# OPTIMIZE

## MERCURY BUSINESS AVAILABILITY CENTER™

### Deploying Servers

MERCURY™

BUSINESS TECHNOLOGY OPTIMIZATION

# Mercury Business Availability Center

## Deploying Servers

Version 6.1

Document Release Date: March 5, 2006

MERCURY™

Mercury Business Availability Center, Version 6.1
Deploying Servers

This manual, and the accompanying software and other documentation, is protected by U.S. and international copyright laws, and may be used only in accordance with the accompanying license agreement. Features of the software, and of other products and services of Mercury Interactive Corporation, may be covered by one or more of the following patents: United States: 5,511,185; 5,657,438; 5,701,139; 5,870,559; 5,958,008; 5,974,572; 6,137,782; 6,138,157; 6,144,962; 6,205,122; 6,237,006; 6,341,310; 6,360,332, 6,449,739; 6,470,383; 6,477,483; 6,549,944; 6,560,564; 6,564,342; 6,587,969; 6,631,408; 6,631,411; 6,633,912; 6,694,288; 6,738,813; 6,738,933; 6,754,701; 6,792,460 and 6,810,494. Australia: 763468 and 762554. Other patents pending. All rights reserved.

Mercury, Mercury Interactive, the Mercury logo, the Mercury Interactive logo, LoadRunner, WinRunner, SiteScope and TestDirector are trademarks of Mercury Interactive Corporation and may be registered in certain jurisdictions. The absence of a trademark from this list does not constitute a waiver of Mercury's intellectual property rights concerning that trademark.

All other company, brand and product names may be trademarks or registered trademarks of their respective holders. Mercury disclaims any responsibility for specifying which marks are owned by which companies or which organizations.

Mercury provides links to external third-party Web sites to help you find supplemental information. Site content and availability may change without notice. Mercury makes no representations or warranties whatsoever as to site content or availability.

Mercury Interactive Corporation
379 North Whisman Road
Mountain View, CA 94043
Tel: (650) 603-5200
Toll Free: (800) TEST-911
Customer Support: (877) TEST-HLP
Fax: (650) 603-5300

© 2005-2006 Mercury Interactive Corporation, All rights reserved

If you have any comments or suggestions regarding this document, please send them by e-mail to documentation@mercury.com.

AMLIB_INST6.1/01

# Table of Contents

**Welcome to Deploying Servers** ..... **vii**
How This Guide Is Organized ..... vii
Who Should Read This Guide ..... viii
Getting More Information ..... viii

**PART I: DEPLOYMENT INTRODUCTION AND SYSTEM REQUIREMENTS**

**Chapter 1: Introducing Mercury Business Availability Center Server Deployment** ..... **3**
About Mercury Business Availability Center Server Deployment ..... 3
Deploying Mercury Business Availability Center Servers ..... 5
**Setting Management Database Parameters** ..... **8**
Web Servers ..... 9
Upgrading Mercury Business Availability Center ..... 9

**Chapter 2: Reviewing System Requirements** ..... **11**
Mercury Business Availability Center Servers ..... 12
Mercury Business Availability Center Databases ..... 14
Viewing Mercury Business Availability Center Site ..... 14
Additional Requirements for Mercury Business Availability Center ..... 15
Server Environment Settings ..... 15
Running Mercury Business Availability Center on VMware ..... 16

**Chapter 3: Browser Preparation** ..... **17**

**PART II: DEPLOYMENT CONFIGURATION**

**Chapter 4: Deployment Configuration** ..... **21**
Working with a Distributed Deployment ..... 21
One Machine (Typical) Deployment ..... 24
Three Machine Deployment ..... 26
Five Machine (Enterprise) Deployment ..... 27
Eight Machine Deployment ..... 30

**Chapter 5: High Availability for Mercury Business Availability Center ..... 33**
Load Balancing for Mercury Business Availability Center ..... 34
High Availability for the Core Server ..... 36
High Availability for the Centers Server ..... 37
High Availability for the Data Processing Server ..... 38
Configuring Mercury Business Availability Center Data Collectors ..... in a Distributed Environment ..... 51

**PART III: SERVER ADMINISTRATION AND MAINTENANCE**

**Chapter 6: File Backup Recommendations ..... 57**
Configuration and Data Files Backup ..... 57

**Chapter 7: Port Management ..... 59**
Connectivity of Mercury Business Availability Center ..... Components ..... 60
Incoming Mercury Business Availability Center Traffic ..... 61
Outgoing Mercury Business Availability Center Traffic ..... 63
Local Mercury Business Availability Center Traffic ..... 64

**Chapter 8: Start Menu and Task Bar Icons ..... 67**
Mercury Business Availability Center Start Menu ..... 68
Mercury Business Availability Center Task Bar Icon ..... 69

**PART IV: MERCURY BUSINESS AVAILABILITY CENTER SERVER INSTALLATION FOR WINDOWS**

**Chapter 9: Installing Mercury Business Availability Center Servers on a Windows Platform ..... 73**
Overview of Mercury Business Availability Center Server Installation ..... 74
Preparing Information Required for Installation ..... 75
Working with the Web Server ..... 77
Installation Prerequisites ..... 78
Installing Mercury Business Availability Center Servers ..... 80
Features Included in Mercury Business Availability Center Server ..... Installation ..... 83
Completing Server Installation and Launching Mercury Business ..... Availability Center ..... 85
Verifying JBoss and Tomcat Connectivity ..... 87
Uninstalling Mercury Business Availability Center Servers ..... 87

**Chapter 10: Setting Management Database Parameters for a Windows Platform ..... 91**
Overview of Setting the Management Database ..... 91
Using Set Management Database ..... 92
Required Information for Setting the Management Database ..... 95
Running the Set Management Database Utility ..... 97

**Chapter 11: Installing Components Setup Files for a Windows Platform ..... 99**
Overview of Installing Components Setup Files ..... 99
Installing Components Setup Files to the Mercury Business Availability Center Downloads Page ..... 100
Available Components and Setup Files ..... 102

**PART V: APPENDIXES**

**Appendix A: Installation Troubleshooting ..... 107**

**Appendix B: Connectivity Troubleshooting ..... 115**

**Index ..... 121**

# Welcome to Deploying Servers

This guide provides you with detailed instructions on deploying the servers that run Mercury Business Availability Center.

---

**Note to Mercury Managed Services customers:** The information in *Deploying Servers* is not relevant to Mercury Managed Services customers.

---

## How This Guide Is Organized

The guide contains the following parts:

### Part I Deployment Introduction and System Requirements

Introduces Mercury Business Availability Center server deployment and the platform system requirements, and describes setting up the Mercury Business Availability Center environment and special deployments.

### Part II Deployment Configuration

Describes the deployment options for installing Mercury Business Availability Center, and how to configure high availability and load balancing.

### Part III Server Administration and Maintenance

Describes how to administer and maintain Mercury Business Availability Center servers as well as how to manage the ports used by the servers, and use the Mercury Business Availability Center start menu and task bar icon.

**Part IV Mercury Business Availability Center Server Installation for Windows**

Describes how to install Mercury Business Availability Center servers on a Windows platform and connect to the database.

**Part V Appendixes**

Describes installation and connectivity troubleshooting issues.

## Who Should Read This Guide

This guide is intended for the following users of Mercury Business Availability Center:

- Mercury Business Availability Center administrators

Readers of this guide should be knowledgeable and highly skilled in enterprise system administration, and knowledgeable about Mercury Business Availability Center.

## Getting More Information

For information on using and updating the Mercury Business Availability Center Documentation Library, reference information on additional documentation resources, typographical conventions used in the Documentation Library, and quick reference information on deploying, administering, and using Mercury Business Availability Center, refer to *Getting Started with Mercury Business Availability Center*.

# Part I

## Deployment Introduction and System Requirements

# 1

# Introducing Mercury Business Availability Center Server Deployment

This chapter introduces the Mercury Business Availability Center platform components, and provides an overview of server deployment.


| This chapter describes: | On page: |
|---|---|
| About Mercury Business Availability Center Server Deployment | 3 |
| Deploying Mercury Business Availability Center Servers | 5 |
| Setting Management Database Parameters | 8 |
| Web Servers | 9 |
| Upgrading Mercury Business Availability Center | 9 |


## About Mercury Business Availability Center Server Deployment

The Mercury Business Availability Center servers are the backbone of the Mercury Business Availability Center platform, which powers the Mercury Business Availability Center applications. This guide provides an overview of Mercury Business Availability Center 6.1 platform deployment, including detailed installation instructions for Mercury Business Availability Center servers, and information regarding recommended Web server settings.

When setting up the Mercury Business Availability Center platform, in addition to reviewing the information in this guide, it is recommended that you also review the following documentation, as relevant for your organization and platform requirements:

- If you are upgrading to Mercury Business Availability Center 6.1 from an earlier version of Mercury Business Availability Center, see "Upgrading Mercury Business Availability Center" on page 9.
- For details on deploying a database server for use with Mercury Business Availability Center, see *Preparing the Database Environment*.
- For information on running Mercury Business Availability Center on a hardened platform (including using HTTPS protocol), see *Hardening the Platform*.
- Mercury Services offers best practice consulting on deployment planning, strategies, and security. For information on how to obtain this service, contact your Mercury representative.

If you are installing Mercury Business Availability Center for the first time, the platform deployment consists of the following main stages:

- **Installing Mercury Business Availability Center 6.1 servers** – for details, see "Deploying Mercury Business Availability Center Servers" on page 5.
- **Creating the Mercury Business Availability Center management database and connecting to it** – for details, see "Setting Management Database Parameters" on page 8.

**Note the following:**

- After installing Mercury Business Availability Center servers, register your copy of Mercury Business Availability Center to gain access to technical support and information on all Mercury products. You will also be eligible for updates and upgrades. You can register your copy of Mercury Business Availability Center on the Mercury Customer Support Web site (http://support.mercury.com). Remember to notify Mercury or your local representative if you move to a new address, so that you can continue to receive product information and updates.
- For troubleshooting issues, refer to the Mercury Customer Support Knowledge Base, which can be accessed from the Mercury Business Availability Center Help menu or from the Mercury Customer Support Web site. In addition, refer to the Mercury Business Availability Center readme file (located in the Mercury Business Availability Center Setup CD-ROM root directory) for last-minute technical and troubleshooting information.

## Deploying Mercury Business Availability Center Servers

You install the following servers when deploying Mercury Business Availability Center:

- **Mercury Business Availability Center Centers Server** – responsible for running Mercury Business Availability Center applications, reporting, and the Administration Console.
- **Mercury Business Availability Center Core Server** – responsible for receiving data samples from the data collectors, distributing the data to the relevant Mercury Business Availability Center components, and supporting the Bus.
- **Mercury Business Availability Center Data Processing Server** – responsible for aggregating data, running the Business Logic Engine, and controlling the Mercury Universal CMDB.

- **JBoss 3.2.6 application server** (installed automatically during Mercury Business Availability Center server installation) – responsible for running the Mercury Business Availability Center Java engine.
- **Tomcat 5.0 servlet engine** (installed automatically during Mercury Business Availability Center server installation) – responsible for handling the creation of dynamic HTML content for the Mercury Business Availability Center Web interface.

The Mercury Business Availability Center servers are run in a Microsoft Windows environment, and should be installed by your organization's system administration staff. The procedure for installing Mercury Business Availability Center servers is described in Chapter 9, "Installing Mercury Business Availability Center Servers on a Windows Platform."

You can install the Mercury Business Availability Center servers according to a number of different deployment strategies. Distributed deployments, in which multiple server machines are installed, can benefit from various high availability and load balancing options. For details on the recommended deployment strategies, see "Deployment Configuration" on page 21. For details on high availability and load balancing options, see "High Availability for Mercury Business Availability Center" on page 33.

---

**Note:** While Mercury Business Availability Center Centers Servers and Core Servers are symmetrical and can be installed on multiple machines, the Data Processing Server is stateful and can only be installed on one primary machine, and a second backup machine if required.

---

---

**Note:** If Mercury Business Availability Center servers are installed on multiple network segments, it is highly recommended that the number of hops, and the latency between the servers are minimal. Network induced latency may cause adverse affects to the Mercury Business Availability Center application and can result in performance and stability issues. For more information, contact Mercury Customer Support.

---

## General Information for Server Deployment

Note the following when deploying Mercury Business Availability Center servers:

- Access to the Mercury Business Availability Center server machine must be available, either through HTTP or HTTPS, from any standard Internet or intranet connection.
- The Mercury Business Availability Center server machine must have a user account with administrative rights to the database server(s) upon which you set up the management database (and later, profile database).
- To maximize the performance of machines on which you install Mercury Business Availability Center servers, it is recommended that server machines be dedicated to Mercury Business Availability Center and not run other applications.
- Mercury Business Availability Center servers cannot coexist with other Mercury products on the same machine.
- The Mercury Business Availability Center service resides on all Mercury Business Availability Center servers and is responsible for running all required Mercury Business Availability Center processes. The Mercury Business Availability Center service can be started and stopped to control Mercury Business Availability Center server operation.
- After Mercury Business Availability Center deployment, you install the setup files for various Mercury Business Availability Center tools (Mercury data collectors and Mercury tools for recording scripts) to the Mercury Business Availability Center Downloads page. For details on installing Mercury Business Availability Center tools setup files, see "Installing Components Setup Files for a Windows Platform" on page 99. For information on installing and configuring the data collectors, see *Data Collector Overview*.
- The Microsoft Data Access Component (MDAC) 2.7 SP1 is included in the server installation on a Windows platform (on the Core Server in a distributed Mercury Business Availability Center deployment).
- Sun JVM 1.4.2_10 is automatically installed on the machine during server installation.

- For instructions and recommendations on performing a distributed deployment/high availability deployment of Mercury Business Availability Center, see Chapter 5, "High Availability for Mercury Business Availability Center."

## Setting Management Database Parameters

Mercury Business Availability Center requires two types of databases/user schemas, which you set up on either Microsoft MS SQL Server or Oracle Server:

- **Management database –** for storage of system-wide and management-related metadata for the Mercury Business Availability Center environment. Mercury Business Availability Center requires one management database.
- **Profile database(s) –** for storage of raw and aggregated measurement data obtained from the Mercury Business Availability Center data collectors. Although only one profile database is required, you can store profile data in multiple databases, if required.

Part of the process of deploying Mercury Business Availability Center servers requires connecting to the management database. If you are installing Mercury Business Availability Center for the first time, you can manually create the management database directly on the database server before server installation, or you can allow Mercury Business Availability Center to create the database for you, using the set management database utility. It is recommended that you create the database manually.

For detailed information on deploying either of the database servers in your system for use with Mercury Business Availability Center, and creating the management database/user schema manually, see *Preparing the Database Environment*.

The procedure for setting management database parameters is described in Chapter 10, "Setting Management Database Parameters for a Windows Platform."

---

**Note:** If you need to verify the integrity of the management database, you can run the database schema verify program. For details, see Appendix D, "Database Schema Verification" in *Preparing the Database Environment*.

---

## Web Servers

To work with Mercury Business Availability Center, the server machine must run one of the following Web servers:

- **Microsoft Internet Information Server (IIS)** – If you plan to run Mercury Business Availability Center on IIS, you should install the IIS prior to Mercury Business Availability Center installation. During Mercury Business Availability Center server installation, the IIS settings are automatically configured to work with Mercury Business Availability Center.
- **Apache HTTP Server** – If you plan to use Mercury Business Availability Center with the Apache HTTP Server, you must use the version that has been adapted by Mercury for Mercury Business Availability Center. This version is installed during Mercury Business Availability Center server installation.

For information on setting up the Web server to work with Mercury Business Availability Center, see "Working with the Web Server" on page 77(Windows platforms).

## Upgrading Mercury Business Availability Center

If you are upgrading to Mercury Business Availability Center 6.1 from an earlier version of Mercury Business Availability Center, refer to the upgrade guide relevant to your upgrade path. The following upgrade guides are available:

- Upgrading Mercury Business Availability Center Version 4.5 to Version 6.1
- Upgrading Mercury Business Availability Center Version 5.x to Version 6.1

- Upgrading Mercury Business Availability Center Version 6.0 to Version 6.1

You can access these guides in PDF format (make sure you have Acrobat Reader 4.0 or later installed on the machine) from the following locations:

- From the **Deployment_Documentation** directory on the **Mercury Business Availability Center 6.1 Setup** CD-ROM.
- From the **Documentation\pdfs** directory on the **Mercury Business Availability Center 6.1 Documentation and Utilities** CD-ROM.
- From the Mercury Business Availability Center Documentation Portal area on the Mercury Customer Support Web site (support.mercury.com).

# 2

# Reviewing System Requirements

This chapter describes the system requirements required for running the Mercury Business Availability Center platform.

---

**Note:** The Mercury Business Availability Center readme file (available from the Mercury Business Availability Center Setup CD-ROM root directory) contains support matrices that enable you to see at a glance the supported operating systems for Mercury Business Availability Center components, as well as Mercury Business Availability Center component support for the current and previous Mercury Business Availability Center versions.

