# Configuring Listener scenario

The Listener scenario is recommended for users who want to audit only AlwaysOn databases on the Primary node of the Availability Group by registering the Availability Group Listener for auditing in SQL Compliance Manager. ***If you want to audit read-only Secondary nodes***, use the N odes scenario instead.

Review the following steps to successfully configure your Availability Group Listener for auditing:

1. Install the clustered Agent service on all Availability Group nodes using the SQL Compliance Manager Cluster Configuration Console.
2. Create a clustered resource for the newly installed Agent service in Failover Cluster Manager.
3. Register the Availability Group Listener in SQL Compliance Manager.

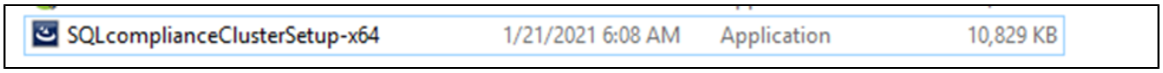
## 1. Install the cluster Agent service on all Availability Group nodes using the SQL Compliance Manager Cluster Configuration Console

Use the following steps on each node involved in the AlwaysOn group before adding the listener to SQL Compliance Manager for auditing.

> ⚠ Before stepping through the following instructions, ensure that the SQL CM Collection Server, the Management Console, and the Repository Databases are already installed.
>
> - Please review step 10 in How to install SQL Compliance Manager to install these components in a standalone server.
> - Please review the steps to Install SQL Compliance Manager Collection Service on Cluster nodes to install these components in a clustered environment.

1. From the installation folder of the SQL Compliance Manager Collection Service on the Collection and Repository database server, copy the *SQLComplianceClusterSetup.exe* file onto the nodes of the Availability Group. To install the Cluster Configuration Console on the nodes of the Availability Group, you are going to be auditing. This is located by default at the following path:

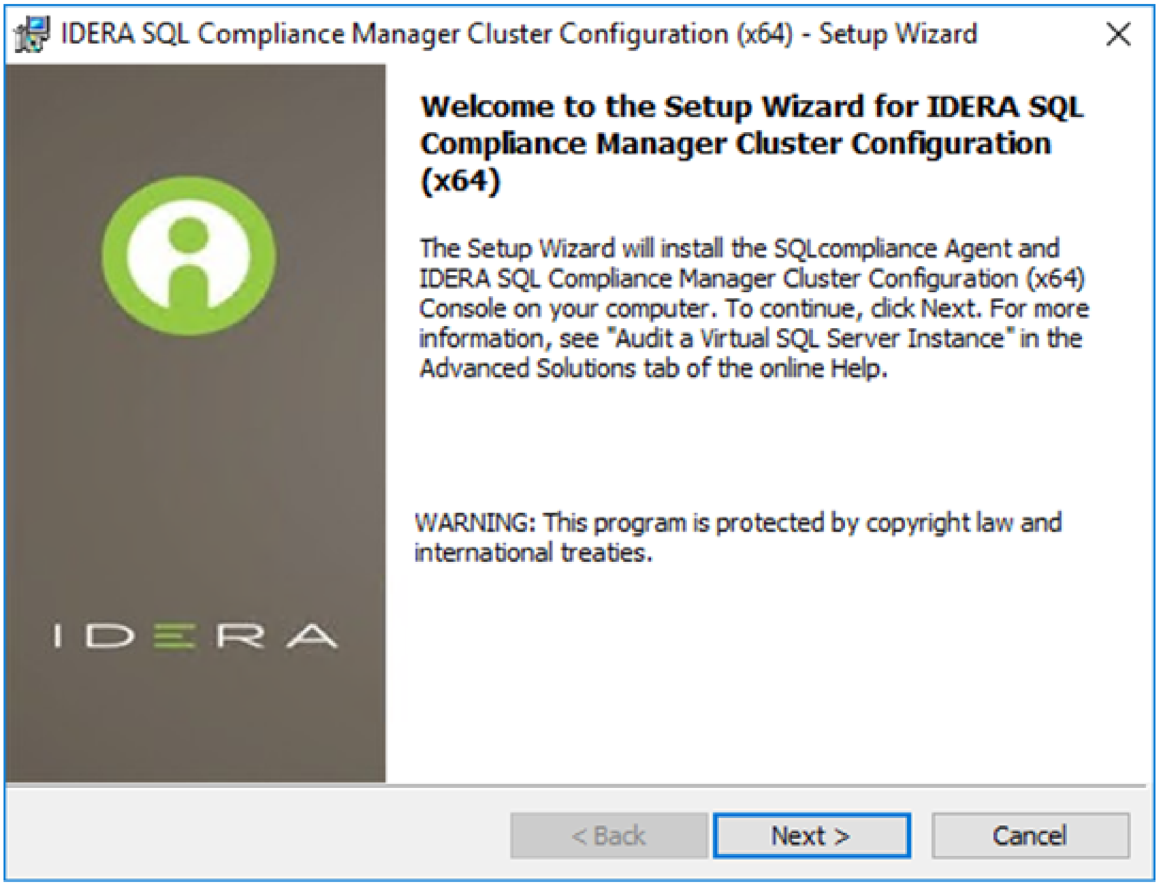
   C:\Program Files\Idera\SQLcompliance



SQLcomplianceClusterSetup-x64 1/21/2021 6:08 AM Application 10,829 KB

2. Beginning with the primary node of the Availability Group. Run the *SQLcomplianceClusterSetup.exe* to launch the installation wizard.

3. Once the setup wizard launches, click the **Next** button to proceed to the License Agreement.



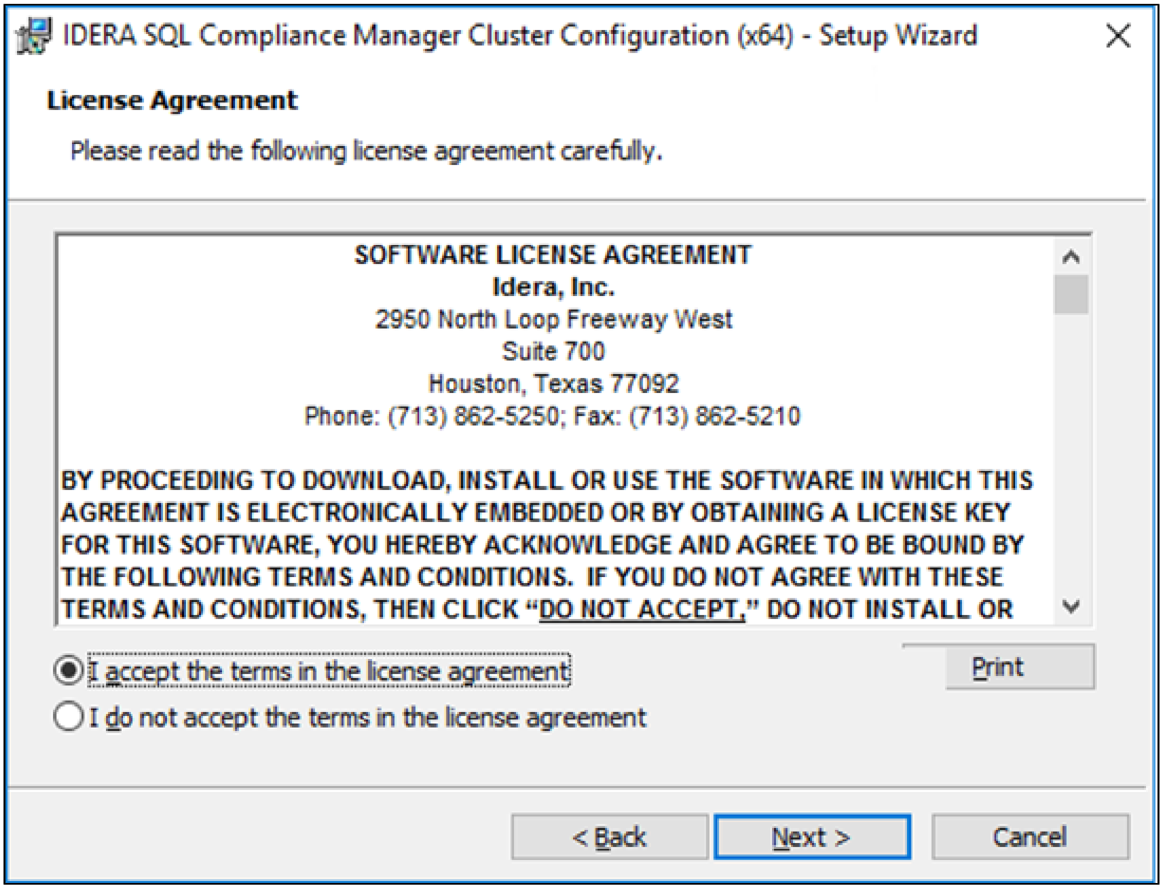
IDERA SQL Compliance Manager Cluster Configuration (x64) - Setup Wizard

**Welcome to the Setup Wizard for IDERA SQL Compliance Manager Cluster Configuration (x64)**

The Setup Wizard will install the SQLcompliance Agent and IDERA SQL Compliance Manager Cluster Configuration (x64) Console on your computer. To continue, click Next. For more information, see "Audit a Virtual SQL Server Instance" in the Advanced Solutions tab of the online Help.

WARNING: This program is protected by copyright law and international treaties.

4. Read the license agreement, select the option to accept the license agreement terms, and click **Next**.



IDERA SQL Compliance Manager Cluster Configuration (x64) - Setup Wizard

**License Agreement**

Please read the following license agreement carefully.

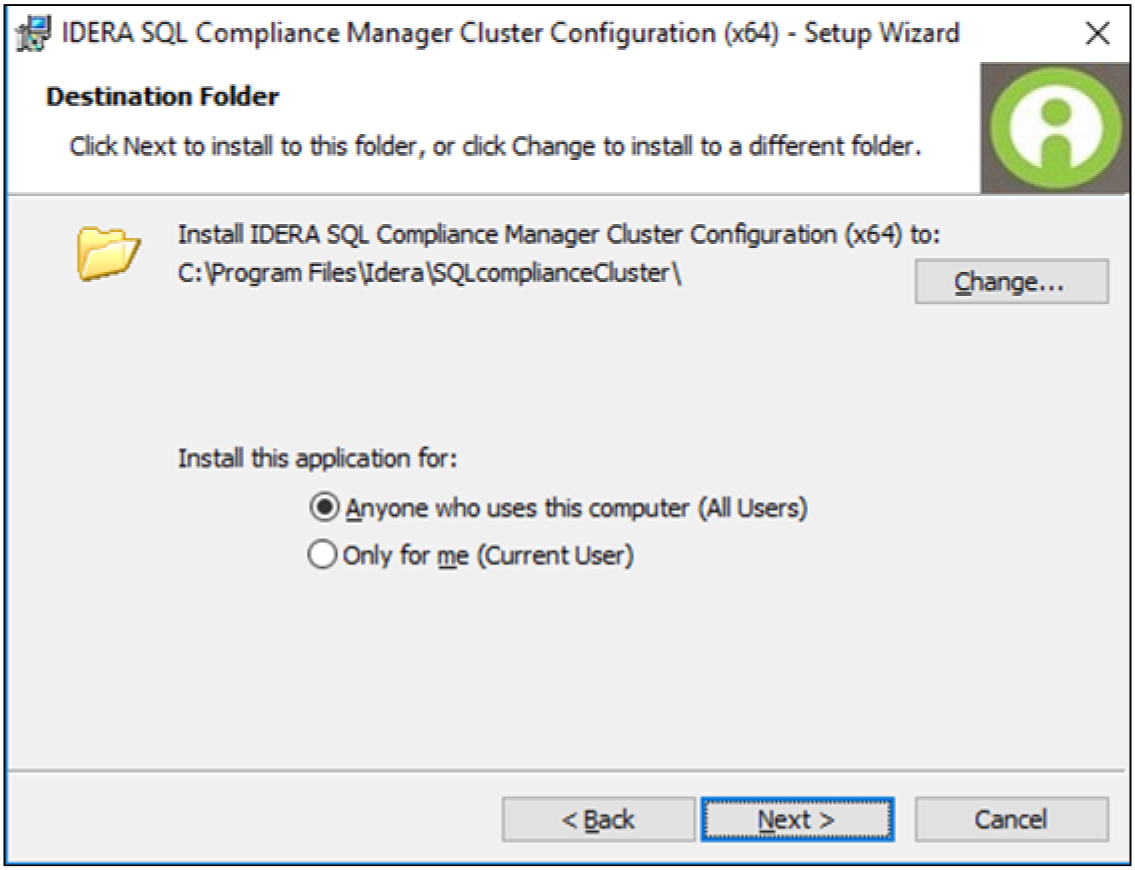
**SOFTWARE LICENSE AGREEMENT**
**Idera, Inc.**
2950 North Loop Freeway West
Suite 700
Houston, Texas 77092
Phone: (713) 862-5250; Fax: (713) 862-5210

