Operations Manager Guide

Administer and Monitor from One Console
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This Patent is patented. One or more of the following patents may apply to the product sold herein: U.S. Patent Nos. 5,321,520, 5,416,602, 5,748,560, 6,154,766, 6,173,310, 6,266,050, 6,263,031, 6,269,933, 6,279,033, 6,501,832, 6,597,796, 6,597,547, 6,606,596, 6,658,093, 6,658,432, 6,662,825, 6,671,715, 6,681,100, 6,694,416, 6,697,808, 6,704,723, 6,707,898, 6,741,980, 6,765,997, 6,788,788, 6,788,786, 6,829,086, 6,829,087, 6,829,088, 6,829,334, 6,830,537, 6,830,603, 6,840,798, 6,873,993, 6,885,734, 6,888,299, 6,892,984, 6,949,925, 6,964,012, 6,977,992, 6,996,599, 6,996,599, 7,003,512, 7,010,518, 7,020,486, 7,020,251, 7,039,165, 7,082,422, 7,143,474, 7,143,473, 7,127,403, 7,174,349, 7,181,417, 7,194,457, 7,197,481, 7,228,305, 7,226,181, 7,272,242, 7,272,242, 7,302,693, 7,324,947, 7,339,847, 7,340,040, 7,350,759, 7,355,728, 7,384,708, 7,428,923, 7,459,598, 7,459,598, 7,459,598, 7,475,921, 7,488,181, 7,508,671, 7,539,048, 7,547,370, 7,672,701, 7,752,811, 7,801,997, 7,836,178, 7,861,161, 7,861,253, 7,881,443, 7,925,565, 7,945,584, 7,970,782, 8,005,870, 8,035,382, 8,051,399, 8,094,788, 8,109,918, 8,296,287, 8,324,418, 8,452,775, 8,521,733, 8,522,192, 8,577,902, 8,606,813, 8,607,138, 8,645,313, 8,761,699, 8,775,807, 8,782,083, 8,812,490, 8,825,588, 8,943,044, and 8,945,187. Other patent applications are pending.

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OVERVIEW AND ADDITIONAL RESOURCES

Description of this guide

This guide provides instructions for managing, monitoring, and setting alerts for all of your MicroStrategy systems from one console called MicroStrategy Operations Manager. It also gives instructions for setting up and using Enterprise Manager to analyze your MicroStrategy system usage.

• Chapter 1, Getting Started with MicroStrategy Operations Manager

  Operations Manager is a console that offers you much information about your system. This chapter introduces you to the console and its pages and provides steps for viewing the overall health of your environments, viewing details about environments, and configuring what information displays on the console.

• Chapter 2, Defining Servers, Environments, and Groups

  In Operations Manager, servers make up environments, which make up groups. These allow you to manage and monitor your system at different levels—from a high level with groups, down to a detailed level with servers. This chapter provides steps for defining which servers compose your
environments, which environments compose your groups, and how you can monitor and manage the components of each.

- **Chapter 3, Configuring Counters and Alerts**
  You can view information about your MicroStrategy components at any time with Operations Manager. However, you have better things to do with your time than watching the performance of those systems. If you want to be informed when certain usage or resource thresholds are crossed, you can configure counters and alerts in Operations Manager. This chapter explains what alerts and counters you can enable and provides steps for configuring them.

- **Chapter 4, Monitoring your MicroStrategy System**
  Operations Manager provides many details about each environment in your MicroStrategy system. This chapter introduces you to environment-level alerts; heartbeat monitors for usage, memory, and processing information; and real-time system monitors you can use. It provides steps for accessing and configuring these and for managing the items they monitor.

- **Chapter 5, Analyzing System Usage with Enterprise Manager**
  Enterprise Manager provides insights about governing and tuning all areas of your MicroStrategy environment. It provides a historical overview of system usage. This chapter introduces you to Enterprise Manager, provides best practices, and shows you how to install and configure Enterprise Manager. It also describes how to analyze statistics and generate usage reports with Enterprise Manager.

  Detailed table and column information about the statistics repository and Enterprise Manager warehouse is in the *Supplemental Reference for System Administration*.

## About this book

The following sections provide the location of examples, list prerequisites for using this book, and describe the user roles the information in this book was designed for.

- Dates in the MicroStrategy Tutorial project are updated to reflect the current year. The sample documents and images in this guide, as well as the procedures, were created with dates that may no longer be available in the Tutorial project. Replace them with the first year of data in your Tutorial project.
How to find business scenarios and examples

Some of the concepts discussed in this guide are accompanied by business scenarios or other descriptive examples. Many of the examples use the MicroStrategy Tutorial, which is MicroStrategy’s sample warehouse, metadata, and project. Information about the MicroStrategy Tutorial can be found in the MicroStrategy Basic Reporting Guide.

Detailed examples of advanced reporting functionality can be found in the MicroStrategy Advanced Reporting Guide.

What’s new in this guide

MicroStrategy 10

- This guide is new for this release.
- Enterprise Manager data load processes can be configured and scheduled from Operations Manager. The chapter explaining Enterprise Manager was updated and moved from the MicroStrategy System Administration Guide to this guide. See Chapter 5, Analyzing System Usage with Enterprise Manager.

Prerequisites

Before working with this document, you should be familiar with the information in the MicroStrategy System Administration Guide.

Who should use this guide

This document is designed for:

- System administrators responsible for monitoring and maintaining the MicroStrategy business intelligence system
- Network administrators who may need to configure network connections between the system’s components

Education

MicroStrategy Education Services provides a comprehensive curriculum and highly skilled education consultants. Many customers and partners from over 800 different organizations have benefited from MicroStrategy instruction.
Courses that can help you prepare for using this manual or that address some of the information in this manual include:

- Implementing MicroStrategy: Development and Deployment
- MicroStrategy Administration

For the most up-to-date and detailed description of education offerings and course curricula, visit http://www.microstrategy.com/Education.

Resources

Documentation

MicroStrategy provides both manuals and online help; these two information sources provide different types of information, as described below:

- **Manuals**: In general, MicroStrategy manuals provide:
  - Introductory information and concepts
  - Examples and images
  - Checklists and high-level procedures to get started

  The steps to access the manuals are described in *Accessing manuals and other documentation sources, page xiv.*

  Most of these manuals are also available printed in a bound, soft cover format. To purchase printed manuals, contact your MicroStrategy Account Executive with a purchase order number.

- **Help**: In general, MicroStrategy help provides:
  - Detailed steps to perform procedures
  - Descriptions of each option on every software screen

Translations

For the most up-to-date translations of MicroStrategy documentation, refer to the MicroStrategy Knowledge Base. Due to translation time, manuals in languages other than English may contain information that is one or more releases behind. You can see the version number on the title page of each manual.
Finding information

You can search all MicroStrategy books and Help for a word or phrase, with a simple Google™ search at http://www.google.com. For example, type “MicroStrategy derived metric” or “MicroStrategy logical table” into a Google search. As described above, books typically describe general concepts and examples; Help typically provides detailed steps and screen options. To limit your search to MicroStrategy books, on Google’s main page you can click More, then select Books.

Additional formats

MicroStrategy manuals are available as electronic publications, downloadable on the Apple iBookstore or Google Play, and can be read on your iOS or Android device respectively. To download a book, search for the book’s title in the iBookstore or Google Play respectively. To view a list of manuals that are currently available, scan the following QR codes using your device’s camera:

For iOS devices, scan the following QR code:

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For new MicroStrategy releases, it may take several days for the latest manuals to be available on the iBookstore or Google Play.

Manuals for MicroStrategy overview and evaluation

- Introduction to MicroStrategy: Evaluation Guide
Instructions for installing, configuring, and using the MicroStrategy Evaluation Edition of the software. This guide also includes a detailed, step-by-step evaluation process of MicroStrategy features, where you perform reporting with the MicroStrategy Tutorial project and its sample business data.

  Overview of the installation and evaluation process, and additional resources.

- **MicroStrategy Suite: Quick Start Guide**
  Evaluate MicroStrategy as a departmental solution. Provides detailed information to download, install, configure, and use the MicroStrategy Suite.

**Resources for Identity and Loyalty**

- **Alert Commerce Management System (CMS) Guide and Alert API Reference**
  Content resources providing steps to deliver and manage marketing and commerce content through the Alert mobile applications.

- **Usher Administration Guide**
  Steps to perform mobile identity validation using the Usher mobile identity network to issue electronic badges for identifying users.

**Manuals for query, reporting, and analysis**

- **MicroStrategy Installation and Configuration Guide**
  Information to install and configure MicroStrategy products on Windows, UNIX, Linux, and HP platforms, as well as basic maintenance guidelines.

- **MicroStrategy Upgrade Guide**
  Instructions to upgrade existing MicroStrategy products.

- **MicroStrategy Project Design Guide**
  Information to create and modify MicroStrategy projects, and understand facts, attributes, hierarchies, transformations, advanced schemas, and project optimization.

- **MicroStrategy Basic Reporting Guide**
  Instructions to get started with MicroStrategy Developer and MicroStrategy Web, and how to analyze data in a report. Includes the basics for creating reports, metrics, filters, and prompts.
• **MicroStrategy Advanced Reporting Guide: Enhancing Your Business Intelligence Application**

Instructions for advanced topics in the MicroStrategy system, building on information in the Basic Reporting Guide. Topics include reports, Freeform SQL reports, Query Builder reports, filters, metrics, Data Mining Services, custom groups, consolidations, and prompts.

• **Document and Dashboard Analysis Guide**

Instructions for a business analyst to execute and analyze a document in MicroStrategy Developer and MicroStrategy Web, building on basic concepts about projects and reports presented in the *MicroStrategy Basic Reporting Guide*.

• **MicroStrategy Report Services Document Creation Guide: Creating Boardroom Quality Documents**

Instructions to design and create Report Services documents, building on information in the *Document and Dashboard Analysis Guide*. It is organized to help guide you through creating a new document, from creating the document itself, to adding objects to the new document, and formatting the document and its objects.

• **MicroStrategy Dashboards and Widgets Creation Guide: Creating Interactive Dashboards for your Data**

Instructions for designing and creating MicroStrategy Report Services dashboards, a type of document that is optimized for viewing online and for user interactivity. It builds on the basic concepts about documents presented in the *MicroStrategy Report Services Document Creation Guide*.

• **MicroStrategy OLAP Services Guide**

Information on MicroStrategy OLAP Services, which is an extension of MicroStrategy Intelligence Server. OLAP Services features include Intelligent Cubes, derived metrics, derived elements, dynamic aggregation, view filters, and dynamic sourcing.

• **MicroStrategy Office User Guide**

Instructions for using MicroStrategy Office to work with MicroStrategy reports and documents in Microsoft® Excel, PowerPoint, and Word, to analyze, format, and distribute business data.

• **MicroStrategy Mobile Analysis Guide: Analyzing Data with MicroStrategy Mobile**

Information and instructions for using MicroStrategy Mobile to view and analyze data, and perform other business tasks with MicroStrategy reports and documents on a mobile device.
• **MicroStrategy Mobile Design and Administration Guide: A Platform for Mobile Intelligence**

Information and instructions to install and configure MicroStrategy Mobile, as well as instructions for a designer working in MicroStrategy Developer or MicroStrategy Web to create effective reports and documents for use with MicroStrategy Mobile.

• **MicroStrategy System Administration Guide: Tuning, Monitoring, and Troubleshooting your MicroStrategy Business Intelligence System**

Concepts and high-level steps to implement, deploy, maintain, tune, and troubleshoot a MicroStrategy business intelligence system.

• **MicroStrategy Supplemental Reference for System Administration: VLDB Properties, Internationalization, User Privileges, and other Supplemental Information for Administrators**

Information and instructions for MicroStrategy administrative tasks such as configuring VLDB properties and defining data and metadata internationalization, and reference material for other administrative tasks.

• **MicroStrategy Functions Reference**

Function syntax and formula components; instructions to use functions in metrics, filters, attribute forms; examples of functions in business scenarios.

• **MicroStrategy MDX Cube Reporting Guide**

Information to integrate MicroStrategy with MDX cube sources. You can integrate data from MDX cube sources into your MicroStrategy projects and applications.

**Manuals for Analytics Modules**

• **Analytics Modules Installation and Porting Guide**

• **Customer Analysis Module Reference**

• **Sales Force Analysis Module Reference**

• **Financial Reporting Analysis Module Reference**

• **Sales and Distribution Analysis Module Reference**

• **Human Resources Analysis Module Reference**

**Manuals for Narrowcast Services products**

• **MicroStrategy Narrowcast Server Getting Started Guide**
Instructions to work with the tutorial to learn Narrowcast Server interfaces and features.

- **MicroStrategy Narrowcast Server Installation and Configuration Guide**
  Information to install and configure Narrowcast Server.

- **MicroStrategy Narrowcast Server Application Designer Guide**
  Fundamentals of designing Narrowcast Server applications.

- **MicroStrategy Narrowcast Server System Administrator Guide**
  Concepts and high-level steps to implement, maintain, tune, and troubleshoot Narrowcast Server.

- **MicroStrategy Narrowcast Server Upgrade Guide**
  Instructions to upgrade an existing Narrowcast Server.

**Software Development Kits**

- **MicroStrategy Developer Library (MSDL)**
  Information to understand the MicroStrategy SDK, including details about architecture, object models, customization scenarios, code samples, and so on.

- **MicroStrategy Web SDK**
  The Web SDK is available in the MicroStrategy Developer Library, which is part of the MicroStrategy SDK.

- **Narrowcast Server SDK Guide**
  Instructions to customize Narrowcast Server functionality, integrate Narrowcast Server with other systems, and embed Narrowcast Server functionality within other applications. Documents the Narrowcast Server Delivery Engine and Subscription Portal APIs, and the Narrowcast Server SPI.

**Documentation for MicroStrategy Portlets**

- **Enterprise Portal Integration Help**
  Information to help you implement and deploy MicroStrategy BI within your enterprise portal, including instructions for installing and configuring out-of-the-box MicroStrategy Portlets for several major enterprise portal servers.
This resource can be accessed from the MicroStrategy Product Manuals page, as described in *Accessing manuals and other documentation sources*, page xiv.

**Documentation for MicroStrategy GIS Connectors**

- *GIS Integration Help*

  Information to help you integrate MicroStrategy with Geospatial Information Systems (GIS), including specific examples for integrating with various third-party mapping services.

  This resource can be accessed from the MicroStrategy Product Manuals page, as described in *Accessing manuals and other documentation sources*, page xiv.

**Help**

Each MicroStrategy product includes an integrated help system to complement the various interfaces of the product as well as the tasks that can be accomplished using the product.

Some of the MicroStrategy help systems require a web browser to be viewed. For supported web browsers, see the MicroStrategy Readme.

MicroStrategy provides several ways to access help:

- **Help button:** Use the Help button or ? (question mark) icon on most software windows to see help for that window.

- **Help menu:** From the Help menu or link at the top of any screen, select MicroStrategy Help to see the table of contents, the Search field, and the index for the help system.

- **F1 key:** Press F1 to see context-sensitive help that describes each option in the software window you are currently viewing.

  For MicroStrategy Web, MicroStrategy Web Administrator, and MicroStrategy Mobile Server, pressing the F1 key opens the context-sensitive help for the web browser you are using to access these MicroStrategy interfaces. Use the Help menu or ? (question mark) icon to access help for these MicroStrategy interfaces.

**Accessing manuals and other documentation sources**

The manuals are available from [http://www.microstrategy.com/producthelp](http://www.microstrategy.com/producthelp), as well as from the machine where MicroStrategy was installed.
Adobe Acrobat Reader is required to view these manuals. If you do not have Acrobat Reader installed on your computer, you can download it from http://get.adobe.com/reader/.

The best place for all users to begin is with the MicroStrategy Basic Reporting Guide.

To access the installed manuals and other documentation sources, see the following procedures:

- To access documentation resources from any location, page xv
- To access documentation resources on Windows, page xv
- To access documentation resources on UNIX and Linux, page xv

## To access documentation resources from any location


## To access documentation resources on Windows

1. From the Windows Start menu, choose Programs (or All Programs), MicroStrategy Documentation, then Product Manuals. A page opens in your browser showing a list of available manuals in PDF format and other documentation sources.

2. Click the link for the desired manual or other documentation source.

3. If you click the link for the Narrowcast Services SDK Guide, a File Download dialog box opens. This documentation resource must be downloaded. Select Open this file from its current location, and click OK.

If bookmarks are not visible on the left side of an Acrobat (PDF) manual, from the View menu click Bookmarks and Page. This step varies slightly depending on your version of Adobe Acrobat Reader.

## To access documentation resources on UNIX and Linux

1. Within your UNIX or Linux machine, navigate to the directory where you installed MicroStrategy. The default location is /opt/MicroStrategy, or $HOME/MicroStrategy/install if you do not have write access to /opt/MicroStrategy.
2 From the MicroStrategy installation directory, open the Help folder.

3 Open the Product_Manuals.htm file in a web browser. A page opens in your browser showing a list of available manuals in PDF format and other documentation sources.

4 Click the link for the desired manual or other documentation source.

5 If you click the link for the Narrowcast Services SDK Guide, a File Download dialog box opens. This documentation resource must be downloaded. Select Open this file from its current location, and click OK.

If bookmarks are not visible on the left side of an Acrobat (PDF) manual, from the View menu click Bookmarks and Page. This step varies slightly depending on your version of Adobe Acrobat Reader.

Documentation standards

MicroStrategy online help and PDF manuals (available both online and in printed format) use standards to help you identify certain types of content. The following table lists these standards.

These standards may differ depending on the language of this manual; some languages have rules that supersede the table below.

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<td>• Names of other product manuals and documentation resources</td>
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<td>• Code samples</td>
</tr>
<tr>
<td></td>
<td>• Registry keys</td>
</tr>
<tr>
<td></td>
<td>• Path and file names</td>
</tr>
<tr>
<td></td>
<td>• URLs</td>
</tr>
<tr>
<td></td>
<td>• Messages displayed in the screen</td>
</tr>
<tr>
<td></td>
<td>• Text to be entered by the user</td>
</tr>
<tr>
<td></td>
<td>Example: <strong>Sum(revenue)/number of months</strong>.</td>
</tr>
<tr>
<td>Type</td>
<td>Indicates</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
</tr>
<tr>
<td></td>
<td>Example: Type <code>cmdmgr -f scriptfile.scp</code> and press <strong>Enter</strong>.</td>
</tr>
<tr>
<td>+</td>
<td>A keyboard command that calls for the use of more than one key (for example, <strong>SHIFT+F1</strong>).</td>
</tr>
<tr>
<td>🔄</td>
<td>A note icon indicates helpful information for specific situations.</td>
</tr>
<tr>
<td>🔴</td>
<td>A warning icon alerts you to important information such as potential security risks; these should be read before continuing.</td>
</tr>
</tbody>
</table>
GETTING STARTED WITH MICROSTRATEGY OPERATIONS MANAGER

Introduction

MicroStrategy Operations Manager is a web-based administrative tool that allows you to view and monitor all of your MicroStrategy environments in one place. Operations Manager allows you to define thresholds for system usage and performance, and you can have the system send alerts when those thresholds are met or exceeded. Operations Manager presents key usage and performance information using graphs and charts so you can quickly and easily see the overall health of an environment. Operations Manager collects information from the Health Center system in each of your environments. For more information on Health Center, see the MicroStrategy System Administration Guide.

To learn about what you must do before using Operations Manager and the high-level capabilities of Operations Manager, see the following:

- Preparing to use Operations Manager, page 2
- Accessing Operations Manager, page 3
- Viewing the overall health of your environments: Landing page, page 4
• **Viewing detailed information about an environment:** *Environment Details page, page 8*

• **Configuring Operations Manager,** page 8

---

**Preparing to use Operations Manager**

Before you can access Operations Manager, it must be deployed in your system. For prerequisites, considerations, and instructions, see the *MicroStrategy Installation and Configuration Guide*. Operations Manager does not need to be installed on the same machine as the MicroStrategy Intelligence Server or Web server.

After Operations Manager is deployed, use the Configuration Wizard to make the Operations Manager machine the Master Health Agent. If Operations Manager is installed on a separate machine, configure both the Web server and MicroStrategy Intelligence Server as Health Agents and the Operations Manager machine as the Master Health Agent. For steps on configuring a machine as a Health Agent or a Master Health Agent, see the *MicroStrategy System Administration Guide*.

For any user that administers or monitors Operations Manager, assign the needed access and privileges:

• For the user, assign Monitoring access to the Server Configuration Object.

1  In MicroStrategy Developer, from the **Administration** menu, point to **Server** and then select **Configure MicroStrategy Intelligence Server**.

2  In the Server Definition, General category, in the Properties area next to Set Configuration object properties, click **Modify**. The Properties dialog box opens.

3  In the Properties list on the left, click **Security**.

4  For any user who will be monitoring Operations Manager, click the Object column and from the drop-down list, select **Monitoring**. You may have to add the user's name.

5  Click **OK** twice.

• Assign the user the privilege of **Server Performance Counter Monitoring** (in the Administrator category).

• Assign the user the privilege of **Administer operation manager** or **Monitor operation manager** in the Operations Manager category. Granting the Operations Manager privileges automatically grants all other privileges.
needed. For steps to assign privileges, see the *MicroStrategy System Administration Guide.*

## Accessing Operations Manager

You access MicroStrategy Operations Manager through your web browser.

### To log in to Operations Manager

1. In your web browser, go to one of the following, according to the type of application server you are using for Operations Manager:
   - JSP.
     
       http://server:port/MicroStrategyOM/servlet/mstrOM
   - ASP.
     
       http://server:port/MicroStrategyOM/asp

   where `server:port` are the machine name and port number where Operations Manager is installed and accessible.

2. On the Connect to Environment page, type your MicroStrategy user name and password in the fields provided.

   If the credentials for all the environments are not the same, when you complete the login process, Operations Manager will be connected to those environments whose credentials match what you enter here. You will need to individually connect to all other environments. See *Connecting to or disconnecting from an environment, page 4.*

3. Select whether to log in using **Standard** or **LDAP** authentication. For information on integrating LDAP with MicroStrategy, see the *MicroStrategy System Administration Guide.*

4. Click **Login.** The Landing page of Operations Manager is displayed.

   The Operations Manager session does not expire, regardless of how long you leave the session idle, until you log out of the session or the system is shut down.
Viewing the overall health of your environments: Landing page

The Landing Page is the main Operations Manager page where you can view basic information about each of your environments and servers. You can access the Operations Manager configuration page and each environment’s Environment Details page.

To access the Landing page from anywhere in Operations Manager, click **Operations Manager** at the top left.

The landing page displays all of your Operations Manager environments, sorted by group. To expand an environment so you can view all the servers in it, click the triangle next to the environment’s name. The icon next to each server indicates what kind of server it is:

- 🛠️ The server is an Intelligence Server
- 🌐 The server is a Web Server
- ☑️ The server is a Mobile Server

**Searching for a server**

To search for a server, begin typing the server name in the search box. As you type, the screen refreshes to display the servers that match what you type.

**Connecting to or disconnecting from an environment**

When you point to an environment, the background of the environment row turns blue, and one of these icons displays to the left of the environment name:
• Indicates that the environment is connected to Operations Manager. Click to disconnect the environment.

• Indicates that the environment is disconnected from Operations Manager. Click to connect the environment, then enter the environment credentials in the Environment Login dialog box that displays.

**Displaying counters**

This page displays counters that indicate the overall health of your servers. To change the displayed counters, click the View icon.

For a list of counters, see *List of counters, page 6*.

For steps on changing which counters are displayed, see *Changing the displayed counters, page 6*.

For steps on setting the thresholds for counters, see *Configuring thresholds for counters, page 24*.

**Hiding information on the Landing page**

To hide groups or unconnected environments, or to view information about Enterprise Manager, click the View icon.

**Refreshing groups and environments**

To refresh the information about the groups and environments on the Landing page, click the Refresh icon. This does not refresh the counters.

**Monitoring environments**

To monitor the details for an environment, click the environment name. The Environment Details for that environment are displayed. For more information about the Environment Details, see *Viewing detailed information about an environment: Environment Details page, page 8*.

**Managing Operations Manager configuration**

To manage your Operations Manager configuration, at the upper right of the Landing Page, click the Configuration icon. The Configuration page is displayed, at the Environment Configuration page. For more information about the Configuration page, see *Configuring Operations Manager, page 8*. 
Changing the displayed counters

The Landing page displays counters for each environment and server. These counters provide basic information about the health of your servers. You can change which counters display on the Landing page.

To change the counters displayed on the Landing page

1. In Operations Manager, on the Landing page, click the View icon. The View menu is displayed.
2. Click Counters. A list of counters is displayed.
3. To turn a counter on or off, click the counter’s name. Counters are added or removed from the Landing page as you click them.
4. When you are finished changing the counters, click anywhere outside the View menu. The menu closes.

List of counters

The following counters can be displayed on the Operations Manager Landing page.

<table>
<thead>
<tr>
<th>Counter name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Status</td>
<td>The status of the server: Running, Starting, Stopping, Stopped, or Unknown.</td>
</tr>
<tr>
<td>Up Time</td>
<td>The percentage of time the server has been up over the past 24 hours.</td>
</tr>
<tr>
<td>Alerts</td>
<td>The total number of unread alerts for the environment or server. A value displays for this counter at both the environment level and the server level. At the environment level, the value is equal to the sum of the values for all the servers in the environment.</td>
</tr>
<tr>
<td>Machine Memory Used</td>
<td>The real-time memory usage, displayed in graph format.</td>
</tr>
<tr>
<td>Machine CPU Used</td>
<td>The real-time CPU usage on the server, displayed in graph format.</td>
</tr>
<tr>
<td>I-Server Memory Used</td>
<td>The real-time memory used by the Intelligence Server, displayed in graph format.</td>
</tr>
<tr>
<td>I-Server CPU Used</td>
<td>The real-time CPU usage by the Intelligence Server, displayed in graph format.</td>
</tr>
<tr>
<td>Open Sessions</td>
<td>The total number of open sessions for the environment. A value displays for this counter at both the environment level and the server level. At the environment level, the value is equal to the sum of the values for all the servers in the environment.</td>
</tr>
<tr>
<td>Disk I/O bytes</td>
<td>Real-time rate of disk read and write in bytes per second. This is hidden by default.</td>
</tr>
<tr>
<td>Memory Pages I/O</td>
<td>Real-time number of pages swapped in and out of memory. This is hidden by default.</td>
</tr>
<tr>
<td>Network I/O</td>
<td>Real-time rate of network read and write in bytes per second.</td>
</tr>
<tr>
<td>Disk I/O Operation</td>
<td>Real-time total number of in and out operations per second. This is hidden by default.</td>
</tr>
</tbody>
</table>
For the Network I/O counter to display information, a simple network management protocol (SNMP) service agent must be configured and enabled. For instructions, see the third-party SNMP documentation.

At the server level, the Machine Memory Used, Machine CPU Used, I-Server Memory Used, and I-Server CPU Used display as line graphs in one of the following colors:

- **Red**: Indicates that the usage is at a critical level.
- **Orange**: Indicates that the usage is at an acceptable level.
- **Green**: Indicates that the usage is at an excellent level.

