OPTIMIZE

MERCURY BUSINESS AVAILABILITY CENTER™

Deploying Servers

MERCURY™

BUSINESS TECHNOLOGY OPTIMIZATION

Mercury Business Availability Center

Deploying Servers

Version 6.6

Document Release Date: March 15, 2007

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Mercury Business Availability Center, Version 6.6
Deploying Servers

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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 and uninstall Mercury Business Availability Center servers on a Windows platform and connect to the database.

Part V Mercury Business Availability Center Server Installation for Solaris

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

Part VI Appendixes

Describes installation and connectivity troubleshooting issues.

Who Should Read This Guide

This guide is intended for Mercury Business Availability Center administrators of Mercury Business Availability Center.

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.

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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 6.6 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 6.6 from an earlier version of Mercury Business Availability Center, see "Upgrading Mercury Business Availability Center" on page 18.
- 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:

1. **Installing Mercury Business Availability Center 6.1 servers (Windows) and/or 6.2 servers (Windows/Solaris).**
2. **Installing Mercury Business Availability Center 6.6 servers.**
3. **Creating the Mercury Business Availability Center management database and connecting to it.**
4. **Configuring Web server settings for Sun Java System Web Server.** This is for Solaris installations only, when not done automatically.

Note:

- 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 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 package root directory) for the latest 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.** Responsible for running the Mercury Business Availability Center Java engine. It is installed automatically during Mercury Business Availability Center server installation.

➤ **Tomcat 5.0 servlet engine.** Responsible for handling the creation of dynamic HTML content for the Mercury Business Availability Center Web interface. It is installed automatically during Mercury Business Availability Center server installation.

The Mercury Business Availability Center servers are run in a Microsoft Windows or Sun Solaris operating environment, and should be installed by your organization's system administration staff. The procedure for installing Mercury Business Availability Center servers is described in "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 95 and "Installing Mercury Business Availability Center Servers on a Solaris Platform" on page 131.

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 33. For details on high availability and load balancing options, see "High Availability for Mercury Business Availability Center" on page 47.

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 on a Windows platform, see "Installing Components Setup Files" on page 119. For details on installing Mercury Business Availability Center tools setup files on a Solaris platform, see "Installing Components Setup Files" on page 155. 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 "High Availability for Mercury Business Availability Center" on page 47.

➤ Installing Mercury Business Availability Center in an I18N environment is only supported for Mercury Business Availability Center installed on a Windows platform. For instructions on deploying Mercury Business Availability Center in a non-English language environment, see *Working in an I18N Environment*.

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 "Setting Management Database Parameters" on page 111 and "Setting Management Database Parameters" on page 147.

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** (for Windows deployment only). 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.
- **Sun Java System Web Server** (for Solaris deployment only). If you plan to run Mercury Business Availability Center on Sun Java System, you should install the Sun Java System Web Server prior to Mercury Business Availability Center installation. During installation, the Sun Java System Web Server settings are automatically configured to work with Mercury Business Availability Center.
- **Apache HTTP Server** (for Windows and Solaris deployment). 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 "Configuring the Web Server" on page 101 (Windows platforms), or "Working with the Web Server" on page 137 (Solaris platforms).

Upgrading Mercury Business Availability Center

If you are upgrading to Mercury Business Availability Center 6.6 from an earlier version of Mercury Business Availability Center, see *Upgrading Mercury Business Availability Center*.

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

- From the Mercury Business Availability Center 6.6 package.
- 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 6.2 readme file, available with the Mercury Business Availability Center package, contains support matrixes with the supported operating systems for Mercury Business Availability Center components. It also lists support for the current and previous Mercury Business Availability Center versions.

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Mercury Business Availability Center Servers

Computer/Processor	**Windows:** ➤ Dual Processor Pentium 4 (32-bit only), 2.8 GHz or higher ➤ Recommended: server technology with Hyper-Threading or Dual Core Technology support **Solaris:** ➤ Sun server with dual UltraSPARC-IIIi processor, 1.3 GHz or higher. ➤ Recommended: Sun Fire V440 machine with at least 2 CPUs and 4 GB RAM. The CPU cache should be increased to 8 MB. ➤ Minimal: SunFire V240 machine with dual UltraSPARC-IIIi processor, 1.5 GHz and 4 GB memory. ➤ Unsupported hardware: SunFire 280R machine.

Operating System	**Windows:** ➤ Windows 2000 Server/Advanced Server, Service Pack 4 ➤ Windows 2003 Server standard/enterprise, Service Pack 1 **Note:** It is recommended that Dr. Watson be enabled and configured in automatic mode. To set up automatic mode, after running Dr. Watson at least once (Drwtsn32.exe), in the Windows Registry search for **\\HKEY_LOCAL_MACHINE\Software\Microsoft\Windows NT\CurrentVersion\AeDebug** and set the value of the Auto parameter to **1**. **Solaris:** ➤ Sun Solaris 8 ➤ Sun Solaris 9 ➤ Sun Solaris 10 (recommended) **Note:** Regardless of the operating system version, the entire Distribution (with OEM support) and the latest recommended Patch Cluster are required.
Web Server	**Windows:** ➤ Microsoft Internet Information Server (IIS) 5.0 ➤ Microsoft Internet Information Server (IIS) 6.0 ➤ Apache HTTP Server 2.0.49 (adapted by Mercury for Mercury Business Availability Center and installed during Mercury Business Availability Center server installation) **Solaris:** ➤ Sun Java System Web Server 6.0, Service Pack 7 ➤ SSL-compatible 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 in following architectures:
	  ➤ machine with all three servers (Data Processing, Core, and Centers) installed
	  ➤ Data Processing Server machine with all services (online, offline, and modeling) installed
	  ➤ gateway computer with the Core and Centers Servers installed
	
	Solaris:
	Minimum: 4 GB RAM

Virtual Memory (for **Windows** deployment)	Minimum: 4 GB **Note:** The virtual memory size should always be at least twice the physical memory size.
Memory Swap File (for **Solaris** deployment)	Minimum: 8 GB **Note:** The swap file size should always be at least twice the physical memory size.
Virtual Address Space (for **Windows** deployment)	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 (includes 1 GB required for software files) ➤ Recommended: 20 GB hard disk **Solaris:** ➤ Minimum: 1 GB (includes 600 MB required for software files) ➤ Recommended: 2 GB hard disk

Mercury Business Availability Center Databases

Supported Databases	**Windows:** ➤ Microsoft SQL Server 2000 Enterprise, Service Pack 4 ➤ Oracle Enterprise Edition Server 9.2.0.6 ➤ Oracle Enterprise Edition Server 10.2.0.1 (recommended) **Solaris:** ➤ Oracle Enterprise Edition Server 9.2.0.6 ➤ Oracle Enterprise Edition Server 10.2.0.1 (recommended) **Note:** 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	**Windows:** ➤ Minimum: color palette setting of at least 256 colors ➤ Recommended: color palette setting of 32,000 colors **Note:** In a distributed deployment, this requirement is only necessary for the Centers Server machines. **Solaris:** X-server installed. In a distributed deployment, this is only necessary for the Centers Server machines.
Resolution	1024x768 or higher
Supported Browsers	**Windows:** ➤ Microsoft Internet Explorer (IE) 6.0, Service Pack 1 ➤ Microsoft Internet Explorer (IE) 6.0, Service Pack 2 (recommended) **Solaris:** ➤ FireFox 1.5. FireFox supports the following applications: Dashboard (excluding topology map), Service Level Management, and End User Management. **Note:** For both Internet Explorer and FireFox, the browser must be set to accept all cookies.
Java Plug-in (for Dashboard maps applets)	Sun Java Plug in 1.4.2_08 **Note:** 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. If you are using IE, download the Sun Java Plug-in from the Download Java 2 SDK, Standard Edition, v 1.4.2_08 (J2SE) page, accessed from 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 to manage SiteScope	➤ SiteScope 8.5 (available from the Downloads page in Platform Administration). ➤ SiteScope version 8.0 or later together with latest service pack for the version used. ➤ SiteScope version 7.9.5.17.
Bristol TransactionVision Integration	To view reports in TransactionVision, you must have Adobe SVG Viewer version 3.0 or higher installed on your machine. Download from If you are using IE, download the Sun Java Plug-in from the Download Java 2 SDK, Standard Edition, v 1.4.2_08 (J2SE) page, accessed from http://www.adobe.com/svg/viewer/install/main.html.
Mercury Business Availability Center for Siebel	Requires SiteScope version 8.2 or 8.5.
Mercury Business Availability Center for SAP	Requires SiteScope version 8.1.2, 8.2, or 8.5.
Dashboard maps applet	Java Plug-in 1.4.2_08 on the machine from which you are viewing Mercury Business Availability Center. **Note:** If you are using IE, download the Sun Java Plug-in from the Download Java 2 SDK, Standard Edition, v 1.4.2_08 (J2SE) page, accessed from 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 and database servers must have the same settings for the following: ➤ time zone ➤ daylight savings time configuration ➤ time

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.
- VMWare is the only virtualization technology supported by Mercury Business Availability Center.

Note: 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 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.

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Note: Only the server deployments described here are supported. Other deployments, such as having the Core and Data Processing servers on the same machine, are not supported.

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 51.
- 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 47.

Deploying Multiple Servers

- Mercury Business Availability Center is installed on a Windows or on a Solaris platform. For details on installing Mercury Business Availability Center on a Windows platform, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 95. For details on installing Mercury Business Availability Center on a Solaris platform, see "Installing Mercury Business Availability Center Servers on a Solaris Platform" on page 131.
- 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. For details, see "Services Assigned to each of the Data Processing Servers" on page 57.
- 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 must 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 69.
- 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.

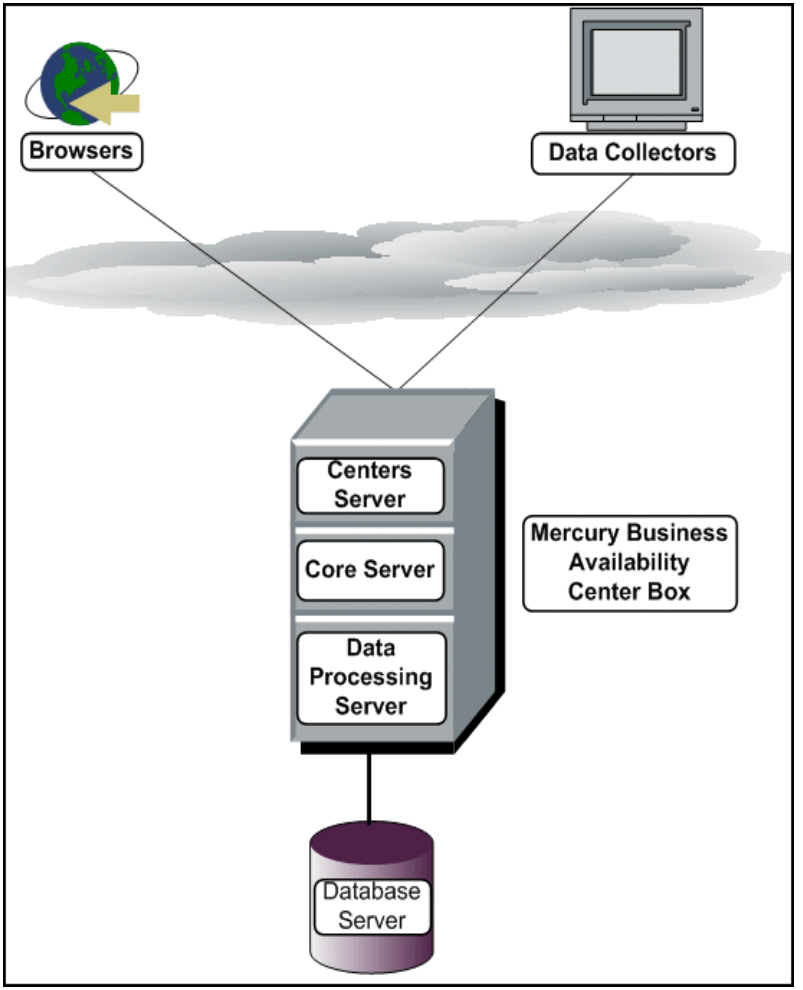
- Core Servers, Centers Servers, and Offline Data Processing Servers are symmetrical and can be installed on multiple machines running concurrently.
- Online and Modeling Data Processing Servers are stateful and cannot run concurrently with additional Data Processing Servers of the same type. Additional 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.