---


| This chapter describes: | On page: |
|---|---|
| Mercury Business Availability Center Servers | 12 |
| Mercury Business Availability Center Databases | 14 |
| Viewing Mercury Business Availability Center Site | 14 |
| Additional Requirements for Mercury Business Availability Center | 15 |
| Server Environment Settings | 15 |
| Running Mercury Business Availability Center on VMware | 16 |

# Mercury Business Availability Center Servers

| | |
|---|---|
| Computer/Processor | **Windows:** Dual Processor Pentium 4, 1.4 GHz or higher (preferably server technology including Hyper-Threading Technology support) |
| Operating System | **Windows:**<br>Windows 2000 Server/Advanced Server, Service Pack 4<br>Windows 2003 Server standard/enterprise, Service Pack 1. |
| Web Server | **Windows:**<br>Microsoft Internet Information Server (IIS) 5.0<br>Microsoft Internet Information Server (IIS) 6.0<br>Apache HTTP Server 2.0.49 (adapted by Mercury for Mercury Business Availability Center and installed during Mercury Business Availability Center server installation) |
| Memory | **Windows:** Minimum 2 GB RAM (Recommended: 4 GB RAM–especially for a Mercury Business Availability Center box where all three servers are installed on the same machine, and for the Data Processing Server when the servers are installed on separate machines) |
| Virtual Memory (for Windows deployment) | Minimum 4 GB (Note: The virtual memory size should always be at least twice the physical memory size.) |
| Virtual Address Space | **Windows:** On Windows 2003 Server (standard and enterprise editions) and Windows 2000 Advanced Server platforms, set the **/3GB** switch in the Windows **Boot.ini** file to increase virtual address space. |
| Free Hard Disk Space | **Windows:** Minimum 3 GB (including 1 GB required for software files)<br>(Recommended: 10 GB hard disk) |

| | |
|---|---|
| Display | **Windows:** Color palette setting of at least 256 colors (32,000 colors recommended)<br>(Note: In a distributed deployment, this requirement is only necessary for the Centers Server machines.) |
| Web Browser<br>(only required for viewing Mercury Business Availability Center site from the Mercury Business Availability Center server machine) | **Windows:** Microsoft Internet Explorer (IE) 6.0 or 6.0, Service Pack 1<br>(Note: Browser should be set to accept all cookies.) |
| Supported Databases | **Windows:**<br>Microsoft SQL Server 2000 Enterprise, Service Pack 4<br>Oracle Server 9.2.0.6; 10.2.0.1 (recommended)<br>For more information on supported and recommended database environments when working with Mercury Business Availability Center, see *Preparing the Database Environment*. |

## Mercury Business Availability Center Databases

| | |
|---|---|
| Supported Databases | Microsoft SQL Server 2000 Enterprise, Service Pack 4<br>Oracle Server 9.2.0.6 ; 10.2.0.1 (recommended)<br>For more information on supported and recommended database environments when working with Mercury Business Availability Center, see *Preparing the Database Environment*. |

## Viewing Mercury Business Availability Center Site

| | |
|---|---|
| Display | Color palette setting of more than 256 colors |
| Recommended Resolution | 1024x768 or higher |
| Supported Browsers | **Windows:** Microsoft Internet Explorer (IE) 6.0 or 6.0, Service Pack 1<br>(Note: Browser should be set to accept all cookies.) |
| Java Plug-in (for applets) | Sun Java Plug in 1.4.2_08 is supported for viewing the Dashboard maps applet. (If an earlier version is installed on the client machine, Mercury Business Availability Center will automatically try to download Java Plug in 1.4.2_08 when you access the maps applet.)<br>If you are using IE, you can download Sun Java Plug-in from the Download Java 2 SDK, Standard Edition, v 1.4.2_08 (J2SE) page, accessed from the Java Sun Web site (http://java.sun.com/products/archive/j2se/1.4.2_08/index.html). After installing, verify that the browser is using the correct Java version: Click **Tools** > **Internet Options** > **Advanced** tab, and select the Java (Sun) check box. Click OK, then close the browser and reopen it. |

# Additional Requirements for Mercury Business Availability Center

| | |
|---|---|
| Monitor Administration | If you want to work with Monitor Administration to manage SiteScopes, you must use SiteScope version 8.0 or later together with latest service pack for the version used. SiteScope 8.1 and the latest service pack for it are available from the Downloads page in Platform Administration. |
| Bristol TransactionVision Integration | To view reports in TransactionVision, you must have Adobe SVG Viewer version 3.0 or higher installed on your machine, downloadable from the Adobe Web site http://www.adobe.com/svg/viewer/install/main.html. |
| Dashboard | If you want to work with Mercury Business Availability Center using SSL, in order to have full functionality for the maps applet in Dashboard, you should install Java Plug-in 1.4.2_08 on the machine from which you are viewing Mercury Business Availability Center.<br>If you are using IE, you can download the Sun Java Plug-in from the Download Java 2 SDK, Standard Edition, v 1.4.2_08 (J2SE) page, accessed from the Java Sun Web site (http://java.sun.com/products/archive/j2se/1.4.2_08/index.html). After installing, verify that the browser is using the correct Java version: Click **Tools** > **Internet Options** > **Advanced** tab, and select the **Java (Sun)** check box. Click **OK**, then close the browser and reopen it. |

# Server Environment Settings

| | |
|---|---|
| Time Settings | All Mercury Business Availability Center servers, as well as the database servers, must be installed in the same time zone, with the same daylight savings time configuration, and be set to the same time. |

# Running Mercury Business Availability Center on VMware

If you are deploying Mercury Business Availability Center on a VMware platform, the sizing guidelines for a regular installation are not applicable. The following, general limitations and recommendations are applicable to a VMware installation:

- Performance of Mercury Business Availability Center on VMware can be expected to be slower than in a regular installation.
- Mercury Business Availability Center capacities and performance will vary according to the various server resources, such as CPU, memory, and network bandwidth, allocated to Mercury Business Availability Center components.
- ESX Server version 2.5.2 or higher should be used.
- A Gigabit network card should be used.
- It is strongly recommended that you do not run a database server containing Mercury Business Availability Center databases on VMWare if the database files reside on a VMWare virtual disk.
- VMWare is the only virtualization technology supported by Mercury Business Availability Center.

  SiteScope should not be run on VMware if a large number of SiteScope monitors and measurements are used. In such cases, it is recommended that SiteScope is run on a separate, dedicated, physical server.

# 3

# Browser Preparation

Note the following requirements for using your browser with Mercury Business Availability Center:

- Mercury Business Availability Center uses cookies. Ensure that your Web browser is set to accept all cookies.
- Mercury Business Availability Center requires browser support for pop-up windows. Mercury Business Availability Center will not perform properly if you are using Web applications that are set to block pop-up windows in your browser.
- Mercury Business Availability Center requires Java support for applets (JRE) to function properly.
- Staff who view the Mercury Business Availability Center site using Microsoft Internet Explorer (IE) must set their browser caching to automatically check for newer versions of stored pages, and to use the minimum amount of disk space.

**To set IE browser caching options for Mercury Business Availability Center:**

1. In the browser page, select **Tools** > **Internet Options**. The Internet Options dialog box opens and displays the **General** tab.
2. In the **Temporary Internet files** section, click **Settings**. The Settings dialog box opens.
3. In the **Check for newer version of stored pages** list, select **Automatically**.
4. In the **Temporary Internet files directory** section, move the **Amount of disk space to use** slider to the minimum setting.
5. Click **OK** to close the dialog boxes.

# Part II

## Deployment Configuration

# 4

# Deployment Configuration

You can deploy Mercury Business Availability Center in a number of different configurations according to the size of your system and your load balancing and high availability needs.


| This chapter describes: | On page: |
|---|---|
| Working with a Distributed Deployment | 21 |
| One Machine (Typical) Deployment | 24 |
| Three Machine Deployment | 26 |
| Five Machine (Enterprise) Deployment | 27 |
| Eight Machine Deployment | 30 |


## Working with a Distributed Deployment

A distributed deployment of Mercury Business Availability Center is when you install the Mercury Business Availability Center servers on multiple machines on your network. Different configurations are possible, depending on the number of machines you use for load balancing as well as the number of backup machines you have. For details on the possible configurations and the deployment that best suits your needs, contact your Mercury Services representative.

### Benefits of a Distributed Deployment

Using a distributed architecture for Mercury Business Availability Center gives you the following benefits:

- Provides scaling solutions for your Mercury Business Availability Center system.
- Multiple Core and Centers servers can be placed behind a load balancer to divide load and improve system performance. For details on load balancing, see "Load Balancing for Mercury Business Availability Center" on page 34.
- Backup machines for the Mercury Business Availability Center servers allow high availability options to be used to improve system availability and reliability. For details on high availability, see "High Availability for Mercury Business Availability Center" on page 33.

### Deploying Multiple Servers

- Mercury Business Availability Center is installed on a Windows  platform. For details on installing Mercury Business Availability Center, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 73.
- During server installation, you can choose **Typical** installation to install all of the Mercury Business Availability Center servers on each Mercury Business Availability Center machine, or **Custom** installation to specify which server type to install on each server machine.
- When you use **Custom** installation to install a Data Processing Server, you can install all of the Data Processing Server services on the same Data Processing Server, or you can install different types of Data Processing Servers, each running different Data Processing Server services. The breakdown of the Data Processing Servers is as follows:
  - **Online Data Processing Server** – runs the online Business Logic Engine, both the old and new Alerts engine, and partition manager.
  - **Offline Data Processing Server** – runs the offline Business Logic Engine, new offline aggregator, both the old and new Alerts engine, Adapters, LRDT watchdog, and partition manager.
  - **Modeling Data Processing Server** – runs the CMDB service, Viewsys service, both the old and new Alerts engine, and partition manager

- At the end of the server installation process, you use the Set Management Database utility to establish connectivity between the server and the management database. You should ensure that you specify the same management database and connection parameters for each Mercury Business Availability Center server (whether the servers are at the same location or geographically separated).
- After installing Mercury Business Availability Center servers on multiple machines, you must point Mercury Business Availability Center data collectors (Business Process Monitor, SiteScope, Client Monitor, Real User Monitor) to the server or load balancer with which they must communicate to perform their work. For details, see "Configuring Mercury Business Availability Center Data Collectors in a Distributed Environment" on page 51.
- The servers must be accessible from any standard Internet or intranet connection, either through HTTP or HTTPS.
- Each server must have a user account with administrative rights to the database server(s) containing the management and profile databases.
- You must create a common temporary directory to hold the temporary images created by the Centers Servers when generating scheduled reports. For details, see "Modifying the Location and Expiration of Temporary Image Files" in *Platform Administration*.

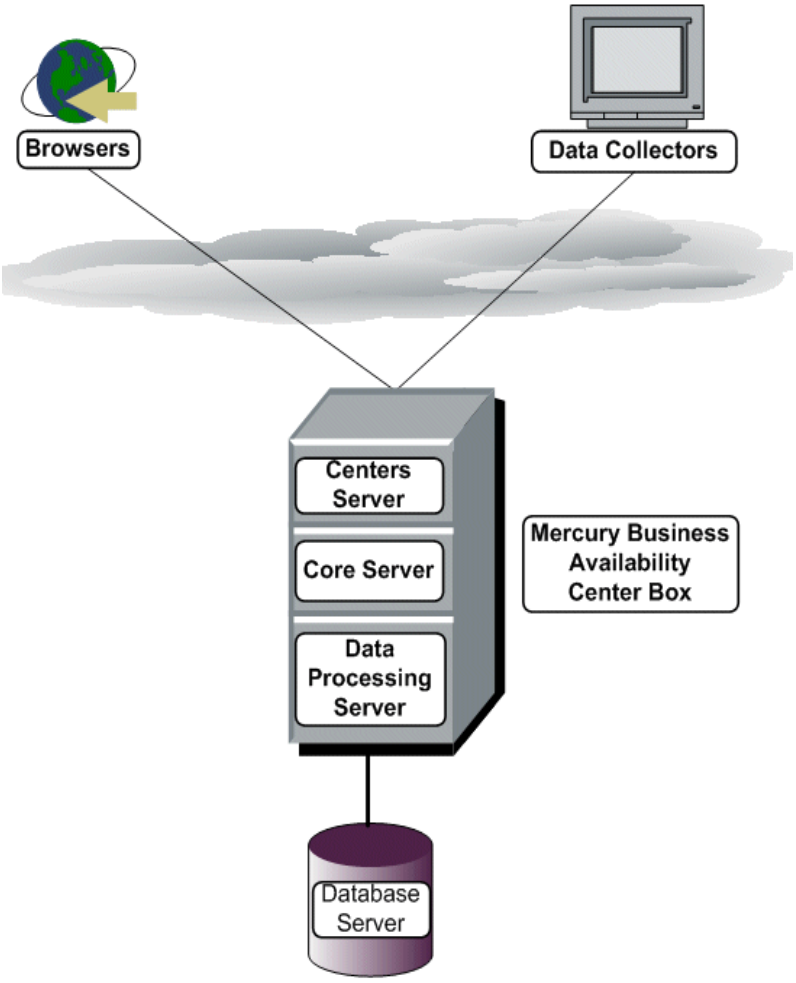
### Notes and Limitations

- If Mercury Business Availability Center servers are installed on multiple network segments, it is highly recommended that the number of hops, and the latency between the servers are minimal. Network induced latency may cause adverse affects to the Mercury Business Availability Center application and can result in performance and stability issues. For more information, contact Mercury Customer Support.

  Mercury Business Availability Center Core Servers and Centers Servers are symmetrical, and can be installed on multiple machines running concurrently. Offline Data Processing Servers are also symmetrical, but Online and Modeling Data Processing Servers are stateful and cannot run concurrently with additional Data Processing Servers of the same type. Additional Data Processing Servers can be used as passive backup machines only.

# One Machine (Typical) Deployment

A typical deployment is one in which all three Mercury Business Availability Center servers (Centers, Core, and Data Processing) are installed on the same machine.



---

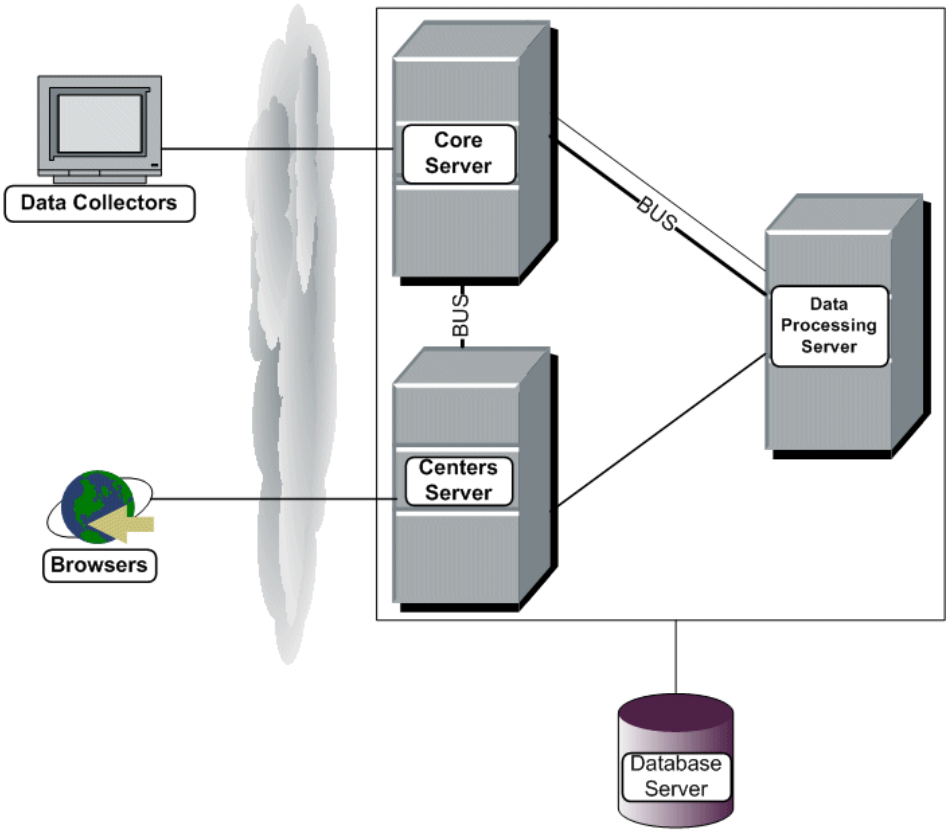
**Note:** As a typical installation is not scalable, and has no load balancing or high availability options, it is not recommended as a production system. A typical installation should be used for development and testing purposes only.

---

To carry out a one machine deployment, you choose the **Typical** setup type during Mercury Business Availability Center installation. For details on installing Mercury Business Availability Center, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 73.

# Three Machine Deployment

A three machine deployment is one in which one instance of each of the three Mercury Business Availability Center server types (Centers, Core, and Data Processing) is installed on a different machine.




Load balancing (for the Centers and Core servers) and high availability can be implemented in a three machine deployment by adding additional machines. For details on load balancing, see "Load Balancing for Mercury Business Availability Center" on page 34. For details on high availability, see "High Availability for Mercury Business Availability Center" on page 33.