Each line graph represents the memory usage over the past minute, with updates every five seconds. To see the average percentage of memory usage for one of these counters, point to the line graph. The average usage displays in a tooltip, as shown below:

At the environment level, memory usage displays as one of the following:

- **Red dot**: Indicates that the usage for at least one server in the environment is at a critical level.

- **Orange dot**: Indicates that the usage for at least one server in the environment is at an acceptable level; all other servers are at either an acceptable level or an excellent level.

- **Green dot**: Indicates that usage for all servers in the environment are at an excellent level.

The memory usage thresholds are configurable. For steps, see *Configuring thresholds for counters, page 24*
If there is a problem with any one of the servers in an environment, an information icon displays in the usage columns of the environment row. Point to the icon for details.

**Viewing detailed information about an environment: Environment Details page**

The Environment Details page displays the operations details for one environment. Each environment can have one Intelligence server or one Intelligence Server cluster, and multiple Web and Mobile Servers.

To view the Environment Details for an environment, on the Landing page, right-click the environment’s name, then click one of the following.

- **Alerts**: Displays the alerts inbox for an environment. You can sort alerts by date, or group by machine. You can also view alerts for just one server. For additional information about the Alerts page, see *Viewing alerts for an environment: Alerts Inbox, page 50*.

- **Heartbeat**: Displays server usage information in graphical format. For additional information about the Heartbeat page, see *Viewing the overall health of an environment: Heartbeat, page 52*.

- **Monitors**: Displays the various monitors for the environment. For additional information about the Monitors page, see *Monitoring environment activity: Monitors, page 56*.

**Configuring Operations Manager**

You can configure the items you work with in Operations Manager, such as when alerts are triggered, what servers to monitor, and so on. Configuring Operations Manager consists of the following:

- Adding and maintaining environments. For information on what an environment is, for steps on creating one, and instructions for managing them, see *Environments, page 12*.

- Creating and maintaining groups. For instructions to configure and manage your groups, see *Groups, page 19*.

- Setting counter thresholds. For steps, see *Counters, page 24*. 
• Configuring alerts. For information on what alerts are available and steps on configuring them, such as setting up a real-time alert to notify you by email when it is triggered, see Alerts, page 25.

• Configuring Enterprise Manager data loading schedules and other maintenance tasks that are performed as part of the data load process. See Configuring Enterprise Manager, page 84.

To access Operations Manager’s Configuration page, click the Configuration icon 📊.
DEFINING SERVERS, ENVIRONMENTS, AND GROUPS

Introduction

Operations Manager allows you to monitor all of your MicroStrategy systems in one place. You can allocate your MicroStrategy servers into environments, and monitor each environment separately.

A server is a machine that is running a MicroStrategy server product, such as Intelligence Server, MicroStrategy Web Server, or MicroStrategy Mobile.

For instructions to manage your servers, see Servers, page 17.

An environment is a collection of servers that are involved in the same task. An environment consists of a single Intelligence Server or a single cluster of Intelligence Servers, together with any MicroStrategy Web Servers or Mobile Servers that you associate with the environment.

For instructions to configure and manage your environments, see Environments, page 12.

A group is a collection of environments that are all related in some way. An environment may be a member of more than one group.

For instructions to configure and manage your groups, see Groups, page 19.
Environments

An environment is a collection of servers involved in the same task. An environment consists of one Intelligence Server or one cluster of Intelligence Servers, together with any MicroStrategy Web Servers or Mobile Servers that are associated with the Intelligence Server.

With Operations Manager, you can manage all servers in an environment at once. For example, a user may have trouble accessing MicroStrategy Web. In Operations Manager, you can check the status of the user’s MicroStrategy Web servers and Intelligence Server at the same time.

Managing your environments: The Environment Configuration page

To access the Environment Configuration page in Operations Manager, from the Configuration menu, click the Environment icon . All environments are displayed in a table with the following columns:

- **Environments**: Contains the environment name.
- **Heartbeat Tab**: Indicates whether the Heartbeat tab is enabled or disabled for the environment. For instructions on enabling or disabling the Heartbeat tab, see Enabling and disabling the Heartbeat and Monitor tabs, page 15.
- **Monitor Tab**: Indicates whether the Monitor tab is enabled or disabled for the environment. For instructions on enabling or disabling the Monitor tab, see Enabling and disabling the Heartbeat and Monitor tabs, page 15.
- **Modified Date**: Contains the timestamp from the last time the environment was modified.

To create a new environment, click Create Environment. For detailed instructions, see Creating a new environment, page 13.

To change an existing environment’s group associations or associated servers, point to the environment’s row, then click the Modify icon . For detailed instructions, see Changing an environment’s group associations, page 15 or Selecting which servers are in an environment, page 16.

To delete an environment, point to the environment’s row, then click the Delete icon .
Creating a new environment

To monitor servers in Operations Manager, you must first create an environment and include the servers in the environment.

To create a new environment


2. Click the Configuration icon. Configuration information is displayed on the Environments page.

3. Click Create Environment. The Environment dialog box is displayed.

4. In the Environment Name field, type a descriptive name for the environment.

5. In the Intelligence Server Name field, type the hostname or IP address of your Intelligence Server.

6. In the Port field, type the port to your Intelligence Server. By default, this is 34952, but your installation may be different.

7. To associate the environment with a group:
   a. Click Associate with Group. A menu displays list of all your groups.
   b. Select the check box next to each group to associate the environment with.
   c. Click Apply.

8. Click Test Connection. The Connect dialog box displays.


10. Select whether to log in using Standard or LDAP authentication. For information on integrating LDAP with MicroStrategy, see the MicroStrategy System Administration Guide.

11. Click Login.

Add MicroStrategy Web servers

12. Choose one:
   a. Add servers from scratch:
      a. In the Web Server Name field, enter the hostname or IP address of the server hosting MicroStrategy Web.
b In the Application Path field, enter the application path to MicroStrategy Web. By default, the application path is MicroStrategy, but your installation may be different.

c In the Port field, enter the port on which MicroStrategy Web runs. By default, the port is 8080, but your installation may be different.

d Select one of the following server types:

   — ASP
   — JSP

e If communication between the Intelligence Server and your MicroStrategy Web server is encrypted, select the HTTPS check box.

f Click Add.

g Repeat steps a through f for each additional Web server you add.

- Add servers from pool. This option is available if you already have Web servers set up in Operations Manager.

   a Click Add from Pool. A menu displays a list of available Web servers.
   b Select the check box next to each Web server you want to add.
   c Click Apply.

**Add MicroStrategy Mobile servers**

13 Choose one:

- Add servers from scratch:

   a In the Mobile Server Name field, enter the hostname or IP address of the server that is hosting MicroStrategy Mobile.

   b In the Application Path field, enter the application path to MicroStrategy Mobile. By default, the application path is MicroStrategyMobile, but your installation may be different.

   c In the Port field, enter the port on which MicroStrategy Mobile runs. By default, the port is 8080, but your installation may be different.

   d Select one of the following server types:

      — ASP
      — JSP
If communication between the MicroStrategy Intelligence Server and the MicroStrategy Mobile server is encrypted, select the HTTPS check box.

Click Add.

Repeat steps a through f for each additional Mobile server you add.

- Add servers from pool. This option is available if you already have Mobile servers set up in Operations Manager.
  a Click Add from Pool. A menu displays a list of available Mobile servers.
  b Select the check box next to each Mobile server you want to add.
  c Click Apply.

When you are finished, click Create. The new environment is saved.

### Enabling and disabling the Heartbeat and Monitor tabs

The Heartbeat tab allows you to view usage information for an environment. The Monitor tab allows users to view the system monitors for an environment. You can disable these tabs to keep users from being accessing them. For example, if maintenance is being done on your server, you may want to disable these tabs until the maintenance is complete.

**To disable the Heartbeat and Monitor tabs**

1. Click Enabled in the Heartbeat Tab column. The value changes to Disabled.
2. Click Enabled in the Monitor Tab column. The value changes to Disabled.

**To enable the Heartbeat and Monitor tabs**

1. Click Disabled in the Heartbeat Tab column. The value changes to Enabled.
2. Click Disabled in the Monitor Tab column. The value changes to Enabled.

### Changing an environment's group associations

Once you have your environments and groups set up, you may decide to change which groups an environment is associated with. Or you may add more groups you want to associate an environment with. You can add or remove groups from an environment from the Environments page.
**To add or remove groups from an environment**

2. Click the Configuration icon. Configuration information is displayed on the Environments page.
3. Click the environment you want to modify and select Modify. The Environment dialog box opens.
4. To change the group associations, click Associate with Group.
5. From the drop-down menu, select the check box next to each group you want to add to the environment, or clear the check box next to each group you want to remove from the environment.
6. When you are finished, click Apply. The changes are saved.

**Selecting which servers are in an environment**

You can define which MicroStrategy Web and Mobile servers are included in an environment.

**To add or remove MicroStrategy Web or Mobile servers to or from an environment**

1. Log in to Operations Manager.
2. Click the Configuration icon. Configuration information is displayed on the Environments page.
3. Point to the environment’s row, then click the Modify icon. The Environment dialog box is displayed.

**Modify MicroStrategy Web servers**

4. For steps to add additional Web servers, see *Add MicroStrategy Web servers, page 13.*
5. To delete a Web server from the environment:
   a. Click the Delete icon next to the server you want to delete. A confirmation message displays.
   b. Click Yes.
6. To modify a Web server:
a Click the Edit icon next to the server you want to modify.
b Make changes to the Web server information.
c Click OK.

Modify MicroStrategy Mobile servers

7 For steps to add additional Mobile servers, see Add MicroStrategy Mobile servers, page 14.

8 To delete a Mobile server from the environment:
   a Click the Delete icon next to the server you want to delete. A confirmation message displays.
   b Click Yes.

9 To modify a Mobile server:
   a Click the Edit icon next to the server you want to modify.
   b Make changes to the Mobile server information.
   c Click OK.

10 When you are finished, click Save. The new environment is saved.

Servers

An Operations Manager environment is made up of one or more servers. A server is a machine that is running a MicroStrategy server component, such as Intelligence Server, MicroStrategy Web Server, or MicroStrategy Mobile Server.

You can start, stop, or restart any of your servers from Operations Manager. For instructions, see Starting, stopping, or restarting a server, page 18.

Managing your servers: The Server page

To access the Server page in Operations Manager, from the Configuration menu, click the Servers icon.

To view the servers in an environment, in the Environments column, click the environment. The servers in the environment are listed in the main pane.

The following information and actions are available for each server:
<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Name</td>
<td>The name of the machine hosting the server</td>
</tr>
<tr>
<td>Server Type</td>
<td>The type of server:</td>
</tr>
<tr>
<td></td>
<td>• Intelligence Server</td>
</tr>
<tr>
<td></td>
<td>• Web Server</td>
</tr>
<tr>
<td></td>
<td>• Mobile Server</td>
</tr>
<tr>
<td>Application Path</td>
<td>The application path to the server.</td>
</tr>
<tr>
<td>Status</td>
<td>The status of the server:</td>
</tr>
<tr>
<td></td>
<td>• Running: The server is running.</td>
</tr>
<tr>
<td></td>
<td>• Stopped: The server is not running.</td>
</tr>
<tr>
<td></td>
<td>• Starting: The server is in the process of starting.</td>
</tr>
<tr>
<td></td>
<td>• Unknown: The status of the server is unknown.</td>
</tr>
<tr>
<td>Actions</td>
<td>The server management actions available:</td>
</tr>
<tr>
<td></td>
<td>• Stop: Stop a running server.</td>
</tr>
<tr>
<td></td>
<td>• Start: Start a stopped server.</td>
</tr>
<tr>
<td></td>
<td>• Restart: Stop then start a running server.</td>
</tr>
</tbody>
</table>

### Starting, stopping, or restarting a server

All servers are in one of the following states:

- **Started**: The server is running.
- **Stopped**: The server is not running.
- **Starting**: The server is in the process of starting.

You can start, stop, or restart any server in an environment using the Server page of MicroStrategy Operations Manager.

### To start, stop, or restart a server

2. Click the **Configuration** icon. Configuration information is displayed on the Environments page.
3. Click the **Servers** icon.
4. Expand the environment that contains the server you want to start, stop, or restart. A list of the servers in that environment is displayed.
5 Choose one:

- To start a server that is stopped, in the Actions column for that server, click the Start icon ⏬.
- To stop a server that is running, in the Actions column for that server, click the Stop icon ■.
- To restart a server that is running, in the Actions column for that server, click the Restart icon 🔄.

A login dialog box is displayed.

6 In the Login dialog box, type your username and password for the server and click Login. The server status changes.

### Groups

You can combine your environments into groups so you can keep better track of them. For example, you may have a different environment for each geographic region, so that users from each region access a server that is close to them. However, each of these environments may be configured in similar ways and require similar maintenance. You can create a group that includes all these environments.

An environment can be associated with more than one group.

For steps on creating a group, selecting the environments in a group, and deleting a group, see the following:

- *Creating a new group, page 19*
- *Selecting which environments are in a group, page 20*
- *Deleting a group, page 20*

### Creating a new group

You can create groups to help organize and keep track of your environments.

---

**To create a new group**

1. Log in to Operations Manager.
2 Click the Configuration icon. Configuration information is displayed on the Environments page.

3 Click the Groups icon.

4 Click Add New Group. The Create Group configuration panel opens.

5 In the Name field, type a name for the group.

6 Select the check box for each environment that you want to include in this group. If you have many environments, use the Environments search box to search for the ones you want.

7 Click Save. The group is created.

Selecting which environments are in a group

To select the elements of a group, you can add environments or remove them.

To add environments to or remove environments from a group

1 Log in to Operations Manager.

2 Click the Configuration icon. Configuration information displays on the Environments page.

3 Click the Groups icon.

4 Point to the group you want modify, then click the Edit icon. The Edit Group panel opens.

5 Configure which environments are in the group, as follows:
   ▫ To add an environment to the group, select that environment’s check box.
   ▫ To remove an environment from the group, clear that environment’s check box.

6 Click Save. The changes to the group are saved.

Deleting a group

If you no longer want to use a group, you can delete it. Deleting a group does not delete the environment in the group.
To delete a group

1 Log in to Operations Manager.

2 Click the Configuration icon. Configuration information is displayed on the Environments page.

3 Click the Groups icon.

4 Point to the group you want to delete, and then click the Delete icon. A confirmation dialog box displays.

5 Click Yes.
**Introduction**

Operations Manager provides many alerts and counters that you can use to monitor your environments.

**Counters** provide a graphical view of basic information about your environments. These display on the Landing page and help you determine, at a glance, the overall health of your environments. You can set the thresholds for these counters.

**Alerts** can be configured to send an alert message to the Alert Inbox in Operations Manager when specific events occur. Some alerts can also be configured to send email to a recipient or list of recipients. For example, you can set alerts that warn you when report processing times are too long, when the CPU usage on a machine becomes too high for a sustained time, or even when a string you specify is noted in a log file.
Counters

Operations Manager provides a set of counters that display on the Landing page and allow you to see basic information about the health of your servers at a glance.

For a complete list of counters that display on the Landing page, and their descriptions, see List of counters, page 6

Configuring thresholds for counters

A counter’s threshold determines how it displays on the Landing page. By default, all counters are preset with 33 percent as the Excellent threshold and 66 percent as the Critical threshold, but you can change them.

You can change the thresholds for the following counters:

• Up Time
• Machine Memory Used
• Machine CPU Used
• I-Server Memory Used
• I-Server CPU Used

To change the threshold for a counter

1 In MicroStrategy Operations Manager, on the Landing page, click the Configuration icon.

2 From the toolbar on the left, click the Counter icon.

3 On the Counters page, use the sliders on each counter to move the threshold marker.

4 Click Apply when you are finished.

If you start making changes to the counter thresholds and then decide you do not want to save the changes, and you have not yet applied them, you can revert the counters to the most recent configuration by clicking Revert.
Alerts

You can configure two types of alerts.

- **Real Time Alerts** can be turned on and off. Real-time alerts can be configured to send an email to one or more recipients when an alert is triggered.

- **System Alerts** are always on. Most system alerts do not send email to recipients when an alert is triggered, but you can see them when viewing alerts and monitors in Operations Manager or MicroStrategy Health Center console.

For steps on configuring alerts, see *Working with alerts, page 25.*

For a list of alerts you can configure, by category, see *What categories of alerts are available?, page 27.*

**Working with alerts**

You can turn real-time alerts on or off and configure all alert details, such as what threshold value triggers it. For steps, see the following:

- *Turning alerts on or off, page 25*
- *Configuring Alerts, page 26*

**Turning alerts on or off**

Real-time alerts can be turned on or off in Operations Manager.

---

**Turning real-time alerts on or off**

1. In MicroStrategy Operations Manager, on the Landing page, click the [Configuration](#) icon.

2. On the Configuration page, click the [Alerts](#) icon. The Alerts configuration page opens. Alerts in all categories are displayed.

3. From the [Environment](#) drop-down menu, select the environment you want to turn alerts on or off for.

4. From the [Server](#) drop-down menu, select the server you want to turn alerts on or off for.
5 To list alerts in one category, select the category, such as MicroStrategy Intelligence Server, from the **Category** drop-down list.

6 To turn on an alert:
   a Under the Status column, point to the **Off** slider until your pointer becomes a double arrow.
   b Click and drag the slider to the right until it changes to the green **On** slider.
   c If the Configuration panel opens, provide the necessary configuration values and click **Apply**.

7 To turn off an alert:
   a Under the Status column, point to the **On** slider until your pointer becomes a double arrow.
   b Click and drag the slider to the left until it changes to the gray **Off** slider.

**Configuring Alerts**

Each alert has its own configuration parameters, but the basic steps for configuring an alert are the same for all alerts.

**Configuring an alert**

1 In MicroStrategy Operations Manager, on the Landing page, click the **Configuration** icon.

2 On the Configuration page, click the **Alerts** icon. The Alerts configuration page displays.

3 From the **Environment** drop-down menu, select the environment you want to configure alerts for.

4 From the **Server** drop-down menu, select the server you want to configure alerts for.

5 To list alerts in one category, select the category, such as MicroStrategy Intelligence Server, from the **Category** drop-down list.

6 Click to the left of the alert you want to configure. The Configuration panel opens on the right.
What categories of alerts are available?

Configuring alerts, which are grouped by category, consists of the following:

- Monitoring Machine Usage and Performance with Configuration Alerts, page 27
- Monitoring Cache and Intelligence Server Availability with MicroStrategy 3-tier Client Alerts, page 35
- Monitoring Web and Mobile Server Availability with MicroStrategy 4-tier Client Alerts, page 38
- Monitoring Intelligence Server Performance with MicroStrategy Intelligence Server Alerts, page 41
- Monitoring Enterprise Manager with MicroStrategy Enterprise Manager Alerts, page 45
- Monitoring Mobile ASPx with MicroStrategy Mobile ASPx Alerts, page 46
- Monitoring Mobile JSP with MicroStrategy Mobile JSP Alerts, page 46
- Monitoring Web Universal JSP with MicroStrategy Web Universal JSP Alerts, page 47

Monitoring Machine Usage and Performance with Configuration Alerts

The configuration alerts are based on the usage and performance of your machines and network. You can configure the following Configuration alerts:

- Memory Usage, page 28
- CPU Usage, page 29
- Logical Disk Free Space, page 30
- Logical Disk I/O, page 31
- Memory Pages I/O, page 31
- Network Traffic In and Out, page 32
Memory Usage

Sends an alert if memory usage thresholds are exceeded. For example, you can configure Operations Manager to send an alert when the available memory falls below a certain amount or when memory usage equals or exceeds a certain amount for a specified time.

The following options are available for configuring the memory usage alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 5 seconds to get the real-time information for these alerts.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Available Memory Alerting Threshold (MB)</td>
<td>The amount of available memory, in megabytes, that triggers an alert. If the amount of available memory on the server is at or less than this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Available Memory Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the Available Memory Alerting Threshold must be met or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the threshold must be met or exceeded. For example, if this interval is 12 and the polling period is 5, the threshold must be maintained for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Available Memory Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the last available memory usage alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, the polling period is 5, this interval must be at least 60.</td>
<td>Yes</td>
</tr>
<tr>
<td>Used Memory Alerting Threshold (MB)</td>
<td>The total amount of used memory, in megabytes, that triggers an alert. If the usage amount equals or exceeds this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Used Memory Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the Used Memory Alerting Threshold must be maintained or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the alerting threshold must be met or exceeded. For example, if this interval is 12 and the polling period is 5, the threshold must be maintained for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Used Memory Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the last used memory usage alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, with the polling period of 5, this interval must be at least 60.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
**CPU Usage**

Sends alerts according to CPU usage parameters. For example, you can configure Operations Manager to send an alert when your total CPU usage meets or exceeds an amount for a specified time.

The following options are available for configuring the CPU usage alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 5 seconds to get the real-time information for these alerts.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the thresholds for this alert are met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Total CPU Percentage Alert Threshold</td>
<td>The CPU usage amount that triggers an alert, expressed as a percentage of the total available CPU capacity. If the total CPU usage is at or above this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Total CPU Percentage Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the Total CPU Percentage Alert Threshold must be met or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the alerting threshold must be met or exceeded. For example, if this interval is 12 and the polling period is 5, the Total CPU Percentage Alert Threshold must be met or exceeded for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Total CPU Percentage Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Total CPU Percentage Alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, with the polling period of 5, this interval must be at least 60.</td>
<td>Yes</td>
</tr>
<tr>
<td>Kernel CPU Percentage Alerting Threshold</td>
<td>The kernel CPU usage amount that triggers an alert, expressed as a percentage of the total kernel CPU capacity. If the kernel CPU usage is at or above this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Kernel CPU Percentage Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the Kernel CPU Percentage Alerting Threshold must be met or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the threshold must be met or exceeded. For example, if this is 12 and the polling period is 5, the threshold must be maintained for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Kernel CPU Percentage Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Kernel CPU Percentage Alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 60 and the polling period is 5, a new alert may not be triggered until 300 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>User CPU Percentage Alerting Threshold</td>
<td>The user CPU usage amount that triggers an alert, expressed as a percentage of the total user CPU capacity. If the user CPU usage is at or above this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Logical Disk Free Space

Sends alerts according to the amount of logical disk free space. For example, you can configure Operations Manager to send an alert when the logical disk free space equals or falls below a specified amount for a specified time.

The following options are available for configuring this alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 5 seconds to get the real-time information for the alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the threshold for this alert is met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Logical Disk Free Space Percentage Alerting Threshold</td>
<td>The logical disk free space amount that triggers an alert, expressed as a percentage of the total logical disk free space capacity. If the logical disk free space usage is at or above this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Logical Disk Free Space Percentage Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the Logical Disk Free Space Percentage Alerting Threshold must be maintained or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the threshold must be met or exceeded. For example, if this is 12 and the polling period is 5, the Logical Disk Free Space Percentage Alerting Threshold must be maintained for 60 seconds before the alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Logical Disk Free Space Percentage Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Logical Disk Free Space Percentage alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 60 and the polling period is 5, a new alert may not be triggered until 300 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Logical Partition or directory</td>
<td>The logical partition or directory from which to gather the logical disk free space information. The default is C:.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
**Logical Disk I/O**

Sends alerts according to the number of logical disk input and output operations per second. For example, you can configure Operations Manager to send an alert when the number of operations per second is equal to or above a specified amount for a specified time.

The following options are available for the logical disk input and output alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 5 seconds to get the real-time information for the alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the threshold for this alert is met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Logical Disk I/O per Second Alerting Threshold</td>
<td>The number of logical disk input and output operations per second that triggers an alert. If the number of logical disk input and output operations is at or above this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Logical Disk I/O per Second Alerting Sustain Interval</td>
<td>The number of consecutive polling periods the Logical Disk I/O per Second Alerting Threshold must be met or exceeded to trigger an alert. The default is 12. This number multiplied by the polling period is the total number of seconds the threshold must be met or exceeded. For example, if this is 12 and the polling period is 5, the Logical Disk I/O per Second Alerting Threshold must be maintained for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Logical Disk I/O per Second Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Logical Disk I/O per Second alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 60 and the polling period is 5, a new alert may not be triggered until 300 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Memory Pages I/O**

Sends alerts according to the number of memory pages input/output operations per second. For example, you can configure Operations Manager to send an alert when the number of operations per second is equal to or above a specified amount for a specified time.

The following options are available for the memory pages input/output alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 5 seconds to get the real-time information for the alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
<td>Required?</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the threshold for this alert is met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Memory Pages IO per Second Alerting Threshold</td>
<td>The number of pages being swapped in and out of memory per second that triggers an alert. If the number of pages is at or above this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Memory Pages IO per Second Alerting Sustain Interval</td>
<td>The number of consecutive polling periods the Memory Pages IO per Second Alerting Threshold must be met or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the Alerting Threshold must be met or exceeded. For example, if this is 12 and the polling period is 5, the Memory Pages IO per Second Alerting Threshold must be maintained for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Memory Pages IO per Second Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Memory Pages IO per Second alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 60 and the polling period is 5, a new alert may not be triggered until 300 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Network Traffic In and Out**

Sends alerts according to the amount of network in and out traffic per second. For example, you can configure Operations Manager to send an alert when the network in traffic reaches a specified amount for a specified time.

For this alert to work, a simple network management protocol (SNMP) service agent must be configured and enabled. For instructions, see the third-party SNMP documentation.

The following options are available for the network traffic in and out alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 5 seconds to get the real-time information for these alerts.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the thresholds for this alert are met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>SNMP Agent Host IP Address</td>
<td>The IP address of the simple network management protocol (SNMP) agent that collects the network traffic in and out. The default is the IP address on which you are running Operations Manager.</td>
<td>Yes</td>
</tr>
<tr>
<td>SNMP Agent Host Port Number</td>
<td>The port of the SNMP agent that collects the network traffic in and out. The default is 161.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Option

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNMP Agent Community</td>
<td>The community settings of the SNMP agent that collects the network traffic in and out. The default is public.</td>
<td>Yes</td>
</tr>
<tr>
<td>SNMP Agent Version</td>
<td>The agent’s version of SNMP that collects the network in and out traffic. The SNMP version can be 1 or 2. The default is 1.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network In Alerting Threshold (Bytes)</td>
<td>The Network In amount, in bytes, that triggers an alert. If the amount of data coming into the network equals or exceeds this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network In Alerting Sustain Interval</td>
<td>The number of consecutive periods the Network In Alerting Threshold must be maintained or exceeded to trigger an alert. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the threshold must be met or exceeded. For example, if this is 12 and the polling period is 5, the Network In Alerting Threshold must be maintained for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network In Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Network In alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 60 and with the polling period of 5, a new alert may not be triggered until 300 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network Out Alerting Threshold (Bytes)</td>
<td>The network out amount, in bytes, that triggers an alert. If the amount of data going out of the network equals or exceeds this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network Out Alerting Sustain Interval</td>
<td>The number of consecutive periods the Network Out Alerting Threshold must be maintained or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the threshold must be met or exceeded. For example, if this is 12 and the polling period is 5, the Network Out Alerting Threshold must be maintained for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network Out Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Network Out alert was triggered before that alert can be triggered again. The default is 12. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 60 and with the polling period of 5, a new alert may not be triggered until 300 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Network Status

Sends alerts that are based on the status of the network. For example, you can configure Operations Manager to send an alert when the network latency reaches a specified percentage for a specified time.

