

#### **SQL Server**

Provides the name of the SQL Server instance whose audit data the selected archive contains. This field uses the format `SQLServerName\InstanceName`.

#### **Display Name**

Allows you to specify the name you want the Management Console to use when referencing this archive database. By default, the archive name reflects the archive frequency (quarter, month, year) you specified when setting the archive preferences. Consider updating the name to include the type of audit data the archive contains, such as Houston Sales Logins 2017 Q2.

#### **Description**

Allows you to specify a description for the selected archive. By default, the archive description reflects the archive preferences you set. Consider updating the description to include more information about the type of audit data the archive contains, such as All attempted logins (failed and successful) on Houston Sales db for the 2017 Q2 period.

### Archive database summary

#### **Database Name**

Provides the name of selected archive database. This name is automatically generated using the naming conventions you specified in your archive preferences.

#### **Event Time Span**

Provides the date and time of the first and last events stored in this archive database.

#### **Database Integrity**

Indicates whether the last integrity check performed on this archive database passed or failed.

#### **Last Integrity Check**



Provides the date and time an integrity check was last performed on this archive database.

### **Last Integrity Check Result**

Summarizes the results of the last integrity check, such as **Passed** or **Problems found and marked in audit data**.



## Archived Events tab

The Archived Events tab allows you to read previously collected audit data that has been moved to an archive database for storage.

### Available actions

#### **Page through events**

Allows you to page through the list of events. Use the previous and next arrows to navigate from page to page, up and down the list.

#### **Update databases to use optimized indexes**

Allows you to update archive and event databases generated with earlier versions of IDERA SQL Compliance Manager. Updating the databases applies optimized indexes that improve the Management Console performance.

To update the databases, click the provided link. Be aware that this update process requires free disk space, may be resource-intensive, and may take some time to complete. Consider performing database updates during non-peak hours.

#### **Create customized view**

Allows you to create a custom version of this tab. You can change the data that is displayed by selecting different columns. You also can save your customizations to view later.

#### **Attach**

Allows you to load audit data stored in the archive database so you can view and run reports on the events. By default, SQL Compliance Manager loads events from the most recently created archive database.

#### **Detach**

Allows you to remove the selected archive database. Removing the archive prevents users from viewing and running reports on the audit data stored in the database.

#### **Filters**

Allows you to filter the listed events by time span (for example, last seven days) or event category (for example, security).

#### **Enable Groups**

Allows you to group events by a specific property, such as the audited SQL Servers affected by the events or the times the events occurred. Enable





groups when you want to sort the events or focus on a particular event attribute.

### **Archives Properties**

Allows you to view details about the selected archive database.

### **Refresh**

Allows you to update the Archives list with current data.

### **Event Properties**

Allows you to view details about the selected event.

## Default columns

### **Icon**

Provides a visual indication of the event category so you can quickly scan the listed event for a specific event type, such as security events.

### **Category**

Provides the category SQL Server assigns to this event.

### **Event**

Provides the type of SQL action that caused this event, such as CREATE USER.

### **Date**

Provides the date that the event occurred.

### **Time**

Provides the time that the event occurred.

### **Login**

Provides the SQL Server login of the user whose actions generated this event.

### **Database**

Provides the name of the database on which the event occurred.

### **Target Object**

Provides the name of the database object targeted by the T-SQL statement associated with this event.

### **Details**

Provides the text description of the event.



## Additional columns

You can add any of these columns to this tab using the **Select Column** action. After you add a new column, you can save the tab as a custom view to reference later.

### **Access Check**

Indicates whether this event passed or failed the SQL Server access check.

### **Application**

Provides the name of the application that initiated this event.

### **Database User**

Provides the name of the database user who executed this event.

### **Host**

Provides the name of the computer where the event was initiated.

### **Object**

Provides the name of the database object affected by this event

### **Owner**

Provides the name of the owner of the database affected by this event.

### **Privileged User**

Indicates whether the user who initiated this event was a privileged user.

### **Role**

Provides the type of SQL Server role assigned to the user who initiated this event.

### **Server**

Provides the name of the SQL Server affected by this event.

### **Session Login**

Provides the login credentials used to open the corresponding session with SQL Server.

### **SPID**

Provides the SQL Server internal process ID of the object affected by the event.

### **Target Login**

Provides the name of the SQL Server login targeted by the T-SQL statement associated with this event.



**Target User**

Provides the name of the database user targeted by the T-SQL statement associated with this event.



## Attach Archive Database window

The Attach Archive Database window allows you to open an archive database so you can view and report on previously collected audit data.

### Available fields

#### **Archive Database**

Allows you to select which archive database you want to attach. To view all available databases on the registered SQL Server instances, click **Show all databases**.

#### **Archive Information**

Provides general information about the archive database you selected, such as the name of the corresponding SQL Server instance and the last date the archive was updated.



## Audit Events tab

The Audit Events tab allows you to sort and analyze SQL events collected from the SQL Server instances and databases you are auditing.

### Available actions

#### **View Before-After data**

Allows you to view before and after data for DML events, according to the affected table or column. You can also change the display from a multi-level grid to a flat grid by clicking **Flatten Data**.

For more information about collecting before and after data, see the [Before-After Data tab](#) on the Audited Database Properties window.

#### **Page through events**

Allows you to page through the list of audited events. Use the previous and next arrows to navigate from page to page, up and down the list.

#### **Create customized view**

Allows you to create a custom version of this tab. You can change the data that is displayed by selecting different columns. You also can save your customizations to view later.

#### **Filters**

Allows you to filter the listed events by time span (for example, last seven days) or event category (for example, security).

#### **Enable Groups**

Allows you to group events by a specific property, such as the audited SQL Servers affected by the events or the times the events occurred. Enable groups when you want to sort the events or focus on a particular event attribute.

#### **Refresh**

Allows you to update the events list with current data.

#### **Event Properties**

Allows you to view details about the selected event.

## Default columns

### **Icon**



Provides a visual indication of the event category associated with the event so you can quickly scan the listed events for a specific type, such as a security event.

**Category**

Provides the name of the event category. The event category corresponds to the activity you are auditing. For example, if you are auditing EXECUTE events on stored procedures, the event category is DML.

**Event**

Provides the type of event that occurred.

**Date**

Provides the date that the event occurred.

**Time**

Provides the time that the event occurred.

**Login**

Provides the name of the SQL login that applied the change, using the format DomainName\LogonName.

**Database**

Provides the name of the database on which the event occurred.

**Target Object**

Provides the name of the database object targeted by the T-SQL statement associated with this event.

**Details**

Provides the text description of the event.

## Before-After audit columns

**Action**

Provides the type of DML event that caused the table column to change (UPDATE, INSERT, or DELETE).

**Date**

Provides the date that the change occurred.

**Time**

Provides the time that the change occurred.

**Columns Updated**



Provides the number of columns that were changed by this event.

**Audited Updates**

Provides the number of updated columns for which audit data was collected. To collect different data, [change audit settings](#).

**Primary Key**

Provides the name of the column that uniquely identifies this table. For more information about primary keys, see Microsoft Books Online.

**Table**

Provides the name of the table affected by this event.

**After Value**

Provides the value before this column was changed.

**Before Value**

Provides the value after this column was changed.

**Column**

Provides the name of the column affected by the event.

**Row Count**

Provides the frequency of data access.

**Login**

Provides the name of the SQL login that applied the change, using the format DomainName\LogonName.

## Sensitive Column audit columns

**Action**

Displays the SELECT event that read the table column.

**Application**

Provides the name of the application that initiated this event.

**Database**

Provides the name of the database on which the event occurred.

**Date**

Provides the date that the change occurred.

**Time**

Provides the time that the change occurred.

**Column**

Provides the name of the column affected by the event.

**Row Count**

Provides the frequency of data access.

**Login**

Provides the name of the SQL login that read the column, using the format DomainName\LogonName.

**Host**

Provides the name of the computer where the event was initiated.

## Additional columns

You can add any of these columns to this tab using the **Select Column** action. After you add a new column, you can save the tab as a custom view to reference later.

**Access Check**

Indicates whether this event passed or failed the SQL Server access check.

**Application**

Provides the name of the application that initiated this event.

**Database User**

Provides the name of the database user who executed this event.

**Host**

Provides the name of the computer where the event was initiated.

**Object**

Provides the name of the database object affected by this event.

**Owner**

Provides the name of the owner of the database affected by this event.

**Privileged User**

Indicates whether the user who initiated this event was a privileged user.

**Role**

Provides the type of SQL Server role assigned to the user who initiated this event.

**Server**

Provides the name of the SQL Server affected by this event.





**Session Login**

Provides the login credentials used to open the corresponding session with SQL Server.

**SPID**

Provides the SQL Server internal process ID of the object affected by the event.

**Target Login**

Provides the name of the SQL Server login targeted by the T-SQL statement associated with this event.

**Target User**

Provides the name of the database user targeted by the T-SQL statement associated with this event.



## Audit reports view

The Audit reports view allows you to generate audit reports using the built-in Microsoft SQL Server Reporting Services Report Viewer (Report Viewer). Each report lets you view and track audited events stored in your event databases and archive files. Use these reports to confirm regulatory compliance, enforce security policies, and capture activity history.

## Available actions

### Generate a report now

Use the **Audit Reports** tree to navigate to the appropriate report, and then specify your criteria in the report view.

### Deploy reports to Microsoft Reporting Services

In the **Reporting Services** pane, click **Deploy Reports**. Starts the Reports Installer, allowing you to deploy individual IDERA SQL Compliance Manager reports to your existing Reporting Services server and [customize the report](#).

### View which reports have been deployed

In the **Reporting Services** pane, click **View Deployed Reports**. Opens the Report Manager on the Reporting Services server, allowing you to see which SQL Compliance Manager reports you have deployed.

## Available reports

### Alert Reports

These reports list alert details, such as target object, affected SQL Server instance, the event, and time of the alert. Use these reports to audit Event and Status Alerts triggered over a specified time period.

- Alert Activity - Data
- Alert Activity - Events
- Alert Activity - Status

### Audit Reports

The Daily Audit Activity Statistics report lists the amount of activity that occurred on the SQL Server instance or designated database, on an hourly basis, for the dates specified. Use this report to audit overall activity levels on your SQL Server instances and databases.

### Application Audit Reports



These reports list activity details, such as login, event, and time of activity, per application and database. Use these reports to audit activity across multiple applications and databases.

- Application Activity
- Application Activity Statistics

### **Database Object Audit Reports**

These reports list backup, restore, DBCC, DML, and database object activities on specific databases. Use these reports to audit mass data movement or database object activity, such as SELECT or UPDATE, across multiple databases.

- Backup and DBCC Activity
- DML Activity (Before-After)
- Object Activity

### **DDL Audit Reports**

The Database Schema Change History report lists schema changes applied to audited databases. Use these reports to audit data definition language (DDL) statements, such as dropped tables, executed against one or more databases on a SQL Server instance.

### **Host Audit Reports**

The Host Activity report lists all host computers from which specific logins executed an action. Use this report to audit user behavior from multiple client computers, identifying the host computer from which an activity request originated.

### **Policy Audit Reports**

These reports list changes and updates applied to the SQL Compliance Manager Agent deployed on a specific SQL Server, and any integrity violations in your audit data. Use these reports to diagnose audit data integrity issues and track agent configuration changes as well as agent activities, such as SQL Compliance Manager Agent service restarts.

- Agent History
- Alert Rules
- Audit Control Changes
- Integrity Check

### **Security Audit Reports**

These reports list permission changes by object type as well as unauthorized attempts to execute activities. Use these reports to audit your SQL Server security settings and identify misconduct.

- Change History (by object)



- Change History (by user)
- Permission Denied Activity
- User Login History
- Table/Data Access by Row count

### **User Audit Reports**

These reports list user activities performed on a specific SQL Server instance, and provide a history of login creations and deletions. Use these reports to audit user behavior and login management.

- Login Creation History
- Login Deletion History
- Server Login Activity Summary
- User Activity History



## Audit Snapshot Preferences window

Allows you to indicate whether you want IDERA SQL Compliance Manager to capture a snapshot of your audit settings at a regular interval (days). Each snapshot includes current audit settings for all registered SQL Server instances and audited databases. Captured snapshots are listed on the Change Log tab. By default, SQL Compliance Manager does not capture audit snapshots.

To schedule audit snapshot captures, specify the appropriate frequency, and then click **Capture Audit Snapshots**.



## Audited Database Properties window - General tab

The General tab of the Audited Database Properties window allows you to view the general properties of the selected database, and specify a description.

### Available fields

#### **Server instance**

Provides the name of the registered SQL Server instance that is hosting the selected database.

#### **Database name**

Provides the name of the selected database you are auditing.

#### **Description**

Allows you to specify a description for this database. The Management Console uses this description when you view properties or report on audit data. Consider including information about the data stored on this database, or the organization to which this database belongs.

#### **Auditing status**

Indicates whether auditing is currently enabled on this database.

#### **Date created**

Provides the date and time when the database was added for auditing. By default, auditing is enabled when the database is added.

#### **Last modified**

Provides the date and time when audit settings were last modified for this database.

#### **Last change in auditing status**

Provides the date and time when the auditing status of this database changed.



## Audited Database Properties window - Audited Activities tab

The Audited Activities tab of the Audited Database Properties tab allows you to change which types of SQL Server events you want to audit on the selected databases. Use the [Audit Events tab](#) to see your collected data.

### Available fields

#### Audited Activities

Allows you to select the type of activity you want to audit. Based on your selections, IDERA SQL Compliance Manager collects and processes the corresponding SQL Server events.

#### Access Check Filter

Allows you to refine your audit trail for SQL Server login data by collecting events that better reflect your auditing requirements for security and user processes.

SQL Server validates login permissions and access rights when a user attempts to execute an operation or SQL statement on the audited

SQL Server instance. ***If the access check filter is enabled for a database on a registered instance***, SQL Compliance Manager collects access check events at the database level.

Select this filter to help identify logins that may have inappropriate access rights or permissions. This filter may also help reduce the size of your audit data.

| Type of Event Filter                        | Description                                                          |
|---------------------------------------------|----------------------------------------------------------------------|
| Audit only actions that passed access check | Omits events that track failed access checks performed by SQL server |
| Audit only actions that failed access check | Omits events that track passed access checks performed by SQL Server |

#### Capture SQL statements for DML and SELECT activity

Allows you to specify whether you want to collect SQL statements associated with audited DML and SELECT activities. To capture these statements, you must also enable DML or SELECT auditing.



Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit SQL statements.

### **Capture Transaction Status for DML Activity**

Allows you to specify whether you want to collect the status of all DML transactions that are executed by T-SQL scripts run on your audited database. This setting captures begin, commit, rollback, and savepoint statuses. To capture these statuses, you must enable DML auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit transaction status, such as rollbacks.

### **Capture SQL statements for DDL and Security Changes**

Allows you to specify whether you want to collect SQL statements associated with audited database definition (DDL) activities. To capture these statements, you must also enable DDL auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit SQL statements.






## Audited Database Properties window - DML/SELECT Filters tab

The DML/Select Filters tab of the Audited Database Properties window allows you to change which database objects you want to audit for DML and SELECT statements. These settings are available when you choose to audit DML or SELECT statements on the selected databases. You can audit all database objects or specific database objects, such as user tables and stored procedures.

For example, if you chose to audit SELECT statements on user tables, the Collection Server retrieves SQL Server events that comprise of SELECT operations run on user tables in the audited database.

 To successfully audit before and after data, ensure you select the target user tables.

### Available actions

#### **Add**

Allows you to enable auditing of DML and SELECT events on one or more user tables.

#### **Remove**

Allows you to remove the selected user table from the list of audited user tables. When you remove the user table, the SQLcompliance Agent will no longer collect DML and SELECT events recorded for that user table.



## Audited Database Properties window - Before-After Data tab

The Before-After Data tab of the Audited Database Properties window allows you to select the tables for which you want to collect before and after data. You can collect before and after data for DML events generated by DELETE, INSERT, and UPDATE commands.

Collect before and after data when it is critical to capture the exact data change in a table column. When this feature is enabled, you can evaluate the before value and after value for each change in the Audit Events view. Enabling this feature can impact your Collection Server and Management Console performance.

**If you want to collect before and after data**, verify that you are auditing DML events on this database and that common language runtime (CLR) is enabled on the corresponding SQL Server instance.

**i** IDERA provides limited support for before-after data auditing of the publisher database in SQL Servers with replication. However, this scenario is supported only when the publisher database with transaction replication is set to replicate data **ONLY**. **If the target database uses SQL Server replication set to replicate more than data**, do not enable before-after auditing. Before and after data collection does not support SQL Server replication in that situation. For more information, see Microsoft Books Online for the version of SQL Server you are using.

**i** To successfully audit specific columns on a table, ensure the table name does not contain the following special characters: \ / : \* ? "

### Available actions

#### Specify tables for before and after data collection

Use **Add** and **Remove** to specify the tables for which you want to collect before and after data.

#### Specify which columns to audit

Use **Edit** to specify which columns you want to audit. You can audit all columns or individual columns that do not contain BLOB data.

#### Select the maximum number of rows to collect

Use **Edit** to select the number of rows per transaction that you want to audit from this table. For example, if you select 100 rows, the SQL Compliance Manager Agent will capture the first 100 rows of each DML transaction, and



collect all column updates for each captured row. By default, the first 10 rows per DML transaction are captured.

### Enable Now

Allows you to enable CLR on the instance hosting this database.

CLR is required by .NET Framework to access details about DML events on the SQL Server database. For more information, see Microsoft Books Online.

## Available fields

### Table Name

Provides the name of the table you are auditing on this database.

### Maximum Rows

Provides the maximum number of rows that the SQL Compliance Manager Agent will capture of each DML transaction.

### Columns

Indicates the status of the columns associated with the audited tables. Typically, this field displays **All Columns** or lists the individual columns that are audited for before-and-after data.

***If the audited table contains BLOB data and individual columns that are not selected***, the status will display as **Not Configured**. SQL Compliance Manager does not support auditing BLOB data. To audit data changes on this table, click **Edit** and then choose the available columns that do not contain BLOB data.

## Set up auditing before and after data

Auditing before and after data is an extension of DML event auditing at the table column level.

1. Ensure Database Modification (DML) activity is selected on the Audited Activities tab.
2. Ensure the appropriate tables are specified on the [DML/SELECT Filters tab](#).
3. On the Before-After Data tab, click **Add** to choose which audited tables should also be audited at the column level for before and after data.
4. Choose the appropriate tables, and then click **OK**. By default, all columns are audited.
5. ***If you want to audit specific columns***, select the table, and then click **Edit**.



## Audited Database Properties window - Sensitive Columns tab

The Sensitive Columns tab of the Audited Database Properties window allows you to choose the table columns for which you want to audit SELECT events. This data tells you which third-party application or database user accessed and read the specified columns. You can also create sensitive column data sets, which allows you to monitor sensitive columns as a group of sensitive data.

Audit access to sensitive columns when it is critical to capture whether someone read the data in a specific table column. When this feature is enabled, you can review the SELECT events in the Audit Events view. Enabling this feature can impact your Collection Server and Management Console performance. You can audit sensitive columns on specific tables without enabling SELECT statement auditing at the database level.

- i IDERA SQL Compliance Manager does not capture sensitive column data for trusted user accounts. For more information about trusted users, see [Audited Database Properties window - Trusted Users tab](#).
- i To successfully audit specific columns on a table, ensure the table name does not contain the following special characters: \ / : \* ? "
- i Sensitive Column auditing is supported by SQL Compliance Manager Agent 3.5 or later. To use this feature, please ensure you upgrade your agent to at least version 3.5.

### Available actions

#### Specify tables for before and after data collection

Use **Add** and **Remove** to specify the tables for which you want to access to specific sensitive columns.

#### Specify which columns to audit

Use **Edit** to specify which columns you want to audit. You can audit all columns or individual columns.

#### Specify which columns to audit as a group

Use **AddDataSet** to specify a group of columns to audit as a set of sensitive information.

### Available fields

#### Table Name



Provides the name of the table you are auditing on this database.

### Columns

Indicates the status of the columns associated with the audited tables. Typically, this field will display **All Columns** or list the individual columns that are audited for SELECT events.

### Type

Indicates whether the column is being audited as an 'Individual' or as part of a 'Dataset'.

## Set up auditing sensitive columns

Sensitive column auditing occurs independently from your other database-level audit settings.

To set up auditing sensitive columns:

1. On the Sensitive Columns tab, click **Add** to choose which audited tables should also be audited at the column level when a user attempts to access this column.
2. Choose the appropriate tables, and then click **OK**. By default, all columns are audited.
3. **If you want to audit specific columns**, select the table, and then click **Edit**.
4. **If you want to audit a group of columns**, click **AddDataSet**.



## Audited Database Properties window - Trusted Users tab

Trusted users are SQL Server logins and members of SQL Server roles that you trust to read, update, or manage a particular audited database. The SQL Compliance Manager Agent removes events generated by trusted users from the audit trail before sending the trace file to the Collection Server for processing. This exclusion occurs for all auditing, including DML and SELECT events related to sensitive columns and before and after data.

By designating trusted users, you can more efficiently audit databases used by third-party applications, such as SAP, that are self-auditing. Self-auditing applications are able to audit activity and transactions initiated by their service accounts. Because service accounts can generate a significant number of login and database change events, omitting these expected events from your audit data trail lets you more easily identify unexpected activity.

When you designate trusted users, consider limiting your list to a few specific logins. This approach optimizes event processing performance and ensures you filter the intended accounts.

***If you are auditing privileged user activity and the trusted user is also a privileged user***, IDERA SQL Compliance Manager will continue to audit this user because of its elevated privileges. For example, a service account that is a member of the sysadmin fixed SQL Server role will continue to be audited even though the account is designated as trusted. Keep in mind that trusted users are filtered at the database level whereas privileged users are audited at the server level.

To omit, or filter, events generated by specific logins and roles from your audit data trail, click **Add**, and then select the SQL Server login or role you want to trust.

**i** When you want to specify multiple accounts as trusted users, consider creating a Windows group that contains only those users. This approach allows you to better manage your trusted users and ensures you do not accidentally trust additional accounts due to unexpected group membership (such as through nested groups). Creating a unique group for trusted users prevents unintended omissions in your audit data.

### Available actions

#### **Add a trusted user or role**

Allows you to select which SQL Server logins or roles you want to trust on this database. When a login or role is designated as trusted, the SQL Compliance Manager Agent omits all database-level activity generated by these logins from the audit data trail.

#### **Remove a user or role from the trusted list**



Allows you to designate a previously trusted user or SQL Server role as non-trusted. When a login or role becomes non-trusted, SQL Compliance Manager begins auditing database-level activity generated by this login or role, based on your current audit settings.