To carry out a three machine deployment, you choose the **Custom** setup type during Mercury Business Availability Center installation and specify the server type you want to install on each machine. When installing the

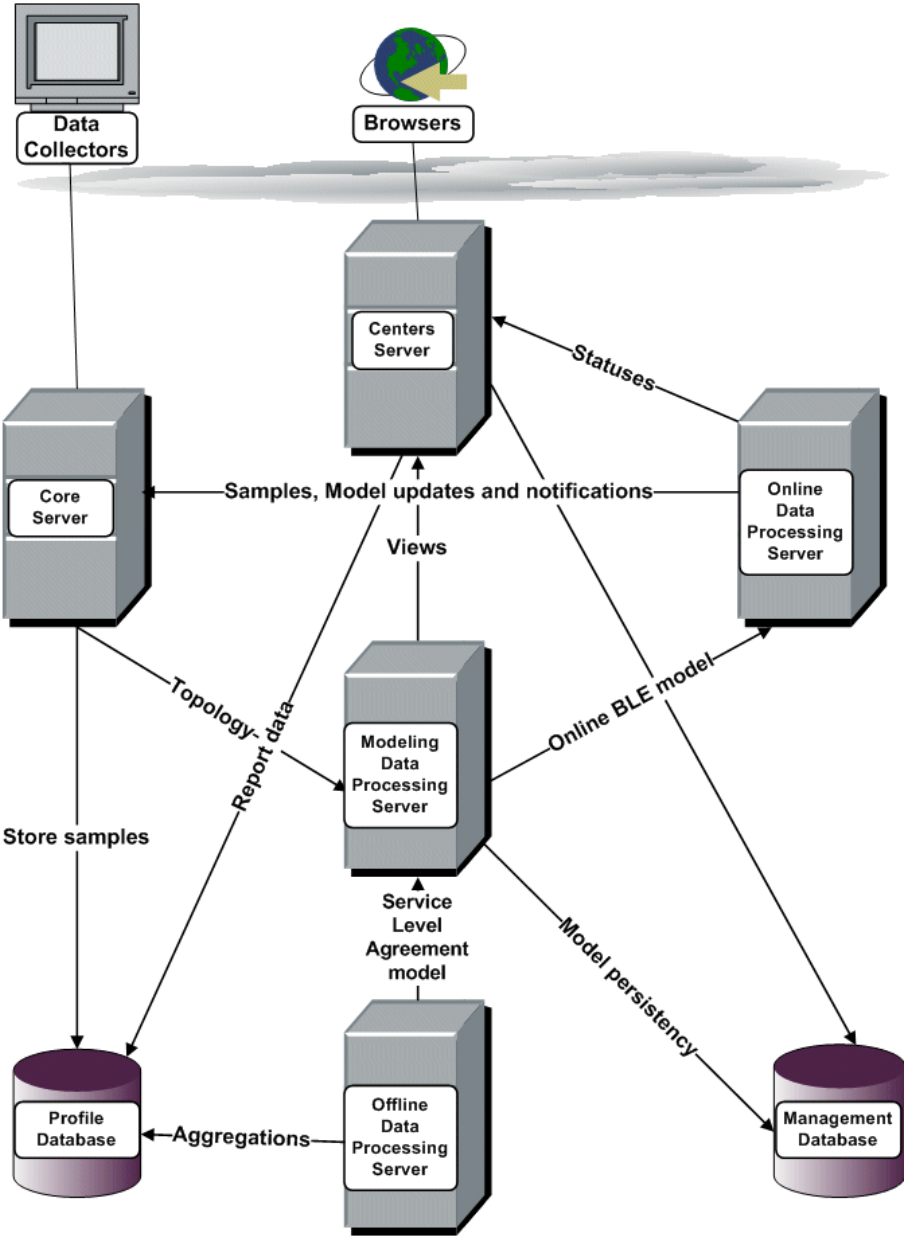
Data Processing Server, select **All** to install all the Data Processing Server types on the same machine. For details on installing Mercury Business Availability Center, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 73.

## Five Machine (Enterprise) Deployment

A five machine deployment is one in which one instance of the Centers Server is installed on one machine, one instance of the Core Server is installed on another machine, and three instances of the Data Processing Server are installed on three additional machines. Each Data Processing Server is installed with different features and each runs different Data Processing Server services. The breakdown of the Data Processing Servers is as follows:

- **Online Data Processing Server** – includes the online Business Logic Engine, both the old and new Alerts engine, and partition manager. Runs the DASHBOARD service.
- **Offline Data Processing Server** – includes the offline Business Logic Engine, new offline aggregator, both the old and new Alerts engine, Adapters, LRDT watchdog, and partition manager. Runs the CDM, LRDT and NOA services.
- **Modeling Data Processing Server** – includes CMDB, Viewing system, both the old and new Alerts engine, and partition manager. Runs the CMDB, VIEWSYS, SAP, and PACKAGER services.

For details on the services run by the Data Processing Servers, see “Services Assigned to the Data Processing Server” on page 39.

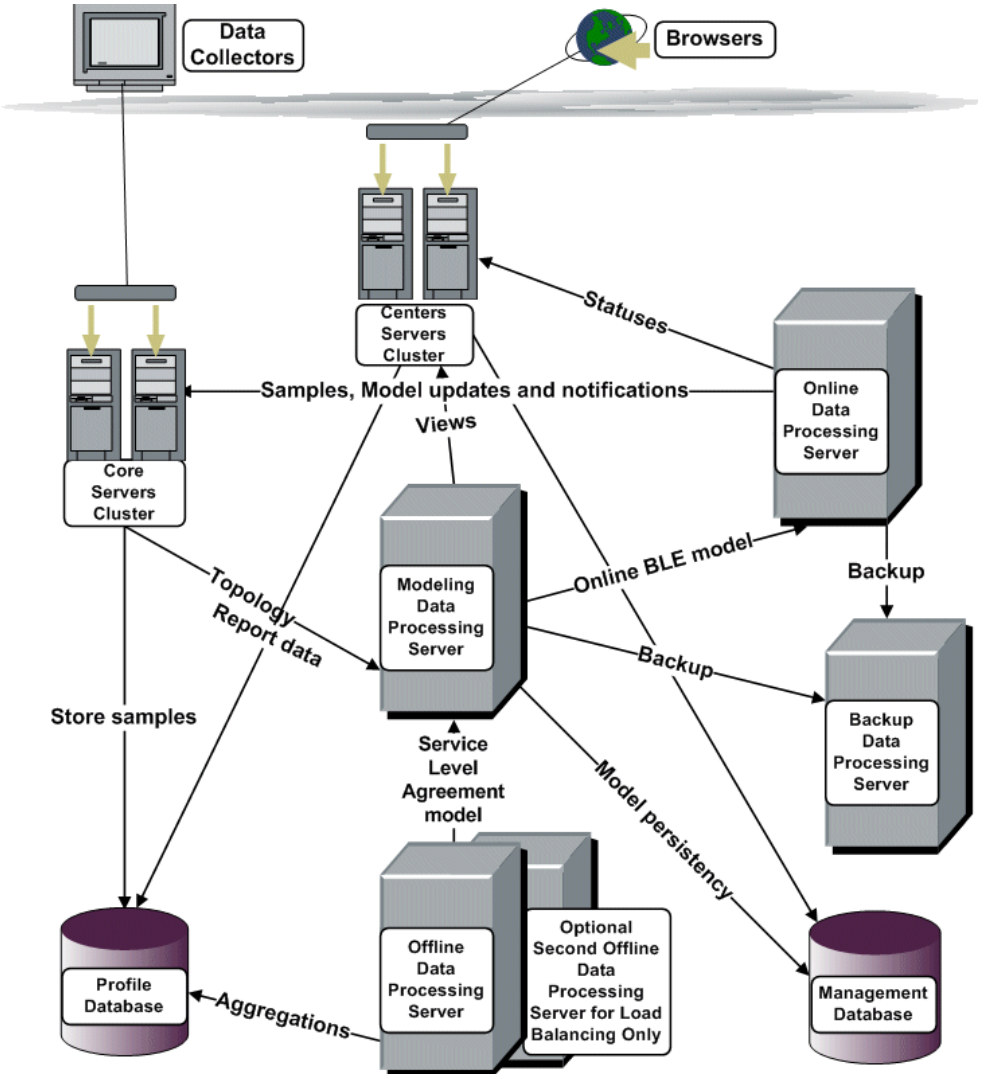


Load balancing (for the Centers and Core servers) and high availability can be implemented in a five machine deployment by adding additional machines. For details on load balancing, see "Load Balancing for Mercury Business Availability Center" on page 34. For details on high availability, see "High Availability for Mercury Business Availability Center" on page 33.

To carry out a five machine deployment, you choose the **Custom** setup type during Mercury Business Availability Center installation and specify the server type you want to install on each machine. For the Data Processing Servers, you further specify which type of Data Processing Server you want to install on each machine. For details on installing Mercury Business Availability Center, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 73.

# Eight Machine Deployment

An eight machine deployment is the same as an enterprise deployment, with the addition of extra backup machines for the Core and Centers Servers as well as one extra backup machine for both the Modeling and Online Data Processing Servers. Optional, additional Offline Data Processing Servers can be included for internal load balancing only. For details on the enterprise deployment, see “Five Machine (Enterprise) Deployment” on page 27.



By having a backup server for the Core, Centers, Online Data Processing, and Modeling Data Processing servers, and an optional, additional Offline Data Processing Server, you achieve load balancing for the Centers, Core, and Offline Data Processing servers, and high availability for the Core, Centers, Online Data Processing and Modeling Data Processing servers (high availability for the Offline Data Processing Server is also achieved, providing the CMDB directory has been reassigned for high availability. For details, see "High Availability for the CMDB Directory" on page 43). For details on load balancing, see "Load Balancing for Mercury Business Availability Center" on page 34. For details on high availability, see "High Availability for Mercury Business Availability Center" on page 33.

To carry out an eight machine deployment, you choose the **Custom** setup type during Mercury Business Availability Center installation and specify the server type you want to install on each machine. For the Data Processing Servers, you further specify which type of Data Processing Server you want to install on each machine. For details on installing Mercury Business Availability Center, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 73.

# 5

# High Availability for Mercury Business Availability Center

You can improve your system availability and reliability using high availability options that combine multiple servers, external load balancing, data persistency, and failover procedures.

Mercury Services offers best practice consulting on this subject. For information on how to obtain this service, contact your Mercury representative.


| This chapter describes: | On page: |
|---|---|
| Load Balancing for Mercury Business Availability Center | 34 |
| High Availability for the Core Server | 36 |
| High Availability for the Centers Server | 37 |
| High Availability for the Data Processing Server | 38 |
| Configuring Mercury Business Availability Center Data Collectors in a Distributed Environment | 51 |

# Load Balancing for Mercury Business Availability Center

When you install multiple Mercury Business Availability Center servers, Mercury Business Availability Center can utilize external load balancing mechanisms to help ensure the even distribution of processing and communications activities across the network. This is particularly important in cases of high load, to avoid overwhelming any single server.

When using multiple Mercury Business Availability Center servers, it is generally recommended that you use one or more external load balancers at the entry to Mercury Business Availability Center.

You can use separate load balancers for the Core Servers and for the Centers Servers, or have both server types working behind a single load balancer. If you cluster more than one type of server machine behind the same load balancer, you must define a virtual IP for each server type on the load balancer, and map it to the actual IPs of the Core or Centers Servers. You must also configure the load balancer to work with stickiness by session method for the Centers Servers, and to work with round robin for the Core Servers.

If there is more than one Offline Data Processing Server running, with all the services enabled, Mercury Business Availability Center will perform internal load balancing between the servers.

## Load Balancer for Core Servers

When Mercury Business Availability Center is working with a large incoming sample load, the external load balancer spreads the load between the deployed Core Servers.

You use the standard settings for the load balancer, with stickiness disabled and round robin enabled. For each data collector, you specify the URL or IP address (or the virtual URL/IP) of the load balancer, as described in "Configuring Mercury Business Availability Center Data Collectors in a Distributed Environment" on page 51.

## Load Balancer for Centers Servers

If there are a large number of users using the Mercury Business Availability Center applications, it is difficult to predict the number of requests that will be issued to the server, so the external load balancer is important for spreading the load on the CPU. If one Centers Server starts to get overwhelmed, requests are forwarded to another server with more capacity. Users accessing Mercury Business Availability Center specify the URL (or the virtual URL/IP) of the load balancer machine in the browser to open the Web site.

You use the standard settings for the load balancer, with stickiness by session enabled.

## Load Balancer for Offline Data Processing Servers

Mercury Business Availability Center has internal load balancing capabilities for the Offline Data Processing Server. If there is more than one Offline Data Processing Server running, with all the services enabled, Mercury Business Availability Center will automatically perform internal load balancing between the servers. This is useful when working with a large number of Service Level Agreements (in Service Level Management an agreement, usually between an organization and a service provider, that outlines standards and expectations of service levels).

However, the offline aggregation (NOA) and offline business logic engine (BLE) services that run on the Offline Data Processing Server utilize a lot of system resources. To avoid placing unnecessary load on Mercury Business Availability Center, it is recommended to disable these services on any additional Offline Data Processing Servers installed solely for the purpose of enabling manual failover in the event of an Offline Data Processing Server failure (for details, see "High Availability for the Data Processing Server" on page 38).

**To disable the offline aggregation and business logic engine services on an Offline Data Processing Server:**

Select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, choose **Foundations**, select **Offline Aggregator** and locate the **Run Aggregator** parameter. Change the setting to **False**.

### Notes and Limitations

- Software load balancing is not supported.
- If you use two load balancers for failover, you must ensure that you configure the IP addresses of both load balancers on the DNS server machine. You can then specify the machine name, IP address, or URL of either load balancer when this information is required for the data collectors, or in the browser to open the Mercury Business Availability Center site.
- If you use two load balancers for failover, and the load balancers each work with more than one server type, you should define a unique virtual IP address on each load balancer for each server type, map the virtual IPs to the actual IPs of the corresponding servers, and ensure that you configure all the virtual IP addresses on the DNS server machine. You can then specify either of the relevant virtual IPs for each data collector, or in the browser to open the Mercury Business Availability Center site.

## High Availability for the Core Server

Mercury Business Availability Center provides high availability for the Core Servers to help ensure that your data gets to its destination, even if a Core Server fails.

### Protected Delivery for Incoming Data

Mercury Business Availability Center provides protected data delivery for the Core Servers. Protected data delivery means that the data is not deleted from one data store until it is forwarded to, and stored in, the next data store.

---

**Note:** If your organization requires total consistency for raw data delivery for the Mercury Business Availability Center platform, note that Mercury Services offers best practice consulting on this subject. For information on how to obtain this service, contact your Mercury representative.

---

Mercury Business Availability Center supports the following mechanisms to help ensure high availability for the raw data:

- If the Web server of the Core Server machine fails, the data is either redirected to another Core Server by the load balancer, or queued on the data collector until the Core Server is up.
- If the Web server of the Core Server machine safely receives the data, but the Bus is down, the Web server provides protected delivery by storing the data until the Bus is up again.
- If the Bus receives the data, but the Collector on the Core Server is down, the Bus still forwards the data to the Centers and Data Processing Servers. The data is stored until the Collector is up again, when the data can be sent to the database.

## High Availability for the Centers Server

Mercury Business Availability Center provides high availability for the Dashboard application on Centers Servers, to help ensure that users remain working with the Dashboard, even if a Centers Server fails while a user is in the middle of a session.

When a user logs in to Mercury Business Availability Center and starts working with the Dashboard, the session information is registered on a specific Centers Server and the load balancer will send all communications related to that session to the same Centers Server. If the Centers Server fails, the load balancer will redirect the session to another Centers Server and the session will be re-registered on the new Centers Server. The user will continue working without any interruption of service and without having to log in to Mercury Business Availability Center again.

**Note:**

- It is possible that in certain situations, the transition from one Centers Server to another could take a few seconds, during which time errors may be received for some user actions.
- The load balancer must be set with stickiness by session enabled.

## High Availability for the Data Processing Server

For Online and Modeling Data Processing Servers (for details on the different types of Data Processing Servers, see "Five Machine (Enterprise) Deployment" on page 27) you can install only one active server in a Mercury Business Availability Center system, but can install a second server to act as a passive, backup Data Processing Server. The active server will run specific Mercury Business Availability Center services, but in the event that this server becomes unavailable, you can use Mercury Business Availability Center's System Health page to reassign the services to the passive server, which will then retrieve the current configuration from the management database and will continue to provide the services as the new active Data Processing Server. For details on reassigning services using the System Health page, see "Reassigning Services From the System Health Page" on page 46.

The Offline Data Processing Server is symmetrical and more than one Offline Data Processing Server can run concurrently. If an Offline Data Processing Server fails and you want to activate a different machine in its place, you must manually reassign the Offline Data Processing Server services from one machine to the other. For details on manually reassigning services, see "Manually Reassigning Services" on page 46.

---

**Note:** If an additional Offline Data Processing Server has been installed solely for the purpose of enabling manual failover in the event of an Offline Data Processing Server failure, it is recommended to stop the offline aggregation and business logic engine services from running on this machine. For details, see "Load Balancer for Offline Data Processing Servers" on page 35.