Diagram of a one machine deployment

In a one machine deployment, all servers are installed on one 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.

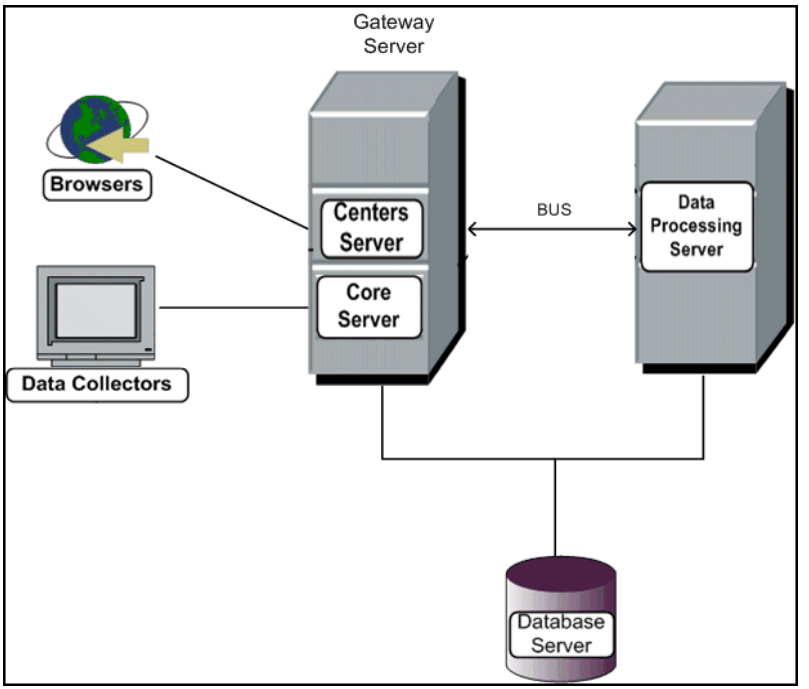
To carry out a one machine deployment, you choose the **Typical** setup type during Mercury Business Availability Center installation. For details on installing Mercury Business Availability Center on a Windows platform, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 95. For details on installing Mercury Business Availability Center on a Solaris platform, see "Installing Mercury Business Availability Center Servers on a Solaris Platform" on page 131.

Two Machine Deployment

A two machine deployment is one in which one instance of a combined Centers Server and Core Server is installed on one machine and the Data Processing Server is installed on a second machine. The machine with the Centers Server and the Core Server is called the Gateway Server.

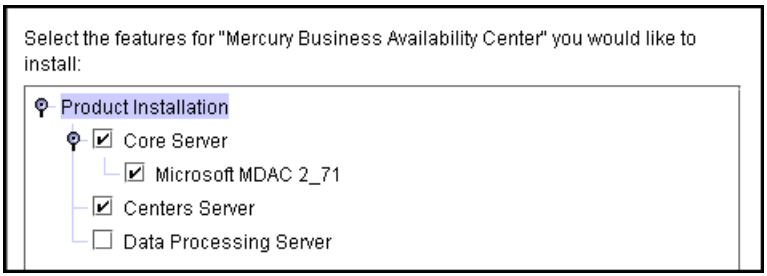
Diagram of a two machine deployment

In a two machine deployment, servers are installed as seen below:

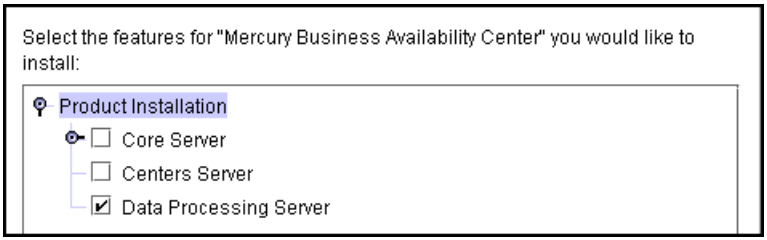


Load balancing can be implemented in a two machine deployment by adding additional Gateway server machines. For details on load balancing, see “Load Balancing for Mercury Business Availability Center” on page 51.

To carry out a two machine deployment, specify the server type you want to install on each machine. When installing the Gateway Server, choose **Custom** setup. Select **Core Server**, **Microsoft MDAC 2_71**, and **Centers Server**.



To install the Data Processing Server, choose **Custom** setup and then select **Data Processing Server**.



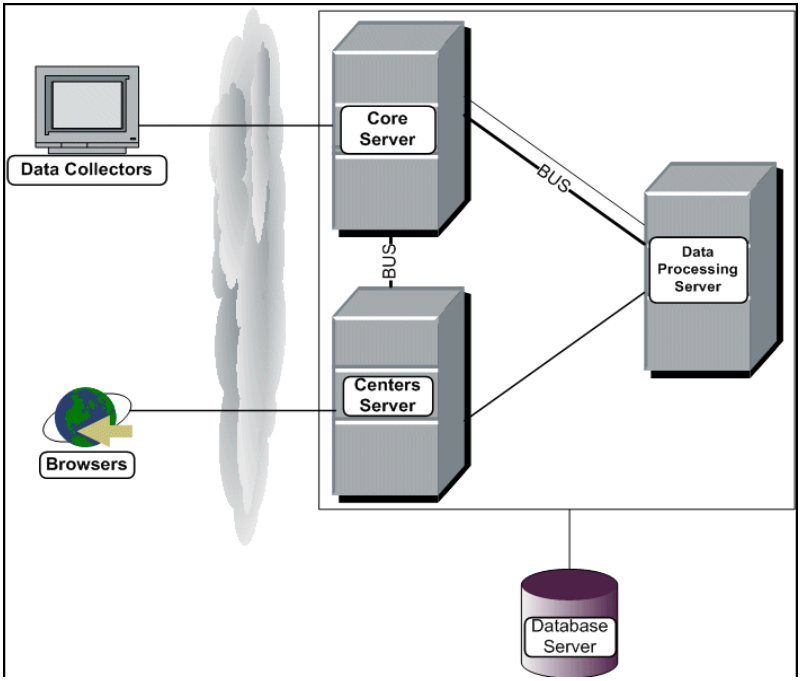
Select **All** to install all the Data Processing Server types (modeling, online, and offline) on the same machine. For details on installing Mercury Business Availability Center on a Windows platform, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 95. For details on installing Mercury Business Availability Center on a Solaris platform, see "Installing Mercury Business Availability Center Servers on a Solaris Platform" on page 131.

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.

Diagram of a three machine deployment

In a three machine deployment, servers are installed as seen below:



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 51. For details on high availability, see “High Availability for Mercury Business Availability Center” on page 47.

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 on a Windows platform, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 95. For details on installing Mercury Business Availability Center on a Solaris platform, see "Installing Mercury Business Availability Center Servers on a Solaris Platform" on page 131.

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.

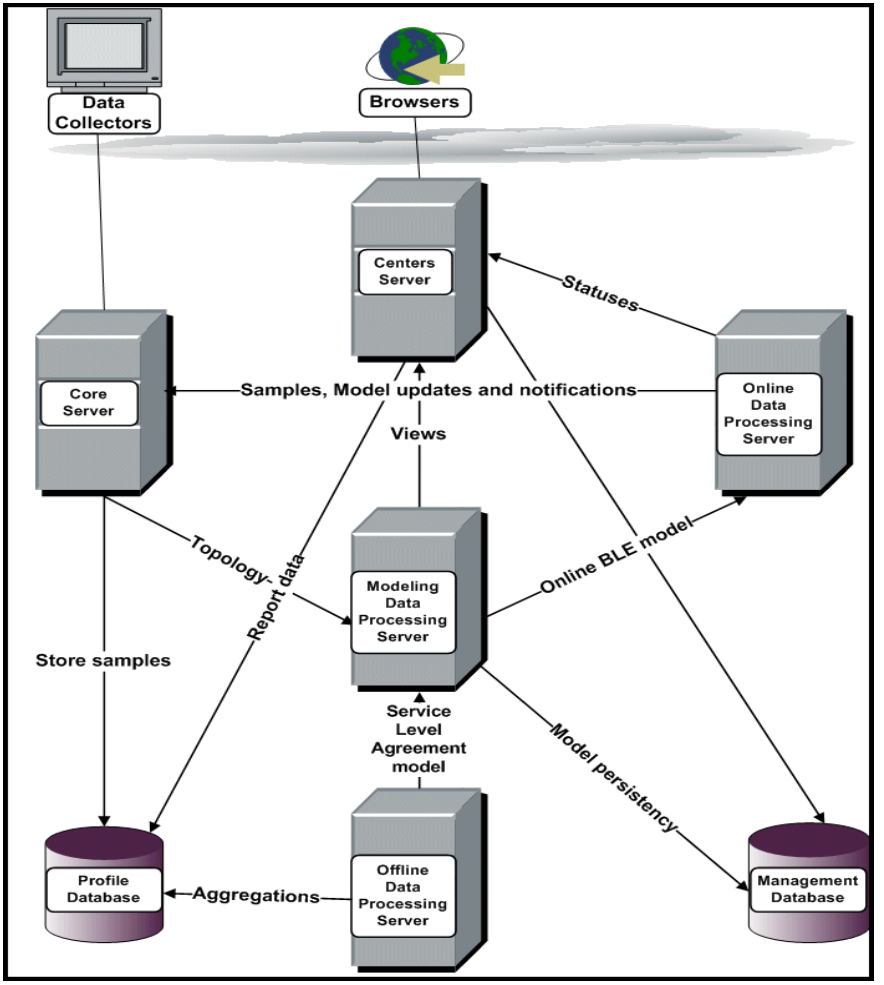
The breakdown of the Data Processing Servers is as follows:

- **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, VERTICALS, and PACKAGER services.

For details of Data Processing Server services, see "Services Assigned to each of the Data Processing Servers" on page 57.

Diagram of a five machine deployment

In a five machine deployment, servers are installed as seen below:



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 51. For details on high availability, see “High Availability for Mercury Business Availability Center” on page 47.