The following options are available for the network status alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 5 seconds to get the real-time information for the alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
<td>Required?</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the thresholds for this alert are met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Destination IP Address</td>
<td>The IP address of the machine this computer attempts to contact to test the network conditions.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network Latency Alerting Threshold</td>
<td>The network latency time, in milliseconds, between the source and destination machines that triggers an alert. If the network latency meets or exceeds this time, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network Latency Alerting Sustain Interval</td>
<td>The number of consecutive polling periods the Network Latency Alerting Threshold must be met or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the alerting threshold must be maintained. For example, if this is 12 and the polling period is 5, the threshold must be met for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network Latency Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Network Latency alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 60 and the polling period is 5, a new alert may not be triggered until 300 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network Packet Loss Percentage Alerting Threshold</td>
<td>The amount of packet loss that occurs between the source and destination machines that triggers an alert, expressed as a percentage of the total packets sent. If the packet loss percentage meets or exceeds this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network Packet Loss Percentage Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the Network Packet Loss Percentage Alerting Threshold must be met or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the threshold must be met be exceeded. For example, if this is 12 and the polling period is 5, the threshold must be maintained for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Network Packet Loss Percentage Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Network Packet Loss Percentage alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 60, a new alert may not be triggered until 300 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Page File Usage**

Sends alerts according to the page file usage percentage. For example, you can configure Operations Manager to send an alert when the page file usage percentage meets or exceeds a specified amount for a specified time.

The following options are available for the page file usage alert:
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 5 seconds to get the real-time information for this alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the threshold for this alert is met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Page File Usage Percentage Alerting Threshold</td>
<td>The page file usage amount that triggers an alert, expressed as a percentage. If the page file usage meets or exceeds this amount, an alert is triggered. The default is 20.</td>
<td>Yes</td>
</tr>
<tr>
<td>Page File Usage Percentage Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the Page File Usage Percentage Alerting Threshold must be met or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the Alerting Threshold must be maintained. For example, if this is 12 and the polling period is 5, the threshold must be maintained for 60 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Page File Usage Percentage Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Page File Usage Percentage alert was triggered before that alert can be triggered again. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 60 and the polling period is 5, a new alert may not be triggered until 300 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Monitoring Cache and Intelligence Server Availability with MicroStrategy 3-tier Client Alerts

#### Cache Availability

Sends alerts according to the cache availability. For example, you can configure Operations Manager to send an alert when the cache is consistently unavailable for a specified time.

The following options are available for the cache availability alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 180 seconds to get the real-time information for the alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the thresholds for this alert are met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td><strong>Option</strong></td>
<td><strong>Description</strong></td>
<td><strong>Required?</strong></td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>MicroStrategy Intelligence Server Name(s)</strong></td>
<td>The hostname of the MicroStrategy Intelligence Server you want to monitor cache availability for. Separate multiple server names with a semicolon. The default is the Intelligence Server for the environment you are configuring the alert for. If you specify more than one server here, you must specify the same number of the following settings: • User Name • Password • Authentication Mode • Port Number • MicroStrategy Project Name • Report ID</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>User Name(s)</strong></td>
<td>The MicroStrategy user name for the Intelligence Server. Separate multiple user names with a semicolon. If the user name has an internal space or semicolon (;), enclose the entire value within double quotes. For example, &quot;John Doe&quot;. The default is the user name for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Password(s)</strong></td>
<td>The password of the MicroStrategy user for the Intelligence Server. Separate multiple passwords with a semicolon. If a password has an internal space or semicolon (;), enclose the entire value within double quotes. For example, &quot;pass word&quot;. The default is the password for the environment you are configuring the alert for. If a user does not have a password, use a space for any passwordless account. You must specify the same number of passwords here as entries in the MicroStrategy Intelligence Server Name field. For example, if you have three servers and the user for the middle one does not use a password, specify the passwords as follows: password1; ;password2</td>
<td>No</td>
</tr>
<tr>
<td><strong>Authentication Mode(s)</strong></td>
<td>The authentication mode used for logging in to the MicroStrategy Intelligence Server. Separate multiple authentication modes with a semicolon. The default is the authentication mode for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Port Number(s)</strong></td>
<td>The port number for the MicroStrategy Intelligence Server. Separate multiple port numbers with a semicolon. The default is the port of the Intelligence Server for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>MicroStrategy Project Name</strong></td>
<td>The name of the MicroStrategy project storing the report that Health Center executes when checking the Cache Availability. Separate multiple project names with a semicolon. If the project name has an internal space or semicolon (;), enclose the entire value within double quotes. For example, &quot;Project Name&quot;. If it has a quotation mark in it, escape it with a backslash (). For example, if the project name is The “New” Project, type &quot;The &quot;New&quot; project&quot;.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Report ID</strong></td>
<td>The object ID of the report that Health Center executes when checking the Cache Availability. To get the object ID, view the report’s properties. You can specify one report per server. If you are configuring this alert for multiple servers, separate the IDs with a semicolon.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Alerting Minimum Firing Interval

The minimum number of consecutive polling periods after the Cache Availability alert was triggered before the alert can be triggered again. The default is 2. This value multiplied by the Real Time Counter Polling Period must be 300 or more. With the polling period of 180, this must be at least 2, and a new alert may not be triggered until 360 seconds after the last one was triggered.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the Cache Availability alert was triggered before the alert can be triggered again. The default is 2. This value multiplied by the Real Time Counter Polling Period must be 300 or more. With the polling period of 180, this must be at least 2, and a new alert may not be triggered until 360 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Intelligence Server Availability

Sends alerts according to the availability of Intelligence Server. For example, you can configure Operations Manager to send an alert when Intelligence Server is consistently unavailable for a specified time.

The following options are available for the Intelligence Server availability alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 180 seconds to get the real-time information for this alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email address that alerts are sent to when the threshold for this alert is met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
</tbody>
</table>
| MicroStrategy Intelligence Server Name(s) | The hostname of the MicroStrategy Intelligence Server you want to monitor for availability. Separate multiple server names with a semicolon. The default is the Intelligence Server for the environment you are configuring the alert for.  
If you specify more than one server here, you must specify the same number of the following settings:  
• User Name  
• Password  
• Authentication Mode  
• Port Number  
If you specify a MicroStrategy project name or report ID, or both, for one server, you must specify a project name or report ID, or both, for all servers. | Yes       |
<p>| User Name(s)                  | The MicroStrategy user name for the Intelligence Server. Separate multiple user names with a semicolon. If the user name has an internal space or semicolon (;), enclose the entire value within double quotes. For example, &quot;John Doe&quot;. The default is the user name for the environment you are configuring the alert for. | Yes       |</p>
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Password(s)</td>
<td>The password of the MicroStrategy user for the Intelligence Server. Separate multiple passwords with a semicolon. If a password has an internal space or semicolon (;), enclose the entire value within double quotes. For example, &quot;password1; password2&quot;. The default is the password for the environment you are configuring the alert for. If a user does not have a password, use a space for any passwordless account. You must specify the same number of passwords here as entries in the MicroStrategy Intelligence Server Name field. For example, if you have three servers and the middle one does not use a password, specify the passwords as follows: password1; ;password2</td>
<td>Yes</td>
</tr>
<tr>
<td>Authentication Mode (s)</td>
<td>The authentication mode used for logging in to the MicroStrategy Intelligence Server. Separate multiple authentication modes with a semicolon. The default is the authentication mode for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
<tr>
<td>Port Number(s)</td>
<td>The port number for the MicroStrategy Intelligence Server. Separate multiple port numbers with a semicolon. The default is the port of the Intelligence Server for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
<tr>
<td>Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods after the last Report Alerting Time alert was triggered before that alert can be triggered again. The default is 2. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 2 and the polling period is 180, a new alert may not be triggered until 360 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Monitoring Web and Mobile Server Availability with MicroStrategy 4-tier Client Alerts**

**Mobile Server Availability**

Sends alerts according to the availability of the Mobile Server. For example, you can configure Operations Manager to send an alert when the Mobile Server is consistently unavailable for a specified time.

The following options are available for this alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 180 seconds to get the real-time information for this alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the threshold for this alert is met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
<td>Required?</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
</tbody>
</table>
| MicroStrategy Web Application URL(s)       | The URL of the MicroStrategy Web application you want to monitor. Separate multiple URLs with a semicolon. The default is http://localhost/MicroStrategy/asp/  
If you specify more than one URL here, you must specify the same number of the following settings:  
• MicroStrategy Intelligence Server Name  
• User Name  
• Password  
• Authentication Mode  
• Port Number  
In addition, if you specify a MicroStrategy project name or report ID, or both, for one server, you must specify a project name or report ID, or both, for all servers. | Yes       |
| MicroStrategy Intelligence Server Name(s)  | The hostname of the MicroStrategy Intelligence Server you want to monitor for availability, Separate multiple server names with a semicolon. The default is the Intelligence Server for the environment you are configuring the alert for. | No        |
| User Name(s)                               | The MicroStrategy user name for the Intelligence Server. Separate multiple user names with a semicolon. If the user name has an internal space or semicolon ( ), enclose the entire value within double quotes. For example, "John Doe". The default is the user name for the environment you are configuring the alert for. | Yes       |
| Password(s)                                | The password of the MicroStrategy user for the Intelligence Server. Separate multiple passwords with a semicolon. If a password has an internal space or semicolon ( ), enclose the entire value within double quotes. For example, "password". The default is the password for the environment you are configuring the alert for.  
If a user does not have a password, use a space for the passwordless account. You must specify the same number of passwords here as entries in the MicroStrategy Intelligence Server Name field. For example, if you have three servers and the middle one does not use a password, specify the passwords as follows:  
password1; ;password2 | No        |
| Authentication Mode(s)                     | The authentication mode used for logging in to the MicroStrategy Intelligence Server. Separate multiple authentication modes with a semicolon. The default is the authentication mode for the environment you are configuring the alert for. | Yes       |
| Port Number(s)                             | The port number for the MicroStrategy Intelligence Server. Separate multiple port numbers with a semicolon. The default is the port of the Intelligence Server for the environment you are configuring the alert for. | Yes       |
| Alerting Minimum Firing Interval           | The minimum number of consecutive polling periods after the last Report Alerting Time alert was triggered before that alert can be triggered again. The default is 2. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this interval is 2 and the polling period is 180, a new alert may not be triggered until 360 minutes after the last one was triggered. | Yes       |
Web Server Availability

Sends alerts according to the availability of the Web Server. For example, you can configure Operations Manager to send an alert when the Web Server is consistently unavailable for a specified time.

The following options are available for this alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 180 seconds to get the real-time information for the alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the threshold for this alert is met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
</tbody>
</table>
| MicroStrategy Web Application URL(s) | The URL of the MicroStrategy Web application you want to monitor. Separate multiple URLs with a semicolon. The default is http://localhost/MicroStrategy/asp/  
  If you specify more than one URL here, you must specify the same number of the following settings:  
  • MicroStrategy Intelligence Server Name  
  • User Name  
  • Password  
  • Authentication Mode  
  • Port Number  
  In addition, if you specify a MicroStrategy project name or report ID, or both, for one server, you must specify a project name or report ID, or both, for all servers. | Yes |
| MicroStrategy Intelligence Server Name(s) | The hostname of the MicroStrategy Intelligence Server you want to monitor for availability. Separate multiple server names with a semicolon. The default is the Intelligence Server for the environment you are configuring the alert for. | No |
| User Name(s)                          | The MicroStrategy user name for the Intelligence Server. Separate multiple user names with a semicolon. If the user name has an internal space or semicolon (;), enclose the entire value within double quotes. For example, "John Doe". The default is the user name for the environment you are configuring the alert for. | Yes |
| Password(s)                           | The password of the MicroStrategy user for the Intelligence Server. Separate multiple passwords with a semicolon. If a password has an internal space or semicolon (;), enclose the entire value within double quotes. For example, "password". The default is the password for the environment you are configuring the alert for.  
  If a user does not have a password, use a space for the passwordless account. You must specify the same number of passwords here as entries in the MicroStrategy Intelligence Server Name field. For example, if you have three servers and the middle one does not use a password, specify the passwords as follows: | Yes |
Monitoring Intelligence Server Performance with MicroStrategy Intelligence Server Alerts

Intelligence Server (IServer) Performance Counters

Sends alerts about the Intelligence Server performance. For example, you can configure Operations Manager to send an alert when Intelligence Server CPU usage meets or exceeds a specified percentage for a specified time.

The following options are available for this alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 5 seconds to get the real-time information for these alerts.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the thresholds for this alert are met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Port Number</td>
<td>The port number of the Intelligence Server. The default is 34952.</td>
<td>Yes</td>
</tr>
<tr>
<td>CPU Percentage Alerting Threshold (%)</td>
<td>The CPU usage percent that triggers an alert. If the CPU usage meets or exceeds this amount, an alert is triggered. The default is 95.</td>
<td>Yes</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
<td>Required?</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>CPU Percentage Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the CPU Percentage Alerting Threshold must be met or exceeded to trigger an alert. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the threshold must be maintained. For example, if the polling period is 5 and this is 20, the threshold must be maintained for 100 seconds before an alert is triggered. The default is 24.</td>
<td>Yes</td>
</tr>
<tr>
<td>CPU Percentage Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods before the next CPU percentage alert can be triggered. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, with the polling period of 5, this interval must be at least 60.</td>
<td>Yes</td>
</tr>
<tr>
<td>Extended CPU Percentage Alerting Threshold (%)</td>
<td>The extended CPU usage percent that triggers an alert. If the extended CPU usage meets or exceeds this amount, an alert is triggered. The default is 95.</td>
<td>Yes</td>
</tr>
<tr>
<td>Extended CPU Percentage Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the Extended CPU Percentage Alerting Threshold must be met or exceeded to trigger an alert. The default is 24. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the threshold must be maintained. For example, with the polling period of 5 and this interval is 20, the threshold must be met or exceeded for 100 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Extended CPU Percentage Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods before the next extended CPU percentage alert can be triggered. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, with the polling period of 5, this interval must be at least 60.</td>
<td>Yes</td>
</tr>
<tr>
<td>Memory Usage Alerting Threshold (MB)</td>
<td>The amount of memory usage for an alert to be triggered. If the memory usage meets or exceeds this amount, an alert is triggered. The default is 0.</td>
<td>Yes</td>
</tr>
<tr>
<td>Memory Usage Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the Memory Usage Alerting Threshold must be met or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the threshold must be maintained. For example, if the polling period is 5 and this is 20, the threshold must be met or exceeded for 100 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Memory Usage Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods before the next memory usage alert can be triggered. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if the Polling Period is 5, the Minimum Firing Interval must be at least 60.</td>
<td>Yes</td>
</tr>
<tr>
<td>Extended Memory Usage Alerting Threshold (MB)</td>
<td>The amount of extended memory usage that triggers an alert. If the extended memory usage meets or exceeds this amount, an alert is triggered. The default is 0.</td>
<td>Yes</td>
</tr>
<tr>
<td>Extended Memory Usage Alerting Sustain Interval</td>
<td>The number of consecutive polling periods that the Extended Memory Usage Alerting Threshold must be met or exceeded to trigger an alert. The default is 12. This number multiplied by the Real Time Counter Polling Period is the total number of seconds the threshold must be met. For example, if the polling period is 5 and this is 20, the threshold must be met or exceeded for 100 seconds before an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>Extended Memory Usage Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods before the next extended memory usage alert can be triggered. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if the polling period is 5, this firing interval must be at least 60.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Intelligence Server (IServer) Log Parser

Sends an alert according to the contents of the DSSErrors.log file. The DSSErrors.log file is the primary file in which MicroStrategy records information about its operation. For example, you could search for 0x8000399A, which finds this type of error message, related to History List messages, in the log file: 2014-02-14 14:14:26.183+02:00 MsiWorkingSet::ReturnRptInstance: AddMsg() failed, return error 0x8000399A.

The following options are available for the iserver log parser alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 60 seconds to get the real-time information for this alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (for MicroStrategy use only).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the strings for this alert are found. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Log Entry</td>
<td>The string or strings to search for in all fields in the DSSErrors.log file. Separate multiple strings with a vertical bar (</td>
<td>) which serves as an OR in this boolean search. Any of the terms found triggers an alert. No quotation marks are needed.</td>
</tr>
</tbody>
</table>

Job Duration

Sends alerts according to job duration on the Intelligence Server. For example, you can configure Operations Manager to send an alert when any job duration exceeds a specified time.

The following options are available for this alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 30 seconds to get the real-time information for this alert.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the threshold for this alert is met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Alerting Threshold</td>
<td>The job duration, in seconds, for an alert to be triggered. If a job takes this long or longer to execute, an alert is triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>User Name</td>
<td>The MicroStrategy user name for the Intelligence Server. The default is the user name for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Report Throughput Counters

Sends alerts according to report throughput information. For example, you can configure Operations Manager to send an alert when the report queue time meets or exceeds a specified number of seconds.

The following options are available for this alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Counter Polling Period</td>
<td>The number of seconds between polling times. Operations Manager polls the server every 5 seconds to get the real-time information for these alerts.</td>
<td>Read only</td>
</tr>
<tr>
<td>Real Time Counter Instance</td>
<td>An internal server name (MicroStrategy use).</td>
<td>Read only</td>
</tr>
<tr>
<td>Alert Email Recipient</td>
<td>The email addresses the alerts are sent to when the thresholds for this alert are met. Separate multiple addresses with a semicolon (;).</td>
<td>No</td>
</tr>
<tr>
<td>Alerting Error Percentage Threshold</td>
<td>The reporting error percentage that triggers an alert. If the percentage of report requests that result in errors meets or exceeds this percentage, an alert is triggered. The default is 10.</td>
<td>Yes</td>
</tr>
<tr>
<td>Alerting High Queue Time Threshold</td>
<td>The average queue time, in seconds, that triggers an alert. If the average queue time meets or exceeds this time, an alert is triggered. The default is 5.</td>
<td>Yes</td>
</tr>
<tr>
<td>Alerting High Response Time Threshold</td>
<td>The average report response time, in seconds, that triggers an alert. If the average report response time meets or exceeds this amount, an alert is triggered. The default is 60.</td>
<td>Yes</td>
</tr>
<tr>
<td>Alerting Throughput Threshold</td>
<td>The ratio of the report submission rate per minute to the report completion rate per minute. When the ratio meets or exceeds the threshold, an alert is triggered. The default is 2.</td>
<td>Yes</td>
</tr>
<tr>
<td>Alerting Minimum Firing Interval</td>
<td>The minimum number of consecutive polling periods before the next alert can be triggered. The default is 60. This value multiplied by the Real Time Counter Polling Period must be 300 or more. For example, if this is 60 and the polling period is 5, a new alert may not be triggered until 300 seconds after the last one was triggered.</td>
<td>Yes</td>
</tr>
<tr>
<td>User Name</td>
<td>The MicroStrategy user name for the Intelligence Server. The default is the user name for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
<td>Required?</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Password</td>
<td>The password of the MicroStrategy user for the Intelligence Server. The default is the password for the environment you are configuring the alert for.</td>
<td>No</td>
</tr>
<tr>
<td>Authentication Mode</td>
<td>The authentication mode for the MicroStrategy Intelligence Server. The default is the authentication mode for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
<tr>
<td>Port Number</td>
<td>The port number for the MicroStrategy Intelligence Server. The default is the port number for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Memory Depletion**

Creates an alert if the Intelligence Server log file includes memory depletion errors.

The following options are available for this alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Name</td>
<td>The MicroStrategy user name for the Intelligence Server. The default is the user name for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
<tr>
<td>Password</td>
<td>The password of the MicroStrategy user for the Intelligence Server. The default is the password for the environment you are configuring the alert for.</td>
<td>No</td>
</tr>
<tr>
<td>Authentication Mode</td>
<td>The authentication mode for the MicroStrategy Intelligence Server. The default is the authentication mode for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
<tr>
<td>Port Number</td>
<td>The port number for the MicroStrategy Intelligence Server. The default is the port number for the environment you are configuring the alert for.</td>
<td>Yes</td>
</tr>
<tr>
<td>Log file reading retry period</td>
<td>How long, in milliseconds, the Health Center attempts to read the DSSErrors.log file. If the Health Center is unable to read the file, an alert is triggered. The default is 60000.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Monitoring Enterprise Manager with MicroStrategy Enterprise Manager Alerts**

**ETL Service Status and Data Load Failures**

This alert analyzes the Enterprise Manager data load process.

The following option is available for this alert:
### Monitoring Mobile ASPx with MicroStrategy Mobile ASPx Alerts

#### JVM Maximum Heap Size

This alert confirms that the Java Virtual Machine has enough memory available.

The following options are available for the JVM maximum heap size for Mobile ASPx alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter by last modified date</td>
<td>The number of previous days to analyze log files for. The default is 1.</td>
<td>Yes</td>
</tr>
<tr>
<td>Collect logs from additional IIS virtual directories</td>
<td>Whether to monitor out-of-memory errors from the MicroStrategy Web and Operations Manager virtual directories in addition to the MicroStrategy Mobile virtual directory. The default is No. Typing Yes starts monitoring for out-of-memory errors from following virtual directories, in addition to the default MicroStrategy Web deployment (C:\Program Files (x86)\MicroStrategy\Web ASPx\Application: /MicroStrategyOM Path: C:\Program Files (x86)\MicroStrategy\Operations Manager ASPx)</td>
<td>No</td>
</tr>
<tr>
<td>MicroStrategy Mobile ASPx URL</td>
<td>The URL to your MicroStrategy Mobile application.</td>
<td>Yes</td>
</tr>
<tr>
<td>MicroStrategy Mobile ASP Port</td>
<td>The port for your MicroStrategy Mobile application. The default is 0.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Monitoring Mobile JSP with MicroStrategy Mobile JSP Alerts

#### JVM Maximum Heap Size

This alert confirms that the Java Virtual Machine has enough memory available.
The following options are available for the JVM heap size for Mobile JSP alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Server Type</td>
<td>The name and version of the application server for MicroStrategy Mobile JSP.</td>
<td>No</td>
</tr>
<tr>
<td>Application Server Configuration Path</td>
<td>The complete path to the folder containing the start-up script for the application server.</td>
<td>Yes</td>
</tr>
<tr>
<td>MicroStrategy Mobile JSP Deployment Path</td>
<td>The path where the MicroStrategy Mobile JSP application is deployed.</td>
<td>Yes</td>
</tr>
<tr>
<td>Filter by last modified date</td>
<td>The number of previous days to analyze log files for. The default is 1.</td>
<td>Yes</td>
</tr>
<tr>
<td>Application Server Configuration File Name</td>
<td>You can change settings, such as the JVM maximum heap size, for the application server by overriding the default configuration file to use. To do this, type the name of the configuration file to use as an override. For example, for a JOSS application server, you may type run.conf. For Tomcat on UNIX or Linux, you may type catalina.sh.</td>
<td>No</td>
</tr>
<tr>
<td>MicroStrategy Mobile JSP URL</td>
<td>The URL to your MicroStrategy Mobile application.</td>
<td>Yes</td>
</tr>
<tr>
<td>MicroStrategy Mobile JSP Port</td>
<td>The port for your MicroStrategy Mobile application. The default is 0.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Monitoring Web Universal JSP with MicroStrategy Web Universal JSP Alerts**

**Available Memory for JVM setting**

This alert verifies that the machine hosting the MicroStrategy Web server has enough memory available to start the Web server. It checks if the machine has enough physical memory to support the JVM Max Heap Size as specified in the registry.

The following options are available for the JVM available memory alert:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Server Type</td>
<td>The name and version of the application server for MicroStrategy Mobile JSP.</td>
<td>No</td>
</tr>
<tr>
<td>Application Server Configuration Path</td>
<td>The complete path to the folder containing the start-up script for the application server.</td>
<td>Yes</td>
</tr>
<tr>
<td>Application Server Root Folder Path</td>
<td>The complete path to the root folder for the MicroStrategy Web JSP application server.</td>
<td>Yes</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
<td>Required?</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Application Server Configuration File Name</td>
<td>You can change settings, such as the JVM maximum heap size, for the application server by overriding the default configuration file to use. To do this, type the name of the configuration file to use as an override. For example, for a JOSS application server, you may type <code>run.conf</code>. For Tomcat on UNIX or Linux, you may type <code>catalina.sh</code>.</td>
<td>No</td>
</tr>
</tbody>
</table>
MONITORING YOUR MICROSTRATEGY SYSTEM

The Environment Details Page

Introduction

The Environment Details page contains tools that let you monitor each environment.

At the top of the page, the counters for the Environment display, just as they do on the Landing page. For details, see Viewing the overall health of your environments: Landing page, page 4.

On the left side of the page, the Environment Details toolbar displays. Use this toolbar to access the following:

- **Alerts**: Allows you to view the alerts inbox for an environment. See Viewing alerts for an environment: Alerts Inbox, page 50
- **Heartbeat**: Allows you to view usage information for an environment. See Viewing the overall health of an environment: Heartbeat, page 52
- **Monitors**: Allows you to view the system monitors for an environment. See Monitoring environment activity: Monitors, page 56
Viewing alerts for an environment: Alerts Inbox

The Alerts Inbox displays all alerts for an environment.

To access the Alerts Inbox from the Landing page

1. On the Operations Manager Landing page, right-click the environment you want to see alerts for, then click Alerts.

To access the Alert Inbox from the Environment Details page

1. On the Environment Details toolbar, click the Alerts icon.

Using the Alert Inbox

On the left side of the page, the Alerts List displays. This list can show up to 20 alerts. If more than 20 alerts are in your list, you can page through the list by using the next page arrow and the previous page arrow.

Click an alert to show the Alert Details on the right side of the page. If multiples of the same alert exist, the multiples are aggregated into one alert in the Alert List; you can page through them in the Alert Details on the left. For example, if your memory usage exceeds a certain threshold for more than 60 seconds and this happens several times a day, you receive an alert for each occurrence. All the alerts are combined into one alert in your Alerts List, and you can view details in the Alert Details portion of the page.

Filtering alerts

You can filter the alert inbox to show alerts for a server or a type of alert, or both.

To filter alerts

1. Click the Server Name drop-down list and select the server you want to view alerts for.
2 Click the **Alert Name** drop-down list and select the type of alerts you want to view.

**Sorting alerts**

You can sort alerts by date or machine.

---

**To sort alerts**

1 In the Alerts Inbox, select one of the following options from the Arrange by drop-down list:
   - **Date**: sorts alerts by date, from newest to oldest.
   - **Machine Name**: sorts alerts by machine name.

**Marking an alert as read or unread**

Unread alerts display with a green dot next to them. You can mark an unread real-time alert as read, or mark a read real-time alert as unread. You cannot change the read/unread status of a system alert.