---

**Note:** When carrying out a new Mercury Business Availability Center 6.1 installation, the first Data Processing Server started becomes the default server for the assigned services for that specific type of Data Processing Server, that is, it becomes the primary Data Processing Server. If a second Data Processing Server is started, it automatically becomes the passive, backup Data Processing Server.

---

## Services Assigned to the Data Processing Server

The following are the services that are assigned to each of the Data Processing servers:

### Modeling Data Processing Server

- **CMDB** – a configuration data model that includes Mercury Business Availability Center components, installed on the Data Processing Server. The CMDB is a central repository for configuration information that is gathered from the various Mercury Business Availability Center and third-party applications and tools. This information is used to build Mercury Business Availability Center views.
- **VIEWSYS** – the viewing system and package manager service, installed on the Data Processing Server. The Viewsys service manages Mercury Business Availability Center views.
- **SAP** – a service that links data retrieved from SiteScopes and Business Process Monitors to SAP related entities brought from Mercury Application Mapping, for Mercury Business Availability Center compatibility.

- **PACKAGER** – a service that enables you to deploy and remove packages, and display the currently deployed packages. Packages are zip files containing resources that are structured in organized, predefined subdirectories.

#### Online Data Processing Server

- **DASHBOARD** – a service on the Data Processing Server that is responsible for online business logic calculations.

#### Offline Data Processing Server

- **CDM** – the CDM (configuration data model) service is responsible for adding data collector entities to the CMDB.
- **LRDT** – the service that updates data used by the watchdog monitor service on the Data Processing Server, that is responsible for checking the status and well being of Mercury Business Availability Center components.
- **NOA** – a service that validates and synchronizes new tasks for the offline aggregator on an hourly basis.

You can list the service assignment status at any given point in time using the JMX Web console.

#### To view service status via the JMX Web Console:

1. In a Web browser, open:
   **http://<Data Processing Server machine name>:8080/jmx-console**
2. In the **Topaz** section, select:
   **service=ha-manager**

**3** Under **listAllAssignments**, click **Invoke**. The latest status is displayed in the following format:

| Service | Customer | Server - [Start] - [Ping] | Assigned - [Since] - [Duration] | State - [Since] - [Duration] | Srv. Sign | State Sign |
|---|---|---|---|---|---|---|
| LRDT | -1 | shine - [4h:57m:16s] - [8s] | Yes(1) - [03/Jan/2006 09:53:24] - [9d:4h:23m] | RUNNING - [12/Jan/2006 09:21:26] - [4h:55m:55s] | 15 | 15 |
| NOA | -1 | shine - [4h:57m:16s] - [8s] | Yes(1) - [03/Jan/2006 09:53:24] - [9d:4h:23m] | RUNNING - [12/Jan/2006 09:21:26] - [4h:55m:55s] | 15 | 15 |
| DASHBOARD | 1 | shine - [4h:57m:16s] - [8s] | Yes(1) - [03/Jan/2006 09:53:23] - [9d:4h:23m] | RUNNING - [12/Jan/2006 09:22:42] - [4h:54m:39s] | 15 | 15 |
| CDM | 1 | shine - [4h:57m:16s] - [8s] | Yes(1) - [03/Jan/2006 09:53:23] - [9d:4h:23m] | RUNNING - [12/Jan/2006 09:23:09] - [4h:54m:12s] | 15 | 15 |
| CMDB | 1 | shine - [4h:57m:16s] - [8s] | Yes(1) - [03/Jan/2006 09:53:23] - [9d:4h:23m] | RUNNING - [12/Jan/2006 09:21:34] - [4h:55m:47s] | 15 | 15 |
| VIEWSYS | 1 | shine - [4h:57m:16s] - [8s] | Yes(1) - [03/Jan/2006 09:53:23] - [9d:4h:23m] | RUNNING - [12/Jan/2006 09:21:52] - [4h:55m:29s] | 15 | 15 |
| SAP | 1 | shine - [4h:57m:16s] - [8s] | Yes(1) - [03/Jan/2006 09:53:23] - [9d:4h:23m] | RUNNING - [12/Jan/2006 09:22:26] - [4h:54m:55s] | 15 | 15 |
| PACKAGER | 1 | shine - [4h:57m:16s] - [8s] | Yes(1) - [03/Jan/2006 09:53:23] - [9d:4h:23m] | RUNNING - [12/Jan/2006 09:22:31] - [4h:54m:50s] | 15 | 15 |

The report displayed contains the following columns:

| Column Name | Description |
|---|---|
| Service | The name of the assigned service. |
| Customer | The ID of the customer for which the service is assigned. The default customer ID for an individual Mercury Business Availability Center system (that is, one not managed by Mercury Managed Services) is 1.<br>A customer ID of -1 represents the entire Mercury Business Availability Center system as opposed to a specific customer. |
| Server | The name of the Data Processing Server to which the service is assigned. The length of time the server has been running, and the last time it was pinged, are also displayed. |
| Assigned | Whether the service assignment is currently active or not. The date the service was assigned, and the length of time is has been assigned, are also displayed. |

| Column Name | Description |
|---|---|
| State | The current state of the service. The date that the service acquired the state, and the length of time that it has been in the state, are also displayed. Valid states are:<br>• 1 – Stopped<br>• 2 – Starting<br>• 3 – Stopping<br>• 4 – Running<br>• -1 – Failed<br>• -2 – Failed to stop<br>• -3 – Failed to start |
| Srv Sign | Server signature. |
| State Sign | State signature (should match the server signature). |

The report shows that all the services are assigned to the Data Processing Server called shine and are currently active and running.

---

**Note:** The LRDT and NOA services are system services that are assigned a customer ID of -1.

---

## High Availability for the CMDB Directory

The CDM (adapters framework) service uses the **MercuryAM\CMDB** directory, which by default is installed on the Offline Data Processing Server.

For high availability of the **MercuryAM\CMDB** directory, and the ability to reassign the CDM service in the event of an Offline Data Processing Server failure, it is recommended to install the **MercuryAM\CMDB** directory on a netapp machine (a fast, powerful, and highly fault tolerant network machine), and to point Mercury Business Availability Center to this machine for the **MercuryAM\CMDB** directory. In the event of an Offline Data Processing Server failure, the CDM service can then be reassigned to the backup Offline Data Processing Server using the System Health page, accessed from the Setup and Maintenance tab in Platform Administration (for details, see "Reassigning Services From the System Health Page" on page 46).

If the **MercuryAM\CMDB** directory is not installed on a netapp machine, and is left in the default location on the Offline Data Processing Server, in the event of an Offline Data Processing failure, the CDM service must be manually reassigned to the backup Offline Data Processing Server and the **MercuryAM\CMDB** directory must also be copied to the backup Offline Data Processing Server (for details, see "Manually Reassigning Services" on page 46).

---

**Note:** If the CDM service is reassigned to the backup Offline Data processing Server without the **MercuryAM\CMDB** directory being copied, for example if the primary Offline Data Processing Server fails in such a way that you do not have access to the file system, the CDM service will use the empty **MercuryAM\CMDB** directory that exists on the backup Offline Data Processing Server and you will lose all your existing adapter framework data.

---

**To install the MercuryAM\CMDB directory on a netapp machine and point a new Mercury Business Availability Center 6.1 installation to it:**

Immediately after the installation of Mercury Business Availability Center 6.1, and before Mercury Business Availability Center 6.1 is started for the first time, carry out the following steps:

1 Create the **MercuryAM\CMDB** directory on the netapp machine.

2 Perform the following query on the Management database to set the pointer in Mercury Business Availability Center to the **MercuryAM\CMDB** directory on the netapp machine:

```
insert into setting_parameters(SP_ID,SP_CONTEXT,SP_SUB_CONTEXT,
SP_NAME,SP_VERSION,SP_HOST_ID,SP_VALUE,SP_VALUE_CLOB,
SP_CUSTOMER_ID)
SELECT MAX(SP_ID)+1,'BACConfSettings',NULL,
'adapters.main.directory.location','6.1.0.0',NULL,'<Adapters file location>'
,NULL,NULL
FROM setting_parameters
```

Where <Adapters file location> is the domain, netapp machine name, and path to the CMDB directory. For example, if the domain is mercury.com and the netapp machine is called mynetapp, <Adapater file location> will be <**mynetapp.mercury.com\MercuryAM\CMDB**>.

---

**Note:** It is strongly recommended that your database administrator carry out this step.

---

3 Ensure that the user who starts the Mercury Business Availability Center service has read/write access to the **MercuryAM\CMDB** directory on the netapp machine.

**To install the MercuryAM\CMDB directory on a netapp machine and point an existing Mercury Business Availability Center 6.1 installation to it:**

1. Ensure that there are no open connections to Mercury Business Availability Center.
2. Disable Mercury Business Availability Center on all machines by selecting **Start** > **Programs** > **Mercury Business Availability Center** > **Administration** > **Disable Business Availability Center**.
3. Copy the **MercuryAM\CMDB** directory from the Offline Data Processing Server to the netapp machine.
4. Perform the following query on the Management database to set the pointer in Mercury Business Availability Center to the **MercuryAM\CMDB** directory on the netapp machine:

   ```
   insert into setting_parameters(SP_ID,SP_CONTEXT,SP_SUB_CONTEXT,
   SP_NAME,SP_VERSION,SP_HOST_ID,SP_VALUE,SP_VALUE_CLOB,
   SP_CUSTOMER_ID)
   SELECT MAX(SP_ID)+1,'BACConfSettings',NULL,
   'adapters.main.directory.location','6.1.0.0',NULL,'<Adapters file location>'
   ,NULL,NULL
   FROM setting_parameters
   ```

   Where <Adapters file location> is the domain, netapp machine name, and path to the CMDB directory. For example, if the domain is mercury.com and the netapp machine is called mynetapp, <Adapater file location> will be <**mynetapp.mercury.com\MercuryAM\CMDB**>.

   ---

   **Note:** It is strongly recommended that your database administrator carry out this step.

   ---

5. Delete the old **MercuryAM\CMDB** directory from the Offline Data Processing Server.
6. Ensure that the user who starts the Mercury Business Availability Center service has read/write access to the **MercuryAM\CMDB** directory on the netapp machine.

**7** Start the Mercury Business Availability Center service on all machines by selecting **Start** > **Programs** > **Mercury Business Availability Center** > **Administration** > **Enable Business Availability Center**.

### Reassigning Services From the System Health Page

The System Health page, accessed from the Setup and Maintenance tab in Platform Administration, enables you move services between Data Processing Servers as server availability and resource issues arise. For details on using the System Health page to move services between Data Processing Servers, see "Managing System Health" in *Platform Administration*.

### Manually Reassigning Services

You can manually reassign the services running on a primary Data Processing Server to a passive, backup Data Processing Server should it be necessary (for example, if you have to move the CMD service and the **MercuryAM\CMDB** directory). Since a service can only be active on one Data Processing Server, you must either remove the existing assignment, or make it inactive, before reassigning the service to a different Data Processing Server. To reassign a service, you can either add a new assignment, or activate a previously defined, but inactive, assignment.

---

**Note:** When reassigning the CDM service between Offline Data Processing Servers there are additional steps that may need to be carried out. For details, see "Reassigning the CDM Service Together With the MercuryAM\CMDB Directory:" on page 50.

---

---

**Note:** In the event of a primary Data Processing Server failure, all the services must be reassigned and activated on the backup Data Processing Server for Mercury Business Availability Center to function properly.

---

### Removing a Service's Assignment

Removing a service's assignment will delete the entry from the HA_TASK_ASSIGN table in the management database so that it will have to be added as a new assignment if you wish to use it again in the future.

**To remove a service's current assignment:**

1 In a Web browser, open:
**http://<Data Processing Server machine name>:8080/jmx-console**

2 In the **Topaz** section, select:
**service=ha-manager**

3 Under **removeAssignment**, enter the following data:

- **customer_id** – The ID of the customer for which the service is assigned. The default customer ID for an individual Mercury Business Availability Center system (that is, one not managed by Mercury Managed Services) is 1.

---

**Note:** The customer_id for the LRDT and NOA services is always -1 as they are services assigned to the system as a whole, as opposed to a specific customer.

---

- **serviceName** – The name of the service for which you are removing the current assignment.
- **serverName** – The name of the Data Processing Server to which the service is currently assigned.

4 Under **removeAssignment**, click **Invoke**. The assignment for the service will be removed from the specified Data Processing Server.

### Changing the Status of an Assigned Service

You can leave the assignment of a service to a specific Data Processing Server in the HA_TASK_ASSIGN table in the Management database, but make it active or inactive by changing its assigned value.

**To change the assigned value of an existing assignment:**

1. In a Web browser, open:
**http://<Data Processing Server machine name>:8080/jmx-console**
2. In the Topaz section, select:
**service=ha-manager**
3. Under **changeAssignment**, enter the following data:
   - **customer_id** – The ID of the customer for which the service is assigned. The default customer ID for an individual Mercury Business Availability Center system (that is, one not managed by Mercury Managed Services) is 1.

---

**Note:** The customer_id for the LRDT and NOA services is always -1 as they are services assigned to the system as a whole, as opposed to a specific customer.

---

   - **serviceName** – The name of the service for which you are changing the assignment value.
   - **serverName** – The name of the Data Processing Server to which the service is assigned.
   - **assignValue** – The assigned value for the assignment. Any number between -9 and 9 is valid. 1 makes the assignment active and any other number makes it inactive.
4. Under **changeAssignment**, click **Invoke**. The assignment for the service will be changed according to the assignValue entered.

### Adding an Assignment for a Service

You can add an assignment for a service to a specific Data Processing Server and either activate it immediately, or keep it inactive until needed. This is useful when working with a primary and a passive, backup Data Processing Server. Assignments for all the services can be created for each server, with the assignments to the primary Data Processing Server being active, and the assignments to the backup Data Processing Server being inactive.

**To add a new assignment for a service:**

1 In a Web browser, open:
**http://<Data Processing Server machine name>:8080/jmx-console**

2 In the Topaz section, select:
**service=ha-manager**

3 Under **addAssignment**, enter the following data:

- **customer_id** – The ID of the customer for which the service is to be assigned. The default customer ID for an individual Mercury Business Availability Center system (that is, one not managed by Mercury Managed Services) is 1.

---

**Note:** The customer_id for the LRDT and NOA services is always -1 as they are services assigned to the system as a whole, as opposed to a specific customer.

---

- **serviceName** – The name of the service you are assigning.
- **serverName** – The name of the new Data Processing Server to which the service is being assigned.
- **assignValue** – The assigned value for the assignment. Any number between -9 and 9 is valid. 1 makes the assignment active and any other number makes it inactive.

4 Under **addAssignment**, click **Invoke**. The assignment for the service will be added for the specified Data Processing Server.

### Reassigning the CDM Service Together With the MercuryAM\CMDB Directory:

If you have not reassigned the **MercuryAM\CMDB** directory to a netapp machine (for details, see "High Availability for the CMDB Directory" on page 43) and need to reassign the CDM service to a backup Offline Data Processing Server, you must also copy the **MercuryAM\CMDB** directory to the backup Offline Data Processing Server.

**To reassign the CDM service together with the MercuryAM\CMDB directory:**

1. Delete the assignment for the CDM service on the active Offline Data Processing Server, or make it inactive.
2. Stop both the active and backup Offline Data Processing Servers.
3. Make a back-up copy of the **MercuryAM\CMDB** directory of the backup Offline Data Processing Server to which the CDM service is being reassigned.
4. Copy the **MercuryAM\CMDB** directory from the active Offline Data Processing Server to the backup Offline Data Processing Server.
5. Restart the backup Offline Data Processing server.
6. Create an assignment for the CDM service on the backup Offline Data Processing Server, or activate an existing, but inactive, assignment.

After changing the server on which a specific service is to run, the service will be automatically stopped on the server on which it is currently running and reassigned to the new server on which it is configured to run.

---

**Tip:** You can check that services have been reassigned, activated, and inactivated correctly by viewing the service status in the JMX Web Console. For details, see "To view service status via the JMX Web Console:" on page 40.

---

# Configuring Mercury Business Availability Center Data Collectors in a Distributed Environment

This section describes how to configure the Mercury Business Availability Center data collectors to work in a distributed Mercury Business Availability Center deployment.

To help ensure the proper functioning of Mercury Business Availability Center data collectors in a distributed Mercury Business Availability Center environment, you must configure them to communicate with the distributed Mercury Business Availability Center servers. You configure the following data collectors:

- Business Process Monitor, Client Monitor, and Real User Monitor Configuration – for details, see page 52
- SiteScope Configuration – for details, see page 53

---

**Note:** You can use the Mercury Self-Alert Monitor group in SiteScope to monitor the performance of Mercury Business Availability Center server machines, as well as host machines running Business Process Monitors. If a Mercury Self-Alert Monitor reports a problem with a server machine—for example, high CPU usage or low memory—you may need to add more machines to a cluster. If a Mercury Self-Alert Monitor reports a problem with a host machine, you may need to more evenly distribute the work assigned to existing Business Process Monitors in Mercury Business Availability Center profiles, or add more Business Process Monitors (that is, more host machines on which you install the Business Process Monitor) to your Mercury Business Availability Center architecture.

