

Getting an overview of your Precise for SQL Server application

This section includes the following topics:

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- [About the Main area in the Dashboard tab](#)
- [About the Instance details area in the Dashboard tab](#)
- [How the Dashboard can help you identify performance problems](#)

About the Dashboard tab

The Dashboard tab provides an overview (approx. 70-80%) of the information displayed in other Precise for SQL Server tabs. The Dashboard is the starting point for your Precise analysis since it displays an overview of all the instances available in the selected application and information that is also available in some of the other tabs.

The Dashboard tab displays availability, performance findings, statistics and resource consumption of all SQL Server instances for the selected time period. The Current view in this tab can be used to monitor an instance's current state, display a list of its active sessions, and its resource consumption during the last minute. In addition you can view statistics, resource consumption and top resource consumers, for the selected time frame.

The Dashboard tab also displays information from the SmarTune tab. SmarTune can provide you with expert knowledge regarding a specific area of deterioration, and comprehensive advice on how to solve a specific problem and optimize performance. This is an important tab to begin with if you want to start performance tuning on a database.

The Dashboard tab provides answers to the following types of questions:

- Are all my SQL Server instances up?
- Which instance is consuming the most resources?
- Which program is consuming the most resources for the specified instance and across all instances?
- From what types of performance problems is an instance suffering?

The All row in the All SQL Server Instances table located in the Main area (left pane) displays the average availability of all instances. When you select the All row a summary of the activities of all the instances and a comparison of application identifiers is displayed in the various tab pages viewed in the Instance Details area (right pane).

In general, launching to a tab from the All row focuses in on the Tier entity, which summarizes the data collected for all instances. Tabs that do not have an Tier entity, open on the default instance.



If you are working with SAP, PeopleSoft, or Siebel, and ERP support is installed, the Dashboard tab displays information on SQL Server activity in relation to the ERP application and users, and specific information on executed views and transactions.

See [About Precise for SQL Server tabs](#), [About the Current tab](#), [About the Activity tab](#), [About the Objects tab](#), [About the Statistics tab](#), [About the SQL tab](#), [About the Maintenance tab](#), and [About the SmarTune tab](#).

How the Dashboard tab is structured

The Dashboard tab is divided into two areas—the Main area and the Instance Details area. The Main area lists all the instances that are monitored by the Precise for SQL Server Tier. The Instance Details area provides comparative information regarding the selected instance.

The information displayed in the Dashboard tab is influenced by the time frame you selected. See [Selecting a time frame](#).

About the Main area in the Dashboard tab

The instance table displayed in the Main area lists all the instances that are monitored by the Precise for SQL Server Tier. Each row corresponds to an instance. The All row displays the average availability (%) of all instances. The following table shows the information displayed in the Instance table.

Table 1 Instance table

Column	Description
Icon	Indicates whether or not the instance is available.
Instance	Name of the instance.
In MS-SQL	Breakdown of In MS-SQL duration of the instance.
Executions	Total statements executions.
Availability	Average percentage of time the instance was available.

About the Instance Details area in the Dashboard tab

Clicking on the various tabs in this area allows you to display overall activity, top performance findings, active sessions, current and statistical information for the selected instance. Clicking on the hyperlink for specific data items launches, in context, to the related tab from which the data was derived. See [Configuring Findings settings](#).

The following table describes the information displayed in the Instance Details area.

Table 2 Information displayed in the Instance Details area

Tab	Information Displayed
Overview	The Overview tab displays In MS-SQL data and performance findings for the selected instance.
Applications	The Applications tab displays the top resource-consuming databases, programs and machines.
More	The following options are available in the More tab: - The Statistics tab displays statistical information for the selected instance, as reported by the SQL Server and collected by the Precise for SQL Server Collector. - The Activities tab displays the top resource-consuming statements, logical files and storage devices. - The Availability tab displays the average percentage of time the instance was available, and a detailed log of the changes in availability status. - The Current tab displays the overall activity and active sessions that occurred within the last minute for the selected instance.  The Current tab is not available if All Instances is selected.

