# OPTIMIZE

## MERCURY APPLICATION MAPPING™

### Installation Guide

MERCURY™

BUSINESS TECHNOLOGY OPTIMIZATION

# Mercury Application Mapping

## Installation Guide

Version 6.6

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MERCURY™

Mercury Application Mapping Installation Guide, Version 6.6

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# Welcome to Mercury Application Mapping Installation

This guide provides detailed instructions on how to install Mercury Application Mapping.

## How This Guide is Organized

The guide contains the following parts:

### Part I Installation Introduction

Introduces the components that are installed during Mercury Application Mapping installation, and provides the installation workflow and deployment choices.

### Part II Installation for Windows

Describes the procedures for deploying Mercury Application Mapping on one machine, in a distributed deployment, and together with Mercury Business Availability Center with a shared CMDB. Describes the installation procedure for the GUI and collectors (the discovery probe), and packages. Also describes the upgrade procedure for migrating Mercury Application Mapping from version 3.0 to 6.5.

### Part III Installation for Solaris

Describes the procedures for deploying Mercury Application Mapping on one machine, in a distributed deployment, and together with Mercury Business Availability Center with a shared CMDB. Describes the installation procedure for packages.

### Part IV Hardening Mercury Application Mapping

Explains the procedures for hardening the Mercury Application Mapping server.

### Part V Upgrading Mercury Application Mapping

Explains the procedures for upgrading (migrating) Mercury Application Mapping to version 6.5.

### Part VI Appendix

Describes a common problem that you may encounter when installing Mercury Application Mapping, and the solution to this problem.

## Who Should Read This Guide

This guide is intended for the following users of Mercury Application Mapping:

- System or instance administrators

  This document assumes that you are moderately knowledgeable about enterprise application development and highly skilled in enterprise system administration.

## Getting More Information

For information on using and updating the Mercury Application Mapping 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 Application Mapping, refer to *Getting Started with Mercury Application Mapping*.

# Part I

## Installation Introduction

# 1

# Introduction to Installation

This chapter introduces the main stages of the Mercury Application Mapping installation for both Windows and Solaris environments, presents the installation workflow, and provides prerequisite software and configuration information.


| This chapter describes: | On page: |
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# Installation Procedure Overview

During installation the following Mercury Application Mapping components are installed:

- Mercury Application Mapping server
- JBoss application server (J2F)
- Configuration management database (CMDB)
- History CMDB
- Mercury Application Mapping packages
- Mercury Application Mapping application (GUI)
- Discovery probes

This section includes the following topics:


- "Installation Stages" on page 4
- "Order of Installation" on page 5
- "Launching Mercury Application Mapping" on page 5


## Installation Stages

The installation workflow contains the following main stages:

1. Installing the license file saved to the network on which you are performing the installation. For details, see "License Configurations" on page 6.
2. Setting up the CMDB and History CMDB databases on MS SQL Server or schemas on Oracle Server, on a Windows platform.

   Setting up the CMDB and History CMDB schemas on Oracle Server, on a Solaris platform.

   For details, see "Databases Used in Mercury Application Mapping" in *Preparing the Database Environment*.
3. Installing the Mercury Application Mapping server, JBoss application server (J2F), and CMDB server. For details on the different types of deployment, see "Deployment Configurations" on page 8 in this chapter.

4 Installing Mercury Application Mapping packages. For details, see Chapter 6, "Installing Packages" (for Windows) and Chapter 13, "Installing Packages" (for Solaris).

5 Installing Mercury Application Mapping GUI. For details, see Chapter 7, "Installing the Application (GUI)."

6 Installing collectors (discovery probes). For details, see Chapter 8, "Installing the Discovery Probes."

---

**Note:** For a Solaris installation, you install the Mercury Application Mapping application (GUI) and discovery probes from the Windows CD-ROM.

---

## Order of Installation

The following order is recommended when installing Mercury Application Mapping:

- install the Mercury Application Mapping server and CMDB server
- install the Mercury Application Mapping packages
- set up the connection from Mercury Application Mapping to the shared CMDB running on Mercury Business Availability Center
- install the Mercury Application Mapping application (GUI) and discovery probes

## Launching Mercury Application Mapping

For details, see "Accessing Mercury Application Mapping" in *Getting Started with Mercury Application Mapping*.

# The Installation CD-ROMs

You install Mercury Application Mapping using the Windows or Solaris CD-ROM:

- Mercury Application Mapping 6.6 Setup – Windows
- Mercury Application Mapping 6.6 Setup – Solaris

## CD-ROM Contents

This section lists the installation files and their descriptions.

| Installation File | Description |
|---|---|
| BACMAMShareCMDB.exe | Shares the configuration management database (CMDB) between Mercury Application Mapping and Mercury Business Availability Center |
| MAMDiscoveryProbe.exe | Installs Discovery Probes (also called collectors) |
| MAMGUI.exe | Installs the Mercury Application Mapping application (GUI) |
| MAMpackages.exe | Installs Mercury Application Mapping packages that enable you to discover IT infrastructure resources |
| MAMServer.exe | Installs the Mercury Application Mapping server |

# License Configurations

Upon purchase, Mercury supplies you with a license file that you need during installation. Before installation, save this license file to a location that is accessible from the machine on which you are performing the installation.

Depending on which license your company has purchased, you are entitled to install one of the following packages (for details on package contents, see the following table).

- **Full license.** You can choose any package to install with Mercury Application Mapping. A full installation includes all application packages.
- **Applications license.** You can install those applications that are covered by the license agreement with Mercury. An applications installation also includes the basic packages.

The following table lists the packages that are included in each license.

| Package | Basic License | Applications License | Full License |
|---|---|---|---|
| TCP discovery | √ | √ | √ |
| Layer 2 | √ | √ | √ |
| Network basic | √ | √ | √ |
| MF | √ | √ | √ |
| Netlinks | √ | √ | √ |
| WebSphere MQ | | | √ |
| SAP | | √ | √ |
| Siebel | | √ | √ |
| UDDI discovery | | √ | √ |
| Oracle E-Business Suite | | √ | √ |
| Oracle | √ | √ | √ |
| MS-SQL | √ | √ | √ |
| DB2 | √ | √ | √ |
| Sybase | √ | √ | √ |
| JBoss | | √ (J2EE) | √ |
| WebLogic | | √ (J2EE) | √ |
| WebSphere | | √ (J2EE) | √ |
| Host resource | √ | √ | √ |

| Package | Basic License | Applications License | Full License |
|---|---|---|---|
| Veritas cluster | | | √ |
| Microsoft cluster | | | √ |
| IBM HTTP (Web server) | √ | √ | √ |
| IIS (Web server) | √ | √ | √ |

# Deployment Configurations

Choose between the following deployments:

## Typical

This configuration uses a single server machine on which is installed the Mercury Application Mapping server, the JBoss application server (J2F), and the CMDB server.

For details about this installation, see:

### Windows

➤ Chapter 2, "Single Machine (Typical) Deployment."

### Solaris

➤ Chapter 9, "Single Machine (Typical) Deployment."

## Distributed

This configuration uses two server machines, one machine for the Mercury Application Mapping server and one machine for the CMDB server. On both machines, the installation process installs the JBoss application server (J2F).

For details about this installation, see:

### Windows

➤ Chapter 3, "Installing the Server in a Distributed Deployment"

➤ Chapter 4, “Installing the CMDB Server in a Distributed Deployment”

### Solaris

➤ Chapter 10, “Installing the Server in a Distributed Deployment”

➤ Chapter 11, “Installing the CMDB Server in a Distributed Deployment”

## Distributed with Shared CMDB

(When Mercury Application Mapping is integrated with Mercury Business Availability Center.) This configuration uses the following arrangement:

➤ on the Mercury Application Mapping server machine is installed the Mercury Application Mapping server and the JBoss application server (J2F)

➤ on the Mercury Business Availability Center Data Processing Server machine (on the modeling server), you set up the necessary prerequisites for sharing the environment (for example, Setup sets up the History schema (or database) service and the jars that enable the Mercury Business Availability Center environment to work with Mercury Application Mapping)

For details about this installation, see:

### Windows

➤ Chapter 5, “Distributed Deployment Installation with a Shared CMDB.”

### Solaris

➤ Chapter 12, “Distributed Deployment Installation with a Shared CMDB.”

For details on Mercury Business Availability Center CMDB deployment, see:

➤ “Sharing the Mercury Universal CMDB Environment” in *Working with the CMDB*.

➤ “Mercury Universal CMDB Management” in *Platform Administration*.

➤ “High Availability for the CMDB Directory” in *Deploying Servers*.

## Using the Installation Wizard

You install the Mercury Application Mapping application using a step-by-step installation wizard. Each wizard dialog box comprises two sections. The left side displays a checklist and provides a visual indication of your progress through the installation process. The right side displays the information that needs to be entered at that stage.

As Mercury Application Mapping components can be installed either together on the same workstation or server or on separate workstations or servers, the installation wizard displays only those stages relevant to the components being installed.

## Installation Prerequisites for Windows Platform

Consider the following issues before installing Mercury Application Mapping on a Windows platform:

- All Mercury Application Mapping server components must be located on the same network subnet. For more information, contact your system administrator.
- You possess a valid license file saved to the network on which you are performing the installation.
- When installing Mercury Application Mapping in a distributed deployment, install the components according to the order in this guide.
- The appropriate and operational SQL client software (SQLPLUS for Oracle and ISQL for MS SQL) must be installed on each machine on which the Mercury Application Mapping server is to be installed. Also, there must be a valid connection to Oracle Server or MS SQL Server from the server. For details on moving the schema (or database) scripts to another machine after installation, see "Database Utilities–Database Clients" in *Preparing the Database Environment*.
- Do not install Mercury Application Mapping on a drive that is mapped to a network resource.

- Due to Web browser limitations, the names of server machines running the Mercury Application Mapping server should consist only of alphanumeric characters (a-z, A-Z, 0-9), hyphens (-), and periods (.).

  If the names of the machines running the Mercury Application Mapping servers contain underscores, it may not be possible to log in to Mercury Application Mapping. In this case, you should use the machine's IP address instead of the machine name.

- Database user and password names can contain alphanumeric characters from the database character set as well as the underscore sign. Names must begin with an alphabetic character and should not exceed 30 characters.

## Installation Prerequisites for Solaris Platform

Consider the following issues before installing Mercury Application Mapping on a Solaris platform:

- It is recommended that you install Mercury Application Mapping servers to a drive with at least 4 GB of free disk space.
- It is highly recommended to install Mercury Application Mapping server components on the same network segment. Server separation to different segments induces latency that may cause adverse affects to the Mercury Application Mapping application and can result in performance and stability issues. For more information, contact Mercury Customer Support.
- Mercury Application Mapping servers must not be installed on a machine that has other Mercury products installed on it.
- Mercury Application Mapping servers must not be installed on a drive that is mapped to a network resource.
- You must install the latest recommended Patch Cluster for the Solaris operating system version on each Mercury Application Mapping 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.

- The following files must be located on each Mercury Application Mapping server machine. If these files are missing, the installation may fail:

  /usr/xpg4/bin/id

  /usr/openwin/bin/xdpyinfo

- If you plan to run Mercury Application Mapping servers on a hardened platform (including using the HTTPS protocol), review the hardening procedures described in *Hardening the Platform*.
- You must be a root user to install Mercury Application Mapping 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 Application Mapping server machine. The machine you are installing from must be running an X-server.
- Database user and password names can contain alphanumeric characters from the database character set as well as the underscore sign. Names must begin with an alphabetic character and should not exceed 30 characters.
- The only supported installation method is to mount the Mercury Application Mapping 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. If you copy files from a Windows operating system to a Solaris operating system, there may be a loss of files during installation.
- You install Mercury Application Mapping in UI mode. You cannot install the Mercury Application Mapping server using MS-DOS Telnet or any kind of serial console connection.

## Hardware and Software Requirements

This section describes the setup needed for Mercury Application Mapping.

This section includes the following topics:

- "Server Requirements" on page 13
- "GUI Client Requirements" on page 15

➤ "GUI Web Client Requirements" on page 16

➤ "Database System Requirements" on page 17

➤ "Collector Requirements" on page 17

## Server Requirements

### Hardware Requirements

| | |
|---|---|
| Computer/processor | **Windows:** Pentium IV (32-bit only) 2.4 GHz or later processor<br>Recommended: Dual Processor Xeon 4, 2.8 GHz or later (preferably including Hyper-Threading or Dual Core Technology support)<br>**Solaris:**<br>➤ Sun server with an UltraSPARC IIIi Processor<br>➤ Recommended: Sun Fire V240/V440 machine with at least 2 UltraSPARC IIIi processors. |
| Memory | **Windows:** Minimum 2 GB RAM (recommended: 4 GB RAM)<br>**Solaris:** Minimum 2 GB RAM (recommended: 4 GB RAM) |
| Virtual memory (for Windows deployment) | Minimum 4 GB |
| Memory Swap File (for Solaris deployment) | Minimum 8 GB<br>**Note:** The swap file size should always be at least twice the physical memory size. |
| Free hard disk space | **Windows:** Minimum 4 GB (at least 8 GB for CMDB software and data files) (recommended: 20 GB hard disk)<br>**Solaris:** Minimum 4 GB (including 600 MB for software files) (recommended: 20 GB hard disk) |

| | |
|---|---|
| Display | **Windows:** Color palette setting of at least 256 colors (recommended: 32,000 colors )<br>**Note:** In a distributed deployment, this requirement is only necessary for the Mercury Application Mapping Server machine.<br>**Solaris:** X-server installed<br>**Note:** In a distributed deployment, this requirement is only necessary for the Mercury Application Mapping Server machine. |

## Software Requirements

| | |
|---|---|
| Operating system | **Windows:**<br>➤ Windows 2000 Server/Advanced Server, Service Pack 4<br>➤ Windows 2003 Server standard/enterprise, Service Pack 1<br>**Solaris:**<br>➤ Solaris 8 (supported)<br>➤ Solaris 9 (supported but not tested)<br>➤ Solaris 10 (supported) |
| Web Browser<br>(only required when using Mercury Application Mapping thin Web client) | **Windows:** Microsoft Internet Explorer (IE) 6.0, Service Pack 1 or later<br>**Note:** Browser should be set to accept all cookies. |

| | |
|---|---|
| Supported databases | **Windows:** Oracle Enterprise Edition 10g (recommended Oracle release) and Oracle Enterprise Edition Server 9.2.0.6 or MS SQL Server 2000 Enterprise, Service Pack 4<br>**Note:** Oracle environments for Oracle Enterprise Edition 9i are 32-bit on all platforms and for Oracle Enterprise Edition 10g, 32-bit for Windows and 64-bit for UNIX.<br>**Solaris:**<br>➤ Oracle Enterprise Edition Server 9.2.0.6<br>➤ Oracle Enterprise Edition Server 10.2.0.1 (recommended)<br>For more information on supported and recommended database environments when working with Mercury Application Mapping, see *Preparing the Database Environment*. |
| Java Runtime Environment | JRE 1.4.2 – installed with the JBoss application server (J2F) |

## GUI Client Requirements

### Hardware Requirements

| | |
|---|---|
| Computer/processor | **Windows:** Personal computer with a Pentium IV 2.0 GHz or later processor (preferably including Hyper-Threading Technology support) |
| Memory | **Windows:** Minimum 250 MB RAM (recommended: 1 GB RAM) |
| Virtual memory (for Windows deployment) | Minimum 0.5 GB<br>**Note:** The virtual memory size should always be at least twice the physical memory size. |
| Memory swap file (for Linux deployment) | Minimum 0.5 GB<br>**Note:** The swap file size should always be at least twice the physical memory size. |
| Free hard disk space | **Windows**: Minimum 0.5 GB (recommended: 1 GB hard disk) |

| | |
|---|---|
| Temporary directory | Minimum 150 MB RAM (recommended: 250 MB) |
| Display | Color palette setting of more than 256 colors |
| Recommended resolution | 1024x1280 or later |

### Software Requirements

| | |
|---|---|
| Operating system | **Windows:**<br>➤ Windows 2000 Server/Advanced Server, Service Pack 4 or later<br>➤ Windows 2000 Professional, Service Pack 2 or 3<br>➤ Windows 2003 Server, Service Pack 1<br>➤ Windows XP Professional, Service Pack 1 |

## GUI Web Client Requirements

### Software Requirements

| | |
|---|---|
| Supported browsers | **Windows:** Internet Explorer (IE) 6.0, Service Pack 1 or later<br>**Note:** Browser should be set to accept all cookies. |
| Java Plug-in (for applets) | Sun Java Plug in 1.4.2 or later<br>**Note:** If you are using Microsoft Internet Explorer, you can download the Sun Java Plug-in from the Get Java Technology page, accessed from the Java Sun Web site (http://java.com/en/index.jsp).<br>After installation, 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. |

# Database System Requirements

## Oracle System Requirements

Refer to the Oracle installation guide for the specific Oracle platform. Additional information is available in the Oracle software distribution media as well as in the online Oracle documentation (http://otn.oracle.com/documentation/index.html). Mercury Application Mapping supports both Solaris and Windows database servers.

## MS SQL Server System Requirements

For Windows platform only.

For details about hardware and software requirements, see "System Requirements for Working with MS SQL" in *Preparing the Database Environment*.

# Collector Requirements

## Hardware Requirements

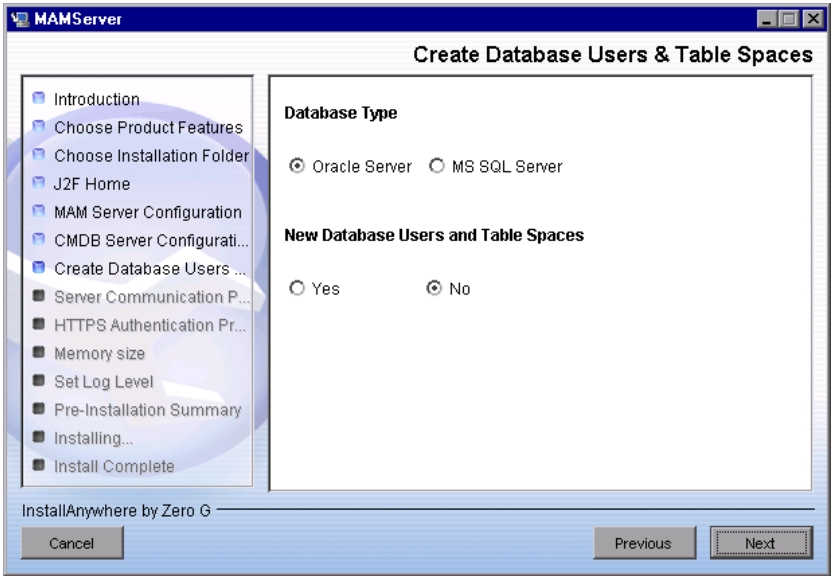
| | |
|---|---|
| Computer/processor | **Windows:** Pentium IV 2.4 GHz or later processor |
| Memory | **Windows:** Minimum 1 GB RAM (Recommended: 2 GB RAM) |
| Virtual memory (for Windows deployment) | Minimum 2 GB<br>**Note:** The virtual memory size should always be at least twice the physical memory size. |
| Free hard disk space | **Windows:** Minimum 4 GB (at least 4 GB for database software and data files) (Recommended: 20 GB hard disk) |
| Display | **Windows:** Color palette setting of at least 256 colors (32,000 colors recommended)<br>**Note:** In a distributed deployment, this requirement is necessary for the Mercury Application Mapping Server/client machines only. |

### Software Requirements

| | |
|---|---|
| Operating system | **Windows:**<br>➤ Windows 2000 Server/Advanced Server, Service Pack 4 or later<br>➤ Windows 2003 Server, Service Pack 1 |
| Java Runtime Environment | JRE 1.4.2 (installed by InstallAnywhere) |

## Database Users and Tablespaces

During installation, you must decide whether you want to create the database users and tablespaces, or use predefined users and tablespaces. Mercury Application Mapping enables you to make this choice at the same time as you choose on which database you want to run the application:



- Choose **Yes** in the following cases:
  - There are no existing database users and tablespaces.
  - There are existing database users and tablespaces, but you want to initialize the database default contents.
  - You want to create a new user but want to enter existing tablespace details. Setup creates the user and assigns it to existing tablespaces without recreating them.
- Choose **No** in the following cases:
  - You do not want to change the database's default contents, for example, because you have data in your schema/database from a previous installation of the same release. In this case, Setup updates the necessary server configuration files with the database details and updates the database scripts configuration file. For details, see "Mercury Application Mapping Database Script" in *Preparing the Database Environment*.
  - Your database administrator provides instructions for creating the database users and tablespaces in advance according to company policy. To manually create Mercury Application Mapping Oracle schemas, see "Manually Creating the Oracle Server Database Schemas" in *Preparing the Database Environment*. To manually create Mercury Application Mapping MS SQL databases, see "Manually Creating the MS SQL Server Databases" in *Preparing the Database Environment*.

