

Examining Web instance statistics

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About the Statistics tab

The Statistics tab displays statistical information on the behavior of your applications Web instances with respect to the Web server. This statistical information can be used to identify and analyze the cause of a performance problem, especially with respect to the server side. It can also help you make future tuning decisions regarding your Web servers.



This tab is only available if you have server-side collection installed.

How the Statistics tab is structured

The Statistics tab displays information on a specific Tier and its related instances, or on a specific instance and its related performance counters.

When you open the Statistics tab from another tab, you will either be focused on an individual instance, or on the entire Tier (if you selected the ALL row in the Dashboard). The tab is always launched at the instance (or Tier) level, even if the currently selected entity (in another tab) is not an instance or Tier. The selected entity is always reflected in the Tab heading, which serves as a point of orientation.

About the Main area in the Statistics tab

The Main area in the Statistics tab shows comprehensive information on the selected entity. You can choose from several views to examine the entity from different angles. You can for example focus on CPU Utilization, Load, or Memory.

About the Association area in the Statistics tab

The Association area in the Statistics tab provides information on the entities associated with the selected entity (displayed in the Main area). For example, when you view Tier information, the Association area displays the information for the instances belonging to that Tier.

From the Association area, you can also drill down to another entity by clicking a row in the table. A drill-down affects the whole tab.

When you drill down to another entity, the following are displayed:

- The Tab heading displays the new selection
- The Association area displays the statistics counters that were collected for the selected instance

The Association area displays all the Performance counters collected for the selected instance. The table displays the performance counter name and value. This list can differ to reflect the specific information relevant to your systems configuration type.



To gain a better understanding of the processes involved and better tune and improve your Web server's performance, see the counters explanation provided by your specific Web servers documentation.

From the Association area, you can click the row for the performance counter to view detailed information for the selected counter. The Tab heading indicates the newly selected entity, and the Main area displays an overtime graph for the performance counter you drilled down to.

About the entities you can examine

The Statistics tab displays information on different entities. This section provides an overview of all entities, their meaning, and views.

The following entities are available in the Statistics tab:

- [About the Tier entity](#)
- [About the Instance entity](#)
- [About the Performance Counter entity](#)

About the Tier entity

The Statistics tab, when launched from the Dashboard tab with the All row in the All Instances table selected, opens with information on the Tier level. The Tier entity displays information regarding the load of the Tier. For this entity, the Load view is the only available view.

The Load view displays the following graphs:

- **Requests.** Displays the amount of Web server requests logged within the selected time frame.
- **Concurrent Connections.** Displays the current number of connections to the service within the selected time frame. You can associate an Tier with instances.

The table below describes the information that is displayed in the table, in the Association area, for instances associated with the Tier.

Table 1 Association area table information

| Column | Description |
|------------------------|---|
| Instances | Name of an instance (as configured during the Installation procedure). |
| Server | Name of the server where the instance is installed. |
| Requests | Total number of HTTP requests logged for the instance within the selected time frame. |
| Concurrent Connections | Number of current connections to the service. This is the sum of both non-anonymous (authenticated) and anonymous (unauthenticated) users. If this number has reached or is approaching the maximum number of allowed connections, the Web service is running at full capacity. |
| Memory | Amount of virtual address space reserved by the Web server process. |
| Page Faults | Number of times a virtual page was not found in memory. |
| CPU Utilization | The time spent, in percentage, processing threads by all CPUs. |
| Cache Hit Ratio | The percentage of total requests that were serviced form the Web server output cache. |



These column headings are derived from counter names. To gain a better understanding of the processes involved and to better tune and improve your Web server's performance, see the counters explanation provided by your specific Web server's documentation.

About the Instance entity

You can view Instance level information by performing any of the following options:

- In the Association area of the Statistics tab, drill down to a specific instance by clicking the relevant table row.
- In another tab, drill down to a specific instance and click **Statistics** on the Precise Tab Selection bar.
- In the All Instances table of the Dashboard tab, select an instance and click **Statistics** on the Precise Tab Selection bar.

The Instance entity displays information on the most important performance counters. The Instance entity provides the following views:

- [About the overview for an instance](#)
- [About CPU utilization for an instance](#)
- [About instance memory information](#)
- [About instance load information](#)

The Association area displays all performance counters collected for the selected instance. The table displays the name and value for each performance counter. The listed counters can differ to reflect the specific information relevant to your systems configuration type.