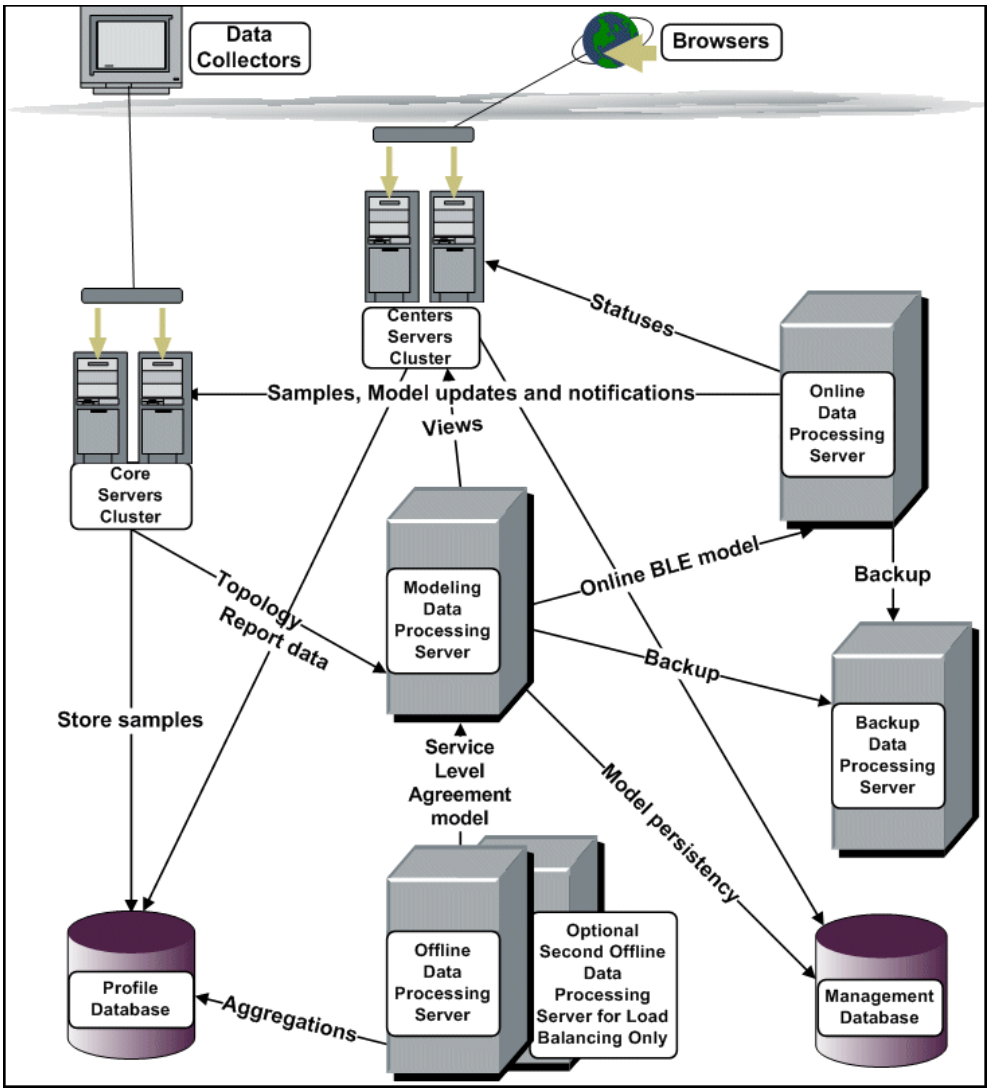
To carry out a five machine deployment, you choose the **Custom** setup type during Mercury Business Availability Center installation and specify the server type you want to install on each machine. For the Data Processing Servers, you further specify which type of Data Processing Server you want to install on each machine. For details on installing Mercury Business Availability Center on a Windows platform, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 95. For details on installing Mercury Business Availability Center on a Solaris platform, see "Installing Mercury Business Availability Center Servers on a Solaris Platform" on page 131.

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 42.

Diagram of an eight machine deployment

In an eight machine deployment, servers are installed as seen below:



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 61. For details on load balancing, see "Load Balancing for Mercury Business Availability Center" on page 51. For details on high availability, see "High Availability for Mercury Business Availability Center" on page 47.

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 on a Windows platform, see "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 95. For details on installing Mercury Business Availability Center on a Solaris platform, see "Installing Mercury Business Availability Center Servers on a Solaris Platform" on page 131.

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, and failover procedures.

This chapter describes:	On page:
Overview of High Availability Options	48
Multiple Java Virtual Machine (JVM) Processes	49
Load Balancing for Mercury Business Availability Center	51
High Availability for the Core Server	54
High Availability for the Centers Server	55
High Availability for the Data Processing Server	56
Configuring Mercury Business Availability Center Data Collectors in a Distributed Environment	69

Overview of High Availability Options

Implementing a high availability configuration means setting up your Mercury Business Availability Center servers so that service is continuous despite power outages, machine downtime, and heavy load.

High availability is implemented in two layers:

- **hardware infrastructure.** This layer includes redundant servers, networks, power supplies, and so forth.
- **application.** This layer has two components:
  - **load balancing.** Load balancing divides the work load among several computers. As a result, system performance and availability increase. Load balancing can be internal or external.

    Internal load balancing is built into the Mercury Business Availability Center applications and into the Bus communication between Mercury Business Availability Center servers.

    External load balancing is a software and hardware unit supplied by an outside vendor. This unit must be installed and configured to work with Mercury Business Availability Center applications.
  - **failover.** Work performed by a server or system component, for example, a database or data collector, is taken over by a backup if the primary server or component fails or becomes temporarily unavailable.

Implementation of load balancing and failover is discussed in detail throughout this chapter.

Note: Mercury Services offers best practice consulting on high availability. For information on how to obtain this service, contact your Mercury representative.

Multiple Java Virtual Machine (JVM) Processes

Prior to Mercury Business Availability Center 6.2, JBOSS application server ran the single process, **mercury_as**, to perform multiple functions.

From Mercury Business Availability Center 6.2, Online Business Logic Engine (BLE), Offline BLE, and Offline Aggregator components are separate from the JBOSS application server. This separation distributes the computing load among multiple processes instead of the single process, **mercury_as**.

The additional JVM processes are:

- **mercury_online_engine.** This process is responsible for performing online status calculations for Mercury Business Availability Center Dashboard. Prior to Mercury Business Availability Center 6.2, this functionality was done by the Online BLE component of **mercury_as**.
- **mercury_offline_engine.** This process is responsible for performing Service Level Management calculations and all offline data aggregation. Prior to Mercury Business Availability Center 6.2, this functionality was done by the Offline BLE and the Offline Aggregator components of **mercury_as**.

You can view the processes using the JMX Web console.

To view JAVA processes 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, click **service=hac-manager.**

3 Under **listAllAssignments** from the database, click **Invoke**. The processes are displayed in the following format:

Service	Customer	Process - [Start] - [Ping]	Assigned - [Since] - [Duration]	State - [Since] - [Duration]	Srv. Sign	State Sign
LRDT	-1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 22:58:19] - [2d:10h:2m]	1	1
NOA	-1	labm1bac19 : mercury_offline_engine - [2d:9h:59m] - [1s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 23:01:06] - [2d:9h:59m]	1	1
PM	-1	labm1bac19 : topaz_pm - [9h:59m:6s] - [3s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [20/Jun/2006 23:01:15] - [9h:59m:5s]	3	3
DASHBOARD	1	labm1bac19 : mercury_online_engine - [2d:9h:59m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 23:10:53] - [2d:9h:49m]	1	1
CDM	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 23:07:22] - [2d:9h:52m]	1	1
CMDB	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 22:59:21] - [2d:10h]	1	1
VIEWSYS	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 22:59:39] - [2d:10h]	1	1
VERTICALS	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [21/Jun/2006 08:46:18] - [14m:2s]	1	1
PACKAGER	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 23:06:36] - [2d:9h:53m]	1	1
MAMSA	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 23:07:22] - [2d:9h:52m]	2	2

Installation

The additional JVM processes are automatically installed during the Data Processing Server installation, for both Custom and Typical installation, and for both single and multiple server deployment.

Log Files

The additional JVM processes have log files in the following directories:

- <Mercury Business Availability Center root directory>\log\mercury_online_engine\
- <Mercury Business Availability Center root directory>\log\mercury_offline_engine\

Configuration Files

The additional JVM processes have the following configuration files:

- <Mercury Business Availability Center root directory>\conf\core\Supervisor\nanny\mercury_online_engine.nanny
- <Mercury Business Availability Center root directory>\conf\core\Supervisor\nanny\mercury_offline_engine.nanny

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Note: Log files and configuration files are primarily for Mercury Customer Support's use. They are described here only to alert you to new files on your Data Processing Server.

Notes and Limitations

- The JBoss process **mercury_as** must be running on the same Data Processing Server as the **mercury_online_engine** and the **mercury_offline_engine** processes.
- BLE Online, BLE Offline, and Offline Aggregator components cannot be configured to be a part of the **mercury_as** process.

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 communication 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.

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.

Use the standard settings for the load balancer, with **stickiness by session disabled** and **round robin enabled**. For each data collector, 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 69.

Load Balancer for Centers Servers

If there is a large number of users using the Mercury Business Availability Center applications, it is difficult to predict the number of requests that are 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.

Use the standard settings for the load balancer, with **stickiness by session enabled**.

Load Balancer for Gateway Servers

The Gateway Server is a machine in which one instance of a combined Core Server and Centers Server is installed.

To configure the load balancer for a Gateway Server, create two virtual IP addresses. The first address is for data collectors that need to access the Core Server. The second address is for users that need to access the Mercury Business Availability Center web site on the Centers Server.

To configure load balancing for the Core Server:

1 Use the standard settings for the load balancer, with **stickiness by session disabled** and **round robin enabled**.

2 For each data collector, specify the virtual IP address of the load balancer, as described in "Configuring Mercury Business Availability Center Data Collectors in a Distributed Environment" on page 69.

To configure load balancing for the Centers Server:

Use the standard settings for the load balancer, with **stickiness by session enabled.**

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 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: 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 Web 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 sends all communications related to that session to the same Centers Server. If the Centers Server fails, the load balancer redirects the session to another Centers Server and the session is re-registered on the new Centers Server. The user continues 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, you can install only one active server in a Mercury Business Availability Center system. A second server can act as a passive, backup Data Processing Server. The active server runs 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 then retrieves the current configuration from the management database and continues 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 64.

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 64.

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.

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**.

Note: When carrying out a new Mercury Business Availability Center 6.6 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, you can assign it to act as a backup server. For details, see "Managing System Health" in *Platform Administration*.

Services Assigned to each of the Data Processing Servers

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. This service is referred to as Viewing System in the System Health page in the Mercury Business Availability Center Administration Console.
- **VERTICALS.** Verticals service is a service for both SAP and Siebel that ensures compatibility with Mercury Business Availability Center. SAP service links data retrieved from SiteScope and Business Process Monitors to SAP related entities brought from Mercury Application Mapping. Siebel service links data retrieved from SiteScope and Business Process Monitors to Siebel related entities brought from Mercury Application Mapping, for Mercury Business Availability Center compatibility.
- **PACKAGER.** packager service is responsible for packages. Packages are zip files containing resources that are structured in organized, predefined subdirectories.

Online Data Processing Server

- **DASHBOARD.** Dashboard service on the Data Processing Server that is responsible for online business logic calculations. This service is referred to as Online BLE in the System Health page in the Mercury Business Availability Center Administration Console.

Offline Data Processing Server

- **CDM.** The CDM service is responsible for adding data collector entities to the CMDB. This service is referred to as Source Adapters in the System Health page in the Mercury Business Availability Center Administration Console.
- **LRDT.** LRDT service updates data used by Mercury Self-Alert Monitor (deployed by SiteScope), that is responsible for checking the status and well being of Mercury Business Availability Center components.
- **NOA.** The New Offline Aggregator service validates and synchronizes new tasks for the offline aggregator on an hourly or daily basis.
- **PM.** The Purging Manager splits fast-growing tables into partitions at defined time intervals. After a defined amount of time has elapsed, data in a partition is no longer accessible for use in Mercury Business Availability Center reports. After an additional defined amount of time, that partition is purged from the profile database.

  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, click **service=hac-manager.**

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

Service	Customer	Process - [Start] - [Ping]	Assigned - [Since] - [Duration]	State - [Since] - [Duration]	Srv. Sign	State Sign
LRDT	-1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 22:58:19] - [2d:10h:2m]	1	1
NOA	-1	labm1bac19 : mercury_offline_engine - [2d:9h:59m] - [1s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 23:01:06] - [2d:9h:59m]	1	1
PM	-1	labm1bac19 : topaz_pm - [9h:59m:6s] - [3s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [20/Jun/2006 23:01:15] - [9h:59m:5s]	3	3
DASHBOARD	1	labm1bac19 : mercury_online_engine - [2d:9h:59m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 23:10:53] - [2d:9h:49m]	1	1
CDM	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 23:07:22] - [2d:9h:52m]	1	1
CMDB	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 22:59:21] - [2d:10h]	1	1
VIEWSYS	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 22:59:39] - [2d:10h]	1	1
VERTICALS	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [21/Jun/2006 08:46:18] - [14m:2s]	1	1
PACKAGER	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 23:06:36] - [2d:9h:53m]	1	1
MAMSA	1	labm1bac19 : mercury_as - [2d:10h:3m] - [2s]	Yes(1) - [18/Jun/2006 22:57:19] - [2d:10h:3m]	RUNNING - [18/Jun/2006 23:07:22] - [2d:9h:52m]	2	2

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. A customer ID of -1 represents the entire system as opposed to a specific customer.
Process	The name of the Data Processing Server and the name of the service assigned to it. 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: ➤ 1 – Stopped ➤ 2 – Starting ➤ 3 – Stopping ➤ 4 – Running ➤ -1 – Failed ➤ -2 – Failed to stop ➤ -3 – Failed to start
Srv Sign	Server signature.
State Sign	State signature (should match the server signature).