---

**Note:** When Mercury Application Mapping shares the CMDB with Mercury Business Availability Center, Mercury Application Mapping does not create a CMDB user or tablespaces, but connects to those in Mercury Business Availability Center.

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## Database Validation Messages

During installation, Setup validates several database parameters including the connection to the CMDB and History databases (or schemas, if CMDB and History are running on Oracle Server). If the validation attempt fails, Setup displays a message.

If you select **No** in the Create Database Users and Tablespaces dialog box, Setup enables you to continue with the installation (click **Ignore** in the message box). If you select **Yes**, Setup ceases installation (click **Cancel Installation**). For details on the dialog box, see the previous section.

## Memory Sizing

If your system needs non-default memory sizing, you can make changes for each component.

The recommended Mercury Application Mapping memory sizing is as follows:

| Component | Minimum Size | Recommended Size | Note |
|---|---|---|---|
| Mercury Application Mapping Server | 0.5 GB | 1.2 GB | For a 32-bit environment |
| CMDB Server | 0.5 GB | 1.2 GB | For a 32-bit environment |
| Mercury Application Mapping GUI Client | 128 MB | 256 MB | |
| Mercury Application Mapping Collectors | 256 MB | 1024 MB | |
| Discovery Probe Manager | 256 MB | 1024 MB | Depends on the discovery configuration. For details, see “Discovery Process Configuration” in *Discovery Manager Administration*. |
| Discovery Probe Gateway | 256 MB | 512 MB | |

# Migrating from Previous Versions

You can migrate Mercury Application Mapping resources from version 3.0 to version 6.6 for a Windows installation. For details, see Chapter 18, "Migrating Mercury Application Mapping from Version 3.0 to Version 6.6."

For details on upgrading from version 6.x to 6.6, see Chapter 19, "Upgrading Mercury Application Mapping from Version 6.x to Version 6.6."

# Part II

## Installation for Windows

# 2

# Single Machine (Typical) Deployment

This chapter describes the procedures to be performed for a typical installation of Mercury Application Mapping in a single machine deployment on a Windows platform. For details on using the installation wizard, see "Using the Installation Wizard" on page 10.

---

**Note:** It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."

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| This chapter describes: | On page: |
|---|---|
| Installation Procedure with Oracle Server | 26 |
| Installation Procedure with MS SQL Server | 41 |

# Installation Procedure with Oracle Server

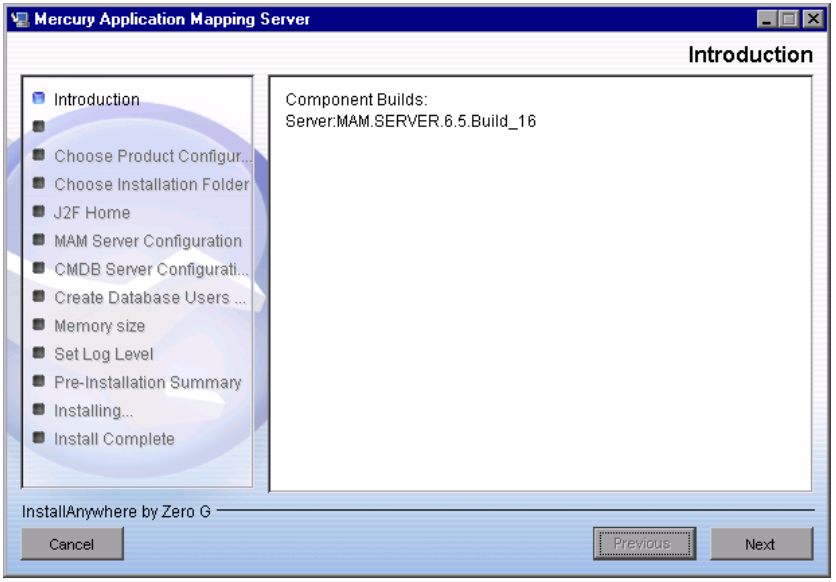
The following procedure explains how to install Mercury Application Mapping when the CMDB schemas run on Oracle Server.

**To install Mercury Application Mapping:**

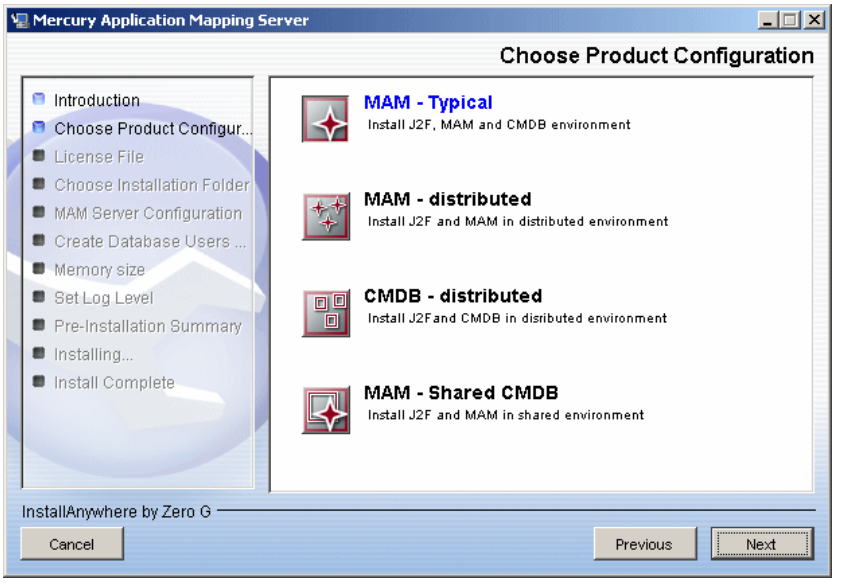
1 Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.

2 Double-click the **<CD-ROM root folder>\MAM66\MAMServer.exe** file.

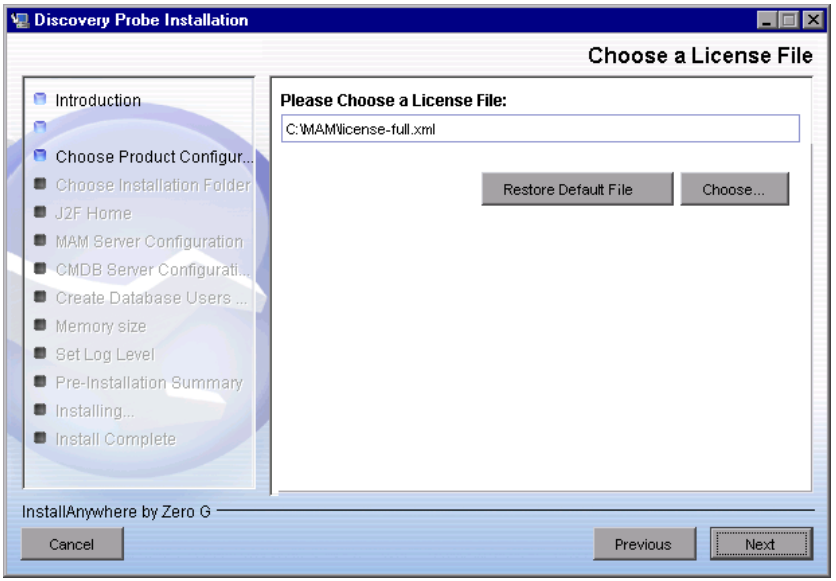
A progress bar is displayed. Once the initial process is complete, the Introduction dialog box opens.



**3** Click **Next** to open the Choose Product Configuration dialog box.

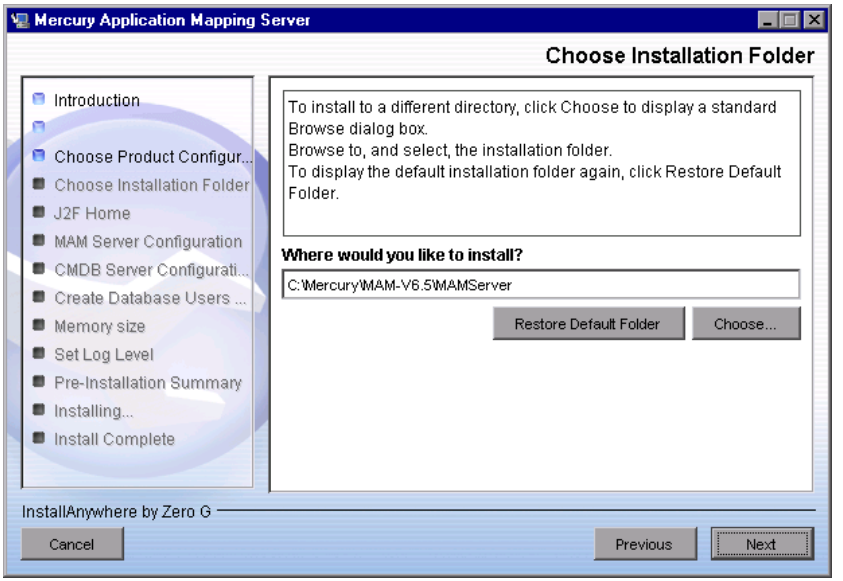


**4** Select the **MAM - Typical** icon and click **Next** to open the Choose a License File dialog box.




Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

**5** Click **Next** to open the Choose Installation Folder dialog box.



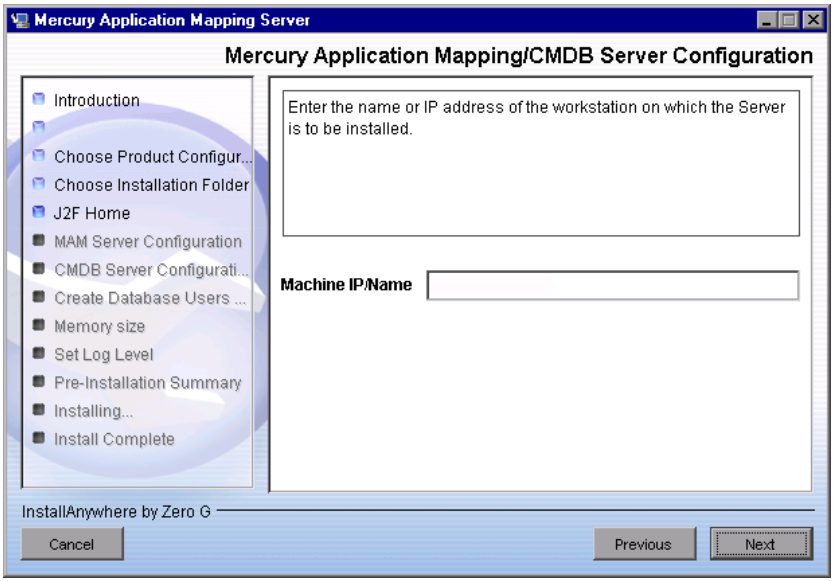

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

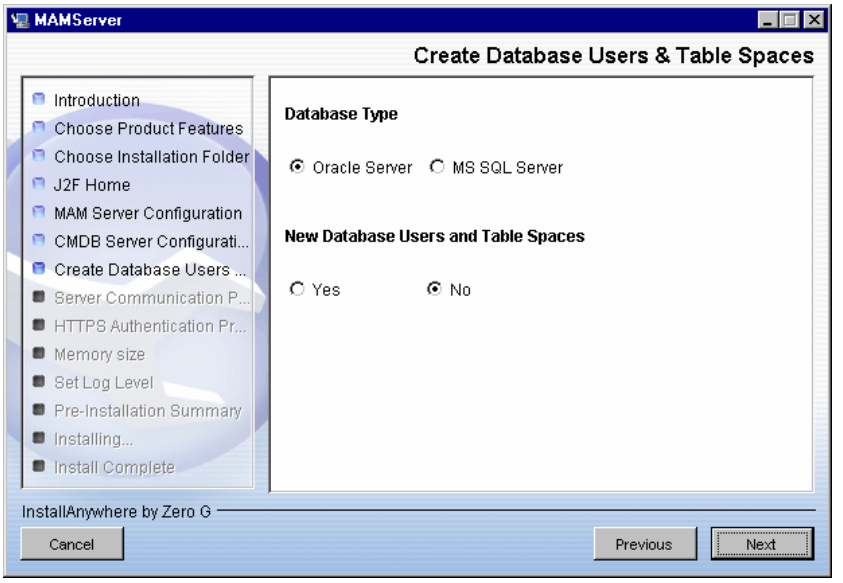
---

**6** Click **Next** to open the Mercury Application Mapping/CMDB Server Configuration dialog box.




Enter the IP address or the machine name of the workstation on which the Mercury Application Mapping and CMDB servers are to be installed in the **Machine IP/Name** box, or accept the existing entry.

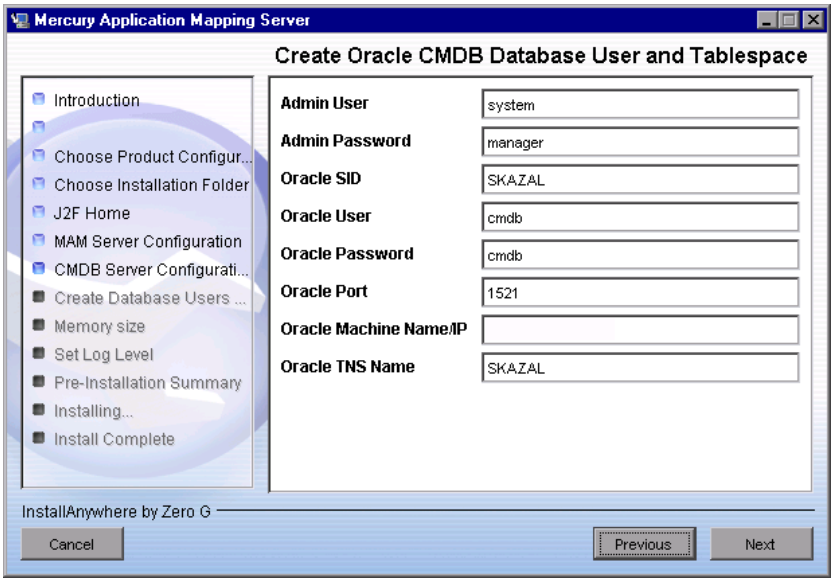
**7** Click **Next** to open the Create Database Users & Tablespaces dialog box.




Select **Oracle Server**.

Select **Yes** to create new users and tablespaces. Select **No** to use the existing users and tablespaces. For details on the difference between **Yes** and **No**, see “Database Users and Tablespaces” on page 18.

**8** Click **Next** to open the Create Oracle CMDB Database User & Tablespace dialog box.

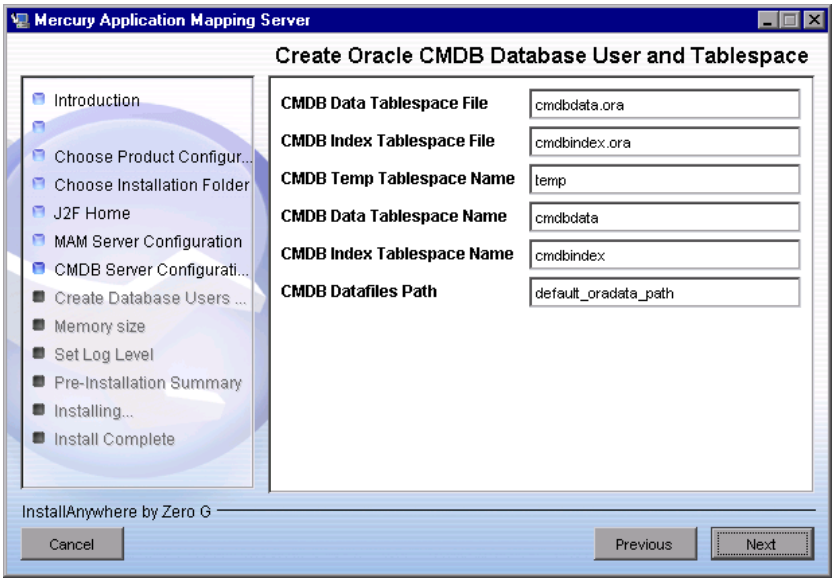



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the schema. | manager |
| Oracle SID | The schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the CMDB schema. | cmdb |
| Oracle Password | The password Mercury Application Mapping uses to connect to the CMDB schema. | cmdb |
| Oracle Port | The port Mercury Application Mapping uses to connect to the CMDB schema. | 1521 |

| Field | Description | Default Value |
|---|---|---|
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server. | |
| Oracle TNS Name | The alias of Oracle Server as specified in the **tnsnames.ora** client file. | SKAZAL |

**9** Click **Next** to open the Create Oracle CMDB Database User & Tablespace dialog box.

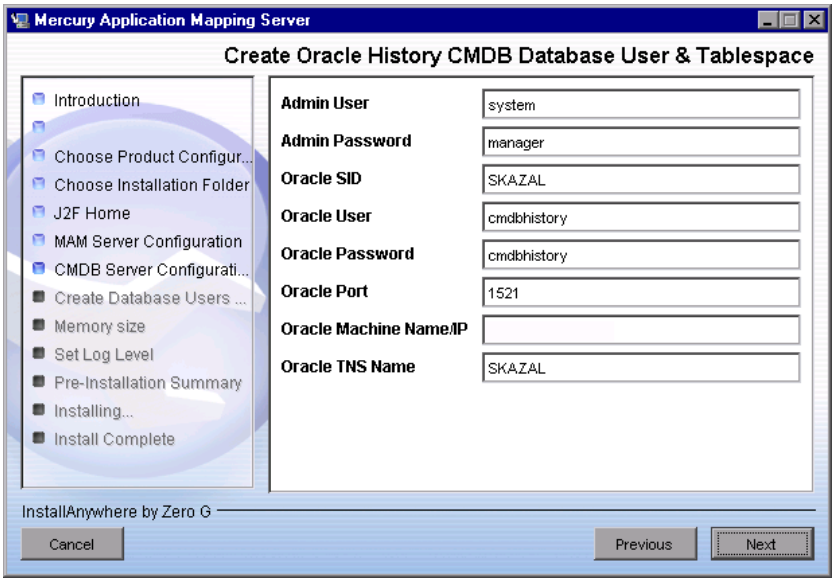



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB Oracle Data Tspace File | Name of the Mercury Application Mapping tablespace file. Only relevant if you chose to create the tablespaces. | cmdbdata.ora |
| CMDB Oracle Index Tspace File | Name of the Mercury Application Mapping index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbindex.ora |

| Field | Description | Default Value |
|---|---|---|
| CMDB Oracle Temp Tspace Name | Name of the Mercury Application Mapping temporary tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB Oracle Data Tspace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbdata |
| CMDB Oracle Index Tspace Name | Name of the Mercury Application Mapping index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbindex |
| CMDB Oracle Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change this location. | default_oradata_path |