---

**To mark an alert as read or unread**

1 In the Alerts Inbox, select the alert.

2 From the **Actions** drop-down list, perform one of the following:
   - To mark an unread real-time alert as read, select **Mark as Read**. The green dot next to the alert is removed.
   - To mark a read real-time alert as unread, select **Mark as Unread**. A green dot displays next to the alert.

**Delete an alert**

You can delete alerts that you no longer need.

---

**To delete an alert**

1 In the Alert Inbox, select the alert you want to delete.
2 From the **Actions** drop-down list, select **Delete**. The alert is deleted.

### Viewing the overall health of an environment: Heartbeat

The Heartbeat monitors provide usage, memory, and processing information about a server.

---

**To access the Heartbeat monitors from the Landing page**

1 On the Operations Manager Landing page, right-click the environment you want to see the Heartbeat monitors for, then click **Heartbeat**.

**To access the Heartbeat monitors from the Environment Details page**

1 On the Environment Details toolbar, click the **Heartbeat** icon 📈.

### Using the Heartbeat Monitors

At the top of the Heartbeat monitor, the following summary information displays about the Intelligence Server for the environment:

- The MicroStrategy version that is running on the Intelligence Server.
- **Network In**: The amount of data coming into the network
- **Network Out**: The amount of data going out of the network
- **Open Sessions**: The total number of open sessions on the server
- **Logical Disk Free Space**: The amount of free space on the logical disk
- **Status**: The status of the server

On the left side of the Heartbeat monitor, information about the server displays in real time. When you click an option, that heartbeat monitor displays to the right as a line graph with data for the past five minutes. The server is polled and the monitor is refreshed every five seconds, for 60 total data points. The following Heartbeat monitors are available:
• **Total CPU**: The total CPU percentage being used. Click to open the CPU monitor. For a sample view of the CPU heartbeat monitor, see [Viewing CPU usage, page 53](#).

• **Memory**: The server’s total percentage of available memory being used. Click to open the Memory monitor. For a sample view of the Memory heartbeat monitor, see [Viewing memory usage, page 53](#).

• **Memory I/O**: The number of pages per second swapped in and out of memory. Click to open the Memory I/O monitor. For a sample view of the Memory I/O heartbeat monitor, see [Viewing memory I/O usage, page 54](#).

• **Logical Disk I/O Bytes**: The total kilobytes of disk read and write operations per second. Click to open the Logical Disk I/O Bytes monitor. For a sample view of the Logical Disk I/O Bytes heartbeat monitor, see [Viewing logical disk I/O usage, page 54](#).

• **Page File**: The percentage of the server’s available virtual memory being used. Click to open the Page File monitor. For a sample view of the Page File heartbeat monitor, see [Viewing page file usage, page 55](#).

• **Job Completion Rate**: The average number of jobs per minute that complete processing on the Intelligence Server. Click to open the Job Completion Rate monitor. For a sample view of the Job Completion Rate heartbeat monitor, see [Viewing the job completion rate, page 55](#).

### Viewing CPU usage

The CPU heartbeat monitor displays the CPU usage for the server, as shown in the image below.

You can point to any data point to see the Total CPU, Kernel CPU, and User CPU usage amounts for that point in time.

### Viewing memory usage

The Memory heartbeat monitor displays the memory usage for the server, as shown in the image below.
You can point to any data point to see the memory usage percentage for that point in time.

**Viewing memory I/O usage**

The Memory I/O heartbeat monitor displays the number of pages per second swapped in and out of memory, as shown in the image below.

You can point to any data point to see the number of pages for that point in time.

**Viewing logical disk I/O usage**

The Logical Disk I/O Bytes heartbeat monitor displays the total kilobytes of disk read and write operations per second, as shown in the image below.
You can point to any data point to see the amount for that point in time.

**Viewing page file usage**

The Page File heartbeat monitor displays the percentage of available virtual memory used for the server as shown in the image below.

![Page File Heartbeat Monitor](image1)

You can point to any data point to see the percentage for that point in time.

**Viewing the job completion rate**

The Job Completion Rate heartbeat monitor displays the number of jobs per minute that complete processing on the Intelligence Server, as shown in the image below.

![Job Completion Rate Heartbeat Monitor](image2)

You can point to any data point to see the number of jobs completed for that point in time.

This monitor is not available for Web or Mobile servers because job processing does not take place on those servers.
Monitoring environment activity: Monitors

Operations Manager provides monitors that you can use to track the activity of your MicroStrategy environments in real time. The following monitors are available:

- Monitoring and managing currently running jobs: Jobs monitor, page 57
- Monitoring and managing open user sessions: User monitor, page 59
- Monitoring and managing an environment’s cache: Cache monitor, page 61
- Monitoring and managing open database connections: Database Connection monitor, page 68
- Monitoring the Quick Search Index status: Quick Search monitor, page 69

To access the Monitors from the Landing page

1. On the Operations Manager Landing page, right-click the environment you want to see monitors for, then click Monitor.

To access the Monitors from the Environment Details page

1. On the Environment Details toolbar, click the Monitors icon.

Using the Monitors

On the left side of the Monitors area, the following real-time categories of information are available for the selected server:

- Jobs (executing): The total number of jobs executing on the server. Click to open the Jobs monitor. For details on this monitor and how you can use it to view details for jobs or cancel them, see Monitoring and managing currently running jobs: Jobs monitor, page 57.
- Users (open sessions): The total number of open user sessions on the server. Click to open the User monitor. For detailed information, see Monitoring and managing open user sessions: User monitor, page 59.
• **Cache Usage**: The total amount of cache usage on the server, in megabytes. Click to open the Cache monitor. For detailed information, see *Monitoring and managing an environment’s cache: Cache monitor, page 61*.

• **Active Database Instances**: The total number of active database instances open on the server. Click to open the Database Connection monitor. For detailed information, see *Monitoring and managing open database connections: Database Connection monitor, page 68*.

• **Quick Search Index Creation Status**: The status of the quick search index creation on the server. Click to open the Quick Search monitor. For detailed information, see *Monitoring the Quick Search Index status: Quick Search monitor, page 69*.

**Monitoring and managing currently running jobs: Jobs monitor**

The Jobs monitor allows you to monitor the jobs being run on the selected server. You can also view details for a job or cancel it. The Jobs monitor has three areas—a summary, graph, and job list.

The top area includes the following summary information:

• **Completed Reports**: Displays the total number of reports that have completed processing since the server was started.

• **Total Report Requests**: Displays the total number of report requests that have been initiated since the server was started.

In the middle area, a line graph displays the Job Submission and Job Completion rates for the past five minutes. This line graph is updated every five seconds, for 60 data points, as shown below.

In the bottom area, a job list table displays all the jobs that are in process on the server. With options under the Actions column, you can cancel a job or view details for it. To sort the table by a column, click the column heading:

• **Description**: Current state of the job execution.
• **Project**: The name of the project the job was submitted from.
• **Owner**: The name of the user who submitted the job.
• **Job ID**: Numeric identifier assigned to the job.
• **Start Time**: The date and time when the job first entered MicroStrategy Server.

  • **Status**: Displays one of the following statuses:
    ▫ **Canceled**: The job is being canceled.
    ▫ **Executing**: The job is executing.
    ▫ **Ready to execute**: The job is in the queue waiting to begin execution.
    ▫ **Error**: An error was encountered while processing the job.
    ▫ **Waiting for prompt**: The job is held until the user answers a prompt.
    ▫ **Waiting for children**: The job is for a document and is waiting for its reports to complete.

• **Job Duration (sec)**: How long, in seconds, the job has been executing.
• **Actions**: You can cancel a job or view details for it, as follows:
  ▫ **Cancel Job**: Click to cancel the job. For steps, see *Canceling a job*, page 58.
  ▫ **View Job Details**: Click to see more details about the job. For information about the Job Details dialog box, see *Viewing job details*, page 58.

### Canceling a job

You can use the Job Monitor to cancel a job on the Intelligence Server.

#### To cancel a job

1. In the Job monitor, click the **Cancel Job** icon in the Actions column for the job you want to cancel. The Confirmation Action dialog box displays.
2. Click **Yes** to cancel the job.

### Viewing job details

When you select to view Job Details for an executing job, the Job Details dialog box opens and displays this information:
• **Job ID:** Numeric identifier assigned to the job.

• **Creation Time:** The date and time when the job first entered MicroStrategy Server.

• **Description:** Current state of the job execution.

• **Status:** Displays one of the following statuses:
  - **Canceled:** The job is being canceled.
  - **Executing:** The job is executing.
  - **Ready to execute:** The job is in the queue waiting to begin execution.
  - **Error:** An error was encountered while processing the job.
  - **Waiting for prompt:** The job is on hold until the user answers a prompt.

• **Client Machine:** The client machine the job was initiated from.

• **Submitted by User:** The name of the user who submitted the job.

• **Priority:** The Intelligence Server priority of the job: low, medium, or high.

• **Project ID:** ID of the project the job was submitted from.

• **Project Name:** Name of the project the job was submitted from.

• **Duration:** How long, in seconds, the job has been executing.

• **Filter:** The filter used by this job.

• **Template:** The template used by this job.

• **Number of Tasks:** The total number of tasks for the job.

• **Number of Finished Tasks:** The number of tasks that have already completed for the job.

• **SQL:** The SQL used by this job.

**Monitoring and managing open user sessions: User monitor**

When a user logs in to MicroStrategy, a user session is established. The User Monitor displays a list of all open sessions and allows you to disconnect a session.

At the top of the User Monitor, a graph displays the distribution of available sessions and currently open sessions on the selected server, as shown below.
The following summary information also displays next to the graph:

- **Available Sessions**: The total number of available sessions. You can configure this number in the Intelligence Server Configuration Editor. For more information, see the *System Administration Guide*.

- **Open Sessions**: The total number of open sessions.

- **Web**: The total number of open Web sessions.

- **Mobile**: The total number of open Mobile sessions.

- **Other**: The total number of open sessions for other MicroStrategy clients. For example, these can be Command Manager sessions, Health Center sessions, and so on.

Below the summary, the following details display for each open user session:

- **User**: The name of the MicroStrategy user who owns the session.

- **Project**: The project the user connection is for. If the user connection is not from a project, this column displays `<Server>`.

- **Client Machine**: The machine name or IP address of the machine the session originated from.

- **Time Connected**: The date and time the user session was opened.

- **Client Type**: The type of session, for example, Command Manager, MicroStrategy Developer, Health Center, and others.

- **First Job Time**: The date and time of the first job initiated by the session.

- **Last Job Time**: The date and time of the most recent job initiated by the session.

- **Job Count**: The total number of jobs initiated by the session.

- **Actions**: To disconnect the session, click the *Disconnect* icon 🗑️.
Monitoring and managing an environment’s cache: Cache monitor

The Cache monitor provides information about report, document, and Intelligent Cube caches on the selected server. You can also manage caches with actions such as deleting, loading, unloading, and so on.

At the top of the Cache monitor, this summary information displays:

- **Cache Hits**
  - **Reports**: The total number of times report caches have been hit since the Intelligence Server was started. This number encompasses all projects on the server.
  - **Documents**: The total number of times document caches have been hit since the Intelligence Server was started. This number encompasses all projects on the server.

- **Cache Size on Disk**
  - **Report**: The total size of all report caches on disk.
  - **Document**: The total size of all document caches on disk.
  - **Intelligence Cube**: The total size of all Intelligent Cube caches on disk.

Under the summary information, a heat map displays the cache information for the selected project, as shown below:
The following rules apply to the heat map display, regardless of any filters you use:

- The larger the cache, the larger it is in the display.
- Caches display from left to right in descending size order.
- Caches with the most hits display as orange; caches with the fewest hits display as blue.
- If all caches in the display have the same number of hits, all caches display as blue.
- Caches with hits between the most and the least display as dark blue, gray, or dark orange.

  - When you point to a cache in the heat map, details display in a tooltip:
    - **Cache Name**: the name of the cache.
    - **Hit Count**: the number of times the cache has been hit since it was loaded to disk.
    - **Cache Size**: the size of the cache in kilobytes.

You can use the drop-down lists at the top to filter the heat map. From left to right, the lists are:

- **Project** selection: click to select the project to view cache information for.
- **Cache type** selection: click to select what type of caches to view. You can choose from the following:
  - Report
  - Document
  - Intelligent Cube
- **Size** selection: works with the Caches Displayed field to limit which caches display in the heat map. Click to select one of the following:
Monitoring and managing an environment’s cache: Cache monitor

- **All**: displays all caches, regardless of the number in the Caches Displayed field.

- **Largest Cache**: displays the caches with the largest cache size, limited by the number in the Caches Displayed field. For example, if you set the Caches Displayed field to 5, selecting this option changes the heat map to display the five largest caches.

- **Smallest Cache**: displays the caches with the smallest cache size, limited by the number in the Caches Displayed field. For example, if you set the Caches Displayed field to 7, selecting this option changes the heat map to display the seven smallest caches.

- **Highest Hit Count**: displays the caches with the most hits, limited by the number in the Caches Displayed field. For example, if you set the Caches Displayed field to 10, selecting this option changes the heat map to display the 10 caches with the most hits.

- **Lowest Hit Count**: displays the caches with the fewest hits, limited by the number in the Caches Displayed field. For example, if you set the Caches Displayed field to 3, selecting this option changes the heat map to display the three caches with the fewest hits.

Below the heat map, a table displays the following information about each cache:

- **Cache Name**: The name of the cache.
- **Size (KB)**: The size of the cache, in kilobytes
- **Type**: One of the following types of cache:
  - **Matching**: A cache containing the report results
  - **History**: A cache containing information about History List messages relating to this report.
  - **Matching-History**: A matching cache that is referenced by at least one History List message.
  - **XML**: A cache containing the report results and structure, for use by MicroStrategy Web.
- **Status**: The status of the cache, which can be any of the following:
  - **R**: Ready. The cache is ready to be used.
  - **P**: Processed. The cache is being updated.
  - **I**: Invalid. The cache has been invalidated either manually or by a change to one of the objects used in the cached report. It can no longer be used and will be deleted according to the Cache lookup cleanup frequency specified in the Server Definition (advanced) category of the Intelligence Server Configuration Editor.
• **E**: Expired. The cache has passed the time limit specified in the Cache Duration in the Result Caches (maintenance) category of the Project Configuration editor. It can no longer be used and will be deleted according to the Cache lookup cleanup frequency specified in the Server Definition (advanced) category of the Intelligence Server Configuration Editor.

• **L**: Loaded. The cache is loaded in Intelligence Server memory.

• **U**: Updated. The information in the cache is up to date.

• **D**: Dirty. The cache has been updated in Intelligence Server memory since it was saved to disk. Caches are saved to disk according to the Backup frequency specified in the Server Definition (advanced) category of the Intelligence Server Configuration Editor.

• **F**: Filed. The cache has been created on disk.

- **Last Hit**: The date and time when the cache was last used, according to the Intelligence Server machine time.

- **Hit Count**: The number of times the cache has been used.

- **Actions**: The following actions are available (see *Managing caches, page 66*):
  
  - **.Undef Cache**: Invalidates the selected cache.
  
  - **Delete Cache**: Deletes the selected cache from the project and from the disk.
  
  - **More Cache Options**: Click for a drop-down list with the following options:
    
    - **Load**: Loads the selected cache into memory.
    
    - **Unload**: Unloads the selected cache from memory.
    
    - **Details**: Select to see additional details about the cache.

**Viewing cache details**

You can view additional details about any cache in the list.

**To view cache details**

1. On the cache monitor, click the **More Actions** icon in the Actions column for the cache. A list of options opens.

2. Click **Details**. The Cache Details dialog box displays.
Cache Details Dialog Box

When you select to view Cache Details for a cache, the Cache Details dialog box opens and displays this information:

- **Cache Name**: The name of the cache.
- **Cache ID**: A unique 32-digit alphanumeric identifier (GUID) for the cache.
- **Report ID**: The ID of the report that uses the cache.
- **Folder**: The folder where the report resides.
- **Cache Size (KB)**: The size of the cache, in kilobytes
- **Status**: The status of the cache, as follows:
  - **R**: Ready. The cache is ready to be used.
  - **P**: Processed. The cache is being updated.
  - **I**: Invalid. The cache has been invalidated either manually or by a change to one of the objects used in the cached report. It will no longer be used and will be deleted according to the Cache lookup cleanup frequency specified in the Server Definition (advanced) category of the Intelligence Server Configuration Editor.
  - **E**: Expired. The cache has passed the time limit specified in the Cache Duration in the Result Caches (maintenance) category of the Project Configuration editor. It will no longer be used and will be deleted according to the Cache lookup cleanup frequency specified in the Server Definition (advanced) category of the Intelligence Server Configuration Editor.
  - **L**: Loaded. The cache is loaded in Intelligence Server memory.
  - **U**: Updated. The information in the cache is up to date.
  - **D**: Dirty. The cache has been updated in Intelligence Server memory since it was saved to disk. Caches are saved to disk according to the Backup frequency specified in the Server Definition (advanced) category of the Intelligence Server Configuration Editor.
  - **F**: Filed. The cache has been created on disk.
- **Cache Type**: One of the following types of cache:
  - **Matching**: A cache containing the report results
  - **History**: A cache containing information about History List messages relating to this report.
  - **Matching-History**: A matching cache that is referenced by at least one History List message.
Monitor and managing an environment’s cache: Cache monitor

- **XML**: A cache containing the report results and structure, for use by MicroStrategy Web.

- **Hit Count**: Number of times the cache has been used.

- **Waiting List**: The number of reports that are waiting to use this cache.

- **Last Hit Time**: The date and time when the cache was last used, according to Intelligence Server machine time.

- **Creator**: The MicroStrategy user who created the cache.

- **Creation Time**: Date and time when the cache was created, according to the Intelligence Server machine time.

- **Expiration**: The date and time when the cache is set to expire.

- **Last Updated Time**: The date and time when the cache was last updated.

- **Last Load Time**: The date and time when the cache was last loaded.

- **Prompt Answers**: The answers to any prompts used in the report. This information is available if the Record prompt answers for cache monitoring check box is selected in the Result Caches (Creation) category of the Project Configuration editor.

- **Database Connection**: The database connection used to create the cache. This information is available if the Create caches per database login check box is selected in the Result Caches (Creation) category of the Project Configuration editor.

- **Database Login**: The user name for the database connection used to create the cache.

- **Cache File Name**: Location and file name for this cache on the disk.

- **Security Filter ID**: ID of the security filter applied to the user who created the cache.

- **Language**: The language used in the cache.

**Managing caches**

From the Cache Monitor, you can perform the following actions:

- **Invalidate a cache.** See Invalidating a cache, page 67.

- **Delete a cache.** See Deleting a cache, page 67.

- **Load a cache into memory.** See Loading a cache into memory, page 67.

- **Unload a cache from memory.** See Unloading a cache from memory, page 67.
**Invalidating a cache**

You can invalidate a cache to keep users from running reports that are based on the outdated cache data.

---

**To invalidate a cache**

1. On the cache monitor, click the **Invalidate** icon in the Actions column for the cache you want to invalidate. The Confirm Action dialog box displays.
2. Click **Yes**.

---

**Deleting a cache**

You can delete a cache if you want to remove it from the system before it would normally be deleted.

---

**To delete a cache**

1. On the cache monitor, click the **Delete** icon in the Actions column for the cache you want to delete. The Confirm Action dialog box displays.
2. Click **Yes**.

---

**Loading a cache into memory**

If a cache has not been automatically loaded into memory, you can do it manually.

---

**To load a cache into memory**

1. On the cache monitor, click the **More Actions** icon in the Actions column for the cache you want to load. A list of options opens.
2. Click **Load**.

---

**Unloading a cache from memory**

You can unload a cache from memory if you need to free up memory for other operations on the Intelligence Server machine.
To unload a cache from memory

1. On the cache monitor, click the More Actions icon in the Actions column for the cache you want to unload. A list of options opens.
2. Click Unload.

Monitoring and managing open database connections: Database Connection monitor

A data warehouse database connection is initiated any time a user executes an uncached report or browses uncached elements. The Database Connection Monitor displays the number of busy and cached connections to the data warehouse. It also displays the name of the database instance, the user who is using the connection, and the database login being used to connect to the database.

If a database connection is cached, the ODBC connection from Intelligence Server to the data warehouse remains open. However, if the data warehouse connection surpasses the connection time-out or lifetime governors (set in the Database Connections dialog box, on the Advanced tab), the ODBC connection closes, and it no longer displays in the Database Connection Monitor.

To view the open database connections for a server, from the Server drop-down list, select that server.

A table displays the following information for each open database connection:

- **Connection ID**: Numeric identifier for a connection.
- **Status**: Connections can be either:
  - **Busy**: The connection is busy with a job.
  - **Cached**: The connection is not busy and is available to process a job.
- **Database Instance**: The database instance being used to make the connection to the database.
- **Database Connection**: The database connection being used to make the connection to the database.
- **User Name**: When a connection is busy, this displays the user name of the person whose job is being executed.
- **Database Login**: The database login being used to make the connection to the database.
- **Actions**: You can disconnect a database connection by clicking the Disconnect icon.
Disconnecting a database connection

You can use Operations Manager to manually disconnect any database connection from the Intelligence Server.

To disconnect a database connection

1. In the Database Connections monitor, click the Disconnect icon in the Actions column for the connection you want to disconnect. The Confirm Action dialog box displays.
2. Click Yes.

Monitoring the Quick Search Index status: Quick Search monitor

The Quick Search monitor displays the status of the Quick Search index for each project. Quick search indexes are managed in MicroStrategy Developer. For information on managing them, see the System Administration Guide.

To view the Quick Search index status for all projects on a server, from the Server drop-down list, select that server.

- **Project**: The name of the project.
- **Index Status**: The current status of the quick search index:
  - **No Index**: The project has not been indexed for quick search.
  - **Crawling**: The quick search index is being created.
  - **Paused**: The index creation process is paused.
  - **Complete**: The index is complete.
- **Percentage Completed**: The percentage of the search index that has been created.
- **Search Items**: The number of items that can be searched in the project.
- **Last Real Time Updates**: The date and time when the search index was automatically updated because of a change in the metadata.
- **Project ID**: The GUID of the project.
ANALYZING SYSTEM USAGE WITH ENTERPRISE MANAGER

Introduction

MicroStrategy Enterprise Manager provides insights about governing and tuning all areas of your MicroStrategy system. By analyzing the usage statistics collected by Intelligence Server, Enterprise Manager provides a historical overview of your MicroStrategy business intelligence operations.

This section provides the following information:

- *What is Enterprise Manager?, page 72* provides an overview of Enterprise Manager.
- *Best practices for using Enterprise Manager, page 73* lists MicroStrategy’s recommendations for best practices on using Enterprise Manager.
- *Understanding Enterprise Manager architecture, page 73* explains how Enterprise Manager interacts with your MicroStrategy system.
- *Installing and configuring Enterprise Manager, page 77* walks you through the process of setting up Enterprise Manager to monitor projects in your system.
- *Maintaining Enterprise Manager, page 93* explains how to ensure that Enterprise Manager runs efficiently.
• *Reporting in Enterprise Manager, page 105* provides descriptions of all the predefined reports available in Enterprise Manager. These reports can help you identify problem areas in the system.

# What is Enterprise Manager?

Enterprise Manager is a tool that provides reports and dashboards that display statistical data on usage of MicroStrategy software. You can use these reports and dashboards to make decisions about tuning the MicroStrategy system. When you log into the Enterprise Manager project, you can run reports that help you do the following:

• Allocate system resources according to data warehouse usage
• Research efficient aggregation, partitioning, and indexing strategies
• Determine the optimal time to run scheduled jobs, load data, or perform system and database maintenance
• Determine the most popular reports so you can schedule and cache them, thus increasing their response time and reducing the load on the system
• Identify unused objects from your metadata repository so they can be deleted later
• Identify peak usage times and patterns and, if necessary, tune your Intelligence Server to respond appropriately
• Determine whether you need to add more threads to the database connection threads if queue times are long
• Profile users by their system resource usage

You can use the predefined reports as they are, copy the reports and then modify the copies, or build your own custom reports to suit your needs. The Enterprise Manager project includes more than 300 metrics and 90 predefined reports. Many of these reports include prompts, which accept user input before a report is executed, for flexibility. You can create new metrics, prompts, filters, templates, or reports to suit the needs of your environment or the type of analysis you want to do. All the predefined objects are in the Public Objects folder in the Enterprise Manager project.
Best practices for using Enterprise Manager

- Make all users who need access to the Enterprise Manager reports members of the MicroStrategy Web Viewer user group. Users in this group have all the necessary permissions and privileges to use the out-of-the-box Enterprise Manager reports.

- Make all users who need administrative access to the Enterprise Manager project members of the EMAdmin user group. Users in this group have all the necessary permissions and privileges to administer the Enterprise Manager project.

- Use Enterprise Manager to monitor itself. This feedback can help you fine-tune Enterprise Manager’s monitoring ability.

- For additional information about every object in the Enterprise Manager project, see the object’s Long Description property (right-click the object, select Properties, and select the Long Description category). The long description includes sample reporting requirements for the object.

- For best practices relating to specific Enterprise Manager functionality, see the following:
  - Best practices for installing and configuring Enterprise Manager, page 76
  - Best practices for Enterprise Manager data loading, page 95
  - Best practices for Enterprise Manager reporting, page 106

Understanding Enterprise Manager architecture

The diagram below shows the main components of Enterprise Manager, and the processes that transform the statistics logged by Intelligence Server so they can be incorporated into Enterprise Manager reports and dashboards. Descriptions of these components and processes are below the diagram:

- Enterprise Manager system components, page 74
- Enterprise Manager processes, page 75
**Enterprise Manager system components**

- **Intelligence Servers**
  
  The MicroStrategy projects on each Intelligence Server can be configured to log usage statistics to the staging tables.

- **Enterprise Manager**
  
  Enterprise Manager consists of a MicroStrategy project, the Enterprise Manager server (service), and an interface in MicroStrategy Operations Manager where administrators can control how the server operates.

  - The Enterprise Manager project is the heart of Enterprise Manager. It runs against the Enterprise Manager Data Warehouse (as shown above). The project contains facts, attributes, hierarchies, metrics, filters, and prompts that are used in the reports and dashboards. These are designed to help users monitor and tune their entire MicroStrategy system. For detailed descriptions of each report and dashboard, see *Reporting in Enterprise Manager, page 105.*
- The Enterprise Manager server directs Intelligence Servers to load statistics about the monitored projects into the statistics repository and runs the data load, which moves statistics data into the repository fact tables.

- MicroStrategy Operations Manager is used to schedule the Enterprise Manager data loads and maintain Enterprise Manager. You can also use it to monitor data load progress. For steps on configuring Enterprise Manager via MicroStrategy Operations Manager, see Configuring Enterprise Manager, page 84.

**Statistics Repository**

The statistics repository contains data on the MicroStrategy system’s usage and performance; the staging tables are populated by all projects that are configured to log statistics. For an explanation of the collected statistics, see the MicroStrategy System Administration Guide. For details about the contents of the statistics tables, see the Statistics Data Dictionary in the Supplemental Reference for System Administration.