High Availability for the CMDB Directory

The CDM (source adapters framework) service uses the **<Mercury Business Availability Center root directory>\CMDB** directory. By default, the service is installed on the Offline Data Processing Server.

If you want to be able to define a backup server for your Offline DP server in case it fails, you must install the **<Mercury Business Availability Center root directory>\CMDB** directory on a network application machine and point Mercury Business Availability Center to this machine. The CDM service can then be reassigned to the backup Offline Data Processing Server using the System Health page, accessed from the **Admin > Platform > Setup and Maintenance.** For details, see "Reassigning Services From the System Health Page" on page 64.

If the **<Mercury Business Availability Center root directory>\CMDB** directory is not installed on a network application 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 **<Mercury Business Availability Center root directory>\CMDB** directory must also be copied to the backup Offline Data Processing Server. For details, see "Manually Reassigning Services" on page 64.

Note: If the CDM service is reassigned to the backup Offline Data processing Server without the **<Mercury Business Availability Center root directory>\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 uses the empty **<Mercury Business Availability Center root directory>\CMDB** directory that exists on the backup Offline Data Processing Server and you lose all of your existing source adapter framework data.

To install the <Mercury Business Availability Center root directory>\CMDB directory on a network application machine and point a new Mercury Business Availability Center 6.6 installation to it:

Immediately after the installation of Mercury Business Availability Center 6.6, and before Mercury Business Availability Center 6.6 is started for the first time, carry out the following steps:

1. Create the **<Mercury Business Availability Center root directory>\CMDB** directory on the network application machine.
2. Perform the following query on the Management database to set the pointer in Mercury Business Availability Center to the **<Mercury Business Availability Center root directory>\CMDB** directory on the network application 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','6.5.0.0',NULL,'<Adapters file location>'
,NULL,NULL
FROM setting_parameters
```

Where <Adapters file location> is the domain, network application machine name, and path to the CMDB directory. For example, if the domain is mercury.com and the network application machine is called mynetapp, <Adapater file location> is <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 **<Mercury Business Availability Center root directory>\CMDB** directory on the network application machine.

To install the <Mercury Business Availability Center root directory>\CMDB directory on a network application machine and point an existing Mercury Business Availability Center 6.6 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 **<Mercury Business Availability Center root directory>\CMDB** directory from the Offline Data Processing Server to the network application machine.
4. Perform the following query on the Management database to set the pointer in Mercury Business Availability Center to the **<Mercury Business Availability Center root directory>\CMDB** directory on the network application 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','6.5.0.0',NULL,'<Adapters file location>'
   ,NULL,NULL
   FROM setting_parameters
   ```

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

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

   ---

5. Delete the old **<Mercury Business Availability Center root directory>\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 **<Mercury Business Availability Center root directory>\CMDB** directory on the network application 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 **Admin** > **Platform** > **Setup and Maintenance**, 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 **<Mercury Business Availability Center root directory>\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 that most of the Data Processing Server services can be reassigned via the System Health page in the Administration Console (**Admin** > **Platform** > **Setup and Maintenance** > **System Health)**. For details, see "Managing System Health" in *Platform Administration*. The procedures below (which require accessing the JMX Console) should only be used for reassigning services that cannot be reassigned in the System Health page.

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 <Mercury Business Availability Center root directory>\CMDB Directory" on page 68.
- 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 deletes the entry from the HA_TASK_ASSIGN table in the management database so that it must 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, click **service=hac-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, PM, 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.
- **processName.** The name of the process (such as **mercury_as**, **mercury_online_engine**, **mercury_offline_engine**, **topaz_pm**).

4 Under **removeAssignment**, click **Invoke**. The assignment for the service is 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, click **service=hac-manager**

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

- **customerid.** 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, PM, 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.

- **processName.** The name of the process (such as **mercury_as**, **mercury_online_engine**, **mercury_offline_engine**, **topaz_pm**).
- **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 is 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, click **service=hac-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, PM, 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.

- **processName.** The name of the process (such as **mercury_as**, **mercury_online_engine**, **mercury_offline_engine**, **topaz_pm**).
- **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 is added for the specified Data Processing Server.

Reassigning the CDM Service Together With the <Mercury Business Availability Center root directory>\CMDB Directory

If you have not reassigned the **<Mercury Business Availability Center root directory>\CMDB** directory to a network application machine and need to reassign the CDM service to a backup Offline Data Processing Server, you must also copy the **<Mercury Business Availability Center root directory>\CMDB** directory to the backup Offline Data Processing Server. For details, see "High Availability for the CMDB Directory" on page 61.

To reassign the CDM service together with the <Mercury Business Availability Center root directory>\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 **<Mercury Business Availability Center root directory>\CMDB** directory of the backup Offline Data Processing Server to which the CDM service is being reassigned.

4 Copy the **<Mercury Business Availability Center root directory>\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 is 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 58.

Configuring Automatic Failover for the Data Processing Server

You can configure automatic reassignment of services running on a primary Data Processing Server to a passive, backup Data Processing Server. This is done from the **System Health** page, accessed from **Admin > Platform > Setup and Maintenance**. For details on using the System Health page to configure automatic reassignment of services, see "Configuring Automatic Failover for the Data Processing Server" in *Platform Administration*.

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 must configure the following data collectors:

- Business Process Monitor, Client Monitor, and Real User Monitor Configuration – for details, see page 70
- SiteScope Configuration – for details, see page 71

Note: 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 "Using the Real User Monitor Web Console" 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	75

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.

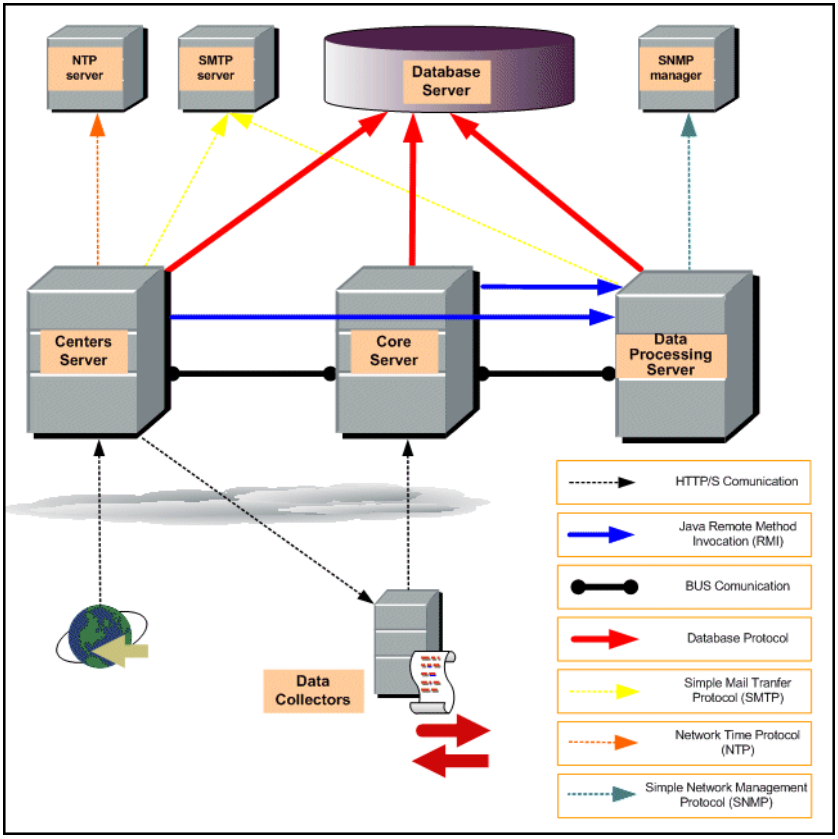
This chapter describes:	On page:
Connectivity of Mercury Business Availability Center Components	78
Incoming Mercury Business Availability Center Traffic	80
Outgoing Mercury Business Availability Center Traffic	81
Local Mercury Business Availability Center Traffic	83

Connectivity of Mercury Business Availability Center Components

A number of different protocols are used for communication between Mercury Business Availability Center servers, data collectors, application users, and Mercury Business Availability Center platform component.

Diagram of connectivity between servers

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



Overview of Bus communication between servers

A Bus is a virtual communications channel between Mercury Business Availability Center servers. It provides the following functionality:

➤ **high availability for communication between the Core and the Centers servers.**

The Bus uses a Mercury proprietary protocol, MDRV, for communication between the Core and the Centers servers. All Core and Centers servers are automatically registered with the JBoss application server on every Centers server. If a Core server fails, Bus communication between the remaining servers continues.

➤ **transfer of monitoring data.**

Data collectors send raw monitoring data to the Core server. The Core server formats the raw data into the custom data (UCX) format and sends it to the Data Processing server via the Bus. Applications such as Dashboard and Service Level Management listen to the Bus and display the formatted data to the user.

➤ **transfer of alerts.**

Each Core server can generate alerts as a result of the data aggregation process. These alerts are sent through the Bus to the Mercury Business Availability Center user's e-mail, pager, or SMS.

➤ **load balancing.**

The Bus architecture has an internal load balancing mechanism that automatically routes monitoring data and alerts among the Core servers according to a round-robin algorithm.

Incoming Mercury Business Availability Center Traffic

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

Internal Traffic

Internal traffic is the traffic between two Mercury Business Availability Center servers. 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

External traffic is the traffic coming into one of the Mercury Business Availability Center servers from a client that is not a Mercury Business Availability Center server. 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

Port Number	Mercury Business Availability Center Servers that Connect to Port	Port Usage
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
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
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 8092 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	86
Mercury Business Availability Center Task Bar Icon	87

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" on page 111 or "Setting Management Database Parameters" on page 147.
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.

9

Changing the User of Mercury Business Availability Center Service

This chapter explains how to change the user of the Mercury Business Availability Center service.

In the Windows platform, Mercury Business Availability Center service runs under user **system**. Occasionally you may need to assign a different user to run the service. An example might be running a server outside the DMZ.

You can change the user in one of two ways:

- **Microsoft Services utility.** This utility lets you manually stop the Mercury Business Availability Center service, change the user, and start the Mercury Business Availability Center service.

  This method is not recommended since Mercury Business Availability Center service often fails to start with the new user.

- **RegisterSupervisorForUser script.** This script automatically stops Mercury Business Availability Center service, installs the service with the new user, and starts the service. This is the recommended method.

To use the RegisterSupervisorForUser script:

1. Open a command prompt window (**Start** > **Programs** > **Accessories** > **Command Prompt**). In the case of a distributed environment, the script needs to be run only on the selected server.
2. Change the directory to **<Mercury Business Availability Center root directory>\bin**.

3 Run the following script:

```
RegisterSupervisorForUser.bat <domain_name\new_user_name>
<password>
```

For example: RegisterSupervisorForUser.bat EU_DOMAIN\mollie abcdef

The RegisterSupervisorForUser script begins. When the command line prompt returns, check Microsoft Services utility to confirm that Mercury Business Availability Center service has been started with the new user.

The file <Mercury Business Availability Center root directory>\bin\nonInstallService.txt is created. Do not delete this file.

Note: After running **RegisterSupervisorForUser**, Mercury Business Availability Center service is not removed from the Microsoft Services window when selecting **Start** > **Programs** > **Mercury Business Availability Center** > **Administration** > **Disable Business Availability Center.** If you want to remove Mercury Business Availability Center service, run the **UnregisterSupervisor** script.