 If you select the **All** row, the information displayed reflects the average availability of all instances. The **Current** option and the Findings table will not be available.

About gaining an overview of your system's performance

The Overview tab displays In MS-SQL data and performance findings for the selected instance. You can continue investigating a problem as follows:

- Click In MS-SQL to launch the Activity tab with an instance or Precise for SQL Server Tier context.
- Click Findings or a launch icon in the Findings table to launch to the SmarTune tab with the selected finding in context.

The following table describes the information displayed in the Overview tab.

Table 3 General instance data

General Instance Data	Description
In MS-SQL	Displays a breakdown of the total In MS-SQL duration over time, into states such as, Using CPU, I/O wait, and Lock Wait.
Findings	Lists all the statements, collapsed statements, tables or instance events that were detected for a specific instance. All problems are ranked by severity. The information displayed in the findings table is also displayed in the SmarTune tab.
Details for ... Finding	Provides quick links to additional tabs and views that would be helpful in your analysis of a particular problem.

About observing top resource-consuming entities

The Applications tab displays the top resource-consuming databases, programs and machines. All entities in this display launch the Activity tab, in context of the instance.

The following table describes the information displayed in the Databases table.

Table 4 Database applications

Column	Description
Database	The name of the top resource-consuming databases.
Sessions	Total number of sessions opened.

In MS-SQL	The resource consumption of the database broken down into states such as, Using CPU, I/O wait, Lock wait states. Click on the respective icons to display the data in this column in a stacked graph, bar graph or numerical format.
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The following table describes the information displayed in the Programs table.

Table 5 Program applications

Column	Description
Program	The name of the top resource-consuming programs.
Sessions	Total number of sessions opened.
In MS-SQL	The resource consumption of the program broken down into states such as, Using CPU, I/O wait, Lock wait states. Click on the respective icons to display the data in this column in a stacked graph, bar graph or numerical format.

The following table describes the information displayed in the Machines table.

Table 6 Machine applications

Column	Description
Machine	The name of the top resource-consuming machines.
Sessions	Total number of sessions opened.
In MS-SQL	The resource consumption of the machine broken down into states such as, Using CPU, I/O wait, Lock wait states. Click on the respective icons to display the data in this column in a stacked graph, bar graph or numerical format.

About examining statistics for an instance

The Statistics tab, accessed from the More tab, displays statistical information for the selected instance, as reported by the SQL Server and collected by the Precise for SQL Server Collector.

All items in this display launch the Statistics tab with an Instance or Precise for SQL Server Tier context. The following table describes the information displayed in the Statistics tab.

Table 7 Instance statistical data

Instance Statistical Data	Description
Server CPU	Displays the SQL Server instance CPU utilization for the selected instance with respect to the CPU utilization of other processes (non-SQL Server).
Load	Displays instance load, for the selected instance, broken down into batch requests/sec, transactions/sec, and logins/sec.
Page Faults	Displays memory paging of the selected instance vs. memory paging caused by other processes (non-SQL Server).

About viewing top resource-consuming statements, logical files and storage devices

The Activities tab, accessed from the More tab, displays the top resource-consuming statements, logical files and storage devices.

All entities in this display launch the Activity tab, in context of an instance or Tier. The following table describes the information displayed in the Statements table.

Table 8 Statement activities

Column	Description
Statement	Displays the ID of the top resource-consuming statements.
Duration (Avg)	Displays the average duration of the statement.
In MS-SQL	Displays the resource consumption of the statement broken down into states such as, Using CPU, I/O wait, and Lock wait states. Click on the respective icons to display the data in this column in a stacked graph, bar graph or numerical format.

The following table describes the information displayed in the Logical Files table.

Table 9 Logical files activities

Column	Description
Database	Displays the name of the file's database.
Logical File	Displays the logical name of the file.
I/O Wait	Displays the total I/O waits registered for the file. Click on the respective icons to display the data in this column in a stacked graph, bar graph or numerical format.