**Enterprise Manager Data Warehouse**

The Enterprise Manager data warehouse is in the same database as the statistics repository. The data warehouse contains the following:

- **Lookup tables** contain descriptive information about each object in the monitored projects, such as name, owner, creation date, folder path, and so on. In the data load process, the lookup tables are loaded with data from the lookup tables in the statistics staging tables.

- **Statistics tables** contain raw statistics data that has been loaded from the statistics staging tables by the data load process.

- **Fact tables** contain data that has been processed and loaded from the statistics tables by the data load process.

**Enterprise Manager processes**

Enterprise Manager has three major processes: logging statistics, data loading, and reporting on that data. These are described below.

- **The statistics logging process**

  You choose which MicroStrategy projects log usage statistics into the statistics staging tables. For details about the statistics logging process, including steps to configure a project to log statistics, see the MicroStrategy System Administration Guide.

- **The data loading process**

  Before the raw information in the statistics staging tables can be analyzed with the Enterprise Manager project, it must be migrated into the
Enterprise Manager repository and converted into a form that can be reported on. In addition, Enterprise Manager needs up-to-date information about the projects it monitors to report accurately on topics like per-user resource usage. The data load process populates the lookup and fact tables in the Enterprise Manager data warehouse. For a detailed description of the data load process, see Data loading, page 93.

- **The Enterprise Manager reporting process**

  The Enterprise Manager users execute reports in the Enterprise Manager project to analyze the information in the repository. For detailed descriptions of each report, see Reporting in Enterprise Manager, page 105.

**Best practices for installing and configuring Enterprise Manager**

- Install the Enterprise Manager service on a machine that is separate from Intelligence Server. Ideally, this is on the same machine as MicroStrategy Operations Manager.

- The Enterprise Manager project can be in the same metadata as your other projects.

- Create the statistics and Enterprise Manager repository in a database that is separate from a production data warehouse. Intelligence Server can operate more efficiently if they are not in the same data warehouse.

- Assign users to groups with the appropriate Enterprise Manager-related privileges. The Enterprise Manager project metadata contains two user groups: MicroStrategy Web Viewer and EMAdmin.
  - Users assigned to the MicroStrategy Web Viewer group have all the necessary privileges and permissions to view the out-of-the-box Enterprise Manager reports. Assign users to this group who need to view reports.
  - Users assigned to the EMAdmin group have all the necessary privileges to administer the Enterprise Manager project. Assign users to this group who need to create reports.

- To ensure that you can successfully upgrade the Enterprise Manager project in the future, do not modify schema objects. Rather, make copies of the objects you want to modify and then modify the copies.

- Upgrade to Enterprise Manager service packs when they become available. MicroStrategy includes your feedback in the service packs, including fixes to issues and additional enhancements.
Installing and configuring Enterprise Manager

Below is a high-level overview of the steps to install and configure Enterprise Manager for your MicroStrategy system.

1 Consider the best practices for installing and configuring Enterprise Manager and confirm that you have fulfilled the prerequisites for installing it.
   • Read the *Best practices for installing and configuring Enterprise Manager, page 76.*
   • For a list of the prerequisites, see *MicroStrategy Enterprise Manager prerequisites, page 78.*

2 Install the Enterprise Manager service. For steps to install Enterprise Manager, see the *MicroStrategy Installation and Configuration Guide.*

3 Step through items in the MicroStrategy Configuration Wizard that are relevant to Enterprise Manager:
   • Set up tables in the statistics and Enterprise Manager repository, which includes the statistics database and the Enterprise Manager data warehouse. For steps to create the tables, see *Creating the Enterprise Manager repository, page 79.*
   • Configure your projects to log statistics to the statistics database. Each project for which you want to log statistics, you specify the information that you want to have logged. For steps on doing this, see the *MicroStrategy System Administration Guide.*
   • Create the Enterprise Manager project: Unpack objects to create the project and the metadata database for use with the project. For steps to create the project, see *Creating the Enterprise Manager project, page 83.*

4 Use MicroStrategy Operations Manager to define the following:
   • The projects for which Enterprise Manager will perform data loads. These should be the same projects in which you turned on statistics in the previous step. For steps to configure the projects, see *Creating and scheduling a data load, page 85.*
   • Data loading schedules for when your projects are loaded into the Enterprise Manager repository. For steps to define the schedules, see *Creating and scheduling a data load, page 85.*
   • Maintenance tasks that are done in the data load process. For steps on defining these, see *Selecting Enterprise Manager maintenance tasks to perform in the data load, page 99.*
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• What is logged when a data load occurs and how large the log files and table can get. For steps to define these, see Configuring what Enterprise Manager data load information is logged, page 103.

MicroStrategy Enterprise Manager prerequisites

Before you install Enterprise Manager, make sure the following are true:

• You have write access to two databases: one for the Statistics and Enterprise Manager Repository, and one for the Enterprise Manager project metadata. The Statistics and Enterprise Manager Repository should be in a database that is separate from your production data warehouse. The project metadata can be placed in the same database as other MicroStrategy project metadatas. Note the Data Source Name (DSN) for each.

The Statistics and Enterprise Manager repository may be in any of these databases:

- IBM DB2 UDB
- MySQL
- Oracle
- SQL Server
- Sybase ASE
- Teradata

If you are using DB2 or Sybase for these, you must change the minimum page file size for the database to at least 8K. DB2 uses the page file size to determine the maximum size of a single row in the database. Some Enterprise Manager tables contain rows that require more than the default 4K.

Before creating the DSN for a MySQL database using the Connectivity Wizard, you must obtain and install the ODBC driver for it.

For a complete list of the versions of each database that are certified for use with Enterprise Manager, see the MicroStrategy Readme.

• You have administrator privileges for the MicroStrategy projects that you want to monitor in Enterprise Manager. You must also have the Create Configuration Objects privilege for the project source in which you are creating the Enterprise Manager project.

The Enterprise Manager metadata contains a user group called EMAdmin. Users in this group have all the privileges necessary to use all features of
Creating the Enterprise Manager repository

The Statistics and Enterprise Manager Repository should reside in a database that is separate from your production databases. You can use an existing statistics database in your system or create a new database:

• To use an existing database, note the Data Source Name (DSN) for it. This DSN is used later in the setup process, when you are prompted for the Enterprise Manager repository.

• To create a new repository, follow the procedure below.

To create a new Enterprise Manager statistics repository

1 Create a database to store your Enterprise Manager statistics repository. This is generally performed by your database administrator. This database must be one of those certified for use as a MicroStrategy statistics repository. For a list of certified databases, see the MicroStrategy Readme.

2 Use the MicroStrategy Connectivity Wizard to create a DSN for the statistics repository. Note this DSN for later. You need it when creating the statistics tables and when you specify the DSN for the Statistics and Enterprise Manager repository.

If you are upgrading from an earlier version of Enterprise Manager, performing the steps below drops the existing tables. To avoid losing this data, see the MicroStrategy Upgrade Guide for instructions on upgrading.

Set up the tables in the Enterprise Manager statistics repository

3 From the Windows Start menu, point to All Programs, then MicroStrategy Tools, and then select Configuration Wizard.
The Configuration Wizard must be run with administrator privileges. If you are not an administrator on the local machine, from the Start menu, instead of selecting Configuration Wizard, right-click Configuration Wizard and select Run As Administrator.

4 On the Welcome page, select Create Metadata, History List and Enterprise Manager Repositories and click Next. The Repository Configuration: Repository Types page opens.

5 Select the Statistics & Enterprise Manager option and clear the other options. Click Next. The Repository Configuration: Statistics and Enterprise Manager Repository page opens.

6 From the DSN drop-down list, select the Data Source Name for the database that will contain your Enterprise Manager repository (the same database that you will use to log Intelligence Server statistics). This is the database and DSN you created in the first two steps of this procedure.

7 Type a valid User Name and Password for this database. The login that you specify must have permission to create and drop tables in the database, and permission to create views.

8 Click Next. The Configuration Wizard connects to the database.

If Enterprise Manager tables already exist in this database, it prompts you for whether to re-create the tables.

Clicking Yes deletes the existing tables and all information in them.

To leave the existing tables in place, click No. To re-create the tables, click Yes.

9 The Summary page lists the tasks that will be performed. To create the tables, click Finish. The process can take several minutes.

Now that the statistics repository tables exist, you can configure projects to log statistics there. See Setting up projects to log statistics to the statistics database, page 80.

### Setting up projects to log statistics to the statistics database

Projects can be configured to log statistics in two ways:

- From MicroStrategy Developer, used to set each project to log different levels of statistics (see the MicroStrategy System Administration Guide)
• From the Configuration Wizard, used to create the Statistics database instance and turn on basic statistics for all projects in the metadata (follow the procedure below)

**To use the Configuration Wizard to configure projects to log basic statistics**

1. From the Windows **Start** menu, point to **All Programs**, then **MicroStrategy Tools**, and then select **Configuration Wizard**.
2. Select **Configure Intelligence Server** and click **Next**. The Server Configuration: Metadata Connection page opens.

**Enterprise Manager Metadata Repository**

3. Select the **Data Source Name** for the Enterprise Manager metadata database from the drop-down list.
4. Type a valid **User Name** and **Password** for this database. Click **Next**.
5. If you have previously configured Intelligence Server, click **Next** until you reach the Statistics Configuration page. If this is the first time you are configuring Intelligence Server, click **Help** for instructions to configure Intelligence Server.

**Default statistics database instance**

6. On the Statistics Configuration page, select the **Make this my default Statistics Database Instance for the local Intelligence Server metadata** check box.
7. From the **DSN** drop-down list, select the data source name of the database to use for the default statistics repository.
8. Type a valid **User Name** and **Password** for this database.
9. Select the **Enable Basic Statistics (For newly created projects and existing projects not logging statistics)** check box.
10. Click **Next**. The Summary page opens.
11. Review the information on the page; when you are ready, click **Finish**. The process can take several minutes.
12. When finished, you see a confirmation that it completed. Click **Return**. The Welcome to MicroStrategy Configuration Wizard page opens. Click **Exit** to close it.
After the projects are set up to log statistics, you must also check that the database connection feature for using parameterized queries is enabled. For steps on this, see Configuring the project source to use parameterized queries, page 82.

**Configuring the project source to use parameterized queries**

For each project source containing projects that log statistics in the statistics repository, you must ensure that the database connection used for the statistics repository has the feature enabled to use parameterized queries.

**To enable parameterized queries in the database connection**

1. In MicroStrategy Developer, log in to the server (three-tier) project source containing the projects that are logging statistics.

2. Right-click one of the projects that is logging statistics and select **Project Configuration**. The Project Configuration Editor opens.

3. Expand the **Database instances** category, and select the **SQL Data warehouses** subcategory.

4. In the Database instances list, select **Statistics**, then click **Modify**. The Database Instances dialog box opens.

5. In the **Database connection (default)** list, select the connection used for the statistics repository database, and click **Modify**. The Database Connections dialog box opens.

6. Click the **Advanced** tab and select the **Use parameterized queries** check box.

7. Click **OK** three times to save the changes and return to the MicroStrategy Developer interface.

8. Repeat the above steps for other three-tier project sources containing projects that are logging statistics to the statistics repository.

**Configure an additional database driver setting**

If your statistics and Enterprise Manager repository is in an Oracle, Sybase, or Teradata database, you must configure an additional ODBC driver setting so the information is recorded properly in the statistics repository.

9. Open the ODBC Data Source Administrator tool in Windows.

10. Select the DSN for your statistics and Enterprise Manager repository and click **Modify**. The ODBC Driver Setup dialog box opens.

11. Perform the following according to your database:
• Oracle: click the Advanced tab and select the Enable SQLDescribeParam check box.

• Sybase: click the Advanced tab and select the Enable Describe Parameter check box.

• Teradata: click Options and select the Enable Extended Statement Information check box.

12 Click OK twice to save the change and close the ODBC Data Source Administrator dialog box.

After the projects are properly logging statistics about your system’s usage, you must set up the Enterprise Manager project so that you can run reports about that usage. For steps on this, see Creating the Enterprise Manager project, page 83.

Creating the Enterprise Manager project

The Enterprise Manager metadata contains all the facts, attributes, hierarchies, metrics, filters, and reports that are predefined as part of the Enterprise Manager project. The Enterprise Manager project can be created on a machine with your production metadata. It is installed in the form of a MicroStrategy Object Manager Package. You can create a new metadata database or use an existing metadata database.

You can automate the creation of the Enterprise Manager project by using a Configuration Wizard response file. For instructions on creating the response file, details about the settings in the response file, and steps on running the response file, see Using a response file to create an Enterprise Manager project, page 89.

To create a new metadata database

1 Create a database to store your Enterprise Manager metadata. This is generally performed by your database administrator. This database must be one of the databases certified for use with MicroStrategy metadata. For a list of certified databases, see the MicroStrategy Readme.

2 Use the MicroStrategy Connectivity Wizard to create a Data Source Name (DSN) for the metadata. Note this DSN for later. It is needed when creating the statistics tables and when you specify the DSN for the Metadata Location.

To access the Connectivity Wizard, from the Windows Start menu, point to All Programs, then MicroStrategy Tools, and then select Connectivity Wizard.
For detailed instructions on using the Connectivity Wizard, see the MicroStrategy Installation and Configuration Guide.

To create the Enterprise Manager project

1. From the Windows Start menu, point to All Programs, then MicroStrategy Tools, and then select Configuration Wizard.

2. Select Create Enterprise Manager project and click Next. The Enterprise Manager Project Creation page opens.

3. Type in a valid User Name and Password to connect to Intelligence Server metadata.

4. If you have an Enterprise Manager project package file (.mmp) to use instead of the default one, click Advanced >>. In the Package location field, type the path to the package, or to locate the file, click ... (the Browse button), navigate to the package file, and double-click it.

5. Click Next. The Enterprise Manager Repository page opens.

6. From the DSN drop-down list, select the data source name of the Enterprise Manager repository.

7. Type in a valid User Name and Password to connect to the database.

8. Click Next. The Summary page displays the tasks that will be performed.

9. Review the information and when you are ready, click Finish. The process can take several minutes.

Enterprise Manager is now initialized in your system; you can connect to it using MicroStrategy Operations Manager, select which projects to monitor, and schedule the data loads. For steps on these, see Configuring Enterprise Manager, page 84.

Configuring Enterprise Manager

Once Enterprise Manager is installed and initialized, and the projects are logging statistics, you can configure Enterprise Manager to process the statistics and load them into the Enterprise Manager repository. This involves connecting to Enterprise Manager using MicroStrategy Operations Manager and creating one or more data loads. For each data load you can choose the following: which projects to monitor, what maintenance tasks to perform, and the schedule on which it runs. For steps on doing these, see the following:

- Connecting to Enterprise Manager with MicroStrategy Operations Manager, page 85
- Creating and scheduling a data load, page 85
If you are using complete session logging, you must follow the above procedures for each different statistics database. Alternatively, for steps on how to use the recommended configuration of single instance session logging, see the MicroStrategy System Administration Guide.

**Connecting to Enterprise Manager with MicroStrategy Operations Manager**

To select the projects to monitor and create data loading schedules, you must connect to Enterprise Manager using MicroStrategy Operations Manager.

**To connect to Enterprise Manager in MicroStrategy Operations Manager**

1. Access MicroStrategy Operations Manager and click the **Configuration** icon.
2. On the left, click the **Enterprise Manager** icon.
3. In the Enterprise Manager panel, type in the **Server Name or IP** of the machine where the Enterprise Manager service is installed.
4. Type the **Port Number** used to connect to Enterprise Manager. Port 9999 is the default.
5. Click **Connect**. Any existing data loads are displayed.

You can now create a data load and select which projects to monitor. For steps, see *Creating and scheduling a data load, page 85*.

**Creating and scheduling a data load**

You can create a data load and specify which projects Enterprise Manager will monitor, select which maintenance tasks the data load performs, and set the schedule for when the data load runs.

Before you can create a data load, you must be able to access Enterprise Manager using MicroStrategy Operations Manager. For steps, see *Connecting to Enterprise Manager with MicroStrategy Operations Manager, page 85*. The projects must already be configured to log statistics. For steps on doing this, see *Setting up projects to log statistics to the statistics database, page 80*.

For a description of what happens in the data load process, best practices to consider when setting it up, and maintenance tasks that can be done as part of the process, see *Data loading, page 93*. 
To create a data load in Enterprise Manager

1. Access MicroStrategy Operations Manager and click the **Configuration** icon.

2. On the left, click the **Enterprise Manager** icon.

3. Click **Create Data Load**.

4. Type in a name in **Data load name**.

**Select projects to monitor**

5. Available servers and projects in the environment are displayed in the **Projects** tab.

6. Select the check box next to each project for which Enterprise Manager will perform the data load. You can select only projects that have statistics logging enabled (see *Setting up projects to log statistics to the statistics database, page 80*). The image below shows an example of two projects selected.

![Create New Load](image)

**Select maintenance tasks to perform in the data load**

7. Select the **Tasks** tab.

8. Select the check box for any maintenance action you want to perform as part of the data load. The image below shows only basic actions selected.
For a description of each action, see *Selecting Enterprise Manager maintenance tasks to perform in the data load, page 99.*

Now you can set up the schedule for the data load.

**Scheduling the data load**

9 Select the **Schedule** tab.

10 From the **Recurrence** drop-down list, select **Daily** or **Weekly**. Depending on which you select, the options displayed change. For weekly schedules, specify the days when you want the data load to run.

11 To load data once a day, select **Occurs at** and specify the time of day when you want the data load to start.

12 To load data several times a day:

   a Select **Occurs every** and specify the interval between data loads, in minutes or hours.

      This interval must be longer than the time it takes the data load to complete. For example, if the data loading process takes 20 minutes to run, set an interval longer than 20 minutes.

   b Select the time of day when you want the data load process to start.

   c Specify the time of day after which the data load process does not start.

13 Specify the date to start the scheduled data load.
To run the data load process indefinitely, clear the End check box.

To specify a date after which the data load does not run, select End and specify a date.

An example data load schedule that runs every two hours daily from 9 A.M. to 7 P.M. is shown in the image below.

**Save the data load**

Click **Save**. The Log In dialog opens.

Select the environment in which the data load will run:

- If the data load is for separate environments, select **Single Environment Login**.
- If the data load is for all environments, select **All environments**.

Type in a valid **User Name** and **Password** for a MicroStrategy Login ID that has Administrator access to the selected environments.

Click **Login**.

The new data load is saved and displayed in the Enterprise Manager page. It is enabled by default as indicated by the green ON switch. An example of two data loads is shown in the image below.
After you have configured Enterprise Manager and used it, you can maintain the data loads. For steps on how to disable and enable them, modify schedules, change what maintenance tasks are performed in the data load, and delete the data loads, see *Maintaining Enterprise Manager, page 93.*

**Upgrading Enterprise Manager**

You should consider several important issues as you upgrade your Statistics and Enterprise Manager Repository and the Enterprise Manager project. For complete details on upgrading your Enterprise Manager environment, see the *MicroStrategy Upgrade Guide.*

The best way to update the Enterprise Manager project is by using the MicroStrategy Configuration Wizard, as described in the *Upgrade Guide.* Alternatively, you can use Object Manager to upgrade the Enterprise Manager project. For instructions on how to use Object Manager and Project Merge, see the *MicroStrategy System Administration Guide.*

**Using a response file to create an Enterprise Manager project**

As an alternative to stepping through each page of the Configuration Wizard during the project creation process, you can create a response file with the Enterprise Manager project information and use that response file with the Configuration Wizard to automatically create the Enterprise Manager project on this machine and configure the connection to the Statistics and Enterprise Manager repository.

**Creating a response file**

MicroStrategy recommends that you create a response file through the graphical interface of the Configuration Wizard. You step through the Configuration Wizard and make your selections, as described in *Creating the Enterprise Manager project, page 83.* When you reach the Summary page of the Configuration Wizard, do not click **Finish.** Instead, click **Save.** You are prompted to save your selections in a response file.
You can also create or modify a response file with a text editor. For information on all the parameters in the response file, see *Enterprise Manager response file parameters, page 92.*

MicroStrategy supplies a blank response file template, `Response.ini`, in the Common Files folder of your MicroStrategy installation. By default, this folder is `C:\Program Files (x86)\Common Files\MicroStrategy`.

**Executing a response file**

You can execute a response file in any of the following ways:

- From within the Configuration Wizard. See *To use a response file with the Configuration Wizard, page 90.*
- From the Windows command line. See *To use a response file through the Windows command line, page 90.* This enables users to run the file without using any graphical user interfaces.
- In UNIX or Linux. See *To use a response file through the Configuration Wizard in UNIX or Linux, page 91* or *To use a response file through the UNIX/Linux command line, page 91.*

**To use a response file with the Configuration Wizard**

1. From the Windows **Start** menu, point to **All Programs**, then **MicroStrategy Tools**, and then select **Configuration Wizard**. The Configuration Wizard opens.

2. Click **Load**. The Open dialog box displays.

3. Browse to the path where the response file is saved and click **Open**. The Summary page opens.

4. An overview of all the configuration tasks performed by the response file is displayed. Review the tasks and when you are ready to perform the configuration, click **Finish**.

**To use a response file through the Windows command line**

1. Type the following command in the Windows command line:

   `macfgwiz.exe -r "Path\response.ini"`
Where `Path\` is the fully qualified path to the response file. For example, a common location of a response file is:

```
C:\Program Files (x86)\Common Files\MicroStrategy\RESPONSE.INI
```

If an error message is displayed, check the path and name you supplied for the response file and make any required changes.

---

**To use a response file through the Configuration Wizard in UNIX or Linux**

1. From a UNIX or Linux console window, browse to `<HOME_PATH>` where `<HOME_PATH>` is the directory you specified as the Home Directory during installation.

2. Browse to the folder `bin`.

3. Type `mstrcfgwiz-editor` and press **ENTER**. The Configuration Wizard opens with the Welcome page displayed.

4. Press **ENTER**.

5. Type 1 to select to use a response file and press **ENTER**.

6. Type the fully qualified path to the `response.ini` file and press **ENTER**. For example:

```
/home/username/MicroStrategy/RESPONSE.INI
```

If an error message is displayed, check the path and name you supplied for the response file and make any required changes.

---

**To use a response file through the UNIX/Linux command line**

1. From a UNIX or Linux console window, browse to `<HOME_PATH>` where `<HOME_PATH>` is the directory you specified as the Home Directory during installation.

2. Browse to the folder `bin`.

3. Type the following command in the command line and press **ENTER**.

```
mstrcfgwiz-editor -response /Path/response.ini
```

Where `Path` is the fully qualified path to the response file. For example, a common location of a response file is:

```
/home/username/MicroStrategy/RESPONSE.INI
```
If an error message is displayed, check the path and name you supplied for the response file and make any required changes.

**Enterprise Manager response file parameters**

**Enterprise Manager configuration**

The parameters in the [EMProjectHeader] portion of the response file create the Enterprise Manager project on this machine and configure the connection to the Statistics and Enterprise Manager repository. The table below lists the available parameters and the functionality of available options for each parameter. For detailed information about each parameter, see the Configuration Wizard Help.

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[EMProjectHeader]</td>
<td>Options in this portion refer to creating the Enterprise Manager project on this machine.</td>
</tr>
<tr>
<td>EMProject=</td>
<td>Defines whether to create the Enterprise Manager project, as determined by the following values:</td>
</tr>
<tr>
<td></td>
<td>• 1: Create Enterprise Manager project on this machine.</td>
</tr>
<tr>
<td></td>
<td>• 0: Do not create the Enterprise Manager project.</td>
</tr>
<tr>
<td>EMProjectEncryptPwd=</td>
<td>Defines whether the passwords are encrypted in the response file, as determined by the following values:</td>
</tr>
<tr>
<td></td>
<td>• 0: The passwords are not encrypted in the response file, which enables you to modify the passwords in the response file using a text editor. You can then distribute the response file to multiple users with various login and password credentials. However, be aware that this can compromise your database security if you do not remove the passwords from the response file before distributing it.</td>
</tr>
<tr>
<td></td>
<td>• 1: Encrypts the passwords in the response file, which ensures that your passwords are secure. This is the default behavior.</td>
</tr>
<tr>
<td>EMProjectDSSUser=</td>
<td>The user name to log in to the Enterprise Manager project.</td>
</tr>
<tr>
<td>EMProjectDSSPwd=</td>
<td>The password for the user name above. This may be encrypted, depending on the EMProjectEncryptPwd= setting.</td>
</tr>
<tr>
<td>EMProjectPkgFile=</td>
<td>The full path and file name of the MicroStrategy Enterprise Manager project package file used to create the project. On Windows, by default this is C:\Program Files (x86)\Common Files\MicroStrategy\OOTB-EM.mmp.</td>
</tr>
<tr>
<td>EMProjectDSNName=</td>
<td>The Data Source Name for the database that contains your Statistics and Enterprise Manager repository.</td>
</tr>
<tr>
<td>EMProjectDSNUserName=</td>
<td>The user name to connect to the Statistics and Enterprise Manager repository database.</td>
</tr>
<tr>
<td>Options</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>EMProjectDSNUserPwd=</td>
<td>The password for the user name above for the Statistics and Enterprise Manager repository database. This may be encrypted, depending on the EMProjectEncryptPwd= setting.</td>
</tr>
<tr>
<td>EMProjectDSNPrefix=</td>
<td>The prefix of the Statistics and Enterprise Manager repository database.</td>
</tr>
</tbody>
</table>

## Maintaining Enterprise Manager

To ensure that Enterprise Manager is operating properly and efficiently, you can adjust the data loading schedules, select maintenance tasks that are performed as part of the data load process, control what information is logged, and configure log file settings such as location and how large the log files can get. These are explained below:

-  *Data loading, page 93*
-  *Selecting Enterprise Manager maintenance tasks to perform in the data load, page 99*
-  *Troubleshooting the data loading process, page 100*
-  *Configuring what Enterprise Manager data load information is logged, page 103*

## Data loading

The data loading process gathers and prepares data for analysis and reporting in the Enterprise Manager project. During the data load process, Enterprise Manager gathers metadata from projects, transfers metadata and statistics information from staging tables into the Enterprise Manager repository, and converts raw data into a form that can be analyzed and used for reporting.

A data load occurs according to the schedule you define when you create the data load. For instructions on setting the schedule, see *Creating and scheduling a data load, page 85*. You can also run a data load at any time if your repository is missing data. For steps on running a data load immediately, see *Running a data load now, page 98*.

You can turn on and off single data loads or all data loads at once. For steps, see *Disabling and enabling data loads, page 97*.

The data load process has four steps.

1. Enterprise Manager gathers metadata from projects. Enterprise Manager provides Intelligence Server with a time window for the data load.
Intelligence Server then transfers relevant information about the project sources specified in Enterprise Manager to lookup tables in the statistics staging tables. Relevant information includes such data as report names, user/group names, and object relationships. Examples include user/group relationships and which schedules are mapped to which reports.

2 While Intelligence Server is transferring lookup table information, Enterprise Manager moves statistics data from the statistics staging tables into the statistics tables in the Enterprise Manager repository.