---

### Business Process Monitor, Client Monitor, and Real User Monitor Configuration

For Business Process Monitors to perform their work, you must specify the Core Server URL in the Business Process Monitor Admin application on each host machine on which the Business Process Monitor is running. Edit the Core Server URL entry in the Configure Instance page for each Business Process Monitor instance. For more information, see "Configuring Business Process Monitor Instances" in *Business Process Monitor Administration*.

For Client Monitors to perform their work, Mercury Business Availability Center requires you to specify the Core Server URL in the Client Monitor Agent Settings dialog box. For more information, see "Modifying Client Monitor Settings", in *Client Monitor Administration*.

For Real User Monitors to perform their work, Mercury Business Availability Center requires you to specify the Core Server URL in the Real User Monitor Web Console. For more information, see "Real User Monitor Configuration and Settings" in *Real User Monitor Administration*.

Specify the Core Server address as follows:

- If you install the Core Server on one machine, specify the URL of this machine.
- If you cluster two or more Core Servers behind a load balancer, specify the URL of the load balancer machine.

---

**Note:** If you use two load balancers for failover, specify the URL of either load balancer, and ensure that you configure the IP addresses of both load balancers on the DNS server machine.

---

- If you cluster more than one type of Mercury Business Availability Center server machine behind the same load balancer, on the load balancer define a virtual IP or virtual URL for the Core Server type, and map it to the actual IPs of the Core Servers. Then specify the Core Server's virtual IP for the Business Process Monitor/Client Monitor/Real User Monitor host machine.

---

**Note:** If you use two load balancers for failover, you should define a unique virtual IP for the Core Server type on each load balancer, map the virtual IPs to the same actual IPs of the Core Servers, and ensure that you configure both virtual IP addresses on the DNS server machine. Then specify either of the virtual IPs for each of the Business Process Monitor Admin/Client Monitor/Real User Monitor host machines.

---

### SiteScope Configuration

Mercury Business Availability Center works with SiteScope in either an attached or detached mode.

- If you want to use Mercury Business Availability Center Monitor Administration to control SiteScope, you work in an attached mode. You must set the required parameters, including the Core Server URL, in Mercury Business Availability Center Monitor Administration. For details, see "SiteScope Profile Integration Status" in *Managing SiteScope*.
- If you do not want Mercury Business Availability Center to control SiteScope, but you do want to view SiteScope data in Mercury Business Availability Center applications, you work in a detached mode. You create a new empty profile in Mercury Business Availability Center Monitor Administration and clear **Import SiteScope Configuration**. Then, in SiteScope administration, you connect to the profile you created. This new profile allows you to view SiteScope data in Mercury Business Availability Center applications, but you cannot add features such as Preferences, Health, and so forth. For details, see "SiteScope Profile Integration Status" in *Managing SiteScope*.

**Note:**

- If you use two load balancers for failover, you can use the machine name or IP address of either load balancer when specifying the load balancer machine name or IP address. However, ensure that you configure the IP addresses of both load balancers on the DNS server machine.
- If you are using a load balancer and have defined virtual IPs or URLs, you use the virtual IPs and URLs in the SiteScope configuration in both Mercury Business Availability Center Monitor Administration and in SiteScope.
- For details on changing the Core URL of a registered SiteScope, see "Integration with Mercury Business Availability Center" in *SiteScope Administration*.

# Part III

## Server Administration and Maintenance

# 6

# File Backup Recommendations

This chapter lists the directories that contain key configuration and data files, for which regular backups are recommended.


| This chapter describes: | On page: |
|---|---|
| Configuration and Data Files Backup | 57 |


## Configuration and Data Files Backup

Mercury Business Availability Center directories that contain key configuration and data files should be backed up on a daily basis as a precautionary measure. The table below lists the Mercury Business Availability Center directories that contain such files and which are recommended to back up.

| Resource | Comments |
|---|---|
| MercuryAM\BLE | Configuration of business rules. Back up if business rules have been created. |
| MercuryAM\conf | Assorted Mercury Business Availability Center configuration files. |
| MercuryAM\CMDB | Dashboard configuration data such as adapter frameworks and hierarchies. |
| MercuryAM\openldap | Monitor Administration configuration data. For further information on backing up the LDAP, see "Backing Up and Restoring Monitor Administration Configuration Data" in *Preparing the Database Environment*. |

| Resource | Comments |
|---|---|
| MercuryAM\dat | Assorted Mercury Business Availability Center configuration files. |
| MercuryAM\attachments | Data for user-defined daily reports. |
| MercuryAM\dbverify\conf | Configuration files for dbverify. This directory does not have to be backed up if dbverify has not been run. |
| MercuryAM\EJBContainer\bin | Configuration files for the scripts used to run Mercury Business Availability Center, and environment settings. |
| MercuryAM\launch_service | Various modules used in Mercury Business Availability Center. Back up if changes were made to any of the installation defaults. |
| MercuryAM\settings | Aggregation configuration data. |
| MercuryAM\tools | Various tools and settings for Mercury Business Availability Center. Back up if Mercury Business Availability Center tools are used. |
| MercuryAM\bin | Mercury Business Availability Center binary files. Back up if changes were made to any of the installation defaults. |
| MercuryAM\lib | Mercury Business Availability Center library files. Back up if changes were made to any of the installation defaults. |
| MercuryAM\AppServer\ DataEngine | Mercury Business Availability Center Data Engine configuration files used for obtaining data for reports. |
| MercuryAM\AppServer\GDE | Configuration files for the Generic Data Engine, used for obtaining data for reports. |

# 7

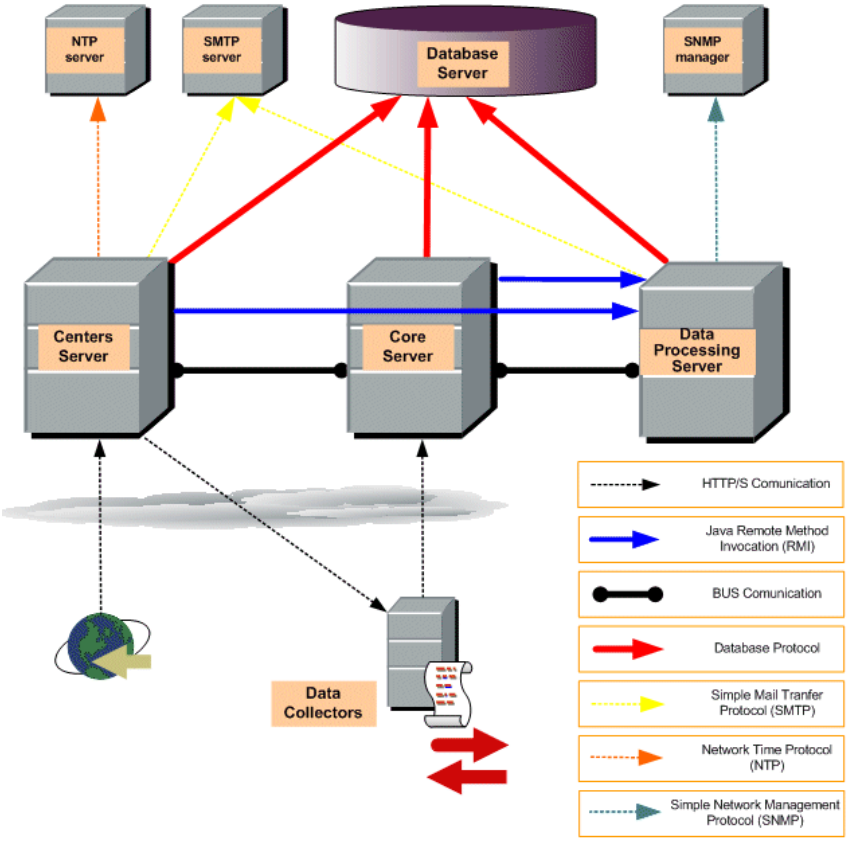
# Port Management

This section lists the ports used by Mercury Business Availability Center for communications.


| This chapter describes: | On page: |
|---|---|
| Connectivity of Mercury Business Availability Center Components | 60 |
| Incoming Mercury Business Availability Center Traffic | 61 |
| Outgoing Mercury Business Availability Center Traffic | 63 |
| Local Mercury Business Availability Center Traffic | 64 |

# Connectivity of Mercury Business Availability Center Components

The following diagram shows the connectivity between Mercury Business Availability Center servers, data collectors, application users, and Mercury Business Availability Center platform components.



# Incoming Mercury Business Availability Center Traffic

There are two categories of incoming Mercury Business Availability Center traffic:

- Internal Traffic – traffic between two Mercury Business Availability Center servers
- External Traffic – traffic coming into one of the Mercury Business Availability Center servers from a client that is not a Mercury Business Availability Center server.

### Internal Traffic

The following table lists the ports used to transmit data between two Mercury Business Availability Center servers:

| Port Number | Mercury Business Availability Center Servers that Listen on Port | Port Usage |
|---|---|---|
| 4444 | Core Server, Centers Server, Data Processing Server | Remote Method Invocation (RMI) channel between Mercury Business Availability Center servers |
| 4445 | Core Server, Centers Server, Data Processing Server | Remote Method Invocation (RMI) channel between Mercury Business Availability Center servers |
| 27842 | Core Server, Centers Server, Data Processing Server | Messaging BUS channel between Mercury Business Availability Center servers |

### External Traffic

The following table lists the ports used to transmit data from an external Mercury Business Availability Center client machine to a Mercury Business Availability Center server:

| Port Number | Mercury Business Availability Center Servers that Listen on Port | Port Usage |
|---|---|---|
| 80/443 | Core Server, Centers Server | HTTP/S channel to Centers Server applications and Core Server |

# Outgoing Mercury Business Availability Center Traffic

The following table lists the ports used by the Mercury Business Availability Center servers to connect to external servers (non Mercury Business Availability Center servers):

| Port Number | Mercury Business Availability Center Servers that Connect to Port | Port Usage |
|---|---|---|
| 80/443 | Centers Server | HTTP/S channel between the Centers Server and data collectors for remote administration tasks |
| 1433 | Core Server, Centers Server, Data Processing Server | T-SQL – channel between the Mercury Business Availability Center servers and the MS SQL Server |
| 1521 | Core Server, Centers Server, Data Processing Server | PL/SQL – connection between the Mercury Business Availability Center servers and the Oracle Server |
| 25 | Centers Server, Data Processing Server | SMTP channel from the Mercury Business Availability Center servers to the SMTP mail server |
| 161 | Data Processing Server | SNMP channel from the Mercury Business Availability Center Data Processing Server to the SNMP manager |

| Port Number | Mercury Business Availability Center Servers that Connect to Port | Port Usage |
|---|---|---|
| 123 | Centers Server | NTP channel from the Mercury Business Availability Center Centers Server to the NTP server |
| 389 | Centers Server | Connection between the Centers Server and LDAP server for authentication (optional). For more information, see "Authentication Strategies" in *Platform Administration*. |

## Local Mercury Business Availability Center Traffic

The table below lists the ports used for communication between components on the same Mercury Business Availability Center server machine.

| Port Number | Mercury Business Availability Center Servers that Connect to Port | Port Usage |
|---|---|---|
| 1098 | Core Server, Centers Server, Data Processing Server | RMI port used by the JBoss application server |
| 1099 | Core Server, Centers Server, Data Processing Server | Naming service used by the JBoss application server |
| 8009 | Core Server, Centers Server, Data Processing Server | Tomcat AJP13 connector |

| Port Number | Mercury Business Availability Center Servers that Connect to Port | Port Usage |
|---|---|---|
| 8080 | Core Server, Centers Server, Data Processing Server | HTTP channel for same machine components |
| 8083 | Core Server, Centers Server, Data Processing Server | RMI dynamic class loading |
| 8090<br>8092<br>8093 | Core Server, Centers Server, Data Processing Server | TCP JMS OIL/2 and UIL used by the JBoss application server |
| 9389 | Centers Server | TCP local LDAP connection used by Mercury Business Availability Centers server |
| Dynamic ports | Core Server, Centers Server, Data Processing Server | Some dynamic ports are used for inter-component channels |

# 8

# Start Menu and Task Bar Icons

During the installation of Mercury Business Availability Center, a start menu and task bar icon for Mercury Business Availability Center are added to the settings of the machine on which the installation is made.


| This chapter describes: | On page: |
|---|---|
| Mercury Business Availability Center Start Menu | 68 |
| Mercury Business Availability Center Task Bar Icon | 69 |

# Mercury Business Availability Center Start Menu

To access the Mercury Business Availability Center start menu that is added to each machine on which Mercury Business Availability Center is installed, select **Start** > **Programs** > **Mercury Business Availability Center**. The menu includes the following options:

## Administration

The Administration menu option includes the following sub-options:

| Sub-option | Description |
|---|---|
| Connect to Database | Runs the Set Management Database wizard, which enables you to create and connect to a management database/user schema for Mercury Business Availability Center on MS SQL Server or Oracle Server. For details, see "Setting Management Database Parameters for a Windows Platform" on page 91. |
| Enable Business Availability Center | Starts Mercury Business Availability Center on the specific machine, and sets it to be run automatically whenever the machine is started. |
| Upgrade Database Schema | Runs the database verify and upgrade program that is used to verify and upgrade the management and profile databases. For details, see "Database Schema Verification" in *Preparing the Database Environment*. |
| Disable Business Availability Center | Stops Mercury Business Availability Center on the specific machine, and disables it from being run automatically whenever the machine is started. |

---

**Note:** You can start and stop the Mercury Business Availability Center application running on a specific machine, without having to enable or disable Mercury Business Availability Center, by starting or stopping an individual instance of the Mercury Business Availability Center service on that machine.

---

### Documentation

The Documentation menu option includes the following sub-options:

| Sub-option | Description |
|---|---|
| Mercury Business Availability Center Documentation Library | Opens the Mercury Business Availability Center Documentation Library home page in your Web browser. |
| Business Availability Center Getting Started Guide | Opens a PDF version of *Getting Started with Mercury Business Availability Center*. |

### Open Business Availability Center

Selecting this option runs the Mercury Business Availability Center application on the local machine.

## Mercury Business Availability Center Task Bar Icon



The task bar icon installed with Mercury Business Availability Center provides a menu with options for the Mercury Interactive Agent. The Mercury Interactive Agent is responsible for launching Mercury Business Availability Center and managing the processes used by it. The supervisor process manages and monitors the other processes used by Mercury Business Availability Center.

When Mercury Business Availability Center is first enabled, the icon appears with a grey background, which changes to green when Mercury Business Availability Center has successfully started. If any of the processes fail, the icon's background changes to red until the problem is rectified.

The menu, which you access by right-clicking the icon, includes the following options:

| Option | Description |
|---|---|
| About | Displays informational data about the Mercury Interactive Agent |
| View Log | Displays the supervisor log, which includes information about the various processes being used by Mercury Business Availability Center. |
| Settings | Displays the processes in use by Mercury Business Availability Center, and their current settings. |
| Close | Stops the Mercury Business Availability Center service that is running and closes the Mercury Interactive Agent. |

---

**Note:** Changing any of the process settings can cause Mercury Business Availability Center to malfunction and should only be done by Mercury Customer Support.

---

# Part IV

## Mercury Business Availability Center Server Installation for Windows

# 9

# Installing Mercury Business Availability Center Servers on a Windows Platform

This chapter describes how to install Mercury Business Availability Center servers on a Windows platform. It also describes the uninstall procedure.

---

**Note:** If you are upgrading to Mercury Business Availability Center 6.1 from an earlier version of Mercury Business Availability Center, refer to the upgrade guide relevant to your upgrade path. For details, see "Upgrading Mercury Business Availability Center" on page 9.

---


| This chapter describes: | On page: |
|---|---|
| Overview of Mercury Business Availability Center Server Installation | 74 |
| Preparing Information Required for Installation | 75 |
| Working with the Web Server | 77 |
| Installation Prerequisites | 78 |
| Installing Mercury Business Availability Center Servers | 80 |
| Features Included in Mercury Business Availability Center Server Installation | 83 |
| Completing Server Installation and Launching Mercury Business Availability Center | 85 |

| This chapter describes: | On page: |
|---|---|
| Verifying JBoss and Tomcat Connectivity | 87 |
| Uninstalling Mercury Business Availability Center Servers | 87 |


# Overview of Mercury Business Availability Center Server Installation

There are three stages to the Mercury Business Availability Center 6.1 server installation:

- Installing the Mercury Business Availability Center 6.1 servers (Core, Centers, and Data Processing), as described in "Installing Mercury Business Availability Center Servers" on page 80.
- Setting the management database by specifying the management database type and connection parameters, as described in "Setting Management Database Parameters for a Windows Platform" on page 91.
- Installing components setup files in the Mercury Business Availability Center Downloads page, as described in "Installing Components Setup Files for a Windows Platform" on page 99.