To use the UnregisterSupervisor script:

1 Open a command prompt window (**Start** > **Programs** > **Accessories** > **Command Prompt**).

2 Change the directory to <**Mercury Business Availability Center root directory**>**bin**.

3 Run the following script:

```
UnregisterSupervisor.bat
```

The UnregisterSupervisor script begins. When the command line prompt returns, check Microsoft Services utility to confirm that Mercury Business Availability Center service has been removed.

The file <Mercury Business Availability Center root directory>\bin\nonInstallService.txt is deleted.

Note: After running **UnregisterSupervisor**, Mercury Business Availability Center service is installed or removed each time you select **Start** > **Programs** > **Mercury Business Availability Center** > **Administration** > **Enable** (or **Disable**) Business Availability Center.

Part IV

Mercury Business Availability Center Server Installation for Windows

10

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.

This chapter describes:	On page:
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Installation Prerequisites	99
Configuring the Web Server	101
Installing Mercury Business Availability Center Servers	102
Starting and Stopping Mercury Business Availability Center	106
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Overview of Mercury Business Availability Center Server Installation

There are several stages to the Mercury Business Availability Center 6.6 server installation:

1. Installing Mercury Business Availability Center 6.1, the 6.2 Add-on, and then the 6.6 Add-on as described in "Installing Mercury Business Availability Center Servers" on page 102.
2. Setting the management database by specifying the management database type and connection parameters, as described in "Setting Management Database Parameters" on page 111.
3. Installing components setup files in the Mercury Business Availability Center Downloads page, as described in "Installing Components Setup Files" on page 119.

   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 "Deployment Configuration" on page 33. Note that if you are installing in a distributed deployment (involving multiple server instances), you should also review "High Availability for Mercury Business Availability Center" on page 47.

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.
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: **All.** Installs all the Data Processing Server services on the same machine. This is the default used in a typical installation. **Modeling.** Installs the CMDB, Viewsys, SAP, and Packager services on the machine. **Online.** Installs the Dashboard service on the machine. **Offline.** Installs the CDM, LRDT, and NOA services on the machine. For further details on the services run by the Data Processing Servers, see "High Availability for the Data Processing Server" on page 56.
Microsoft MDAC2_71	Installs the Microsoft Data Access Component.

Preparing Information Required for Installation

Have the following information ready before installation:

- **License key**. If you did 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.** This is the maintenance number you received with your Mercury Business Availability Center package.
- **Web server name.** This name must also include the domain name.
- **Administrator's e-mail address.**
- **Port number used by the Web server.** This is the port for access to the Mercury Business Availability Center. The default is port 80.
- **Name of the Centers Server machine.**
- **Name of the load balancer** (if any). This is the load balancer used to access the Mercury Business Availability Center site.
- **SMTP mail server name.**
- **SMTP sender name.** This name appears 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*.

➤ **Information for setting the management database parameters**. If you plan to set the management database during server Setup, see "Required Information for Setting the Management Database" on page 115.

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 "Reviewing System Requirements" on page 19.

➤ 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 must not be installed on a machine that already has other Mercury products.

Note: If you do have other Mercury products that you need to keep installed on the machine, use the following workaround: Before running the installation, access the Windows Registry Editor (select **Start** > **Run**, and enter **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.

- Mercury Business Availability Center servers must not be installed on a drive that is mapped to a local or network resource.
- During installation, configuration data from any previous Topaz server installations on the server machine is overwritten. If you have customized configuration data that you want to reapply after the new installation, you must make a list of the changes.
- Due to certain Web browser limitations, the names of server machines running the Centers Server must 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), review the hardening procedures described in *Hardening the Platform*.

Configuring the Web Server

Mercury Business Availability Center installed on a Windows platform works with Apache HTTP Server or Microsoft Internet Information Server (IIS).

Note: There must be only one running Web server on a 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. It is installed during the server installation.

Mercury Business Availability Center runs its Apache HTTP Server, by default, through port 80. If port 80 is already in use, there are two ways to resolve the port conflict:

- before beginning Mercury Business Availability Center installation, reconfigure the service using that port to use a different port
- during Mercury Business Availability Center installation, select a different port for the Apache HTTP Server

  Edit the file **<Mercury Business Availability Center root directory>\conf\core\WebPlatform\webserver_guard.conf** and add the following line:

```
webserver_port=<new port>
```

By default, the Apache HTTP Server is not enabled for SSL use. For details on configuring the Web server to use SSL, see "Using SSL in Mercury Business Availability Center" in *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. Select **Start** > **Settings** > **Control Panel**. Right-click **Internet Information Server (IIS)** and select **Properties**.
2. In the **Recovery** tab, specify to run a file upon failure.
3. In the **File** box, enter:

```
IISReset.exe /RESTART /TIMEOUT:30 /REBOOTONERROR
```

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

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 Windows 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.

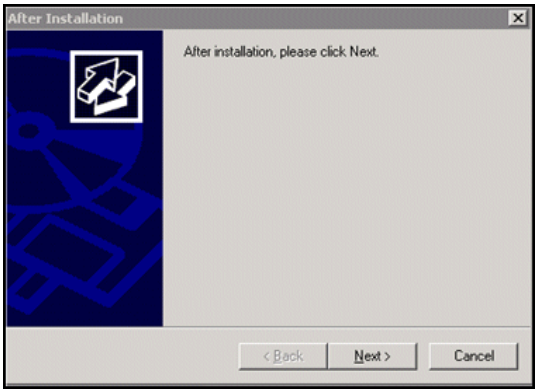
Note: If you do have other Mercury products that you need to keep installed on the machine, use the following workaround: Before running the installation, access the Windows Registry Editor (select **Start** > **Run**, and enter **Regedit**) and rename the **HKEY_LOCAL_MACHINE\SOFTWARE\Mercury Interactive** 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.

To install Mercury Business Availability Center servers:

1. Insert the **Mercury Business Availability Center 6.1 Windows 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. Enter 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, enter 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.

If installing on a Windows platform with remote services running in application server mode, the following window opens 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.

- **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:**
  - **Apache HTTP Server.** If port 80, the default port, is already in use by the existing Web server, Mercury Business Availability Center notifies you to resolve the conflict. For details, see "Apache HTTP Server" on page 101.
  - **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 enter another sender name.

6 When Setup has completed the installation of the Mercury Business Availability Center server files, do not connect to the database as part of the installation process. After installation, do not start (enable) Mercury Business Availability Center.

7 Install the Mercury Business Availability Center 6.2 Add-on on all machines. After installation, do not start (enable) Mercury Business Availability Center.

8 Install the Mercury Business Availability Center 6.6 Add-on on all machines.

9 Create and connect to the management database. For details, see "Setting Management Database Parameters" on page 111.

Starting and Stopping Mercury Business Availability Center

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.

After completing Mercury Business Availability Center server installation, 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.

After successfully installing the 6.6 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:

Select **Start** > **Programs** > **Mercury Business Availability Center** > **Administration** > **Enable Business Availability Center**.

You can now open and work in Mercury Business Availability Center.

To disable Mercury Business Availability Center:

Disabling Mercury Business Availability Center service removes it from Microsoft's Services window. Mercury Business Availability Center service cannot be run until it is registered (enabled) on the machine, as described above.

➤ Select **Start** > **Programs** > **Mercury Business Availability Center** > **Administration** > **Disable Business Availability Center**.

To stop/restart Mercury Business Availability Center service:

Stopping Mercury Business Availability Center service does not remove it from Microsoft's Services window. Mercury Business Availability Center service cannot be run until you restart it in Microsoft's Services.

➤ To stop, select **Start** > **Settings** > **Control Panel** > **Administrative Tools**> **Services**. Right-click **Mercury Business Availability Center** and select **Stop.**

➤ To restart, select **Start** > **Settings** > **Control Panel** > **Administrative Tools**> **Services**. Right-click **Mercury Business Availability Center** and select **Start.**

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.

Post-Installation Tasks

This section contains the following post-installation tasks:

➤ "Verifying JBoss and Tomcat Connectivity" on page 107

➤ "Checking Components" on page 108

➤ "Checking Installation Log Files" on page 108

➤ "Troubleshooting" on page 108

Verifying JBoss and Tomcat Connectivity

After you deploy Mercury Business Availability Center servers, verify the JBoss application server and Tomcat servlet engine connections with the **TopazVerify.jsp** utility.

To run TopazVerify:

1 Enter the following address in your Web browser:

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

2 If errors are returned, follow the on-screen links. Alternatively, use the troubleshooting information in the Mercury Customer Support Knowledge Base accessed from the Mercury Business Availability Center Help menu or from (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.

Checking Components

After installation, you can check which Mercury Business Availability Center components are installed on a Mercury Business Availability Center server machine by doing the following:

1. Open **<Mercury Business Availability Center server root directory>/conf/TopazSetup.ini** file.
2. Check the [INSTALLED_SERVERS] section. For example, Core_Server=1 indicates that there is one installation of the Core Server on the machine.

Checking Installation Log Files

Two installation log files are located in **\Documents and Settings\<Mercury Business Availability Center user>\LocalSettings\Temp\Mercury.**

You can access them by selecting **Start** > **Run**, typing **%temp%\Mercury**, and clicking **OK**. The log file names are in the 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.

Troubleshooting

For troubleshooting installation and connectivity problems, refer to the following documentation:

- **Mercury Customer Support Knowledge Base.** This site 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).
- **Readme files.** These files are located with the Mercury Business Availability Center package.
- **Appendix A, "Installation Troubleshooting".** This appendix lists installation problems and solutions.
- **Appendix B, "Connectivity Troubleshooting".** This appendix lists connectivity problems and solutions.

11

Setting Management Database Parameters

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

This chapter describes:	On page:
Overview of Setting the Management Database	111
Using Set Management Database	112
Required Information for Setting the Management Database	115
Running the Set Management Database Utility	117

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 "Installing Mercury Business Availability Center Servers on a Windows Platform" on page 95) 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 117.

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 112 and "Required Information for Setting the Management Database" on page 115.

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 6.6, you must upgrade the management database before running the Set Management Database utility. For details, refer to *Upgrading Mercury Business Availability Center*, available with the Mercury Business Availability Center package.

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 114.

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*.

Note: 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 "Deployment Configuration" on page 33 and "High Availability for Mercury Business Availability Center" on page 47.
- 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 create and connect to a management database using Windows authentication instead of MS SQL server authentication. For details, see "Connecting to MS SQL Databases Using Windows Authentication" in *Preparing the Database Environment*.
- **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.

➤ 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.

Note: The Set Management Database Wizard does not permit you to use Windows authentication to create or to connect to a management database. You must use MS SQL server authentication in the Set Management Database Wizard. For details, see "Connecting to MS SQL Databases Using Windows Authentication" in *Preparing the Database Environment*.

---

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 "Starting and Stopping Mercury Business Availability Center" on page 106.

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.

12

Installing Components Setup Files

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	119
Installing Components Setup Files to the Mercury Business Availability Center Downloads Page	120
Available Components and Setup Files	123

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 separately with the Mercury Business Availability Center package.

- For Web delivery versions, the files are located in directories in the package download area.
- For versions on CD-ROM, the files are located on separate CD-ROMs:
  - **Windows Components Setup.** This CD-ROM includes setup files for components that can be installed on a Windows platform.

- **Solaris Components Setup.** This CD-ROM includes setup files for components that can be installed on a Solaris platform.
- **Linux Components Setup.** This CD-ROM 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. 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 network or 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

The procedure for installing components to the Downloads page differs, depending on whether you are installing a Web delivery version or CD-ROM delivery version of Mercury Business Availability Center 6.6.

Installing Components Using a Web Delivery Version

Copy the components that you want available in the Downloads page from the appropriate directory in the release download area to the **<Mercury Business Availability Center root directory>\AppServer\webapps\site.war\admin\install** directory on the Mercury Business Availability Center Centers Server. If required, create the **admin\install** directory structure.

For a list of available components, see "Available Components and Setup Files" on page 123.