3 After Enterprise Manager has finished transferring statistics data, it starts transferring the staging lookup tables that Intelligence Server has completed. Enterprise Manager moves the information in the staging lookup tables into lookup tables in the Enterprise Manager repository.

Metadata information for all projects in a project source is transferred into the Enterprise Manager lookup tables, regardless of whether those projects are configured to log statistics.

4 The final step in the data load process involves processing the data in the Enterprise Manager repository tables. These statistics tables contain raw data logged by Intelligence Server. For performance reasons, most fields are fixed-length fields and contain data that cannot be directly interpreted by an administrator. An example of such a field is an object GUID. This raw data must be processed further to support administrative analysis and reporting requirements. SQL scripts transform the statistics data into a form that can be useful for administrative reporting. The transformation ensures that reporting on MicroStrategy metadata content is feasible. This transformed data is stored in fact tables in the Enterprise Manager repository.

Some of Enterprise Manager’s fact tables are views of certain statistics tables. This substantially speeds up the data load process.

To ensure that the statistics data is complete, at the beginning of the data load process a timestamp is created in the EM_IS_LAST_UPDATE table, according to the current date and time in the Enterprise Manager repository. This timestamp indicates the end of the data migration window. The beginning of the data migration window is determined by the previous data load’s timestamp entry in the EM_IS_LAST_UPDATE table. Therefore, the data load transfers any statistics logged between the start of the last data load and the start of the current one. When the data load process is complete, Enterprise Manager updates the EM_IS_LAST_UPDATE table to indicate that the process is finished.

If the data load process is successful, Enterprise Manager deletes all data from the staging lookup and staging statistics tables.
If the data load process is interrupted before it finishes, this last update is not time stamped. In this case, the next time a data load runs, it starts with data from the time the last successful data load was finished.

For log file information you can use to troubleshoot the Enterprise Manager data loading process, see Troubleshooting the data loading process, page 100.

**Best practices for Enterprise Manager data loading**

- Set up the scheduled data loads according to the answers to these questions:
  - How long does the data load take?
  - How current does the data need to be?

If you need near-real-time data, and the data load does not take longer than a few minutes, you may want to run the data load as often as once per hour. However, if the data load process takes a long time, you should run it when Intelligence Server use is low, such as overnight.

- The data load maintenance tasks can affect the load on your Intelligence Server. Close open sessions, for example, requires very little overhead. MicroStrategy recommends that you run this task with every data load. In contrast, Update database statistics can increase the load dramatically. If you are running frequent data loads, this task should not be enabled by default for all data loads. For more information about the data load options, see Selecting Enterprise Manager maintenance tasks to perform in the data load, page 99.

- When you delete a monitored project in Developer, you must also remove it from MicroStrategy Operations Manager. Otherwise, Enterprise Manager attempts to load data from that project in the data load.

- When you change the name of a project in Developer, you should refresh the list of available projects in MicroStrategy Operations Manager before the next data load. Otherwise, Enterprise Manager continues to refer to the project under its old name.

- Synchronize the time of the Intelligence Server machine with the Enterprise Manager repository if possible. When Intelligence Server writes statistics into the database, it uses the repository database management system’s timestamp. This is written as em_record_ts (in the fact tables) and as recordtime (in the statistics tables). Enterprise Manager uses recordtime to determine which statistics to move over according to the time window for a data load process. The time window is determined according to the Enterprise Manager repository database management system’s time.

  Also, if the repository database time is different from the Intelligence Server machine time, certain reports in Enterprise Manager may have missing data. For example, if statistics appear for “Deleted report” in
Enterprise Manager reports, it may be because statistics are being logged for reports that, according to the repository’s timestamp, should not exist.

**Modifying a data load**

You can change the schedule and tasks performed for an existing data load. For steps to create a data load, see *Creating and scheduling a data load, page 85*.

---

**To change a data load**

1. Access MicroStrategy Operations Manager and click the **Configuration** icon 🔄.

2. On the left, click the **Enterprise Manager** icon 🏢.

3. For the data load you want to change, click the **Edit data load settings** icon ✎.

**To select projects to monitor**

4. Available servers and projects in the environment are displayed in the **Projects** tab. Only those projects that have statistics logging enabled are displayed (see *Setting up projects to log statistics to the statistics database, page 80*).

5. Select whether to perform the data load for the project. Use the check box next to each project, as follows:
   - To monitor the project, select the check box.
   - To disable monitoring for the project, clear the check box.

**To change the schedule**

6. Click the **Schedule** tab. The existing data load schedule is displayed.

7. Make any necessary changes to the **Time Range**, **Recurrence**, or **Date Range** options. For details about each option, see *Creating and scheduling a data load, page 85*.

**To change tasks performed as part of a data load**

8. Click **Save**. The Log In dialog box opens.

9. Select the environment in which the data load will run:
• If the data load is for separate environments, select **Single Environment Login**.
• If the data load is for all environments, select **All environments**.

10 Type in a valid **User Name** and **Password** for a MicroStrategy Login ID that has Administrator access to the selected environments.

11 Click **Login**.

**Disabling and enabling data loads**

You can prevent a single data load from running by disabling it. To have it run as scheduled, you can enable it. You can disable and enable all data loads at once using the MicroStrategy Service Manager. These are described below.

---

**To disable a single data load**

1. Access MicroStrategy Operations Manager and click the **Configuration** icon.

2. On the left, click the **Enterprise Manager** icon.

3. For the data load you wish to disable, click the **ON** switch.

The data load is disabled and moved down in the list with other disabled data loads. The toggle switch changes to gray and says **OFF**.

---

**To enable a single data load**

1. Access MicroStrategy Operations Manager and click the **Configuration** icon.

2. On the left, click the **Enterprise Manager** icon.

3. For the data load you wish to enable, click the **OFF** switch.

The data load is enabled and moved up in the list with other enabled data loads. The toggle switch changes to green and says **ON**.
To disable or enable all data loads

You can disable and enable all Enterprise Manager data loads by stopping and starting the Enterprise Manager data loading service.

1. On the machine that hosts the Enterprise Manager service, open the MicroStrategy Service Manager.
   - In Windows: Double-click the Service Manager icon in the system tray. If the Service Manager icon is not present, from the Windows Start menu, point to All Programs, then MicroStrategy Tools, and then select Service Manager.
   - In UNIX: You must be in an XWindows environment to run Service Manager in UNIX. From the /bin directory in the MicroStrategy directory, type ./mstrsvcmgr and press ENTER.

2. From the Service drop-down list, select MicroStrategy Enterprise Manager Data Loader.

3. Choose from these options:
   - To stop the data loader, click Stop. All data loads are disabled. This is available if the service is running.
   - To start the data loader service, click, Start. This is available if the service is stopped.
   - To stop and immediately start the data loader service, click Restart. This is available if the service is running.

Running a data load now

You can run a data load immediately rather than waiting for its next scheduled time.

To run a data load immediately

1. Access MicroStrategy Operations Manager and click the Configuration icon.

2. On the left, click the Enterprise Manager icon.

3. For the data load you want to run, click the Run data load now icon.

4. To confirm that you want to run the data load, click Yes.

The data load starts, and a progress bar is displayed.
Deleting a data load

You can delete a data load and all its settings.

To delete a data loading schedule

1. Access MicroStrategy Operations Manager and click the Configuration icon.
2. On the left, click the Enterprise Manager icon.
3. For the data load schedule you want to delete, click the Delete data load settings icon.
4. To confirm that you want to delete the data load, click Yes.

Selecting Enterprise Manager maintenance tasks to perform in the data load

In addition to loading data from the statistics tables and project metadata, the data load process can perform certain system maintenance tasks. These tasks keep your Enterprise Manager project and data loads performing efficiently.

The maintenance tasks that can be performed are listed here by category:

• Basic actions
  ▫ Fact & lookup migration: This task populates data in the Enterprise Manager repository by migrating it from the statistics tables into the fact and lookup tables. Specifically, this moves any data that is new since the last data load occurred.

• Advanced metadata actions
  ▫ Update folder paths/object deletions: This task updates the location property of attributes such as Report, User, and so on. It synchronizes the Enterprise Manager repository lookup tables with the actual folder paths in the metadata. This task also ensures that objects that are deleted in the project metadata are marked as having been deleted in Enterprise Manager. Information about deleted objects is retained in the Enterprise Manager lookup tables for historical analysis. A deleted object is marked with a Deleted flag in the corresponding lookup table.
  ▫ Repopulate relate tables: This task synchronizes the relationship (relate) tables in the Enterprise Manager repository, such as IS_SCHED_RELATE or IS_USR_GP_USR, with the metadata.
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• **Advanced database cleanup actions**
  
  ▫ **Close orphan sessions:** This task closes all sessions that have been open for longer than 24 hours. These are called *orphan sessions*, which are entries in the statistics staging tables that indicate a session was initiated in Intelligence Server, but no information was recorded when the session ended. Orphan sessions occur rarely, but they can affect the accuracy of Enterprise Manager reports that use Session Duration. For example, one long-running orphan session can skew the average time a session lasts by several days.
   
   The SQL script run for this option is `em_close_orphan_sessions_DBname.sql`, where `DBname` is an abbreviation of the type of database storing your Enterprise Manager repository.

  ▫ **Update database statistics:** This task executes SQL scripts that cause the Statistics and Enterprise Manager repository to collect statistics on the repository tables. The database uses these statistics to improve response times for Enterprise Manager reports. This task should be run frequently to improve the performance of Enterprise Manager reports.
   
   The following SQL scripts are run for this option:
   
   - `Upd_Stat_Table_Stats_DBname.sql`
   - `Upd_Fact_Table_Stats_DBname.sql`

---

**To select the maintenance tasks to be performed during a data load**

1. In MicroStrategy Operations Manager, click **Enterprise Manager**.

2. For the data load for which you are choosing maintenance tasks, click the **Edit data load settings** icon .

3. Select the **Tasks** tab.

4. Select the check box for each task to perform during the data load. For a detailed explanation of each task, see *Selecting Enterprise Manager maintenance tasks to perform in the data load, page 99.*

5. Click **Save**.

The selected tasks are performed the next time the data load runs.

**Troubleshooting the data loading process**

If a data load does not complete or is not moving statistics for a project as you expected, you can check items that prevent the data load from working
properly. You can also turn on logging features and then search those log files and table for causes of the problem. These are explained below.

- **What can prevent a data load from working properly?, page 101**
- **Checking Enterprise Manager log files, page 102**

**What can prevent a data load from working properly?**

Below are some of the reasons why a data load might not work for a project:

- Data cannot be loaded from a project that is not already loaded on Intelligence Server. Data also cannot be loaded from a project that is set to Request Idle, Execution Idle, or Full Idle mode.

Before loading data from a project, make sure the project is not in any of these idle modes and is set to Loaded status. For an explanation of the different project modes, including instructions on how to set a project’s mode, see the *System Administration Guide*.

- If you have changed the password for the user that configured a project for Enterprise Manager, data cannot be loaded from that project until you reconfigure it. For steps, see *Modifying a data load, page 96*. On the Projects tab of the data load, clear the check box for the project and save the data load schedule. Next, modify the data load schedule again—this time selecting the check box for the project and saving the data load schedule.

- If you have deleted a project in Developer that is being monitored by Enterprise Manager, the data load process fails until you remove that project from the list of projects being monitored.

- If Intelligence Server and Enterprise Manager cannot get to the statistics and Enterprise Manager repository, data cannot be recorded in the statistics database, and the data load process cannot run. Make sure the DSN for the repository is correct and that the database user has the permissions needed connect to and write data in the database. For steps, see *Creating the Enterprise Manager repository, page 79*.

- Some steps in the data load work only if the database connection for the statistics repository is configured for parameterized queries. See *Configuring the project source to use parameterized queries, page 82*.

- Data can be recorded only if statistics logging is enabled for a project. Make sure you configured your projects to log statistics to the statistics database. For steps on doing this, see the *Monitoring the System* chapter in the *System Administration Guide*.

- If the project is not selected as part of a data load schedule, information for that project is not loaded into the Enterprise Manager repository. To ensure that it is enabled, see *Modifying a data load, page 96*. 
• Check that the data load schedule is turned on. Also, if the MicroStrategy Enterprise Manager Data Loader service has stopped, no scheduled data loads occur. For steps on enabling a data load and on starting the data loader service, see Disabling and enabling data loads, page 97.

Checking Enterprise Manager log files

Enterprise Manager can log information about the data load process, including all errors, into a table and several files. If a data load does not finish or has errors, you can search the table and files to find the cause of the problem. You can configure the following logging options:

• Information is recorded in the MAEntMgr.xml log file about the steps in the data load process, including any errors. This information includes the timestamp of steps such as the data load start, the project or object being processed, fact migration, any errors, and so on. This log is populated for every data load and cannot be turned off. You can, however, control how large the file gets before it is backed up. To do this, configure the Backup log every _ MB option. By default this file is stored in these locations, but you can change it for your system (see Configuring what Enterprise Manager data load information is logged, page 103):

  ▪ In Windows: C:\Program Files (x86) \MicroStrategy\Enterprise Manager \\
  ▪ In UNIX/Linux: /<MSTR Home Path>/install/EnterpriseManager/

• If an error occurs when a SQL script executes as part of a data load, the MAEntMgr.xml file records that the error occurred, but it does not store the SQL script that caused the error. To obtain the SQL script in a following data load, you can turn on the Log migration SQL option (see Configuring what Enterprise Manager data load information is logged, page 103). This creates a log file called MigrationSQL.txt or MigrationSQL.log, which you can view in the Log Analysis panel of the Health Center Console. By default, this log migration SQL option is turned off. MicroStrategy recommends turning it on for troubleshooting. By default, this file name and location are as follows:

  ▪ In Windows: C:\Program Files (x86)\Common Files\MicroStrategy\Log\MigrationSQL.txt
  ▪ In UNIX/Linux: /<MSTR Home Path>/log/MigrationSQL.log

• You can configure Enterprise Manager to record information into the EM LOG table about the data load process. The information includes when data load started, the steps performed, and so on, which is similar to what is in the MAEntMgr.xml file. The EM LOG table is in the Enterprise Manager repository. To view its contents, use a tool to query the database, such as the MicroStrategy DB Query Tool. You can also control how much history to keep in the table by configuring the Populate EM_LOG table and purge
every _ rows option. For steps to enable this logging and control the table size, see Configuring what Enterprise Manager data load information is logged, page 103.

- You can configure Intelligence Server to record information in a diagnostics file that you specify, such as the DSSErrors.log file, about the data load process. This records detailed information for steps that Intelligence Server performed in the process. To turn on this logging, from the MicroStrategy Diagnostics and Performance Logging Tool, select the EM Migration Trace check box, from the File Log drop-down list, select the name of the log file to record the information in, and click Save. For steps to enable this logging and control the table size, see Configuring what Enterprise Manager data load information is logged, page 103. To view the log file, you can use the MicroStrategy Health Center Console.

Configuring what Enterprise Manager data load information is logged

You can configure Enterprise Manager to collect information about the data load operation. Over time the information in the log files and table can become outdated and no longer relevant to your analysis. You can keep them to a manageable size, making them easier to maintain and faster to query. You can also configure Intelligence Server to log information.

For the names of the files and table, where they are, the types of information they store, what to check in them when troubleshooting a data load, see Checking Enterprise Manager log files, page 102.

To configure Enterprise Manager data loading logs

1 Access MicroStrategy Operations Manager and click the Configuration icon.

2 On the left, click the Enterprise Manager icon.

3 Click Global Settings.

4 Configure the following log settings:
   - Data Load Log File. Specifies where the MAEntMgr.xml log file is stored. You may find the information in this file helpful for troubleshooting errors that occur in the data load.
   - Log migration SQL: To log SQL statements that are executed as part of a data load, select this check box. The SQL statements are recorded in the log file called MigrationSQL.txt (Windows) or MigrationSQL.log (UNIX/Linux). You may find the information in
this file helpful for troubleshooting errors that occur when SQL scripts run as part the data load.

- **Backup log every _ MB**: To allow Enterprise Manager to control the MAEntMgr.xml log file’s size, select this check box and specify the size, in megabytes, that triggers the backup. When the file gets to the specified size, Enterprise Manager renames the log file by appending a sequential number to the name, creates a new MAEntMgr.xml file, and continues to log information in it. The default log file size is 2 MB, the minimum is 0 MB, and the maximum is 50 MB.

- **Populate EM_LOG table and purge every _ rows.** To enable the system to log information in the EM_LOG table in the Enterprise Manager repository, select this check box and specify the number of rows to act as a trigger for purging half of the rows. For example, if this is set as 10,000, when the table reaches 10,000 rows, the system purges 5,000 rows, beginning with the oldest. The default is 10,000 rows, the minimum is 0, and the maximum is 99,999.

  5 Click **Save**.

---

**To configure Intelligence Server data loading logging about Enterprise Manager**

1 Open the Diagnostics and Performance Logging Tool.
   - From Developer: From the Tools menu, select **Diagnostics**.
     
     If the **Diagnostics** option does not appear on the Tools menu, it has not been enabled. To enable this option, from the Tools menu, select **MicroStrategy Developer Preferences**. In the General category, in the Advanced subcategory, select the **Show Diagnostics Menu Option** check box and click **OK**.
   
   - In Windows: From the Windows Start menu, point to All Programs, then **MicroStrategy Tools**, and then select **Diagnostics Configuration**.
   
   - In UNIX/Linux: Navigate to the directory ~/MicroStrategy/bin and enter mstrdiag.

2 In the Kernel component list, in the row of the **EM Migration Trace**, select the check box in the Console Log column.

3 From the **File Log** drop-down list, select the name of the log file to record the information in.

4 Click **Save**.
You can use the Health Center Console to read the log file. For steps, see the System Administration Guide.

Reporting in Enterprise Manager

Enterprise Manager contains many reports designed to provide you with useful information about your MicroStrategy objects, report processing data, and user and session data. For example, is the length of time jobs wait in queue causing significant delays in report processing? If so, increasing the number of available database connection threads could help decrease the queue time. This is one example of how Enterprise Manager reports can help you.

Enterprise Manager also contains several dashboards, a type of interactive document that uses one or more reports to explore related areas of data. For an intuitive introduction to how which Enterprise Manager can help you analyze report information, use the dashboards before you begin executing any reports. For more details on the contents of the dashboards included with Enterprise Manager, see Dashboard-style Documents, page 108.

To run a report in the Enterprise Manager project, you connect to the project as you would any of your other projects. You must have been assigned the appropriate privileges in the Enterprise Manager project by a system administrator.

You can use the Enterprise Manager reports out of the box, or you can modify the reports to return exactly the data you want to analyze for your MicroStrategy environment. For information about customizing the Enterprise Manager reports, see Customizing Enterprise Manager reports to suit your needs, page 107.

Enterprise Manager report names are preceded by a number. The integer-numbered reports (such as 81. Activity by User) indicate that the report returns data on a high-level analysis area. The decimal-numbered reports (such as 81.1 Ad-hoc Job Activity by User or 81.2 DB Result Rows by User) indicate that these reports provide more detail within the higher-level analysis area.

Indexes are included for out-of-the-box reports on the Enterprise Manager fact tables. Check the indexes for the Enterprise Manager reports that you run most frequently or that take the longest to complete. If necessary, you should build additional indexes if you find some reports using tables that do not have an index.

The analysis areas of the Enterprise Manager project are described below. Several of the analysis area descriptions include details on one or two representative reports from that area, and suggest report customization ideas that can be used with many of the reports within that analysis area.
• **Dashboards-style Documents** are an excellent source of summarized data and provide interactive analysis at deeper levels of detail. For descriptions of each Enterprise Manager dashboard, see *Dashboard-style Documents, page 108*.

• **Operations analysis** reports provide information on system resource usage, concurrency, and report and subscription processing time. For descriptions of these reports, see *Operations analysis, page 119*.

• **Performance analysis** reports support analysis related to usage patterns, Intelligence Server governing settings, and Intelligent Cube Analysis. For descriptions of these reports, see *Performance analysis, page 127*.

• **Project analysis** reports provide information about MicroStrategy project growth and the uses of configuration and project objects. For descriptions of these reports, see *Project analysis, page 131*.

• **Real-time analysis** reports provide information related to response times and schedule results. This information can be useful for troubleshooting and for optimizing your database configuration. For descriptions of these reports, see *Real-time analysis, page 138*.

• **User analysis** reports analyze user activity and preferences. For descriptions of these reports, see *User analysis, page 139*.

For a detailed list of all Enterprise Manager facts, attributes, and metrics, see the *Supplemental Reference for System Administration*.

Because Intelligence Server can be configured to log different types of statistics, some of the reports in the Enterprise Manager project are affected if some logging options are not selected. For details about the statistics logging options, see the *System Administration Guide*.

**Best practices for Enterprise Manager reporting**

- Although a recent Enterprise Manager data load is not a prerequisite to viewing and aggregating recently collected statistics data, to view object names from the project metadata, a prior successful data load must have occurred in which the object names and descriptions were loaded. If this has not occurred, metrics are still reported and aggregated correctly, but certain object names appear as null fields.

  Once the statistics data are processed in a data load, the scope of analysis increases significantly, and reports in the different Enterprise Manager analysis areas reflect the data.

- The dashboard documents included with Enterprise Manager give an intuitive introduction to reporting and should be used before running any reports. For more information on the dashboards available in Enterprise Manager, see *Dashboard-style Documents, page 108*. 
• Instead of directly modifying a report supplied with Enterprise Manager, MicroStrategy recommends that you make a copy of the report and modify that copy.

• By default, only the MicroStrategy system administrator and users in the EMAdmin group have the necessary permissions and privileges to run reports in Enterprise Manager. If other users need to view the Enterprise Manager reports, an administrator must assign the users the privileges to use all objects in the Public Objects and Schema Objects folders.

• Data that is displayed as “########” indicates that the data cannot be displayed. For example, if a metric for Average Report Execution Duration displays “########” for a report in a certain time frame, that report might have never executed to completion in that time frame and had all its executions canceled. This could mean that you need to investigate your system for problems in that time frame.

Customizing Enterprise Manager reports to suit your needs

The reports in Enterprise Manager provide a wide variety of information for your analysis. However, you may find that the out-of-the-box reports do not fit your analytical needs. In this case, you can either edit an existing report or you can create your own report using the predefined metrics and attributes in the Enterprise Manager project.

Instead of directly modifying a report supplied with Enterprise Manager, MicroStrategy recommends that you make a copy of the report and modify that copy.

You can modify and create reports in Enterprise Manager through Developer or MicroStrategy Web, just as in any other MicroStrategy project. For an introduction to MicroStrategy reporting, covering the basics of analyzing and creating reports and report objects such as metrics and filters, see the MicroStrategy Basic Reporting Guide. For information about more complex reporting tasks, see the MicroStrategy Advanced Reporting Guide. You can also click Help for detailed information about any interface.

Some Enterprise Manager reports make use of MicroStrategy’s Freeform SQL feature to allow you to use custom SQL statements to access alternative data sources. For complete details about Freeform SQL, see the MicroStrategy Advanced Reporting Guide.
Viewing information about Enterprise Manager objects: Project documentation

The Project Documentation Wizard provides detailed information about any objects in the Enterprise Manager project. For example, to find which metric to use for a specific purpose, you can generate and view the project documentation for the Enterprise Manager metrics.

When you step through the Project Documentation Wizard, you specify the objects that you want information about. The wizard records information about these objects as an HTML file. You can view and search this HTML file or print it for quick reference.

The Enterprise Manager project documentation is initially available on the machine that has the Enterprise Manager project installed. To enable other users to view the project documentation, share the HTML files over your network.

To create project documentation for Enterprise Manager

1. In Developer, log in to the Enterprise Manager project. You must log in with an account that has administrative privileges in this project.

2. From the Tools menu, select Project Documentation. The Project Documentation Wizard opens.

3. Step through the wizard. Select the Enterprise Manager project and the objects and information that you want to include in the project documentation. For instructions on how to use the wizard, click Help.

   To include information about metrics or reports, select Application objects. To include information about attributes, select Schema objects.

4. On the last page of the wizard, click Finish. The project documentation HTML files are generated in the location you specify in the wizard.

Dashboard-style Documents

Enterprise Manager comes with several Report Services documents that show one or more related reports in a dashboard-type display. Report Services documents are an excellent source of summarized data from related areas of analysis. Dashboards, which are a type of document, provide a lot of interactive graphical features to enable exploration of the data at several levels of detail.
The Enterprise Manager Overview dashboard provides an intuitive and interactive overview of collected document, report, and user activity data. It also serves as a quick guide to the other dashboards you can run in Enterprise Manager. Before executing any Enterprise Manager reports, use this dashboard to get an introduction to the capabilities of Enterprise Manager.

You must have MicroStrategy Report Services to view or work with a Report Services document. Dashboards must be viewed in MicroStrategy Web to take full advantage of their interactivity.

The other dashboards in Enterprise Manager are below:

- Data Warehouse Optimization Advisor, page 109
- Dashboard and Document Processing Analysis dashboard, page 110
- Mobile Usage and Adoption Dashboard, page 111
- Project Analysis Dashboard, page 112
- Project Analysis Interactive Dashboard, page 113
- Real-Time Server Usage Dashboard, page 114
- Report Usage Analysis Dashboard, page 115
- Server Caching Optimization Advisor, page 116
- User Analysis Dashboard, page 117
- Enterprise Manager dashboard for mobile devices, page 119

Except for the iPhone Analysis Dashboard, these dashboards are designed for use with MicroStrategy Web. If you are using MicroStrategy Web Universal, the links to other reports in the dashboards do not function. To correct the links, edit the dashboards and change all occurrences of Main.aspx in the links to mstrWeb.

**Data Warehouse Optimization Advisor**

This dashboard provides information that can guide you when optimizing your data warehouse performance. The user specifies the time frame for analysis, the number of database tables to consider for optimization, and the percentage of jobs to consider in the optimization calculations.
The top half of the dashboard summarizes the current database usage. This summary includes the following:

- An executive summary of the database usage over the specified period, including the number of report requests and report result rows, the average execution time for each request, and the total execution time.

- A gauge graph showing the percent of total database load that the specified percentage of jobs consume.

- A grid showing which reports consume the most database resources. This grid can be sorted by number of report requests, number of result rows, or execution time.

The bottom half of the dashboard lists the database tables being considered for optimization. Clicking on a table brings up a list of optimizations and their potential effectiveness. These optimizations include aggregate table grouping and different types of secondary indexes.