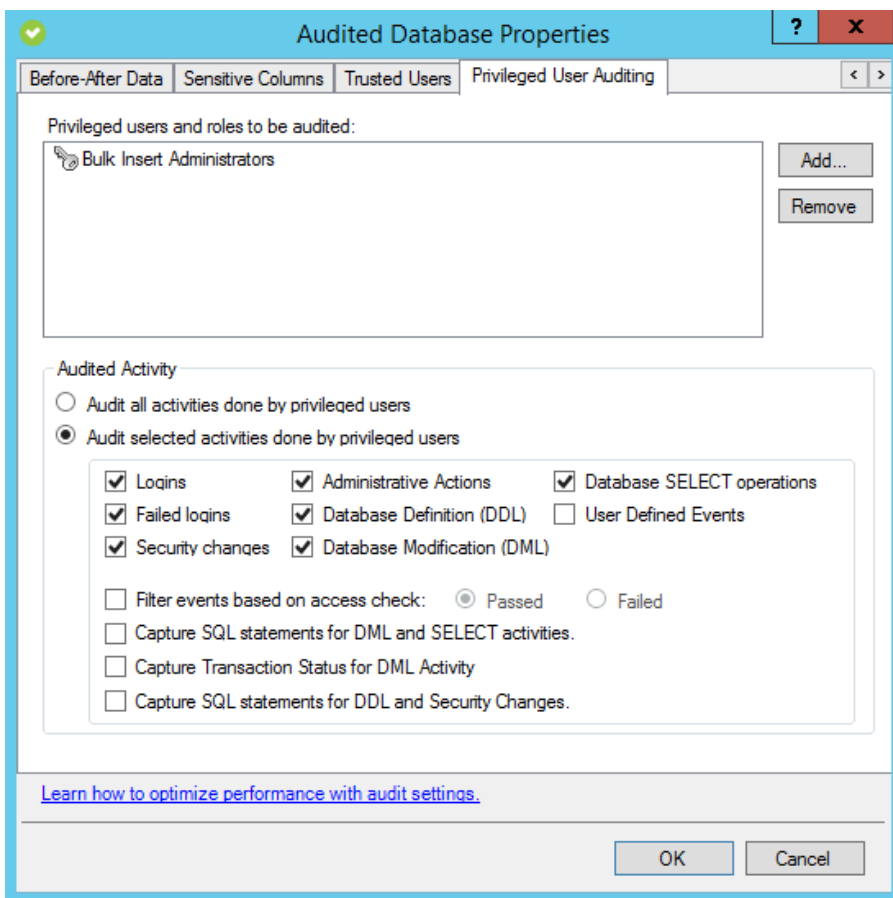


## Audited Database Properties window - Privileged User Auditing tab

The Privileged User Auditing tab of the Registered SQL Server Properties window allows you to change the audit settings currently applied to privileged users on this SQL Server instance. You can choose to audit event categories and user defined events. An event category includes related SQL Server events that occur at the server level. A user defined event is a custom event you create and track using the `sp_trace_generateevent` stored procedure.

For example, you can audit individual SQL Server logins with privileged access, logins that belong to specific fixed server roles, all activities, or specific activities.

When you update audit settings to audit privileged user activities, these changes are not applied until the SQL trace is refreshed. The SQL trace is refreshed when the SQL Compliance Manager Agent sends the trace files to the Collection Server. To ensure an immediate application of your new audit settings, click **Update Audit Settings Now** on the Agent menu.







## Available actions

### Add

Allows you to select one or more privileged users to audit. You can select privileged users by login name or by membership to a fixed server role.

### Remove

Allows you to remove the selected SQL Server login or fixed server role from the list of audited privileged users. When you remove the login or role, the SQL Compliance Manager Agent no longer collects events recorded for that login or the role members.

## Available fields

### Privileged users and roles to be audited

Lists the audited privileged users by login name or fixed server role. ***If you are auditing privileged users in a fixed server role***, the SQL Compliance Manager Agent collects activities executed by all members of the selected role.

### Audited Activity

Allows you to specify which activities (events) you want to audit for the selected privileged users.

### Capture SQL statements for DML and SELECT activity

Allows you to specify whether you want to collect SQL statements associated with audited DML and SELECT activities. To capture these statements, you must also enable DML or SELECT auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit SQL statements.

### Capture transaction status for DML activity

Allows you to specify whether you want to collect the status of all DML transactions that are executed by T-SQL scripts run on your audited database. This setting captures begin, commit, rollback, and savepoint statuses. To capture these statuses, you must enable DML auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and



negatively impact performance, choose this setting only when your compliance policies require you to audit transaction status, such as rollbacks.

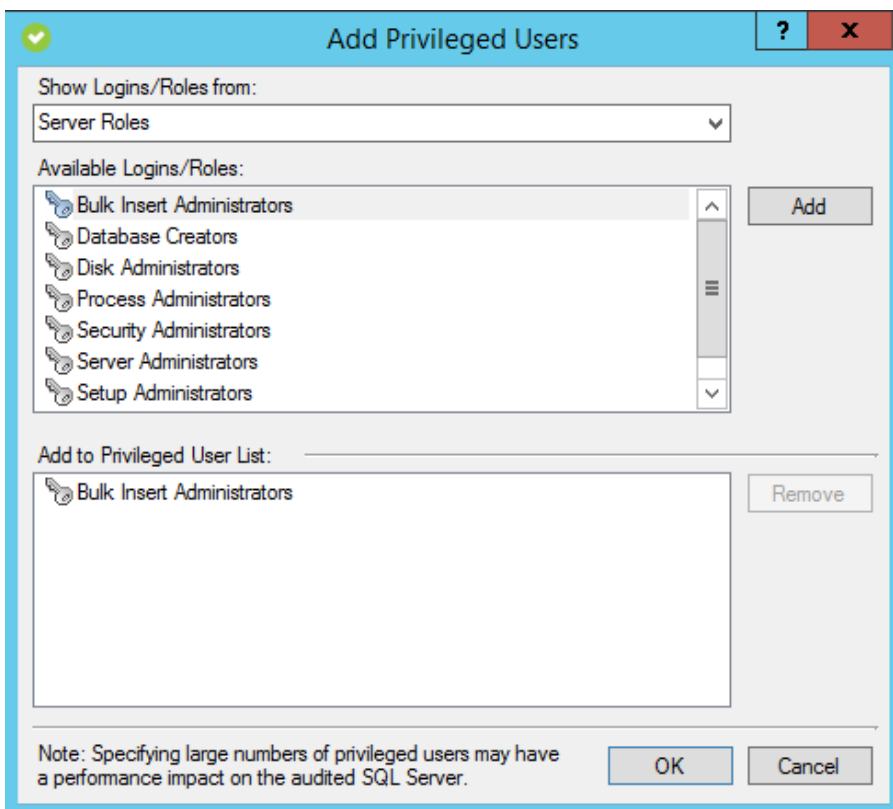
### Capture SQL statements for DDL and Security Changes

Allows you to specify whether you want to collect SQL statements associated with audited database definition (DDL) activities. To capture these statements, you must also enable DDL auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit SQL statements.

### Add Privileged Users window

The Add Users window is accessed by clicking **Add** on the Privileged User Auditing tab while viewing Registered SQL Server Properties. Use this window to include selected login accounts and roles as privileged. Added logins/roles may be removed by selecting the item in the Privileged User Auditing tab, and then click **Remove**.





## Capture Audit Snapshot window

The Capture Audit Snapshot window allows you to manually capture an audit snapshot for all registered SQL Server instances or a specific instance. This option provides on-demand configuration data for auditing diagnostics. Audit snapshots include current audit settings for the registered SQL Server instances and audited databases. Captured snapshots are listed on the **Change Log** tab.

Select the type of audit snapshot you want to capture, and then click **OK**.

***If you want to capture audit snapshots on a routine basis,*** consider scheduling snapshots.



## Change Log Properties window

The Change Log Properties window allows you to view details about an individual event in the Change Log. You can view the following information:

- Date and time the event occurred
- Type of event
- SQL Server instance on which the event occurred
- User who executed the event

To scroll from one event to the next, use the up and down arrows.

To copy the event details to another application, click **Copy**. This action copies the event details to your clipboard, allowing you to paste the contents into another application such as Microsoft Word.



## Change Log tab

The Change Log tab lists changes and events initiated through the Management Console and the Collection Server, allowing you to monitor IDERA SQL Compliance Manager operations and diagnose issues.

### Available actions

#### **Page through activities**

Allows you to page through the list of activities. Use the previous and next arrows to navigate from page to page, up and down the list.

#### **Filters**

Allows you to filter the listed activities by time span (for example, last seven days).

#### **Enable Groups**

Allows you to group activities by a specific property, such as the computers on which the activities occurred or the times the activities occurred. Enable groups when you want to sort the activities or focus on a particular activity attribute.

#### **Refresh**

Allows you to update the activity list with current data.

### Available columns

#### **Date**

Provides the date that the event occurred.

#### **Time**

Provides the time that the event occurred.

#### **Event**

Provides the type of event that occurred.

#### **User**

Provides the name of the user who applied the change, using the format *DomainName\LogonName*.

#### **SQL Server**

Provides the name of the SQL Server instance, using the format *SQLServerName\InstanceName*.



**Description**

Provides the text description of this event.



## Check Repository Integrity window

The Check Repository Integrity window allows you to check for unexpected changes in your audit data, detecting when events are modified, added, or deleted by a script or an application other than IDERA SQL Compliance Manager.

To verify repository integrity, select the Repository database you want to verify, and then click **OK**. To perform an integrity check on an archive database, click **Show archive databases**.



## Collection Server Properties window

The Collection Server Properties window allows you to review the basic properties and status of the Collection Server. You can review the following items:

- Whether the Collection Server is available (up and running)
- Official status
- Name of the computer that hosts the Collection Server
- Port the Collection Server is using to communicate with the Management Console and the SQL Compliance Manager Agent
- Version of Collection Server software (should be the same as the IDERA SQL Compliance Manager build and version number)
- Date and time the last heartbeat was received from the SQL Compliance Manager Agent
- Logging levels set at the Collection Server and the SQL Compliance Manager Agent
- Collection Server heartbeat interval
- Location of trace file directory

## Available actions

### **Change Collection Server log level**

Allows you to select the logging level at which the Collection Server writes events to the Application log on the host computer.

### **Change heartbeat interval**

Allows you to specify the interval (in minutes) at which the Collection Service processes any status alerts associated with the Collection Server. These alerts are written to the Repository. It also manages any SQL CM maintenance activities, such as re-indexing the Repository databases. By default, the heartbeat interval is five minutes.

### **Start Service**

Allows you to restart the Collection Service from the Management Console. Use this feature if the Collection Service has stopped running on the Collection Server computer and requires a manual restart.

### **Stop Service**

Allows you to stop the Collection Service from the Management Console. You can use this feature to stop the Collection Service currently running on the Collection Server computer.

### **Refresh Status**





Allows you to refresh the status fields with the most recent data from the Collection Server.



## Configuration wizard - Add Databases window

The Add Databases window of the Configuration wizard allows you to select one or more user databases to audit. When you choose to audit a database, IDERA SQL Compliance Manager collects and processes SQL Server events on the database according to your audit settings.

### Available actions

#### Audit Databases

Allows you to enable auditing by capturing SQL events at the database level. After you enable auditing on your databases, set up the audited database properties to enable more advanced auditing, such as [sensitive columns](#) and [before-and-after data](#) in tables.

#### Select All

Selects all user databases.

#### Unselect All

Clears all user database selections.

### Available fields

#### User Databases

Allows you to choose target databases from a list of available databases hosted by this SQL Server instance. This list does not include databases you are currently auditing or databases on which you disabled auditing.



## Configuration wizard - Add Server window

The Add Server window of the Configuration wizard allows you to specify the SQL Server instance you want to register with IDERA SQL Compliance Manager. Once you register an instance, you can begin auditing database activity on that server.

Select the SQL Server instance you want to register, and then click **Next**.

### Available fields

#### **SQL Server**

Allows you to specify the name of the target SQL Server instance, using the format *SQLServerName\InstanceName*. You can also browse for available SQL Server instances in your domain.

#### **Description**

Allows you to specify a description for this instance. The Management Console uses this description when you view SQL Server properties or report on audit data. Consider including information about the databases hosted on this instance, or the organization to which this instance belongs.




## Configuration wizard - Apply Regulation window

The Apply Regulation window of the Configuration wizard allows you to apply regulation guidelines to the selected, audited databases. IDERA SQL Compliance Manager configures your audit settings according to the selected guidelines. Note that if you already have audit settings configured, applying new regulation guidelines overrides the existing settings.

After selecting your regulation guidelines and completing the wizard, you must then configure the following audit settings, if not already set:

- [Privileged users](#)
- [Privileged user audited activity](#)
- [Sensitive columns](#)
- Permissions to list server roles and logins

Check the box for the regulation guidelines you want to enforce, and SQL Compliance Manager displays a description of that guideline and what it can do for your organization.


 If you choose a regulation guideline(s) and update it, you can save the changes as a custom template at the end of the wizard.

Select the regulation guideline(s) you want to apply, and click **Next**.

### Available fields

#### **CIS**

Allows you to apply regulation guidelines for the Center for Internet Security (CIS).

 The CIS Regulation Guideline is only available at the server level.

#### **DISA STIG**

Allows you to apply regulation guidelines for the Defense Information Security Agency (DISA STIG).

#### **HIPAA**

Allows you to apply regulation guidelines for the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

#### **NERC**

Allows you to apply regulation guidelines for the North American Electric Reliability Corporation (NERC).

#### **PCI DSS**



Allows you to apply regulation guidelines for the Payment Card Industry Data Security Standard (PCI DSS).

### **SOX**


Allows you to apply regulation guidelines for the Sarbanes-Oxley Act (SOX).


### **FERPA**

Allows you to apply regulation guidelines for the Family Educational Rights and Privacy Act (FERPA).

### **Custom**

Allows you to upload and apply a custom audit settings regulation.

 When uploading a custom regulation, the file needs to be in XML format to proceed successfully with the wizard.

 Sensitive columns and Before-After data settings are not included when uploading a custom regulation. Before-After and sensitive columns need to be configured with each server/database.



## Configuration wizard - Audit Collection Level window

The Audit Collection Level window of the Configuration wizard allows you to choose whether to use the default, custom, or regulation audit settings (audit collection levels) for the databases you selected for audit in IDERA SQL Compliance Manager.

Select the audit collection level you want to use, and then click **Next**.

### Available fields

#### Default

The **Default** audit collection level allows you to collect the SQL Server events most commonly requested by auditors. This collection level audits the following activities and SQL events:

- Security changes
- Database definition (DDL)
- Administrative activities
- Successful operations only (operations that pass the SQL access check)

#### Custom

Choosing the **Custom** audit collection level allows you to specify the activities and SQL events you want to audit on these databases. You can also audit system tables. The **Custom** collection level is recommended for advanced users, or for cases in which only one type of data is required for compliance. Before using this collection level, review the event data gathered by the **Default** collection level.

#### Regulation

The **Regulation** audit collection level configures your audit settings to collect the event data required by specific regulatory guidelines, such as PCI DSS or HIPAA. You can review a list of the collected events on the Regulation Guidelines window of the SQL Compliance Manager Configuration Wizard. On the Summary window at the end of the wizard, click **View the Regulation Guideline Details** to review a summary of all the regulation guidelines applied to the selected database.



## Configuration Wizard - Database Audit Settings window

The Database Audit Settings window of the Configuration wizard allows you to specify which types of SQL Server events you want to audit on the selected databases in IDERA SQL Compliance Manager. This window is available when you choose the Custom audit collection level.

### Available fields

#### Audited Activity

Allows you select the type of activity you want to audit. Based on your selections, SQL Compliance Manager collects and processes the corresponding SQL Server events.

#### Access Check Filter

Allows you to refine your audit trail for SQL Server login data by collecting events that better reflect your auditing requirements for security and user processes.

SQL Server validates login permissions and access rights when a user attempts to execute an operation or SQL statement on the audited SQL Server instance. ***If the access check filter is enabled for a database on a registered instance***, SQL Compliance Manager collects access check events at the database level.

Select this filter to help identify logins that may have inappropriate access rights or permissions. This filter may also help reduce the size of your audit data.

| Type of Event Filter                        | Description                                                          |
|---------------------------------------------|----------------------------------------------------------------------|
| Audit only actions that passed access check | Omits events that track failed access checks performed by SQL Server |
| Audit only actions that failed access check | Omits events that track passed access checks performed by SQL Server |

#### Capture SQL statements for DML and SELECT activity

Allows you to specify whether you want to collect SQL statements associated with audited DML and SELECT activities. To capture these statements, you must also enable DML or SELECT auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing.



Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit SQL statements.

### **Capture transaction status for DML activity**

Allows you to specify whether you want to collect the status of all DML transactions that are executed by T-SQL scripts run on your audited database. This setting captures begin, commit, rollback, and savepoint statuses. To capture these statuses, you must enable DML auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit transaction status, such as rollbacks.





## Configuration wizard - Default Permissions window

The Default Permissions window of the Configuration wizard lets you specify the default permission settings on the Repository databases that contain audit data for this SQL Server instance in IDERA SQL Compliance Manager. Keep in mind that login permissions specified at the database take precedence over the default permissions set on this page. This window is available only when you are registering a SQL Server instance with SQL Compliance Manager for the first time.

### Available fields

#### **Grant right to read events and their associated SQL statements**

Grant users the right to read events and their associated SQL statements on the database containing audit data for this SQL Server instance.

#### **Grant right to read events only**

Grant users the right to read events only. Users cannot read the associated SQL statements when you select this option. To allow users to view the associated SQL statements, you can explicitly grant users read access to the database containing audit data for this SQL Server instance.

#### **Deny read access by default**

Deny users the right to read events or their associated SQL statements by default. To allow users to view events and the associated SQL statements, you can explicitly grant users read access to the database containing audit data for this SQL Server instance.



## Configuration wizard - DML and SELECT Audit Filters window

The DML and SELECT Audit Filters window of the Configuration window allows you to specify which database objects you want to audit for DML and SELECT statements in IDERA SQL Compliance Manager. These settings are available when you [choose to audit DML or SELECT statements on the selected databases](#), and you are using the [Custom audit collection level](#). You can audit all database objects or specific database objects, such as user tables and stored procedures.

For example, if you chose to audit SELECT statements on user tables, the Collection Server retrieves SQL Server events that comprise of SELECT operations run on user tables in the audited database.

Select the database objects you want to audit, and then click **Next**.



## Configuration wizard - Enforce Regulation Guidelines window

The enforce Regulation Guidelines window of the Configuration wizard displays additional information regarding the regulation guideline selections for the audited databases on your SQL Server instance. IDERA SQL Compliance Manager provides a list of the information scheduled for collection.

After selecting your regulation guidelines and completing the wizard, you must then configure the following audit settings, if not already set:

- [Privileged users](#)
- [Privileged user audited activity](#)
- [Sensitive columns](#)
- [Before After data change](#)

After reviewing this information, click **Next**.



## Configuration wizard - Existing Audit Data window

The Existing Audit Data window of the Configuration wizard indicates that an event database already exists for this SQL Server instance in IDERA SQL Compliance Manager. This database most likely contains previously audited event data. Keeping this audit data ensures you maintain compliance and preserve a record of all audited activities on this SQL Server instance.

Specify whether you want to keep the previously collected audit data and use the existing event database, and then click **Next**.



## Configuration wizard - Existing Incompatible Database window

The Existing Incompatible Database window of the Configuration wizard allows you specify how you want to resolve this situation in IDERA SQL Compliance Manager.



## Configuration wizard - License Limit Reached window

The License Limit Reached window of the Configuration wizard indicates that you have registered the maximum number of SQL Server instances allowed by your IDERA SQL Compliance Manager license. You cannot register any additional instances.

To successfully register additional SQL Server instances, upgrade your license or remove a registered SQL Server instance from SQL Compliance Manager. For more information, contact [IDERA Support](#).




## Configuration wizard - Permissions Check window


The Permissions Check window of the Configuration wizard displays the results of a check of the permissions required by IDERA SQL Compliance Manager on the SQL Server instance you want to monitor. This check runs automatically each time you register a new instance.

If the check fails, review the issue, make the required change to the target SQL Server instance, and then click **Re-check**. Once the check is complete, click **Next** to continue.

Required permissions include:

- Collection Service must have rights to the Repository databases
- Collection Service must have rights to read the registry at HKEY\_LOCAL\_MACHINE\Software\Idera\SQLcompliance
- Collection Service must have permissions to the collection trace directory
- Agent Service must have permissions to the agent trace directory
- Agent Service must have rights to read the registry at HKEY\_LOCAL\_MACHINE\Software\Idera\SQLcompliance
- Agent Service must have rights to the SQL Server instance
- SQL Server must have permissions to the agent trace directory
- SQL Server must have permissions to the collection trace directory

 You can make changes to the registry at HKEY\_LOCAL\_MACHINE\Software\Idera\SQLcompliance to update permissions for your services. For more information about the registry key, see [Manage the registry key](#).

 To successfully run and pass the Permissions Check, make sure you are logged in as one of the following users while registering an instance:

- SQL Compliance Agent Service User
- SQL Server Service User
- Current Logged-in User

For more information, see SQL Compliance Manager [Permissions Requirements](#).

## Available actions

### Re-check

Allows you to re-check the required permissions after making an update to the target SQL Server instance in case the preliminary check fails.



## Available fields

### **Progress**

Displays an icon that shows whether the check is in progress, passed or failed.

### **Check**

Displays the list of permissions checked in this step.

### **Status**

Displays the current status of the associated check. All checks display **Waiting** until run.






## Configuration wizard - Permissions Check Failed window

The Permissions Check Failed window of the Configuration wizard displays the Permissions Check Failed window if one or more permissions check fails. This window includes the number of failed permissions and the steps necessary for you to resolve the issue.

The Configuration wizard runs automatically each time you register a new instance. You can also run this wizard using the menu options if you want to check one or more audited instance. SQL Compliance Manager then runs these checks on the Collection Service and each Agent for all of the selected SQL Server instances.

 While IDERA recommends that you do not continue adding this SQL Server instance to SQL Compliance Manager without all permissions checks passing, you are not forced to delay configuration.

### Available actions

#### **Ignore and Continue**

Allows you to continue with configuration even when a permission check fails.

#### **Stay and Re-check**

Allows you to leave the window open, make any necessary changes to the SQL Server instance permissions, and then runs the permissions audit again.



## Configuration wizard - Privileged Users Audited Activity window

The Privileged Users Audited Activity window of the Configuration wizard allows you to specify which activities (events) you want to audit when the selected privileged users perform certain actions. You can choose to audit event categories and user defined events using IDERA SQL Compliance Manager. An event category includes related SQL Server events that occur at the server level. A user-defined event is a custom event you create and track using the `sp_trace_generateevent` stored procedure.

For example, you can audit all activities or only the activities related to specific types of events and actions, such as logins or database modifications (DMLs).

You can also audit activities that either failed or passed the required access check. For example, auditing failed activities allows you to track when a privileged user attempts to execute an action for which the login does not have the appropriate permissions.

Select the activities you want to audit, and then click **Next**.

### Available actions

#### **Audit all activities done by privileged users**

Allows you to audit all activities involving your privileged users.

#### **Audit selected activities done by privileged users**

Allows you to select the privileged user activities you want audited.

### Available fields

#### **Audited Activity**

Allows you to specify which activities (events) you want to audit for the selected privileged users.

#### **Capture SQL statements for DML and SELECT activity**

Allows you to specify whether you want to collect SQL statements associated with audited DML and SELECT activities. To capture these statements, you must also enable DML or SELECT auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit SQL statements.



### **Capture transaction status for DML activity**

Allows you to specify whether you want to collect the status of all DML transactions that are executed by T-SQL scripts run on your audited database. This setting captures begin, commit, rollback, and savepoint statuses. To capture these statuses, you must enable DML auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit transaction status, such as rollbacks.



## Configuration wizard - Privileged Users window

The Privileged Users window of the Configuration wizard allows you to select which privileged users you want to audit using IDERA SQL Compliance Manager. You can audit individual SQL Server logins with privileged access as well as logins that belong to specific server roles.

To successfully configure privileged user audit settings, the Management Console must have trusted access to the physical computer hosting the target SQL Server instance.

**If you are auditing a virtual SQL Server**, configure privileged user audit settings after you have deployed the SQL Compliance Manager Agent to each cluster node hosting the server. Use the Cluster Configuration Console to deploy and configure the SQL Compliance Manager Agent. For more information about installing and configuring the SQL Compliance Manager Agent for a virtual SQL Server, see [Audit a virtual SQL Server instance](#).

**If you are auditing a SQL Server instance running in a non-trusted domain or workgroup**, configure privileged user audit settings after you have deployed the SQL Compliance Manager Agent to the computer hosting the instance.

### Available actions

#### Add

Allows you to select one or more privileged users to audit. You can select privileged users by login name or by membership to a server role.

#### Remove

Allows you to remove the selected SQL Server login or server role from the list of audited privileged users. **If you remove the login or role**, the SQL Compliance Manager Agent will continue collecting events recorded for that login or the role members when these events belong to an audited event category. For example, if you are auditing DML events, any DML event initiated by a privileged user will be included in your audit trail.