**10** Click **Next** to open the Create Oracle History CMDB Database User & Tablespace dialog box.

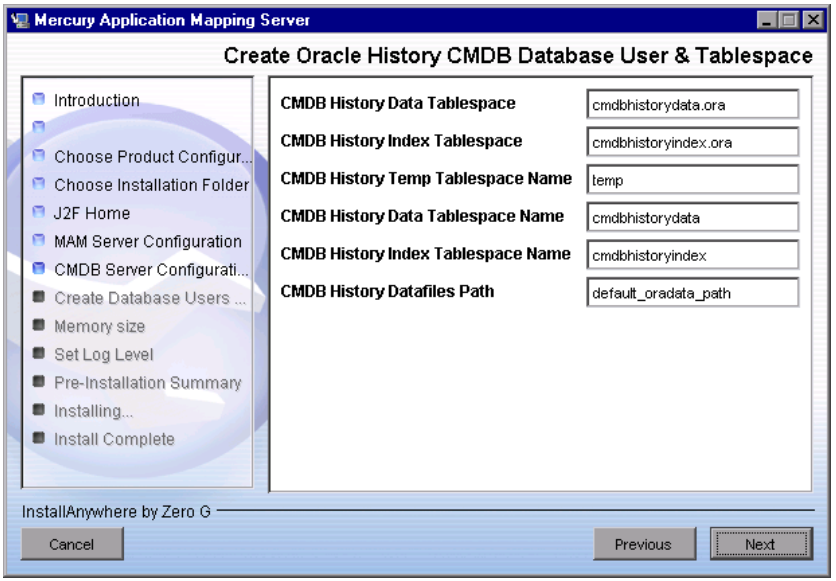



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the History schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the History schema. | manager |
| Oracle SID | The History schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Password | The password Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |

| Field | Description | Default Value |
|---|---|---|
| Oracle Port | The port Mercury Application Mapping uses to connect to the History schema. | 1521 |
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the History schema runs. | |
| Oracle TNS Name | The alias of Oracle Server as specified in **tnsnames.ora** client file. | SKAZAL |

**11** Click **Next** to open the next Create Oracle History CMDB Database User & Tablespace dialog box.

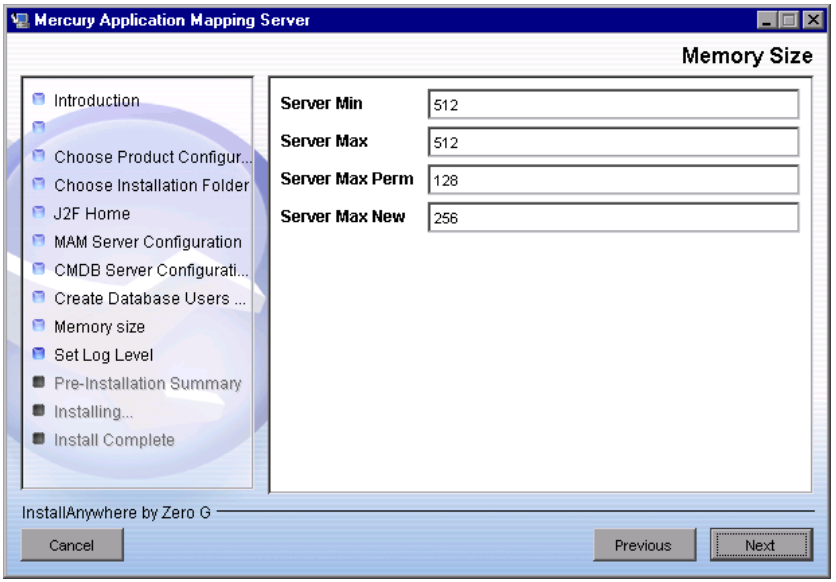


Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB History Oracle Data Tspace | Name of the Mercury Application Mapping History tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistorydata.ora |
| CMDB History Oracle Index Tspace | Name of the Mercury Application Mapping History index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistoryindex.ora |
| CMDB History Oracle Temp File Name | Name of the Mercury Application Mapping temporary History tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB History Oracle Data Tspace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistorydata |

| Field | Description | Default Value |
|---|---|---|
| CMDB History Oracle Index Tspace Name | Name of the Mercury Application Mapping History index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistoryindex |
| CMDB History Oracle Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change the location. | default_oradata_path |

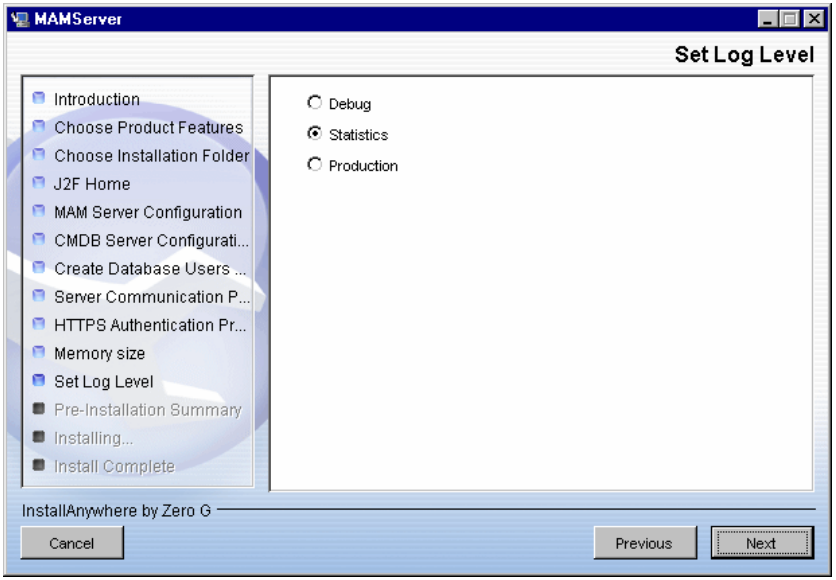
**12** Click **Next** to open the Memory Size dialog box.



Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**13** Click **Next** to open the Set Log Level dialog box.

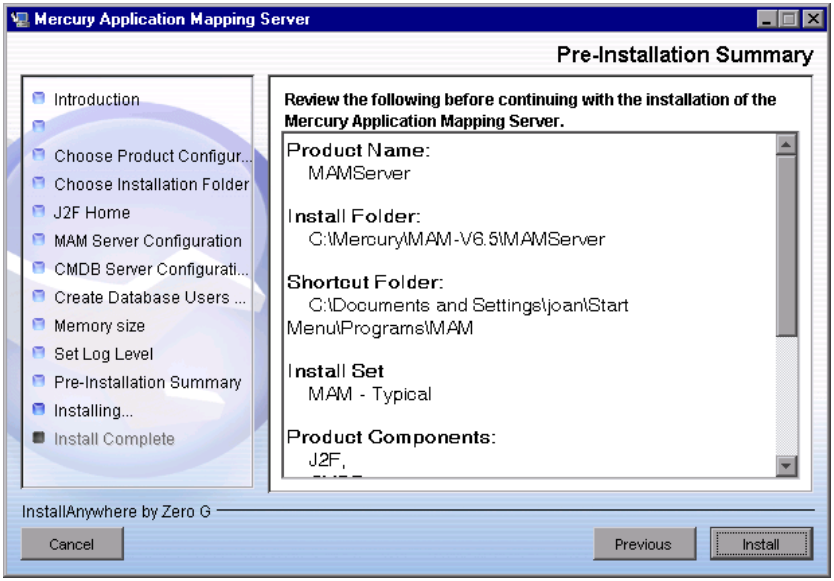


Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.
- **Production.** Only error messages are written to the log file.

  If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**14** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**15** If you are satisfied with the summary, click **Install**. A message is displayed indicating that the installation is currently being performed. When the installation is complete, Setup displays the Installation Completed dialog box.

**16** Click **Done**. Depending on which components are installed, Mercury Application Mapping shortcuts are added to the Windows Start menu.

# Installation Procedure with MS SQL Server

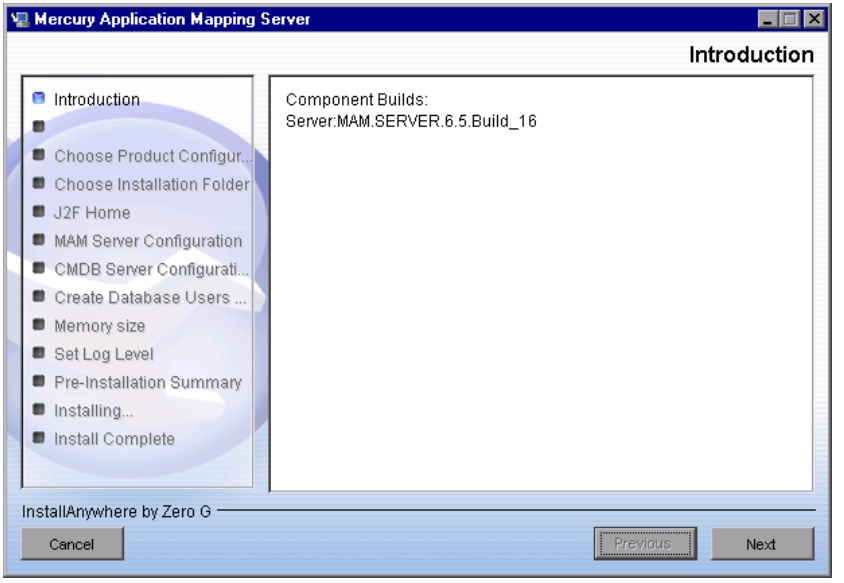
The following procedure explains how to install Mercury Application Mapping when the CMDB databases run on MS SQL Server.

**To install Mercury Application Mapping:**

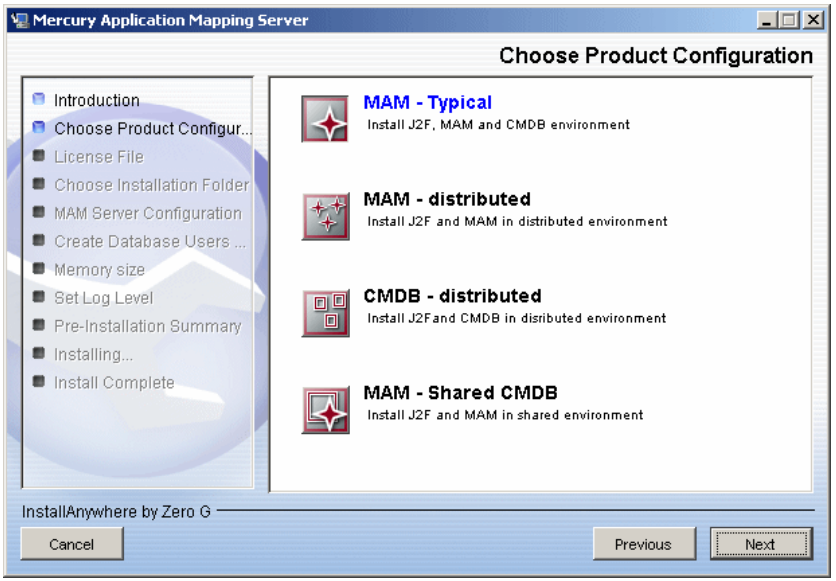
1 Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.

2 Double-click the **<CD-ROM root folder>\MAM66\MAMServer.exe** file.

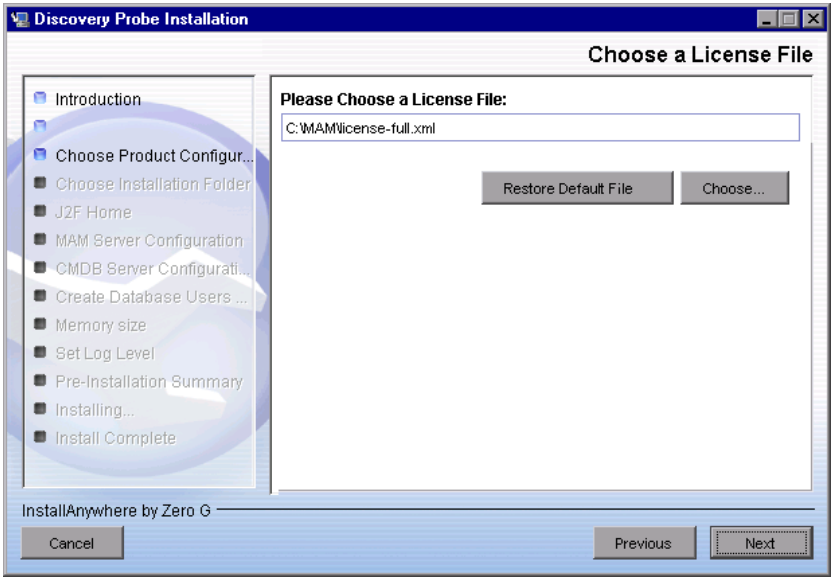
A progress bar is displayed. Once the initial process is completed, the Introduction dialog box is displayed.



**3** Click **Next** to open the Choose Product Configuration dialog box.

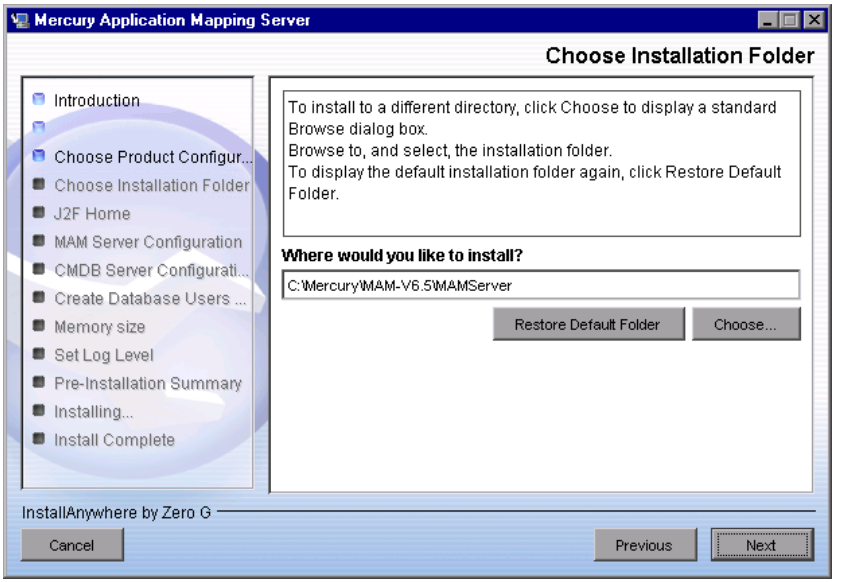



**4** Select the **MAM - Typical** icon and click **Next** to open the Choose a License File dialog box.



Enter the path to the file or browse to the file and select it. For details on licenses, see "License Configurations" on page 6.

**5** Click **Next** to open the Choose Installation Folder dialog box.



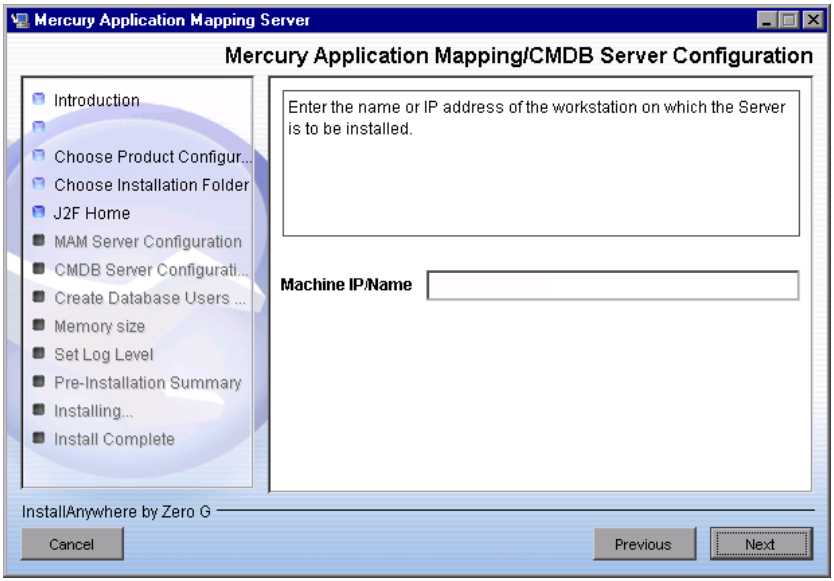

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

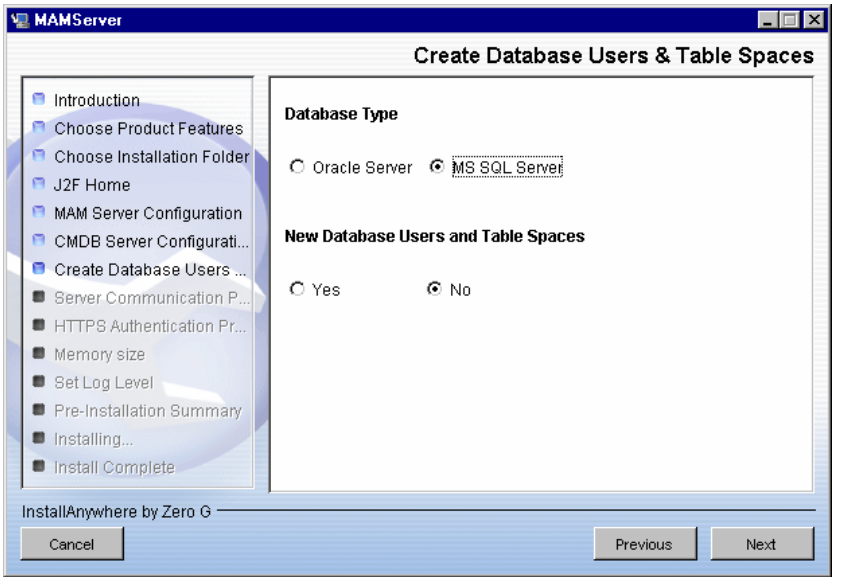
---

**6** Click **Next** to open the Mercury Application Mapping/CMDB Server Configuration dialog box.




Enter the IP address or the machine name of the workstation on which the Mercury Application Mapping and CMDB servers are installed in the **Machine IP/Name** box.

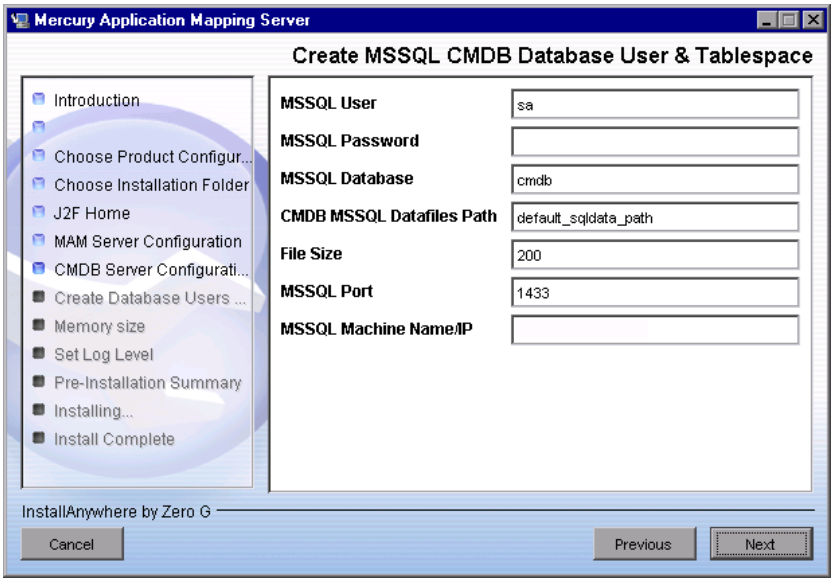
**7** Click **Next** to open the Create Database Users & Tablespaces dialog box.