The following table describes the information displayed in the Storage Devices table.

 This information is only displayed if storage points are installed.

Table 10 Storage device activities

Column	Description
Device Type	Indicates a type of storage device, such as, Windows, HP, Symmetrix.
Unit ID	Displays the ID of the device's unit.
Device	Displays the name of the device.
I/O Wait	Displays the total I/O waits registered for the device. Click on the respective icons to display the data in this column in a stacked graph, bar graph or numerical format.

About viewing the availability of SQL Server instances

The Availability tab, accessed from the More tab, displays the average percentage of time the SQL Server instance was available (that is, it met the SLA Availability requirements configured in the SLA settings over the specified time period) and a detailed log of the changes in availability status.

All entities in this display launch the Activity tab, in context of the instance or Tier.

The following table describes the information displayed on instance availability.

Table 11 Instance availability

Item	Description
Availability	The average percentage of time the SQL Server instance was available.
Log	A detailed log of the changes in availability status.

About viewing your system's current activity

The Current tab displays the overall activity and active sessions that occurred within the last minute for the selected instance.

All items in this display launch the Current tab, in context of an instance.

The following table describes the information displayed in the Session Activities area.

Table 12 Sessions

Item	Description
Sessions	Total number of sessions connected to the selected instance.
Active sessions	Total number of sessions currently active.
Locked sessions	Total number of locked sessions.

The following table displays information on the active sessions that occurred within the last minute, for the selected instance.

Table 13 Active sessions (last minute)

Column	Description
Icon	Represents the current session's state (such as, Lock Wait, Request Wait).
SPID	The session ID.
Program	The name of the program that opened the session.
State	The current state of the session.
In MS-SQL	Total In MS-SQL entities for the session, occurring within the last minute, broken down into states (such as, Using CPU, I/O wait, and Lock Wait).

The following table describes the information displayed in the Current Activity graphs.

Table 14 Current activity graphs

Item	Description
Overall activity (Last minute)	Provides a graphical display of the overall activity that occurred within the last minute, for the selected instance, broken down into the following states: Idle Wait, Parallel Exchange Wait, Request Wait and In MS-SQL.
In MS-SQL (Last minute)	Provides a graphical display of In MS-SQL activity that occurred within the last minute, for the selected instance, broken down into states, such as, Using CPU, I/O wait, and Lock Wait.

About the Findings area in the Dashboard tab

The Findings area in the Dashboard tab displays performance problems detected in the select instance(s). The findings list is displayed according to severity (highest to lowest).

To view the details of a specific finding, hover over the finding name. The area for the selected finding will expand, displaying information and recommended actions. Click on the relevant link to launch the appropriate tab in context, or [Learn more](#) to open the help for that finding.

For more information about how you can identify specific performance problems, see [How the Dashboard can help you identify performance problems](#).

How the Dashboard can help you identify performance problems

You can identify a performance problem by doing one or more of the following:

- [Identifying the most resource-consuming instance](#)
- [Analyzing top performance findings per instance](#)
- [Identifying the highest resource consumers in various entities](#)
- [Examining instance statistics](#)
- [Monitoring a session's activity during the last minute](#)
- [Checking SQL server instance availability](#)

Identifying the most resource-consuming instance

Precise for SQL Server enables you to determine which are the most resource-consuming instances, indicating a potential performance problem.

To identify the most resource-consuming instance

1. In the Time Frame list, choose the period of time you want to analyze.
2. In the All SQL Server Instances table, observe the total In MS-SQL statistics and statement executions of the instance you want to analyze.
3. Select the row of the instance you want to analyze.
4. In the Instance Details area, on the Overview tab, check the In MS-SQL graph to view its resource consumption, over time, to identify problematic time periods and observe its general resource consumption trend.
5. Check the Findings table to view the top problematic findings per instance.