## Configuration wizard - Regulation Details window

The Regulation Details window of the Configuration wizard displays a table containing all of the regulation guidelines applied to the selected database(s) and what events are affected. You can scroll through the table, sorted by regulation number. If you have more than one set of regulations applied, IDERA SQL Compliance Manager displays each set on a tab for ease of use.

You can access this window by clicking the link available on the SQL Compliance Manager Configuration wizard Summary window.



## Configuration wizard - Sensitive Column window

The Sensitive Column window of the Configuration wizard allows you to select the table columns you want IDERA SQL Compliance Manager to audit for sensitive column access using SELECT events. This information is important to track whether a third-party application or database user read data in a specific table column.

Enable this feature on a database to review the SELECT events in the Audit Events view. Note that this feature can affect the performance of your Collection Server and Management Console. You can audit sensitive columns on specific tables without enabling SELECT statement auditing at the database level.

Sensitive column auditing is not available until you deploy an agent to audit the server and a heartbeat is received.

 Sensitive Column auditing is supported by SQL Compliance Manager Agent 3.5 or later. To use this feature, please ensure you upgrade your agent to at least version 3.5.

### Available actions

#### **Add**

Allows you to select one or more database tables to audit for sensitive columns.

#### **Remove**

Allows you to remove the selected database table from the list of audited tables.

#### **AddDataSet**

Allows you to specify a group of columns to audit as a set of sensitive information.



## Configuration wizard - Server Audit Settings window

The Server Audit Settings window of the Configuration wizard allows you to specify which types of SQL Server events you want to audit on the selected instance. IDERA SQL Compliance Manager audits these events at the server level only.

### Available fields

#### Audited Activity

Allows you select the type of activity you want to audit. Based on your selections, SQL Compliance Manager collects and processes the corresponding SQL Server events. You can choose to audit event categories and user defined events. An event category includes related SQL Server events that occur at the server level. A user defined event is a custom event you create and track using the `sp_trace_generateevent` stored procedure.

#### Access Check Filter

Allows you to refine your audit trail for SQL Server login data by collecting events that better reflect your auditing requirements for security and user processes.

SQL Server validates login permissions and access rights when a user attempts to execute an operation or SQL statement on the audited SQL Server instance. ***If the access check filter is enabled for a registered instance***, SQL Compliance Manager collects access check events at the server level.

Select this filter to help identify logins that may have inappropriate access rights or permissions. This filter may also help reduce the size of your audit data.

| Type of Event Filter                        | Description                                                          |
|---------------------------------------------|----------------------------------------------------------------------|
| Audit only actions that passed access check | Omits events that track failed access checks performed by SQL Server |
| Audit only actions that failed access check | Omits events that track passed access checks performed by SQL Server |



## Configuration wizard - SQL Server Cluster window

The SQL Server Cluster window of the Configuration wizard allows you to confirm whether the SQL Server instance you want to audit through IDERA SQL Compliance Manager is hosted by a Microsoft failover cluster (managed through Microsoft Cluster Services). A SQL Server instance running in a cluster is a virtual SQL Server. You can audit server and database events for a virtual SQL Server. Use the Cluster Configuration Console to deploy and configure the SQL Compliance Manager Agent.

***If you want to audit events on a virtual SQL Server***, select the confirmation checkbox, and then click **Next**.

For more information about installing and configuring the SQL Compliance Manager Agent for a virtual SQL Server, see [Audit a virtual SQL Server instance](#).





## Configuration wizard - SQL Compliance Manager Agent Deployment window

The SQL Compliance Manager Agent Deployment window of the Configuration wizard allows you to choose when and how you want to deploy the SQL Compliance Manager Agent to the target SQL Server instance. You can deploy the SQL Compliance Manager Agent now or later using the IDERA SQL Compliance Manager Management Console, or manually using the setup program.

**If you are auditing a virtual SQL Server**, you must manually deploy the SQL Compliance Manager Agent to each cluster node hosting the server. Use the Cluster Configuration Console to deploy and configure the SQL Compliance Manager Agent. For more information about installing and configuring the SQL Compliance Manager Agent for a virtual SQL Server, see [Deploy the SQL Compliance Agent to cluster nodes](#).

**If you are auditing a SQL Server instance hosted by a computer that belongs to a non-trusted domain or a workgroup**, you must manually deploy the SQL Compliance Manager Agent to the host computer using the SQL Compliance Manager setup program.

Choose the deployment option that is appropriate for your environment, and then click **Next**.

### Available fields

#### Deploy Now


Installs the SQL Compliance Manager Agent when you complete the wizard. You must have a connection between the SQL Server that you want to audit and the Management Console.

#### Deploy Later

Does not install the SQL Compliance Manager Agent. Select this option when you plan to install the SQL Compliance Manager Agent later using only the Management Console, such as installing during off-hours.

#### Manually Deploy

Does not install the SQL Compliance Manager Agent. Select this option when you want to manually install the agent directly on the physical computer hosting the SQL Server instance. Note that this option is required for virtual SQL Server instances and instances located across a domain trust boundary.

 To manually deploy the SQL Compliance Manager Agent, you need to install the agent using the [SQL Compliance Manager installer](#) or the [silent command](#) before starting the instance registration process.



**Already Deployed**

*Display only.* Informs you that the SQL Compliance Manager Agent is already deployed on the computer hosting this SQL Server instance.



## Configuration wizard - SQLcompliance Agent Service Account window

The SQL Compliance Manager Agent Service Account window of the Configuration wizard is available when you choose to deploy the SQL Compliance Manager Agent now, and allows you to specify the credentials of the account under which the SQL Compliance Manager Agent Service runs. The SQL Compliance Manager Agent Service uses this account to stop and start SQL Server traces, execute stored procedures, manage trace files, and communicate with the Collection Server. Ensure you specify a valid Windows account that has SQL Server System Administrator privileges on the target SQL Server instance as well as read and write access to the specified trace directory.

Type the account name and password, confirm the password, and then click **Next**.



## Configuration wizard - SQL Compliance Manager Agent Trace Directory window

The SQL Compliance Manager Agent Trace Directory window of the configuration wizard is available when you choose to deploy the SQL Compliance Manager Agent now and allows you to accept the default path for the agent trace directory or specify a different path. The default path is `c:\Program Files\Idera\SQLcompliance\AgentTraceFiles`. The SQL Compliance Manager Agent stores SQL Server trace files in this directory until the files are sent to the Collection Server.

When SQL Compliance Manager creates the default trace directory, the directory is secured using ACL settings. Only local administrators have read and write access to this folder.

***If you specify a different directory path***, ensure the SQL Compliance Manager Agent Service account has read and write privileges on that folder. SQL Compliance Manager does not change the security settings on existing folders.

Choose whether you want to use the default path for the agent trace directory, and then click **Next**.



## Configuration wizard - Summary window

Use the Summary window of the IDERA SQL Compliance Manager Configuration wizard to review the provided summary, and then click **Finish**. When you complete this wizard, SQL Compliance Manager enables auditing on the selected databases. The Collection Server uses the settings you specified to process the raw audit data (SQL Server events) collected from the SQL Server instance.

***If you want to change a setting now***, click **Previous** to return to the appropriate window. You can also change audit settings later using the Audited Database Properties window.

Click **View the Regulation Guidelines Details** link to [view a list of the regulations](#) applied to the selected database(s) for this SQL Server instance.



## Configuration wizard - Trusted Users window

Trusted users are SQL Server logins and members of SQL Server roles that you trust to read, update, or manage a particular audited database. The IDERA SQL Compliance Manager Agent removes events generated by trusted users from the audit trail before sending the trace file to the Collection Server for processing.

By designating trusted users, you can more efficiently audit databases used by third-party applications, such as SAP, that are self-auditing. Self-auditing applications are able to audit activity and transactions initiated by their service accounts. Because service accounts can generate a significant number of login and database change events, omitting these expected events from your audit data trail lets you more easily identify unexpected activity.

When you designate trusted users, consider limiting your list to a few specific logins. This approach optimizes event processing performance and ensures you filter the intended accounts.

If you are auditing privileged user activity and the trusted user is also a privileged user, SQL Compliance Manager will continue to audit this user because of its elevated privileges. For example, a service account that is a member of the sysadmin fixed SQL Server role will continue to be audited even though the account is designated as trusted. Keep in mind that trusted users are filtered at the database level whereas privileged users are audited at the server level.

To omit, or filter, events generated by specific logins and roles from your audit data trail, click **Add**, and then select the SQL Server login or role you want to trust.

### Available actions

#### **Add a trusted user or role**

Allows you to select which SQL Server logins or roles you want to trust on this database. When a login or role is designated as trusted, the SQL Compliance Manager Agent omits all database-level activity generated by these logins from the audit data trail.

#### **Remove a user or role from the trusted list**

Allows you to designate a previously trusted SQL Server login or role as non-trusted. When a login or role becomes non-trusted, SQL Compliance Manager begins auditing database-level activity generated by this login or role, based on your current audit settings.



## Configure Email Settings window

The Configure Email Settings window allows you to configure IDERA SQL Compliance Manager to connect to your mail server. This configuration is required to send alert email notifications.

### Available actions

#### **Test your configuration settings**

Allows you to verify that SQL Compliance Manager can connect to your mail server using the specified settings. This test does not verify whether your mail server successfully sent the alert email notification to the specified recipients.

### Available fields

#### **SMTP Server**

Allows you to specify the name of the computer on which your mail server is running.

#### **Port**

Allows you to specify which port your mail server uses for incoming communications.

#### **Requires Authentication**

Allows you to indicate whether the mail server requires authentication to connect to the server. ***If authentication is required***, provide the user name and password SQL Compliance Manager should use to access the mail server.

#### **SSL**

Allows you to indicate whether the mail server is configured to use Secure Sockets Layer (SSL) for network communications.

#### **Sender Address**

Allows you to specify the email address SQL Compliance Manager should use to send the alert email notification.



## Configure Repository Databases window - Databases tab

The Databases tab of the Configure Repository Databases window allows you to view the status of your Repository databases and update event and attached archive databases created by earlier versions of IDERA SQL Compliance Manager.

### Available actions

#### **Edit Schedule**

Allows you to change the specified scheduled for Repository maintenance activities such as rebuilding indexes.

#### **Update indexes now**

Allows you to update archive and event databases generated with earlier versions of SQL Compliance Manager. Updating the databases applies optimized indexes that improve the Management Console performance.

To update the databases, select the appropriate database, and then click **Update Now**. Be aware that this update process requires free disk space, may be resource-intensive, and may take some time to complete. Consider performing database updates during non-peak hours.

### Available fields

#### **Database Name**

Provides the name of an individual Repository database.

#### **Type**

Indicates the type of database, such as an event database or an archive database.

#### **Status**

Indicates whether a Repository database should be updated to use the optimized indexes.





## Configure Repository Databases window - Recovery Model tab

The Recovery Model tab of the Configure Repository Databases window allows you to select which database recovery model you want the Collection Server to configure when creating databases to store audit data in the Repository. You can choose either the simple model or the default model. The Collection Server applies this setting to new event databases created for each audited SQL Server instance and new archive databases.

A database recovery model controls whether transaction logs are backed up for each database. The simple model does not allow you to back up transaction logs for a database. The default model does allow you to back up transaction logs for a database. The default model is the recovery model configured for the model database. Typically, when a database is created, SQL Server applies the model database properties to the new database. The model database properties on the SQL Server that hosts the Repository should reflect your overall backup and disaster recovery strategies. Before choosing the default recovery model setting, verify that the model database properties are correct.

***If you are auditing SQL Servers in a trial environment or have not implemented a backup strategy for the Repository databases,*** select the simple recovery model.

***If you are auditing production SQL Servers and have implemented a backup strategy for the Repository databases,*** select the default recovery model.

Select the appropriate database recovery model, and then click **OK**.

You can change your selection at any time. When you select a different database recovery model, your change affects new databases only. Ensure you manually change the database recovery model used on each existing Repository database.



## Configure Table Auditing window

The Configure Table Auditing window allows you to choose which columns you want to audit from the selected table.

### Available actions

#### **Specify how many rows of data to include in the audit stream**

Specify how many rows of data you want to capture for each audited column. A single DML transaction can contain multiple rows of data, depending on the modification performed. Consider selecting a low number of rows until you can identify exactly which data you need to audit from the transaction.

#### **Select the columns to audit**

Choose whether you want to **Audit All Columns** or **Audit Selected Columns**. You can select any column that does not contain BLOB data.



## Connect to Repository window

The Connect to Repository window allows you to connect to a different installation of the IDERA SQL Compliance Manager Repository. You can type the name of the SQL Server instance that hosts the Repository databases or browse for the instance. ***If the target SQL Server instance is not listed,*** verify that the instance is available.

Specify the appropriate SQL Server instance, and then click **OK**.



## Console Preferences window - Alert Views window

The Alert Views window allows you to define the number of alerts that display per view page. Specify the appropriate value, and then click **OK**.

### Available actions

#### **Restore Defaults**

Allows you to restore the console settings to the default values.



## Console Preferences window - Event Views window

The Event Views window allows you to configure how the IDERA SQL Compliance Manager Management Console displays events in the Audited Events tab. You can also sort events by age, time period, or user by using the event filter provided on the view.

Specify the appropriate value for each setting, and then click **OK**.

### Available actions

#### **Restore Defaults**

Allows you to restore the console settings to the default values.

### Available fields

#### **Event time display**

Allows you specify which local time (SQL Server computer time or current system time) the Management Console should use to display event times. By default, the Management Console uses the current system time.

#### **Event view limits**

Allows you to specify how you want the Management Console to load events in a view, such as the Audited Events tab. You can configure the view page size (how many events are displayed on a single "page" of the view). You can improve Management Console performance by specifying smaller page sizes.



## Data Alerts Tab

The Data Alerts tab allows you to view previously generated Data Alerts. A Data Alert is generated when the Collection Server processes a SQL Server event that matches the alert rule criteria. Use Data Alerts to identify and investigate data manipulation on specific databases, tables, or columns.

**i** The Collection Server generates one alert per SELECT event, even though the query may have accessed multiple audited columns.

## Available actions

### Page through alerts

Allows you to page through the list of alerts. Use the previous and next arrows to navigate from page to page, up and down the list.

### Create customized view

Allows you to create a custom version of this tab. You can change the data that is displayed by selecting different columns. You also can save your customizations to view later.

### Filters

Allows you to filter the listed alert messages by time span (for example, last seven days) or alert level (for example, high).

### Enable Groups

Allows you to group alerts by a specific property, such as the audited SQL Servers affected by the alerts or the times the alerts occurred. Enable groups when you want to sort the alerts or focus on a particular alert attribute.

### Event Properties

Allows you to view details about the SQL Server event that triggered this alert. This option is available from the right-click context menu. You can also view event properties by double-clicking an alert from the list.

### Alert Message

Allows you to view the message IDERA SQL Compliance Manager generated when this alert was triggered. Depending on your alert rule criteria, this message is written to the application event log and emailed to the specified email addresses. The Management Console displays an alert message only when the corresponding alert rule is configured to generate a message.

This action is available from the right-click context menu only.

### Refresh



Allows you to update the Data Alerts list with current data.

## Default columns

### **Icon**

Provides a visual indication of the alert level so you can quickly scan the listed alerts for a specific alert type, such as a severe alert.

### **Date**

Provides the date when the alert was generated.

### **Time**

Provides the time when the alert was generated.

### **Level**

Indicates the type of alert, such as Severe or Low. Use the alert level to help you identify critical issues, sort alerts by severity, and understand the overall health of your environment. You can define the alert using the Edit Data Alert Rule wizard.

### **Source Rule**

Provides the name of the alert rule that generated this alert.

### **Event**

Provides the name of the audited event that triggered this alert.

### **SQL Server**

Provides the name of the audited SQL Server instance where this event occurred.

## Additional columns

You can add any of these columns to this tab using the **Select Column** action. After you add a new column, you can save the tab as a custom view to reference later.

### **Details**

Provides the first line of the alert message associated with this alert.

### **Subject**

Provides the subject line of the alert message associated with this alert.



## Deploy SQL Compliance Manager Agent wizard - SQL Compliance Manager Agent Services Account window

The SQL Compliance Manager Agent Services Account window of the Deploy SQL Compliance Manager Agent wizard allows you to specify the credentials of the Windows user account under which the SQL Compliance Manager Agent Service runs. The SQL Compliance Manager Agent Service uses this account to stop and start SQL Server traces, execute stored procedures, manage trace files, and communicate with the Collection Server. Ensure you specify a valid Windows account that has SQL Server System Administrator privileges on the target SQL Server instance.

Type the account name and password, and then click **Next**.





## Deploy SQL Compliance Manager Agent wizard - SQL Compliance Manager Agent Trace Directory window

The SQL Compliance Manager Agent Trace Directory window of the Deploy SQL Compliance Manager Agent wizard allows you to accept the default path for the agent trace directory or specify a different path. The default path is C:\Program Files\Idera\SQLcompliance\AgentTraceFiles, and is secured using ACL settings. The SQL Compliance Manager Agent stores SQL Server trace files in this directory until the files can be sent to the Collection Server.

***If you specify a different directory path***, ensure the SQL Compliance Manager Agent Service account has read and write privileges on that folder. IDERA SQL Compliance Manager does not change the security settings on existing folders.

Choose whether you want to use the default path for the agent trace directory, and then click **Next**.



## Deploy SQL Compliance Manager Agent wizard - Summary tab

Review the Summary tab of the Deploy SQL Compliance Manager Agent wizard, and then click **Finish**. When you finish this wizard, IDERA SQL Compliance Manager installs the SQL Compliance Manager Agent on the computer that hosts the selected SQL Server instance, and starts the SQL Compliance Manager Agent Service.

When you enable auditing on this SQL Server instance, the SQL Compliance Manager Agent begins managing SQL Server traces and trace files according to the settings you specified.

***If you want to change a setting now***, click **Back** to return to the appropriate window. You can also change agent settings later using the SQL Compliance Manager Agent Properties window.



## Deploy Reports wizard - Connect to Reporting Services tab

The Connect to Reporting Services tab of the Deploy Reports wizard allows you to specify the Report Server to which you want to deploy the IDERA SQL Compliance Manager Reports. The Deploy Reports wizard automatically applies connection settings based on a default Microsoft Reporting Services installation. You can use the default connection settings, or specify custom connection settings.

To specify connection settings, click **Show advanced connection options**, and then enter the appropriate settings.

Click **Next** to continue.



## Deploy Reports wizard - Report Deployment Location tab

The Report Deployment Location tab of the Deploy Reports wizard allows you to specify the name of the folder where the reports should be stored. This folder belongs to the Virtual Directory specified in the Reporting Services connection settings, and is displayed when you access the reports using the Report Manager interface.

You can also specify whether you want to overwrite existing reports. By overwriting existing reports, you ensure all deployed reports are current. ***If you decide not to overwrite existing reports***, the Deploy Reports wizard installs only the reports that are new or updated in this version of IDERA SQL Compliance Manager.



## Deploy Reports wizard - SQL Compliance Manager Repository tab

The SQL Compliance Manager Repository tab of the Deploy Reports wizard allows you to specify which Windows user account IDERA SQL Compliance Manager should use to connect to the Repository. You can use the same account that the Collection Service runs under, or you can specify a different account.

Specify the name of the SQL Server instance that hosts the Repository, enter the appropriate account credentials, and then click **Next**.



## Deploy Reports wizard - Summary tab

Review the provided summary, and then click **Finish**. When you finish the Deploy Reports wizard, IDERA SQL Compliance Manager installs the corresponding RDL files in the specified virtual directory on your Report Server.

***If you want to change a setting now,*** click **Back** to return to the appropriate window. You can also change your deployment settings later through the Report Manager interface installed with Microsoft Reporting Services.



## Deploy Reports wizard - Welcome tab

You can deploy the IDERA SQL Compliance Manager Reports to your existing Microsoft Reporting Services installation. SQL Compliance Manager supports Reporting Services version 2005 or later. If you previously deployed SQL Compliance Manager Reports, verify which version of Reporting Services is currently running in your environment.

For more information, see [Reporting Services requirements](#).



## Edit Data Alert Rule wizard - Alert Actions tab

The Alert Actions tab of the Edit Data Alert Rule wizard allows you to change the action you want this alert rule to perform when an audited data matches the specified criteria. Depending on the actions you select, IDERA SQL Compliance Manager will write an alert message to the application event log and email it to a specific email address or distribution list. You can use the default alert message or customize it to display the information you need most.

To successfully use email notification, ensure SQL Compliance Manager is configured to connect to your mail server. For more information, see the [Configure Email Settings window](#).

### Available actions

#### Select alert action

Allows you to select whether you want an alert message to be generated when this alert is triggered. You can configure an alert message to be written to the application event log and emailed to a specific address or distribution list. SQL Compliance Manager uses the same alert message content for the event log entry and email notification.

#### Edit rule details

Allows you to specify one or more of the following attributes, depending on the alert action you selected:

- Content of the alert message
- Type of event log entry that should be written (Warning, Error, Information)
- Addresses to which the alert message should be emailed

The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the Edit Data Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.





## Edit Data Alert Rule wizard - Data Alert Type tab

The Data Alert Type tab of the Edit Data Alert Rule wizard allows you to change the criteria of this alert rule by editing its parameters in the **Edit rule details** pane.

### Available actions

#### **Edit rule details**

Allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the Edit Data Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## Edit Data Alert Rule wizard - Finish Alert Rule tab

Use the rule details pane to review your changes, and then click **Finish**. IDERA SQL Compliance Manager applies your changes.

### Available actions

#### **Specify rule name**

Allows you to name your alert rule. Consider using a unique name that reflects the purpose of the alert.

#### **Specify alert level**

Allows you to set the severity alerts generated by this rule should have. SQL Compliance Manager tallies the alerts by severity on the Audited SQL Servers Summary tab.

#### **Specify rule description**

Allows you to provide a description for this alert rule. Consider including detailed information that can help you diagnose issues later.

#### **Enable rule now**

Indicates that you want SQL Compliance Manager to begin monitoring audit data using this alert rule criteria immediately after you finish creating the rule. By default, all alert rules are enabled upon creation.

#### **Review rule details**

Allows you to change your specified alert rule criteria before applying your new alert rule. To edit previously set criteria, click the corresponding setting.



## Edit Data Alert Rule wizard - SQL Server Object Type tab

The SQL Server Object Type tab of the Edit Data Alert rule wizard allows you to change the type of SQL Server object that should be monitored by this alert rule. You can generate alerts for objects on currently audited databases and SQL Server instances.

### Available actions

#### Select the object that triggers this alert

Allows you to specify the SQL Server object type that should trigger this alert. When the Collection Server processes audit data associated with the specified object type, the alert rule is run to see whether the identified data matches the other alert rule criteria.

By default, the alert rule will apply your alert criteria against audit data from any audited SQL Server instance. You can control the level at which you want IDERA SQL Compliance Manager to apply this alert:

- SQL Server instance
- Database
- Table
- Column

For example, you can specify the following objects:

- Any column in any table on any database hosted by the Chicago instance
- Any column in any table on the HR01 database hosted by the Chicago instance
- Any column in the Employees table on the HR01 database hosted by the Chicago instance
- The SSN column in the Employees table on the HR01 database hosted by the Chicago instance

#### Edit rule details

Allows you specify which SQL Server objects the alert rule should use to identify audit data to alert on.

The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Data Alert Rule wizard, the rule details grows to include these additional settings.

To edit previously set criteria, click the corresponding setting.



## Edit Event Alert Rule wizard - Additional Event Filters tab

The Additional Event Filters tab of the edit Event Alert Rule wizard allows you to change when the selected event should trigger this alert rule. You can specify more than one condition.

### Available actions

#### **Select when this alert should be triggered**

Allows you to select the condition under which the alert should trigger. For example, you can specify that the alert rule look for security changes performed by privileged users or only alert on events that are successful.