Installing Components Using a CD-ROM Delivery Version

Each of the components CD-ROMs has a setup utility that will copy the components setup files from the CD-ROM to the **<Mercury Business Availability Center root directory>\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 to 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 on which components setup files are available, see "Available Components and Setup Files" on page 123.
2. Navigate to the CD-ROM and double-click **setup.exe**. The components setup begins.
3. From the initial page, 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 on 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 available for installation and the name of the Setup program used to directly install each component:

Operating System	Components	Setup Program
Windows Components	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 (does not appear on Downloads page)	MercuryBPMSetup_win.exe.jar
	SiteScope for Windows 2000/2003	SiteScopeSetup.exe
	Mercury Virtual User Generator	Vugen.exe
	LoadRunner 8.1 FP3 patch for Mercury Virtual User Generator	LR81FP3.exe
	Discovery Probe for Windows 2000/2003/XP	DiscoveryProbe.exe
	Mercury Real User Monitor Engine for Windows	MercuryRUMSetup_win.exe
	Microsoft .NET framework 1.1	dotnetfx.exe
	Web Services Enhancements (WSE) 2.0 SP3 for Microsoft .NET	Microsoft WSE 2.0 SP3 Runtime.msi
	Mercury Dashboard Ticker	TickerSetup.exe

Operating System	Components	Setup Program
Solaris Components	SiteScope for Solaris	SiteScope.sun.tar.gz
	Mercury Business Process Monitor for Solaris	MercuryBPMSetup_solv4.bin
	Mercury Real User Monitor Engine for Solaris (do not use without consulting Mercury Customer Support)	MercuryRUMSetup_solv4.bin
Linux Components	SiteScope for Linux	SiteScope.linux.tar.gz
	Mercury Business Process Monitor for Linux	MercuryBPMSetup_linux.bin
	Mercury Real User Monitor Probe	MercuryRUMProbeSetup_linux.bin

13

Uninstalling Mercury Business Availability Center Servers on a Windows Platform

This chapter describes how to roll back to version 6.5, 6.4, 6.3, or 6.2 of Mercury Business Availability Center or uninstall Mercury Business Availability Center servers completely.

This chapter describes:	On page:
Rollback	125
Complete Uninstall	126

Rollback

Use the below procedure to roll back Mercury Business Availability Center to version 6.5, 6.4, 6.3, or 6.2.

Note: Rollback can be performed only if you backed up your pre-upgrade database schema.

To roll back to a previous version of Mercury Business Availability Center:

1. Stop the **Mercury Business Availability Center** service on all servers and confirm they are stopped.
2. Stop the Web server process (IIS Admin Service for IIS; Apache service for Apache) on all servers.

3 Select **Start** > **Settings** > **Control Panel** > **Add/Remove Programs** > **Change or Remove Programs** > **Mercury Business Availability Center 6.6**. On Windows 2003 Server make sure to check the **Show Updates** check box in order to display version 6.6 beneath the root Mercury Business Availability Center entry.

4 When the uninstall process is complete, restart the machine if requested.

5 Restart the Web server process (IIS Admin Service for IIS; Apache service for Apache) on all servers.

6 Reconnect to the backed up (pre-upgrade) management database using the Set Management Database utility.

7 Restart the Mercury Business Availability Center service on all servers.

Note: When uninstalling Mercury Business Availability Center and rolling back to Mercury Business Availability Center 6.2/6.3/6.4/6.5, make sure to uninstall the data collectors as well, and to reinstall the 6.2/6.3/6.4/6.5 data collectors.

Complete Uninstall

Use the below procedure to completely uninstall Mercury Business Availability Center.

Note: When uninstalling Mercury Business Availability Center servers completely, the uninstall program removes all Mercury Business Availability Center servers installed on the server machine.

To completely uninstall Mercury Business Availability Center servers:

1. If you configured Mercury Business Availability Center to use Windows authentication to access MS SQL databases, do the following:
   - Edit the <**Mercury Business Availability Center home**>**bin**\ **SupervisorStop.bat** file and remove the comment marker (**rem**) from the line:
   - **rem magentservice.exe –remove**
   - Run the <**Mercury Business Availability Center home**>**bin**\ **SupervisorStop** batch file.
   - Proceed to step 3.

   For more information, see "Using Windows Authentication to Access MS SQL Databases" in *Preparing the Database Environment*.
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** > **Add/Remove Programs**. Select **Mercury Business Availability Center**. (If there are additional entries or child entries, for example, Mercury Business Availability Center 6.6, do not select them). Click **Change/Remove** and follow the on-screen instructions.
4. Click **Yes** when asked to delete Mercury Business Availability Center directory and then click **Next**.
5. Restart the server machine.
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 and remove them if they still appear:
     - ext
     - Jakarta
     - mam_images
     - MercuryAM

- Topaz
- TopazDC

- 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**.

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" on page 169.

---

7 Access the Windows Registry Editor by selecting **Start** > **Run**. Enter **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**

Part V

Mercury Business Availability Center Server Installation for Solaris

14

Installing Mercury Business Availability Center Servers on a Solaris Platform

This chapter describes how to install Mercury Business Availability Center servers on a Solaris platform.

This chapter describes:	On page:
Overview of Mercury Business Availability Center Server Installation	131
Features Included in Mercury Business Availability Center Server Installation	133
Preparing Information Required for Installation	134
Installation Prerequisites	135
Working with the Web Server	137
Installing Mercury Business Availability Center Servers	140
Starting and Stopping Mercury Business Availability Center	143
Post-Installation Tasks	144

Overview of Mercury Business Availability Center Server Installation

There are several stages to the Mercury Business Availability Center server Setup program:

1. Installing the Mercury Business Availability Center 6.2 servers (Core, Centers, and Data Processing)
2. Installing the Mercury Business Availability Center 6.6 Add-on.

3 Setting the management database connection parameters

4 Installing components setup files in the Mercury Business Availability Center Downloads page

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 "Deployment Configuration" on page 33. Note that if you are installing in a distributed deployment involving multiple server instances, you should also review "High Availability for Mercury Business Availability Center" on page 47.

Features Included in Mercury Business Availability Center Server Installation

Component	Description
Centers Server	Runs the Mercury Business Availability Center applications.
Core Server	Handles the foundation data and the Mercury Business Availability Center Bus.
Data Processing Server	Aggregates data, runs the Business Logic Engine, and controls the Mercury Universal CMDB. The different types of Data Processing Server you can install during a custom installation are: ➤ **All**. Installs all the Data Processing Server services on the same machine. This is the default used in a typical installation. ➤ **Modeling**. Installs the CMDB, Viewsys, SAP, and Packager services on the machine. ➤ **Online**. Installs the Dashboard service on the machine. ➤ **Offline**. Installs the CDM service on the machine. For further details on the services run by the Data Processing Servers, see "High Availability for the Data Processing Server" on page 56.

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

Preparing Information Required for Installation

Have the following information ready before installation:

- **Maintenance number.** This is the number you received with your Mercury Business Availability Center package.
- **Path to Sun Java System Web Server configuration directory.** This is needed only if you are using a Sun Java System Web Server and want Mercury Business Availability Center to automatically configure the Web server settings. The following are examples of the path:
  - <Sun Java System Web Server root directory>/<Web server name>/config
  - <Sun Java System Web Server root directory>/servers/<Web server name>/config
- **Web Server name.** This name must also include the domain name.
- **Administrator's e-mail address.**
- **Application user and group name.** This user runs Mercury Business Availability Center application and owns the files in <**Mercury Business Availability Center root directory**>. The user and group can be defined by the administrator or by the Setup utility during installation.

Note: It is recommended to create the user before installing Mercury Business Availability Center rather than using the Setup utility. You then provide this user name during both Mercury Business Availability Center and Sun Java System Web Server installations.

- **SMTP mail server name.**
- **SMTP sender name.** This name appears on alerts sent from Mercury Business Availability Center.
- **Name of the Centers Server machine.**
- **Name of the load balancer** (if any).
- **Path to the Oracle Client home**.

- **Port number used by the Web server**. The default port is 80.
- **Information for setting the management database parameters**. If you plan to set the management database connection parameters during Setup, see "Prerequisites for Setting the Management Database" on page 150.

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 2 GB of free disk space. For details, see "Mercury Business Availability Center Servers" on page 20.
- If you are going to use the Sun Java System Web Server and it was previously installed by a user other than the Mercury Business Availability Center user, reinstall it with the Mercury Business Availability Center user.
- 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 must not be installed on a machine that already has other Mercury products.
- You must install the latest recommended Patch Cluster for the Solaris operating system version on each Mercury Business Availability Center server machine. Patch Cluster installation can take several hours. The Patch Cluster can be accessed from SunSolve. After installing the patches, restart the server machine.
- Mercury Business Availability Center servers must not be installed on a drive that is mapped to a network resource.

- During installation, custom configuration data from any previous installation on the server machine is overwritten. If you have customized configuration data that you want reapplied after the new installation, make a list of the changes. For details, see *Upgrading Mercury Business Availability Center*, available with the Mercury Business Availability Center package or from the Mercury Documentation Portal on the Mercury Customer Support Web site http://support.mercury.com/cgi-bin/portal/CSO/docViewAndSearch.jsp.
- The following files must be on each Mercury Business Availability Center server machine. If these files are missing, the installation may fail:
  - **/usr/xpg4/bin/id**
  - **/usr/openwin/bin/xdpyinfo**
- Due to certain Web browser limitations, the names of server machines running the Centers Server must only consist 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. 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.
- If you plan to run Mercury Business Availability Center servers on a hardened platform (including using HTTPS protocol), review the hardening procedures described in *Hardening the Platform*.
- You must be a root user to install Mercury Business Availability Center on the server machine.
- If you plan to install in UI (graphical user interface) mode, the **DISPLAY** environment variable must be properly configured on the Mercury Business Availability Center server machine. The machine you are installing from must be running an X-server.
- Apache HTTP Server and Sun Java System Web Server cannot run simultaneously on the same server. One of the Web Servers must be stopped.

  For example, if you choose to use Apache HTTP Server and you are installing on a machine with Sun Java System Web Server running, stop the Sun Java System service before installation. Also, be sure that Sun Java System Web Server will not automatically start on reboot.

➤ If you plan to install Apache HTTP Server, you must install the following two packages into **/usr/local/lib/** directory on the installation machine:

Package	Download Site	Name of Binary to Download
expat version 1.95	http://www.sunfreeware.com/programlistsparc<version of Solaris operating system>.html#expat For example: http://www.sunfreeware.com/programlistsparc9.html#expat	expat-1.95.5-sol<version of Solaris operating system>-sparc-local.gz or expat-1.95.5.tar.gz For example: expat-1.95.5-sol9-sparc-local.gz or expat-1.95.5.tar.gz
libiconv version 1.8	http://www.sunfreeware.com/programlistsparc<version of Solaris operating system>.html#libiconv For example: http://www.sunfreeware.com/programlistsparc9.html#libiconv	libiconv-1.9.2-sol<version of Solaris operating system>-sparc-local.gz or libiconv-1.9.2.tar.gz For example: libiconv-1.9.2-sol9-sparc-local.gz or libiconv-1.9.2.tar.gz

The download site for each package corresponds to the version of Solaris operating system on the installation machine.

Working with the Web Server

Mercury Business Availability Center installed on a Solaris platform works with Apache HTTP Server or Sun Java System Web Server.

Note: There must only be one running Web server on a Mercury Business Availability Center server machine.

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. It is installed during the server installation.

Mercury Business Availability Center runs its Apache HTTP Server, by default, through port 80. If port 80 is already in use, there are two ways to resolve the port conflict:

- before beginning Mercury Business Availability Center installation, reconfigure the service using that port to use a different port
- during Mercury Business Availability Center installation, select a different port for the Apache HTTP Server

  Edit the file **<Mercury Business Availability Center root directory>/conf/core/WebPlatform/webserver_guard.conf** and add the following line:

```
webserver_port=<new port>
```

By default, the Apache HTTP Server is not enabled for SSL use. For details on configuring the Web server to use SSL, see "Using SSL in Mercury Business Availability Center" in *Hardening the Platform*.