**BY PROCEEDING TO DOWNLOAD, INSTALL OR USE THE SOFTWARE IN WHICH THIS AGREEMENT IS ELECTRONICALLY EMBEDDED OR BY OBTAINING A LICENSE KEY FOR THIS SOFTWARE, YOU HEREBY ACKNOWLEDGE AND AGREE TO BE BOUND BY THE FOLLOWING TERMS AND CONDITIONS. IF YOU DO NOT AGREE WITH THESE TERMS AND CONDITIONS, THEN CLICK "DO NOT ACCEPT," DO NOT INSTALL OR**

● I accept the terms in the license agreement

○ I do not accept the terms in the license agreement

5. Select the destination path in which you want to install the IDERA Cluster Configuration Console.



IDERA SQL Compliance Manager Cluster Configuration (x64) - Setup Wizard

**Destination Folder**

Click Next to install to this folder, or click Change to install to a different folder.

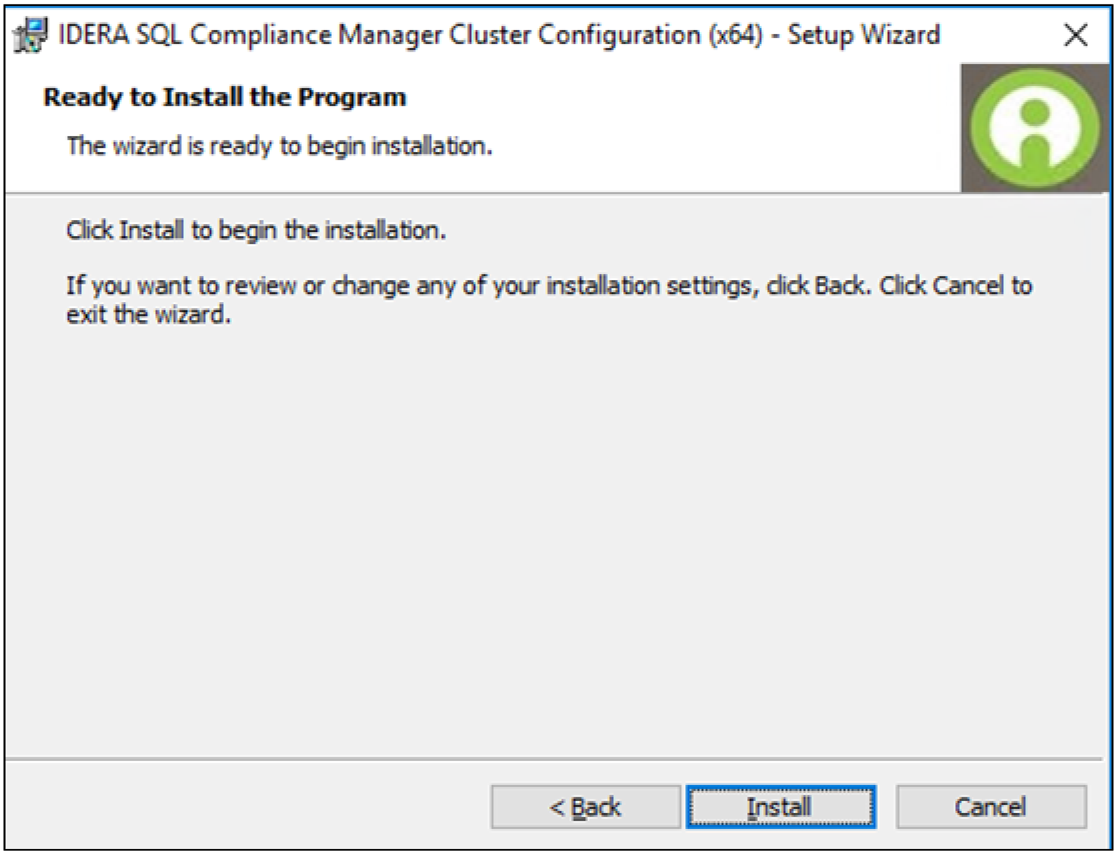
Install IDERA SQL Compliance Manager Cluster Configuration (x64) to:
C:\Program Files\Idera\SQLcomplianceCluster\

Install this application for:

● Anyone who uses this computer (All Users)

○ Only for me (Current User)

6. Click **Install** to begin the installation.



IDERA SQL Compliance Manager Cluster Configuration (x64) - Setup Wizard

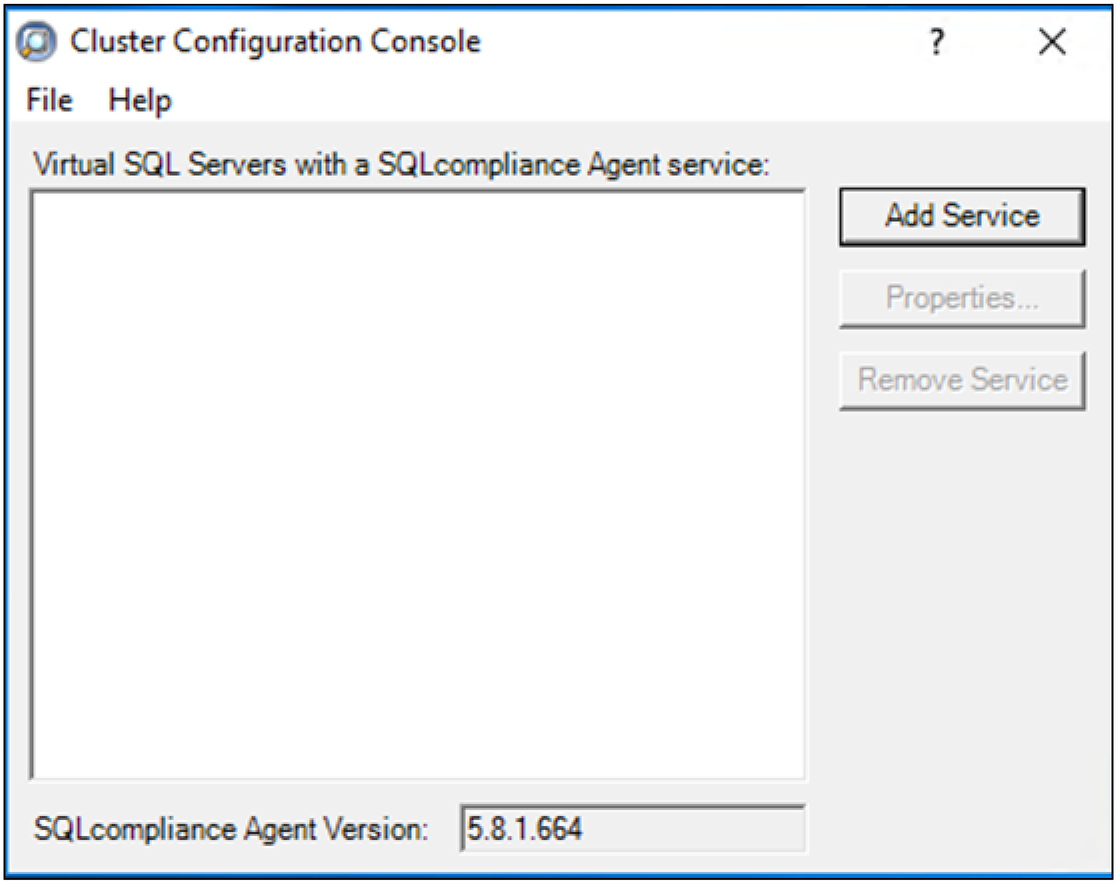
**Ready to Install the Program**

The wizard is ready to begin installation.

Click Install to begin the installation.

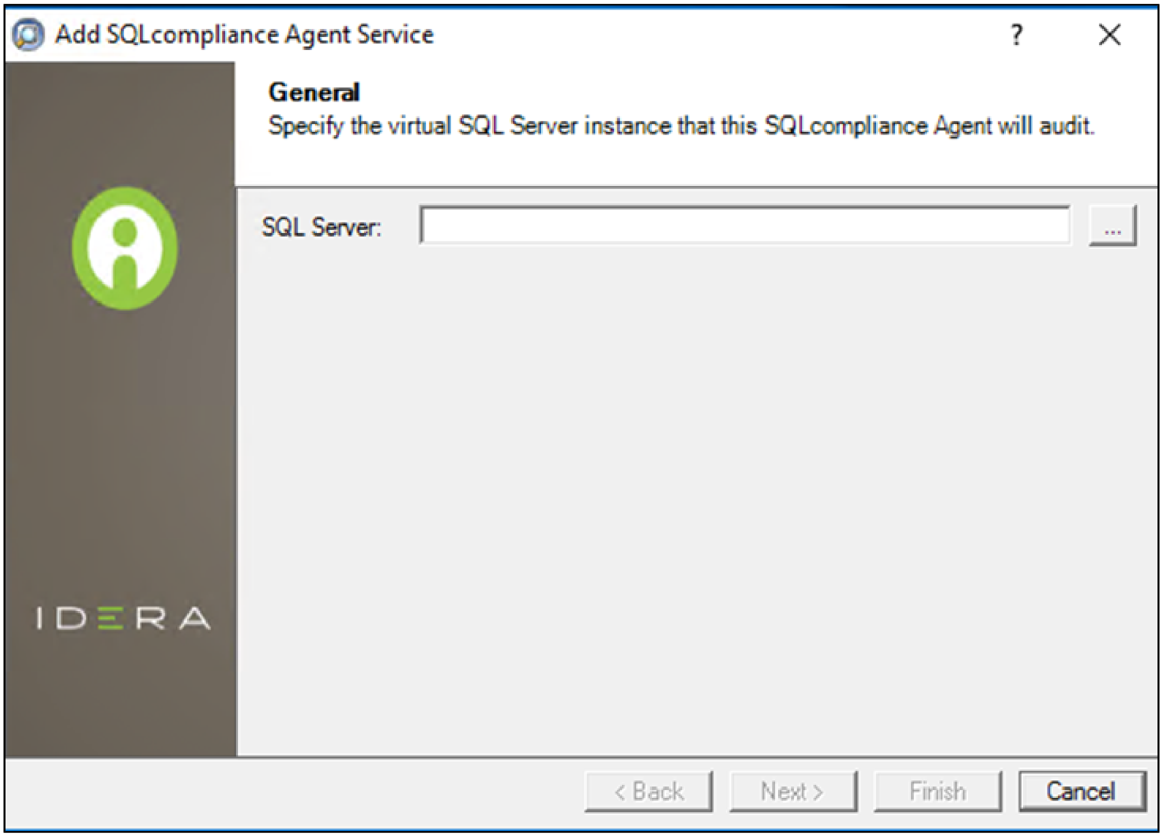
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