#### **Edit rule details**

Allows you to specify a value for the selected condition, such as true or false.

The rule details pane also allows you to change your specified alert rule criteria at any time as you edit your alert rule. As you specify criteria using the Edit Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## Edit Event Alert Rule wizard - Alert Actions tab

The Alert Actions tab of the Edit Event Alert Rule wizard allows you to change the action you want this alert rule to perform when an audited event matches the specified criteria. Depending on the actions you select, IDERA SQL Compliance Manager will write an alert message to the application event log and email it to a specific email address or distribution list. You can use the default alert message or customize it to display the information you need most.

To successfully use email notification, ensure SQL Compliance Manager is configured to connect to your mail server. For more information, see the Configure Email Settings window.

### Available actions

#### Select alert action

Allows you to select whether you want an alert message to be generated when this alert is triggered. You can configure an alert message to be written to the application event log and emailed to a specific address or distribution list. SQL Compliance Manager uses the same alert message content for the event log entry and email notification.

#### Edit rule details

Allows you to specify one or more of the following attributes, depending on the alert action you selected:

- Content of the alert message
- Type of event log entry that should be written (Warning, Error, Information)
- Addresses to which the alert message should be emailed

The rule details pane also allows you to change your specified alert rule criteria at any time as you edit your alert rule. As you specify criteria using the Edit Event Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## Edit Event Alert Rule wizard - Finish Alert Rule tab

Use the rule details pane to review your changes, and then click **Finish**. IDERA SQL Compliance Manager applies your changes.

### Available actions

#### **Specify rule name**

Allows you to name your alert rule. Consider using a unique name that reflects the purpose of the rule, such as AllFailedLogins.

#### **Specify alert level**

Allows you to set the severity of alerts generated by this rule should have. SQL Compliance Manager tallies the alerts by severity on the Audited SQL Servers Summary tab.

#### **Specify rule description**

Allows you to provide a description for this alert rule. Consider including detailed information that can help you diagnose issues later.

#### **Enable rule now**

Indicates that you want SQL Compliance Manager to begin monitoring audited events using this alert rule criteria immediately after you finish creating the rule. By default, all alert rules are enabled upon creation.

#### **Review rule details**

Allows you to change your specified alert rule criteria before applying your edits. To edit previously set criteria, click the corresponding setting.



## Edit Event Alert Rule wizard - SQL Server Event Type tab

The SQL Server Event Type tab of the Edit Event Alert Rule wizard allows you to change the type of SQL Server event on which you want to alert.

### Available actions

#### **Select type of event that triggers this alert**

Allows you to select the SQL Server event type that triggers this alert. When the Collection Server processes an audited event that matches the specified event type, the alert rule is run to see whether the identified event matches the other alert rule criteria.

You can also select a specific event or a user-defined event. A specific event is any supported SQL Server event that occurs at the server or database level. A user-defined event is a custom event created and tracked using the `sp_trace_generateevent` stored procedure.

#### **Edit rule details**

The rule details pane also allows you to change your specified alert rule criteria at any time as you edit your alert rule. As you specify criteria using the Edit Event Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## Edit Event Alert Rule wizard - SQL Server Object Type tab

The SQL Server Object type tab of the Edit Event Alert Rule wizard allows you to change the type of SQL Server object that should be monitored by this alert rule. You can generate alerts for objects on currently audited databases and SQL Server instances.

### Available actions

#### Select the object that triggers this alert

Allows you to specify the SQL Server object type that should trigger this alert. When the Collection Server processes an audited event associated with the specified object type, the alert rule is run to see whether the identified event matches the other alert rule criteria.

By default, the alert rule will generate alerts for matching events on all audited SQL Server instances.

You can specify one or more objects:

| Type of Object      | You can specify ...                                                                                                                                                |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SQL Server instance | <ul style="list-style-type: none"> <li>Any instance</li> <li>A specific instance by name</li> </ul>                                                                |
| Database            | <ul style="list-style-type: none"> <li>A specific database by name</li> <li>Any database whose name matches a naming convention or phrase</li> </ul>               |
| Database object     | <ul style="list-style-type: none"> <li>A specific database object by name</li> <li>Any database object whose name matches a naming convention or phrase</li> </ul> |
| Host Name           | <ul style="list-style-type: none"> <li>Any host name</li> <li>A specific host name</li> </ul>                                                                      |

For example, you can specify the following objects:

- Any database whose name contains the word test on the LABSERVER instance
- The model database on any audited instance
- The Salary table in the HR01 database hosted by the Chicago instance





## **Edit rule details**

Allows you specify the word or phrase the alert rule should use to identify events associated with the object you want to alert on.

The rule details pane also allows you to change your specified alert rule criteria at any time as you edit your alert rule. As you specify criteria using the Edit Event Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## Edit Event Filter wizard - SQL Server Event Type tab

The SQL Server Event Type tab of the Edit Event Filter wizard allows you to change the type of SQL Server event you want to filter from your audit data.

### Available actions

#### **Select type of event to filter from your audit data**

Allows you to select the specific SQL Server event category or type you want to filter from your audit data. When the Collection Server processes an audited event that matches the specified event type, the filter is run to see whether the identified event matches the other filter criteria.

#### **Edit filter details**

Allows you to change your specified criteria at any time as you edit your filter. As you specify criteria using the Edit Event Filter wizard, the filter details change to reflect these new settings. To edit previously set criteria, click the corresponding setting.



## Edit Event Filter wizard - SQL Server Event Object Type tab

The SQL Server Event Object Type tab of the Edit Event Filter wizard allows you to change the type of SQL Server object affected by the filtered event. You can filter events that occur on specific audited databases and SQL Server instances.

### Available actions

#### Select the object that is affected by this event

Allows you to specify the SQL Server object type that is affected by the event you want to filter. For example, you can filter out all DDL activity on a specific database. When the Collection Server processes an audited event associated with the specified object type, the filter run to see whether the identified event matches the other filter criteria.

By default, the filter will apply your criteria against events on any audited SQL Server instance.

You can specify one or more objects:

| Type of Object      | You can specify ...                                                                                                                                                |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SQL Server instance | <ul style="list-style-type: none"> <li>Any instance</li> <li>A specific instance by name</li> </ul>                                                                |
| Database            | <ul style="list-style-type: none"> <li>A specific database by name</li> <li>Any database whose name matches a naming convention or phrase</li> </ul>               |
| Database object     | <ul style="list-style-type: none"> <li>A specific database object by name</li> <li>Any database object whose name matches a naming convention or phrase</li> </ul> |

For example, you can specify the following objects:

- Any database whose name contains the word test on the LABSERVER instance
- The model database on any audited instance
- The Salary table in the HR01 database hosted by the Chicago instance

#### Edit filter details



Allows you specify the word or phrase the filter should use to identify objects affected by the event you want to filter from your audit data.

The filter details pane also allows you to change your specified criteria at any time as you edit your new filter. As you specify criteria using the Edit Event Filter wizard, the filter details change to include these new settings. To edit previously set criteria, click the corresponding setting.



## Edit Event Filter wizard - SQL Server Event Source tab

The SQL Server Event Source tab of the Edit Event Filter wizard allows you to change which user (SQL Server login) or application is initializing the SQL Server event you want to filter from your audit data.

### Available actions

#### **Select the user or application to filter from your audit data**

Allows you to select the specific software application, computer, or SQL Server login you want to filter from your audit data. You can also filter privileged user events.

When the Collection Server processes an audited event that was initiated by the specified application, computer, or user, the filter is run to see whether the identified event matches the other filter criteria.

#### **Edit filter details**

Allows you to change your specified criteria at any time as you edit your filter. As you specify criteria using the Edit Event Filter wizard, the filter details change to reflect these new settings. To edit previously set criteria, click the corresponding setting.



## Edit Event Filter wizard - Finish Event Filter tab

Use the filter details pane to review your changes, and then click **Finish**. When you finish this wizard, IDERA SQL Compliance Manager applies your changes.

### Available actions

#### **Specify filter name**

Allows you to name your event filter. Consider using a unique name that reflects the purpose of the rule.

#### **Specify filter description**

Allows you to provide a description for this event filter. Consider including detailed information that can help you diagnose issues later.

#### **Enable filter now**

Indicates that you want SQL Compliance Manager to begin filtering events using this rule criteria immediately after you finish creating the rule. By default, all alert rules are enabled upon creation.

#### **Review filter details**

Allows you to change your specified event filter rule criteria before applying your edits. To edit previously set criteria, click the corresponding setting.



## Edit Status Alert wizard - Status Alert Type tab

The Status Alert Type tab of the Edit Status Alert wizard allows you to change the type of IDERA SQL Compliance Manager status you want to alert on.

### Available actions

#### **Select type of SQL Compliance Manager status that triggers this alert**

Allows you to select the [product component](#) status that should trigger this alert. When the Collection Server receives a status that matches the specified type, the alert rule is run to see whether the status matches the other alert rule criteria.

#### **Edit rule details**

Allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the Edit Status Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## Edit Status Alert wizard - Alert Actions tab

The Alert Actions tab of the Edit Status Alert wizard allows you to change the action you want this alert rule to perform when the IDERA SQL Compliance Manager status matches the specified criteria. Depending on the actions you select, SQL Compliance Manager will write an alert message to the application event log and email it to a specific email address or distribution list. You can use the default alert message or customize it to display the information you need most.

To successfully use email notification, ensure SQL Compliance Manager is configured to connect to your mail server. For more information, see the [Configure Email Settings window](#).

### Available actions

#### Select alert action

Allows you to select whether you want an alert message to be generated when this alert is triggered. You can configure an alert message to be written to the application event log and emailed to a specific address or distribution list. SQL Compliance Manager uses the same alert message content for the event log entry and email notification.

#### Edit rule details

Allows you to specify one or more of the following attributes, depending on the alert action you selected:

- Content of the alert message
- Type of event log entry that should be written (Warning, Error, Information)
- Addresses to which the alert message should be emailed

The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the Edit Status Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.





## Edit Status Alert wizard - Finish Status Alert Rule tab

Using the Finish Status Alert Rule tab of the Edit Status Alert wizard, specify a name for the different alert rule, review the rule details, and then click **Finish**. When you finish this wizard, IDERA SQL Compliance Manager applies your changes.

### Available actions

#### **Specify rule name**

Allows you to name your alert rule. Consider using a unique name that reflects the purpose of the alert.

#### **Specify alert level**

Allows you to set the severity alerts generated by this rule should have. SQL Compliance Manager tallies the alerts by severity on the Audited SQL Servers Summary tab.

#### **Specify rule description**

Allows you to provide a description for this alert rule. Consider including detailed information that can help you diagnose issues later.

#### **Enable rule now**

Indicates that you want SQL Compliance Manager to begin monitoring the product component status using this alert rule criteria immediately after you finish creating the rule. By default, all alert rules are enabled upon creation.

#### **Review rule details**

Allows you to change your specified alert rule criteria before applying your new alert rule. To edit previously set criteria, click the corresponding setting.



## Event Alerts tab

The Event Alerts tab allows you to view previously generated Event Alerts. An Event Alert is generated when the Collection Server processes a SQL Server event that matches the alert rule criteria. Use Event Alerts to identify and investigate suspicious activity on specific databases, users, or instances.

### Available actions

#### **Page through alerts**

Allows you to page through the list of alerts. Use the previous and next arrows to navigate from page to page, up and down the list.

#### **Create customized view**

Allows you to create a custom version of this tab. You can change the data that is displayed by selecting different columns. You also can save your customizations to view later.

#### **Filters**

Allows you to filter the listed alert messages by time span (for example, last 7 days) or alert level (for example, high).

#### **Enable Groups**

Allows you to group alerts by a specific property, such as the audited SQL Servers affected by the alerts or the times the alerts occurred. Enable groups when you want to sort the alerts or focus on a particular alert attribute.

#### **Event Properties**

Allows you to view details about the SQL Server event that triggered this alert. This option is available from the right-click context menu. You can also view event properties by double-clicking an alert from the list.

#### **Alert Message**

Allows you to view the message IDERA SQL Compliance Manager generated when this alert was triggered. Depending on your alert rule criteria, this message is written to the application event log and emailed to the specified email addresses. The Management Console displays an alert message only when the corresponding alert rule is configured to generate a message.

This action is available from the right-click context menu only.

#### **Refresh**

Allows you to update the Event Alerts list with current data.



## Default columns

### **Icon**

Provides a visual indication of the alert level so you can quickly scan the listed alerts for a specific alert type, such as a severe alert.

### **Date**

Provides the date when the alert was generated.

### **Time**

Provides the time when the alert was generated.

### **Level**

Indicates the type of alert, such as Severe or Low. Use the alert level to help you identify critical issues, sort alerts by severity, and understand the overall health of your environment. You can define the alert using the Edit Alert Rule wizard.

### **Source Rule**

Provides the name of the alert rule that generated this alert.

### **Event**

Provides the name of the audited event that triggered this alert.

### **SQL Server**

Provides the name of the audited SQL Server instance where this event occurred.

## Additional columns

You can add any of these columns to this tab using the **Select Column** action. After you add a new column, you can save the tab as a custom view to reference later.

### **Details**

Provides the first line of the alert message associated with this alert.

### **Subject**

Provides the subject line of the alert message associated with this alert.



## Event Filters tab

The Event Filters tab allows you to filter out specific SQL events in the audit data collected from the SQL Server instances and databases you are auditing. Use audit Event Filters to refine your audit data trail so that it contains only the events you need to track.

### Available actions

#### Set filter criteria

Use the links in the **Filter Description** pane to change the value or setting of a specific filter criterion.

#### New Event Filter

Allows you to create a new event filter using the New Event Filter wizard. IDERA SQL Compliance Manager stores this event filter in the Repository.

#### Use Filter as Template

Allows you to create a new event filter using the selected filter as a template. This action launches the New Event Filter wizard, each window populated with event criteria from the selected filter. You can change any event criterion to meet the goals of your new filter. SQL Compliance Manager stores the new event filter in the Repository. The selected filter remains unchanged.

#### Enable Filter

Allows you to enable the selected event filter. When an event filter is enabled, SQL Compliance Manager processes audited events using the selected criteria in this filter. ***If an event matches the filter criteria***, SQL Compliance Manager removes the event from the audit data. Use the Audit Events tab to see the resultant set of processed events.

#### Disable Filter

Allows you to temporarily stop using the selected event filter. SQL Compliance Manager will no longer use this filter when processing events. All previously processed audit data stored in the Repository remains intact. To reinstate this filter, enable it.

#### Import Filters

Allows you to import Event Filters previously exported from another SQL Server instance. By default, the imported Event Filters are disabled.

#### Export Filters



Allows you to export Event Filters created for this SQL Server instance to an XML file. You can later use this file to import Event Filters across multiple SQL Server instances, ensuring consistent filtering of specific events throughout your environment.

**View Details**

Allows you to view or change the criteria for the selected filter.

**Delete**

Allows you to permanently delete the selected event filter. This option removes the filter from the Repository. SQL Compliance Manager will no longer use this filter when processing events. All previously processed audit data stored in the Repository remains intact.

**Refresh**

Allows you to update the Audit Event Filters list with current data.

## Available columns

**Filter**

Provides the name of the audit event filter. You can specify a new name when you create or edit an audit event filter.

**SQL Server**

Provides the name of the registered SQL Server instance for which audited events are excluded by this filter.

**Description**

Provides a brief description of the event filter. You can specify the filter description when you create or edit an event filter.



## Event Properties window - General tab

The General tab of the Event Properties window allows you to view high-level information about an individual event.

You can view the following information:

- Date and time the event occurred
- Type and category of event
- Application where the event occurred
- Database and target object on which the event occurred
- User who executed the event
- Summary of rows and columns changed by this event (if collected)
- Row count information (if available)
- Corresponding SQL statement (if audited)

To scroll from one event to the next, use the up and down arrows.

To copy the event details to another application, click **Copy**. This action copies the event details to your clipboard, allowing you to paste the contents into another application such as Microsoft Word.



## Event Properties window - Details tab

The Details tab of the Event Properties window allows you to view details collected for an individual event.

To scroll from one event to the next, use the up and down arrows.

To copy the event details to another application, click **Copy**. This action copies the event details to your clipboard, allowing you to paste the contents into another application such as Microsoft Word.



## Event Properties window - Data Change tab

The Data Change tab of the Event Properties window allows you to review how column values changed as a result of the selected event.

This tab is available only when you are collecting before and after data. For more information about collecting before and after data, see [Audited Database Properties window - Before-After Data tab](#).

To scroll from one event to the next, use the up and down arrows.

To copy the event details to another application, click **Copy**. This action copies the event details to your clipboard, allowing you to paste the contents into another application such as Microsoft Word.

### Available columns

#### **Row #**

Provides the ordered number of the change in the data change set. For example, a DML operation results in seven rows changing. In the **Row #** field, these rows are numbered 1-7 in the order in which each change occurred. You can limit the number of recorded changes for a given operation in the [Configure Table Auditing window](#).

#### **Primary Key**

Provides the name of the column that uniquely identifies this table. For more information about primary keys, see Microsoft Books Online.

#### **Column Name**

Provides the name of the column affected by the event.

#### **Before Data**

Provides the value before this column changed.

#### **After Data**

Provides the value after this column changed.





## Event Properties window - Sensitive Columns tab

The Sensitive Column tab of the Event Properties window allows you to review the frequency on which sensitive data has been accessed.

This tab is available only if you audit SELECT statements with sensitive columns.

To scroll from one event to the next, use the up and down arrows.

To copy the event details to another application, click **Copy**. This action copies the event details to your clipboard, allowing you to paste the contents into another application such as Microsoft Word.

### Available columns

**Column Name**

Provides the name of the column affected by the event.

**Row count**

Provides the row count value for the selected column.



## Explore Activity - Audited SQL Servers Summary tab

The Audited SQL Servers Summary tab (Management Console) displays the status of audit activity across your SQL Server environment. Use the statistics and graphs on this tab to quickly and easily identify issues so you can continue to ensure the correct level of compliance.

## Understanding System Status

The System Status pane displays the overall status of your SQL Server environment.

### **Status**

Indicates whether IDERA SQL Compliance Manager encountered any issues while auditing your SQL Server environment.

Clicking the status link opens the more detailed Registered SQL Servers tab under Administration. Use this tab to view the status of audited databases on this instance, validate audit settings, and check the SQL Compliance Manager Agent status.



| Status Type | Possible Causes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alert/Error | <ul style="list-style-type: none"> <li>• <b>The Repository is installed on a SQL Server 2005 instance but a SQL Compliance Manager Agent is deployed to a SQL Server 2012 or later instance.</b> For example, to audit activity on instances running SQL Server 2005, install a second Repository on a SQL Server 2005 instance.</li> <li>• <b>A version 1.1 SQL Compliance Manager Agent is deployed to a SQL Server 2005 or later instance.</b> Version 1.1 does not support auditing SQL Server 2005 instances. To continue auditing SQL Server 2005 instances, upgrade the agents to the latest version.</li> <li>• <b>The SQL Compliance Manager Agent missed every heartbeat over the last 24 hours.</b> This issue occurs when the SQL Compliance Manager Agent service is stopped, the Collection Server is offline, the computer hosting the agent is offline, or network availability is lost.</li> <li>• <b>The SQL Compliance Manager Agent service is no longer running.</b> The SQL Compliance Manager Agent service is stopped by a SQL Server login or a third-party application.</li> <li>• <b>A system alert is triggered.</b> System alerts notify you when the health of your SQL Compliance Manager deployment may be compromised. For more information, see the <a href="#">Activity Log tab</a>.</li> </ul> |
| OK          | SQL Compliance Manager is performing as expected.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Warning     | <ul style="list-style-type: none"> <li>• <b>No SQL Server instances are registered with SQL Compliance Manager.</b> SQL Compliance Manager cannot begin auditing your environment until instances are registered, SQL Compliance Manager Agents are deployed, and audit settings are configured.</li> <li>• <b>The SQL Compliance Manager Agent is not yet deployed to an instance that is registered with SQL Compliance Manager.</b> SQL Compliance Manager cannot audit this instance until an agent is deployed and audit settings are configured.</li> <li>• <b>A deployed SQL Compliance Manager Agent has not yet contacted SQL Compliance Manager.</b> This issue occurs when the SQL Compliance Manager Agent service is stopped, the computer hosting the agent is offline, or network availability is lost.</li> <li>• <b>A deployed SQL Compliance Manager Agent missed two sequential heart beats.</b> This issue occurs when the SQL Compliance Manager Agent service is stopped, the computer hosting the agent is offline, or network availability is lost.</li> </ul>                                                                                                                                                                                                                                             |



### Registered SQL Servers

Displays the number of SQL Server instances that are registered with SQL Compliance Manager.

### Audited SQL Servers

Displays the number of instances currently audited. This number does not include instances where auditing is not yet configured or is disabled.

### Audited Databases

Displays the number of databases currently audited. These databases are hosted by SQL Server instances that are registered with SQL Compliance Manager. This number does not include databases where auditing is not yet configured or is disabled.

### Processed Events

Displays the number of audit events stored in the Repository event databases for the selected time span. This number does not include previously archived or groomed events.

## Understanding the Enterprise Activity Report Card status

Each tab of the Enterprise Activity Report Card provides an auditing status for the corresponding event category. Use this status to help determine whether you are effectively auditing events in your environment.

You can also use auditing thresholds to display critical issues or warnings should a particular activity, such as privileged user events, be higher than expected. These thresholds can notify you about issues related to increased activity levels, such as a security breach, that may be occurring on this instance. Use thresholds to supplement the alert rules you have configured for your environment.

| Status Type                | Indication | Meaning                                                                                                                                                                                                                                |
|----------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audited without thresholds | gray check | This event category is audited on instances in your environment, but auditing thresholds are not set for this event category. Consider setting audit thresholds so you can track peaks in activity and identify any suspicious events. |



| Status Type                       | Indication  | Meaning                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Critical                          | red icon    | The event activity during the selected time span is higher than the defined critical threshold. To see more information about this activity, navigate to the Audit Events tab and search for events in the flagged event category. You can view the detailed properties of an event by double-clicking the listed event.        |
| OK                                | green check | This event category is audited on instances in your environment and auditing thresholds are set for this event category.                                                                                                                                                                                                        |
| Not audited                       | red icon    | This event category is not audited on instances in your environment even though auditing thresholds are set for this event category. To track this activity, change your audit settings to include the corresponding event category. To ignore this activity, disable the auditing threshold set for this event category.       |
| Not audited and no thresholds set | gray circle | This event category is not audited on any instances in your environment. Auditing thresholds are not set for this event category. Review whether you need to audit and track this activity on any of your SQL Server instance.                                                                                                  |
| Warning                           | yellow icon | The event activity during the selected time span is higher than the defined warning threshold. To see more information about this activity, navigate to the Audit Events tab and search for events in the event category that is flagged. You can view the detailed properties of an event by double-clicking the listed event. |

## Understanding the Enterprise Activity Report Card tabs

The Enterprise Activity Report Card tabs (Report Card) chart recent activity for each of the common audit event categories and provide the status of each registered SQL Server instance. This activity and status is calculated for the selected time span from the processed audit events stored in the Repository event databases.



Use the Report Card to track the rate of activity in specific event categories and identify when exceptional activity occurs. Auditing thresholds can also help you track and identify activity that could reflect a SQL Server performance or security issue.

To get more detailed information about a particular SQL Server instance, use the provided link.

## Understanding Recent Alerts

The Recent Alerts pane displays the number of alerts that are generated for each alert category in the selected time span. ***If you see an unexpected number of alerts,*** consider reviewing the current alert messages and then modifying your alert rules to better fit your compliance and auditing needs.

For more information about specific alerts, see the Alerts tab. You can view which alerts are generated from multiple instances across your environment or from a particular instance.

## Available actions

### Register SQL Server

Starts the New Registered SQL Server wizard, allowing you to enable and configure auditing on another SQL Server instance.

### Monitor

Opens the Change Log tab under Administration, allowing you to monitor what types of changes are made to audit settings across your environment.