Select **MS SQL Server**.

Select **Yes** to create new users and tablespaces. Select **No** to use the existing users and tablespaces. For details on the difference between **Yes** and **No**, see “Database Users and Tablespaces” on page 18.

**8** Click **Next** to open the Create MSSQL CMDB Database User & Tablespace dialog box.

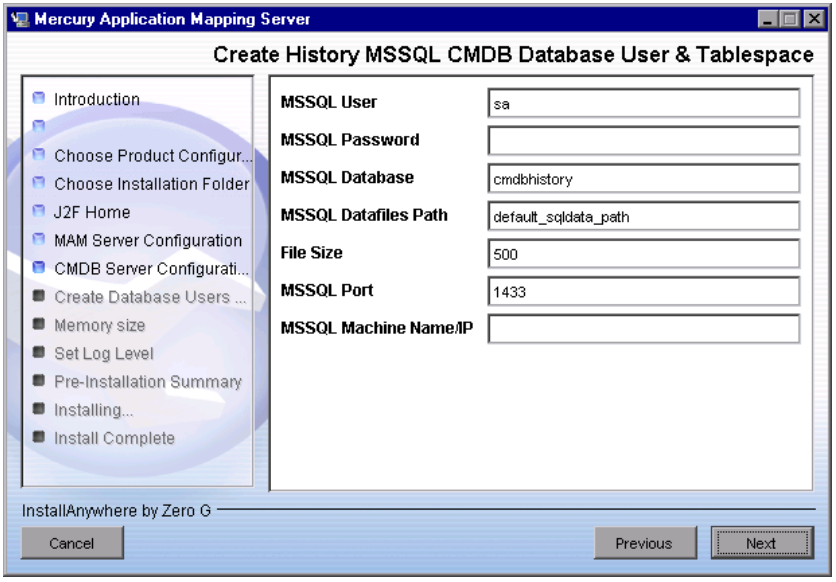



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| MSSQL User | The user name of the MS SQL Server login account. The account must have CREATE DATABASE permissions. To connect to an existing database, the login account with which you are connecting must be mapped to the dbo user in the database. | sa |
| MSSQL Password | The password of the MS SQL Server login account. | |
| MSSQL Database | The name of the CMDB database to be created or the name of an existing CMDB database. | cmdb |
| CMDB MSSQL Datafiles Path | The location of the CMDB database data files. Change the default to create the files at a non-default location. | default_sqldata_path |

| Field | Description | Default Value |
|---|---|---|
| File Size | The initial file size of the CMDB database. It is recommended to increase this value according to available space and expected deployment. Data files are created with **file growth** switched on; if you do not want to use this option, enter at least 1.5 GB in this parameter and switch off **file growth** after setup. | 200 |
| MSSQL Port | The port number for connecting to MS SQL Server. | 1433 |
| MSSQL Machine Name/IP | The name or IP address of MS SQL Server on which the CMDB database runs. | |

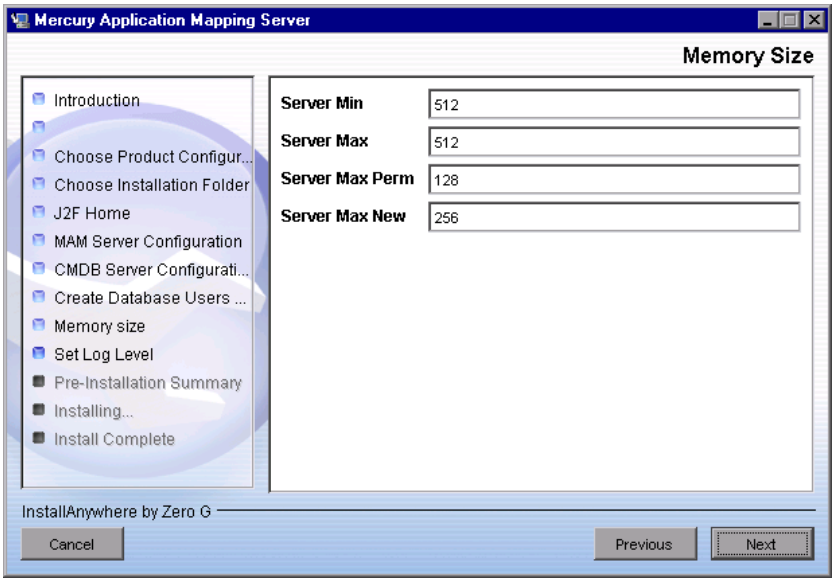
**9** Click **Next** to open the Create History MSSQL CMDB Database User & Tablespace dialog box.



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| MSSQL User | The user name of the MS SQL Server login account. The account must have CREATE DATABASE permissions. To connect to an existing History database, the login account with which you are connecting must be mapped to the dbo user in the History database. | sa |
| MSSQL Password | The password of the MS SQL Server login account. | |
| MSSQL Database | The name of the History database to be created or the name of an existing History database. | cmdbhistory |
| CMDB MSSQL Datafiles Path | The location of the database data files. To create the files at a non-default location, enter the complete path. | default_sqldata_path |
| File Size | The initial file size of the History database. It is recommended to increase this value according to available space and expected deployment. Data files are created with **file growth** switched on; if you do not want to use this option, enter at least 1.5 GB in this parameter and switch off **file growth** after setup. | 500 |
| MSSQL Port | The port number for connecting to the History database. | 1433 |
| MSSQL Machine Name/IP | The name or IP address of MS SQL Server on which the CMDB database runs. | |

**10** Click **Next** to open the Memory Size dialog box.

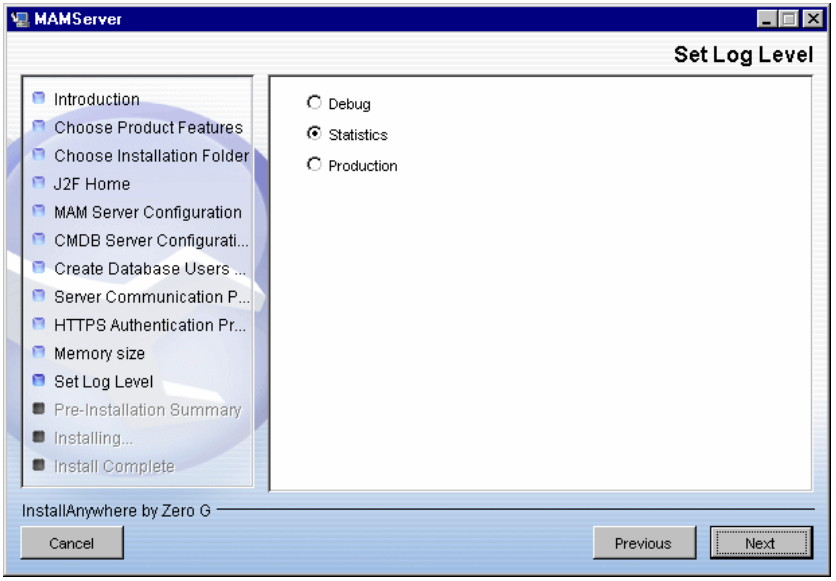



Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |

| Field | Description | Default Size |
|---|---|---|
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**11** Click **Next** to open the Set Log Level dialog box.



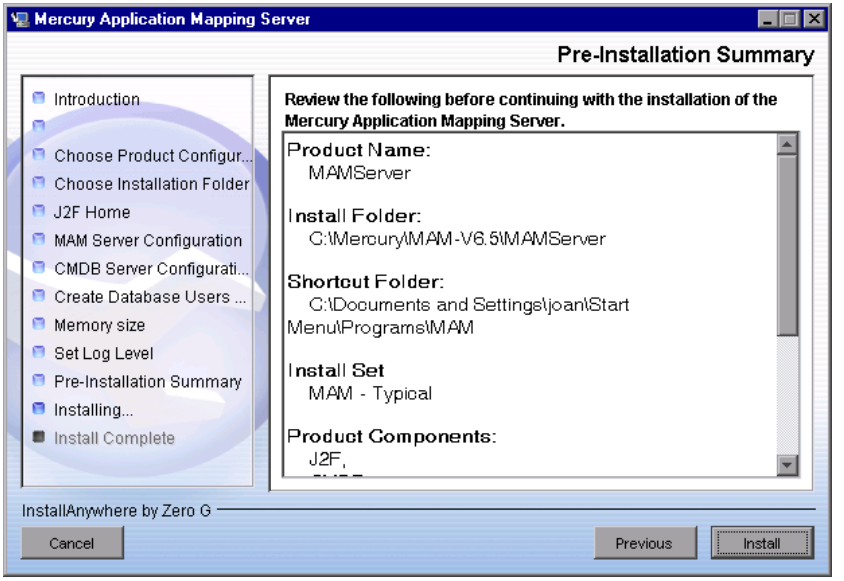

Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.

➤ **Production.** Only error messages are written to the log file.

If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**12** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**13** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When the installation is complete, the Installation Completed dialog box is displayed.

**14** Click **Done**. Depending on which components are installed, Mercury Application Mapping shortcuts are added to the Windows Start menu.

# 3

# Installing the Server in a Distributed Deployment

This chapter explains how to install the Mercury Application Mapping server, when the CMDB server is installed on a separate machine. For details on installing the CMDB server, see Chapter 4, "Installing the CMDB Server in a Distributed Deployment."


| This chapter describes: | On page: |
|---|---|
| Installation Workflow | 54 |
| Installing the Server in a Distributed Deployment with Oracle Server | 55 |
| Installing the Server in a Distributed Deployment with Microsoft MS SQL Server | 69 |

# Installation Workflow

---

**Note:** It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."

---

The distributed deployment configuration of Mercury Application Mapping uses two server machines, one machine for the Mercury Application Mapping server and one machine for the CMDB server. During installation on both machines, the JBoss application server (J2F) is also installed.

You can deploy Mercury Application Mapping to run on Oracle Server or Microsoft MS SQL Server.

---

**Note:** You can create CMDB database users and tablespaces during the Mercury Application Mapping server installation and also during the CMDB server installation. However, only one database definition is required. It is recommended, therefore, to provide database details during the Mercury Application Mapping server installation and to create the users and tablespaces during the CMDB server installation.

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For details on using the installation wizard, see "Using the Installation Wizard" on page 10.

# Installing the Server in a Distributed Deployment with Oracle Server

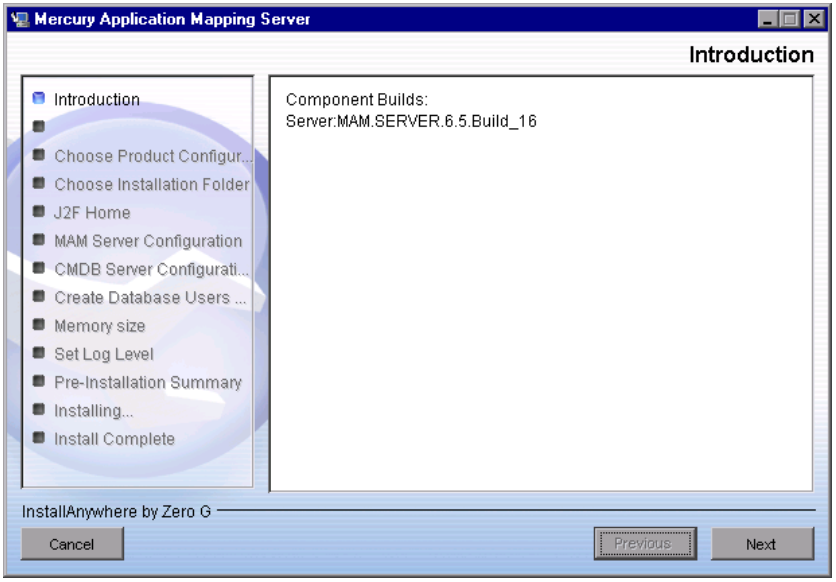
The following procedure explains how to install the Mercury Application Mapping server (and the JBoss application server—J2F) on the Mercury Application Mapping Server machine, when the CMDB databases run on Oracle Server. This is the first part of the procedure. For the second part of the procedure, see "Installing the CMDB Server in a Distributed Deployment with Oracle Server" on page 83.

**To install the Mercury Application Mapping server:**

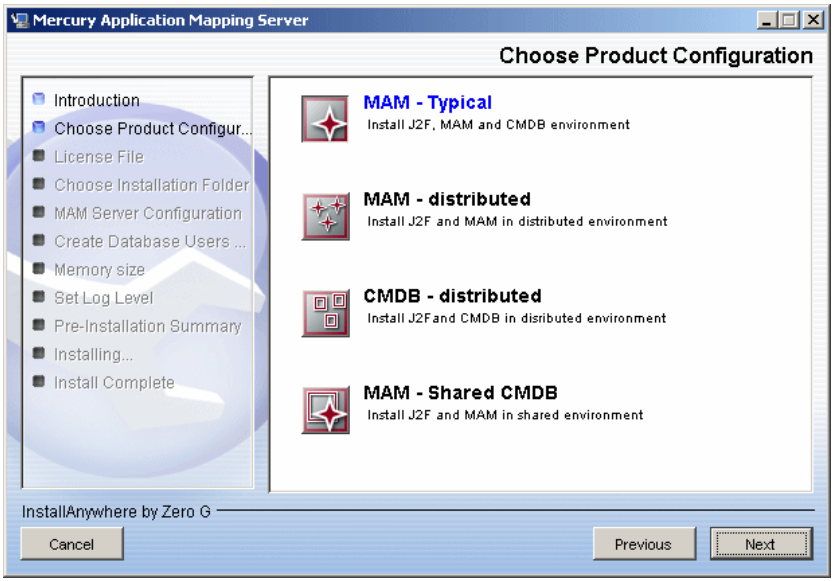
1 Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.

2 Double-click the **<CD-ROM root folder>\MAM66\MAMServer.exe** file.

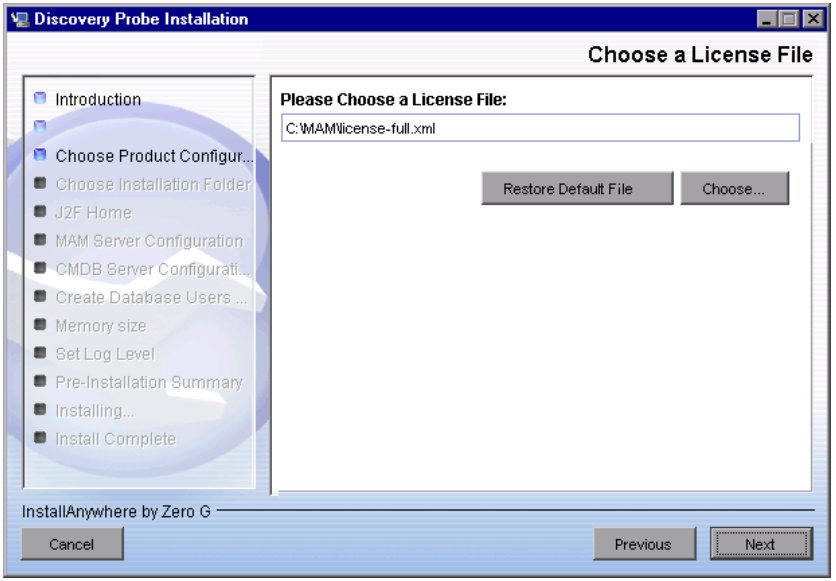
A progress bar is displayed. Once the initial process is completed, the Introduction dialog box is displayed.



**3** Click **Next** to open the Choose Product Configuration dialog box.

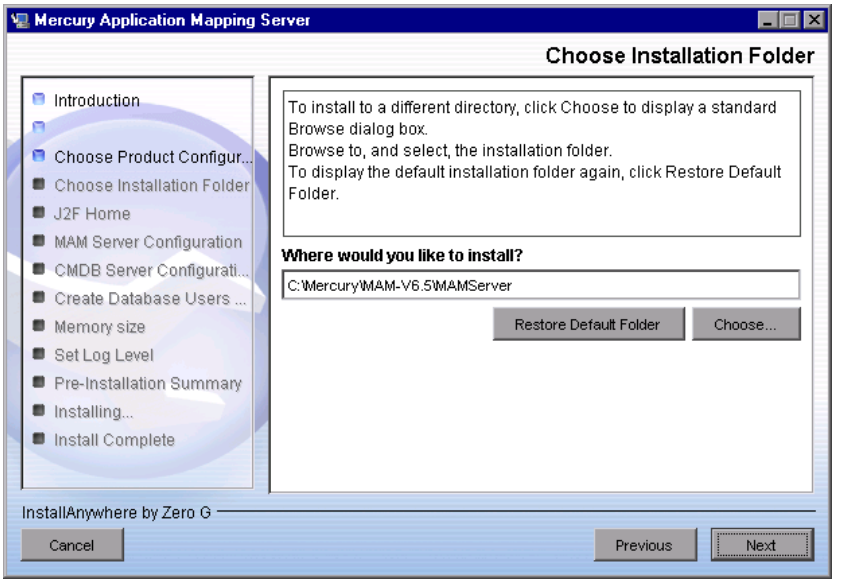



**4** Select the **MAM - Distributed** icon and click **Next** to open the Choose a License File dialog box.



Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

**5** Click **Next** to open the Choose Installation Folder dialog box.



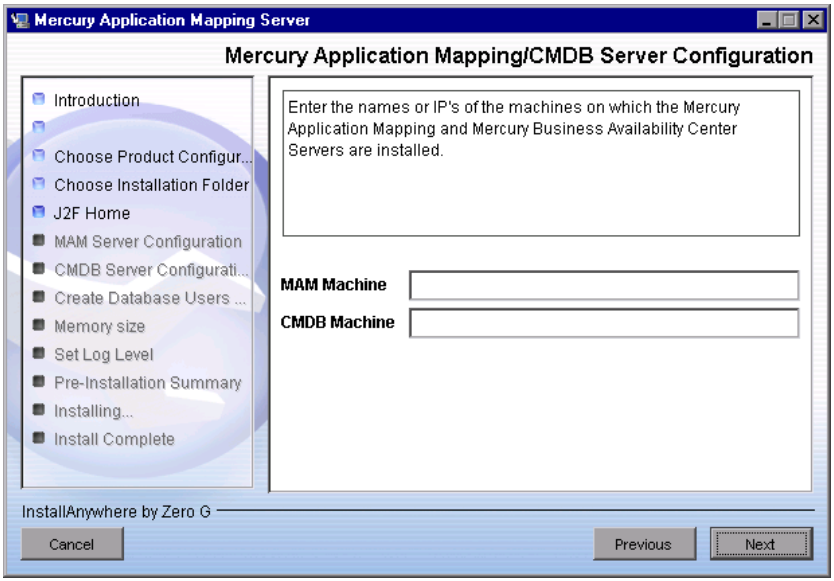

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

---

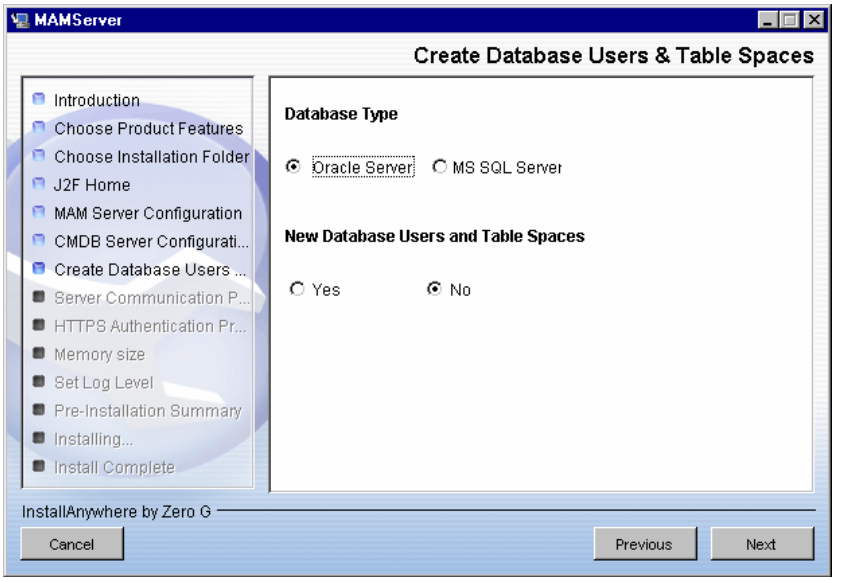
**6** Click **Next** to open the Mercury Application Mapping/CMDB Server Configuration dialog box.