7. The Cluster Configuration Console launches automatically after installation.

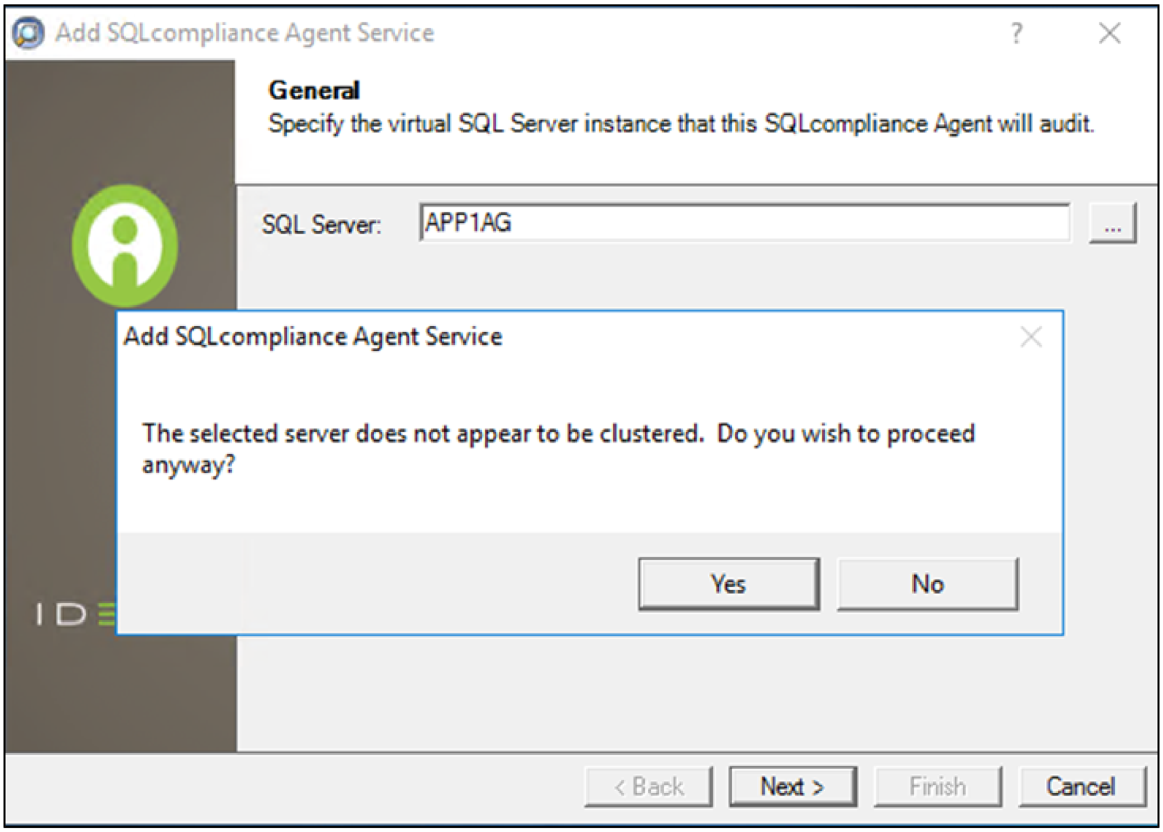

Cluster Configuration Console
File
Help
Virtual SQL Servers with a SQLcompliance Agent service:
Add Service
Properties...
Remove Service

SQLcompliance Agent Version: 5.8.1.664

8. Click **Add Service** to register the Availability Group Listener. SQL Compliance Manager displays the **Add SQLcompliance Agent Service - General** window, where the name of the Availability Group Listener to audit will need to be entered into the SQL Server textbox.


Add SQLcompliance Agent Service
General
Specify the virtual SQL Server instance that this SQLcompliance Agent will audit.
SQL Server:
...
IDERA
< Back
Next >
Finish
Cancel

9. Once the name of the Availability Group Listener to audit has been entered, click **Next**. If you receive a message stating that the selected SQL Server instance is not clustered, click **Yes** to confirm. When configuring a Listener scenario, this is the correct behavior and ensures that the selected SQL Server instance is hosted on a Windows Failover Cluster.


Add SQLcompliance Agent Service
?
General

Specify the virtual SQL Server instance that this SQLcompliance Agent will audit.

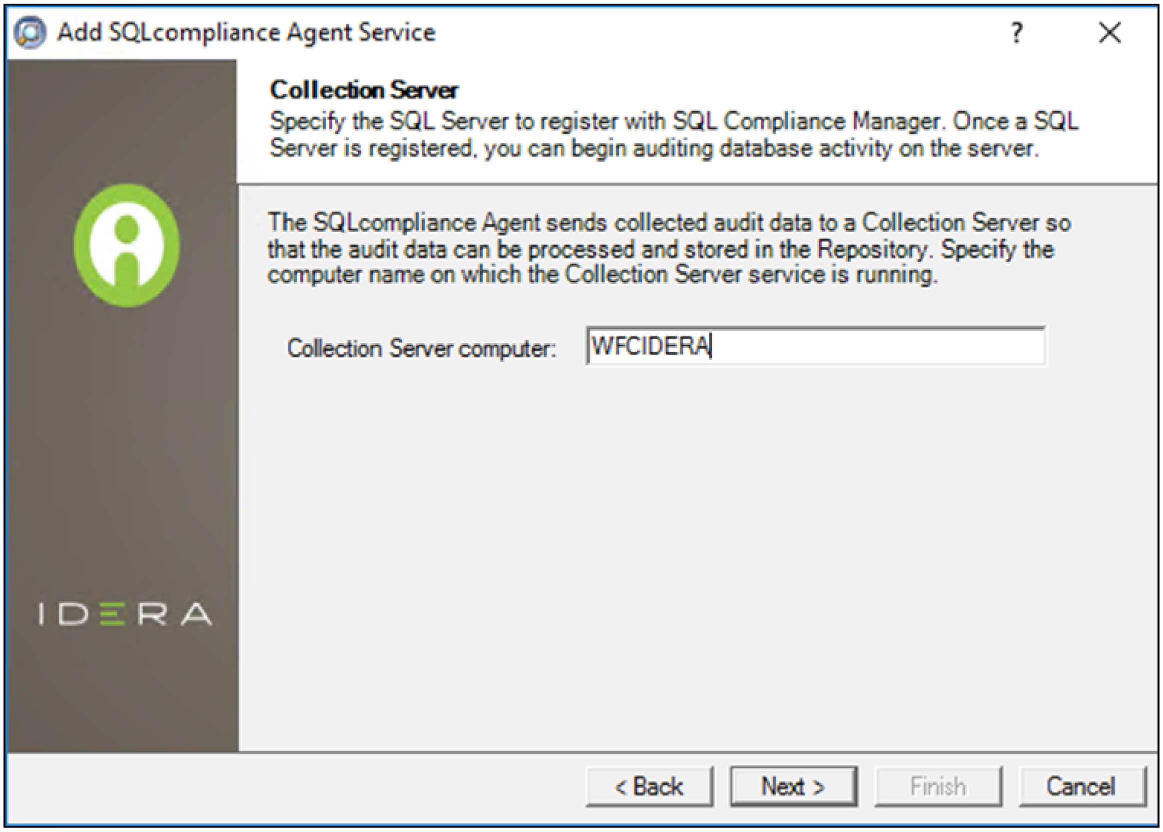
SQL Server: APP1AG

...
Add SQLcompliance Agent Service

The selected server does not appear to be clustered. Do you wish to proceed anyway?

Yes
No
< Back
Next >
Finish
Cancel

10. On the ***Collection Server*** dialog window, specify the server's name where the SQL Compliance Manager Collection Service is installed and click **Next.**



Add SQLcompliance Agent Service

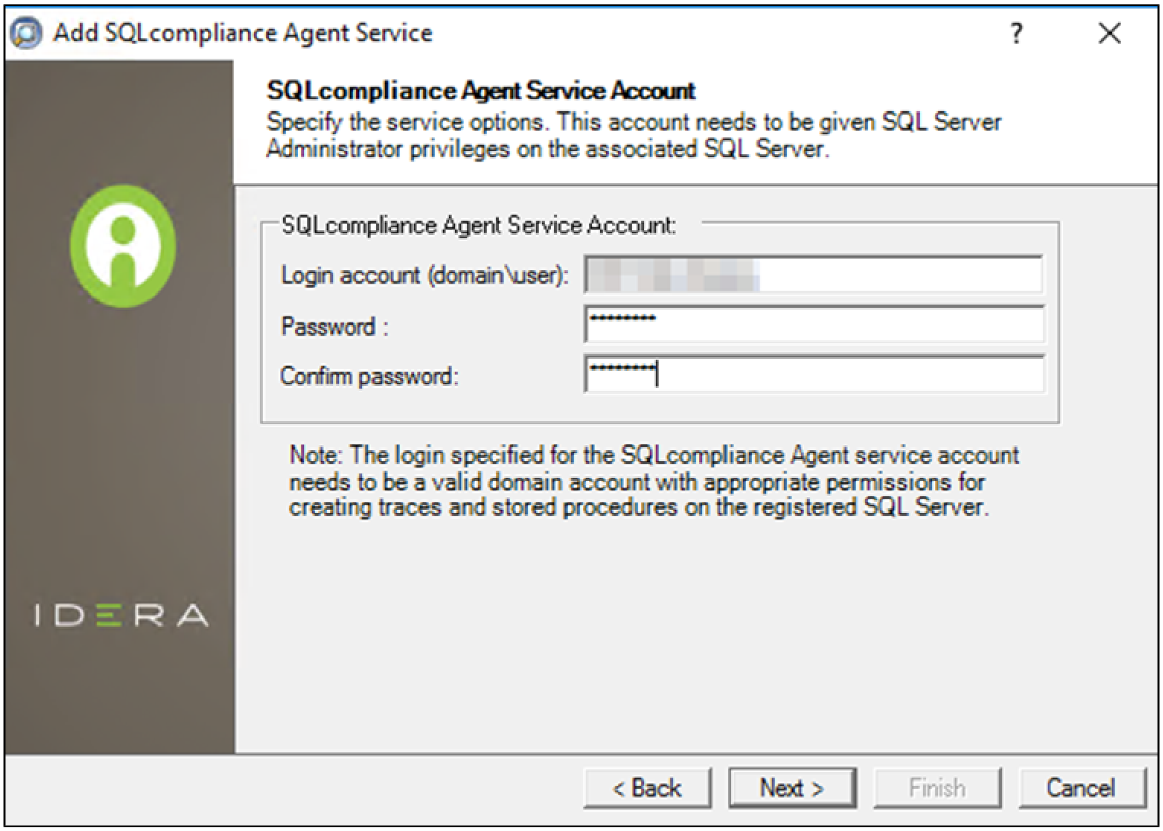
**Collection Server**

Specify the SQL Server to register with SQL Compliance Manager. Once a SQL Server is registered, you can begin auditing database activity on the server.