Sun Java System Web Server

The Sun Java System Web Server is not included in the Mercury Business Availability Center installation. If you plan to run Mercury Business Availability Center using this Web Server, there are two requirements:

- it must be installed on all server machines before installing the Mercury Business Availability Center servers
- it must be installed to run with the Mercury Business Availability Center user and group so that the same permissions apply

During Setup, choose the **typical** installation procedure. You must specify the Sun Java System Web Server configuration path so that Mercury Business Availability Center can automatically configure the Sun Java System Web Server settings.

If Sun Java System Web Server does not use the default port of 80, edit the file **<Mercury Business Availability Center root directory>/conf/core/WebPlatform/webserver_guard.conf** and add the following line:

```
webserver_port=<new port>
```

After completing the installation, Mercury Business Availability Center restarts the Web Server so that the configuration changes can take effect.

Web Server files are found in the following directories:

- <Sun Java System Web Server root directory>/https-<machine name>/config/
- <Sun Java System Web Server root directory>/httpacl/

Mercury Business Availability Center changes the following Sun Java System Web Server files:

Web Server File Name	Change
object.conf	➤ Adds virtual directories ➤ Adds URL redirections to Web Server extensions (Tomcat redirector, Mercury extension)
magnus.conf	➤ Adds virtual directories ➤ Adds URL redirections to Web Server extensions (Tomcat redirector, Mercury extension) ➤ Sets the threads number on the threads pool, and cancels multi-process mode if set
mime.types	➤ Provides additional definitions of file extensions

Web Server File Name	Change
start	➤ Sets new environment variables ➤ Sets descriptors number limit
generated.https-<machine name>.acl	➤ Adds virtual directories ➤ Adds URL redirections to Web Server extensions (Tomcat redirector, Mercury extension)

The original files are saved under the name **<original file name>.j2f.bck**.

Installing Mercury Business Availability Center Servers

You install Mercury Business Availability Center servers—the Centers Server, Core Server, and Data Processing Server—from the Mercury Business Availability Center 6.2 Solaris Setup Disk CD-ROM provided with the Mercury Business Availability Center distribution package.

The only supported installation method is to mount the Mercury Business Availability Center Setup CD-ROM on a Solaris machine with a CD-ROM device. You can then either install directly from the CD-ROM or copy the files to a directory on a Solaris machine and install from there. Copying files from a Windows operating system to a Solaris operating system may cause loss of files during installation.

There are two installation modes:

- **Console mode installation.** This is the recommended mode. It enables you to install via the terminal command line in text format.
- **UI mode installation.** UI mode enables you to install Mercury Business Availability Center servers using graphical user interface functionality. You cannot install Mercury Business Availability Center servers in UI mode using MS-DOS Telnet or any kind of serial console connection.

After each stage of the installation process (or after each dialog box in UI mode), you have the option to continue to the next stage or move back to the previous stage.

Note: It is recommended that you do not use **Exceed** to install Mercury Business Availability Center in UI mode. Installing via **Exceed** may slow the pace of the installation and may adversely affect the appearance and functionality of the GUI. If you are installing via **Exceed**, use the console mode.

To install Mercury Business Availability Center servers:

1 Log into the server as user **root**.

2 Insert **Mercury Business Availability Center 6.2 Solaris Setup** CD-ROM into the drive from which you want to install. If you are installing from a network drive, mount it.

3 Move to the root directory of the CD-ROM drive.

4 Run one of the following scripts:

- To install in UI mode:

```
./solv4_setup.sh
```

- To install in console mode:

```
./solv4_setup.sh -console
```

Select options by entering the option number. The selected option is marked with an [X].

5 The installation begins. Follow the on-screen instructions for server installation. Note the following during the server installation stage:

- **Selecting the setup type:**
  - Select **Typical** for a standard (Mercury Business Availability Center box) installation that installs the Core Server, Centers Server, and Data Processing Server on the machine.
  - Select **Custom** to select the Mercury Business Availability Center features installed on the machine.

- **Setting connection settings:**
  - Apache HTTP Server – if port 80 (default port) is already in use, Mercury Business Availability Center notifies you of this.
  - Sun Java System Web Server – if using a port other than port 80 (default port), enter the number.
- **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.
- **Specifying user and group:**

  If either the user or group that you specify are not found, choose one of the following options:
  - **Exit installation.** Exits Setup so that you can create the user/group, and run Setup again.
  - **Select a new user/group.** Enables you to enter a new user and/or group.
  - **Allow Setup to create the user/group.** Setup creates a user and/or group on the local host.

6 When Setup has completed the installation of the Mercury Business Availability Center server files, do not connect to the database as part of the installation process. After installation, do not start (enable) Mercury Business Availability Center.

7 If you are working in a distributed environment, install Mercury Business Availability Center 6.2 on all machines. After installation, do not start (enable) Mercury Business Availability Center.

8 Install the Mercury Business Availability Center 6.6 Add-on on all machines.

9 Create and connect to the management database. For details, see "Setting Management Database Parameters" on page 147.

For information on completing Mercury Business Availability Center server installation, see "Post-Installation Tasks" on page 144.

Starting and Stopping Mercury Business Availability Center

If you are using Sun Java System Web Server, Mercury Business Availability Center restarts the Web Server at the end of installation in order for the configuration changes to take effect.

After successfully installing the 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 start Mercury Business Availability Center:

1 Log into the server as user **root**.

2 Change directory:

```
cd <Mercury Business Availability Center server root directory>/scripts/
```

3 Run the script:

```
./run_topaz start
```

```
[sortop.mercury.co.it]/opt/MercuryAM/scripts > ./run_topaz start
Setting NLS_LANG to AMERICAN_AMERICA.UTF8
starting X server...
/opt/MercuryAM/X/runXvfb : Xvfb (pid 1706?) not running
/opt/MercuryAM/X/runXvfb start: Xvfb started
starting Apache web server...
./run_topaz: /opt/MercuryAM/WebServer/bin/apache2start.sh: not found
starting nanny...
/opt/MercuryAM
m_agent_daemon ( 2297 ),
[sortop.mercury.co.it]/opt/MercuryAM/scripts >
```

You return to the command line prompt when script has finished.

To access the Mercury Business Availability Center site, enter the Mercury Business Availability Center URL with the server machine name and the domain name. The domain was defined in the Web server configuration dialog box during Mercury Business Availability Center server Setup. For example, http://muffett.mercury.com/topaz.

To stop Mercury Business Availability Center:

1. Log into the server as user **root**.
2. Change directory:

```
cd <Mercury Business Availability Center server root directory>/scripts/
```

3. Run the script:

```
./run_topaz stop
```



You return to the command line prompt when script has finished.

Post-Installation Tasks

This section contains the following post-installation tasks:

- "Checking installation log files" on page 145
- "Checking components" on page 145
- "Verifying Jboss and Tomcat Connectivity" on page 145
- "Troubleshooting" on page 146

Checking installation log files

Two installation log files are located in / directory:

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

An example might be Mercury_Application_Management.10.31.18.05.install.is.log. Check these files for any errors.

Checking components

After installation, you can check which Mercury Business Availability Center components are installed on a Mercury Business Availability Center server machine in either of two ways:

Open <**Mercury Business Availability Center server root directory**>**/conf/TopazSetup.ini** file. Check the [INSTALLED_SERVERS] section. For example, Core_Server=1 indicates that there is one installation of the Core Server on the machine.

- Enter the Solaris command at the prompt:

```
pkginfo -i | grep MERQ
```

Verifying Jboss and Tomcat Connectivity

After you deploy Mercury Business Availability Center servers, verify the JBoss application server and Tomcat servlet engine connections with the TopazVerify utility.

To run the TopazVerify utility:

Enter the following address in your Web browser:

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

If errors are returned, follow the on-screen links.

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 /mercury/work** directory and restart the server.

Troubleshooting

For troubleshooting installation and connectivity problems, refer to the following documentation:

- **Mercury Customer Support Knowledge Base.** This site 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).
- **Readme files.** These files are located with the Mercury Business Availability Center package.
- **Appendix A, "Installation Troubleshooting".** This appendix lists installation problems and solutions.
- **Appendix B, "Connectivity Troubleshooting".** This appendix lists connectivity problems and solutions.

15

Setting Management Database Parameters

This chapter describes how to set management user schema parameters on a Solaris platform.

This chapter describes:	On page:
Overview of Setting the Management Database	147
Using the Set Management Database	148
Prerequisites for Setting the Management Database	150
Running the Set Management Database Utility	151

Overview of Setting the Management Database

The Set Management Database utility enables you to create and connect to the user schema for Mercury Business Availability Center on Oracle Server.

You can set the management database as part of Mercury Business Availability Center server installation (described in "Installing Mercury Business Availability Center Servers on a Solaris Platform" on page 131) by continuing with the second stage of Setup for setting management schema parameters. Alternatively, you can run the Set Management Database utility independently after server installation, using the Set Management Database Wizard.

If, at a later time, you want to modify previously defined 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.

Note: If you are upgrading to Mercury Business Availability Center 6.6, you must upgrade the management database before running the Set Management Database utility. For details, refer to *Upgrading Mercury Business Availability Center*, available with the Mercury Business Availability Center package.

Using the Set Management Database

Setting management user schema parameters involves two steps:

Creating the Management Schema

You can either use the Set Management Database utility to create the user schema for you, or you can create the management schema manually, directly in Oracle 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 user schema manually on Oracle Server, see "Management User Schema" in *Preparing the Database Environment*.

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

Connecting to the 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 user schema you manually created directly on 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 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.
- When upgrading to a new Mercury Business Availability Center version, you can connect to an existing management user schema that was previously upgraded to the new Mercury Business Availability Center version.

Prerequisites for Setting the Management Database

Before setting management database parameters, be sure 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.
- there is 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 and 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 that you will give the new user schema (for example, AM_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" on page 105 in *Preparing the Database Environment*.
- **SID.** The Oracle instance name that uniquely identifies the instance of the Oracle database 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.** The port can also be **1526**.

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. To create a new user schema, the administrator must have user creation privileges.
- **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" on page 92 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**.

Running the Set Management Database Utility

The following procedure describes how to run Set Management Database as part of the Mercury Business Availability Center Setup program, or using the Set Management Database Wizard.

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. Setting the user schema parameters is a continuation of the Mercury Business Availability Center Setup program.
- On the Mercury Business Availability Center server machine, do the following two commands:

```
cd <Mercury Business Availability Center root directory>/scripts
/SetMngDbWizard.sh
```

The Set Management Database Wizard begins.

2 Follow the on-screen instructions for setting management user schema parameters.

3 If you are connecting to an existing user schema for the first time from this server installation, the Set Management Database utility checks what parameters already exist in the SYSTEM table for the Mercury Business Availability Center database.

If you entered a parameter during installation that differs from the one in the SYSTEM table, you are asked whether you want to overwrite the old parameter value with the new one.

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 schema parameters. For details, see "Starting and Stopping Mercury Business Availability Center" on page 143.

If you ran the Set Management Database utility to modify previously defined 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.

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**.

16

Installing Components Setup Files

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

This chapter describes:	On page:
Overview of Installing Components Setup Files	156
Installing Components Setup Files to the Mercury Business Availability Center Downloads Page	157
Available Components and Setup Files	160

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 separately with the Mercury Business Availability Center package.

- For Web delivery versions, the files are located in directories in the package download area.
- For versions on CD-ROM, the files are located on separate CD-ROMs:
  - **Windows Components Setup.** This CD-ROM includes setup files for components that can be installed on a Windows platform.
  - **Solaris Components Setup.** This CD-ROM includes setup files for components that can be installed on a Solaris platform.
  - **Linux Components Setup.** This CD-ROM 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. 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 network or 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

The procedure for installing components to the Downloads page differs, depending on whether you are installing a Web delivery version or CD-ROM delivery version of Mercury Business Availability Center 6.6.