Accept the default values or make changes to the following fields:

- **MAM Machine.** Enter the machine name or IP address of the machine on which you are installing the Mercury Application Mapping server.
- **CMDB Machine.** Enter the machine name or IP address of the machine on which you are installing the CMDB server.

**7** Click **Next** to open the Create Database Users & Tablespaces dialog box.

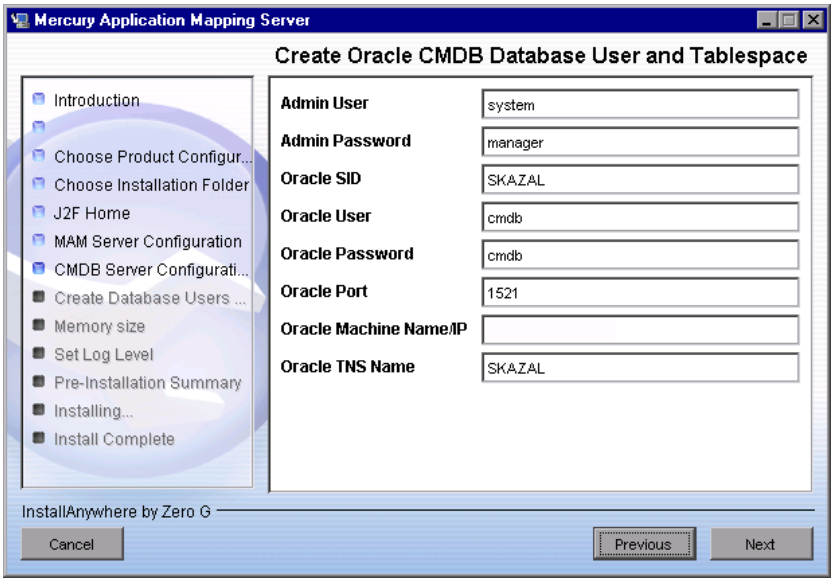



Select **Oracle Server**.

Select **No** to use existing users and tablespaces. It is recommended to create users and tablespaces during the installation on the CMDB server machine.

For details on the difference between **Yes** and **No**, see “Database Users and Tablespaces” on page 18.

**8** Click **Next** to open the Create Oracle CMDB Database User & Tablespace dialog box.

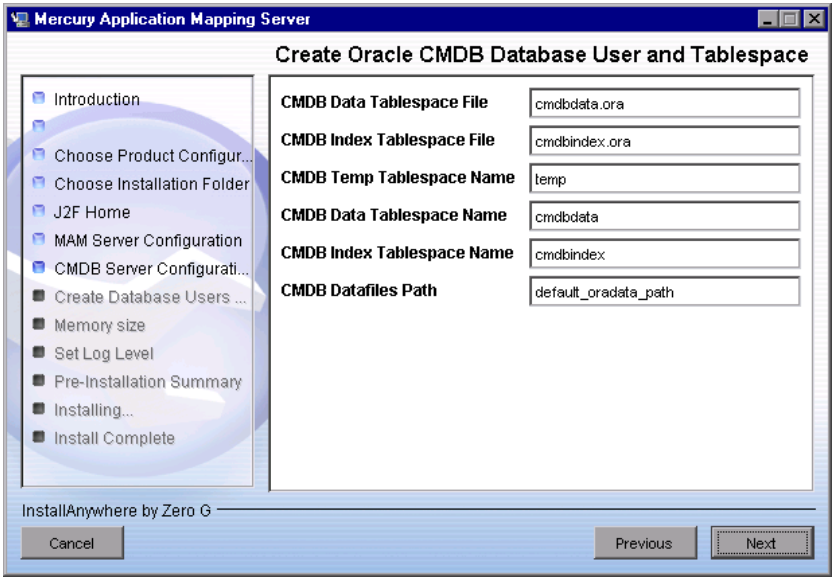



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the schema. | manager |
| Oracle SID | The schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the CMDB schema. | cmdb |
| Oracle Password | The password Mercury Application Mapping uses to connect to the CMDB schema. | cmdb |
| Oracle Port | The port Mercury Application Mapping uses to connect to the CMDB schema. | 1521 |

| Field | Description | Default Value |
|---|---|---|
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the CMDB schema runs. | |
| Oracle TNS Name | The alias of Oracle Server as specified in the **tnsnames.ora** client file. | SKAZAL |

**9** Click **Next** to open the Create Oracle CMDB Database User & Tablespace dialog box.

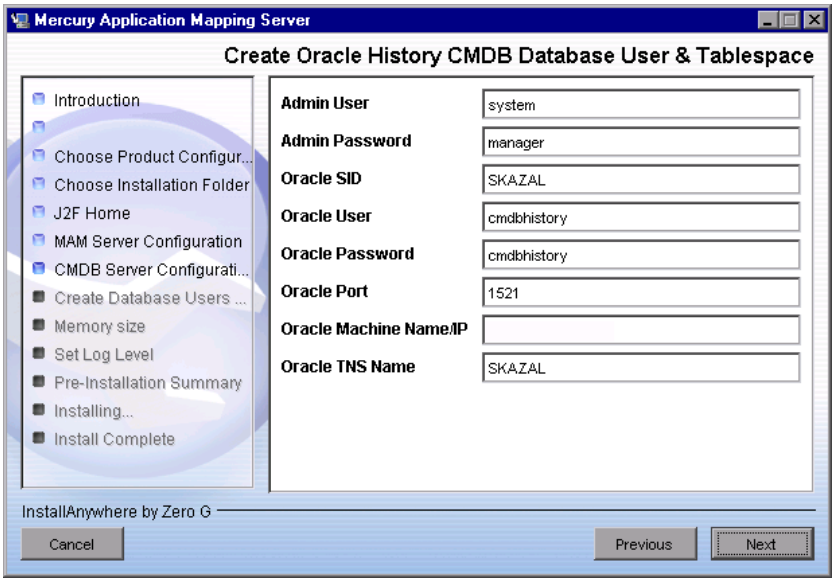



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB Oracle Data Tspace File | Name of the Mercury Application Mapping tablespace file. Only relevant if you chose to create the tablespaces. | cmdbdata.ora |
| CMDB Oracle Index Tspace File | Name of the Mercury Application Mapping index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbindex.ora |

| Field | Description | Default Value |
|---|---|---|
| CMDB Oracle Temp Tspace Name | Name of the Mercury Application Mapping temporary tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB Oracle Data Tspace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbdata |
| CMDB Oracle Index Tspace Name | Name of the Mercury Application Mapping index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbindex |
| CMDB Oracle Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change this location. | default_oradata_path |

**10** Click **Next** to open the Create Oracle History CMDB Database User & Tablespace dialog box.

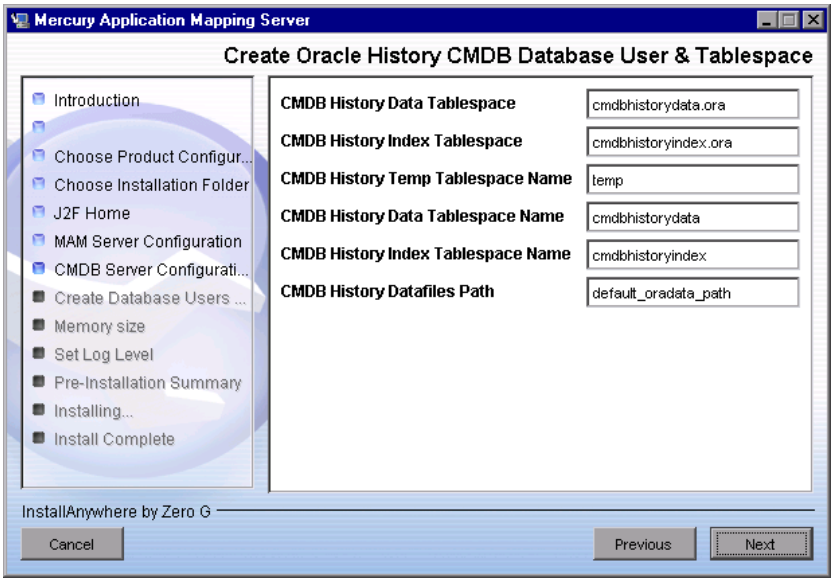



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the History schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the History schema. | manager |
| Oracle SID | The History schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Password | The password Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |

| Field | Description | Default Value |
|---|---|---|
| Oracle Port | The port Mercury Application Mapping uses to connect to the History schema. | 1521 |
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the History schema runs. | |
| Oracle TNS Name | The alias of Oracle Server as specified in **tnsnames.ora** client file. | SKAZAL |

**11** Click **Next** to open the next Create Oracle History CMDB Database User & Tablespace dialog box.

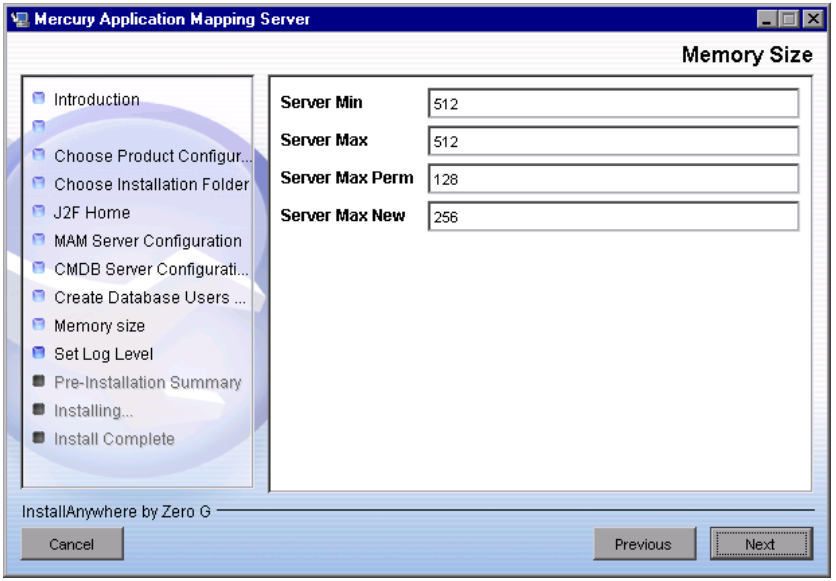


Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB History Oracle Data Tspace | Name of the Mercury Application Mapping History tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistorydata.ora |
| CMDB History Oracle Index Tspace | Name of the Mercury Application Mapping History index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistoryindex.ora |
| CMDB History Oracle Temp File Name | Name of the Mercury Application Mapping temporary History tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB History Oracle Data Tspace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistorydata |

| Field | Description | Default Value |
|---|---|---|
| CMDB History Oracle Index Tspace Name | Name of the Mercury Application Mapping History index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistoryindex |
| CMDB History Oracle Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change the location. | default_oradata_path |

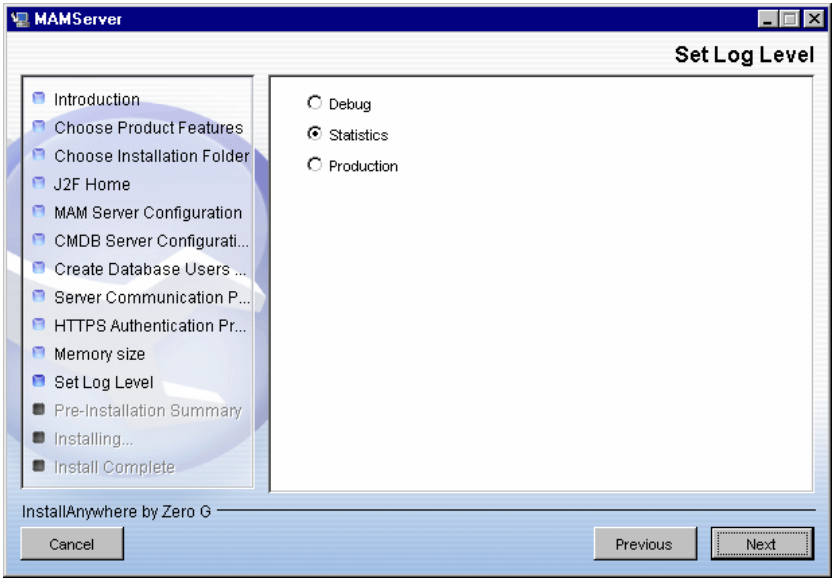
**12** Click **Next** to open the Memory Size dialog box.



Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**13** Click **Next** to open the Set Log Level dialog box:

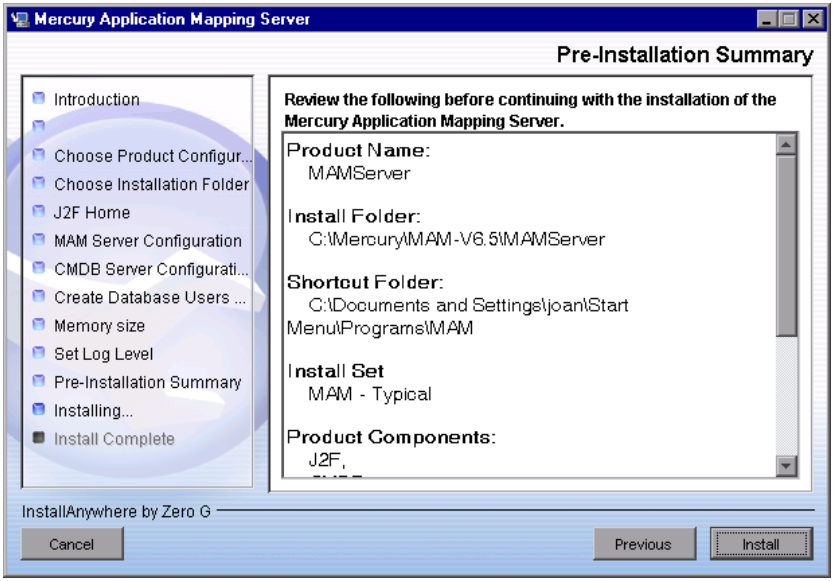


Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.
- **Production.** Only error messages are written to the log file.

  If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**14** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**15** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When installation is complete, the Installation Completed dialog box is displayed.

**16** Click **Done**. Depending on which components are installed, Mercury Application Mapping shortcuts are added to the Windows Start menu.

# Installing the Server in a Distributed Deployment with Microsoft MS SQL Server

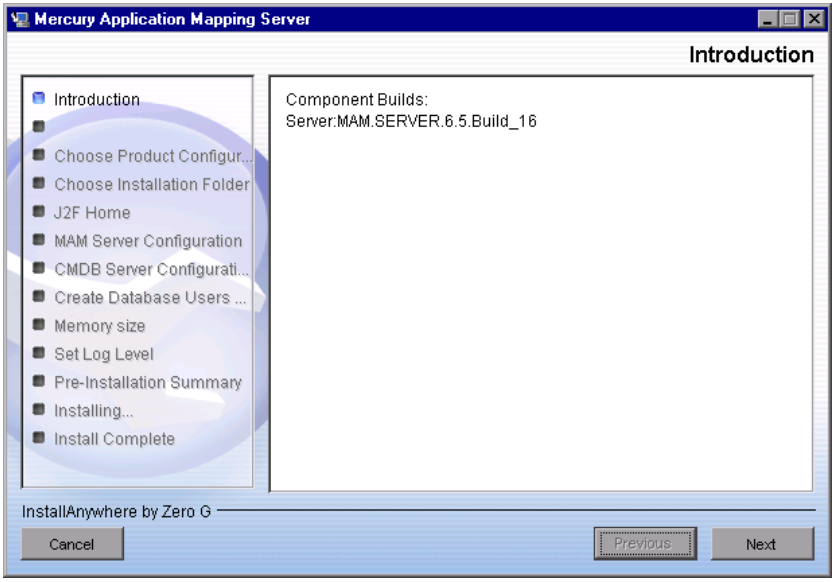
The following procedure explains how to install the Mercury Application Mapping server (and the JBoss application server—J2F) on the Mercury Application Mapping server machine, when the CMDB databases run on Microsoft MS SQL Server. This is the first part of the procedure. For the second part of the procedure, see "Installing the CMDB Server in a Distributed Deployment with Microsoft MS SQL Server" on page 97.

**To install the Mercury Application Mapping server:**

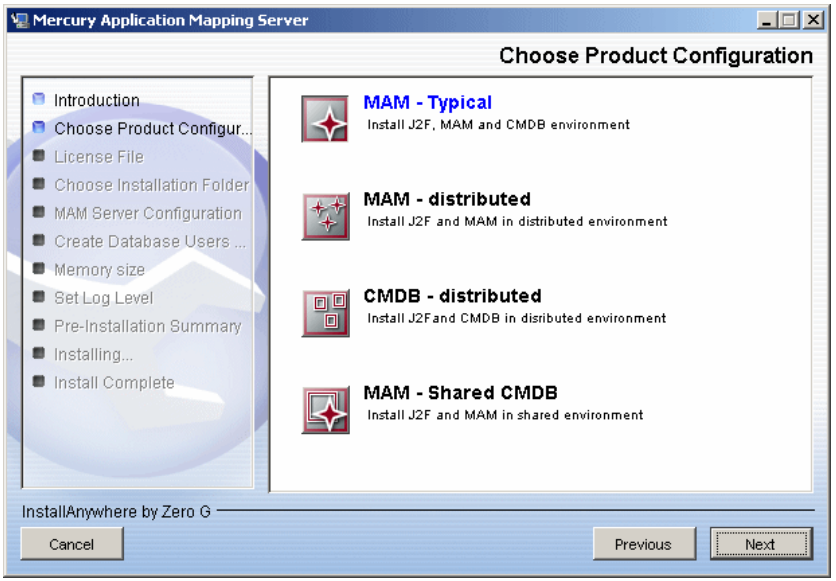
1 Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.

2 Double-click the **<CD-ROM root folder>\MAM66\MAMServer.exe** file.

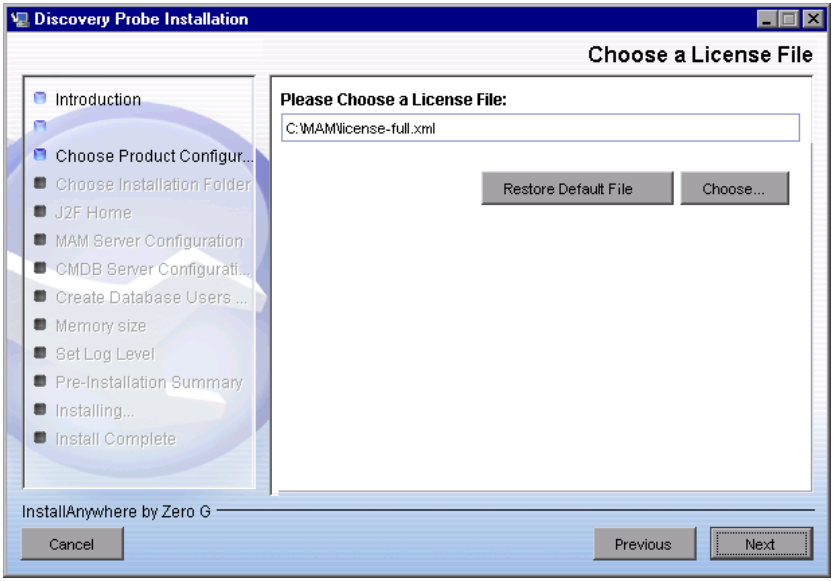
A progress bar is displayed. Once the initial process is completed, the Introduction dialog box is displayed.