The SQLcompliance Agent sends collected audit data to a Collection Server so that the audit data can be processed and stored in the Repository. Specify the computer name on which the Collection Server service is running.

Collection Server computer: WFCIDERA

11. On the ***SQLcompliance Agent Service Account*** dialog window, specify the login credentials for the Agent service account and click **Next**. This account must have local administrator privileges, and sysadmin permissions on the SQL Server nodes of the Availability Group set up for auditing.



Add SQLcompliance Agent Service

**SQLcompliance Agent Service Account**

Specify the service options. This account needs to be given SQL Server Administrator privileges on the associated SQL Server.

SQLcompliance Agent Service Account:

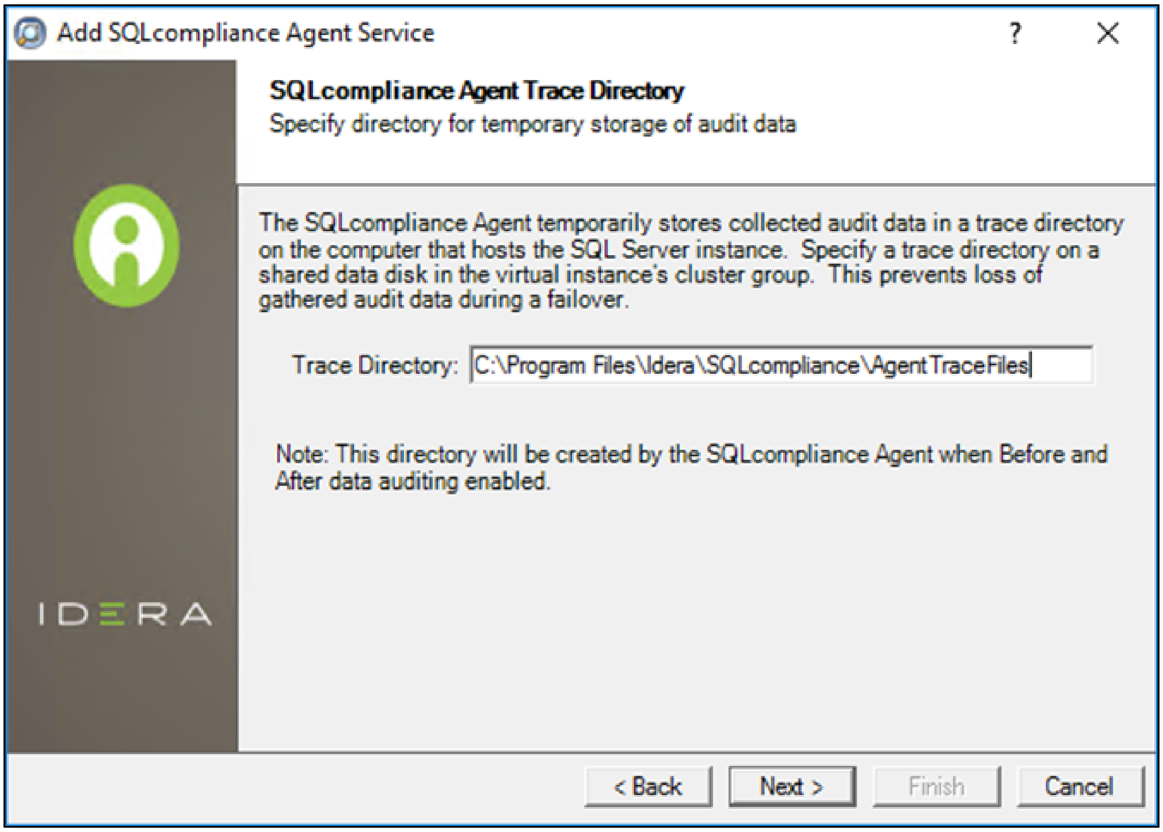
Login account (domain\user): [redacted]

Password : *********

Confirm password: *********

Note: The login specified for the SQLcompliance Agent service account needs to be a valid domain account with appropriate permissions for creating traces and stored procedures on the registered SQL Server.

12. On the ***SQLcompliance Agent Trace Directory*** dialog window, specify the path where audit trace files will be created for the audit process and click **Next**. Note that the service account specified to run the Agent service must have read and write permissions on this trace directory folder.



**SQLcompliance Agent Trace Directory**

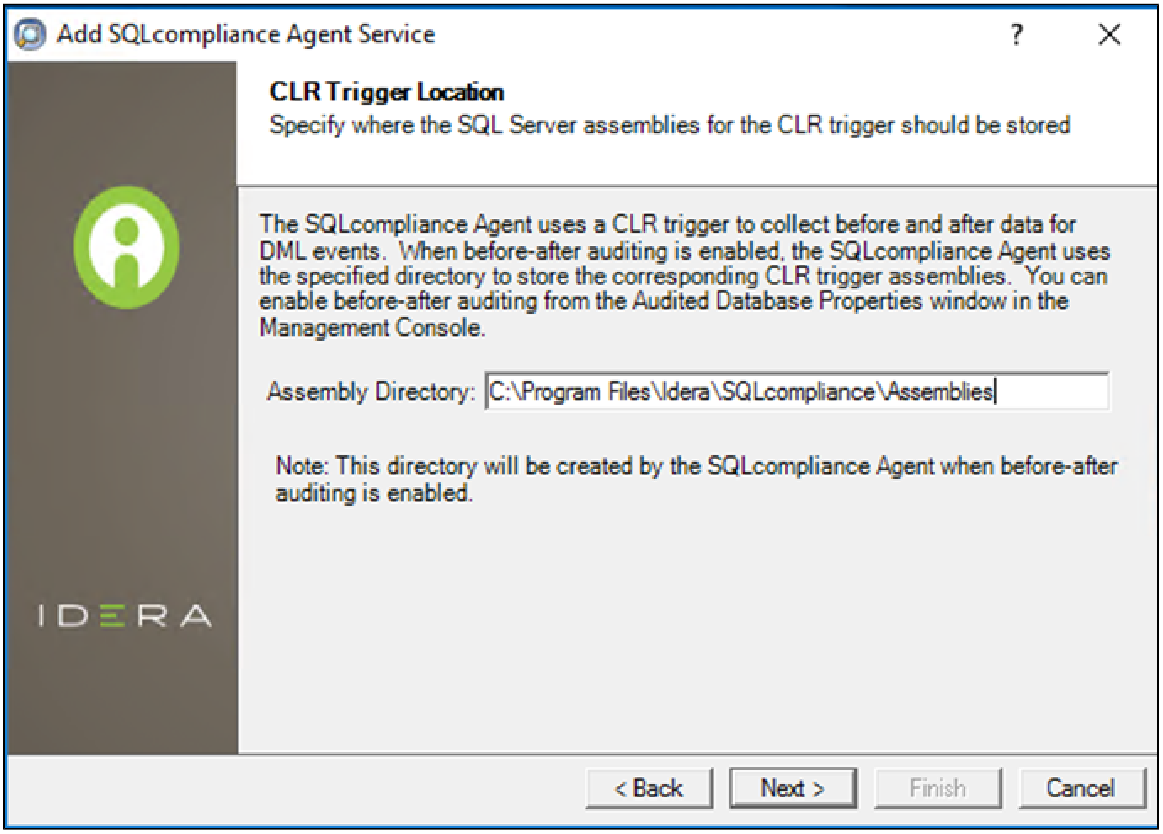
Specify directory for temporary storage of audit data

The SQLcompliance Agent temporarily stores collected audit data in a trace directory on the computer that hosts the SQL Server instance. Specify a trace directory on a shared data disk in the virtual instance's cluster group. This prevents loss of gathered audit data during a failover.

Trace Directory: C:\Program Files\Idera\SQLcompliance\AgentTraceFiles

Note: This directory will be created by the SQLcompliance Agent when Before and After data auditing enabled.

13. 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 service account specified to run the Agent service must have read and write permissions on this trace directory folder.



CLR Trigger Location

Specify where the SQL Server assemblies for the CLR trigger should be stored

The SQLcompliance Agent uses a CLR trigger to collect before and after data for DML events. When before-after auditing is enabled, the SQLcompliance Agent uses the specified directory to store the corresponding CLR trigger assemblies. You can enable before-after auditing from the Audited Database Properties window in the Management Console.

Assembly Directory: C:\Program Files\Idera\SQLcompliance\Assemblies

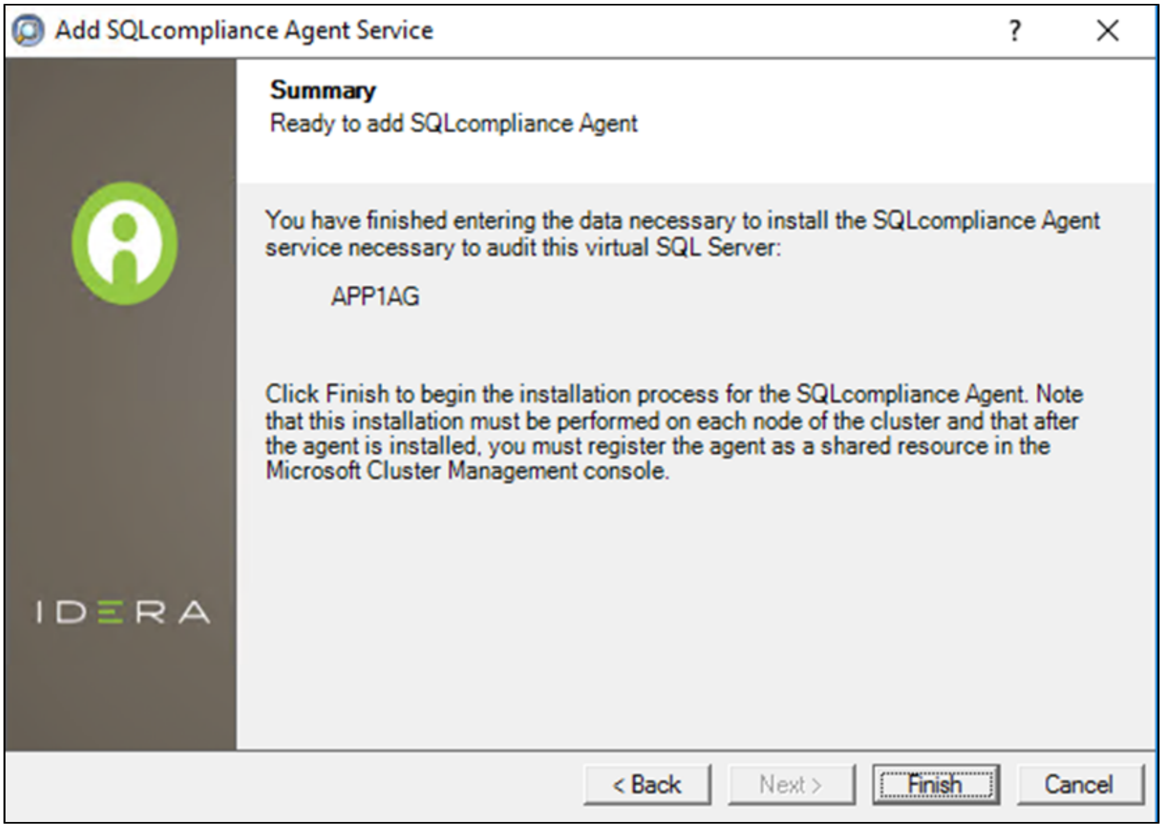
Note: This directory will be created by the SQLcompliance Agent when before-after auditing is enabled.