**Dashboard and Document Processing Analysis dashboard**

This dashboard provides an overview of document usage and performance in your projects, including average wait times and number of execution errors encountered. The user specifies the period for analysis.
The Processing Summary area provides a general picture of document activity for a project and Intelligence Server. It includes the following:

- Line graphs showing key performance indicators for document execution, including average wait times, execution times, and number of errors encountered
- An area graph showing the number of jobs and execution errors over time
- An area graph showing average wait, execution, and queue times for executed documents

The Document Details area provides in-depth information on documents in a project. Select a document from the drop-down list to view the following:

- A bubble graph of popular documents, with the number of users and job requests for each document
- General information about the selected document, including the owner, description, and date the document was last modified
- An area graph showing the average wait time, execution time, and queue time encountered when executing the document

**Mobile Usage and Adoption Dashboard**

This interactive dashboard measures your MicroStrategy business intelligence system’s use by mobile device users, and the overall contribution that Mobile usage contributes to the total business intelligence system use. This dashboard gives insight into details such as number of mobile interactive jobs, number of mobile subscriptions, and the most popular mobile reports and documents.
For an Enterprise Manager dashboard that is designed to be viewed on mobile devices, see *Enterprise Manager dashboard for mobile devices, page 119.*

You can specify the time frame for the reported data using the dashboard’s prompt, and you can easily re-prompt the dashboard to change the time frame.

The left pane includes the following:

- **Intelligence Server Cluster**: You can specify the cluster for which you want to report data.

- **Intelligence Server Machine**: You can specify an Intelligence Server machine for which to report data.

- **Project**: This pie chart shows which projects are most popular among mobile users. The grid report shows metrics for users, errors, and jobs.

The right pane includes the following tabs:

- **Mobile Contribution to Enterprise BI**: Click this tab to view contribution of mobile usage to your overall system. You can see weekly subscription reports and weekly interactive reports. You can view total jobs, document jobs, and report jobs within the context of the respective weekly subscription or interactive reports.

- **Popular Reports and Documents**: Click this tab to view a heat map showing the most popular reports and documents for your mobile users. Details are shown in a graph below the data.

### Project Analysis Dashboard

This dashboard provides a comprehensive overview of usage and activity on your projects, over the time frame that you specify.

The top portion of the dashboard contains a general analysis of the system. It includes the following:

- Pie charts showing the project usage by total time spent executing jobs, total number of jobs executed, and number of users connected
• An overview of system usage for each project, including cache hits, number of jobs, and other metrics

On the dashboard, below the general analysis area is a separate portion for each project. These portions contain a detailed analysis of the project:

• A line graph showing the weekly growth trend for the numbers of reports and other objects in the project

• A line graph showing the weekly usage trend, in terms of number of users and number of user requests

• A line graph showing the weekly project performance trend, in terms of job execution time and number of jobs

• A graph showing the load distribution (ad hoc versus scheduled jobs)

This dashboard also contains links to other Enterprise Manager reports.

For customization purposes, the document links work over the ASP.NET version of MicroStrategy Web. For MicroStrategy Web Universal, the links must be modified appropriately. The MicroStrategy Developer Library (MSDL) provides information to customize Report Services documents.

**Project Analysis Interactive Dashboard**

This dashboard provides usage information for a project, including object storage, patterns in project growth, and a list of unused application objects for cleanup.

The Overview portion provides a general view of project performance and project size:
• Line graphs of key performance indicators for the project over time, including the number of users, sessions, and document jobs

• Bar graphs of the number of application and schema objects in the project, broken down by object type—reports, documents, attributes, and hierarchies

The Growth portion provides details about new application objects added to the project:

• A graph of the number of application objects that have been added to the project by week, broken down by object type

• A funnel graph of new application objects added to the project, organized by the owner of the object

The Usage portion provides a picture of the most frequently used objects in the project:

• Heat maps of the top 10 frequently used reports and documents in the project

• Lists of the top 10 attributes, metrics, and filters in the project

The Clean Up portion provides a view of unused objects in the project:

• A list of unused reports, documents, attributes, and other application objects for the project

• Links to generate scripts for deleting unused application objects from the metadata

**Real-Time Server Usage Dashboard**

This dashboard provides an overview of recent system activity. The user specifies the earliest date for which data is reported.
The dashboard includes the following:

- Critical system metrics such as average job duration and total jobs processed for a given server machine
- Pie charts indicating the recent job distribution by project, and execution status such as Completed, Error, and so on
- A line graph showing system throughput and response time for a server machine
- A grid indicating the status of scheduled jobs on the server machine, per project

The dashboard also includes links to more detailed reports.

For customization purposes, the document links work over the ASP.NET version of MicroStrategy Web. For MicroStrategy Web Universal, the links must be modified appropriately. The MicroStrategy Developer Library (MSDL) provides information to customize Report Services documents.

**Report Usage Analysis Dashboard**

This dashboard provides an overview of report usage and performance in your projects, including average wait times and number of execution errors encountered. The user specifies the period for analysis.
The Processing Summary portion provides a general picture of report activity for a given project and Intelligence Server:

- Line graphs of various key performance indicators, including the number of user report requests, exported jobs, and execution times
- An area graph showing the number of jobs and report execution errors encountered over time
- A graph showing average wait times, execution times, and queue times for reports over time

The Reporting Details portion provides in-depth information on individual reports within a given project. Select a report from the drop-down list:

- A bubble graph of popular reports, with the number of user and job requests for each report
- Detailed information about the specified report, including the owner, description, and date the report was last modified
- A heat map showing the users that have requested the report, along with the number of report execution errors encountered

**Server Caching Optimization Advisor**

This dashboard provides information that can guide you toward optimal caching strategies, according to historical usage data. The user specifies the percentage of jobs to be optimized (the default is 20%) and a period for the analysis.
The dashboard has two panels. The first panel provides an overview of the effectiveness of server caching over the specified period:

- A summary of the server workload, including the number of report requests, the average amount of time required to execute a request, the average number of result rows, and the number of jobs that resulted in an error.
- A gauge showing the percentage that database execution time has been reduced by jobs that hit the cache instead of the database.
- A bar graph analyzing the hourly server workload by average time each job spends in queue, average execution time per job, and number of jobs per hour.

The second panel provides the optimization potential for three optimization strategies, presented in three grids:

- Enabling caching for the worst-performing reports, according to projected database savings.
- Disabling caching for reports with low hit ratios.
- Increasing caching efficiency by building OLAP cubes augmented with frequently drilled-to objects.

**User Analysis Dashboard**

This dashboard provides an overview of user activity on an Intelligence Server or project, including statistics for report and document execution and user session information. You can also examine inactive users to determine how long they have been inactive or determine whether they should be removed.
The Intelligence Server Usage portion shows user and session activity for an Intelligence Server:

- Line graphs of key performance metrics for an Intelligence Server—average session duration, average connection time, and number of distinct users
- A heat map showing the number of users connecting to Intelligence Server via applications such as MicroStrategy Web or MicroStrategy Scheduler
- Area graphs with breakdowns of the number of sessions, number of users, and average session durations per application or project

The Project Usage portion contains user-specific activity information for a project. Select a project name from the drop-down list to view the following:

- A heat map of connection activity by user with number of jobs and sessions per user and connection times
- A breakdown of each user's individual activity, including the names of executed reports and documents, errors encountered, and wait times

The User Inactivity portion allows you to view information on inactive users by project or Intelligence Server:

- An area map of inactivity trends showing the number of users that have been inactive for a given period
- A list of inactive users, with a listing of account creation dates and date of last connection
- A bar graph showing the distribution of inactive users by length of inactivity
Enterprise Manager dashboard for mobile devices

This dashboard provides MicroStrategy Mobile users with quick access to a high-level overview of activity in the MicroStrategy system in the past week. It is designed to be viewed in MicroStrategy Mobile. For an Enterprise Manager dashboard that provides information about mobile device usage in your MicroStrategy system, see Mobile Usage and Adoption Dashboard, page 111.

The main Enterprise Manager Mobile dashboard consists of links to four detailed dashboards:

- The **User Analysis** dashboard provides information about user activity in the past week, such as the number of users who have connected to the MicroStrategy system, or the number of job requests logged. You can view user activity by interface, such as Developer, MicroStrategy Mobile, or MicroStrategy Web, by user group, or by feature, such as Report Services or OLAP Services.

- The **Project Analysis** dashboard provides information about the reports and documents in each project that were used in the past week, and the load distribution across clustered Intelligence Servers for each project.

- The **Operations Analysis** dashboard provides information about the number of report and document jobs that have returned an error in the past week. You can drill down to see which reports and documents returned an error, and what the error codes were for each report or document.

- The **Performance Analysis** dashboard provides information about the past week of report and document requests from various sources, such as Developer, MicroStrategy Web, or Distribution Services. For each source, you can see how many reports/documents used a cache, how many used an Intelligent Cube, and how many used an external data source.

Operations analysis

The Operations Analysis folder in Enterprise Manager contains the following analysis areas, each with its own reports:

- *Concurrency analysis (including user/session analysis)*, page 120
- *Data load*, page 121
- *Delivery processing analysis*, page 121
- *Inbox Message Analysis*, page 122
- *Report processing analysis*, page 123
- *Resource utilization analysis (including top consumers)*, page 125
Concurrent analysis (including user/session analysis)

This analysis area provides reports to analyze session and user concurrency on the system at different times. Administrators can measure the following:

- The total number of users in the metadata
- The total number of users who are logged in
- The total number of user sessions that are open
- The total number of user sessions that have active jobs

Reports in this analysis area use an attribute from the Time hierarchy as the primary attribute for analysis, and various metrics representing answers to administrator questions.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Concurrency by Hour of Day</td>
<td>Provides the number of concurrent active users and the number of concurrent sessions by hour of day. This report is prompted on time.</td>
</tr>
<tr>
<td>11. Daily Session Concurrency Analysis</td>
<td>Uses various metrics to analyze the concurrent active sessions over time. This report is prompted on time and on session duration.</td>
</tr>
<tr>
<td>12. Session Duration Analysis</td>
<td>Uses various metrics to analyze the duration of user sessions, over time. This report is prompted on time and on session duration.</td>
</tr>
<tr>
<td>13. Daily User Connection Concurrency Analysis</td>
<td>Uses various metrics to analyze the concurrency of user sessions, over time. This report is prompted on time and on session duration.</td>
</tr>
<tr>
<td>14. Minute Level User Concurrency During Peak Hours</td>
<td>Provides a minute-level graph for the active users and sessions during the peak hours of the day. This report is prompted on time.</td>
</tr>
<tr>
<td>14.1 Top n Maximum User Concurrency Hours - report as filter</td>
<td>Provides a list of the top N hours in terms of maximum user concurrency. This report is prompted on time, session duration, and number of hours to be returned.</td>
</tr>
</tbody>
</table>

Sample report: Daily Session Concurrency Analysis

This report uses various metrics to analyze the concurrent active sessions over time. The results summarize the load on and use of Intelligence Server. This report contains prompts on time and on the minimum and maximum duration of the sessions to be analyzed.

Usage scenario

Administrators can use this report to analyze the total number of sessions on the MicroStrategy system in any day. They can also see the average, minimum, and maximum number of sessions open at any minute in a day.

Report details

- Drill path: The recommended drill path is along the Time hierarchy.
• Other options: To restrict the scope of analysis to a specific MicroStrategy client such as Developer, you can add an additional filter or page-by on the Connection Source attribute using the appropriate client. Alternatively, you can add a filter or page-by on any attribute from the Session hierarchy (except the Session attribute itself).

Data load

This analysis area covers the historical data loads and how long they take.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Load Durations - Complete (Last Week)</td>
<td>Lists all Enterprise Manager data loads that occurred in the past week and how long each took.</td>
</tr>
<tr>
<td>Data Load Durations - Project Wise (Last Week)</td>
<td>Lists all Enterprise Manager data loads that occurred in the past week and how long each took. The project name is included.</td>
</tr>
</tbody>
</table>

Sample report: Data Load Durations - Project Wise

This report provides a historical view of the data load process for each project being monitored. For each project, the start and end time of each data load is listed.

Usage scenario

Administrators can use this report to confirm that the statistics data is being loaded at the proper time and that the data load does not put an undue load on the server.

Report details

• The projects are listed by project name.
• The project with GUID 00000000000000000000000000000000 represents fact migration from the statistics tables of the listed project.

Delivery processing analysis

This analysis area provides reports that analyze the Distribution Services subscription activity in your system.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>111. Weekly Subscription Activity</td>
<td>Provides a comprehensive weekly summary of subscription activity.</td>
</tr>
<tr>
<td>112. Subscription Statistics</td>
<td>Provides subscription activity over a given time interval. This report is prompted on time.</td>
</tr>
<tr>
<td>Report name</td>
<td>Function</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>113. User Subscription Statistics</td>
<td>Provides information for users on subscription execution over a given time interval. This report is prompted on time.</td>
</tr>
<tr>
<td>114. Top 10 Subscribed Documents</td>
<td>Provides insight into the documents that contribute to the top 10 percent of recipients; execution time; or number of subscriptions over a time interval. This report is prompted on time and on which subscription analysis metric to use.</td>
</tr>
<tr>
<td>115. Top 10 Subscribed Reports</td>
<td>Provides insight into the reports that contribute to the top 10 percent of recipients, execution time, or number of subscriptions over a time interval. This report is prompted on time and on which subscription analysis metric to use.</td>
</tr>
<tr>
<td>116. Top 10 Subscribed Contacts</td>
<td>Provides insight into the users that contribute to the top 10 percent of recipients, execution time, or number of subscriptions over a period. This report is prompted on time and on which subscription analysis metric to use.</td>
</tr>
<tr>
<td>117. Top 10 Longest Executing Subscriptions</td>
<td>Lists the top 10 percent of subscriptions that contribute to the execution times over a period. This report is prompted on time.</td>
</tr>
</tbody>
</table>

**Inbox Message Analysis**

This analysis area provides reports that analyze Inbox Message activity, including errors encountered while performing actions on Inbox Messages and the contribution of Inbox Message Jobs to the total number of jobs on Intelligence Server.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>118. Inbox Message Action over Time</td>
<td>Provides information on the number of inbox messages, the number of actions performed on these messages, and how many of those actions resulted in errors. This report is prompted on time.</td>
</tr>
<tr>
<td>119. Number of Messages by User over Time</td>
<td>Provides insight into the users of inbox messages. This report looks at the number of messages for each user and the number of actions taken on these messages. This report is prompted on time.</td>
</tr>
<tr>
<td>120. Inbox Contributions to Job Counts</td>
<td>Analyzes the contribution of inbox message jobs to the total job count on Intelligence Server. This report is prompted on time.</td>
</tr>
<tr>
<td>121. Top 10 Users of Inbox Messages by Project</td>
<td>Provides the top 10 users of inbox messages by project. This report is promoted on time.</td>
</tr>
<tr>
<td>122. Top 10 Reports in Inbox Messages by Project</td>
<td>Lists the top reports by number of inbox messages. This report is prompted on time.</td>
</tr>
<tr>
<td>123. Top 10 Documents in Inbox Messages by Project</td>
<td>Lists the top documents by number of inbox messages. This report is prompted on time.</td>
</tr>
<tr>
<td>124. Unread Inbox Messages</td>
<td>Provides information on the activity of inbox messages that have not been read. This report is prompted on time.</td>
</tr>
<tr>
<td>125. Inactive Inbox Messages</td>
<td>This report looks at the inbox messages that have not had any actions performed in a set number of days. This report is prompted on a measuring metric and a number of days of inactivity.</td>
</tr>
</tbody>
</table>
Report processing analysis

A significant area of system analysis and monitoring involves tuning the server's governing and project configuration settings. Administrators can use the reports in this analysis area to determine the following:

- Whether the time out setting for user sessions is appropriate. Analysis can help you configure the User Session Idle Time setting. (From Developer, right-click a project source and select Configure MicroStrategy Intelligence Server, expand Governing Rules, and select General.)

- Whether caching should be enabled for prompted reports. Analysis can help you configure the Enable caching for prompted reports and documents setting. (In Developer, right-click the project name, select Project Configuration, expand Caching, expand Result Caches, and select Creation).

While insights into such questions usually involve gathering data from multiple reports spanning multiple analysis areas, the Enterprise Manager reports in the Report Processing Analysis area provide a targeted examination to assess server and project governing.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weekly Summary - Activity Analysis</td>
<td>Provides a comprehensive weekly summary of project activity. This report is prompted on the projects to be summarized.</td>
</tr>
<tr>
<td>2. Report Execution Analysis Working Set</td>
<td>Analyzes report execution by time each job takes to execute. This report is prompted on time and on the projects to be analyzed.</td>
</tr>
<tr>
<td>3. Document Execution Analysis Working Set</td>
<td>Provides a comprehensive analysis of document execution by time the jobs take to execute. This report is prompted on time.</td>
</tr>
<tr>
<td>4. Report Error Analysis</td>
<td>Provides a comprehensive analysis of jobs that do not run to completion. This report is prompted on time.</td>
</tr>
<tr>
<td>4.1 Report Job Time Out Analysis</td>
<td>Provides information about which and how many report executions have exceeded the execution time out limit. This report is prompted on time.</td>
</tr>
<tr>
<td>4.2 Job Cancellation Trend</td>
<td>Provides the number of canceled and non-canceled jobs, over time. This report is prompted on time.</td>
</tr>
<tr>
<td>5. DB Result Rows by Report</td>
<td>Provides the number of jobs, the number of database result rows, and the average elapsed report execution duration, per report and project. This report is prompted on time.</td>
</tr>
<tr>
<td>5.1 Report Executions with no data returned</td>
<td>Lists the report jobs that return no data. This report is prompted on time and on type of report job.</td>
</tr>
<tr>
<td>5.2 Post-Report Execution Activity</td>
<td>Analyzes user activity after executing each report. This report is prompted on time and on type of report job.</td>
</tr>
<tr>
<td>6. Top 10 Longest Executing Reports</td>
<td>Provides the number of jobs and the average elapsed report execution duration for the 10 longest executing reports. This report is prompted on time.</td>
</tr>
<tr>
<td>7. Top 10 Longest Executing Documents</td>
<td>Provides the number of jobs and the average elapsed document execution duration for the 10 longest executing documents. This report is prompted on time.</td>
</tr>
<tr>
<td>Report name</td>
<td>Function</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>10. Document Analysis based on Wait Time (End-to-End)</td>
<td>Provides average wait times for documents by project executed via MicroStrategy Mobile. This includes Intelligence Server time, device rendering time, network time and end-to-end wait time. This report is prompted on time.</td>
</tr>
<tr>
<td>11. Document Analysis based on Request Type (End-to-End)</td>
<td>Provides the number of times documents are executed via MicroStrategy Mobile by type of request, such as user request, report queue request, application recovery request, Back button request, and so on. This report is prompted on time.</td>
</tr>
</tbody>
</table>

**Sample report: DB Result Rows by Report**

This Enterprise Manager report can help you understand the effect on load and performance of those user reports that did not result in cache hits. This report prompts on time.

**Usage scenarios**

- You can use this report to identify user reports that have high Average Elapsed Time (Average Elapsed Duration per Job) and are requested frequently (Total Report Requests). You can then consider a strategy to ensure that these user reports have a high cache hit ratio in the future.

- Total Database Result Rows provides a good approximate measure of the size of report caches. This can give you insight into tuning report-related project settings. To make changes to the project settings, in Developer, right-click the project name, select **Project Configuration**, expand **Caching**, expand **Result Caches**, and select **Creation** (to specify whether and how caches are created), **Storage** (to specify cache memory usage), or **Maintenance** (to specify cache expiration, or to purge caches). For detailed information about these settings, click **Help**.

- Total Database Result Rows also provides a measure of the data returned by the database to Intelligence Server for post-processing.

- Average Execution Time provides a measure of time taken to execute a report on the warehouse data source.

**Report details**

- Additional options: To restrict your analysis to a given computer, a connection source, a user session, and so on, add any attribute from the Session folder to this Enterprise Manager report. For example, to restrict analysis to Web reports, add the Connection Source attribute to the page-by axis. For detailed information about page-by, see the *MicroStrategy Basic Reporting Guide*. 

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**Operations analysis** © 2015, MicroStrategy Inc.
Resource utilization analysis (including top consumers)

This analysis area provides reports to help you analyze how available resources are being used so you can determine optimization strategies. Available system hardware resources include various Intelligence Server machines, database servers, Web servers, and client machines. Enterprise Manager provides insight into Intelligence Server machine use and the nature of client-side activity.

Administrators can use the reports in this analysis area to measure the following:

- How much time users spend in report execution queues
- Load times to determine at what times peak loads occur
- Which interfaces (Developer, Web, Mobile, and so on) users prefer
- Web usage statistics

Reports in this analysis area prompt you to select a period to analyze and use various metrics representing answers to administrator requirements.

The Top Consumers folder contains shortcuts to reports elsewhere in Enterprise Manager. Together, these reports indicate what users and reports are top consumers of system resources.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. Execution cycle breakdown</td>
<td>Provides a daily breakdown of the time taken by each of the four steps in the report execution cycle: queue, SQL generation, SQL execution, and Analytical Engine. This report is prompted on time.</td>
</tr>
<tr>
<td>30.2 Queue to Execution time ratios by Server Processing Unit</td>
<td>Breaks down queue time and execution time for each report job step. This report is prompted on time.</td>
</tr>
<tr>
<td>30.3 Effect of job prioritization on queue time</td>
<td>Lists information on the effects of job prioritization on the queue time, execution time, and elapsed duration of reports. You can use this to see if adjusting database threads—by changing their priority to high, medium, or low—would improve performance. This report is prompted on time.</td>
</tr>
<tr>
<td>31. Activity Analysis by Weekday/Hour Working Set</td>
<td>Lists the Intelligence Server number of report jobs by hour. This report is prompted on time.</td>
</tr>
<tr>
<td>32. Peak Time Periods</td>
<td>Lists the number of jobs and the average queue and execution durations per job by hour. This report is prompted on time.</td>
</tr>
<tr>
<td>33. Server Activity Analysis Summary</td>
<td>Lists the number of jobs and daily use of each Intelligence Server by connection source. This report is prompted on time.</td>
</tr>
<tr>
<td>33.1 Scheduled Report Load on Intelligence Server</td>
<td>Analyzes the duration and CPU usage of all scheduled jobs. This report is prompted on time.</td>
</tr>
<tr>
<td>33.2 Subscribed Report Load on Intelligence Server</td>
<td>Analyzes the duration and CPU usage of all Narrowcast Server subscription jobs. This report is prompted on time.</td>
</tr>
</tbody>
</table>
### Sample report: Scheduled Report Load on Intelligence Server

This report provides a comprehensive analysis of the effect scheduled jobs have on the Intelligence Server machines in your system. This report contains a prompt on time.

#### Usage scenario

You can use this report to understand the daily effect of scheduled reports on each Intelligence Server machine. Effects can be measured with metrics such as the total server report jobs and the total time spent in Intelligence Server.

You can also use this report to study which user reports are executed as part of a schedule. By viewing which scheduled jobs have errors, you can quickly take appropriate action.

#### Report details

- This report lists several attributes in the Report Objects window that are not in the report grid. With MicroStrategy OLAP Services, you can move these attributes from the Report Objects window to the report grid without re-executing the report. For detailed information about OLAP Services, see the MicroStrategy Basic Reporting Guide.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.3.1 Web Access Trends</td>
<td>Analyzes the number of jobs run from MicroStrategy Web. This report is prompted on time.</td>
</tr>
<tr>
<td>33.3.2 Web and Non-Web Usage</td>
<td>Compares the server usage of Web and non-Web users. This report is prompted on time.</td>
</tr>
<tr>
<td>33.3.3 Web Usage Statistics</td>
<td>Provides the number of Web users, the average number of jobs per Web user, and the average report execution time per job for Web users. This report is prompted on time.</td>
</tr>
<tr>
<td>34. Intelligent Cube Usage Statistics</td>
<td>Provides comprehensive information about an Intelligent Cube’s use. This report is prompted on time.</td>
</tr>
<tr>
<td>43. Top 10 Database Tables</td>
<td>Lists the top 10 most accessed database tables per project, and how many jobs access these tables. This report is prompted on time.</td>
</tr>
<tr>
<td>6. Top 10 Longest Executing Reports</td>
<td>Provides the number of jobs and the average elapsed report execution duration for the 10 longest executing reports. This report is prompted on time.</td>
</tr>
<tr>
<td>62. Top 10 Reports</td>
<td>Analyzes the server load for the 10 most-executed reports. This report is prompted on time.</td>
</tr>
<tr>
<td>80. Top (n) users</td>
<td>Determines the top (n) users, using a metric you choose from a list. This report is prompted on time, a list of metrics, and the number of users.</td>
</tr>
<tr>
<td>91. Popular reports in a User’s User Group</td>
<td>Lists the top (n) most-executed reports in a user’s user group. This report is prompted on project list, user list, and the number of reports.</td>
</tr>
</tbody>
</table>
- To know which users in your system have scheduled the most jobs, include the User attribute in this report.
- To understand which schedules have been mapped to a report in a project, include the Report attribute in this report.
- To find out which of your scheduled reports had errors, include the Error Indicator attribute in this report.

**Performance analysis**

Administrators can use this analysis area to understand what effect the server and project governing settings and usage patterns have on the system.

The Performance Analysis folder has several reports and two folders, each with its own related area of analysis:

- **Cube advisor, page 129**
- **Performance monitoring analysis, page 130**

The Performance Analysis folder in Enterprise Manager has reports that measure such metrics as average job execution time and other job performance trends, cache analysis, longest executing reports, and so on.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>40. System Performance Trends</td>
<td>Analyzes system performance over time using your choice of metrics. This report is prompted on time and on methods of analysis.</td>
</tr>
<tr>
<td>41. Cache Analysis</td>
<td>Analyzes the effectiveness of caching on the system. This report is prompted on time, indicator, and the top number of report processing metrics. The project is in the report’s page by area.</td>
</tr>
<tr>
<td>42. Job Performance Trend</td>
<td>Analyzes daily and weekly trends in report requests and job performance. This report is prompted on time.</td>
</tr>
<tr>
<td>43. Top 10 Database Tables</td>
<td>Lists the top 10 most accessed database tables per project and how many jobs access those tables. This report is prompted on time.</td>
</tr>
<tr>
<td>44. Warehouse Tables Accessed</td>
<td>Provides a count of the warehouse tables and columns accessed, by type of SQL clause. This report is prompted on time.</td>
</tr>
<tr>
<td>45. User Data Request Performance Breakdown</td>
<td>Provides insight into how users are using the monitored projects and Intelligence Server and looks at the user experience for the monitored systems regarding the data requested. This report is prompted on time.</td>
</tr>
<tr>
<td>46. Cache Analysis (End-to-End)</td>
<td>Provides average wait times and number of user requests via MicroStrategy Mobile that hit the application cache—which are usually from using the Back button–device cache, server cache, or no cache. This report is prompted on time.</td>
</tr>
<tr>
<td>47. Network Type Analysis (End-to-End)</td>
<td>Provides average wait times and number of user requests, categorized by the type of network from which the requests originated. This report is prompted on time.</td>
</tr>
<tr>
<td>Report name</td>
<td>Function</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>48. For Capacity Planning Team (Number of Jobs)</td>
<td>Provides information about how many jobs were executed, with numbers of hits for caches and Intelligent Cubes. This report is prompted on time.</td>
</tr>
<tr>
<td>49. For Capacity Planning Team (User/Session Concurrency)</td>
<td>Provides information by day, hour, and connection source of numbers of users and sessions. This report is prompted on time.</td>
</tr>
<tr>
<td>50. For Capacity Planning Team (Document Executions)</td>
<td>Provides information by day and hour of how many documents were executed and the average number of reports per document. This report is prompted on time.</td>
</tr>
<tr>
<td>51.1 For EA Team (Report Processing Analysis - Job Based)</td>
<td>Provides information about how long report job steps took for a report you select. This report is filtered by day, hour, and minute.</td>
</tr>
<tr>
<td>51.2 For EA Team (Document Processing Analysis - Job Based)</td>
<td>Provides information about how long document job steps took for a document you select. This report is filtered by day, hour, minute, and document.</td>
</tr>
<tr>
<td>52.1 For EA Team (Report Processing Analysis - Time Based)</td>
<td>Provides information about how long report job steps took for reports that were running at a selected time. This report is filtered by day, hour, and minute.</td>
</tr>
<tr>
<td>52.2 For EA Team (Document Processing Analysis - Time Based)</td>
<td>Provides information about how long job steps took for documents that were running at a selected time. This report is filtered by day, hour, and minute.</td>
</tr>
<tr>
<td>53. For EA Team (Performance Monitor)</td>
<td>Dashboard with performance monitor trends and execution times for jobs executed at a selected time.</td>
</tr>
<tr>
<td>53. For EA Team (Performance Monitor) (HTML 5)</td>
<td>Dashboard with performance monitor trends and execution times for jobs executed at a selected time.</td>
</tr>
<tr>
<td>53.1 For EA Team (Dataset: Document Report Execution Analysis)</td>
<td>A dataset report for the above performance monitor dashboards showing document and report execution times for jobs running at the selected time.</td>
</tr>
<tr>
<td>53.2. For EA Team (Dataset: Performance Counter Trend)</td>
<td>A dataset graph report for the above performance monitor dashboards showing trends in the selected performance counter such as percent of CPU time, total in-use memory, and so on.</td>
</tr>
</tbody>
</table>

Two reports from this analysis area are presented in detail below. These sample reports have been selected as representative reports of the analysis area; the details and options suggested for the sample reports can often be used on other reports in the same or related analysis areas.