**3** Click **Next** to open the Choose Product Configuration dialog box.

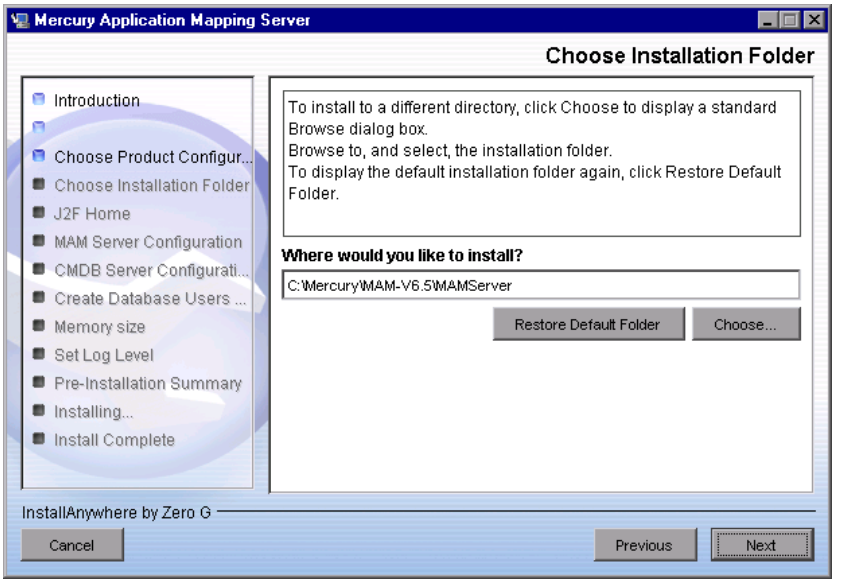



**4** Select the **MAM – Distributed** icon and click **Next** to open the Choose a License File dialog box.



Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

**5** Click **Next** to open the Choose Installation Folder dialog box.



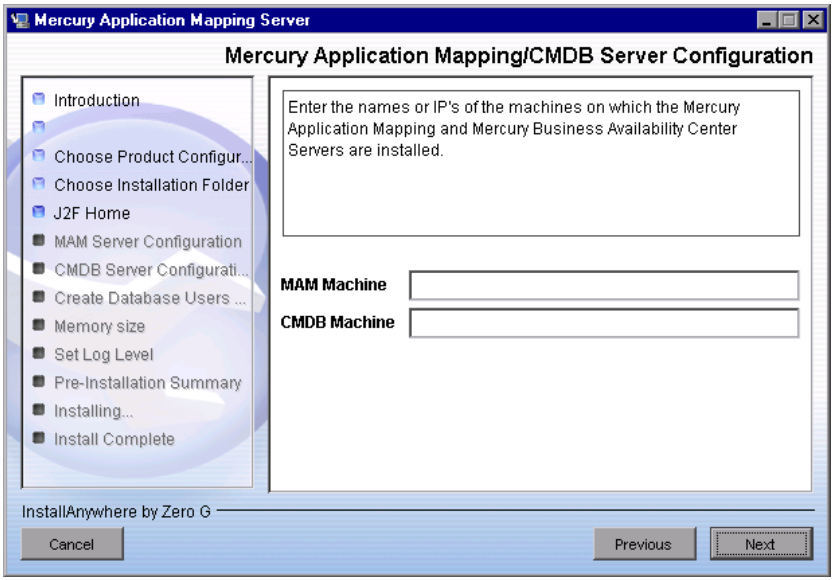

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

---

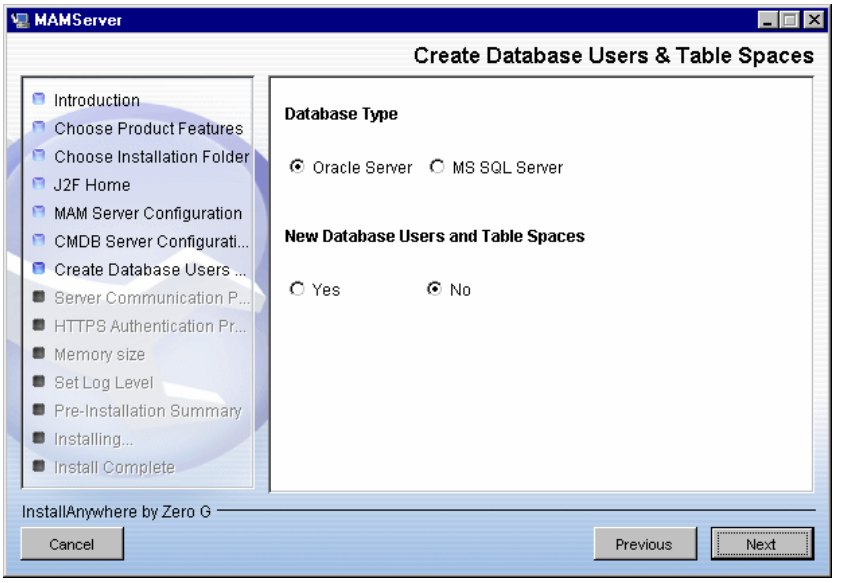
**6** Click **Next** to open the Mercury Application Mapping/CMDB Server Configuration dialog box.




Accept the default values or make changes to the following fields:

- **MAM Machine.** Enter the machine name of the machine on which you are installing the Mercury Application Mapping server.
- **CMDB Machine.** Enter the machine name of the machine on which you are installing the CMDB server.

**7** Click **Next** to open the Create Database Users & Tablespaces dialog box.

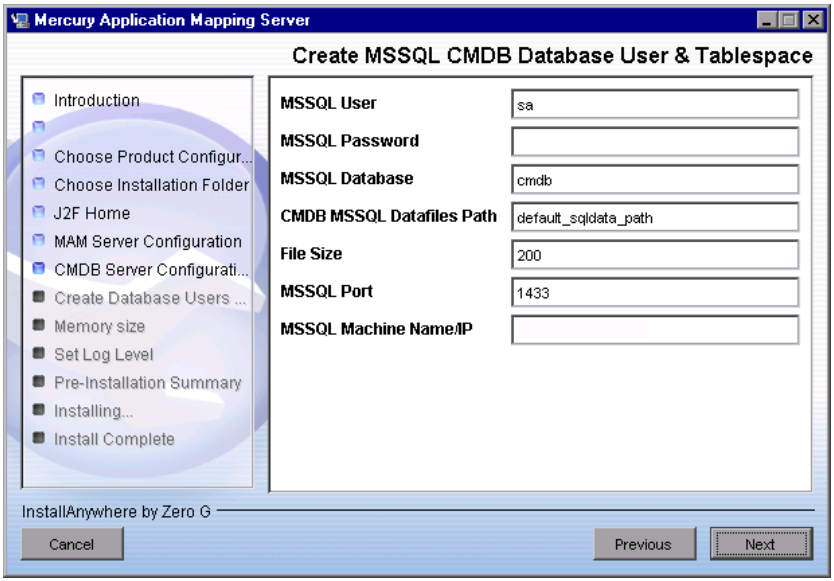



Select **MS SQL Server**.

Select **No** to use existing users and tablespaces. It is recommended to create users and tablespaces during the installation on the CMDB server.

For details on the difference between **Yes** and **No**, see “Database Users and Tablespaces” on page 18.

**8** Click **Next** to open the Create MSSQL CMDB Database User & Tablespace dialog box.

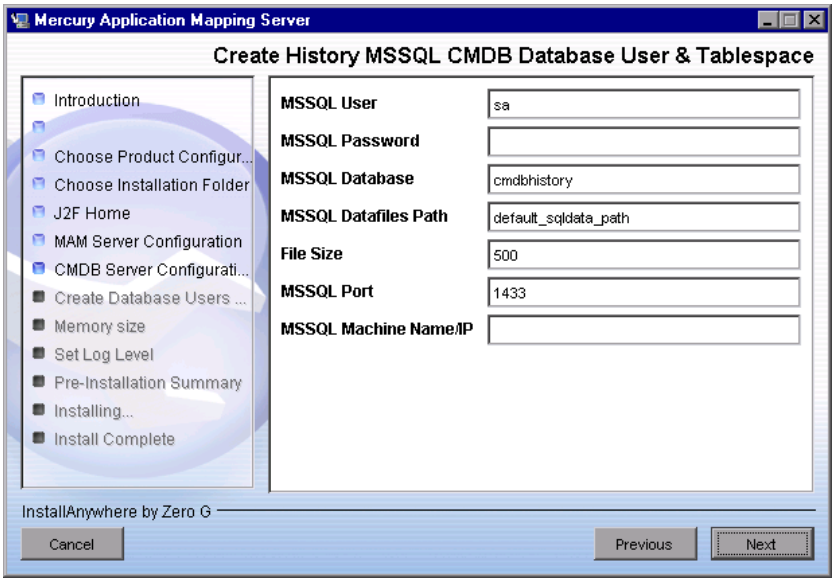



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| MSSQL User | The user name of the MS SQL Server login account. The account must have CREATE DATABASE permissions. To connect to an existing database, the login account with which you are connecting must be mapped to the dbo user in the database. | sa |
| MSSQL Password | The password of the MS SQL Server login account. | |
| MSSQL Database | The name of the CMDB database to be created or the name of an existing CMDB database. | cmdb |
| CMDB MSSQL Datafiles Path | The location of the database data files. Change the default to create the files at a non-default location. | default_sqldata_path |

| Field | Description | Default Value |
|---|---|---|
| File Size | The initial file size of the CMDB database. It is recommended to increase this value according to available space and expected deployment. Data files are created with **file growth** switched on; if you do not want to use this option, enter at least 1.5 GB in this parameter and switch off **file growth** after setup. | 200 |
| MSSQL Port | The port number for connecting to MS SQL Server. | 1433 |
| MSSQL Machine Name/IP | The name or IP address of MS SQL Server on which the CMDB database runs. | |

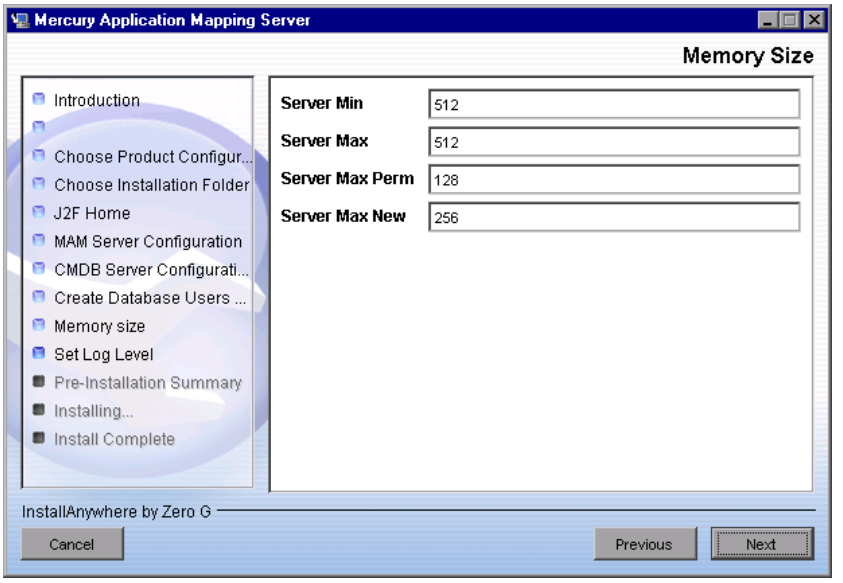
**9** Click **Next** to open the Create History MSSQL CMDB Database User & Tablespace dialog box.



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| MSSQL User | The user name of the MS SQL Server login account. The account must have CREATE DATABASE permissions. To connect to an existing History database, the login account with which you are connecting must be mapped to the dbo user in the History database. | sa |
| MSSQL Password | The password of the MS SQL Server login account. | |
| MSSQL Database | The name of the History database to be created or the name of an existing History database. | cmdbhistory |
| CMDB MSSQL Datafiles Path | The location of the database data files. To create the files at a non-default location, enter the complete path. | default_sqldata _path |
| File Size | The initial file size of the History database. It is recommended to increase this value according to available space and expected deployment. Data files are created with **file growth** switched on; if you do not want to use this option, enter at least 1.5 GB in this parameter and switch off **file growth** after setup. | 500 |
| MSSQL Port | The port number for connecting to the History database. | 1433 |
| MSSQL Machine Name/IP | The name or IP address of MS SQL Server on which the CMDB database runs. | |

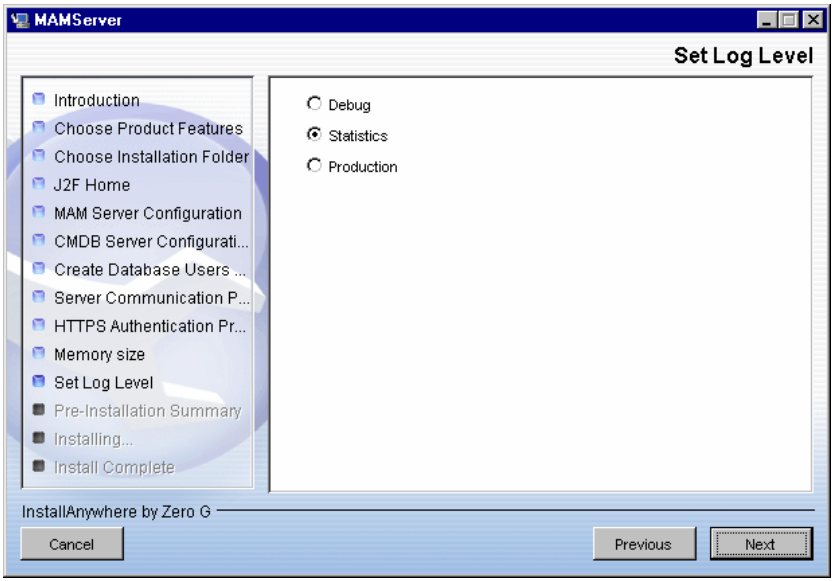
**10** Click **Next** to open the Memory Size dialog box.




Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**11** Click **Next** to open the Set Log Level dialog box:

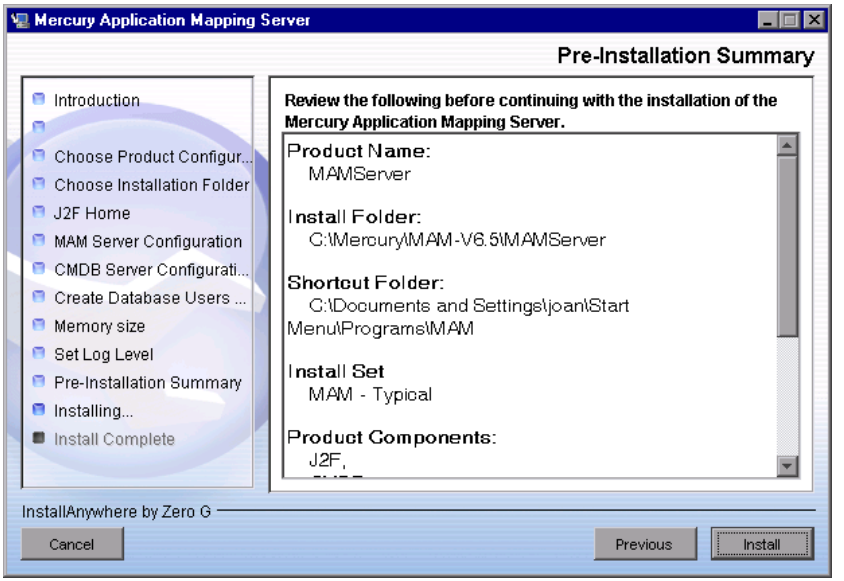



Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.
- **Production.** Only error messages are written to the log file.

  If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**12** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**13** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When installation is complete, the Installation Completed dialog box is displayed.

**14** Click **Done**. Depending on which components are installed, Mercury Application Mapping shortcuts are added to the Windows Start menu.

# 4

# Installing the CMDB Server in a Distributed Deployment

This chapter explains how to install the CMDB server, when the Mercury Application Mapping server is installed on a separate machine. For details on installing the Mercury Application Mapping server, see Chapter 3, "Installing the Server in a Distributed Deployment."


| This chapter describes: | On page: |
|---|---|
| Installation Workflow | 82 |
| Installing the CMDB Server in a Distributed Deployment with Oracle Server | 83 |
| Installing the CMDB Server in a Distributed Deployment with Microsoft MS SQL Server | 97 |

# Installation Workflow

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**Note:** It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."

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The distributed deployment configuration of Mercury Application Mapping uses two server machines, one machine for the Mercury Application Mapping server and one machine for the CMDB server. On both machines, the JBoss application server (J2F) is also installed.

You can deploy Mercury Application Mapping to run on Oracle Server or Microsoft MS SQL Server.

---

**Note:** You can create CMDB database users and tablespaces during Mercury Application Mapping installation and also during the CMDB server installation. However, only one database definition is required. It is recommended, therefore, to provide database details during the Mercury Application Mapping server installation and to create the users and tablespaces during the CMDB server installation.

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For details on using the installation wizard, see "Using the Installation Wizard" on page 10.

# Installing the CMDB Server in a Distributed Deployment with Oracle Server

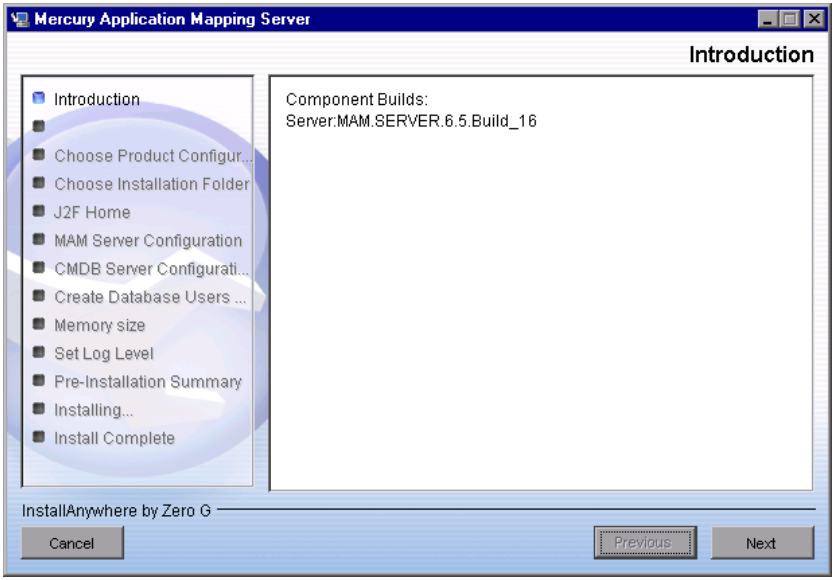
The following procedure explains how to install the CMDB server (and the JBoss application server—J2F) on the CMDB server machine, when the CMDB databases run on Oracle Server. This is the second part of the procedure. For the first part of the procedure, see "Installing the Server in a Distributed Deployment with Oracle Server" on page 55.