⚠

# Note

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

14. Review the configuration ***Summary*** and click **Finish**.



Add SQLcompliance Agent Service

**Summary**

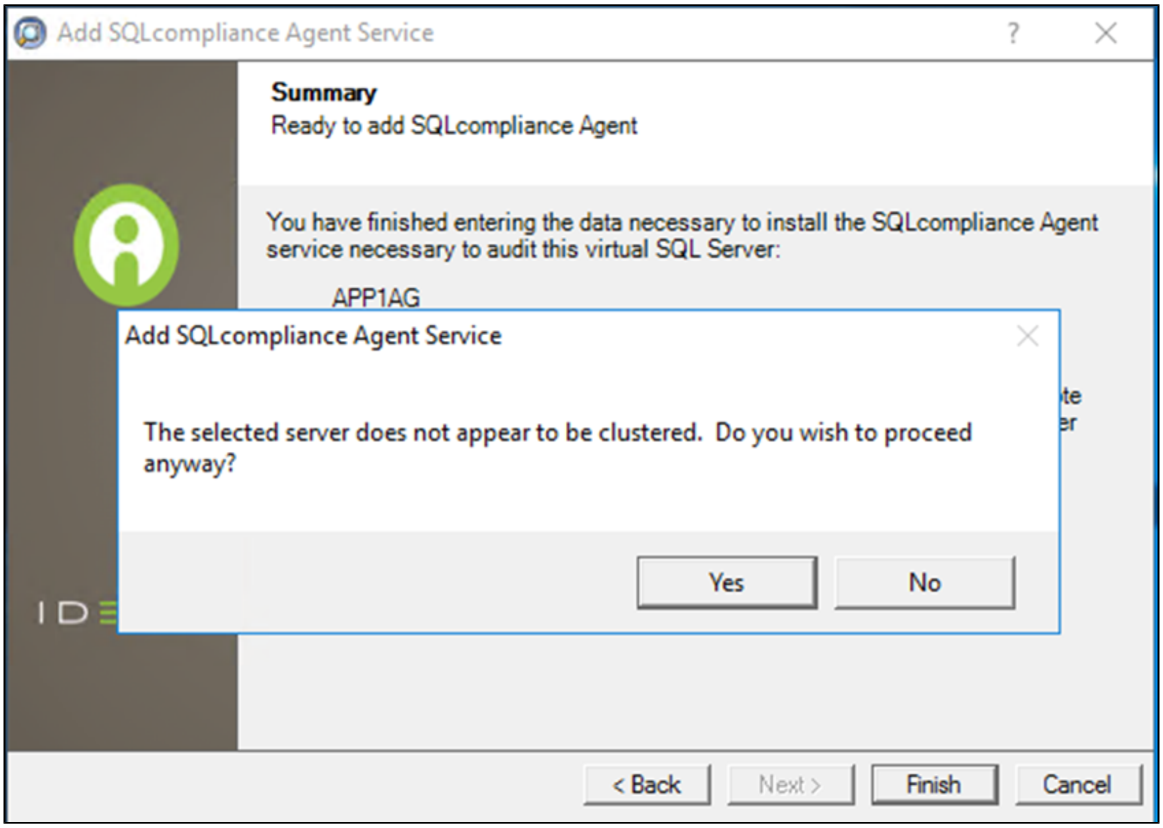
Ready to add SQLcompliance Agent

You have finished entering the data necessary to install the SQLcompliance Agent service necessary to audit this virtual SQL Server:

APP1AG

Click Finish to begin the installation process for the SQLcompliance Agent. Note that this installation must be performed on each node of the cluster and that after the agent is installed, you must register the agent as a shared resource in the Microsoft Cluster Management console.

15. The wizard asks for another confirmation to proceed with the registration of the Availability Group Listener as a virtual cluster server registration, click



Add SQLcompliance Agent Service

**Summary**

Ready to add SQLcompliance Agent

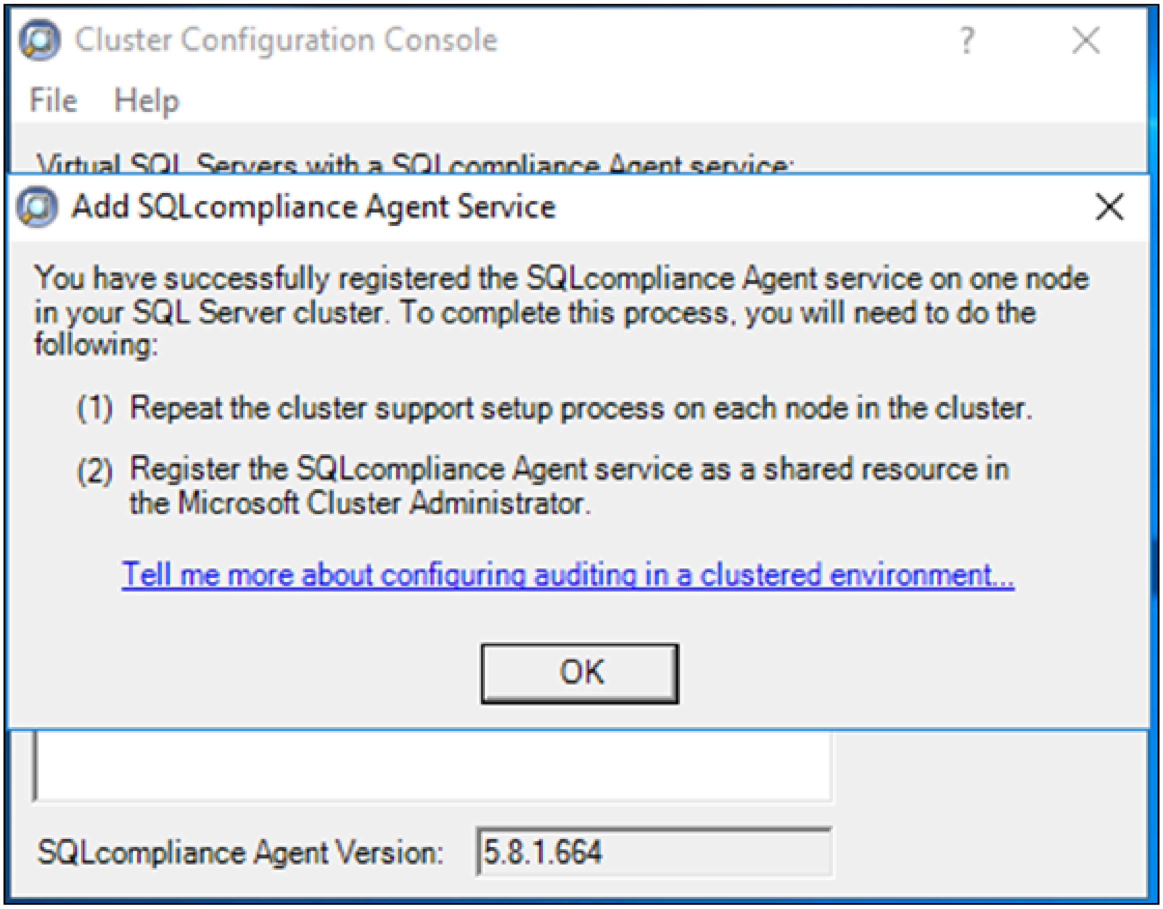
You have finished entering the data necessary to install the SQLcompliance Agent service necessary to audit this virtual SQL Server:

APP1AG

Add SQLcompliance Agent Service

The selected server does not appear to be clustered. Do you wish to proceed anyway?

16. The IDERA Cluster Configuration Console displays a confirmation message stating that you have successfully added the SQL Compliance Manager Agent. Click **OK**.


Cluster Configuration Console
File
Help
Virtual SQL Servers with a SQLcompliance Agent service:
Add SQLcompliance Agent Service

You have successfully registered the SQLcompliance Agent service on one node in your SQL Server cluster. To complete this process, you will need to do the following:

(1) Repeat the cluster support setup process on each node in the cluster.

(2) Register the SQLcompliance Agent service as a shared resource in the Microsoft Cluster Administrator.

Tell me more about configuring auditing in a clustered environment...

SQLcompliance Agent Version: 5.8.1.664

# Note

Repeat these steps on each remaining node in your AlwaysOn Availability Group. Consider using the same folder structure for the *Agent Trace directory* and the *CLR Trigger location* when setting the Agent up on the secondary nodes. When you are finished configuring all the nodes, proceed with the steps below.

## 2. Create a clustered resource for the newly installed Agent service in Failover Cluster Manager

The Registry Replication tab is not available in Windows Server 2012.

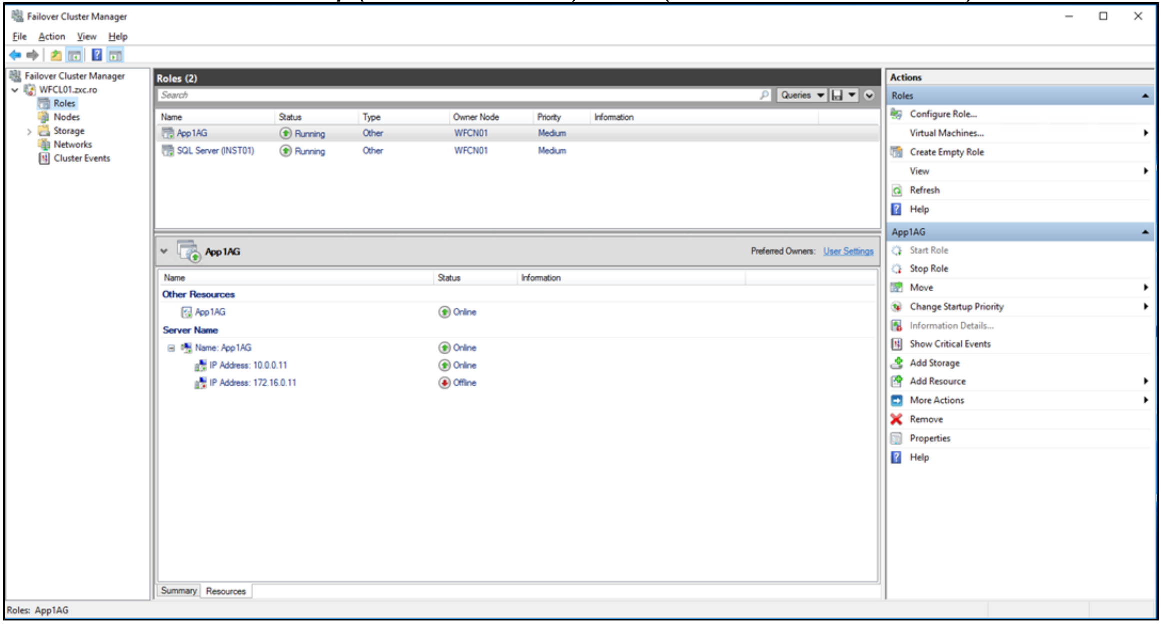
If you are using Windows Server 2012, you must use the *"Add-ClusterCheckpoint"* PowerShell cmdlet to add the necessary setting.