### Configure Access

Opens the SQL Logins tab under Administration, allowing you to control who has access to view and report on audit data or change configuration settings.

### Self-Audit

Allows you to perform an integrity check on the audit data currently stored in Repository.

### Configure Alerting

Opens the Alert Rules tab under Administration, allowing you to configure alerting to track specific activity on SQL Server instances across your environment.

### Span

Allows you to change the number of days (time span) for which the Summary tab displays status, alerts, and activity. By default, this tab displays data for the last seven days.





## Explore Activity - Database Summary tab

The IDERA SQL Compliance Manager Database Summary tab displays the status of audit activity for a particular database hosted by the selected SQL Server instance. Use the statistics and graphs on this tab to quickly and easily identify database-level issues so you can continue to ensure the correct level of compliance.

### Understanding Event Distribution

The Event Distribution pane tracks the distribution of audited activity during the selected time span. This pie chart displays how recently collected events are distributed across the commonly audited event categories. You can mouse-over a slice of the pie to see the exact number of events in this category and the percentage of total events this category represents. To verify which event categories you are auditing, see the Audited Activity pane.

### Understanding Audited Activity

The Audited Activity pane provides a brief summary of the audit settings configured for the selected database. For more detailed information, review the database audit settings (available from the task ribbon).

#### **Regulation Guideline**

Lists the regulation guideline(s) applied to this database.

#### **Database**

Lists the event categories currently audited on this database. This list includes auditing settings configured at the database level only.

#### **Before-After**

Lists which tables are audited for before and after data.

#### **Sensitive Columns**

Lists which tables are audited at the column level for SELECT events.

#### **Trusted Users**

Displays the number of trusted users that are excluded from the audit trail.

#### **Event Filters**

Displays the number of Event Filters that are created to streamline audit data collected from this database, and the event properties used by these filters. Events that match the listed properties are omitted from the audit data trail for this database.





## Understanding Recent Database Activity

The Recent Database Activity pane tracks the level of activity during the selected time span. This graph plots the number of recently collected audit events per the commonly audited event categories.

## Understanding Recent Audit Events

The Recent Audit Events pane lists the most recent audit events collected for this database during the specified time span. This list displays up to 100 events. To see more details about a specific event, double-click the listed event. To view all audited events collected since your last archive, use the Audit Events tab.

## Available actions

### **Configure Alerting**

Opens the Alert Rules tab under Administration, allowing you to configure alerting to track specific activity on this database or other SQL Server instances across your environment.

### **Configure Event Filters**

Opens the Event Filters tab under Administration, allowing you to configure Event Filters that exclude specific types of events from your audit trail, allowing you to eliminate unnecessary events before they are processed by the Collection Server.

### **Remove Database**

Allows you to unregister the selected SQL Server database(s). When you remove a SQL Server database, SQL Compliance Manager disables all auditing for this specific database on the SQL Server instance. Auditing of other databases on this instance continues.

### **Disable Auditing**

Allows you to disable auditing on the selected SQL Server database. When you disable auditing, the SQL Compliance Manager Agent stops collecting new event data for this database and stops the corresponding SQL trace running against that database. You can continue to view and report on previously audited events or archived events.

Disabling auditing at the database level does not disable auditing at the server level or auditing of other databases hosted on the SQL Server instance.

To re-enable auditing, right-click the database from the Explore Activity tree, and then click **Enable Auditing** on the context menu.



## Database Settings

Allows you to change the audit settings for the selected SQL Server database.

## Apply Regulation Guideline

Allows you to select one or more regulations to apply to this audited SQL Server database. If you want to apply regulation guidelines to all audited databases on a SQL Server instance, use the **Apply Regulation Guideline** feature from the [Explore Activity - Instance Summary tab](#).

## Trusted Users

Allows you to change which SQL Server logins or roles are considered trusted users on the selected SQL Server database. Logins designated as trusted users are not audited at the database level. All events resulting from trusted user activity are filtered from the audit trail before the trace file is sent to the Collection Server for processing.

## Import

Allows you to import audit settings previously exported from another audited instance or database.

## Export

Allows you to export audit settings for this SQL Server database to an XML file. This file includes audit settings configured at the database level. You can later use this file to import audit settings across multiple databases, ensuring consistent auditing and compliance on a given instance or throughout your environment.

## Span

Allows you to change the number of days (time span) for which the Summary tab displays status, events, and activity. By default, this tab displays data for the last seven days.



## Explore Activity - Instance Summary tab

The IDERA SQL Compliance Manager Instance Summary tab displays the status of audit activity for a particular SQL Server instance in your environment. Use the statistics and graphs on this tab to quickly and easily identify server-level issues so you can continue to ensure the correct level of compliance.

### Understanding Server Status

#### Status

Indicates whether SQL Compliance Manager encountered any issues while auditing this SQL Server instance. ***If a system alert is triggered***, the status displays as critical. System alerts notify you when the health of your SQL Compliance Manager deployment may be compromised. For more information, see the [Activity Log tab](#).

#### Last Heartbeat

Provides the most recent date and time that the SQL Compliance Manager Agent deployed for this instance contacted the Collection Server.

#### Last Archived

Provides the most recent date and time that events collected for this instance were archived.

#### Processed Events

Displays the number of audit events stored in the Repository event databases for the selected time span. This number does not include events previously archived or groomed.

#### Recent Alerts

Displays the number of alerts generated for events collected from this instance during the specified time span.

### Understanding the Server Activity Report Card status

Each tab of the Server Activity Report Card provides an auditing status for the corresponding event category. You can use this status to help you determine whether you are effectively auditing events on this SQL Server instance.

You can also use auditing thresholds to display critical issues or warnings should a particular activity, such as privileged user events, be higher than expected. These thresholds can notify you about issues related to increased activity levels, such as a



security breach, that may be occurring on this instance. Use thresholds to supplement the alert rules you have configured for this instance.

| Status Type                       | Indication  | Meaning                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audited without thresholds        | gray check  | This event category is audited on instances in your environment, but auditing thresholds are not set for this event category. Consider setting audit thresholds so you can track peaks in activity and identify any suspicious events.                                                                                           |
| Critical                          | red icon    | The event activity during the selected time span is higher than the defined critical threshold. To see more information about this activity, navigate to the Audit Events tab and search for events in the event category that is flagged. You can view the detailed properties of an event by double-clicking the listed event. |
| OK                                | green check | This event category is audited on instances in your environment and auditing thresholds are set for this event category.                                                                                                                                                                                                         |
| Not audited                       | red icon    | This event category is not audited on instances in your environment even though auditing thresholds are set for this event category. To track this activity, change your audit settings to include the corresponding event category. To ignore this activity, disable the auditing threshold set for this event category.        |
| Not audited and no thresholds set | gray circle | This event category is not audited on any instances in your environment. Auditing thresholds are not set for this event category. Review whether you need to audit and track this activity on any of your SQL Server instance.                                                                                                   |



| Status Type | Indication  | Meaning                                                                                                                                                                                                                                                                                                                         |
|-------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning     | yellow icon | The event activity during the selected time span is higher than the defined warning threshold. To see more information about this activity, navigate to the Audit Events tab and search for events in the event category that is flagged. You can view the detailed properties of an event by double-clicking the listed event. |

## Understanding the Server Activity Report Card tabs

The Server Activity Report Card tabs chart recent activity for each of the common audit event categories and provide the status of this registered SQL Server instance. This activity and status is calculated from the processed audit events stored in the Repository event databases for the selected time span.

Use the Report Card to track the rate of activity in specific event categories and identify when exceptional activity occurs. Auditing thresholds can also help you track and identify activity that could reflect a SQL Server performance or security issue. Using the yellow and red lines that display when warning and critical auditing thresholds are exceeded, you can pinpoint the exact time at which the violations occurred.

When reviewing the Report Card, consider guidelines such as the following tips:

- Too many alerts and failed logins can indicate serious issues
- A sudden spike in privileged user activity could indicate a security breach
- Setting your Overall Activity threshold at 20% above the benchmark activity can warn you when unexpected traffic or database growth occurs

To get more detailed information about a particular increase in activity, use the Recent Audit Events pane to see which events correlated to this activity.

## Understanding Audit Configuration

The Audit Configuration pane provides a brief summary of the audit settings configured for the selected SQL Server instance.

For more detailed information, review the properties of the registered instance.

### Server

Lists the event categories currently audited on this SQL Server instance. This list includes auditing settings configured at the server level.

### Privileged Users



Displays the number of privileged users who are audited, and the audit settings currently configured to track their activity.

### Databases

Indicates the number of databases hosted by this SQL Server instance that are audited.

### Event Filters

Displays the number of Event Filters created to streamline audit data collected from this SQL Server instance, and the event properties used by these filters. Events that match the listed properties are omitted from the audit data trail for this instance.

## Understanding Recent Audit Events

The Recent Audit Events pane lists the most recent audit events collected for this SQL Server instance during the specified time span. This list displays up to 100 events.

To see more details about a specific event, double-click the listed event.

To view all audited events collected since your last archive, use the Audit Events tab.

## Available actions

### Configure Alerting

Opens the Alert Rules tab under Administration, allowing you to configure alerting to track specific activity on this instance or other SQL Server instances across your environment.

### Remove Server

Allows you to unregister the selected SQL Server instance. When you remove a SQL Server instance, SQL Compliance Manager disables all auditing at the server and database levels on the SQL Server instance. ***If the selected instance is the last instance to be audited on this SQL Server, SQL Compliance Manager also uninstalls the SQL Compliance Manager Agent. If you manually deployed the SQL Compliance Manager Agent, you must manually uninstall it from the SQL Server computer.***

### Add Audited Databases

Starts the New Audited Database wizard, allowing you to enable auditing on additional databases hosted by this SQL Server instance.

### Disable Auditing

Allows you to disable auditing on the selected SQL Server instance. When you disable auditing, the SQL Compliance Manager Agent stops collecting new



event data, and stops the corresponding SQL trace. You can continue to view and report on previously audited events or archived events.

To re-enable auditing, right-click the instance from the **Explore Activity** tree, and then click **Enable Auditing** on the context menu.

### **Server Settings**

Allows you to change the audit settings for the selected SQL Server instance.

### **Apply Regulation Guideline**

Allows you to select one or more regulations to apply to all of the audited databases within this SQL Server instance. If you want to apply regulation guidelines only to specific databases, use the **Apply Regulation Guideline** feature from the [Explore Activity - Database Summary tab](#). This option is unavailable if you have no databases selected for audit.

### **Privileged Users**

Allows you to change how privileged user activity is audited on the selected SQL Server instance.

### **Import**

Allows you to import audit settings previously exported from another SQL Server instance. Using the Import Audit Settings wizard, you can specify whether you want to import settings at the server or database level.

### **Export**

Allows you to export audit settings for this SQL Server instance to an XML file. This file includes audit settings configured at the server and database level. You can later use this file to import audit settings across multiple SQL Server instances, ensuring consistent auditing and compliance throughout your environment.

### **Collect Audit Data**

Allows you to force the SQL Compliance Manager Agent to send trace files to the Collection Server for processing. Typically, the SQL Compliance Manager Agent sends trace files to the Collection Server at the specified collection interval. By default, a trace file collection occurs every two minutes.

### **Agent Properties**

Allows you to view or change the properties, such as the heartbeat interval and the collection interval, of the SQL Compliance Manager Agent deployed to the selected SQL Server instance.

### **Span**



Allows you to change the number of days (time span) for which the Summary tab displays status, alerts, and activity. By default, this tab displays data for the last 7 days.





## Groom Alerts Now window

The Groom Alerts Now window allows you to groom alert messages currently stored in the Repository databases. Grooming permanently deletes any alert message that is older than the age limit you specify.

### Available fields

#### **SQL Servers**

Allows you to select which SQL Server instance you want to groom. You can groom alerts for all registered SQL Server instances or for a particular SQL Server instance.

#### **Grooming Options**

Allows you to specify the age (in days) at which an alert message should be groomed. The Collection Server does not groom alert messages that are younger than the specified age.



## Groom Audit Data Now window

The Groom Audit Data Now window allows you to groom audited events currently stored in the Repository databases. Grooming permanently deletes any event that is older than the age limit you specify. To improve the Collection Server performance while maintaining audit data for later analysis, consider archiving your audit data.

### Available actions

#### Generate Script

Creates a CLI command that includes your groom settings. You can save the command to a batch file or copy the command to another application. Use this command to schedule and automate your audit data maintenance through a third-party tool.

### Available fields

#### SQL Servers

Allows you to select which SQL Server instance you want to groom. You can groom audit data for all registered SQL Server instances or for a particular SQL Server instance.

#### Grooming Options

Allows you to specify the age (in days) at which an audited event should be groomed and choose whether you want to skip the integrity check.

The Collection Server will not groom events that are younger than the specified age.

When you groom audit data, you can choose to check the integrity of the collected events. ***If the audit data for the selected SQL Server instance fails this integrity check***, IDERA SQL Compliance Manager does not groom the data.



## Import Audit Settings wizard - Import Audit Settings window

The Import Audit Settings window of the Import Audit Settings wizard allows you to select which type of audit settings you want to import from the selected XML file.

### Available actions

#### **Select server-level audit settings**

Allows you to import all server-level audit settings from the selected XML file. This action is available when the selected XML file contains audit settings that were exported at the server level.

#### **Select privileged user audit settings**

Allows you to import the privileged user settings from the selected XML file. This action is available when the selected XML file contains audit settings that were exported at the server level.

#### **Select database audit settings**

Allows you to import database-level audit settings previously configured for a specific database, using the selected database as a baseline or template. You can import these settings to multiple databases or limit your import to target databases whose names match the baseline database.

For example, if you want to import the audit settings you configured for the HR database, select HR from the database list.



## Import Audit Settings wizard - Select File to Import window

The Select File to Import window of the Import Audit Settings wizard allows you to specify which audit settings you would like import by selecting the corresponding XML file.

Previously exported audit settings are saved to XML files in the designated folder. By default, the audit settings file names are `InstanceName_AuditSettings.xml` (for a registered instance and all databases hosted on that instance) and `InstanceName_DatabaseName_AuditSettings.xml` (for a specific database on a registered instance). These files are stored in the My Documents folder of the user who exported the settings.



## Import Audit Settings wizard - Target Databases window

The Target Databases window of the Import Audit Settings wizard allows you to select which databases you would like to audit using the imported settings.

You can import audit settings to any audited database. To successfully collect audit data from the target database, ensure auditing is enabled at the database level.

***If you previously choose to import audit settings to target databases that matched the names of the source databases***, this window will only list the matching databases. To import audit settings to all databases, return to the Import Audit Settings window and clear the Only import for matching database names option.

### Available actions

#### **Clear All**

Clears all audited databases.

#### **Select All**

Selects all audited databases.



## Import Audit Settings wizard - Target Servers window

The Target Servers window of the Import Audit Settings wizard allows you to select which registered SQL Server instances you would like to audit using the imported settings.

You can import audit settings to any registered SQL Server instance. To successfully collect audit data from the target SQL Server instance, ensure auditing is enabled at the server level.

### Available actions

**Clear All**

Clears all registered SQL Server instances.

**Select All**

Selects all registered SQL Server instances.



## Import Audit Settings wizard - Summary window

The Summary window of the Import Audit Settings wizard allows you to choose whether to append or overwrite the existing audit settings for the target SQL Server instance or database.

To complete your import, click **Finish**. The Management Console updates the SQL Compliance Manager Agent at the next heartbeat.

### Available actions

#### **Add to current audit settings**

Appends the existing audit settings the SQL Compliance Manager Agent is using to audit the target SQL Server instance or database with the settings you have chosen to import. The SQL Compliance Manager Agent will use the previous settings and the imported settings to collect events from this instance or database.

#### **Overwrite current audit settings**

Overwrites the existing audit settings the SQL Compliance Manager Agent is using to audit the target SQL Server instance or database with the settings you have chosen to import. The SQL Compliance Manager Agent will use only the imported settings to collect events from this instance or database.



## Integrity Check Results window

The Integrity Check Results window allows you to review the results of your audit data integrity check.

**If your audit data fails the integrity check**, the integrity check returns a list of events that were inserted, modified, or deleted from the selected Repository or archive database. These events are considered compromised. The integrity check also analyzes the additional data associated with Before-After and Sensitive Column auditing of DML and SELECT events, and indicates whether this data is compromised as well.

The integrity check results indicate:

- How many individual event entries are compromised
- How many entries of Before-After change data and column data are compromised
- How many Sensitive Column entries are compromised

You can choose whether to mark each compromised event entry in the audit data. Marking these events changes the event class to reflect the compromise and changes the event category to Integrity Check. Use the marked audit data to help diagnose the issues and begin a forensic analysis.

| Type of Compromise                                                                                             | New Event Class | New Event Category |
|----------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Events were added to the audit data stream after archival using another application                            | Events inserted | Integrity Check    |
| Events stored in the selected Repository or archive database were modified using another application           | Events modified | Integrity Check    |
| Events previously stored in the selected Repository or archive database were deleted using another application | Missing events  | Integrity Check    |

To mark the compromised events as they occur in the audit data, click **Mark Events**.





## Login Filtering Options window

The Login Filtering Options window allows you to set login filtering. Login filtering reduces the number of login events stored in your audit data. When login filtering is enabled, the Collection Server searches the trace files sent by the SQL Compliance Manager Agent for duplicate logins that occurred within the specified time period. Duplicate logins are logins with matching user, application, or host names. The Collection Server consolidates these logins into a single event entry in your audit data.

Login filtering is enabled when you audit login events on specific SQL Server instance. By default, the Collection Server searches for duplicate events with time stamps that are within an hour of each other.

Use login filtering to better audit login activity on SQL Server instances where applications, such as SQL Server 2005 Enterprise Studio, frequently open and close connections to SQL Server.

To set login filtering, select the provided checkbox, and specify the appropriate time period.



## Login Properties window - General tab

The General tab of the Login Properties window allows you to change the security access and IDERA SQL Compliance Manager permissions for the selected SQL Server login.

### Available fields

#### **Security access**

Allows you to specify whether this login should have access to the SQL Server instance that hosts the Repository databases.

#### **Permissions within SQL Compliance Manager**

Allows you to indicate which SQL Compliance Manager permissions this login should have. You can grant the login permission to configure audit settings or view audit data. By default, all logins on the Repository SQL Server instance have read access to audit data. Read access allows the user to view and report on audit data stored in the Repository and archive databases.



## Login Properties window - Database Access tab

The Database Access tab of the Login Properties window allows you to specify access on each Repository database. Use this tab if your environment requires permissions settings that tightly control database access. For example, you can deny access to the Repository databases by default, but grant a login access to a specific Repository database.

Select the Repository database on which you want to set permissions, and then select the appropriate permissions.

Your selections are applied along with any default permissions you set when you registered the corresponding SQL Server instance.



## Manage SQL Compliance Manager Licenses window

The Manage SQL Compliance Manager Licenses window allows you to view details about your IDERA SQL Compliance Manager product license. You can view the following information:

- Current license key
- Type of license (trial or production)
- Number of SQL Server instances allowed to be licensed with this key
- Expiration date of license

### Available actions

#### **Add**

Allows you to upgrade an existing product license key or specify a new product license key. Copy the license key into the provided field, and then click **OK**.

#### **Delete**

Allows you to permanently decommission a license key. This action removes the license key from the Repository.



## New Data Alert Rule wizard - Alert Actions tab

The Alert Actions tab allows you to select the action you want this alert rule to perform when an audited data matches the specified criteria. Depending on the actions you select, IDERA SQL Compliance Manager writes an alert message to the application event log and email it to a specific email address or distribution list. You can use the default alert message or customize it to display the information you need most.

To successfully use email notification, ensure SQL Compliance Manager is configured to connect to your mail server. For more information, see the [Configure Email Settings window](#).

### Available actions

#### Select alert action

Allows you to select whether you want an alert message to be generated when this alert is triggered. You can configure an alert message to be written to the application event log, emailed to a specific address or distribution list, or send SNMP Trap messages to a specified network management console. SQL Compliance Manager uses the same alert message content for all notifications.

#### Edit rule details

Allows you to specify one or more of the following attributes, depending on the alert action you selected:

- Content of the alert message
- Type of event log entry that should be written (Warning, Error, Information)
- Addresses to which the alert message should be emailed
- Server address, port number, and community name of the network management console

The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Data Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## New Data Alert Rule wizard - Data Alert Type tab

The Data Alert Type tab of the New Data Alert Rule wizard allows you to start setting up an alert that tracks when someone accesses a sensitive column.

### Available actions

#### **Edit rule details**

Allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Data Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## New Data Alert Rule wizard - Finish Alert Rule tab

The finish Alert rule tab allows you to specify a name for the new Data Alert rule, review the rule details, and then click **Finish**. When you finish this wizard, IDERA SQL Compliance Manager enables the alert rule and begins applying your alert criteria against audit data associated with the selected objects.

***If you want to change a setting now***, use the rule details pane. You can also change alert rule settings later using the Edit Data Alert Rule wizard.

### Available actions

#### **Specify rule name**

Allows you to name your alert rule. Consider using a unique name that reflects the purpose of the alert.

#### **Specify alert level**

Allows you to set the severity alerts generated by this rule should have. SQL Compliance Manager tallies the alerts by severity on the Audited SQL Servers Summary tab.

#### **Specify rule description**

Allows you to provide a description for this alert rule. Consider including detailed information that can help you diagnose issues later.

#### **Enable rule now**

Indicates that you want SQL Compliance Manager to begin monitoring audit data using this alert rule criteria immediately after you finish creating the rule. By default, all alert rules are enabled upon creation.

#### **Review rule details**

Allows you to change your specified alert rule criteria before applying your new alert rule. To edit previously set criteria, click the corresponding setting.



## New Data Alert Rule wizard - SQL Server Object Type tab

The SQL Server Object Type tab of the New Data Alert Rule wizard allows you to specify the type of SQL Server object that should be monitored by this alert rule. You can generate alerts for objects on currently audited databases and SQL Server instances.

**i** When you choose to alert on access to specific columns, your choice is limited to the columns you previously selected for Sensitive Column auditing. For example, if you chose to audit only the salary column, you can alert on access to the salary column only. Likewise, if you chose to audit all columns in a table, you can alert on access to any column in that table, but not specific columns.

### Available actions

#### Select the object that triggers this alert

Allows you to specify the SQL Server object type that should trigger this alert. When the Collection Server processes audit data associated with the specified object type, the alert rule is run to see whether the identified data matches the other alert rule criteria.

By default, the alert rule will apply your alert criteria against audit data from any audited SQL Server instance.

You can control the level at which you want IDERA SQL Compliance Manager to apply this alert:

- SQL Server instance
- Database
- Table
- Column

For example, you can specify the following objects:

- Any column in any table on any database hosted by the Chicago instance
- Any column in any table on the HR01 database hosted by the Chicago instance
- Any column in the Employees table on the HR01 database hosted by the Chicago instance
- The SSN column in the Employees table on the HR01 database hosted by the Chicago instance

#### Edit rule details

Allows you specify which SQL Server objects the alert rule should use to identify audit data to alert on.





The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Data Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## New Event Alert Rule wizard - Additional Event Filters tab

This tab allows you to define when the selected event should trigger this alert rule. You can specify more than one condition.

### Available actions

#### **Select when this alert should be triggered**

Allows you to select the condition under which the alert should trigger. For example, you can specify that the alert rule look for security changes performed by privileged users, or only alert on events that are successful.

#### **Edit rule details**

Allows you to specify a value for the selected condition, such as true or false.

The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Event Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## New Event Alert Rule wizard - Alert Actions tab

The Alert Actions tab of the New Event Alert Rule wizard allows you to select the action you want this alert rule to perform when an audited event matches the specified criteria. Depending on the actions you select, IDERA SQL Compliance Manager writes an alert message to the application event log and email it to a specific email address or distribution list. You can use the default alert message or customize it to display the information you need most.

To successfully use email notification, ensure SQL Compliance Manager is configured to connect to your mail server. For more information, see the [Configure Email Settings window](#).