**To install the CMDB server:**

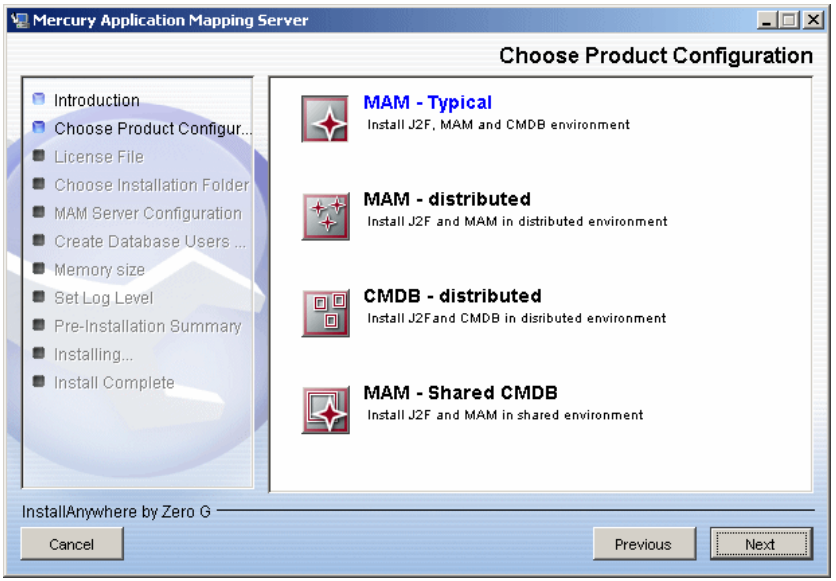
1 Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.

2 Double-click the **<CD-ROM root folder>\MAM66\MAMServer.exe** file.

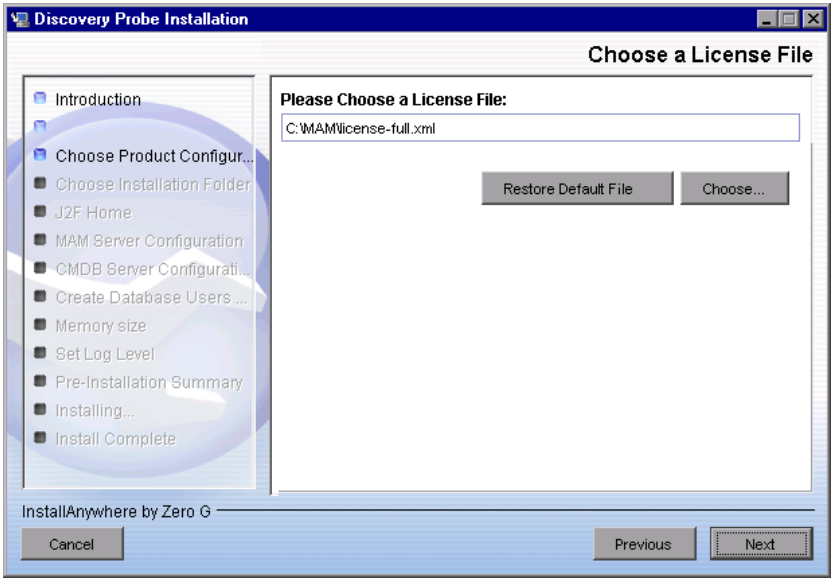
A progress bar is displayed. Once the initial process is completed, the Introduction dialog box is displayed.



**3** Click **Next** to open the Choose Product Configuration dialog box.

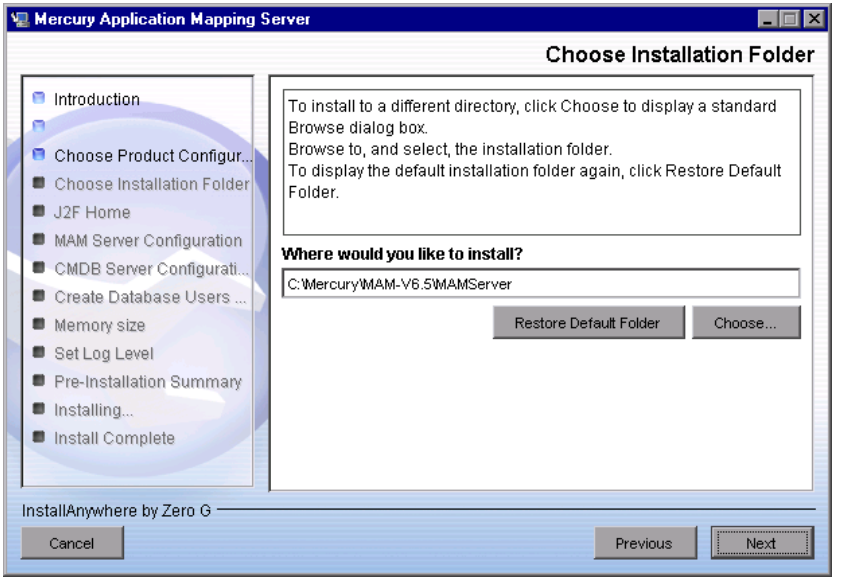



**4** Select the **CMDB – Distributed** icon and click **Next** to open the Choose a License File dialog box.



Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

***5*** Click **Next** to open the Choose Installation Folder dialog box.



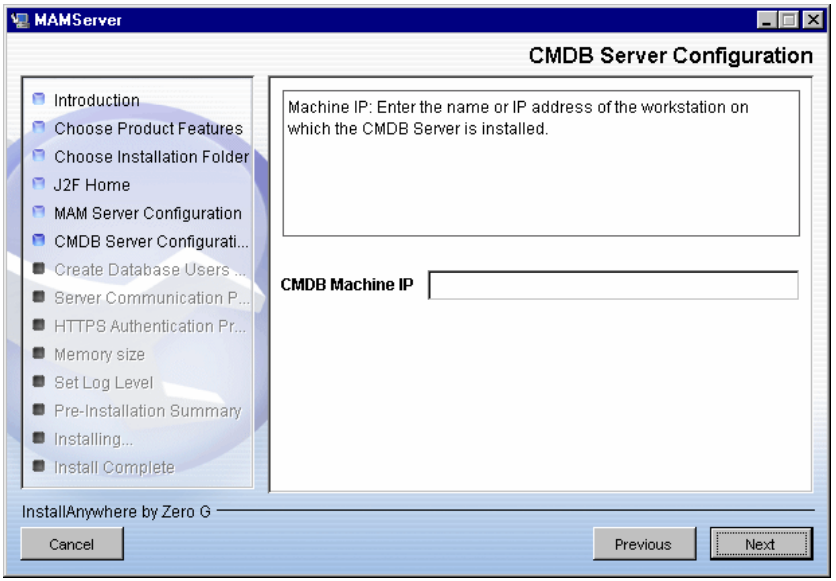

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

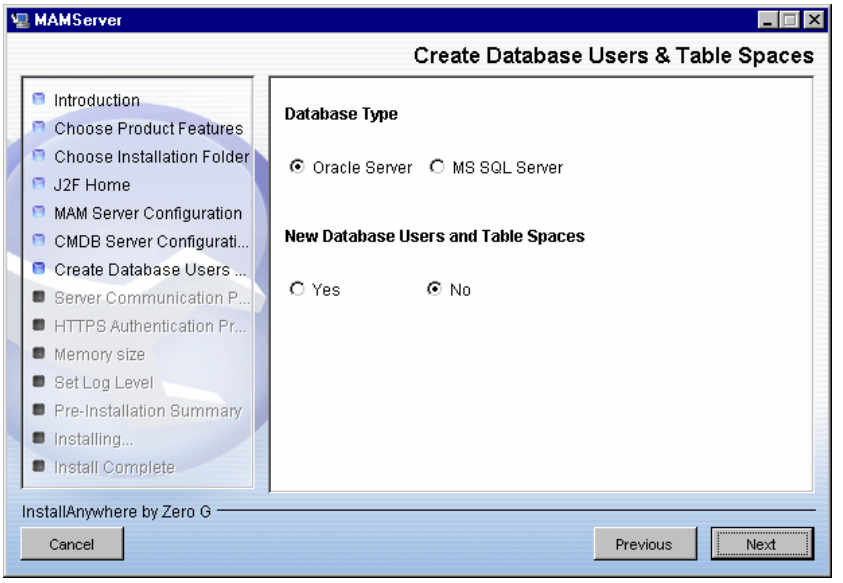
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**6** Click **Next** to open the CMDB Server Configuration dialog box.




The default CMDB machine IP in the **CMDB Machine IP** box is the address you entered during installation of the Mercury Application Mapping server. Accept the default entry, or enter the host name or IP address of the machine on which you are installing the CMDB server. For details, see step 6 on page 58.

**7** Click **Next** to open the Create Database Users & Tablespaces dialog box.

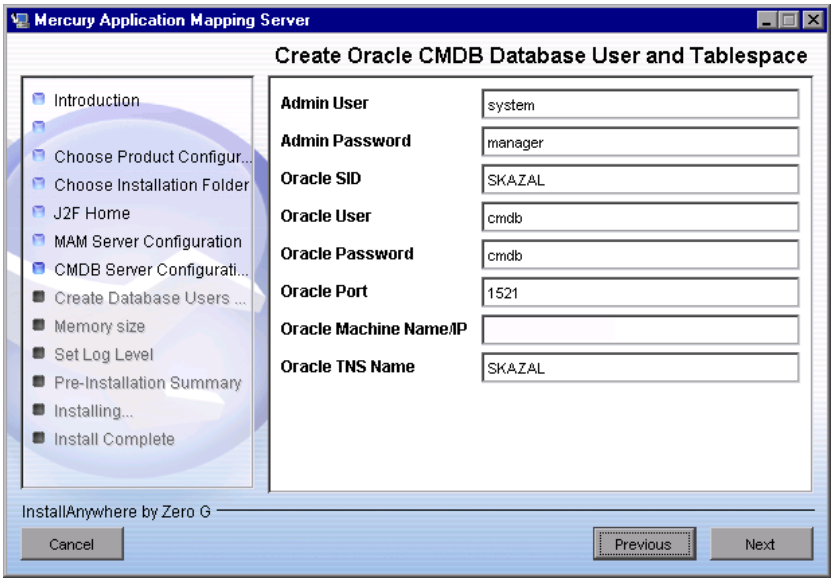



Select **Oracle Server**.

Select **Yes** to create new users and tablespaces, and to update the Mercury Application Mapping configuration files with the database details.

For details on the difference between **Yes** and **No**, see "Database Users and Tablespaces" on page 18.

**8** Click **Next** to open the Create Oracle CMDB Database User & Tablespace dialog box.

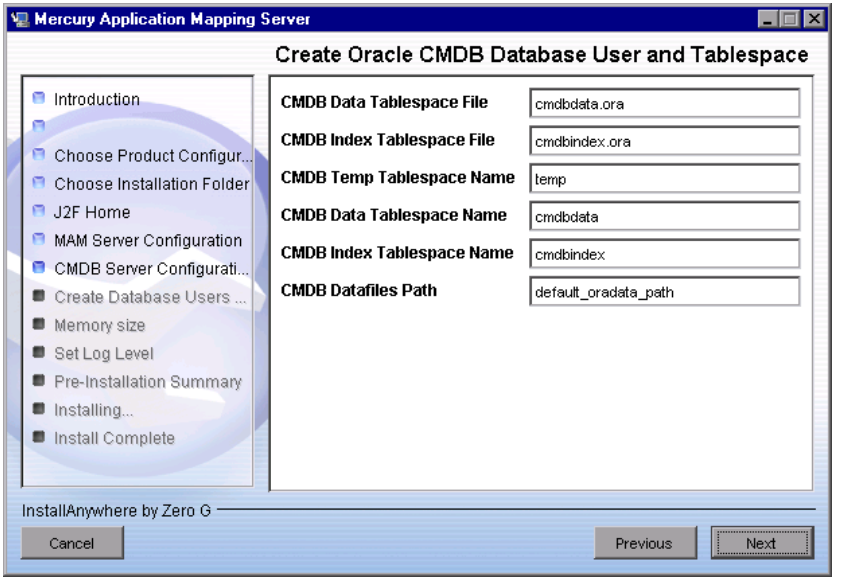



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the schema. | manager |
| Oracle SID | The schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the CMDB schema. | cmdb |
| Oracle Password | The password Mercury Application Mapping uses to connect to the database. | cmdb |
| Oracle Port | The port Mercury Application Mapping uses to connect to the CMDB schema. | 1521 |

| Field | Description | Default Value |
|---|---|---|
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server. | |
| Oracle TNS Name | The alias of Oracle Server as specified in the **tnsnames.ora** client file. | SKAZAL |

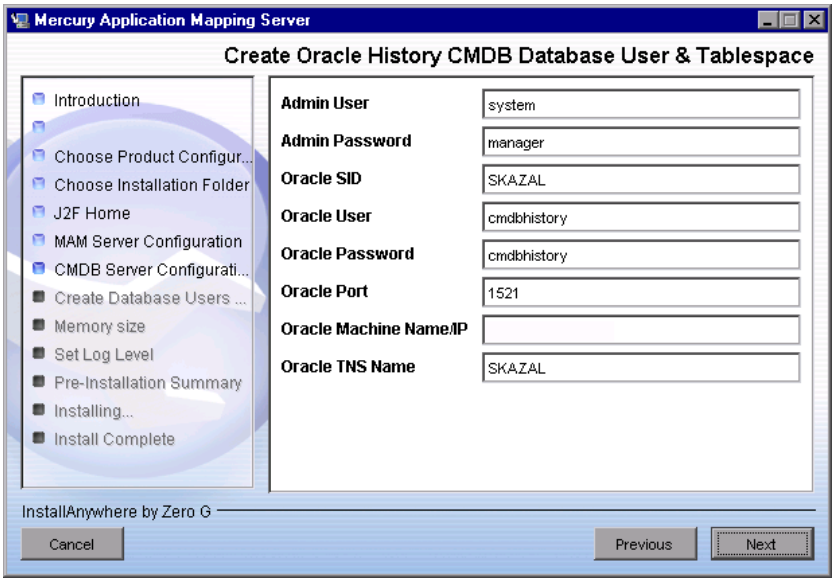
**9** Click **Next** to open the Create Oracle CMDB Database User & Tablespace dialog box.



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB Oracle Data Tspace File | Name of the Mercury Application Mapping tablespace file. Only relevant if you chose to create the tablespaces. | cmdbdata.ora |
| CMDB Oracle Index Tspace File | Name of the Mercury Application Mapping index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbindex.ora |
| CMDB Oracle Temp Tspace Name | Name of the Mercury Application Mapping temporary tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB Oracle Data Tspace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbdata |
| CMDB Oracle Index Tspace Name | Name of the Mercury Application Mapping index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbindex |
| CMDB Oracle Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change this location. | default_oradata_path |

**10** Click **Next** to open the Create Oracle History CMDB Database User & Tablespace dialog box.

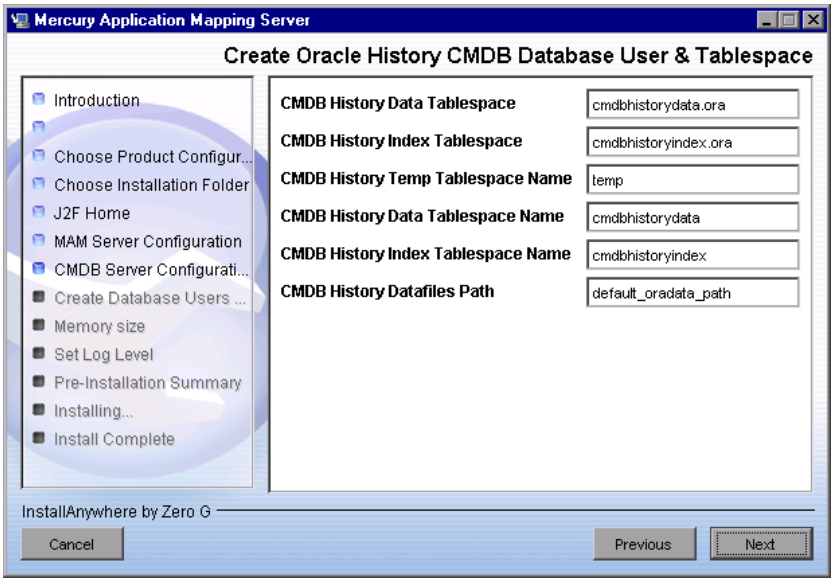



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the History schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the History schema. | manager |
| Oracle SID | The History schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Password | The password Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Port | The port Mercury Application Mapping uses to connect to the History schema. | 1521 |

| Field | Description | Default Value |
|---|---|---|
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the History schema runs. | |
| Oracle TNS Name | The alias of Oracle Server as specified in **tnsnames.ora** client file. | SKAZAL |

**11** Click **Next** to open the next Create Oracle History CMDB Database User & Tablespace dialog box.

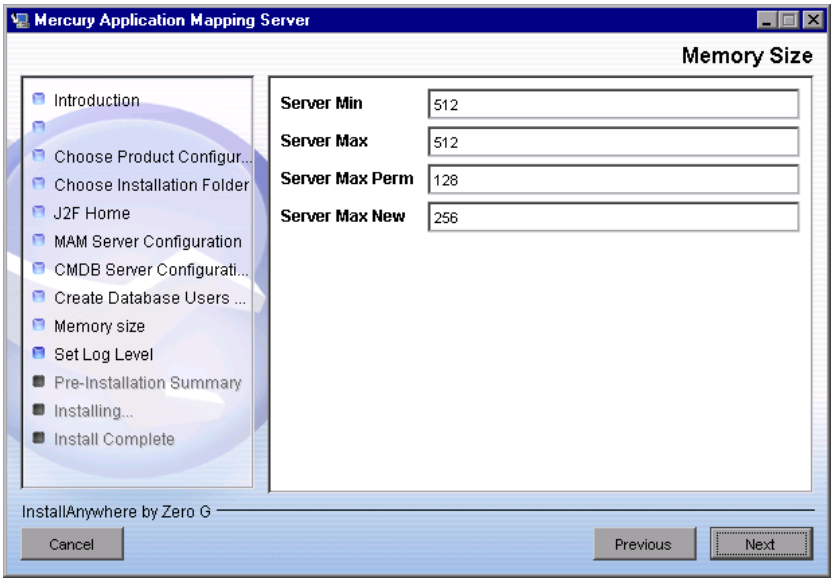



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB History Oracle Data Tspace | Name of the Mercury Application Mapping History tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistory data.ora |
| CMDB History Oracle Index Tspace | Name of the Mercury Application Mapping History index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistoryi ndex.ora |

| Field | Description | Default Value |
|---|---|---|
| CMDB History Oracle Temp File Name | Name of the Mercury Application Mapping temporary History tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB History Oracle Data Tspace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistory data |
| CMDB History Oracle Index Tspace Name | Name of the Mercury Application Mapping History index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistoryindex |
| CMDB History Oracle Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change the location. | default_oradata_path |

**12** Click **Next** to open the Memory Size dialog box.

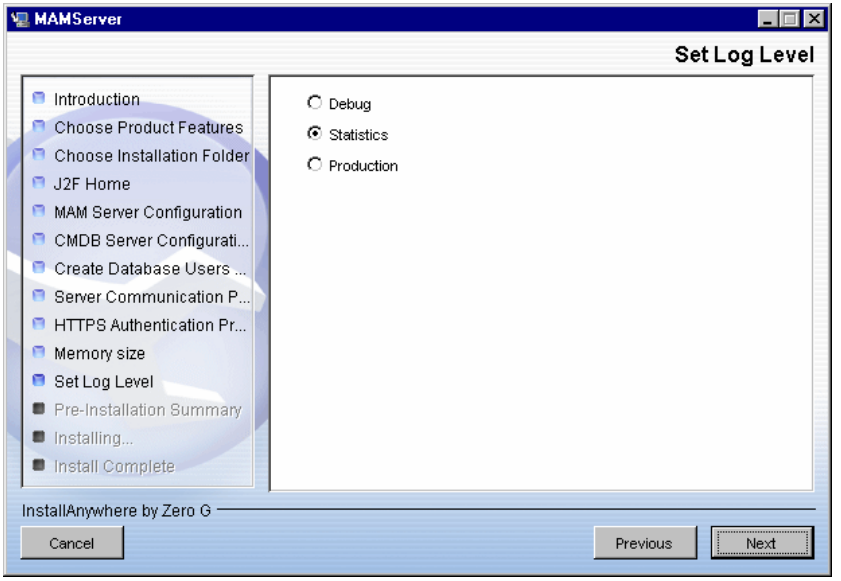



Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |

| Field | Description | Default Size |
|---|---|---|
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**13** Click **Next** to open the Set Log Level dialog box:



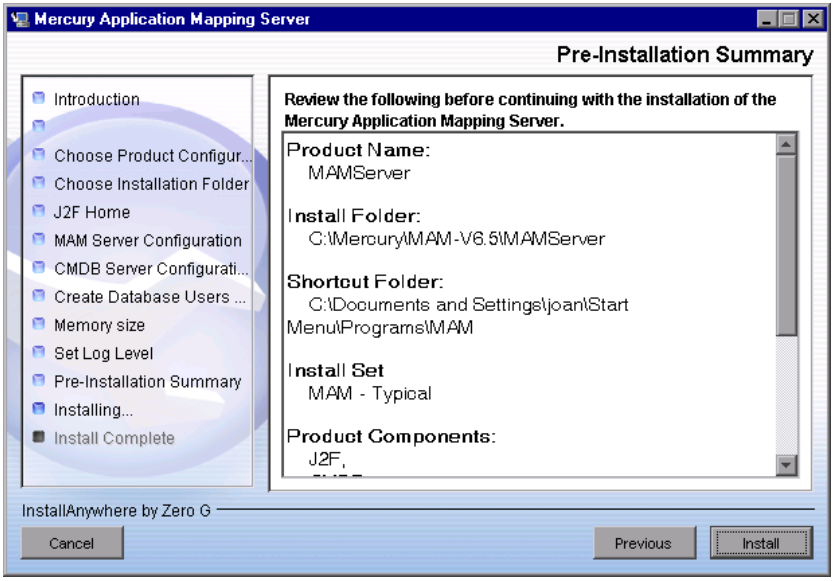

Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.