For more information, see Add ClusterCheckpoint.

Use the following steps only on the Primary node of the AlwaysOn Availability Group before finally registering the Availability Group Listener for auditing into the SQL Compliance Manager console.

1. Launch the **Failover Cluster Manager**

2. Select the clusters' ***ServiceGroup*** (Windows Server 2008) or ***Role*** (Windows Server 2012 and later) created for the cluster agent service.



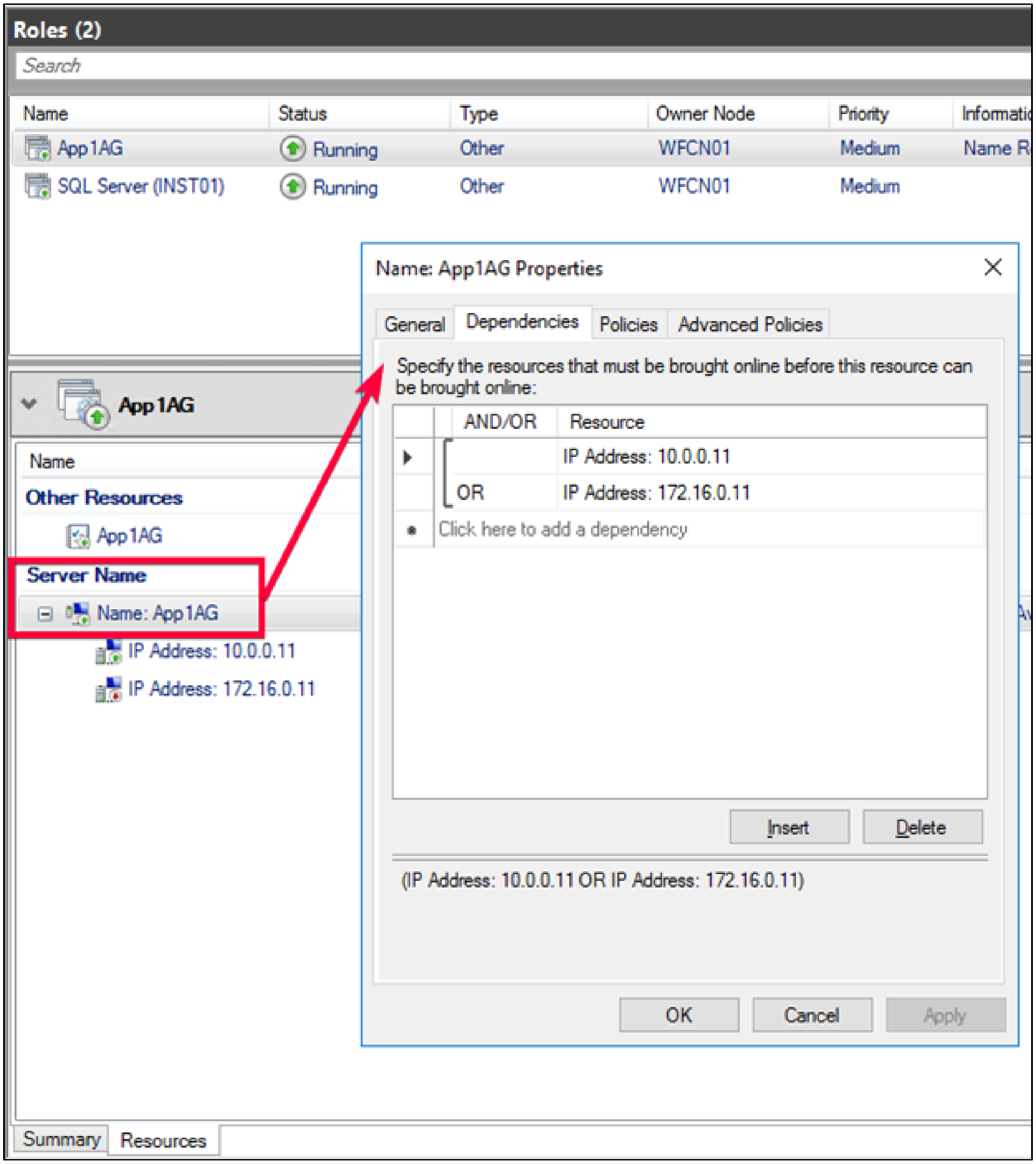
| Name | Status | Type | Owner Node | Priority | Information |
|---|---|---|---|---|---|
| App1AG | Running | Other | WFCN01 | Medium | |
| SQL Server (INST01) | Running | Other | WFCN01 | Medium | |

| Name | Status | Information |
|---|---|---|
| **Other Resources** | | |
| App1AG | Online | |
| **Server Name** | | |
| Name: App1AG | Online | |
| IP Address: 10.0.0.11 | Online | |
| IP Address: 172.16.0.11 | Offline | |

3. On the ***Server Name*** area, right-click the resource name and click  Failover Cluster Manager displays the ***Properties*** window.

4. Click the ***Dependencies.***

5. Verify that the **Resource** field displays the listener's IP address.



| Name | Status | Type | Owner Node | Priority | Informatio |
|---|---|---|---|---|---|
| App1AG | Running | Other | WFCN01 | Medium | Name R |
| SQL Server (INST01) | Running | Other | WFCN01 | Medium | |

Specify the resources that must be brought online before this resource can be brought online:

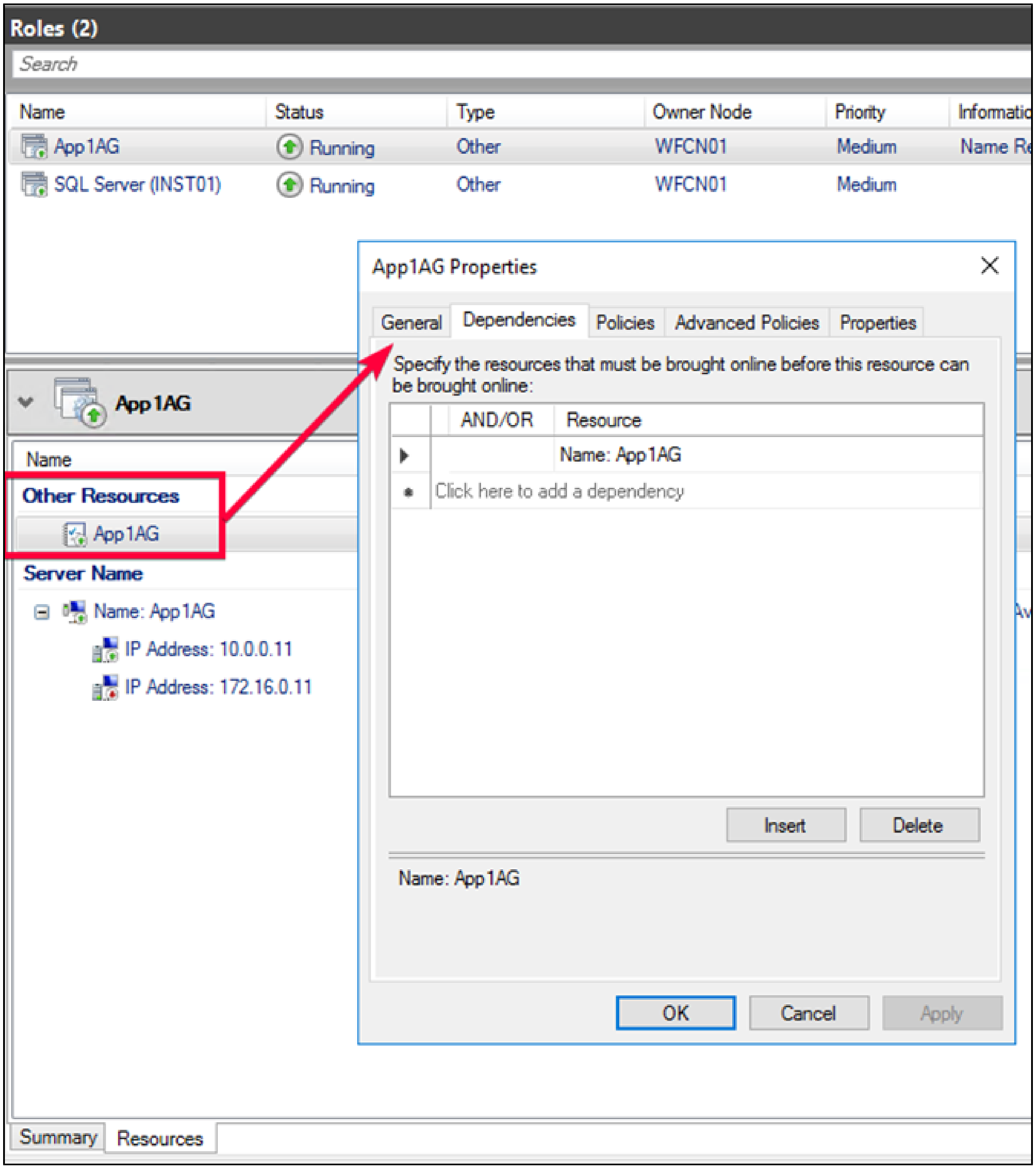
| AND/OR | Resource |
|---|---|
| | IP Address: 10.0.0.11 |
| OR | IP Address: 172.16.0.11 |
| | Click here to add a dependency |

(IP Address: 10.0.0.11 OR IP Address: 172.16.0.11)

6. 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.