Installing Components Using a Web Delivery Version

Copy the components that you want available in the Downloads page from the appropriate directory in the release download area to the **<Mercury Business Availability Center root directory>\AppServer\webapps\site.war\admin\install** directory on the Mercury Business Availability Center Centers Server. If required, create the **admin\install** directory structure.

For a list of available components, see "Available Components and Setup Files" on page 160.

Installing Components Using a CD-ROM Delivery Version

Each of the components CD-ROMs has a setup utility that will copy the components setup files from the CD-ROM to the **<Mercury Business Availability Center root directory>\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.

Component setup files can only be installed in console mode via the terminal command line in text format.

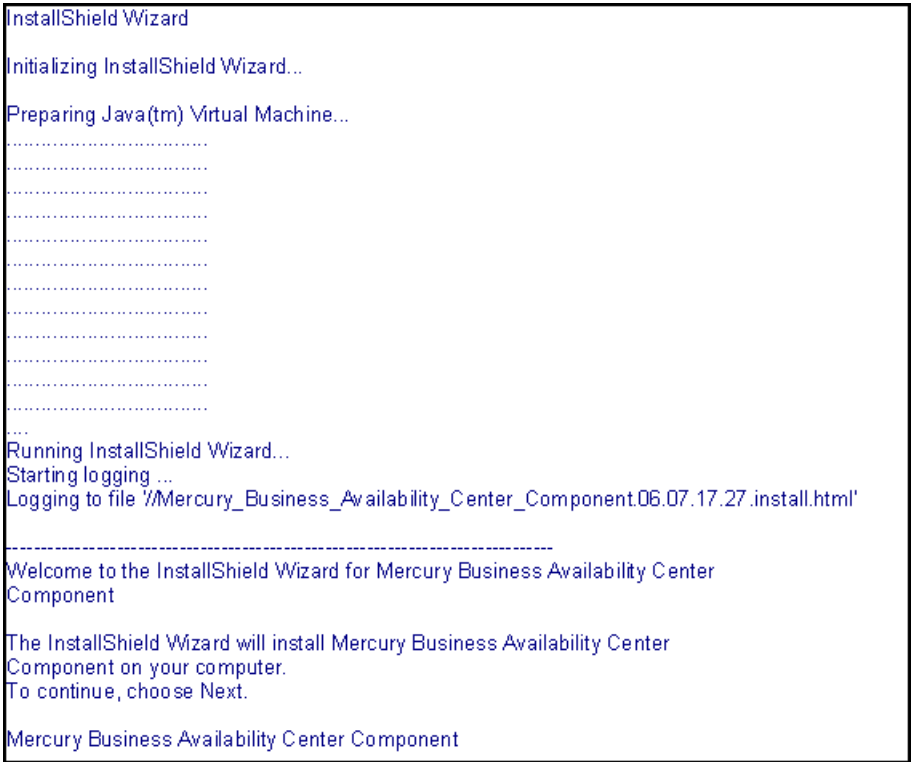
Note: You can install all, or some, of the components setup files on multiple Centers Servers, with the files installed on a specific server being available on that server's Download page.

To install components setup files to 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. If you are installing from a network drive, mount it. For details on which components setup files available, see "Available Components and Setup Files" on page 160.
2. Move to the root directory of the CD-ROM drive.
3. Run the following script:

```
./setup.bin -console
```

4. The InstallShield Wizard installation begins.



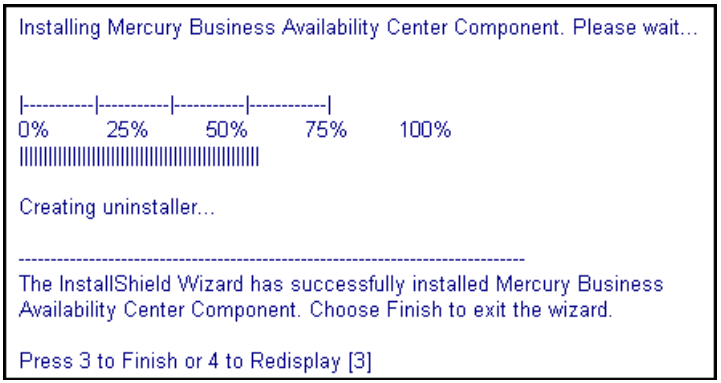
Note the location of the log file in case you want to refer to it later.

5 Selecting the setup type:

- Select **Typical** for a standard installation that installs all of the components included on the CD-ROM.
- Select **Custom** to select the Mercury Business Availability Center components to install on the machine.

A list of components to be installed is displayed. Follow the on-screen instruction to see the next or previous screen.

An installation progress bar is displayed while the components are being installed.



6 Enter **3** to finish the installation.

Available Components and Setup Files

The following table lists the components available for installation and the name of the Setup program used to directly install each component:

Operating System	Components	Setup Program
Windows Components	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 (does not appear on Downloads page)	MercuryBPMSetup_win.exe.jar
	SiteScope for Windows 2000/2003	SiteScopeSetup.exe
	Mercury Virtual User Generator	Vugen.exe
	LoadRunner 8.1 FP3 patch for Mercury Virtual User Generator	LR81FP3.exe
	Discovery Probe for Windows 2000/2003/XP	DiscoveryProbe.exe
	Mercury Real User Monitor Engine for Windows	MercuryRUMSetup_win.exe
	Microsoft .NET framework 1.1	dotnetfx.exe
	Web Services Enhancements (WSE) 2.0 SP3 for Microsoft .NET	Microsoft WSE 2.0 SP3 Runtime.msi
	Mercury Dashboard Ticker	TickerSetup.exe

Operating System	Components	Setup Program
Solaris Components	SiteScope for Solaris	SiteScope.sun.tar.gz
	Mercury Business Process Monitor for Solaris	MercuryBPMSetup_solv4.bin
	Mercury Real User Monitor Engine for Solaris (do not use without consulting Mercury Customer Support)	MercuryRUMSetup_solv4.bin
Linux Components	SiteScope for Linux	SiteScope.linux.tar.gz
	Mercury Business Process Monitor for Linux	MercuryBPMSetup_linux.bin
	Mercury Real User Monitor Probe	MercuryRUMProbeSetup_linux.bin

17

Uninstalling Mercury Business Availability Center Servers on a Solaris Platform

This chapter describes how to roll back to version 6.5, 6.4, 6.3, or 6.2 of Mercury Business Availability Center or uninstall Mercury Business Availability Center servers completely.

This chapter describes:	On page:
Rollback	163
Complete Uninstall	165

Rollback

Use the below procedure to roll back Mercury Business Availability Center to version 6.5, 6.4, 6.3, or 6.2.

Note: Rollback can be performed only if you backed up your pre-upgrade database schema.

To roll back to a previous version of Mercury Business Availability Center:

1. Log into the server as user **root**.
2. Stop the Mercury Business Availability Center service on all servers and confirm they are stopped. To stop servers, execute the command:

```
cd <Mercury Business Availability Center server root directory>/
scripts
./run_topaz stop
```

3. To access the uninstall program, type:

```
cd <Mercury Business Availability Center server root
directory>/Patches/Mercury Business Availability Center 6.6/_uninst
```

4. Run one of the following executables:
   - To uninstall in UI mode:

```
./uninstall
```

   - To uninstall in console mode:

```
./uninstall -console
```

5. The Mercury Business Availability Center 6.6 uninstall program begins. Follow the on-screen instructions. When the uninstall program is complete, a success message is displayed.
6. Click **Finish**.
7. Check the log file located in the / directory for errors. The log file name follows the format Mercury_Business_Availability_Center.uninst.<date and time>.install.is.log.

8 Reconnect to the backed up (pre-upgrade) management database using the Set Management Database utility.

Note: When uninstalling Mercury Business Availability Center and rolling back to Mercury Business Availability Center 6.2/6.3/6.4/6.5, make sure to uninstall the data collectors as well, and to reinstall the 6.2/6.3/6.4/6.5 data collectors.

Complete Uninstall

Use the below procedure to completely uninstall Mercury Business Availability Center.

Note: When uninstalling Mercury Business Availability Center servers completely, the uninstall program removes all Mercury Business Availability Center servers installed on the server machine.

To completely uninstall Mercury Business Availability Center servers:

1 Log into the server as user **root**.

2 To access the uninstall program, type:

```
cd <Mercury Business Availability Center server root directory>/_uninst
```

3 Run one of the following executables:

➤ To uninstall in UI mode:

```
./uninstall
```

➤ To uninstall in console mode:

```
./uninstall -console
```

4 The Mercury Business Availability Center uninstall program begins. Follow the on-screen instructions. When the uninstall program is complete, a success message is displayed.

5 Click **Finish**.

6 Check the log file located in the / directory for errors. The log file name follows the format Mercury_Business_Availability_Center.uninst.<date and time>.install.is.log.

Note: If you encounter problems during the uninstall procedure, contact Mercury Customer Support.

Part VI

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 (http://support.mercury.com).

Installation very slow and problems with GUI appearance when installing on a Solaris platform in UI mode via Exceed

GUI may include distorted screens or have missing fields.

Solution:

Do not use **Exceed** to install on a Solaris platform in UI mode. Use the console mode, or install directly on the Mercury Business Availability Center server machine.

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 Sun Java System Web Server has not been updated with the platform's configuration requirements

The Sun Java System Web server should be updated automatically, as part of server installation. If not, try restarting the Sun Java System Web Server for the changes to take effect.

For details, see "Installing Mercury Business Availability Center Servers on a Solaris Platform" on page 131.

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**>**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*.

- <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:

- Add the Mercury Business Availability Center Core Server name and IP address to the Business Process Monitor machine's **WINNT\system32\drivers\etc\hosts** file.
- Change the Mercury Business Availability Center Core Server name in the **<Mercury Business Availability Center 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" on page 119.

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 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.

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 and an error about insufficient heap space

A message box opens indicating that Mercury Business Availability Center is not available and you should try logging in at a later time.

Possible Cause 1:

Check log files in **<Mercury Business Availability Center root directory>\log** directory for errors.

Microsoft's Security Update 921883 for Windows 2003 Service Pack 1 and for Windows XP Professional x64 Edition may cause applications using more than 700 MB of contiguous memory to fail. Mercury Business Availability Center JVM uses a heap size larger than 768 MB memory. For more information about Security Update 921883, see http://www.microsoft.com/technet/security/Bulletin/MS06-040.mspx.

If the Mercury Business Availability Center server goes down, look for the following error in **<Mercury Business Availability Center root directory>\log\jboss_boot.log** when the service or process is restarted:

```
Error occurred during initialization of VM.
Could not reserve enough space for object heap.
```

Solution:

Although Microsoft has a hotfix available only for Microsoft Support customers, it is recommend to wait for the next Service Pack release. For more information about this hotfix, see http://support.microsoft.com/kb/924054.

If Security Update 921883 is already installed, do the following:

- If the Security Update is not critical at your site:
  - Uninstall it and wait for Microsoft's next Service Pack.
  - Disable **Windows Automatic Updates** to prevent Security Update 921883 from being installed again.
- If the Security Update is critical at your site:
  - Install the hotfix.
  - Reduce the contiguous memory on all Mercury Business Availability Center servers to less than 768 MB.

    Edit the **<Mercury Business Availability Center root directory>\conf\ ProcessMemory.ini**. file and reduce the memory allocation in every server.

    For example, the Centers server allocates 1216 MB of continuous memory and you want to reduce this amount to 640 MB. Change the following line from:

Center.2G.MercuryAS=**1216**,80,196

to:

Center.2G.MercuryAS=**640**,80,196

Make this change for the Core, Modeling, and Data Processing servers.

Possible Cause 2:

The page file size is too small.

Solution:

Configure the page file size to be at least 150% of RAM size. Restart the server.

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

A message box opens indicating that the Mercury Business Availability Center 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:

- 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 **<Mercury Business Availability Center root directory>\WebServer\conf\httpd.conf** file on the Core Server to a recognized name in the DNS, or to the Core Server IP address.

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