The server Setup program gives you the option of installing all of the three Mercury Business Availability Center servers on one machine (referred to as a Mercury Business Availability Center box), or installing one of the servers on the machine. For details on the different deployment configurations that are possible, see Chapter 4, "Deployment Configuration." Note that if you are installing in a distributed deployment (involving multiple server instances), you should also review Chapter 5, "High Availability for Mercury Business Availability Center."

For a description of the installed features, see "Features Included in Mercury Business Availability Center Server Installation" on page 83.

---

**Note:** Following installation, you can access two installation log files located in **<local directory>:\Documents and Settings\<Mercury Business Availability Center user>\Local Settings\Temp\Mercury** (which you can access by selecting **Start** > **Run**, typing **%temp%\Mercury**, and clicking **OK**). The log file names are in the following format:

- **<product name><date and time>.install.html**
- **<product name><date and time>.install.is.log**

For example:

**Mercury_Business_Availability_Center.10.31.18.05.install.is.log**

---

Before beginning Mercury Business Availability Center server installation, you should review the following:

- Preparing information that is required during the installation, described on page 75.
- Web server issues that may affect the installation, described on page 77.
- Installation prerequisites, described on page 78.

## Preparing Information Required for Installation

You should have the following information ready when you install Mercury Business Availability Center servers:

- License key – if you do not receive a license key with your Mercury Business Availability Center package, you can obtain one from your Mercury Customer Support representative. Note that you can enter **TEMPORARY** if you do not yet have a permanent license key. The temporary license key grants you ten transactions over ten days. (TEMPORARY appears by default during first-time installations.)

If at a later stage you need to update the license key (for example, if you acquire a license for one or more new Mercury Business Availability Center components), you can do so within the Mercury Business Availability Center site: Select **Admin** > **Platform** > **Setup and Maintenance** > **License Management** and click **New License Key**. For information on updating the license key, see "License Management" in *Platform Administration*.

- Maintenance number – you receive a maintenance number with your Mercury Business Availability Center package.
- (If using Apache HTTP Server) Web server name, including domain, and e-mail address for the Mercury Business Availability Center administrator.
- Port number used by the Web server to access Mercury Business Availability Center (default is port 80).
- Name of the Centers Server machine or load balancer used to access the Mercury Business Availability Center site.
- SMTP mail server name and sender name (to appear on alerts sent from Mercury Business Availability Center).

---

**Note:** In addition to sending e-mail alerts via the configured SMTP server, Mercury Business Availability Center can send e-mail alerts via the Microsoft SMTP Service. For details, see "Configuring SMTP Mails" in *Platform Administration*.

---

- (If you plan to set the management database during server Setup) Information for setting the management database parameters, as described in "Required Information for Setting the Management Database" on page 95.

# Working with the Web Server

Mercury Business Availability Center installed on a Windows platform works with Apache HTTP Server or Microsoft Internet Information Server (IIS), as described in the following sections.

---

**Note:** Ensure that there is only one running Web server on a Mercury Business Availability Center server machine. For example, if you select to use Apache HTTP Server during Mercury Business Availability Center server installation, and you are installing on a machine on which IIS is already running, make sure to stop the IIS service and set its startup status to **Manual** before you begin the installation process.

---

## Apache HTTP Server

If you plan to run Mercury Business Availability Center on the Apache HTTP Server, you must use the Apache HTTP Server version that has been adapted by Mercury for Mercury Business Availability Center, and is installed during the server installation. If another Web server is already installed on the machine, a port conflict might arise between the existing Web server and the one installed by Mercury Business Availability Center.

Mercury Business Availability Center runs its Apache HTTP Server, by default, through port 80. If the existing Web server presently uses port 80, you must either reconfigure it to use a different port before beginning Mercury Business Availability Center installation, or, during Mercury Business Availability Center installation, select a different port for the adapted Apache HTTP Server.

(If the port conflict is not resolved in one of these ways, you must reconfigure the existing Web server after Mercury Business Availability Center installation has finished.)

---

**Note:** By default, the Apache HTTP Server is not enabled for SSL use. For details on configuring the Web server to use SSL, see *Hardening the Platform*.

---

### Microsoft Internet Information Server

If you plan to use the Microsoft Internet Information Server (IIS), the IIS settings are automatically configured to work with Mercury Business Availability Center during the server installation.

Note that you can make your Mercury Business Availability Center server machines running IIS under Windows 2000 more robust by configuring IIS to restart automatically upon failure.

**To configure automatic IIS restart:**

1. Open the Services dialog box from the Control Panel, right-click the Internet Information Server (IIS) service, and select **Properties**.
2. In the **Recovery** tab, specify to run a file upon failure.
3. In the **File** box, type:

   IISReset.exe /RESTART /TIMEOUT:30 /REBOOTONERROR

   This instructs Windows 2000 to run the IISReset tool if IIS crashes. If the tool fails to run within 30 seconds, the machine restarts.

## Installation Prerequisites

Note the following before installing Mercury Business Availability Center servers:

- It is recommended that you install Mercury Business Availability Center servers to a drive with at least 3 GB of free disk space. (For more details on server system requirements, see Chapter 2, “Reviewing System Requirements.”)

- If installing Mercury Business Availability Center on a Windows 2003 Server (standard or enterprise edition), or Windows 2000 Advanced Server platform, set the **/3GB** switch in the Windows **Boot.ini** file to increase virtual address space.
- If Mercury Business Availability Center servers are installed on multiple network segments, it is highly recommended that the number of hops, and the latency between the servers are minimal. Network induced latency may cause adverse affects to the Mercury Business Availability Center application and can result in performance and stability issues. For more information, contact Mercury Customer Support.
- Mercury Business Availability Center servers cannot coexist with other Mercury products on the same machine.

---

**Note:** If you do have other Mercury products that you need to keep installed on the machine, you can use the following workaround: Before running the installation, access the Windows Registry Editor (select **Start > Run**, and type **Regedit**) and rename the **HKEY_LOCAL_MACHINE\SOFTWARE\Mercury Interactive** key. Start the server installation and accept the license agreement, then return to the Registry Editor and rename the key to the original name, **Mercury Interactive**. Continue with the installation procedure.

---

- Do not install Mercury Business Availability Center on a drive that is mapped to a local or network resource.
- Due to certain Web browser limitations, the names of server machines running the Centers Server should consist only of alphanumeric characters (a-z, A-Z, 0-9), hyphens (-), and periods (.). For example, if the names of the machines running the Centers Server contain underscores, it may not be possible to log in to the Mercury Business Availability Center site when using Microsoft Internet Explorer 6.0 or later. (To access the Mercury Business Availability Center site in this case, use the machine's IP address instead of the machine name containing the underscore.)

- During Mercury Business Availability Center server installation, you can specify a different path for the Mercury Business Availability Center directory (default is **C:\MercuryAM**), but note that the full path to the directory must not contain spaces and cannot contain more than 15 characters.
- If you plan to run Mercury Business Availability Center servers on a hardened platform (including using HTTPS protocol), you should review the hardening procedures described in *Hardening the Platform*.

## Installing Mercury Business Availability Center Servers

You install Mercury Business Availability Center 6.1 servers—the Centers Server, Core Server, and Data Processing Server—from the Mercury Business Availability Center 6.1 Setup CD-ROM provided with the Mercury Business Availability Center distribution package. Unless you install on a machine running IIS, Mercury Business Availability Center installs Apache HTTP Server (adapted for Mercury Business Availability Center) during the installation process.

You need administrative privileges for the machine(s) on which you are installing Mercury Business Availability Center servers.

---

**Note:** For installation troubleshooting, refer to the Mercury Customer Support Knowledge Base, which can be accessed from the Mercury Business Availability Center Help menu or from the Mercury Customer Support Web site.

In addition, refer to the Mercury Business Availability Center readme file (located in the Mercury Business Availability Center Setup CD-ROM root directory) for last-minute technical and troubleshooting information.

---

**To install Mercury Business Availability Center servers:**

**1** Insert the Mercury Business Availability Center Setup CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.

2 From the **Start** menu, select **Run**.

3 Type the location from which you are installing, followed by setup.exe. Note that the setup file for Mercury Business Availability Center servers is located in the CD-ROM root directory. For example, type d:\setup.exe.

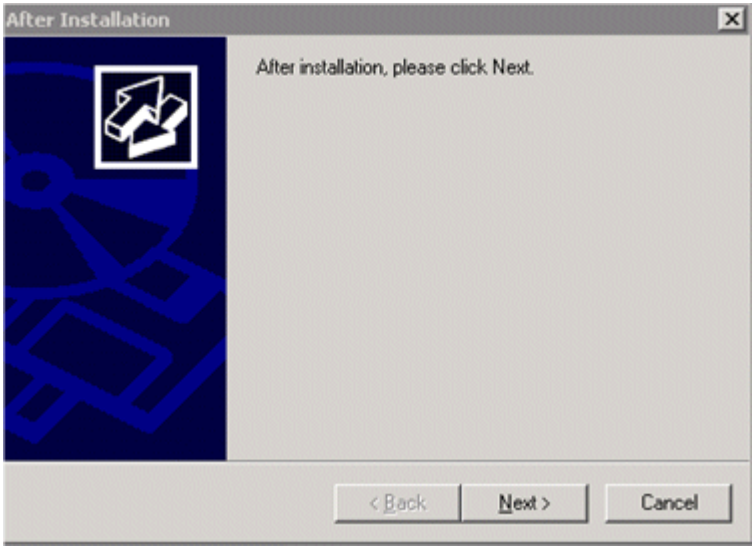
4 Click **OK**. If Mercury Business Availability Center detects a previous Topaz installation on the machine, a message is displayed warning that any customized configuration data will be overwritten.

5 Setup begins. Follow the on-screen instructions for server installation.

Note the following during the server installation stage:

➤ **Installing on a Windows platform with remote services running in application server mode:**

➤ The following window appears if Windows detects a wrong user mode for the installation:




Click **Next** when the installation is complete and follow any other instructions that may appear in the window.

For more information on this subject, refer to Microsoft Knowledge Base Article – 252330.

- **Selecting the setup type:**
  - Select **Typical** setup type for a standard (Mercury Business Availability Center box) installation that installs the Core Server, Centers Server, and Data Processing Server on the machine, as well as MDAC.
  - Select **Custom** setup type to select the Mercury Business Availability Center features to be installed on the machine. For a description of the installed features, see "Features Included in Mercury Business Availability Center Server Installation" on page 83.
- **Selecting the Web server type:**
  - If Mercury Business Availability Center does not detect an installation of Microsoft IIS on the machine, you are offered the **Apache HTTP Server** option only. If you want to run Mercury Business Availability Center with Microsoft IIS, click **Cancel** to exit Mercury Business Availability Center Setup. Install IIS and rerun the Mercury Business Availability Center installation.
- **Configuring connection settings:**
  - For Apache HTTP Server – if port 80 (default port) is already in use by the existing Web server, Mercury Business Availability Center notifies you of this. Resolve the conflict by either entering a different port number (in which case, Mercury Business Availability Center configures Apache HTTP Server to use the defined port), or exiting Setup and changing the port number of the existing Web server, then rerunning the installation procedure. For more information, see "Working with the Web Server" on page 77.
  - For Microsoft IIS – if IIS is using a port other than port 80, enter the IIS port.
- **Specifying the SMTP mail server:**
  - It is recommended that you specify the complete Internet address of your SMTP server. Use only alphanumeric characters.
  - In the Sender name box, specify the name to appear in scheduled reports and on alert notices that Mercury Business Availability Center sends. Accept the default name ("MercuryAM_Alert_Manager") or type another sender name.

**6** When Setup has completed the installation of the Mercury Business Availability Center server files, select whether you want to continue with the set management database stage immediately, or finish the server installation and set database parameters later. The preferred method is to create the management schema manually, and then to run the set management database utility later to connect to it.

For instructions on creating the management database manually on MS SQL Server, see "Creating Databases" in *Preparing the Database Environment*. For instructions on creating the user schema manually on Oracle Server, see "Management User Schema" in *Preparing the Database Environment*.

For information on setting database parameters (whether it is done as part of Setup, or run at a later time), see Chapter 10, "Setting Management Database Parameters for a Windows Platform."

For information on completing Mercury Business Availability Center server installation, see "Completing Server Installation and Launching Mercury Business Availability Center" on page 85.

## Features Included in Mercury Business Availability Center Server Installation

| Component | Description |
|---|---|
| Centers Server | Installs the Centers Server on the machine; responsible for running the Mercury Business Availability Center applications, reporting, and the Administration Console. |
| Core Server | Installs the Core Server on the machine; responsible for receiving data samples from the data collectors, distributing the data to the relevant Mercury Business Availability Center components, and supporting the Bus. |

| Component | Description |
|---|---|
| Data Processing Server | The Data Processing Server is responsible for aggregating data, running the Business Logic Engine, and controlling the Mercury Universal CMDB. When you choose to install the Data Processor Server as part of a custom installation, you select the type of Data Processing Server to install. The following are the different types of Data Processing Server from which you choose:<br>**All** – installs all the Data Processing Server services on the same machine. This is the default used in a typical installation.<br>**Modeling** – installs the CMDB, Viewsys, SAP, and Packager services on the machine.<br>**Online** – installs the Dashboard service on the machine.<br>**Offline** – installs the CDM, LRDT, and NOA services on the machine.<br>For further details on the services run by the Data Processing Servers, see "High Availability for the Data Processing Server" on page 38. |
| Microsoft MDAC2_71 | Installs the Microsoft Data Access Component. |

**Note:** Sun JVM 1.4.2_10 is automatically installed on the machine during Mercury Business Availability Center server installation.

## Completing Server Installation and Launching Mercury Business Availability Center

When completing Mercury Business Availability Center 6.1 server installation, you restart your computer. It is recommended that you do this as soon as possible. Note that when the machine restarts, you must log in as the same user under which you were logged in prior to restarting the machine.

Once Mercury Business Availability Center has been installed, make sure that the **MAX_HEAP_SIZE** parameter for JRE in the **<Mercury Business Availability Center server root directory>\EJBcontainer\bin \product_run.bat** file does not exceed 1024 MB.

You can verify Jboss and Tomcat connectivity using the TopazVerify tool, as described in "Verifying JBoss and Tomcat Connectivity" on page 87.

After successfully installing the 6.1 servers (either together on one machine, or at least one instance of each server type in a distributed deployment) and connecting the server machines to the management database, you launch Mercury Business Availability Center on each server machine.

To register and start Mercury Business Availability Center, activate the Mercury Business Availability Center service by selecting **Start** > **Programs** > **Mercury Business Availability Center** > **Administration** > **Enable Business Availability Center**. You can then open and work in Mercury Business Availability Center.

You can stop the Mercury Business Availability Center service by selecting **Start** > **Programs** > **Mercury Business Availability Center** > **Administration** > **Disable Business Availability Center**.

After installation you can access the Mercury Business Availability Center Getting Started guide (PDF format) from **Start** > **Mercury Business Availability Center** > **Documentation**. To view the guide, make sure you have Acrobat Reader 4.0 or later installed on the machine.

---

**Important:** If you need to stop or restart the Mercury Business Availability Center service on the server machine, access the Services window on the machine and select the required option from the right-click menu for the Mercury Business Availability Center service.

If you want to disable Mercury Business Availability Center on the machine so that the Mercury Business Availability Center service is removed from the Services window and Mercury Business Availability Center cannot be run, use the **Disable Business Availability Center** option (under **Start** > **Programs** > **Mercury Business Availability Center** > **Administration**). Use the **Enable Business Availability Center** to re-register Mercury Business Availability Center on the machine.

---

---

**Note:** You can check which Mercury Business Availability Center servers and features are installed on a Mercury Business Availability Center server machine by viewing the [INSTALLED_SERVERS] section of the **<Mercury Business Availability Center server root directory>\conf\TopazSetup.ini** file. For example, Core_Server=1 indicates that there is one installation of the Core Server on the machine.

---

## Verifying JBoss and Tomcat Connectivity

After you deploy Mercury Business Availability Center servers, you can verify that the JBoss application server and Tomcat servlet engine connections are healthy by running the **TopazVerify.jsp** file.

To run TopazVerify, enter the following address in your Web browser:

http://<Mercury Business Availability Center server>/topaz/topazverify

If errors are returned, troubleshoot them. Either follow the on-screen links, or use the troubleshooting information in the Mercury Customer Support Knowledge Base, which can be accessed from the Mercury Business Availability Center Help menu or from the Mercury Customer Support Web site (http://support.mercury.com/cgi-bin/portal/CSO/docViewAndSearch.jsp).

---

**Note:** After upgrading or reinstalling Mercury Business Availability Center to the same location as a previous installation, the TopazVerify page may not load properly. If this occurs, manually delete the contents of the **<Mercury Business Availability Center server root directory>\EJBContainer\server\default\work** directory and restart the server.

---

## Uninstalling Mercury Business Availability Center Servers

You can uninstall Mercury Business Availability Center servers using the following procedure. Note that the uninstall program removes *all* Mercury Business Availability Center servers installed on the Mercury Business Availability Center server machine.

After running the uninstall process, you perform various steps to verify that there are no traces of Mercury Business Availability Center, as described in the procedure below.