7. Click the ***Dependencies***

8. Verify that the **Resource** field displays the listener name. Click **Cancel** to close this window.



| Name | Status | Type | Owner Node | Priority | Informatio |
|---|---|---|---|---|---|
| App1AG | Running | Other | WFCN01 | Medium | Name Re |
| SQL Server (INST01) | Running | Other | WFCN01 | Medium | |

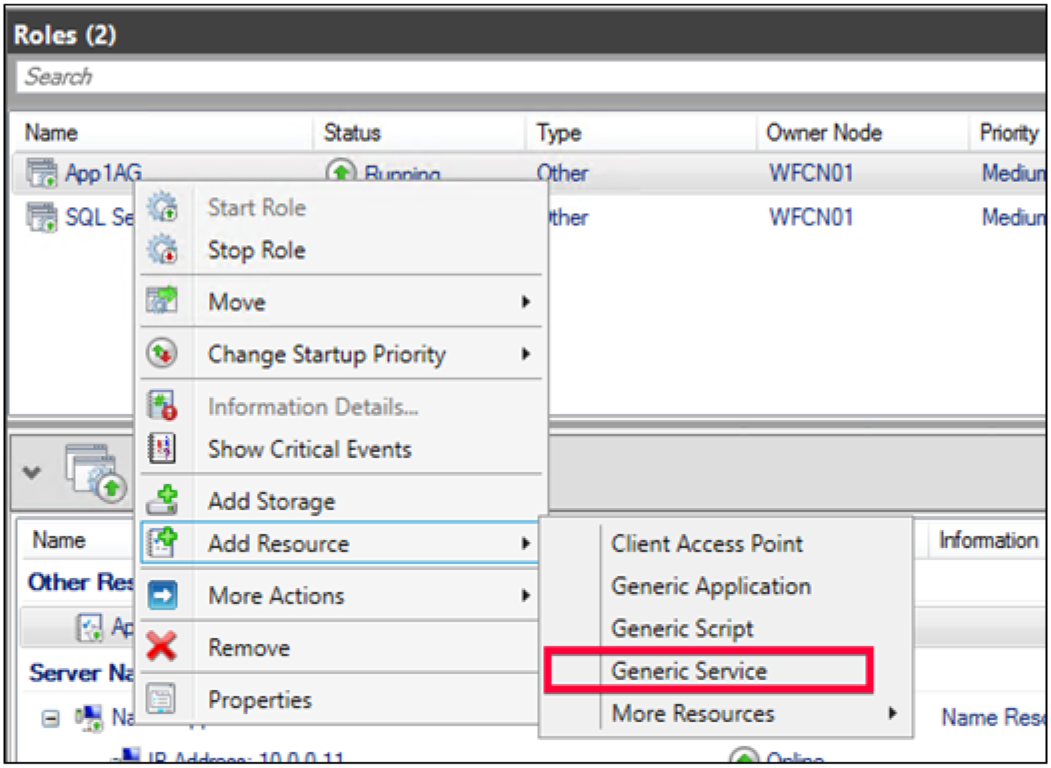
App1AG Properties

Specify the resources that must be brought online before this resource can be brought online:

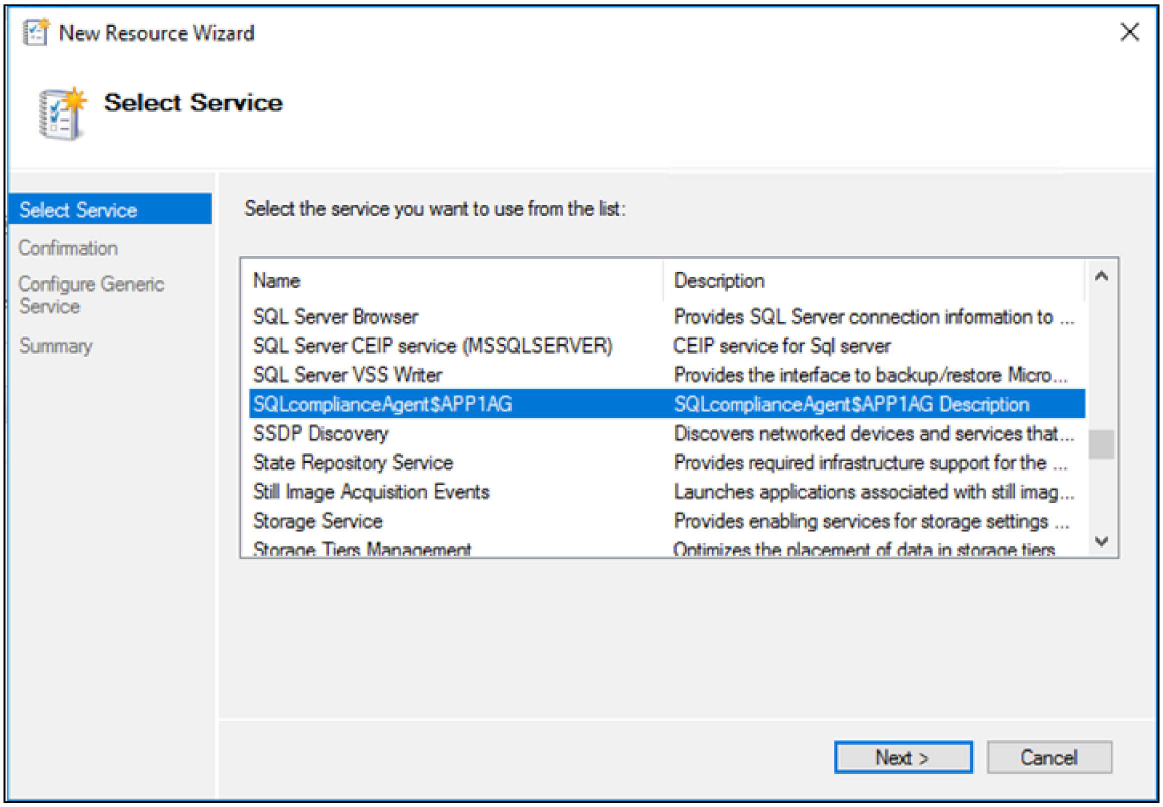
| AND/OR | Resource |
|---|---|
| | Name: App1AG |
| Click here to add a dependency | |

Name: App1AG

9. After verifying the resource information, right-click the ***Service Group*** or ***Role*** and point to **Add a resource**. Click on **Generic Service**. Failover Cluster Manager displays the ***New Resource Wizard***.



10. On the ***Select Service*** page, select the SQLcompliance Agent service from the available list. The service name is displayed in the format ***SQLcomplianceAgent$[listener name],*** where **[*listener name*]** is the SQL Server Availability Group Listener name previously registered into the SQLcompliance Cluster Configuration Console**.**

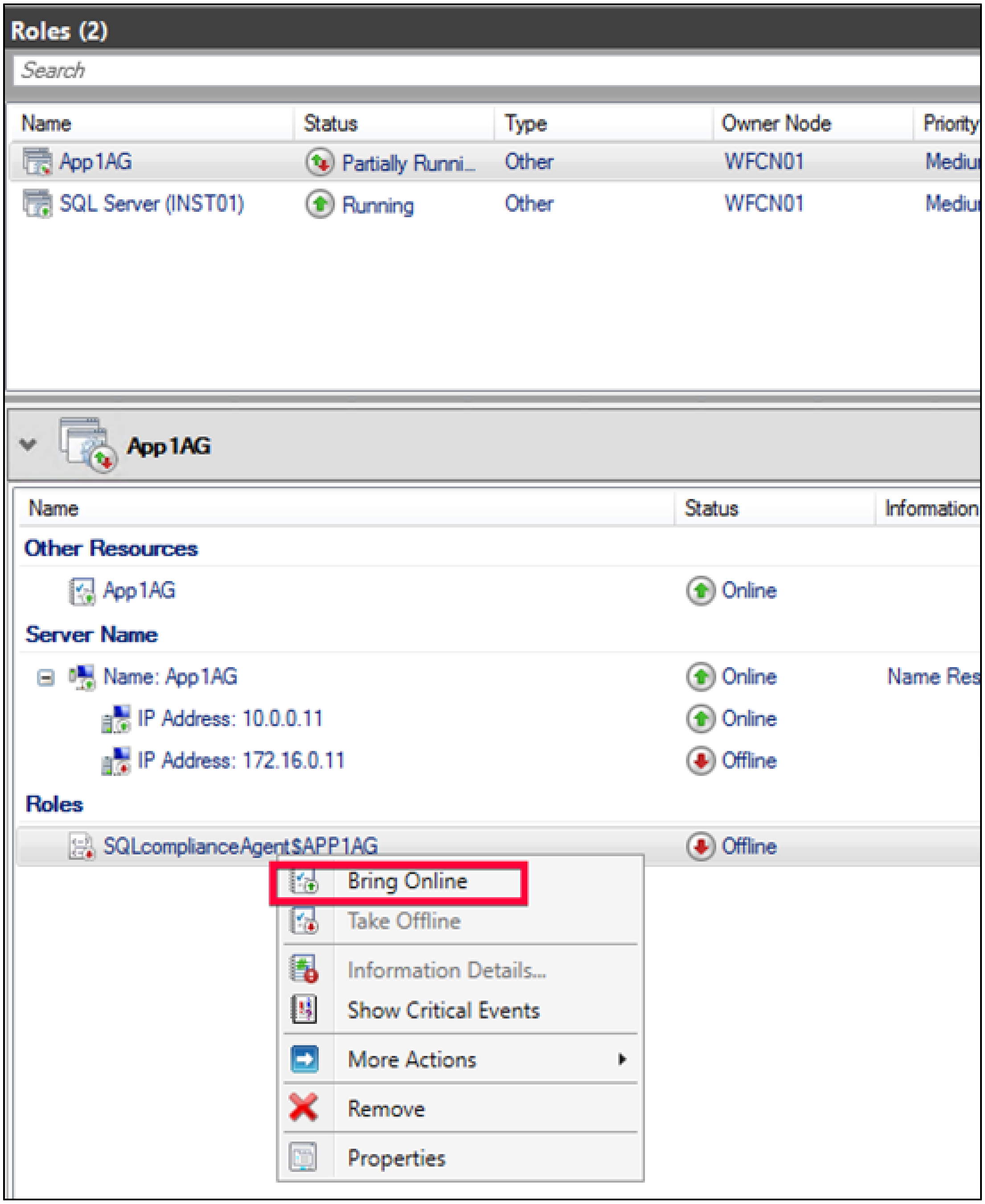


Select the service you want to use from the list:

| Name | Description |
|---|---|
| SQL Server Browser | Provides SQL Server connection information to ... |
| SQL Server CEIP service (MSSQLSERVER) | CEIP service for Sql server |
| SQL Server VSS Writer | Provides the interface to backup/restore Micro... |
| SQLcomplianceAgent$APP1AG | SQLcomplianceAgent$APP1AG Description |
| SSDP Discovery | Discovers networked devices and services that... |
| State Repository Service | Provides required infrastructure support for the ... |
| Still Image Acquisition Events | Launches applications associated with still imag... |
| Storage Service | Provides enabling services for storage settings ... |
| Storage Tiers Management | Optimizes the placement of data in storage tiers |

11. Click **Next**, continue following the wizard, and click **Finish**.

12. On the ***Other Resources*** area of the Failover Cluster Manager window, right-click the ***SQLcomplianceAgent$[listener name]*** and select **Bring Online** the **resource**.