### Available actions

#### Select alert action

Allows you to select whether you want an alert message to be generated when this alert is triggered. You can configure an alert message to be written to the application event log and emailed to a specific address or distribution list. SQL Compliance Manager uses the same alert message content for the event log entry and email notification.

#### Edit rule details

Allows you to specify one or more of the following attributes, depending on the alert action you selected:

- Content of the alert message
- Type of event log entry that should be written (Warning, Error, Information)
- Addresses to which the alert message should be emailed

The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Event Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## New Event Alert Rule wizard - Finish Alert Rule tab

The Finish Alert Rule tab of the New Event Alert Rule wizard allows you to specify a name for the new Event Alert rule, review the rule details, and then click **Finish**. When you finish this wizard, IDERA SQL Compliance Manager enables the alert rule and begins applying your alert criteria against audited events associated with the selected objects.

***If you want to change a setting now***, use the rule details pane. You can also change alert rule settings later using the Edit Event Alert Rule wizard.

### Available actions

#### **Specify rule name**

Allows you to name your alert rule. Consider using a unique name that reflects the purpose of the alert.

#### **Specify alert level**

Allows you to set the severity alerts generated by this rule should have. SQL Compliance Manager tallies the alerts by severity on the Audited SQL Servers Summary tab.

#### **Specify rule description**

Allows you to provide a description for this alert rule. Consider including detailed information that can help you diagnose issues later.

#### **Enable rule now**

Indicates that you want SQL Compliance Manager to begin monitoring audited events using this alert rule criteria immediately after you finish creating the rule. By default, all alert rules are enabled upon creation.

#### **Review rule details**

Allows you to change your specified alert rule criteria before applying your new alert rule. To edit previously set criteria, click the corresponding setting.



## New Event Alert Rule wizard - SQL Server Event Type tab

The SQL Server Event Type tab allows you to specify on which type of SQL Server event you want to alert.

### Available actions

#### **Select type of event that triggers this alert**

Allows you to select the SQL Server event type that should trigger this alert. When the Collection Server processes an audited event that matches the specified event type, the alert rule is run to see whether the identified event matches the other alert rule criteria.

You can also select a specific event or a user defined event. A specific event can be any supported SQL Server event that occurs at the server or database level. A user defined event is a custom event you create and track using the `sp_trace_generateevent` stored procedure.

#### **Edit rule details**

Allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Event Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## New Event Alert Rule wizard - SQL Server Object Type tab

The SQL Server Object Type tab allows you to specify the type of SQL Server object that should be monitored by this alert rule. You can generate alerts for objects on currently audited databases and SQL Server instances.

### Available actions

#### Select the object that triggers this alert

Allows you to specify the SQL Server object type that should trigger this alert. When the Collection Server processes an audited event associated with the specified object type, the alert rule is run to see whether the identified event matches the other alert rule criteria.

By default, the alert rule applies your alert criteria against events on any audited SQL Server instance.

You can specify one or more objects:

| Type of Object      | You can specify ...                                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SQL Server instance | <ul style="list-style-type: none"> <li>• Any instance</li> <li>• A specific instance by name</li> </ul>                                                                |
| Database            | <ul style="list-style-type: none"> <li>• A specific database by name</li> <li>• Any database whose name matches a naming convention or phrase</li> </ul>               |
| Database object     | <ul style="list-style-type: none"> <li>• A specific database object by name</li> <li>• Any database object whose name matches a naming convention or phrase</li> </ul> |

For example, you can specify the following objects:

- Any database whose name contains the word test on the LABSERVER instance
- The model database on any audited instance
- The Salary table in the HR01 database hosted by the Chicago instance

#### Edit rule details

Allows you specify the word or phrase the alert rule should use to identify events associated with the object you want to alert on.



The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Event Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## New Event Filter wizard - Finish Event Filter tab

The Finish Event Filter tab of the New Event Filter wizard allows you to specify a name for the new event filter, review the filter details, and then click **Finish**. When you finish this wizard, IDERA SQL Compliance Manager enables the event filter and begins applying your filter criteria against audited events associated with the selected objects.

***If you want to change a setting now***, use the filter details pane. You can also change event filter settings later using the Edit Event Filter wizard.

### Available actions

#### **Specify filter name**

Allows you to name your event filter. Consider using a unique name that reflects the purpose of the rule.

#### **Specify filter description**

Allows you to provide a description for this event filter. Consider including detailed information that can help you diagnose issues later.

#### **Enable filter now**

Indicates that you want SQL Compliance Manager to begin filtering events using this rule criteria immediately after you finish creating the rule. By default, all alert rules are enabled upon creation.

#### **Review filter details**

Allows you to change your specified event filter rule criteria before applying your edits. To edit previously set criteria, click the corresponding setting.





## New Event Filter wizard - SQL Server Event Source tab

The SQL Server Event Source tab of the allows you to specify which user (SQL Server login) or application is initializing the SQL Server event you want to filter from your audit data.

### Available actions

#### **Select the user or application to filter from your audit data**

Allows you to select the specific software application, computer, or SQL Server login you want to filter from your audit data. You can also filter privileged user events.

When the Collection Server processes an audited event that was initiated by the specified application, computer, or user, the filter is run to see whether the identified event matches the other filter criteria.

#### **Edit filter details**

Allows you to change your specified criteria at any time as you create your new filter. As you specify criteria using the New Event Filter wizard, the filter details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## New Event Filter wizard - SQL Server Event Type tab

The SQL Server Event Type tab of the New Event Filter wizard allows you to specify the type of SQL Server event you want to filter from your audit data.

### Available actions

#### **Select type of event to filter from your audit data**

Allows you to select the specific SQL Server event category or type you want to filter from your audit data. When the Collection Server processes an audited event that matches the specified event type, the filter is run to see whether the identified event matches the other filter criteria.

#### **Edit filter details**

Allows you to change your specified criteria at any time as you create your new filter. As you specify criteria using the New Event Filter wizard, the filter details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## New Event Filter wizard - SQL Server Object Type tab

The SQL Server Object Type tab of the New Event Filter wizard allows you to specify the type of SQL Server object affected by the filtered event. You can filter events that occur on specific audited databases and SQL Server instances.

### Available actions

#### Select the object that is affected by this event

Allows you to specify the SQL Server object type that is affected by the event you want to filter. For example, you can filter out all DDL activity on a specific database. When the Collection Server processes an audited event associated with the specified object type, the filter is run to see whether the identified event matches the other filter criteria.

By default, the filter will apply your criteria against events on any audited SQL Server instance.

You can specify one or more objects:

| Type of Object      | You can specify ...                                                                                                                                                |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SQL Server instance | <ul style="list-style-type: none"> <li>Any instance</li> <li>A specific instance by name</li> </ul>                                                                |
| Database            | <ul style="list-style-type: none"> <li>A specific database by name</li> <li>Any database whose name matches a naming convention or phrase</li> </ul>               |
| Database object     | <ul style="list-style-type: none"> <li>A specific database object by name</li> <li>Any database object whose name matches a naming convention or phrase</li> </ul> |

For example, you can specify the following objects:

- Any database whose name contains the word test on the LABSERVER instance
- The model database on any audited instance
- The Salary table in the HR01 database hosted by the Chicago instance

#### Edit filter details



Allows you specify the word or phrase the filter should use to identify objects affected by the event you want to filter from your audit data.

The filter details pane also allows you to change your specified criteria at any time as you create your new filter. As you specify criteria using the New Event Filter wizard, the filter details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## New SQL Server Login wizard - SQL Compliance Manager Permissions tab

The IDERA SQL Compliance Manager Permissions tab of the New SQL Server Login wizard allows you to specify the level of permissions that you want this login to have within SQL Compliance Manager. A login can configure audit settings, change console security, view audit data, and run reports.

To allow a login to configure audit settings and console security, SQL Compliance Manager adds the login to the Systems Administrator (sysadmin) fixed server role on the SQL Server instance that hosts the Repository databases.

Select the appropriate SQL Compliance Manager permission, and then click **Next**.



## New SQL Server Login wizard - SQL Server Windows Authentication tab

The SQL Server Windows Authentication tab of the New SQL Server Login wizard allows you to specify which Windows user account should be used when creating the SQL Server login to access IDERA SQL Compliance Manager. You can also grant or deny security access to the SQL Server instance that hosts the Repository databases.

Type the log name of the Windows user account (DomainName\UserName), select the appropriate security access, and then click **Next**.



## New SQL Server Login wizard - Summary tab

The Summary tab of the New SQL Server Login wizard allows you to review the provided summary, and then click **Finish**. When you finish this wizard, IDERA SQL Compliance Manager creates a SQL Server login with the specified permissions on the SQL Server instance that hosts the Repository databases.

***If you want to change a setting now,*** click **Back** to return to the appropriate window. You can also change login settings later using the Login Properties window.



## New Status Alert wizard - Alert Actions tab

The Alert Actions tab of the New Status Alert wizard allows you to select the action you want this alert rule to perform when the IDERA SQL Compliance Manager status matches the specified criteria. Depending on the actions you select, SQL Compliance Manager writes an alert message to the application event log and email it to a specific email address or distribution list. You can use the default alert message or customize it to display the information you need most.

To successfully use email notification, ensure SQL Compliance Manager is configured to connect to your mail server. For more information about using email notifications, see the [Configure Email Settings window](#).

### Available actions

#### Select alert action

Allows you to select whether you want an alert message to be generated when this alert is triggered. You can configure an alert message to be written to the application event log and emailed to a specific address or distribution list. SQL Compliance Manager uses the same alert message content for the event log entry and email notification.

#### Edit rule details

Allows you to specify one or more of the following attributes, depending on the alert action you selected:

- Content of the alert message
- Type of event log entry that should be written (Warning, Error, Information)
- Addresses to which the alert message should be emailed

The rule details pane also allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Status Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.





## New Status Alert wizard - Finish Status Alert Rule tab

The Finish Status Alert Rule tab of the New Status Alert wizard allows you to specify a name for the new alert rule, review the rule details, and then click **Finish**. When you finish this wizard, IDERA SQL Compliance Manager enables the alert rule and begins applying your alert criteria against status updates about the specified product component.

***If you want to change a setting now***, use the rule details pane. You can also change alert rule settings later using the Edit Status Alert Rule wizard.

### Available actions

#### **Specify rule name**

Allows you to name your alert rule. Consider using a unique name that reflects the purpose of the alert.

#### **Specify alert level**

Allows you to set the severity alerts generated by this rule should have. SQL Compliance Manager tallies the alerts by severity on the Audited SQL Servers Summary tab.

#### **Specify rule description**

Allows you to provide a description for this alert rule. Consider including detailed information that can help you diagnose issues later.

#### **Enable rule now**

Indicates that you want SQL Compliance Manager to begin monitoring the product component status using this alert rule criteria immediately after you finish creating the rule. By default, all alert rules are enabled upon creation.

#### **Review rule details**

Allows you to change your specified alert rule criteria before applying your new alert rule. To edit previously set criteria, click the corresponding setting.



## New Status Alert wizard - Status Alert Type tab

The Status Alert Type tab of the New Status Alert wizard allows you to choose the type of IDERA SQL Compliance Manager status you want to alert on.

### Available actions

#### **Select type of SQL Compliance Manager status that triggers this alert**

Allows you to select the [product components](#) status that should trigger this alert. When the Collection Server receives a status that matches the specified type, the alert rule is run to see whether the status matches the other alert rule criteria.

#### **Edit rule details**

Allows you to change your specified alert rule criteria at any time as you create your new alert rule. As you specify criteria using the New Status Alert Rule wizard, the rule details grows to include these additional settings. To edit previously set criteria, click the corresponding setting.



## Registered SQL Server Properties window - General tab

The General tab of the Registered SQL Server Properties window allows you to change the description of this registered SQL Server instance, and view general properties such as audit settings.

### Available actions

#### Update now

Allows you to send audit setting updates to the SQL Compliance Manager Agent running on this SQL Server instance. This action is available when you update audit settings between heartbeats, and the Collection Server has not yet sent your changes to the SQL Compliance Manager Agent.

To diagnose SQL Compliance Manager Agent issues, check the SQL Compliance Manager Agent status and review the SQL Compliance Manager Agent properties.

### Available fields

#### SQL Server

Provides the name of the selected SQL Server instance. ***If you are auditing a local instance***, the SQL Server instance name is the name of the physical computer hosting this instance.

#### Version

Provides the version number of SQL Server running on this registered instance.

#### Description

Allows you to specify a description for this instance. The Management Console uses this description when you view SQL Server properties or report on audit data. Consider including information about the databases hosted on this instance, or the organization to which this instance belongs.

#### Status

Provides the current status of this instance. The current status indicates whether SQL Server is available and the SQL Compliance Manager Agent Service and Collection Service are running. Use the Registered SQL Servers tab to see an overview of the status of all registered SQL Server instances.

#### Date created



Provides the date and time when this instance was registered. By default, auditing is enabled when the instance is registered with SQL Compliance Manager.

### **Last modified**

Provides the date and time when audit settings were last modified on this instance.

### **Last heartbeat**

Provides the date and time when the SQL Compliance Manager Agent auditing this instance contacted the Collect Server. This communication is called a heartbeat. Typically, the SQL Compliance Manager Agent receives audit setting updates during a heartbeat.

### **Events received**

Provides the date and time when the Collection Server last received audited events (SQL trace files) from the SQL Compliance Manager Agent.

### **Audit Settings**

Provides the following information about the status of your audit settings:

- Whether auditing is enabled on this instance
- When the SQL Compliance Manager Agent auditing this instance received the last audit setting updates
- Whether the audit settings are current

***If the audit settings are not current***, you can send your updates to the SQL Compliance Manager Agent by clicking **Update now**.

### **Event Database Information**

Provides the following information about audited events collected on this instance:

- Name of the database where audited events processed by the Collection Server are stored
- Whether the Repository databases passed the last audit data integrity check
- When the last audit data integrity check was performed

### **Time of Last Archive**

Provides the date and time when audited events collected for this SQL Server instance were last archived.

### **Last Archive Results**



Provides the results of the data integrity check. SQL Compliance Manager automatically performs a data integrity check each time you archive audited events from the Repository databases.



## Registered SQL Server Properties window - Audited Activities tab

**i** If you want to use SQL Extended Events as the event handling system for DML and SELECT events occurring on your SQL Server 2012 and later instances, you must enable/disable this feature in the SQL Compliance Manager Web Console. For more information about this feature, see [Using SQL Server Extended Events](#).

The Audited Activities tab allows you to change which types of SQL Server events you want to audit on the selected instance. IDERA SQL Compliance Manager audits these events at the server level only.

### Available fields

#### **Audited Activity**

Allows you select the type of activity you want to audit. Based on your selections, SQL Compliance Manager collects and processes the corresponding SQL Server events.

You can choose to audit event categories and user defined events. An event category includes related SQL Server events that occur at the server level. A user defined event is a custom event you create and track using the `sp_trace_generateevent` stored procedure.

#### **Capture DML and Select Activities**

**Via Trace Events** - Allows you to select Trace Events as your event handling system for DML and SELECT activities. For more information about this feature see, [Understanding Traces](#).

**Via Extended Events** - Allows you to select SQL Server Extended Events as your event handling system for DML and SELECT events for SQL Server 2012 and later versions. For more information about this feature, see [Using SQL Server Extended Events](#).

**Via SQL Server Audit Specifications** - Allows you to select SQL Server Audit Logs as your event handling system for DML and SELECT events for SQL Server 2017 and later versions. For more information about this feature, see [Using SQL Server Audit Logs](#).

#### **Access Check Filter**

Allows you to refine your audit trail for SQL Server login data by collecting events that better reflect your auditing requirements for security and user processes.



SQL Server validates login permissions and access rights when a user attempts to execute an operation or SQL statement on the audited SQL Server instance. ***If the access check filter is enabled for a registered instance***, SQL Compliance Manager collects access check events at the server level.

Select this filter to help identify logins that may have inappropriate access rights or permissions. This filter may also help reduce the size of your audit data.

| Type of Event Filter                        | Description                                                          |
|---------------------------------------------|----------------------------------------------------------------------|
| Audit only actions that passed access check | Omits events that track failed access checks performed by SQL Server |
| Audit only actions that failed access check | Omits events that track passed access checks performed by SQL Server |



## Registered SQL Server Properties window - Privileged User Auditing tab

The Privileged User Auditing tab of the Registered SQL Server Properties window allows you to change the audit settings currently applied to privileged users on this SQL Server instance. You can choose to audit event categories and user defined events. An event category includes related SQL Server events that occur at the server level. A user defined event is a custom event you create and track using the `sp_trace_generateevent` stored procedure.

For example, you can audit individual SQL Server logins with privileged access, logins that belong to specific fixed server roles, all activities, or specific activities.

When you update audit settings to audit privileged user activities, these changes are not applied until the SQL trace is refreshed. The SQL trace is refreshed when the SQL Compliance Manager Agent sends the trace files to the Collection Server. To ensure an immediate application of your new audit settings, click **Update Audit Settings Now** on the Agent menu.

### Available actions

#### **Add**

Allows you to select one or more privileged users to audit. You can select privileged users by login name or by membership to a fixed server role.

#### **Remove**

Allows you to remove the selected SQL Server login or fixed server role from the list of audited privileged users. When you remove the login or role, the SQL Compliance Manager Agent no longer collects events recorded for that login or the role members.

### Available fields

#### **Privileged users and roles to be audited**

Lists the audited privileged users by login name or fixed server role. ***If you are auditing privileged users in a fixed server role***, the SQL Compliance Manager Agent collects activities executed by all members of the selected role.

#### **Audited Activity**

Allows you to specify which activities (events) you want to audit for the selected privileged users. Select **Audit all activities done by privileged users** to include everything or select **Audit selected activities done by privileged**





**users** followed by additional preferences for selective auditing. Available options include:

- Logins
- Failed logins
- Security changes
- Administrative actions
- Database definition (DDL)
- Database modification (DML)
- Database SELECT operations
- User defined events
- Filter events based on access check.

### **Capture SQL statements for DML and SELECT activities**

Allows you to specify whether you want to collect SQL statements associated with audited database modification (DML) and Select activities. To capture these statements, you must also enable DML or Select auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit SQL statements.

### **Capture Transaction Status for DML Activity**

Allows you to specify whether you want to collect the status of all DML transactions that are executed by T-SQL scripts run on your audited database. This setting captures begin, commit, rollback, and savepoint statuses. To capture these statuses, you must enable DML auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit transaction status, such as rollbacks.

### **Capture SQL statements for DDL and Security Changes**

Allows you to specify whether you want to collect SQL statements associated with audited database definition (DDL) activities. To capture these statements, you must also enable DDL auditing.

Ensure the Collection Server and the target SQL Server computers have ample resources to handle the additional data collection, storage, and processing. Because this setting can significantly increase resource requirements and negatively impact performance, choose this setting only when your compliance policies require you to audit SQL statements.





## Registered SQL Server Properties window - Auditing Thresholds tab

The Auditing Thresholds tab of the Registered SQL Server Properties window allows you to set auditing thresholds to identify unusual activity on the selected SQL Server instance. IDERA SQL Compliance Manager reports threshold violations through the Activity Report Cards on the Summary tabs.

Use auditing thresholds to display critical issues or warnings when a particular activity, such as privileged user events, is higher than expected. These thresholds can notify you about issues related to increased activity levels, such as a security breach, that may be occurring on this instance. Auditing thresholds can also inform you when an audited SQL Server instance is becoming non-compliant. Use thresholds to supplement the alert rules you have configured for your environment.

### Available fields

#### **Warning**

Allows you to specify the number of events you expect to occur in a given event category for the selected time period. When the warning threshold is exceeded, this violation indicates an unusually high number of events. A warning threshold violation can lead to a non-compliant database or SQL Server instance.

#### **Critical**

Allows you to specify the maximum number of events that should occur in a given event category for the selected time period. When the critical threshold is exceeded, this violation indicates a serious issue, such as a security breach, which is compromising your ability to remain in compliance with your corporate and regulatory policies.

#### **Period**

Allows you to set an acceptable rate, or time span, for the warning and critical thresholds. For example, you may expect overall activity to be no more than 200 events per day on this instance.

#### **Enabled**

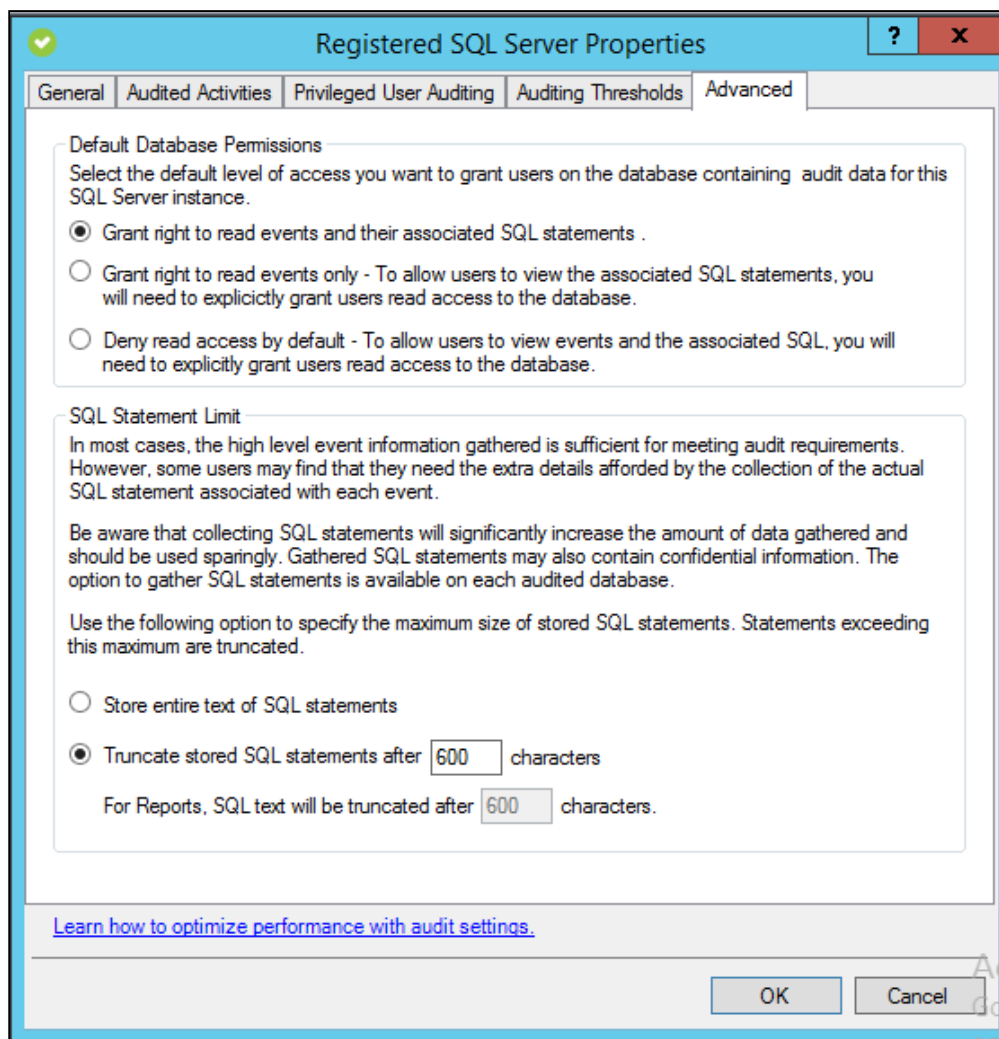
Allows you to enable (select) or disable (clear) auditing thresholds for a particular event category.



## Registered SQL Server Properties window - Advanced tab

The Advanced tab of the Registered SQL Server Properties window allows you to configure the following settings:

- Control the default permission settings on the databases that contain audit data for this SQL Server instance.
- Indicate whether collected SQL statements should be truncated if they pass the specified character limit. This option is only available if you are auditing SQL statements executed at the server level on this instance.