For information on uninstalling Mercury Business Availability Center servers when upgrading Mercury Business Availability Center, refer to the upgrade guide relevant to your upgrade path. For details, see "Upgrading Mercury Business Availability Center" on page 9.

---

**Note:** If you plan to uninstall Mercury Business Availability Center and then reinstall it to a different directory on the server machine, there is no need to remove the ISAPI filters. However, you will need to update the path for the filters. For details, see "Installation Troubleshooting".

---

**To uninstall Mercury Business Availability Center servers:**

1. If you configured Mercury Business Availability Center to use Windows authentication to access MS SQL databases (for details, see "Using Windows Authentication to Access MS SQL Databases" in *Preparing the Database Environment*):
   - Edit the **<Mercury Business Availability Center home>\bin\ SupervisorStop.bat** file and remove the comment marker (**rem**) from the last line:

     **rem magentservice.exe –remove**
   - Run the **<Mercury Business Availability Center home>\bin\ SupervisorStop** batch file.
   - Proceed with step 3.
2. If you have launched Mercury Business Availability Center, stop the Mercury Business Availability Center service on the Mercury Business Availability Center server machine.
3. On the machine from which you are uninstalling Mercury Business Availability Center:
   - Select **Start** > **Settings** > **Control Panel**
   - Select **Add/Remove Programs**
   - Select **Mercury Business Availability Center**
   - Click **Change/Remove** and follow the on-screen instructions.
4. Restart the server machine.
5. Remove the Mercury Business Availability Center server root directory.

**6** If you are running Mercury Business Availability Center with Microsoft IIS, open the IIS Internet Services Manager and check the following:

- Under the **Default Web Site**, check that the following virtual directories have been removed. Remove them if they still appear:
  - ext
  - Jakarta
  - mam_images
  - MercuryAM
  - Topaz
  - TopazDC
- Check that ISAPI filters were removed: Right-click the server machine name in the tree, and select **Properties**. In the Properties dialog box, with **WWW Service** displayed in the Master Properties list, click **Edit**. Select the **ISAPI Filters** tab. If the following filters still appear, remove them: **ApmApiISAPIFilter** and **jakartaFilter**.

**7** Access the Windows Registry Editor (select **Start** > **Run**, and type Regedit) and delete the Mercury Business Availability Center root registry keys from the following paths:

- **HKEY_CURRENT_USER\software\Mercury Interactive\Topaz**
- **HKEY_LOCAL_MACHINE\SOFTWARE\Mercury Interactive\Topaz**
- **HKEY_LOCAL_MACHINE\SOFTWARE\Mercury Interactive\AM**

# 10

# Setting Management Database Parameters for a Windows Platform

This chapter describes how to set management database parameters on a Windows platform.


| This chapter describes: | On page: |
|---|---|
| Overview of Setting the Management Database | 91 |
| Using Set Management Database | 92 |
| Required Information for Setting the Management Database | 95 |
| Running the Set Management Database Utility | 97 |


## Overview of Setting the Management Database

The set management database utility enables you to create and connect to the management database/user schema for Mercury Business Availability Center on MS SQL Server or Oracle Server.

You can run set management database as part of Mercury Business Availability Center server installation (described in Chapter 9, “Installing Mercury Business Availability Center Servers on a Windows Platform”) by continuing with the second stage of Setup for setting management schema parameters; or, you can run the set management database utility independently after server installation, using the Set Management Database Wizard. The steps involved are the same for both procedures, as described in “Running the Set Management Database Utility” on page 97.

If, at a later time, you want to modify the management database type or connection parameters, you can run the set management database utility again. After modifying database type or connection parameters, restart all Mercury Business Availability Center servers and data collectors, as well as the database server.

Before beginning the set management database procedure, it is recommended that you review "Using Set Management Database" on page 92 and "Required Information for Setting the Management Database" on page 95.

For detailed information on deploying either MS SQL Server or Oracle Server in your system for use with Mercury Business Availability Center, and on setting up the database, see *Preparing the Database Environment*.

---

**Note:** If you are upgrading to Mercury Business Availability Center 6.1, you must upgrade the management database before running the set management database utility. For details, refer to *Upgrading Mercury Business Availability Center*, available from the Mercury Business Availability Center Documentation Library home page, or from the Mercury Business Availability Center 6.1 Setup CD-ROM.

---

## Using Set Management Database

Setting management database parameters involves:

- selecting the type of database/user schema you plan to use for managing Mercury Business Availability Center (MS SQL Server or Oracle Server).
- creating the management database on MS SQL Server, or management user schema on Oracle Server. See "Creating the Management Schema" below.
- specifying the connection parameters to the database or user schema. See "Connecting to Existing Management Schema" on page 94.

---

**Note:** If you change the active management database for Mercury Business Availability Center, all SiteScope entities (monitors, groups, measurements) will keep reporting data to the Core Server using their old IDs (which are not known in the context of the new database). It is recommended that, after changing the management database, you reset each SiteScope from the SiteScope UI (**Preferences** > **MercuryAM**), and connect it to the new management database from Mercury Business Availability Center Monitor Administration.

If you want to keep a SiteScope associated with the old management database, use the SiteScope **Manage Monitors/Groups** option to set MercuryAM logging to **No Logging**.

---

## Creating the Management Schema

You can either use the set management database utility to create the management database/user schema for you on MS SQL Server or Oracle Server, or you can create the management schema manually, directly in the relevant database server. The preferred method is to create the management schema manually, and then to run the set management database utility to connect to it.

For instructions on creating the management database manually on MS SQL Server, see "Creating Databases" in *Preparing the Database Environment*. For instructions on creating the user schema manually on Oracle Server, see "Management User Schema" in *Preparing the Database Environment*.

---

**Important:** Each database created in Mercury Business Availability Center (whether the management database or the profile databases, and whether on the same database server or different database servers) must have a unique name.

---

### Connecting to Existing Management Schema

During the set management database procedure, you select whether you want to create a new management schema or connect to an existing one. You generally use the **Connect to an existing management schema** option in the following scenarios:

- When connecting to a management database/user schema you manually created directly on MS SQL Server/Oracle Server.
- When installing Mercury Business Availability Center servers subsequent to the first server in a distributed Mercury Business Availability Center deployment. In this case, you connect to the management database/user schema that you created during the installation of the first server by specifying the same connection parameters that you set during the installation of the first server.

  For information on implementing a distributed deployment of Mercury Business Availability Center, see Chapter 4, "Deployment Configuration" and Chapter 5, "High Availability for Mercury Business Availability Center."
- When upgrading to a new Mercury Business Availability Center version, you can connect to an existing management database/user schema that was previously upgraded to the new Mercury Business Availability Center version.

# Required Information for Setting the Management Database

Before setting management database parameters, you should prepare the required information, as described in the following sections:

### Deploying MS SQL Server

You need the following information for both creating a new management database and connecting to an existing one:

- **Host Name** – the name of the machine on which MS SQL Server is installed.
- **Database Name** – the name of the existing management database, or the name that you will give your new management database (for example: BAC_Management).
- **User Name and Password** – the user name and password of a user with administrative rights on MS SQL Server. The default MS SQL Server administrator user name is *sa*; by default, there is no password. You can choose to use Windows authentication instead of MS SQL server authentication.
- **Port** – the MS SQL Server's TCP/IP port. Mercury Business Availability Center automatically displays the default port, **1433**.

### Deploying Oracle Server

Before you begin, ensure that:

- Oracle Client is installed on the Mercury Business Availability Center server machine(s) and that the **tnsnames.ora** file contains the correct connection parameters to the Oracle Server.
- you have created a dedicated default tablespace for management user schemas (and a dedicated temporary tablespace, if required).

You need the following information for both creating a new user schema or connecting to an existing one:

- **Path to the ORACLE_HOME directory** – the path to the <Oracle root directory> for the Oracle Client on the Mercury Business Availability Center machine.

- **Oracle Machine** – the name of the host machine on which Oracle Server is installed.
- **Schema and Schema Password** – the name and password of the existing management user schema, or the name that you will give the new user schema (for example, BAC_MANAGEMENT).
- **TNS Name** – the TNS name, as specified in the **tnsnames.ora** file of the local Oracle Client. (For information on the tnsnames.ora file, see "Oracle Client Configuration" in *Preparing the Database Environment*.)
- **SID** – the Oracle instance name that uniquely identifies the Oracle database instance being used by Mercury Business Availability Center, if different from the default value, **orcl**.
- **Port** – the Oracle listener port, if different from the default value, **1521** (can also be **1526**).

In addition, if you are creating a new user schema, you need the following information:

- **Admin User Name and Password** (for administrator connection) – the name and password of a user with administrative permissions on Oracle Server.
- **Default Tablespace** – the name of the dedicated default tablespace you created for management user schemas (for details on creating a dedicated Mercury Business Availability Center tablespace, see "Mercury Business Availability Center Oracle Tablespaces" in *Preparing the Database Environment*). If you did not create, and do not require, a dedicated default tablespace, specify an alternative tablespace (the default Oracle tablespace is called **users**).
- **Temporary Tablespace** – the name of the dedicated temporary tablespace you created for management user schemas. If you did not create, and do not require, a dedicated temporary tablespace, specify an alternative tablespace (the default Oracle temporary tablespace is called **temp**).

---

**Note:** To create a new user schema, you must have user creation privileges.

---

# Running the Set Management Database Utility

If you run set management database separately from Mercury Business Availability Center server setup, note the following important points:

- If the command prompt window is open on the Mercury Business Availability Center server machine, you must close it before continuing with the set management database procedure.
- It is advisable to stop the Mercury Business Availability Center service on the Mercury Business Availability Center server machine before running the set management database utility. If you do not do this, you must restart the Mercury Business Availability Center service after using the utility to create a new management database or to modify the database connection parameters.

---

**Note:** Use only English characters when entering management database parameters.

---

**To set the management database parameters:**

1. Launch the set management database utility in one of the following ways:
   - After completing the server installation stage of Mercury Business Availability Center Setup, choose to create a new management schema or to connect to an existing management schema. In this case, you set the database parameters in the Mercury Business Availability Center Setup dialog boxes.
   - On the Mercury Business Availability Center server machine, select **Start** > **Programs** > **Mercury Business Availability Center** > **Administration** > **Connect to Database**. In this case, Mercury Business Availability Center launches the Set Management Database Wizard.
2. Follow the on-screen instructions for setting management database parameters.

**3** After entering the management database parameters, if you are connecting to an existing database for the first time from this server installation, the set management database utility checks what keys already exist in the SYSTEM table for the Mercury Business Availability Center database.

- ➤ If you entered an SMTP address during installation that differs from the one in the SYSTEM table, you are asked whether you want to overwrite the old SMTP server address with the new one, in order to use the new SMTP server.
- ➤ If the license key entered during installation differs from the one in the System table, you are asked whether you want to overwrite the old license value with the new one, in order to use the new license key.

**4** If you ran the set management database utility as part of server installation, you must start the Mercury Business Availability Center service on the servers after successfully setting the management database parameters. For details, see "Completing Server Installation and Launching Mercury Business Availability Center" on page 85.

If you ran the set management database utility to modify the previously defined database type or connection parameters, restart all Mercury Business Availability Center servers and data collectors, as well as the database server, after successfully completing the parameter modification process.

# 11

# Installing Components Setup Files for a Windows Platform

This chapter describes how to install components (data collectors and scripting tools) setup files to the Mercury Business Availability Center Downloads page on a Windows platform.


| This chapter describes: | On page: |
|---|---|
| Overview of Installing Components Setup Files | 99 |
| Installing Components Setup Files to the Mercury Business Availability Center Downloads Page | 100 |
| Available Components and Setup Files | 102 |


## Overview of Installing Components Setup Files

The components setup files are used to install the components used by Mercury Business Availability Center to deploy monitors that collect performance and availability data related to your business environment as well as scripting tools.

The components setup files are not installed as part of the basic Mercury Business Availability Center installation, but are included on the following Mercury Business Availability Center 6.1 CD-ROMs:

**Windows Components Setup** – includes setup files for components that can be installed on a Windows platform.

**Solaris Components Setup** – includes setup files for components that can be installed on a Solaris platform.

**Linux Components Setup** – includes setup files for components that can be installed on a Linux platform.

You install the components setup files to the Mercury Business Availability Center Downloads page so that they can be downloaded from Mercury Business Availability Center and used when required (see "Installing Components Setup Files to the Mercury Business Availability Center Downloads Page" on page 100). For details on working with the Mercury Business Availability Center Downloads page, see "Downloads" in *Platform Administration*.

---

**Note:** You can install a component by using the component's setup file directly from the CD-ROM. For details on installing a component, refer to the individual documentation for the component you want to install.

---

## Installing Components Setup Files to the Mercury Business Availability Center Downloads Page

Each of the components CD-ROMs has a setup utility that will copy the components setup files from the CD-ROM to the **<MercuryAM>\AppServer\webapps\site.war\admin\install** directory on the Mercury Business Availability Center Centers Server.

During the setup process, you can choose **Typical** setup to install all the components setup files on the CD-ROM, or **Custom** setup to select specific components setup files for installation.

---

**Note:** You can install all, or some, of the components setup files on multiple Centers Servers, with the files installed on a specific server being available on that server's Download page.

---

**To install components setup files in the Mercury Business Availability Center Downloads page:**

1. Insert the Components Setup CD-ROM into the drive of the Mercury Business Availability Center Centers Server on which you want to install the components setup files. For details of which components setup files are located on each Components Setup CD-ROM, see "Available Components and Setup Files" on page 102.
2. Navigate to the CD-ROM and double-click **setup.exe**. The components setup begins.
3. From the initial dialog box, click **Next** to continue.
4. Select the type of installation you want to perform, **Typical** or **Custom**.

   A typical installation installs all of the components included in the CD-ROM.

   In a custom installation, you can select specific components to install.

   Click **Next**.
5. If you are performing a custom installation, select the components to be installed.

   Click **Next**.
6. Read the summary information. If it is correct, click **Next** to continue with the installation. If it is not correct, click **Back** to correct the information you previously provided.

   Click **Next**.
7. Once the components have been installed, click **Finish** to exit the setup.

---

**Note:** You can copy all of the components CD-ROMs to the same network directory and run the setup utility from that directory to install all of the possible components setup files at one time.

---

# Available Components and Setup Files

The following table lists the components found on each CD-ROM and the name of the Setup program used to install the components directly from the CD-ROM:

| CD-ROM | Components | Setup Program |
|---|---|---|
| **Windows Components Setup 1** | Mercury Client Monitor for Windows 2000/XP | MCMSetup.exe |
| | Mercury Business Process Monitor for Windows 2000/2003/XP | MercuryBPMSetup_win.exe |
| | Mercury Business Process Monitor for Windows 2000/2003/XP for remote installation | MercuryBPMSetup_win.exe.jar |
| | SiteScope Service Pack for Windows 2000/2003/XP | SiteScope_8.1_SP_for_BAC_6.1.exe |
| | SiteScope for Windows 2000/2003/XP | SiteScopeSetup.exe |
| | Mercury Virtual User Generator | Vugen.exe |
| | QuickTest Professional for mySAP.com | WRQTR3.exe |
| **Windows Components Setup 2** | Auto Discovery Probe for Windows 2000/2003/XP | DiscoveryProbe.exe |
| | Mercury Real User Monitor Engine for Windows 2000/2003/XP | MercuryRUMSetup_win.exe |
| | Mercury Dashboard Ticker | TickerSetup.exe |

| CD-ROM | Components | Setup Program |
|---|---|---|
| **Solaris Components Setup** | Mercury Business Process Monitor for Solaris | MercuryBPMSetup_solv4.bin |
| | Mercury Real User Monitor Engine for Solaris | MercuryRUMSetup_solv4.bin |
| | SiteScope for Solaris | SiteScope.sun.tar.gz |
| | SiteScope Service Pack for Solaris | SiteScope_8.1_SP_for_BAC_6.1.sun.tar.gz |
| **Linux Components Setup** | Mercury Real User Monitor Probe | MercuryBeatboxSetup_linux.bin |
| | Mercury Business Process Monitor for Linux | MercuryBPMSetup_linux.bin |
| | SiteScope for Linux | SiteScope.linux.tar.gz |
| | SiteScope Service Pack for Linux | SiteScope_8.1_SP_for_BAC_6.1.linux.tar.gz |

# Part V

## Appendixes

# A

# Installation Troubleshooting

This section describes common problems that you may encounter when installing Mercury Business Availability Center, and the solutions to these problems. For additional troubleshooting information, refer to the Mercury Business Availability Center knowledge base on the Mercury Customer Support Web site (http://support.mercury.com).

### Receive error message: not enough space on the drive to extract the installation files

This happens during component installation. If you enter a new path for a different drive with sufficient space, the same error message is displayed.

**Possible Cause:**

During the file extraction process, certain data is always saved to the TEMP directory on the system drive, even if you choose to save the installation files to a different location from the default path.

**Solution:**

- Free up sufficient disk space on the system drive (as specified in the error message), then continue with the installation procedure.
- If it is not possible to free up sufficient disk space on the system drive, change the path for the system's TEMP variable. To do this, select **Start** > **Settings** > **Control Panel** > **System** > **Advanced tab** > **Environment Variables**, and edit the path for the **TEMP** variable in the User variables area.