**Sample report: Cache Analysis**

This report provides a comprehensive analysis of report caching in the system. A good caching strategy can significantly improve system performance. This report is prompted on time and on the job type you want to analyze, and you can select the number of top report jobs you want to see data for.
Usage scenario

You can use this report to analyze the cache hit ratios for certain reports; typically, these are the most frequently requested or most resource-intensive reports. You can also determine whether prompted reports should be set up to create a cache by analyzing whether prompted reports are hitting the cache regularly.

Report details

- To analyze the cache hit ratios for element load jobs, select **Element Browsing Job** at the prompt for the indicator filter. Be sure to remove the Report attribute from the report because Element browsing jobs are ad hoc and do not map to any existing report in the metadata. This can give you insight into tuning element-related project settings. To make changes to the project settings, in Developer, right-click the project name, select **Project Configuration**, expand **Caching**, expand **Auxiliary Caches**, and select **Elements**. For detailed information about these settings, click **Help**.

- To analyze the cache hit ratios for prompted jobs, select **Prompted jobs** at the prompt. This can give you insight into tuning advanced report-related project settings. To make changes to the project settings, in Developer, right-click the project name, select **Project Configuration**, expand **Caching**, expand **Result Caches**, and select **Creation** (to specify whether and how caches are created), **Storage** (to specify cache memory usage), or **Maintenance** (to specify cache expiration, or to purge caches). For detailed information about these settings, click **Help**.

Sample report: Warehouse Tables Accessed

This report provides a count of the number of warehouse tables and columns accessed in various SQL clauses. This report is prompted on time.

Usage scenario

You can use this report to gain insights into database tuning by determining which warehouse tables and columns are accessed in the various SQL clauses, such as SELECT, WHERE, and so on. This information can help you determine where database tuning can be adjusted to improve overall query and reporting performance of your MicroStrategy project.

For example, columns that are frequently accessed in the WHERE clause are good candidates for indexing.

Cube advisor

The reports in this analysis area give an overview of database execution statistics for report requests. They provide a picture of how measures such as
report execution times are affected if reports are run against Intelligent Cubes rather than the data warehouse.

You can use the Database Execution Time of Reports report with Cube Advisor to provide data on the performance benefits of potential Intelligent Cubes, such as any decrease in the time required to execute SQL statements and the number of users that would be affected by the recommended Intelligent Cubes. For information on this report’s contents and steps for exporting it and importing into Cube Advisor, see the Dynamic Sourcing chapter in the In-memory Analytics Guide.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>46. Report Object Listing</td>
<td>Provides analysis of the attributes and metrics in a report. This report is prompted on report.</td>
</tr>
<tr>
<td>47. Projected Cube Execution Time of Reports</td>
<td>Projects the execution times of report jobs if they were to hit an Intelligent Cube. This report is prompted on time and on report.</td>
</tr>
<tr>
<td>48. Database Execution Time of Reports</td>
<td>Provides database execution statistics for report requests. This report is prompted on time and on project. You can export this report as an Excel file and then import it to the Cube Advisor.</td>
</tr>
</tbody>
</table>

**Performance monitoring analysis**

The reports in this analysis area measure Intelligence Server performance, as recorded by the Diagnostics and Performance Logging Tool’s Performance Monitors. For information about enabling these counters, or other uses of the Diagnostics and Performance Logging Tool, see the MicroStrategy System Administration Guide.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>92. Performance Monitor Report</td>
<td>Lists the Performance Monitor Counters recorded in project statistics, and their values, over a selected time. This report is prompted on time and on what counters are recorded in the Enterprise Manager warehouse.</td>
</tr>
</tbody>
</table>
| 93. Performance vs. Governing Settings          | Provides general performance analysis against Intelligence Server governing settings over a selected time. To achieve maximum flexibility in this report, make sure that the following performance counters are logged in the Diagnostics and Performance Logging Tool:  
  • Executing Reports  
  • Memory Used by Report Caches  
  • Number of Report Caches  
  • Open Project Sessions  
  • Open Sessions |
<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
</table>
| To achieve maximum flexibility in this report, make sure that the following Performance Counters are logged in the Diagnostics and Performance Logging Tool: | • Executing Reports  
• Memory Used by Report Caches  
• Number of Report Caches                                                                                                                                 |
| 95. User Performance against Governing | Provides an analysis of performance per user against Intelligence Server governing settings over a selected time.  
To achieve maximum flexibility in this report, make sure that the following performance counters are logged in the Diagnostics and Performance Logging Tool: | • Open Project Sessions  
• Open Sessions                                                                                                                                 |
| 96. Delivery Performance against Governing | Provides an analysis of performance per subscription delivery against Intelligence Server governing settings over a selected time.                                                                                   |

**Project analysis**

Enterprise Manager reports in this analysis area use the Project attribute to analyze various metrics related to project use and Intelligence Server use. Administrators can use these reports to analyze project usage trends and understand how a project grows over time. The reports can help you determine which metadata objects are used and how often, so you can take appropriate actions.

The Project Analysis folder in Enterprise Manager contains the following analysis areas, each with its own reports:

- *Object properties analysis, page 131*
- *Object usage analysis, page 133*
- *Project development trends, page 137*
- *Prompt usage analysis, page 137*

These areas are described below, and one report is presented in detail. This sample report has been selected as a representative report of the analysis area; the details and options suggested for the sample report can often be used on other reports in the same or related analysis areas.

**Object properties analysis**

These reports list the properties of all objects of a specific type in the projects or Intelligence Servers monitored by Enterprise Manager.
<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.1 Attribute Form Properties</td>
<td>Lists the properties of all attribute forms in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>50.2 Attribute Properties</td>
<td>Lists the properties of all attributes in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>50.3 Column Properties</td>
<td>Lists the properties of all columns in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>50.4 Fact Properties</td>
<td>Lists the properties of all facts in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>50.5 Hierarchy Properties</td>
<td>Lists the properties of all hierarchies in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>50.6 Logical Table Properties</td>
<td>Lists the properties of all tables in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>50.7 Transformation Properties</td>
<td>Lists the properties of all transformations in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>51.1 Consolidation Properties</td>
<td>Lists the properties of all consolidations in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>51.2 Custom Group Properties</td>
<td>Lists the properties of all custom groups in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>51.3 Document Properties</td>
<td>Lists the properties of all documents in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>51.4 Filter Properties</td>
<td>Lists the properties of all filters in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>51.5 Metric Properties</td>
<td>Lists the properties of all metrics in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>51.6 Prompt Properties</td>
<td>Lists the properties of all prompts in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>51.7 Report Properties</td>
<td>Lists the properties of all reports in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>51.8 Template Properties</td>
<td>Lists the properties of all templates in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>51.9 Security Filter Properties</td>
<td>Lists the properties of all security filters in all monitored projects. This report is paged by project.</td>
</tr>
<tr>
<td>52.1 DB Connection Properties</td>
<td>Lists the properties of all database connections in all monitored Intelligence Servers.</td>
</tr>
<tr>
<td>52.2 Event Properties</td>
<td>Lists the properties of all events in all monitored Intelligence Servers.</td>
</tr>
<tr>
<td>52.3 Intelligence Server</td>
<td>Lists the properties of all monitored Intelligence Servers.</td>
</tr>
<tr>
<td>52.4 Project Properties</td>
<td>Lists the properties of all projects in all monitored Intelligence Servers.</td>
</tr>
<tr>
<td>52.5 Schedule Properties</td>
<td>Lists the properties of all schedules in all monitored Intelligence Servers.</td>
</tr>
</tbody>
</table>
## Object usage analysis

This analysis area provides reports to analyze how objects are used in MicroStrategy.

The Object Usage Analysis folder has several reports and two folders, each with its own related area of analysis:

- *Command Manager Reporting, page 134*
- *Configuration Object Usage Analysis, page 135*
- *Static Report Content Analysis, page 135*

The reports in the top-level Object Usage Analysis folder can be useful to help you determine what application objects are not being used, and can be safely deleted.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>52.6 User Group Properties</td>
<td>Lists the properties of all user groups in all monitored Intelligence Servers.</td>
</tr>
<tr>
<td>52.7 User Properties</td>
<td>Lists the properties of all users in all monitored Intelligence Servers.</td>
</tr>
<tr>
<td>52.8 DB Instance Properties</td>
<td>Lists the properties of all database instances in all monitored Intelligence Servers.</td>
</tr>
<tr>
<td>52.9 Device Properties</td>
<td>Lists the properties of all Distribution Services devices in all monitored Intelligence Servers.</td>
</tr>
<tr>
<td>52.10 Transmitter Properties</td>
<td>Lists the properties of all Distribution Services transmitters in all monitored Intelligence Servers.</td>
</tr>
<tr>
<td>54. User Security Filter Relations</td>
<td>Lists all users and their associated security filters in all monitored Intelligence Servers. This report is pagged by project.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.1 Report Statistics</td>
<td>Lists all reports that have not been executed since the specified date and provides the number of times they have been executed. This report is prompted on time.</td>
</tr>
<tr>
<td>60.2 Template Statistics</td>
<td>Lists all templates that have not been used since the specified date and provides the number of times they have been used. This report is prompted on time.</td>
</tr>
<tr>
<td>61.1 Schedule Statistics</td>
<td>Lists all schedules that have not been used in the specified time frame. This report is prompted on time.</td>
</tr>
<tr>
<td>61.2 Server Definition Statistics</td>
<td>Lists all server definitions that have not been used in the specified time frame. This report is prompted on time.</td>
</tr>
<tr>
<td>62. Top 10 Reports</td>
<td>Analyzes the server load for the 10 most-executed reports. This report is prompted on time.</td>
</tr>
</tbody>
</table>
### Report name

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>63. Report Drilling Analysis</td>
<td>Provides information about how many times a report has been executed and how many times users have drilled from that report. This report is prompted on time.</td>
</tr>
<tr>
<td>64.1 Schedule-Report-User Relations</td>
<td>Lists the users, projects, and reports associated with each schedule.</td>
</tr>
<tr>
<td>64.2 Schedule-Document-User Relations</td>
<td>Lists the users, projects, and documents associated with each schedule.</td>
</tr>
<tr>
<td>65. Report Drilling Patterns</td>
<td>For any report, lists the objects that have been drilled from and drilled to from four-tier clients such as MicroStrategy Web. This report is prompted on time.</td>
</tr>
<tr>
<td>66. Find Patterns in Attribute-Metric Associations to Build Cubes</td>
<td>For all jobs that execute for longer than the specified time, lists attributes and metrics that are in the same job. You can include the attributes and metrics in an Intelligent Cube to reduce database use. This report is prompted on how many seconds.</td>
</tr>
</tbody>
</table>

### Command Manager Reporting

The reports in this analysis area provide Command Manager syntax that you can use to delete unused objects in a project, including attributes, filters, metrics, and users.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>126.1 Delete Unused Attributes</td>
<td>Provides Command Manager syntax to delete attributes that have not been associated with reports in a project. This report is prompted on the attribute’s creation date.</td>
</tr>
<tr>
<td>126.2 Delete Unused DB Instances</td>
<td>Provides Command Manager syntax to delete database instances that have no report executions associated. This report is prompted on the database instance’s creation date.</td>
</tr>
<tr>
<td>126.3 Delete Unused Documents</td>
<td>Provides Command Manager syntax to delete documents that have never been executed. This report is prompted on the document’s creation date.</td>
</tr>
<tr>
<td>126.4 Delete Unused Filters</td>
<td>Provides Command Manager syntax to delete filters that have not been associated with reports in a project. This report is prompted on the filter’s creation date.</td>
</tr>
<tr>
<td>126.5 Delete Unused Metrics</td>
<td>Provides Command Manager syntax to delete metrics that have not been associated with reports in a project. This report is prompted on the metric’s creation date.</td>
</tr>
<tr>
<td>126.6 Delete Unused Reports</td>
<td>Provides Command Manager syntax to delete reports that have never been executed. This report is prompted on the report’s creation date.</td>
</tr>
<tr>
<td>126.7 Delete Unused Schedules</td>
<td>Provides Command Manager syntax to delete schedules that have never been associated with reports, documents, or users. This report is prompted on the schedule’s creation date.</td>
</tr>
<tr>
<td>126.8 Delete Unused Security Filters</td>
<td>Provides Command Manager syntax to delete security filters that have no associations with users. This report is prompted on the security filter’s creation date.</td>
</tr>
<tr>
<td>Report name</td>
<td>Function</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>126.9 Delete Unused Templates</td>
<td>Provides Command Manager syntax to delete templates that are not associated with any reports. This report is prompted on the template's creation date.</td>
</tr>
<tr>
<td>126.10 Delete Unused User Groups</td>
<td>Provides Command Manager syntax to delete user groups that do not contain any users. This report is prompted on the user group's creation date.</td>
</tr>
<tr>
<td>126.11 Delete Unused Users</td>
<td>Provides Command Manager syntax to delete users that have never connected to the system. This report is prompted on the user's creation date.</td>
</tr>
<tr>
<td>126.11.1 Disable Unused Users</td>
<td>Provides Command Manager syntax to disable but not delete users that have never connected to the system. These users can be re-enabled. This report is prompted on the user's creation date.</td>
</tr>
</tbody>
</table>

**Configuration Object Usage Analysis**

The reports in this analysis area can be useful to help you determine what configuration objects are not being used and can be safely deleted.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>67. Unused DB Instances</td>
<td>Lists all database instances that have not executed a job in a certain period. This report is prompted on time.</td>
</tr>
<tr>
<td>68. Unused Projects</td>
<td>Displays all projects that have not been accessed in a certain period, along with usage statistics for all other times. This report is prompted on time.</td>
</tr>
<tr>
<td>69. Unused Schedules</td>
<td>Displays all schedules that are not used in any reports or documents.</td>
</tr>
<tr>
<td>70. Unused Server Definitions</td>
<td>Displays all server definitions that are not loaded on Intelligence Servers, and those that are loaded but are idle, meaning users are not running jobs or connecting.</td>
</tr>
<tr>
<td>71. Unused User Groups</td>
<td>Lists all user groups that do not contain any users.</td>
</tr>
</tbody>
</table>

**Static Report Content Analysis**

The reports in this analysis area inform you about what report objects are rarely used.

<table>
<thead>
<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.3 Attributes Least Used in Executed Reports</td>
<td>Lists the attributes that are used in the fewest jobs and the most recent time each attribute was used. This report is prompted on time, the number of attributes excluded, and a set of report processing metrics.</td>
</tr>
<tr>
<td>60.4 Metrics Least Used in Executed Reports</td>
<td>Lists the metrics that are used in the fewest jobs and the most recent time each metric was used. This report is prompted on time, the number of metrics excluded, and a set of report processing metrics.</td>
</tr>
<tr>
<td>60.5 Filters Least Used in Executed Reports</td>
<td>Lists the filters that are used in the fewest jobs and the most recent time each filter was used. This report is prompted on time, the number of filters excluded,</td>
</tr>
</tbody>
</table>
### Sample report: Report Drilling Patterns

This report lists the objects in each report that have been drilled from and drilled to in four-tier clients such as MicroStrategy Web. The report is paged by project and by report. It prompts you for the dates to be analyzed.

- Analysis of drilling and statistics is available only from a four-tier client such as MicroStrategy Web.

### Usage scenario

The Report Drilling Patterns report shows you what users want to see, by displaying the most commonly drilled-to objects. This information allows you to determine which attributes to include in a report’s list of report objects. Because SQL is not generated for OLAP Services drilling, you can use this report to optimize your OLAP Services implementation.

### Sample report display

<table>
<thead>
<tr>
<th>Drill_From_Obj</th>
<th>Drill_To_Obj</th>
<th>Metrics</th>
<th>RP Number of Jobs</th>
<th>RP Number of Jobs with Error</th>
<th>RP Elapsed Duration (hh:mm:ss)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUARTER</td>
<td>MONTH</td>
<td></td>
<td>1</td>
<td>0</td>
<td>00:00:00</td>
</tr>
<tr>
<td>REGION</td>
<td>COUNTRY</td>
<td></td>
<td>3</td>
<td>0</td>
<td>00:00:01</td>
</tr>
<tr>
<td></td>
<td>REGIONAL REVENUE BY CATEGORY</td>
<td></td>
<td>4</td>
<td>0</td>
<td>00:00:02</td>
</tr>
</tbody>
</table>

### Report details

- Additional options: Use this report in conjunction with other statistics-type reports that display similar usage information about individual objects
such as templates, schedules, and so on.

**Project development trends**

The reports in this folder provide information about the objects and object usage trends in the project.

<table>
<thead>
<tr>
<th>Report name</th>
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<tbody>
<tr>
<td>70. Summary of Application Objects by Project</td>
<td>Provides a count of all types of application objects (reports, filters, metrics, and so on) in all monitored projects, by owner. This report is paged by project and other object information.</td>
</tr>
<tr>
<td>71. Summary of Configuration Objects</td>
<td>Provides a count of all types of configuration objects (schedules, database connections, and so on) in all monitored Intelligence Servers, by owner. This report is paged by object status.</td>
</tr>
<tr>
<td>72. Summary of Schema Objects by Project</td>
<td>Provides a count of all types of schema objects (facts, attributes, and so on) in all monitored projects, by owner. This report is paged by project and other object information.</td>
</tr>
<tr>
<td>73. Weekly Project Usage Trend</td>
<td>A grid-graph view showing the weekly trends per project of users, sessions, and requests. This report is prompted on time.</td>
</tr>
<tr>
<td>74. Weekly New Application Objects Trend Over a Selected Period</td>
<td>A grid-graph of new application objects created over a specified period. This report is prompted on time.</td>
</tr>
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</table>

**Prompt usage analysis**

The reports in this folder provide information about prompt use and prompt answer trends in a project.

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<tr>
<th>Report name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All Prompt Answers for a Given Time Period</td>
<td>Lists all answers to all prompts for a report over the specified period. This report is prompted on time and report. This report is also an as-is view of the IS_PR_ANS_FACT table for the specified period.</td>
</tr>
<tr>
<td>1.1 Most Frequently Selected Prompt Answers Per Report, Prompt Combination</td>
<td>Lists all prompt answers all prompts in a report, sorted by frequency. This information can help you choose default prompt answers for each report. This report is prompted on time and report, and paged by project, report, and prompt.</td>
</tr>
<tr>
<td>1.2 Which Prompt Answer Values Are Used/Not Used For A Specific Prompt Title?</td>
<td>Lists the number and percentage of jobs that contain each prompt answer. This report is prompted on time, report, and prompt.</td>
</tr>
<tr>
<td>1.3 Which Prompts Remain Unanswered?</td>
<td>Lists all optional prompts that are not answered. These prompts might be able to be safely removed from the reports. This report is prompted on time and report.</td>
</tr>
<tr>
<td>1.4.1 Distribution of Prompts Within Executed Report Jobs</td>
<td>Provides information about the prompts and prompt locations in executed reports. This report is prompted on time and report.</td>
</tr>
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</table>
Real-time analysis

Several administrative questions require near real-time information about project and server activity. Following are examples:

- When a user contacts the administrator to troubleshoot an error received when executing a report, the administrator needs a list of recent errors and error messages to investigate the problem.

- Administrators often want to ensure that throughput and response times observed by users are meeting expectations.

- Schedules are typically used to update caches during a batch window. The administrator might want to monitor the system to ensure that scheduled jobs have finished successfully.

Such requirements as those listed above focus on a relatively small snapshot of recent activity on the system. Reports that provide answers to such questions must be refreshed without requiring frequent updates using the Enterprise Manager data loader.

The Real-time Analysis reports provide details of Intelligence Server activity. The data used in these reports is no more than 24 hours old. If a successful data load has finished in the past 24 hours, data from that data load is used; otherwise, the reports work directly with data from the statistics tables.

The reports in this analysis area use Freeform SQL and provide targeted administrative reporting features that complement the historical reporting features in the Operations, Performance, Project, and User Analysis areas.

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<tr>
<th>Report name</th>
<th>Function</th>
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</thead>
<tbody>
<tr>
<td>1.5 Prompt Answers That Result in Reporting Errors</td>
<td>Provides a list of prompt answers that cause errors in report execution, and the corresponding errors. This report is prompted on time and report.</td>
</tr>
</tbody>
</table>

### Report name | Function
---|---
101. Recently Completed Jobs | Provides details about all jobs that have completed since the specified date. This report is prompted on time.
102. Recent Sessions, Users | Provides details about recent user connection activity. This report is prompted on time.
103. Recently Completed Scheduled Jobs | Provides details about all recently completed scheduled jobs. This report is prompted on time.
User analysis

Reports in this analysis area contain the User attribute as their primary attribute for analysis, along with various metrics that answer an administrator’s questions about user activity and preferences.

The User Analysis folder in Enterprise Manager contains the following analysis areas, each with its own reports:

- **User activity analysis, page 139**
- **User preference analysis , page 141**

These areas are described below, and two reports are presented in detail. These sample reports have been selected as representative reports of the analysis area; the details and options suggested for the sample reports can often be used on other reports within the same or related analysis areas.

User activity analysis

This analysis area provides reports to analyze the effects of user activity on the system. Administrators can measure the following:

- Who are the most prolific users in terms of number of jobs, connection duration, and so on?
- How are users using features such as ad hoc reporting, drilling, and so on?
- Which users are using the system correctly and which need more training, as identified by the number of canceled jobs and jobs with errors?

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<td>80. Top (n) users</td>
<td>Determines the top (n) users, using a metric you choose from a list. This report is prompted on time, a list of metrics, and the number of users.</td>
</tr>
<tr>
<td>81. Activity by User</td>
<td>Provides summary information of user reporting activity by user and project. This report is prompted on time.</td>
</tr>
<tr>
<td>81.1 Ad-hoc activity by User</td>
<td>Provides information about how many ad hoc jobs are being run and the composition of ad hoc jobs. This report is prompted on time.</td>
</tr>
<tr>
<td>81.1.1 Drilling Activity by User</td>
<td>Provides information about how many jobs each user has run and how many of those jobs resulted from drilling. This report is prompted on time.</td>
</tr>
<tr>
<td>81.2 DB Result Rows by User</td>
<td>Provides the number of jobs, the number of database result rows, and the average elapsed report execution duration per user and project. This report is prompted on time.</td>
</tr>
<tr>
<td>82. Unused/Inactive Users</td>
<td>Lists all users who have not logged in since the specified date and provides information about their connections. This report is prompted on time.</td>
</tr>
<tr>
<td>83. User Inactivity by Project</td>
<td>Provides a list of users who have not connected to a project over a certain time interval. It also provides the last connection and disconnection timestamp.</td>
</tr>
<tr>
<td>84. User Analysis based on Wait Time (End-to-End)</td>
<td>Lists users who requested content via MicroStrategy Mobile along with information such as their total wait time, Intelligence Server time, device rendering time, network time, and how many manipulations they made.</td>
</tr>
</tbody>
</table>
Sample report: Activity by User

This report provides data on total elapsed report duration. It also provides counts of canceled jobs, non-canceled jobs, jobs that end with an error, and timed-out jobs by user and by project. This report prompts for a time for the analysis.

Usage scenario

You can use this report to gain insight into how reports are used per project by all users. You can determine which users are wasting resources by repeatedly canceling jobs and determine who run the most reports in a project. You can also see where reporting errors originate.

Report details

- Drill paths:
  - To narrow the scope of your analysis to individual sessions, drill across from User to Session and keep the parent attribute.
  - To identify the reports and documents that were executed by a user during a session, drill across from Session to Report/Document.

- Other options:
  - To restrict your analysis to the most prolific users using your chosen criteria, add the report Top (n) Users as a filter to this Enterprise Manager report.
  - To determine which projects a user is using, add a filter on user.
  - To restrict your analysis to a machine or connection source, add any attribute from the Session folder to this Enterprise Manager report.

Sample report: Top (n) Users

This report displays the top N users according to the user activities you select. The report prompts you for user activities and the number of users you want returned.

Usage scenario

You can use this report to learn the top users in a number of analysis areas related to user activity:

- Which users log in to Intelligence Server most often (select the Number of Sessions metric)
• Which users are connected the longest (select the Connection Duration metric)

• Which users run the most report jobs (select the RP Number of Jobs metric)

**Report details**

• Add your own metrics to this report for user activity analysis that focuses on your environment’s requirements.

• Use this report as a filter in custom reports that you create. For example, the Activity by User report returns the total elapsed time for report execution by user and project, and the number of canceled and non-canceled jobs. To narrow the results to the top 10 users responsible for the highest number of canceled jobs, you can add this Top (n) Users report as a filter to the Activity by User report. This allows you to analyze overall user activity and determine whether these users are canceling jobs legitimately.

**User preference analysis**

This analysis area provides reports to analyze the effects of user group activity on the system. Administrators can measure the following:

• What groups do specific users belong to?

• What reports are most commonly executed by members of a specific user group?

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<td>90. List User Groups to which users belong</td>
<td>Lists all user groups to which the specified users belong. This report is prompted on user.</td>
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<tr>
<td>91. Popular reports in a user’s User Group</td>
<td>Lists the top N most-executed reports in a user’s user group. This report is prompted on user, time, and number of reports.</td>
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