## Available fields

### Default Database Permissions



Allows you to set the default permissions on the databases that contain audit data for this instance. Keep in mind that login permissions specified at the database are applied along with the default permissions you set here. You can select one of the following default permissions:

- Grant right to read events and their associated SQL statements.
- Grant right to read events only - To allow users to view the associated SQL statements, you will need to explicitly grant users read access to the database.
- Deny read access by default - To allow users to view events and the associated SQL statements, you will need to explicitly grant users read access to the database.

### **SQL Statement Limit**

Allows you to specify whether you want to truncate collected SQL statements associated with audited events. You can set the character limit for collected SQL statements. By default, this limit is 512 characters. The Collection Server truncates SQL statements that are longer than the specified character limit.



## Registered SQL Servers tab

The Registered SQL Servers tab lists the SQL Server instances that are registered for IDERA SQL Compliance Manager to audit. This list includes the following types of registered servers:

- SQL Server instances running in trusted domains
- SQL Server instances running in non-trusted domains or workgroups
- Virtual SQL Servers hosted by Microsoft failover clusters (Microsoft Cluster Services)

Registering a SQL Server instance allows you to audit events at the server and database levels. You can configure audit settings for each registered instance and hosted database.

This tab lists the registered SQL Server instances you have audited. Auditing allows you to collect specific events from the SQL Server trace. This list contains SQL Servers you are currently auditing. ***If you disabled auditing on a SQL Server instance***, this window continues to list the server until you remove the server.

## Available actions

### Register New Server

Allows you to register an additional SQL Server instance with SQL Compliance Manager.

### Register New Database

Allows you to enable auditing and configure audit settings for a database on the selected SQL Server instance. To manage settings for a database you are currently auditing, use the Audited Database Properties window.

### Enable Auditing

Allows you to enable auditing on the selected SQL Server instance. When you enable auditing, the SQL Compliance Manager Agent begins collecting events on the selected SQL Server instance, and sends the SQL trace files to the Collection Server.

### Disable Auditing

Allows you to disable auditing on the selected SQL Server instance. When you disable auditing, the SQL Compliance Manager Agent stops collecting new event data, and stops the corresponding SQL trace. You can continue to view and report on previously audited events or archived events.

### Server Settings for Audited Server Activities



Allows you to view and modify audit settings for the selected SQL Server instance.

### **Server Settings for Privileged Users**

Allows you to view and modify which privileged users are audited on the selected SQL Server instance.

### **Database Settings for Audited Database Activities**

Allows you to view and modify audit settings for the selected database. This action is available when you select a database from the **Audited Databases** list.

### **Database Settings for Trusted Users**

Allows you to view and modify which users are considered trusted users on the selected database. Trusted users are not audited.

### **Import**

Allows you to import audit settings previously exported from another SQL Server instance or database.

### **Export**

Allows you to export audit settings configured for this SQL Server instance to an XML file. You can later use this file to import audit settings across multiple SQL Server instances or databases, ensuring consistent alerting on activity throughout your environment.

### **Update Now**

Allows you to send your audit setting changes to the SQL Compliance Manager Agent immediately. Typically, the Collection Server sends audit setting updates at each heartbeat communication from the SQL Compliance Manager Agent. By default, a heartbeat occurs every five minutes. To view the SQL Compliance Manager Agent heartbeat details, use the General tab on the SQL Compliance Manager Agent Properties window.

### **Collect Audit Data Now**

Allows you to force the SQL Compliance Manager Agent to send trace files to the Collection Server for processing. Typically, the SQL Compliance Manager Agent sends trace files to the Collection Server at the specified collection interval. By default, a trace file collection occurs every two minutes.

### **Agent Properties**

Allows you to view and modify settings for the SQL Compliance Manager Agent that is auditing the selected SQL Server instance.

### **Check Agent Status**



Allows you to check the status of the SQL Compliance Manager Agent on the selected SQL Server instance, such as whether or not the agent is active.

### **Deploy Agent**

Allows you to deploy the SQL Compliance Manager Agent to one or more registered SQL Server instances. Deploying the agent installs the SQL Compliance Manager Agent Service on the target instance, and allows you to begin auditing events.

### **Upgrade Agent**

Allows you to upgrade the SQL Compliance Manager Agent on the selected SQL Server instance to the current version. This option is available if the agent was remotely deployed through the Management Console. To upgrade an agent that was manually deployed, run setup.exe from the SQL compliance manager installation kit on the target SQL Server computer.

### **Change Agent Trace Directory**

Allows you to specify a different trace directory for the SQL Compliance Manager Agent. The agent uses the specified folder to store trace files before sending these files to the Collection Server for processing.

### **Refresh**

Allows you to update the Registered SQL Servers list with current information.

### **Remove**

Allows you to unregister the selected SQL Server instance. When you remove a SQL Server instance, SQL Compliance Manager disables all auditing at the server and database levels on the SQL Server instance. ***If the selected instance is the last instance to be audited on this SQL Server***, SQL Compliance Manager also uninstalls the SQL Compliance Manager Agent. ***If you manually deployed the SQL Compliance Manager Agent***, you must manually uninstall it from the SQL Server computer.

## Available columns

### **SQL Server**

Provides the name of the SQL Server instance, using the format *SQLServerName\InstanceName*.

### **Status**

Indicates whether SQL Compliance Manager detected an auditing or configuration issue. For example, if the selected SQL Server instance is unavailable, SQL Compliance Manager displays an error.





***If a system alert is triggered***, the **Status** column displays the alert type. System alerts notify you when the health of your SQL Compliance Manager deployment may be compromised. For more information, see the [Activity Log tab](#).

### **Deployment Method**

Indicates the agent deployment method for the selected SQL Server.

The values in this column can be: manually deployed, console deployed, and silent installer script.

### **Audit Status**

Indicates whether auditing is enabled on the selected SQL Server instance. When auditing is disabled, the SQL trace is stopped and the SQL Compliance Manager Agent no longer collects events.

***If a system alert is triggered***, the Audit Status column instructs you to view the Activity Log to determine which event triggered this alert.

### **Last Agent Contact**

Provides the date and time when the SQL Compliance Manager Agent last received audit setting updates from the Collection Server (also called a heartbeat). To view the SQL Compliance Manager Agent heartbeat details, use the General tab on the SQL Compliance Manager Agent Properties window.



## Select SQL Server window

The Select SQL Server window allows you to select the SQL Server instance you want to register with IDERA SQL Compliance Manager. Choose the appropriate instance from the provided list, and then click **OK**.

***If the list does not contain the target SQL Server instance***, the instance may not be available or may be located in a non-trusted domain. Ensure the instance is available and accessible from the Management Console computer.




## Set Maintenance Schedule window

The Set Maintenance Schedule window allows you to specify when IDERA SQL Compliance Manager should perform maintenance tasks on the Repository, such as rebuilding indexes in the event and archive databases. Because these tasks occasionally are resource-intensive and require extra disk space, consider specifying a time period with slow activity.

During the specified time each day, SQL Compliance Manager continues to execute the required maintenance tasks on any event databases or attached archive database that is not yet maintained, until all databases are maintained. These tasks are performed as background processes during the allotted time period.

You can view the status of your databases on the [Configure Repository Databases window - Databases tab](#). You can also choose to [manually update a database](#).

 Specify a duration time that is larger than the [Collection Server heartbeat interval](#). By default, the Collection Server heartbeat is five minutes.



## SNMP Configuration window

The SNMP Configuration window allows you to specify the server address, port number, and community name of the network management console that you want to receive a IDERA SQL Compliance Manager alert notification as SNMP Trap messages.

Type the appropriate server address, port, and community name in the provided fields, and then click **OK**.

Click **Test** to verify that you entered the proper information for the network management console.



## Specify Addresses window

The Specify Addresses window allows you to specify who should receive an alert email notification. You can specify one or more email addresses for each rule.

Type the appropriate email address in the provided field, and then click **Add**.



## Specify Alert Criteria windows

The Specify Alert Criteria windows allow you to use words, phrases, and wildcards to further define your alert rule criteria. For example, you can use this window to find and alert on all databases in your environment that use a naming convention such as dbname01.

### Available actions

#### Alert on objects whose names match the listed words, phrases, or wildcards

To alert on objects with specific names or naming conventions, click **listed**, and then specify the words, phrases, or wildcards the object names should match. You can add more than one criterion.

#### Alert on objects whose names are not listed

To alert on objects whose names are not listed, click **except those listed**, and then specify the words, phrases, or wildcards the object names should not match. You can add more than one criterion.

### Available fields

#### Match all <alert criteria>

Allows you to indicate whether the alert rule should generate alerts for objects that match the listed names, phrases, or wildcards.

#### Specify <alert criteria> to match

Allows you to define match criteria. Match criteria can include exact names, words, phrases, or wildcards. For each match criterion you want to define, type the appropriate word, phrase, or wildcard in the provided field, and then click **Add**.

Use the following examples to help you define wildcard match criteria. Note that wildcard matches are not case-sensitive.

| If you want to match ... | Use ... | Examples                                              |                               |                                       |
|--------------------------|---------|-------------------------------------------------------|-------------------------------|---------------------------------------|
| One digit                | #       | <i>You want:</i><br>All databases with name of testNN | <i>You specify:</i><br>test## | <i>You get:</i><br>Test00Test01test#1 |



| If you want to match ... | Use ... | Examples                                               |                               |                                                                                      |
|--------------------------|---------|--------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------|
| One character            | ?       | <i>You want:</i><br>All databases with name of testXX  | <i>You specify:</i><br>test?? | <i>You get:</i><br>Test00Test01TEST?<br>htester                                      |
| Any character            | *       | <i>You want:</i><br>All databases that start with test | <i>You specify:</i><br>test*  | <i>You get:</i><br>Test00Test01test01<br>01test4metest#1TEST?<br>htest*devtestertest |

**<Alert criteria> to match**

Allows to you change the list of match criteria. You can add a new criterion or remove an existing criterion.



## Specify Event Filter Criteria windows

The Specify Event Filter Criteria windows allow you to use words, phrases, and wildcards to further define your audit event filter criteria. For example, you can use this window to filter out events that occur on all databases in your environment that use a naming convention such as dbname01.

### Available actions

#### **Filter events on objects whose names match the listed words, phrases, or wildcards**

To filter events on objects with specific names or naming conventions, click **listed**, and then specify the words, phrases, or wildcards the object names should match. You can add more than one criterion.

#### **Filter events on objects whose names are not listed**

To filter events on objects whose names are not listed, click **except those listed**, and then specify the words, phrases, or wildcards the object names should not match. You can add more than one criterion.

### Available fields

#### **Match all <event filter criteria>**

Allows you to indicate whether the event filter should generate alerts for objects that match the listed names, phrases, or wildcards.

#### **Specify <alert criteria> to match**

Allows you to define match criteria. Match criteria can include exact names, words, phrases, or wildcards. For each match criterion you want to define, type the appropriate word, phrase, or wildcard in the provided field, and then click **Add**.

Use the following examples to help you define wildcard match criteria. Note that wildcard matches are not case-sensitive.

| <b>If you want to match ...</b> | <b>Use ...</b> | <b>Examples</b>                                       |                               |                                       |
|---------------------------------|----------------|-------------------------------------------------------|-------------------------------|---------------------------------------|
| One digit                       | #              | <i>You want:</i><br>All databases with name of testNN | <i>You specify:</i><br>test## | <i>You get:</i><br>Test00Test01test#1 |





| If you want to match ... | Use ... | Examples                                               |                               |                                                                                      |
|--------------------------|---------|--------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------|
| One character            | ?       | <i>You want:</i><br>All databases with name of testXX  | <i>You specify:</i><br>test?? | <i>You get:</i><br>Test00Test01TEST?<br>htester                                      |
| Any character            | *       | <i>You want:</i><br>All databases that start with test | <i>You specify:</i><br>test*  | <i>You get:</i><br>Test00Test01test01<br>01test4metest#1TEST?<br>htest*devtestertest |

**<Event filter criteria> to match**

Allows to you change the list of match criteria. You can add a new criterion or remove an existing criterion.



## SQL Logins tab

The SQL Logins tab allows you to manage the SQL Server login accounts associated with the Repository databases. Use this window to configure SQL Server security access and designate permissions within IDERA SQL Compliance Manager.

SQL Compliance Manager leverages the SQL Server security model, using SQL Server logins to authenticate access to the Repository databases and your audit data.

This tab does not list the following logins, which have read access to audit data stored in the Repository databases:

- SQL authentication logins, such as the sa account, who are members of the sysadmin fixed server role
- Windows authentication logins who are members of the local Administrators group

## Available actions

### **New Login**

Allows you to create a SQL Server login. SQL Compliance Manager creates this login at the SQL Server instance that hosts the Repository databases.

### **View Login Properties**

Allows you to view details about permissions settings and database access.

### **Delete**

Allows you to delete the selected SQL Server login. Deleting a login removes the login from the SQL Server instance that hosts the Repository databases. This login will no longer be able to view or report on audit data, and the Windows user account associated with this login will no longer be able to access the Management Console.

### **Refresh**

Allows you to refresh the Logins list with current information.

## Available columns

### **Name**

Provides the logon name of the SQL Server login account.

### **Type**

Indicates whether the login is a Windows user or group.

### **Server Access**



Indicates whether security access is permitted or denied to the SQL Server instance that hosts the Repository databases.

**Permissions in SQL Compliance Manager**

Indicates which SQL Compliance Manager permission the selected login has on the Repository databases.



## SQL Compliance Manager Agent Properties window - Deployment tab

The Deployment tab of the SQL Compliance Manager Agent Properties window allows you to verify how the SQL Compliance Manager Agent was deployed on the selected SQL Server instance. You can view the account used by the SQL Compliance Manager Agent Service as well as the deployment method used.

### Available fields

#### **SQL Compliance Manager Agent Service**

Provides the name of the user account under which the SQL Compliance Manager Agent is running on this SQL Server instance. The displayed account name uses the format *DomainName\LogonName*.

#### **SQL Compliance Manager Agent Deployment**

Indicates which deployment method (automatic or manual) was used to install the SQL Compliance Manager Agent on this SQL Server instance.



## SQL Compliance Manager Agent Properties window - General tab

The General tab of the SQL Compliance Manager Agent Properties window allows you to monitor the health of the SQL Compliance Manager Agent that is auditing the selected SQL Server instance.

***If you modifying properties for a SQL Compliance Manager Agent that is auditing a virtual SQL Server***, IDERA SQL Compliance Manager applies your changes to the active node in the cluster hosting the virtual SQL Server. SQL Compliance Manager Agent properties are later replicated from the active node to the passive nodes.

### Available actions

#### **Update now**

Allows you to send any audit setting changes to the SQL Compliance Manager Agent. The SQL Compliance Manager Agent service applies your updates immediately.

### Available fields

#### **SQL Compliance Manager Agent Computer**

Provides the name of the computer on which the SQL Compliance Manager Agent is installed. This computer hosts the selected SQL Server instance and audited databases.

#### **Agent Status**

Provides the status of the agent, such as OK or Not deployed.

#### **Agent version**

Provides the version number for the agent. This version number should reflect the product version number.

#### **Agent port**

Provides the port number used by the agent to communicate with the Collection Server.

#### **Last heartbeat**

Provides the last date and time when the agent successfully communicated with the Collection Server.

#### **Heartbeat interval**



Allows you to specify the interval (in minutes) at which the SQL Compliance Manager Agent calls the Collection service and receives audit setting updates. By default, the heartbeat interval is five minutes.

### **Logging level**

Allows you to select the logging level at which the SQL Compliance Manager Agent writes events to the Application log on the computer hosting the registered SQL Server instance.

### **Last agent update**

Provides the last date and time when the agent received audit setting updates.

### **Audit settings status**

Indicates whether the agent is using the most current audit settings available.

### **Audit settings level at agent**

Provides the version of the audit settings applied at the agent. ***If the agent audit settings level does not match the current audit settings level***, consider performing an immediate update.

### **Current audit settings level**

Provides the version of the audit settings available at the Collection Server.



## SQL Compliance Manager Agent Properties window - SQL Servers tab

The SQL Servers tab of the SQL Compliance Manager Agent Properties window allows you to verify which SQL Server instances are currently audited by the SQL Compliance Manager Agent. This list includes instances that are virtual SQL Servers or are running in non-trusted domains and workgroups.

### Available columns

**SQL Server**

Provides the name of the SQL Server instance, using the format *SQLServerName\InstanceName*.

**Description**

Provides the description you specified when you registered the selected SQL Server instance.



## SQL Compliance Manager Agent Properties window - Trace Options tab

The Trace Options tab of the SQL Compliance Manager Agent Properties window allows you to configure how the SQL Compliance Manager Agent manages the trace files that contain collected events for auditing.

***If you are modifying properties for a SQL Compliance Manager Agent that is auditing a virtual SQL Server***, SQL Compliance Manager applies your changes to the active node in the cluster hosting the virtual SQL Server. SQL Compliance Manager Agent properties are later replicated from the active node to the passive nodes.

### Available fields

#### **SQL Compliance Manager Agent Trace Directory**

Provides the directory path under which the SQL Compliance Manager Agent stores trace files.

#### **Trace Collection Options**

Allows you to specify the following settings:

- The rollover size (MB) at which the SQL Compliance Manager Agent should send the current trace file to the Collection Server, and create a new trace file to continue collecting events
- Time interval (minutes) at which the SQL Compliance Manager Agent should send full trace files to the Collection Server
- Maximum time (minutes) that should elapse before the SQL Compliance Manager Agent sends existing trace files to the Collection Server (if no trace files are received during the normal collection interval)
- Maximum time (seconds) that should elapse before the SQL Compliance Manager Agent's attempt to stop or start a trace file times out and returns a failure. By default, the timeout value is 30 seconds. Ensure this setting does not exceed the specified collection interval.

#### **Trace Tamper Detection Options**

Allows you to specify the amount of time (seconds) that should pass before the SQL Compliance Manager Agent automatically restarts the SQL trace. The SQL Compliance Manager Agent detects whether the trace is stopped, modified, paused, or deleted by another application. After the specified tamper detection interval, the SQL Compliance Manager Agent restarts the trace and records the trace status to the application event log.

#### **Trace Directory Size Limit**





Allows you to specify the maximum size threshold (GB) for the directory where you are storing the trace files. The directory size is checked at each heartbeat. To effectively manage the directory size, ensure you allow ample room to accommodate your auditing needs and set the SQL Compliance Manager Agent heartbeat interval at a low frequency.

**Unattended Auditing Time Limit**

Allows you to specify the maximum time threshold (days) for allowing the SQL Compliance Manager Agent to run without receiving a heartbeat.



## SQL Compliance Manager Agent Trace Directory window

The SQL Compliance Manager Agent Trace Directory window allows you to change the location of the agent trace directory. The SQL Compliance Manager Agent temporarily stores collected SQL Server events in the trace directory until the files can be sent to the Collection Server. To optimize performance, consider specifying a directory that is not located on the local disk drive that hosts the databases of the audited SQL Server instance.

***If you specify a different directory path***, ensure the SQL Compliance Manager Agent Service account has read, write, and delete privileges on that folder. IDERA SQL Compliance Manager does not change the security settings on existing folders.

***If you are auditing a virtual SQL Server***, ensure the specified folder is located on a shared data disk for the selected virtual SQL Server. SQL Compliance Manager applies this change to the active node in the cluster hosting the virtual SQL Server. SQL Compliance Manager Agent properties are later replicated from the active node to the passive nodes.

To change the trace directory, type the path of the preferred trace directory location, and then click **OK**.



## Status Alerts tab

The Status Alerts tab allows you to view previously generated Status Alerts. A Status Alert is generated when the status of the specified [product components](#) matches the alert rule criteria. Use Status Alerts to identify and investigate possible issues with IDERA SQL Compliance Manager operations, such as deployed agents that may have stopped running.

## Available actions

### Page through alerts

Allows you to page through the list of alerts. Use the previous and next arrows to navigate from page to page, up and down the list.

### Create customized view

Allows you to create a custom version of this tab. You can change the data that is displayed by selecting different columns. You also can save your customizations to view later.

### Filters

Allows you to filter the listed alert messages by time span (for example, last seven days) or alert level (for example, high).

### Enable Groups

Allows you to group alerts by a specific property, such as the audited SQL Servers affected by the alerts or the times the alerts occurred. Enable groups when you want to sort the alerts or focus on a particular alert attribute.

### Alert Message

Allows you to view the message SQL Compliance Manager generated when this alert was triggered. Depending on your alert rule criteria, this message is written to the application event log and emailed to the specified email addresses. The Management Console displays an alert message only when the corresponding alert rule is configured to generate a message.

This action is available from the right-click context menu only.

### Refresh

Allows you to update the Status Alerts list with current data.

## Default columns

### Icon



Provides a visual indication of the alert level so you can quickly scan the listed alerts for a specific alert type, such as a severe alert.

**Date**

Provides the date when the alert was generated.

**Time**

Provides the time when the alert was generated.

**Level**

Indicates the type of alert, such as Severe or Low. Use the alert level to help you identify critical issues, sort alerts by severity, and understand the overall health of your environment. You can define the alert using the Edit Alert Rule wizard.

**Source Rule**

Provides the name of the alert rule that generated this alert.

**Rule Type**

Provides the type of Status Alert that triggered this alert, such as a Collection Server or SQL Compliance Manager Agent rule.

**Computer Name**

Provides the name of the SQL Server computer hosting the affected instance. For example, if the SQL Compliance Manager Agent or Collection Server trace directory has reached its size limit, this column displays the name of the computer on which the trace directory folder resides.

**SQL Server**

Provides either the name of the audited SQL Server instance affected by this alert. For example, if the Collection Server has not received a heartbeat from the SQL Compliance Manager Agent, this column displays the name of the registered instance to which the agent was deployed.



## Update Indexes window

The Update Indexes window confirms whether you want to update indexes in the selected Repository databases now or later. Updating indexes optimizes performance when viewing and managing event data.

Before updating the indexes, ensure the selected database has sufficient free space to accommodate these changes. For example, if the current database is 1MB in size, the updated database may grow to 2 MB. In this case, the update process would require 1MB of free space.

Also be aware that this update process may be resource-intensive and may take some time to complete. Consider performing database updates during non-peak hours.

### Available actions

#### **Update now**

Click **Yes** to update the indexes in all available Repository databases, including event and archive databases.

#### **Update later**

Click **Later** to [schedule](#) a time when the index updates should be performed.





## Cluster Configuration Console User Interface

The IDERA SQL Compliance Manager Cluster Configuration online Help provides context-sensitive Help for user interface windows and wizards in the Cluster Configuration Console. For Help on a specific window, expand this section, and then select the appropriate topic. You can also access these window descriptions from the Cluster Configuration Console by pressing F1 or using the ? button.



## Add SQL Compliance Manager Agent Service wizard - Collection Server tab

The Collection Server tab lets you to specify which computer is currently hosting the Collection Server. The SQL Compliance Manager Agent Service receives audit settings from the Collection Server and sends collected SQL events to the Collection Server for processing. Ensure the SQL Compliance Manager Agent Service has access to the Collection Server computer.

Specify the Collection Server to which the SQL Compliance Manager Agent Service should connect, and then click **Next**.





## Add SQL Compliance Manager Agent Service wizard - General tab

The General tab of the Add SQL Compliance Manager Agent Service wizard lets you to specify which virtual SQL Server you are planning to audit. The virtual SQL Server is any SQL Server instance hosted by this cluster node. Specifying a virtual SQL Server allows you to begin auditing SQL events generated by activity on this instance. Use the Management Console to specify which server and database events you would like to audit.

Specify the virtual SQL Server you want to audit, and then click **Next**.