### Connection to an Oracle Server database fails when running the set management database utility

**Possible Cause:**

To connect to an Oracle Server database, Mercury Business Availability Center requires the presence of a correctly registered version of Oracle Client on all Mercury Business Availability Center server machines.

If Oracle Client is not installed on all server machines, or if Oracle Client is installed (or <ORACLE_HOME> changed) after server installation, Mercury Business Availability Center will fail to connect to the Oracle Server database during the set management database procedure.

**Solution:**

**Follow these procedures:**

1. Stop the set management database utility.
2. If Oracle Client is not installed, install it.
3. Rerun the set management database utility by selecting **Start** > **Programs** > **Mercury Business Availability Center** > **Administration** > **Connect to Database.**

### Connection to an MS SQL Server database fails when running the set management database utility

Verify that the user under whom the SQL Server service is running has permissions to write to the disk on which you are creating the database.

### The Mercury Business Availability Center service is not installed after Mercury Business Availability Center is enabled

This can happen if the Windows Services screen is open when the set management database utility begins to run. To avoid the problem, ensure that the Services screen is closed before starting the set management database utility.

### A network login prompt appears when completing a Mercury Business Availability Center server installation

**Possible Cause:**

This can occur if the IIS server's authentication method is not set to the default setting, **Allow Anonymous Access**.

**Solution:**

Reset the IIS server's authentication method to the default setting, **Allow Anonymous Access**, and ensure that the default user account IUSR_XXX (where "XXX" represents the name of the machine) is selected (the user account IUSR_XXX is generated during IIS installation). Then uninstall and reinstall Mercury Business Availability Center.

### Tomcat servlet engine does not start and gives an error

The error message is as follows:

```
java.lang.reflect.InvocationTargetException:
org.apache.tomcat.core.TomcatException: Root cause - Address in use:
JVM_Bind
```

**Possible Cause:**

Running Oracle HTTP Server, installed with a typical Oracle installation, on the same machine as Mercury Business Availability Center servers, causes a conflict with the Tomcat servlet engine.

**Solution:**

Stop the Oracle HTTP Server service, and then restart the Mercury Business Availability Center service.

To prevent the problem from recurring after the machine is restarted, change the service's startup setting to **manual**.

### Inability to install Mercury Business Availability Center components due to administrative restrictions

**Possible Cause:**

The machine on which you are installing has policy management software that restricts access to files, directories, the Windows registry, and so forth.

**Solution:**

If this type of software is running, contact your organization's network administration staff to obtain the permissions required to install and save files on the machine.

### After uninstalling Mercury Business Availability Center and reinstalling to a different directory, Mercury Business Availability Center does not work

**Possible Cause:**

When uninstalling and reinstalling to a different location, the IIS ISAPI filters do not get updated to the new path.

**Solution:**

**To update the IIS ISAPI filters to the new path:**

1. Open the IIS Internet Services Manager.
2. Right-click the machine name in the tree and select **Properties**.
3. With **WWW Service** displayed in the Master Properties list, click **Edit**.
4. Select the **ISAPI Filters** tab.
5. Ensure that the **MercRedirectFilter** and the **jakartaFilter** are both pointing to the correct Mercury Business Availability Center directory.
6. Apply your changes, and quit the Internet Services Manager.
7. Restart the IIS service.

### Business Process Monitors fail to report to the Core Server running on IIS

**Possible Causes:**

- No data reported to loaders
- No data in Web site reports
- An error in the **ReportApi1.log** file on the Business Process Monitor machine similar to the following:

```
File: WebAdo.cpp Line: 385
Error from ReadWebPage: Error Dispatching URL
The URI:
api_reporttransactions_ex.asp
is not mapped to an API Adapter.
Either the URI is misspelled or the mapping file is incorrect...
```

The problem can be confirmed by opening the page **http://<Mercury Business Availability Center server>/Topaz/topaz_api/<unmapped_URI>** (for example, http://cats/topaz/topaz_api/api_reporttransactions_ex.asp) and verifying that the appearance of the line is not mapped to an API Adapter.

This problem is caused when the two Mercury Business Availability Center ISAPI filters that are added to IIS during server installation—**MercRedirectFilter** (filters out most of the api_report<...>.asp commands) and **jakartaFilter** (IIS-Tomcat redirections)—do not appear in the correct order. The MercRedirectFilter must be above the jakartaFilter in the ISAPI Filters list in order to catch the reports from the Business Process Monitor and redirect them to the loaders.

**Solution:**

**To change the order of the ISAPI filters:**

1. Open the IIS Internet Services Manager.
2. Right-click the machine name in the tree and select **Properties**.
3. With **WWW Service** displayed in the Master Properties list, click **Edit**.
4. Select the **ISAPI Filters** tab.

5 Verify that the **MercRedirectFilter** is located above the **jakartaFilter** and that they both have high priority.

6 Apply your changes, and quit the Internet Services Manager.

7 Restart the IIS service.

### Inability to log in to Mercury Business Availability Center, and JBoss server fails to initialize

Running the Verify tool returns errors that indicate failure to connect to the TMC, DataEngine, and ChartEngine due to a JNDI error.

Verify that the database server on which the management database is located is up and running.

### Browser unable to reach Mercury Business Availability Center or the .jsp source code appears in the browser window

For example, you get a message indicating that the page does not exist.

**Solution 1:**

Ensure that the Tomcat servlet engine is running and that port 8009 is not in use by another application. Perform the activities below on the Mercury Business Availability Center server machine (or Centers Server if installed separately).

**To verify Tomcat servlet engine functionality:**

1 Verify whether JBoss is running by opening the \\<**Mercury Business Availability Center root directory**>**MercuryAM****log****jboss_boot.log** file and looking for the following line: *long-date* [main] (ServerImpl.java:395) INFO - JBoss (MX MicroKernel) [3.2.2 (build: CVSTag=JBoss_3_2_2 date=*date*)] Started in
*start-time*.

where:
long-date - represents the date in ms; for example: 2004-09-05 12:03:28,359
date - represents the date in hours; for example: 200310182216
start-date - represents JBoss startup duration; for example: 3m:34s:781ms

2 Verify whether the Mercury Business Availability Center service is installed and running.

3 If port 8009 is in use by another application:

- ➤ terminate the application using port 8009.
- ➤ modify the port used by Mercury Business Availability Center.

**Solution 2:**

Ensure that the Jakarta filter path is correct. The path might be incorrect, for example, if you uninstall Mercury Business Availability Center servers and then reinstall to a different directory. In this case, the Jakarta filter path is not updated, causing redirection problems.

**To update the Jakarta filter path:**

1 Open the IIS Internet Services Manager.

2 Right-click the machine name in the tree and select **Properties**.

3 With **WWW Service** displayed in the Master Properties list, click **Edit**.

4 Select the **ISAPI Filters** tab.

5 Select **jakartaFilter** and click **Edit**.

6 In the **Filter Properties** box, update the path to point to the drive and directory of the current Mercury Business Availability Center installation.

7 Apply your changes, and quit the Internet Services Manager.

8 Restart the IIS service.

### Mercury Business Availability Center is sitting behind a proxy and neither the server name nor the IP address is recognized by the proxy

The problem occurs for both Microsoft IIS and Apache Web servers.

**Possible Cause:**

The Web server redirects the browser page to a URL that replaces the server name or the IP address entered by the user.

**Solution:**

Add the Mercury Business Availability Center server name to the NT or Windows 2000 hosts file on the proxy server machine. This file is located in **WINNT\system32\drivers\etc**.

### Business Process Monitor is unable to connect via the Internet to the Core Server installed on an Apache Web server

**Possible Cause:**

The Business Process Monitor machine is unable to resolve the Core Server name correctly.

**Solution:**

If this is the cause, you can solve this problem in one of the following ways:

- Add the Core Server name/IP address to the Business Process Monitor machine's **WINNT\system32\drivers\etc\Hosts file**.
- Change the Core Server name in the **<Core Server root directory>\WebServer\conf\httpd.conf** file to a recognized name in the DNS, or to the Core Server IP address.

### Mercury Business Availability Center has been installed, but the Downloads page is empty

**Possible Cause:**

The components setup files have not been installed to the Downloads page.

**Solution:**

Install the components setup files to the Downloads page. For details, see "Installing Components Setup Files for a Windows Platform" on page 99.

# B

# Connectivity Troubleshooting

This section describes common problems that you may encounter when connecting to Mercury Business Availability Center, and the solutions to these problems. For additional troubleshooting information, refer to the Mercury Business Availability Center knowledge base on the Mercury Customer Support Web site (http://support.mercury.com).

### General connectivity problems related to ports

Verify that all ports required by Mercury Business Availability Center servers are not in use by other applications on the same machine. To do so, open a Command Prompt window, and run netstat (or use any utility that enables you to view port information). Search for the required ports.

For details on the ports required by Mercury Business Availability Center, and on how to modify them, see Chapter 7, "Port Management."

---

**Tip:** To troubleshoot port usage problems, use a utility that lists all ports in use and the application that is using them. An example of such a utility is Active Ports, a freeware program that maps ports to the owning application and shows which process has opened which port. Active Ports is available at **www.ntutility.com**.

---

### Mercury Business Availability Center connectivity is down, but the Tomcat servlet engine and JBoss application server appear to be working

Connectivity problems include the inability to log in to Mercury Business Availability Center, and the inability of Business Process Monitor to connect to the Core Server.

**Possible Cause:**

This can happen if the **TopazInfra.ini** file is empty or corrupt.

**To verify that this is the problem:**

1. In the browser, type http://<Centers Server>:8080/web-console to connect to the JBoss Management Console.
2. Under **System** > **JMX MBeans** > **Topaz**, select **Topaz:service=Connection Pool Information**.
3. Click the **showConfigurationSummary Invoke** button toward the bottom of the page. If the Operation Result page is blank, the **TopazInfra.ini** file is empty or corrupt.

**Solution:**

To solve this problem, rerun the set management database utility and either reconnect to your existing management database or define a new management database. If you did not discover a problem with the **TopazInfra.ini** file, contact Mercury Customer Support.

### Inability to log in to Mercury Business Availability Center, and JBoss server fails to initialize

Running the Verify tool returns errors that indicate failure to connect to the TMC, DataEngine, and ChartEngine due to a JNDI error.

Verify that the database server on which the management database is located is up and running.

### Browser unable to reach Mercury Business Availability Center or the .jsp source code appears in the browser window

For example, you get a message indicating that the page does not exist.

**Solution 1:**

Ensure that the Tomcat servlet engine is running and that port 8009 is not in use by another application. Perform the activities below on the Mercury Business Availability Center server machine (or Centers Server if installed separately).

**To verify Tomcat servlet engine functionality:**

1 Verify whether JBoss is running by opening the \\<**Mercury Business Availability Center root directory**>**MercuryAM****log****jboss_boot.log** file and looking for the following line: *long-date* [main] (ServerImpl.java:395) INFO - JBoss (MX MicroKernel) [3.2.2 (build: CVSTag=JBoss_3_2_2 date=*date*)] Started in *start-time*.

where:
long-date - represents the date in ms; for example: 2004-09-05 12:03:28,359
date - represents the date in hours; for example: 200310182216
start-date - represents JBoss startup duration; for example: 3m:34s:781ms

2 Verify whether the Mercury Business Availability Center service is installed and running.

3 If port 8009 is in use by another application:

- terminate the application using port 8009.
- modify the port used by Mercury Business Availability Center.

**Solution 2:**

Ensure that the Jakarta filter path is correct. The path might be incorrect, for example, if you uninstall Mercury Business Availability Center servers and then reinstall to a different directory. In this case, the Jakarta filter path is not updated, causing redirection problems.

**To update the Jakarta filter path:**

1. Open the IIS Internet Services Manager.
2. Right-click the machine name in the tree and select **Properties**.
3. With **WWW Service** displayed in the Master Properties list, click **Edit**.
4. Select the **ISAPI Filters** tab.
5. Select **jakartaFilter** and click **Edit**.
6. In the **Filter Properties** box, update the path to point to the drive and directory of the current Mercury Business Availability Center installation.
7. Apply your changes, and quit the Internet Services Manager.
8. Restart the IIS service.

### Mercury Business Availability Center is sitting behind a proxy and neither the server name nor the IP address is recognized by the proxy

The problem occurs for both Microsoft IIS and Apache Web servers.

**Possible Cause:**

The Web server redirects the browser page to a URL that replaces the server name or the IP address entered by the user.

**Solution:**

Add the Mercury Business Availability Center server name to the NT or Windows 2000 hosts file on the proxy server machine. This file is located in **WINNT\system32\drivers\etc**.

### Business Process Monitor is unable to connect via the Internet to the Core Server installed on an Apache Web server

**Possible Cause:**

The Business Process Monitor machine is unable to resolve the Core Server name correctly.

**Solution:**

If this is the cause, you can solve this problem in one of the following ways:

- Add the Core Server name/IP address to the Business Process Monitor machine's **WINNT\system32\drivers\etc\Hosts file**.
- Change the Core Server name in the **<Core Server root directory>\WebServer\conf\httpd.conf** file to a recognized name in the DNS, or to the Core Server IP address.

# Index


**A**

Apache HTTP Server
    on Windows platform 77
automatic server restart 78

**B**

backup, recommendations 57
benefits of a distributed deployment 22
browser caching, setting for Mercury Business Availability Center 17
Business Process Monitor
    configuration for distributed deployment 52

**C**

Centers Server 5
    high availability details 37
    load balancer 35
Client Monitor
    configuration for distributed deployment 52
CMDB directory
    high availability 43
component setup files, installing 83
components
    installing on Downloads page 100
    location on cd-rom 102
components setup files
    for Windows platform 99
connectivity
    troubleshooting 115
Core Server 5
    high availability details 36
    load balancer 34

**D**

data collectors
    configuring in distributed deployment 51
Data Processing Server 5
    assigned services 39
    high availability details 38
databases
    setting management user schema 91
    setting the management database 91
    system requirements 14
deploying multiple servers 22
deployment configuration
    Mercury Business Availability Center 21
distributed deployment 21
    benefits 22
    configuring Mercury Business Availability Center data collectors for 51
    data collector configuration 52, 53
Downloads page
    installing components 100

**F**

file backup recommendations 57

## H

high availability
Centers Server 37
CMDB directory 43
Core Server 36
Data Processing Server 38
distributed deployment 21
load balancing 34
Mercury Business Availability Center 33

## I

IIS 78
IIS, configure automatic restart 78
installation
Mercury Business Availability Center servers 73
troubleshooting 107

## J

JBoss 6
verifying connectivity 87

## L

license key 75
load balancing 34
Centers Server 35
Core Server 34
Mercury Business Availability Center 34
notes and limitations 36
Offline Data Processing Server 35

## M

management database 8
connecting to 94
creating 93
setting parameters for 92
management user schema
connecting to 94
creating 93
setting parameters for 92
Mercury Business Availability Center
additional system requirements 15
deployment configuration 21
high availability 33
launching 85
port management 59
running on VMware platform 16
start menu 67
task bar icon 67
upgrade 9
Mercury Business Availability Center databases
system requirements 14
Mercury Business Availability Center servers
automatic restart 78
Centers Server 5
Core Server 5
Data Processing Server 5
deployment 5
distributed deployment 21
installing 73, 80
system requirements 12
uninstalling 87
Mercury Business Availability Center service
starting 85
Mercury Business Availability Center site
server environment settings 15
system requirements for viewing 14
Microsoft IIS, working with 78
MS SQL Server
creating/connecting to management database 91
management database parameters 95
multiple servers, deployment 22

## N

notes and limitations
load balancing 36

## O

Offline Data Processing Server
load balancer 35

Oracle Server
creating/connecting to management user schema 91
management user schema parameters 95

**P**

ports
used by Mercury Business Availability Center 59
profile databases 8
protected delivery 36

**R**

Real User Monitor
configuration for distributed deployment 52

**S**

server environment settings 15
server installation 73
completing 85
included features 83
installing Mercury Business Availability Center servers 74
Mercury Business Availability Center servers 80
preparing 75
prerequisites 78
Web server issues (Windows platform) 77
service status
viewing via the JMX Web Console 40
services
Data Processing Server 39
manually re-assigning 46
re-assigning using the System Resource Management page 46
set management database utility 91
required information 95
SiteScope
configuration in distributed deployment 53
start menu 67
system requirements 11

**T**

task bar icon 67
TNS name 96
Tomcat
servlet engine 6
verifying connectivity 87
troubleshooting
Mercury Business Availability Center connectivity 115
Mercury Business Availability Center installation 107

**U**

uninstalling
Mercury Business Availability Center servers 87
upgrade
Mercury Business Availability Center 9

**V**

viewing
service status via the JMX Web Console 40
VMware
running Mercury Business Availability Center 16

**W**

Web browser, requirements with Mercury Business Availability Center 17
Web server
running Mercury Business Availability Center on (Windows platform) 77
Windows platform
installing components setup files 99
installing Mercury Business Availability Center servers on 73
running set management database utility on 91