Analyzing top performance findings per instance

The Dashboard tab helps you pinpoint performance problems by letting you observe the top problematic findings per instance, statement or object. You can then drill down on a finding and continue your analysis in the SmarTune tab, which provides important guidelines and clues as to what may be causing the performance problem.

To analyze top performance findings per instance

1. In the Time Frame list, choose the period of time you want to analyze.
2. In the All SQL Server Instances table, observe the total In MS-SQL statistics and statement executions of the instance you want to analyze.
3. Click on an instance in the All SQL Server Instances table.
4. In the Instance Details area, on the overview tab in the Findings table, observe the top findings for the selected instance. The findings displayed in this table are sorted by severity. Additional information and hot links for the selected findings is displayed in the Details area below the Findings table.
5. In the Type column, click on the link to the instance that you want to analyze further or on the **Findings** link located above the table.

6. In the SmarTune tab observe the data displayed on the finding in the various tables and graphs, and follow the links provided to view additional information on the problem in other tabs. The SmarTune tab also provides details and recommendations on how to solve a problem.

Identifying the highest resource consumers in various entities

Precise for SQL Server enables you to determine which are the most resource-consuming application components (such as, Databases, Programs, and Statements).

To identify the highest resource consumers in various entities

1. In the Time Frame list, choose the period of time you want to analyze.
2. In the All SQL Server Instances table, determine which instance consumes the most resources.
3. Select the row of the instance you want to analyze.
4. In the Instance Details area, on the Applications tab, identify the highest application resource consumers for the selected instance.
5. In the Instance Details area, on the Activities tab, identify the highest activity resource consumers for the selected instance.
6. Launch to the Activity tab to continue the performance tuning process on the selected component.



The entities displayed in the Application tab will differ according to the ERP installed and will take into account that ERP's specific entities. For example, if you have SAP installed, the following types of entities are displayed: Work Types, Logins, SAP Users and Programs, and SAP Transactions.

Examining instance statistics

You can examine instance statistics over time to confirm that CPU and memory usage are within normal ranges. A continually high CPU usage may indicate the need to improve the application or to add more processes to the machine to enhance performance. In addition, a high number of page faults may indicate an inefficient SQL statement or lack of memory.

To examine instance statistics

1. In the Time Frame list, choose the period of time you want to analyze.
2. In the Instance Details area, click **More** and select **Statistics**. Observe CPU usage vs. load (number of transactions, batches and logins) and paging statistics.
3. Launch to the Statistics tab to observe additional instance statistics that can help you locate performance problems in various other aspects of your system, such as I/O and Network statistics.

Monitoring a session's activity during the last minute

Monitoring a session's activity during the last minute in SQL Server, can help you locate activities that deviate from the norm, such as locking and latch waits.

To monitor a session's activity during the last minute

1. In the Instance Details area, click **More**, and select **Current**, observe all active sessions (sessions that executed statements during the last minute) and the In MS-SQL breakdown into states, such as, Using CPU, I/O wait, and Lock wait states.
2. Launch to the Current tab to view additional information on current sessions. For example, if you identify a session suffering from lock wait during the last minute of activity, launch to the Current tab and analyze the locking tree to discover what is locking the session and why.

Checking SQL server instance availability

It is possible to examine the availability of SQL Server instances and observe their current status as well as their level of availability over time. In addition, you can determine whether their level of availability meets the SLA standard defined in the SLA availability setting in AdminPoint.

For more information, see the [Precise Administration Guide](#).

To check SQL Server instance availability

1. In the Time Frame list, choose the period of time you want to analyze.
2. In the All SQL Server Instances table, check the current availability state of the instance you want to analyze. A status icon, located in the first column, shows the current availability of the instance. Move the pointer over the icon to display a ToolTip showing the current status of the instance and the date its status changed.
3. Select the row of the instance you want to analyze. The average availability of the instance is displayed in the Availability column.
4. In the Instance Details area, click **More** and select **Availability**. Check the Availability graph to view the availability of the selected instance with respect to the configured SLA and the log. See [How Precise for SQL Server monitors availability](#).