To gain a better understanding of the processes involved and better tune and improve your Web server's performance, see the counters explanation provided by your specific Web servers documentation.

About the overview for an instance

In a bar graph, the Overview displays request counter data within the selected time frame and information regarding common statistical counters collected for the selected instance.

The table below describes the relevant counters

Table 2 Common statistical counters

| Counter | Description |
|-----------------|--|
| CPU Utilization | The percentage of time spent processing threads by all CPUs. |

| | |
|------------------------|---|
| Memory | The amount of virtual address space reserved by the Web server process. |
| Page Faults | The number of times a virtual page was not found in memory. |
| Access Count | The total amount of HTTP requests logged for the instance within the selected time frame. |
| Concurrent Connections | The number of current connections to the service. This is the sum of both non-anonymous (authenticated) and anonymous (unauthenticated) users. If this number has reached or is approaching the maximum number of connections allowed, the Web service is running at full capacity. |
| Cache Hit Ratio | The percentage of total requests that were serviced from the Web server output cache. |

About CPU utilization for an instance

In a bar graph, the CPU Utilization view displays CPU Utilization counter behavior for the selected instance within the selected time frame.

About instance memory information

The Memory view displays the following bar graphs:

- **Web Server Memory.** Memory counter behavior for the selected instance within the selected time frame.
- **Page Faults.** Page Faults counter behavior for the selected instance within the selected time frame.

About instance load information

The Load view displays the following bar graphs:

- **Access Count.** Requests counter behavior for the selected instance within the selected time frame.
- **Concurrent Connections.** Concurrent Connections counter behavior for the selected instance within the selected time frame.

About the Performance Counter entity

In a bar graph, the Performance Counter entity displays the behavior of a particular performance counter over time, such as: TotalProcessTime, ProcessMemory, or PageFaultCount.

How the Statistics tab can help you identify performance problems

The Statistics tab provides many performance counters grouped into several predefined graphs that display related counters that enable you to locate performance problems in your system.

The View control drop-down menu, in the Main area, lets you choose different view options for your selections. You can identify a performance problem by doing one or more of the following:

- [Examining memory statistics](#)
- [Examining CPU utilization statistics](#)
- [Examining load](#)

Examining memory statistics

You can examine a Web instance within a selected time frame to confirm that memory usage falls within the normal range and that no processes are lacking or consuming too much memory. Lack of memory or a high memory consumption rate can cause paging. A page fault occurs when a process requires code or data that is not in its working set (its space in physical memory), thereby causing the page to be retrieved from the disk and written to the physical memory. If there is not enough space in the physical memory, a chosen page needs to be written to the disk to free space.

To examine memory statistics

1. In the Time Frame list, choose the period of time you want to analyze.
2. On the View controls in the Main area, click **Overview** and analyze the graph for requests to determine whether paging is the source of the performance problems.
If you conclude that excessive paging is the source of the performance problems, examine the amount of memory allocated to the Web server and reduce it, if necessary.
3. On the View controls in the Main area, click **Memory**.
4. In the Association area, drill down to the available pages and performance counters to analyze memory usage.

Examining CPU utilization statistics

You can examine a Web server instance within a selected time frame to confirm that CPU usage falls within the normal range. High CPU usage may indicate the need to enhance performance. Low CPU usage may indicate a shortage of processing power.

To examine CPU utilization statistics

1. In the Time Frame list, choose the period of time you want to analyze.
2. On the View controls in the Main area, click **Overview** and analyze the graph to determine whether CPU usage is the source of the performance problems.
If you conclude that high CPU usage is the source of the performance problems, consider adding more CPU or tuning the application in the Activity tab.
3. On the View controls in the Main area, click **CPU Utilization**.
Examine the graph to determine whether a high level of CPU utilization is causing processor bottlenecks.
4. On the Association controls in the Association area, click a counter and check the results.

Examining load

You can examine Web load activity and performance within a selected time frame. A high load may indicate the need to distribute the work activity to enhance performance.

To examine load

1. In the Time Frame list, choose the period of time you want to analyze.
2. On the View controls in the Main area, click **Overview** and analyze the graphs to determine whether excessive load is the source of the performance problems.
3. On the View controls in the Main area, click **Load**.
The Load view displays requests and concurrent connections. Compare these graphs to determine where most of the activity is being generated.
4. On the Association controls in the Association area, click a counter and check the results.