## Add SQL Compliance Manager Agent Service wizard - SQLcompliance Agent Service Account tab

The SQL Compliance Manager Agent Service Account tab of the Add SQL Compliance Manager Agent Service wizard lets you specify the account credentials the SQL Compliance Manager Agent Service account should use to connect to the Collection Server and the virtual SQL Server. The SQL Compliance Manager Agent Service also uses this account to stop and start SQL Server traces, execute stored procedures, and manage trace files. Ensure you specify a valid Windows account that has the following permissions:

- SQL Server System Administrator privileges on the target virtual SQL Server
- Administrator permissions on each node in the cluster hosting the virtual SQL Server
- Read and write access to the trace directory you specify

Specify the account the SQL Compliance Manager Agent Service should run under, and then click **Next**.



## Add SQL Compliance Manager Agent Service wizard - SQL Compliance Manager Agent Trace Directory tab

The SQL Compliance Manager Agent Trace Directory tab of the Add SQL Compliance Manager Agent Service wizard lets you specify which folder should be used for the SQL Compliance Manager Agent trace directory. The SQL Compliance Manager Agent stores SQL Server trace files in this directory until the files are sent to the Collection Server for processing. The specified folder must reside on a shared data disk for the specified virtual SQL Server. Ensure that you specify the same directory path for each node in the cluster hosting the virtual SQL Server.

You can specify an existing folder or a new folder that the Cluster Configuration Console creates for you. When the Cluster Configuration Console creates the trace directory, the directory is secured using ACL settings. Only local administrators have read and write access to the new folder. Ensure the SQL Compliance Manager Agent Service account has read and write privileges on that folder. The Cluster Configuration Console does not change the security settings on existing folders.

Specify the folder where the SQL Compliance Manager Agent should store SQL Server trace files, and then click **Next**.



## Add SQL Compliance Manager Agent Service wizard - CLR Trigger Location tab

The CLR Trigger Location tab of the Add SQL Compliance Manager Agent Service wizard lets you specify which folder should be used to store the CLR trigger assembly files required to audit before and after data. These assemblies are created by IDERA SQL Compliance Manager when you enable before-after auditing for a specific SQL Server database. The SQL Compliance Manager Agent uses the CLR trigger to collect the before and after values of a database object affected by an audited DML event.

Because you are auditing databases hosted by instances running on Windows server cluster nodes, the CLR trigger assemblies must be associated with the same cluster resource group as the audited SQL Server so that before-after auditing can continue when a failover occurs. Thus, the specified folder must be located on a shared data disk for the specified virtual SQL Server. Ensure you specify the same directory path for each node in the cluster hosting the virtual SQL Server.

Specify the folder where the SQL Compliance Manager Agent should store CLR trigger assembly files, and then click **Next**.



## Add SQL Compliance Manager Agent Service wizard - Summary tab

Review the provided summary, and then click **Finish**. When you finish this wizard, the Cluster Configuration Console installs the SQL Compliance Manager Agent Service on this cluster node.

When you enable auditing on the virtual SQL Server, the SQL Compliance Manager Agent begins managing SQL Server traces and trace files according to the settings you specified.

***If you want to change a setting now***, click **Back** to return to the appropriate window. You can also change these settings later using the **Properties** button on the Cluster Configuration Console window.



## Cluster Configuration Console window

The IDERA SQL Compliance Manager Cluster Configuration Console window lets you install and configure the SQL Compliance Manager Agent Service on a cluster node that hosts the virtual SQL Server you want to audit. The cluster node is the physical computer on which you are running the Cluster Configuration Console. When you installed the Cluster Configuration Console, the setup program also installed the SQL Compliance Manager Agent.

### Available actions

#### **Add Service**

Allows you to install and configure the SQL Compliance Manager Agent Service on this cluster node. When you install the service, you specify which virtual SQL Server will be audited by this service and configure the trace directory folder and service account credentials.

#### **Properties**

Allows you to view a subset of properties for the SQL Compliance Manager Agent Service that is auditing the selected virtual SQL Server. To view all properties of the SQL Compliance Manager Agent installed on this cluster node, use the Management Console.

#### **Remove Service**

Allows you to uninstall the SQL Compliance Manager Agent Service from this cluster node.

### Available fields

#### **SQL Compliance Manager Agent Version**

Provides the version number of the SQL Compliance Manager Agent installed on this cluster node.



## SQL Compliance Manager Agent Details window

The IDERA SQL Compliance Manager SQL Compliance Manager Agent Details window lets you view a subset of SQL Compliance Manager Agent properties. To view all properties for the SQL Compliance Manager Agent, use the Management Console.

- Name of the virtual SQL Server audited by this SQL Compliance Manager Agent
- Name of the Collection Server computer that is processing events collected by the SQL Compliance Manager Agent
- Name and location of the trace directory where the SQL Compliance Manager Agent is storing trace files
- Name and location of the CLR trigger assemblies used to collect before and after data for audited DML events
- Name of the SQL Compliance Manager Agent Service under which the SQL Compliance Manager Agent is running
- Name and path of the SQL Compliance Manager Agent Service registry key that is replicated across the cluster nodes

### Available actions

To copy either the SQL Compliance Manager Agent Service name or the registry key, click the copy button beside the corresponding field, and then click **OK**.

#### **Copy the SQL Compliance Manager Agent Service name**

Allows you to copy the name of the SQL Compliance Manager Agent Service to your clipboard. Use this feature to specify the service name when registering the SQL Compliance Manager Agent Service through Microsoft Cluster Administrator. You can paste the copied service name into the required field.

#### **Copy the SQL Compliance Manager Agent Service registry key**

Allows you to copy the path of the SQL Compliance Manager Agent Service registry key that will be replicated across the cluster nodes. The registry path is copied to your clipboard. Use this feature to specify registry replication when registering the SQL Compliance Manager Agent Service through Microsoft Cluster Administrator. You can paste the copied service name into the required field.



## Specify CLR Trigger Directory window

The Specify CLR Trigger Directory window lets you specify which folder should be used to store the CLR trigger assembly files required to audit before and after data. These assemblies are created by IDERA SQL Compliance Manager when you enable before-after auditing for a specific SQL Server database. The SQL Compliance Manager Agent uses the CLR trigger to collect the before and after values of a database object affected by an audited DML event.

Because you are auditing databases hosted by instances running on Windows server cluster nodes, the CLR trigger assemblies must be associated with the same cluster resource group as the audited SQL Server so that before-after auditing can continue when a failover occurs. Thus, the specified folder must be located on a shared data disk for the specified virtual SQL Server. Ensure you specify the same directory path for each node in the cluster hosting the virtual SQL Server.

For each audited instance, specify the folder where the SQL Compliance Manager Agent should store CLR trigger assembly files, and then click **OK**.







## Upgrade SQL Server in your audited environment

You can choose one of the following IDERA SQL Compliance Manager upgrade strategies. Each strategy meets different goals and auditing needs. Before choosing a strategy, review how you intend to deploy a newer version of SQL Server in your audited environment.

### How to use your current installation

Allows you to use your current SQL Compliance Manager installation to audit instances running on multiple versions of SQL Server at the same time in a single environment. This strategy supports a heterogeneous environment and provides a seamless approach to upgrading. As you deploy SQL Server to production servers, you can upgrade the SQL Compliance Manager Agent to support SQL Server 2005 or later event collection.

However, you will need to stop auditing SQL Server events during the time required to upgrade the Collection Server and Repository databases to the new SQL Server version. To prevent potential audit data loss, upgrade the Collection Server and Repository databases during off-hours or other times when there is little or no SQL Server activity.

### How to deploy a second installation

Allows you to audit separate homogeneous environments of SQL Server instances, such as a SQL Server 2005 environment and a SQL Server 2008 environment. This strategy requires two installations of SQL Compliance Manager, one in each environment. You can also use this strategy to perform test auditing of SQL Server instances before you deploy the latest SQL Server version on production servers.

Although you can continue auditing your current environment as you deploy the second SQL Compliance Manager installation, you may want to move your audit settings to the new Repository.



## Upgrade SQL Server on the Collection Server

You can upgrade the SQL Server software running on the existing Collection Server when you use your current IDERA SQL Compliance Manager installation to audit instances running on multiple versions of SQL Server at the same time in a single environment. Use the following checklist and instructions to successfully upgrade the SQL Server software.

### Upgrade checklist

|                                     |                                                                                                                                                                                                               |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <b>Follow these steps ...</b>                                                                                                                                                                                 |
| <input type="checkbox"/>            | Determine whether you want to upgrade to the latest version of SQL Compliance Manager. To verify whether you are running the latest version, click <b>Check for Updates</b> on the Help menu.                 |
| <input type="checkbox"/>            | Choose the appropriate <a href="#">upgrade strategy</a> for your environment and your auditing needs.                                                                                                         |
| <input type="checkbox"/>            | Ensure your Windows logon account has administrator permissions on the Collection Server computer and sysadmin rights on the SQL Server instance hosting the Repository.                                      |
| <input type="checkbox"/>            | Back up your trace directories, especially the Collection Server Trace Directory.                                                                                                                             |
| <input type="checkbox"/>            | Run the Microsoft SQL Server Upgrade Advisor utility on the target instance. For more information about upgrading SQL Server, see <a href="#">Upgrade Advisor</a> on the <a href="#">Microsoft web site</a> . |

### Upgrade instructions

1. ***If you want to use the latest version of SQL Compliance Manager, Upgrade to this build.***
2. [Disable auditing on a SQL Server](#) at the server level.
3. Stop the SQL Compliance Manager Agent service. Use the Microsoft Services administrative tool to stop the SQL Compliance Manager Agent service (SQL Compliance Manager Agent) running on the Collection Server computer.
4. Stop the Collection Server service. Use the Microsoft Services administrative tool to stop the Collection Server service (SQL Compliance Manager Collection Service) running on the Collection Server computer.
5. Upgrade SQL Server on the Collection Server computer.



6. Restart the Collection Server service. Use the Microsoft Services administrative tool to restart the Collection Server service (SQLcompliance Collection Service) running on the Collection Server computer.
7. Restart the SQL Compliance Manager Agent service. Use the Microsoft Services administrative tool to restart the SQL Compliance Manager Agent service (SQL Compliance Manager Agent) running on the Collection Server computer.
8. ***If you upgraded SQL Compliance Manager to the latest version***, also [upgrade the SQL Compliance Manager Agent remotely](#).
9. Upgrade the SQL Server software on the computers hosting your audited instances.
10. [Begin auditing](#) any new SQL Server instances.



## Deploy second Collection Server

Deploy a second Collection Server when you need to audit separate homogeneous environments of SQL Server instances, such as a SQL Server 2008 environment and a SQL Server 2012 environment. For example, you could deploy one Collection Server to a dedicated SQL Server 2008 instance in one environment and a second Collection Server to a dedicated SQL Server 2012 instance in another environment. Use the following checklist and instructions to successfully deploy a second Collection Server.

### Deployment checklist

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <b>Follow these steps ...</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <input type="checkbox"/>            | Determine whether you want to upgrade to the latest version of IDERA SQL Compliance Manager. To verify whether you are running the latest version, click <b>Check for Updates</b> on the Help menu.                                                                                                                                                                                                                                                                                                                                                              |
| <input type="checkbox"/>            | Choose the appropriate <a href="#">upgrade strategy</a> for your environment and your auditing needs.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <input type="checkbox"/>            | Ensure the computer that will host the new Collection Server: <ul style="list-style-type: none"> <li>• Has trusted access to the computers hosting the SQL Server instances you want to audit.</li> <li>• Hosts the same version of SQL Server as the upgraded instances. For example, if some instances were recently upgraded to SQL Server 2012, install the Collection Server on computer hosting SQL Server 2012.</li> <li>• Meets the product <a href="#">hardware</a>, <a href="#">software</a>, and <a href="#">permissions</a> requirements.</li> </ul> |

### Deploy new Collection Server after the SQL Server on an audited instance is upgraded

To deploy a new Collection Server to an upgraded SQL Server on an audited instance:

1. ***If you want to use the latest version of SQL Compliance Manager, upgrade your deployment.***
2. Use Custom install in the SQL Compliance Manager setup program to install the new Collection Server.



3. **If you upgraded SQL Compliance Manager to the latest version**, also [upgrade the compliance Agents](#) deployed to the upgraded instances you are auditing.
4. [Configure the SQL Compliance Manager Agent](#) to communicate with the new Collection Server.

## Deploy new Collection Server to audit new instances

To deploy a new Collection Server to audit new SQL Server instances:

1. **If you want to use the latest version of SQL Compliance Manager**, [upgrade your deployment](#).
2. Use the Custom install in the SQL Compliance Manager setup program to install the new Collection Server.
3. [Register the instances](#) you want to audit.
4. [Begin auditing](#) your new SQL Server instances.





## Migrate the Collection Server

You can execute a migration strategy that addresses one of the following situations:

- The Collection Server requires maintenance, such as new hardware or a software upgrade (Microsoft Windows or SQL Server Service Pack).
- The Collection Server becomes permanently unavailable.
- The Collection Server is decommissioned and replaced.

Establishing a migration strategy for the Collection Server allows you to preserve existing audit settings and collected SQL Server events. You can also continue auditing your SQL Server environment to meet your compliance requirements with minimal disruption.

### What is the Collection Server?

The Collection Server is the computer that hosts the Collection Service and the Repository databases. For more information, review the [Product components and architecture](#).

### Migration checklist

Use the following checklist to help you migrate your Collection Server.

|                                     |                                                                                                                                                                                                                                                                                     |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <b>Follow these steps ...</b>                                                                                                                                                                                                                                                       |
| <input type="checkbox"/>            | <a href="#">Prepare</a> for your migration.                                                                                                                                                                                                                                         |
| <input type="checkbox"/>            | Execute your migration by: <ul style="list-style-type: none"> <li>• <a href="#">Restoring the Repository databases</a></li> <li>• <a href="#">Deploying the new Collection Server</a></li> <li>• <a href="#">Configuring the SQL Compliance Manager Agent connection</a></li> </ul> |
| <input type="checkbox"/>            | <b><i>If you use Microsoft Reporting Services to generate reports about your audit data</i></b> , <a href="#">change the Reporting Services data source</a> to use the restored Repository databases.                                                                               |
| <input type="checkbox"/>            | Test your new Collection Server deployment and setup.                                                                                                                                                                                                                               |





## Migration best practices

Before you execute your migration strategy, decide whether you will want to permanently move the Collection Server to another computer.

***If you expect to replace the Collection Server***, ensure you have an available SQL Server that can be a dedicated host for the Collection Server. This computer should meet or exceed the product requirements.

***If you expect to repair the original Collection Server computer***, ensure your strategy includes plans to reinstate the original computer once it is repaired. Consider the following guidelines:

- To minimize audit data loss, plan to backup the Repository databases on the temporary Collection Server immediately before reinstating the original Collection Server
- Use these migration procedures to reinstate the Collection Server on the original computer, configure the SQL Compliance Manager agents, and configure Reporting Services
- To verify all components were reinstated correctly, test your implementation
- Uninstall the Collection Server you previously implemented on the temporary computer



## Prepare for your migration

A migration strategy moves the Collection Server components to another SQL Server instance, thereby replacing the original Collection Server. You can use a migration strategy to respond to an immediate maintenance need. Use the following procedures and guidelines to implement a new migration strategy or modify an existing migration strategy.

### Verify the configuration of the target SQL Server

When identifying the new SQL Server instance that will host the Collection Server, ensure this instance meets or exceeds the product [hardware](#), [software](#), and [permissions](#), as well as these specific requirements:

- The target instance is running the same version or higher of the SQL Server software that is currently running on the existing Collection Server computer
- The current Collection Service account can access the target instance and has the correct permissions on the target instance

### Back up the Repository databases

Use a tool such as IDERA [SQL Safe](#) to perform a full backup of the Repository databases, including transaction logs. You can back up event and archive databases separately from the SQLcompliance databases. However, for best results during a disaster recovery, fully restore all Repository databases at the same time.



## Restore the Repository databases

To recover lost or damaged audit data, restore the Repository databases. For best results, use the following guidelines:

- Perform a full restore, including the transaction logs
- Schedule the restore during off-hours, or times when you expect the least audit activity
- Restore all Repository databases during the same restore procedure to ensure audit data integrity remains intact

### To restore the Repository databases:

1. Use the SQL Server client tools to close any open connections to the SQLcompliance database.
2. Use the SQL Server client tools to take the SQLcompliance database offline. ***If you cannot take the SQLcompliance database offline***, stop the Collection Service.
3. Use a tool such as IDERA [SQL Safe](#) to restore the SQLcompliance database using the appropriate backup file, including transaction logs.
4. Use a tool such as IDERA [SQL Safe](#) to restore each event and archive database using the appropriate backup file, including the transaction logs. Each registered SQL Server instance has a corresponding event database. The number of archive databases depends on your archive preferences and your archive frequency.
5. Use SQL Server client tools to bring the SQLcompliance database online.



## Deploy the new Collection Server

Ensure you review the Collection Server requirements before installing. By default, IDERA SQL Compliance Manager installs with a trial license. Update the license key to reflect your current production license.

### To install the Collection Server:

1. Log on with an administrator account to the computer on which you want to install the Collection Server.
2. Run `SQLCMIInstall.EXE` in the root of the installation kit.
3. Review the information you need to start the installation and click **Next**.
4. Review and accept the license agreement by selecting the ***I accept the terms and conditions of the End User License Agreement*** checkbox.  
Select the **SQL Compliance Manager Management components** only setup and then click **Next**.
5. Specify if you want to register SQL Compliance Manager with an existing IDERA Dashboard.
6. Accept the default folder for your SQL Compliance Manager installation, type or click **Browse** to specify a different folder, and then click **Next**.
7. Specify the SQL Server Instance on which you restored the Repository databases and a form of authentication to create the SQL Compliance Manager repository.
8. Indicate that you want to use the existing Repository databases, and then click **Next**.
9. ***If you want to audit the Repository or other databases associated with the selected SQL Server instance***, click **Yes**, and then click **Next**.
10. Specify the location where the Collection Server should store audit data received from the SQL Compliance Manager Agent, and then click **Next**. The specified folder will be the trace file directory on the Collection Server.
11. Type the appropriate credentials in the provided fields under which IDERA services run, and then click **Next**. IDERA uses this account to connect, discover, and gather configuration information from SQL Servers in your Business environment. The installer grants the "Log on as a Service" right to the account that you specify.
12. Review the installation settings and click **Install**.



## Configure the SQL Compliance Agent connection

To ensure you successfully continue auditing your registered SQL Servers within IDERA SQL Compliance Manager, configure each SQL Compliance Manager Agent to communicate with the new Collection Server.

Apply this update by changing the Server value of the following registry key on the computer that hosts the registered SQL Server instance:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Idera\SQLcompliance\SQLcomplianceAgent
```

You can manually apply this update at each registered SQL Server or automate this update using a script. This procedure demonstrates how to use a script, such as a Visual Basic script, to configure the SQL Compliance Manager Agent to communicate to the new Collection Server.

Use this procedure to develop a script that suits your environment. You can run a script locally to update one agent at a time, or remotely to update all agents at the same time.

### To configure the SQL Compliance Manager Agent using a script:

1. Define variables for the computers that host the SQL Compliance Manager Agent and the new Collection Server. For example, if you plan to run a Visual Basic script locally on the computer that hosts the SQL Server, your script may include the following code:

```
' Define the SQL Compliance Manager Agent server
strComputer = "SQLServer01"
strNewCollectionServer = "CollectionServer02"
```

2. Declare the SQL Compliance Manager Agent and registry objects. For example, if you plan to run a Visual Basic script locally on the computer that hosts the SQL Server, your script may include the following code:

```
' Get the SQLcompliance Agent and registry objects
Set objComplianceAgent = GetObject("winmgmts:
{impersonationLevel=impersonate}!\" _
& strComputer & "\root\cimv2:Win32_Service='SQLcomplianceAgent'")
Set objReg = GetObject("winmgmts:{impersonationLevel=impersonate}!\" _
& strComputer & "\root\default:StdRegProv")
```

3. Stop the SQL Compliance Manager Agent Service. For example, if you plan to run a Visual Basic script locally on the computer that hosts the SQL Server, your script may include the following code:



```
' Stop the SQLcompliance Agent Set flgStopStatus =
objComplianceAgent.ExecMethod_("StopService")
```

4. Change the registry key. For example, if you plan to run a Visual Basic script locally on the computer that hosts the SQL Server, your script may include the following code:

```
' Change the location of the Collection Server in the registry
const HKEY_LOCAL_MACHINE = &H80000002
strRegAgentPath = "SOFTWARE\Idera\SQLcompliance\SQLcomplianceAgent"
strServerValName = "Server"
objReg.GetStringValue HKEY_LOCAL_MACHINE, strRegAgentPath,
strServerValName, strOldServer
objReg.SetStringValue HKEY_LOCAL_MACHINE,
strRegAgentPath, strServerValName, strNewCollectionServer
WScript.Echo "Changed collection server from " & strOldServer & " to
" & strNewCollectionServer
```

5. Start the SQL Compliance Manager Agent Service. For example, if you plan to run a Visual Basic script locally on the computer that hosts the SQL Server, your script may include the following code:

```
' Restart the SQLcompliance Agent Set flgStartStatus =
objComplianceAgent.ExecMethod_("StartService")
```

6. Using an administrator account, run your script to update each SQL Compliance Manager Agent deployed to your registered SQL Servers.





## Audit a virtual SQL Server instance

IDERA SQL Compliance Manager supports auditing a virtual SQL Server instance including the local instance on a cluster running the Collection Server.

After you [install and configure the SQL Compliance Manager Agent](#) on each node of the Microsoft failover cluster where the virtual SQL Server instance is running, you can test your configuration and begin auditing the instance.

### To audit the virtual SQL Server:

1. Verify that the SQL Compliance Manager Agent is running.
2. Use the Registered Server Properties window to [modify the existing audit settings](#) or configure additional audit settings for server-level events.
3. Use the New Audited Database wizard to [configure the audit settings for all databases](#) hosted by the virtual SQL Server instance.

When you decide to stop auditing a virtual SQL Server instance, use the following procedure to remove your configuration settings and uninstall the SQL Compliance Manager Agent.

### To stop auditing the virtual SQL Server:

1. Use the Microsoft Cluster Administrator tool to remove the registered generic service you created for the SQL Compliance Manager Agent Service. You can perform this task on any node of the cluster hosting the virtual SQL Server instance.
2. Use the [Cluster Configuration Console window](#) to remove the SQL Compliance Manager Agent Service. This action deletes the SQL Compliance Manager Agent Service. Be sure to perform this task on each node of the cluster hosting the virtual SQL Server instance.
3. Use Add/Remove Programs to uninstall the Cluster Configuration Console and the SQL Compliance Manager Agent. You must perform this task on each node of the cluster hosting the virtual SQL Server instance.
4. Use the Management Console to [remove the registered SQL Server instance](#).





## Start auditing the virtual SQL Server

After you install and configure the SQL Compliance Agent on each node of the Microsoft failover cluster where the virtual SQL Server instance is running, you can test your configuration and begin auditing the instance.

### To audit the virtual SQL Server:

1. Verify that the [SQL Compliance Agent is running](#).
2. Use the Registered Server Properties window to [modify the existing audit settings](#) or configure additional audit settings for server-level events.
3. Use the New Audited Database wizard to [configure the audit settings for all databases](#) hosted by the virtual SQL Server instance.



## Stop auditing the virtual SQL Server

When you decide to stop auditing a virtual SQL Server instance, use the following procedure to remove your configuration settings and uninstall the SQL Compliance Agent.

### To stop auditing the virtual SQL Server:

1. Use the Microsoft Cluster Administrator tool to remove the registered generic service you created for the SQL Compliance Agent Service. You can perform this task on any node of the cluster hosting the virtual SQL Server instance.
2. Use the [Cluster Configuration Console window](#) to remove the SQL Compliance Agent Service. This action deletes the SQL Compliance Agent Service. Be sure to perform this task on each node of the cluster hosting the virtual SQL Server instance.
3. Use Add/Remove Programs to uninstall the Cluster Configuration Console and the SQL Compliance Agent. You must perform this task on each node of the cluster hosting the virtual SQL Server instance.
4. Use the Management Console to [remove the registered SQL Server instance](#).