Roles (2)

Search

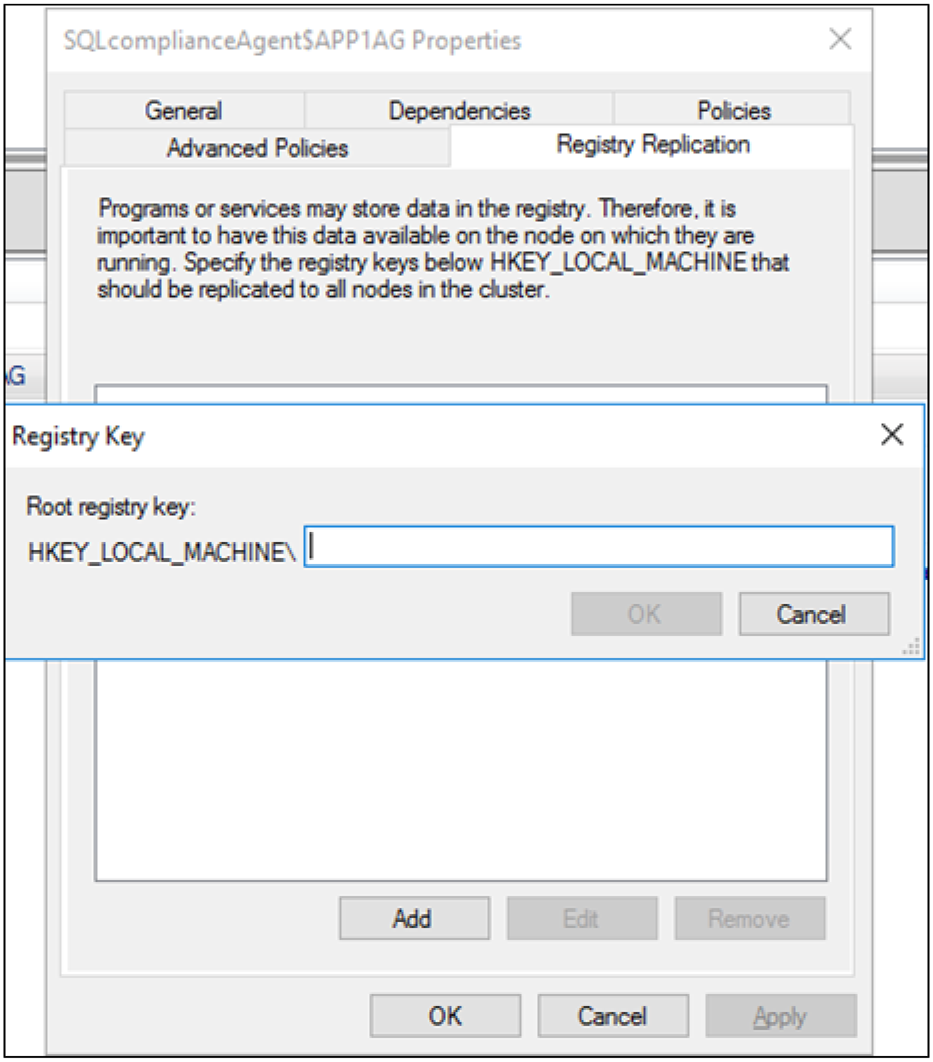
| Name | Status | Type | Owner Node | Priority |
|---|---|---|---|---|
| App1AG | Partially Runni... | Other | WFCN01 | Mediu |
| SQL Server (INST01) | Running | Other | WFCN01 | Mediu |

App1AG

| Name | Status | Information |
|---|---|---|
| **Other Resources** | | |
| App1AG | Online | |
| **Server Name** | | |
| Name: App1AG | Online | Name Res |
| IP Address: 10.0.0.11 | Online | |
| IP Address: 172.16.0.11 | Offline | |
| **Roles** | | |
| SQLcomplianceAgent$APP1AG | Offline | |

13. While the cluster service is online, right-click the ***SQLcomplianceAgent$[listener name]*** cluster service and click **Properties**.

14. On the ***Registry Replication*** tab, click **Add.** Failover Cluster Manager displays the ***Registry Key*** window.



SQLcomplianceAgent$APP1AG Properties

Programs or services may store data in the registry. Therefore, it is important to have this data available on the node on which they are running. Specify the registry keys below HKEY_LOCAL_MACHINE that should be replicated to all nodes in the cluster.

Registry Key

Root registry key:

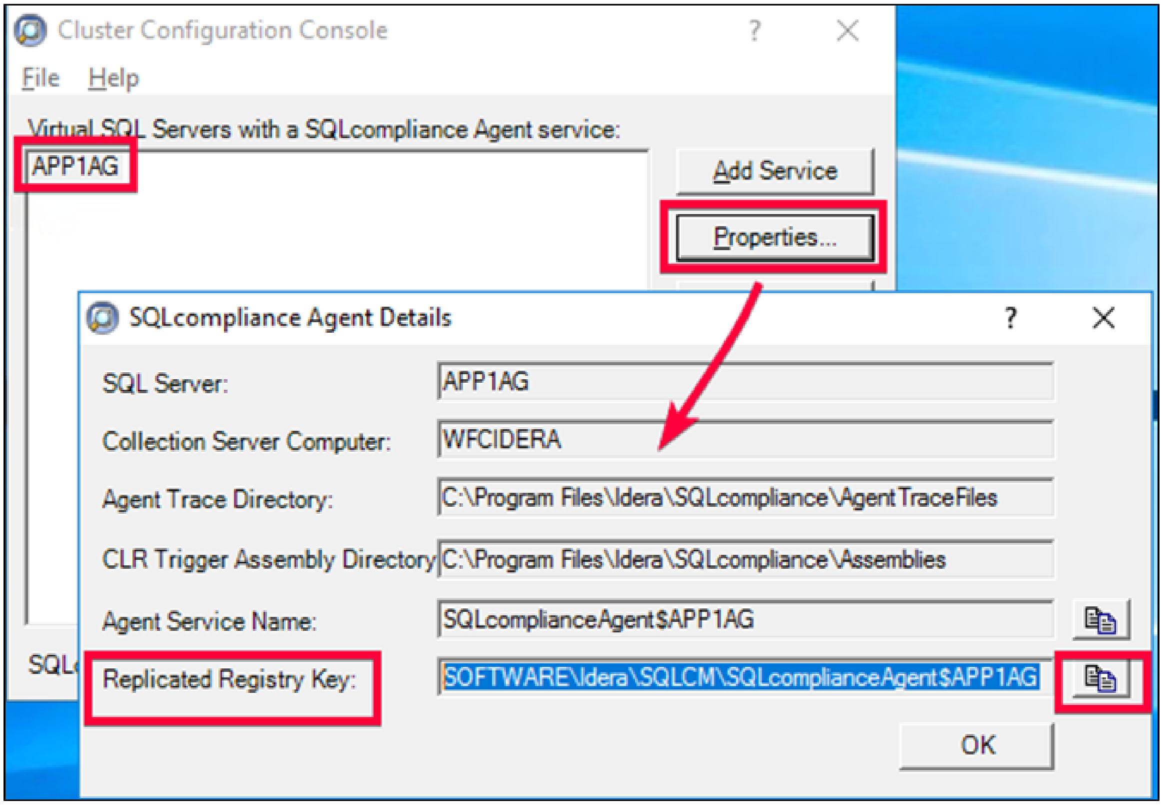
HKEY_LOCAL_MACHINE\

⚠ 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.

15. To obtain the correct path, go to the **IDERA Cluster Configuration Console** and copy the Replicated Registry Key from the ***SQLcompliance Agent details*****.**


Cluster Configuration Console
File Help
Virtual SQL Servers with a SQLcompliance Agent service:
APP1AG
Add Service
Properties...
SQL
SQLcompliance Agent Details
OK

SQL Server: APP1AG

Collection Server Computer: WFCIDERA

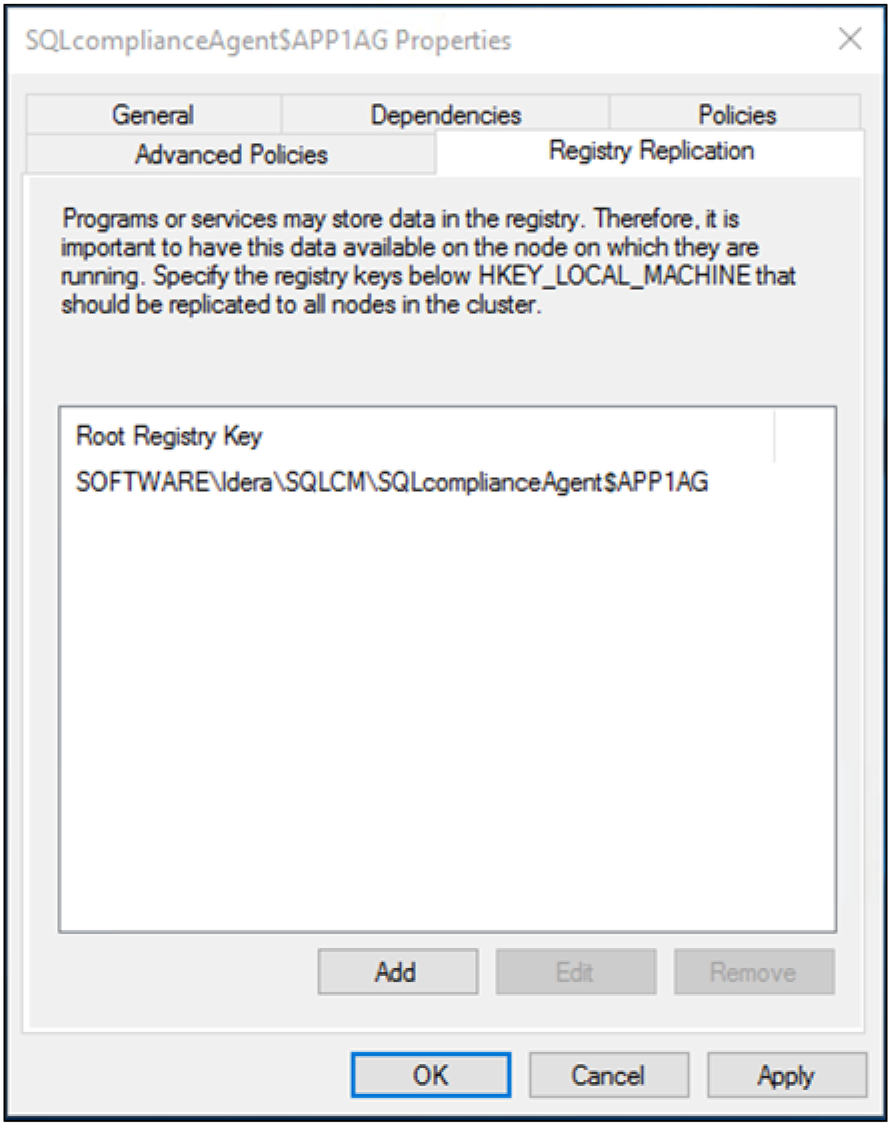
Agent Trace Directory: C:\Program Files\Idera\SQLcompliance\AgentTraceFiles

CLR Trigger Assembly Directory: C:\Program Files\Idera\SQLcompliance\Assemblies

Agent Service Name: SQLcomplianceAgent$APP1AG

Replicated Registry Key: SOFTWARE\Idera\SQLCM\SQLcomplianceAgent$APP1AG

16. Click **OK** and copy the registry key path back into the service properties window**.** The new root registry key appears in the ***Registry Replication*** tab of the Properties window. Click **Apply** and then **OK** to save changes.


SQLcomplianceAgent$APP1AG Properties

Programs or services may store data in the registry. Therefore, it is important to have this data available on the node on which they are running. Specify the registry keys below HKEY_LOCAL_MACHINE that should be replicated to all nodes in the cluster.

| Root Registry Key |
|---|
| SOFTWARE\Idera\SQLCM\SQLcomplianceAgent$APP1AG |

## 3. Register the Availability Group Listener in 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 Availability Group 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 registers the AG Listener as a virtual cluster 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.

   ⓘ 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. SQL Compliance Manager verifies that all the required permissions are in place on the SQL Server instance you want to audit on the Permissions Check page.

10. After all the 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. Finally, SQL Compliance Manager displays the newly-added AlwaysOn Availability Group Listener 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, 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.