➤ **Production.** Only error messages are written to the log file.

If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**14** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**15** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When the installation is complete the Installation Completed dialog box is displayed.

**16** Click **Done**. Depending on which components are installed, Mercury Application Mapping shortcuts are added to the Windows Start menu.

# Installing the CMDB Server in a Distributed Deployment with Microsoft MS SQL Server

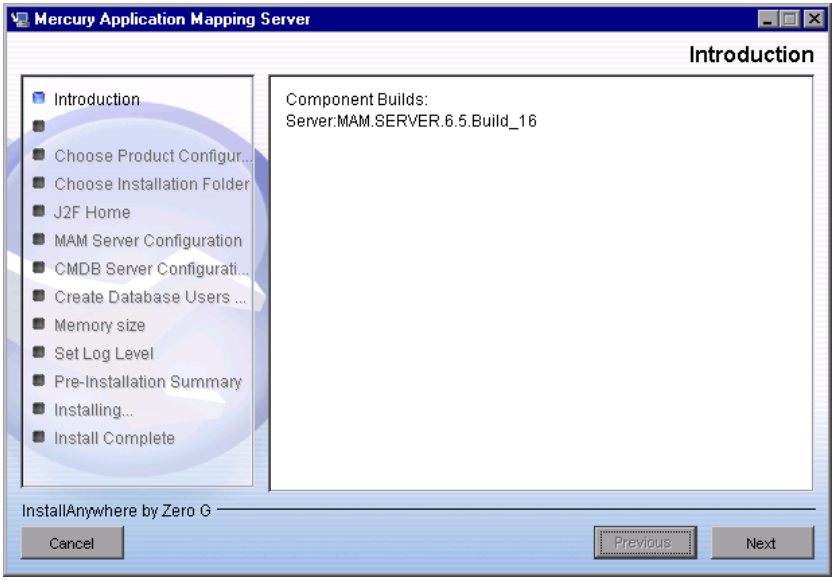
The following procedure explains how to install the CMDB server (and the JBoss application server—J2F) on the CMDB server machine, when the CMDB databases run on Microsoft MS SQL Server. This is the second part of the procedure. For the first part of the procedure, see "Installing the Server in a Distributed Deployment with Microsoft MS SQL Server" on page 69.

**To install the CMDB server:**

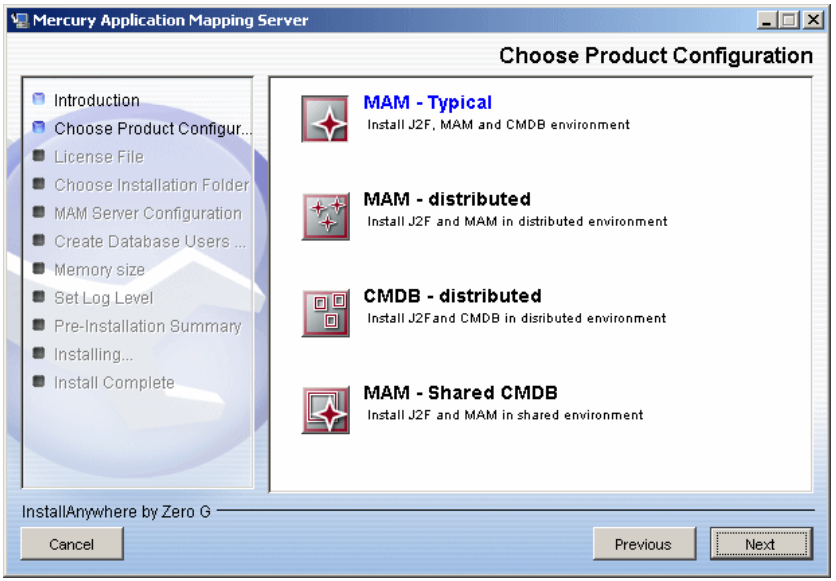
1 Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.

2 Double-click the **<CD-ROM root folder>\MAM66\MAMServer.exe** file.

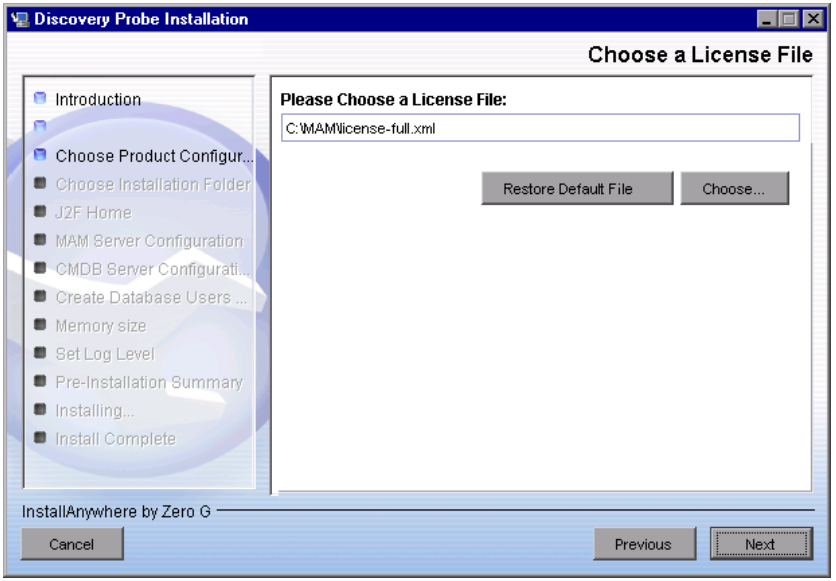
A progress bar is displayed. Once the initial process is completed, the Introduction dialog box is displayed.



**3** Click **Next** to open the Choose Product Configuration dialog box.

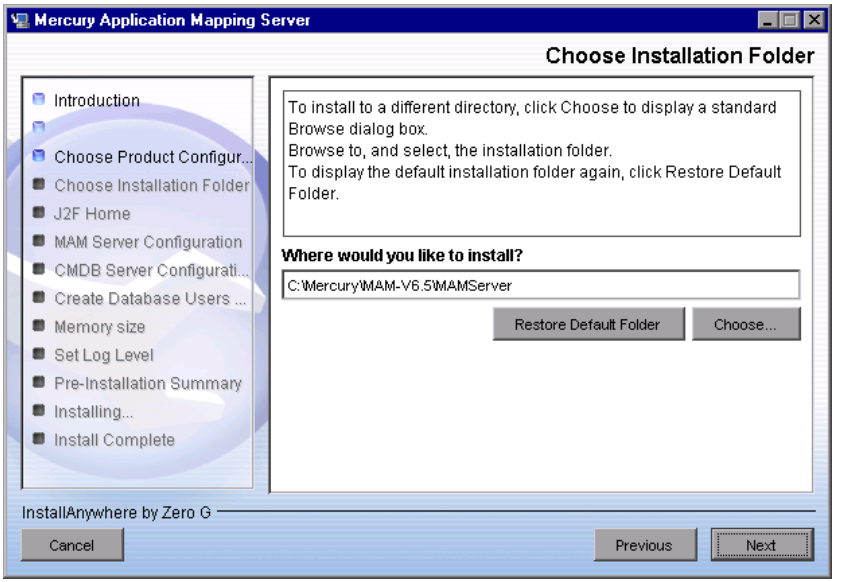



**4** Select the **CMDB – Distributed** icon and click **Next** to open the Choose a License File dialog box.



Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

**5** Click **Next** to open the Choose Installation Folder dialog box.



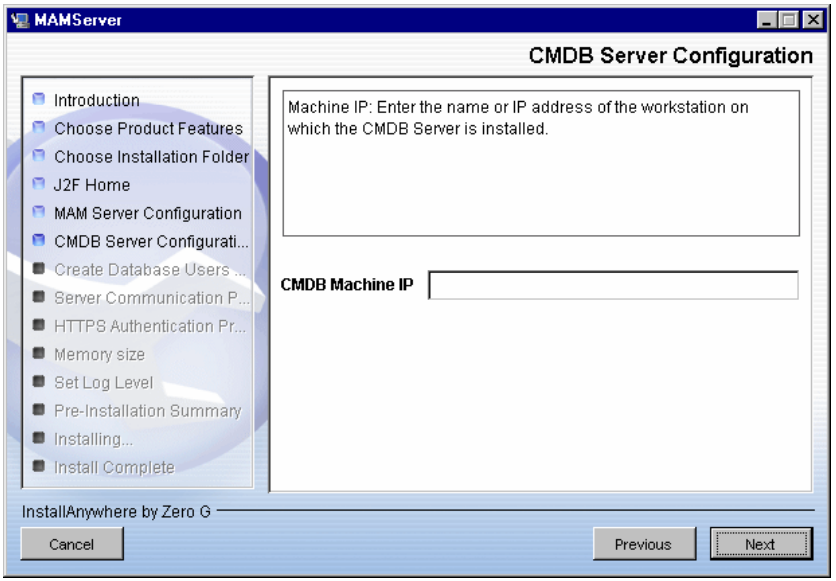

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

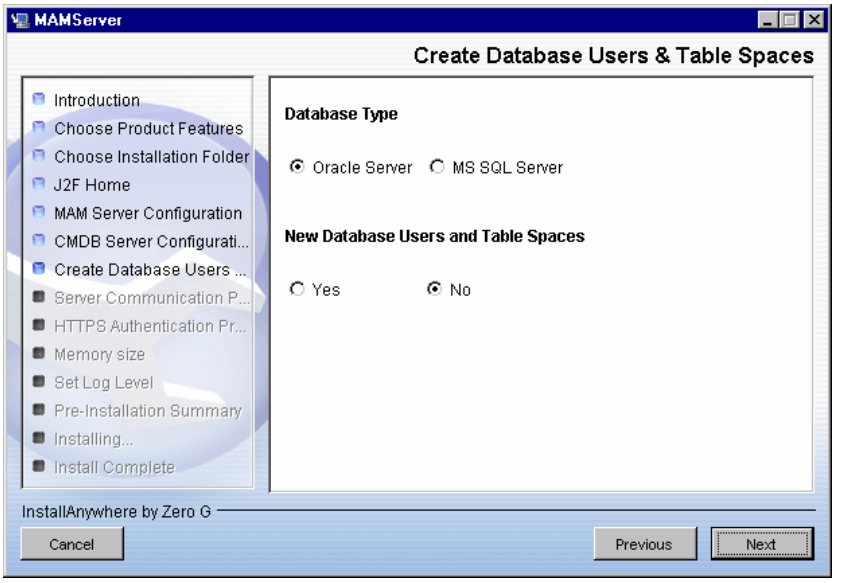
---

**6** Click **Next** to open the CMDB Server Configuration dialog box.




The default CMDB machine IP in the **CMDB Machine IP** box is the address you entered during installation of the Mercury Application Mapping server. Accept the default entry, or enter the host name or IP address of the machine on which you are installing the CMDB server. For details, see step 6 on page 72.

**7** Click **Next** to open the Create Database Users & Tablespaces dialog box.

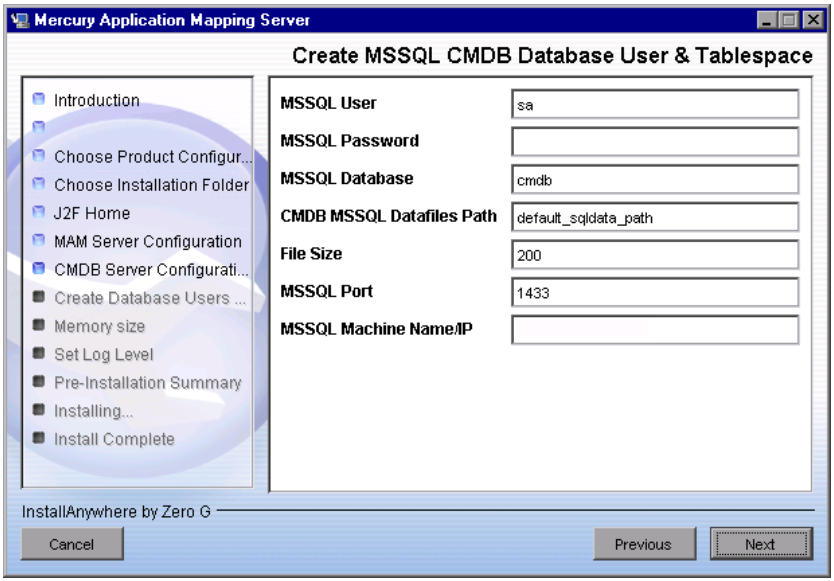



Select **MS SQL Server**.

Select **Yes** to create new users and tablespaces, and to update the Mercury Application Mapping configuration files with the CMDB database details.

For details on the difference between **Yes** and **No**, see "Database Users and Tablespaces" on page 18.

**8** Click **Next** to open the Create MSSQL CMDB Database User & Tablespace dialog box.

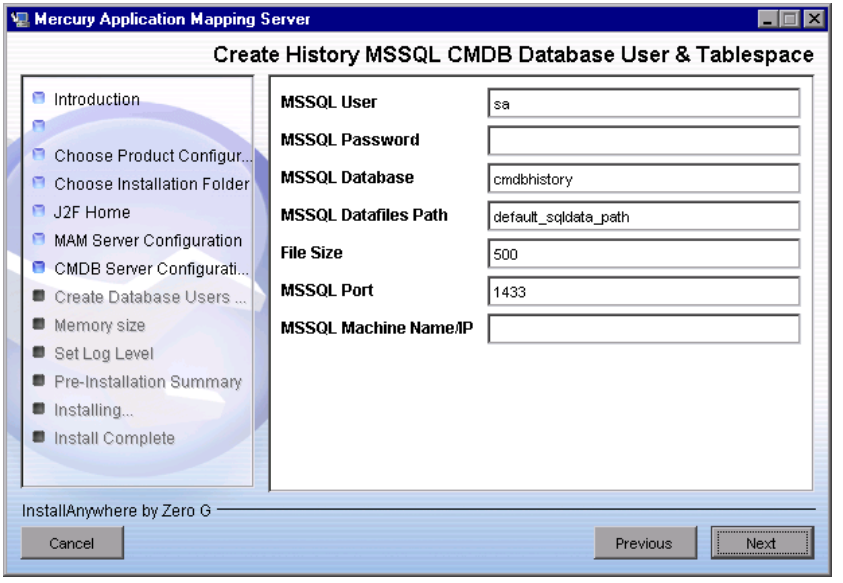



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| MSSQL User | The user name of the MS SQL Server login account. The account must have CREATE DATABASE permissions. To connect to an existing database, the login account with which you are connecting must be mapped to the dbo user in the database. | sa |
| MSSQL Password | The password of the MS SQL Server login account. | |
| MSSQL Database | The name of the CMDB database to be created or the name of an existing CMDB database. | cmdb |
| CMDB MSSQL Datafiles Path | The location of the database data files. Change the default to create the files at a non-default location. | default_sqldata_path |

| Field | Description | Default Value |
|---|---|---|
| File Size | The initial file size of the CMDB database. It is recommended to increase this value according to available space and expected deployment. Data files are created with **file growth** switched on; if you do not want to use this option, enter at least 1.5 GB in this parameter and switch off **file growth** after setup. | 200 |
| MSSQL Port | The port number for connecting to MS SQL Server. | 1433 |
| MSSQL Machine Name/IP | The name or IP address of MS SQL Server on which the CMDB database runs. | |

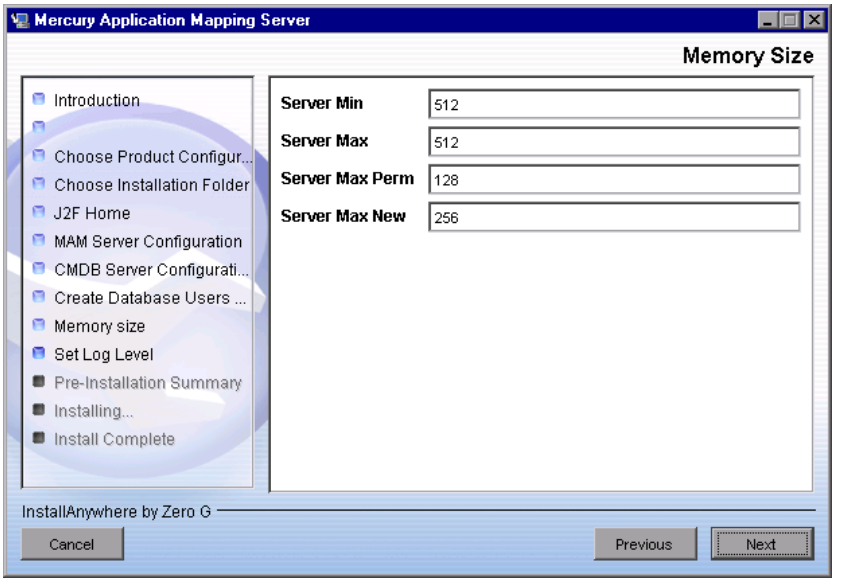
**9** Click **Next** to open the Create History MSSQL CMDB Database User & Tablespace dialog box.



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| MSSQL User | The user name of the MS SQL Server login account. The account must have CREATE DATABASE permissions. To connect to an existing History database, the login account with which you are connecting must be mapped to the dbo user in the History database. | sa |
| MSSQL Password | The password of the MS SQL Server login account. | |
| MSSQL Database | The name of the History database to be created or the name of an existing History database. | cmdbhistory |
| CMDB MSSQL Datafiles Path | The location of the database data files. To create the files at a non-default location, enter the complete path. | default_sqldata _path |
| File Size | The initial file size of the History database. It is recommended to increase this value according to available space and expected deployment. Data files are created with **file growth** switched on; if you do not want to use this option, enter at least 1.5 GB in this parameter and switch off **file growth** after setup. | 500 |
| MSSQL Port | The port number for connecting to the History database. | 1433 |
| MSSQL Machine Name/IP | The name or IP address of MS SQL Server on which the CMDB database runs. | |

**10** Click **Next** to open the Memory Size dialog box.

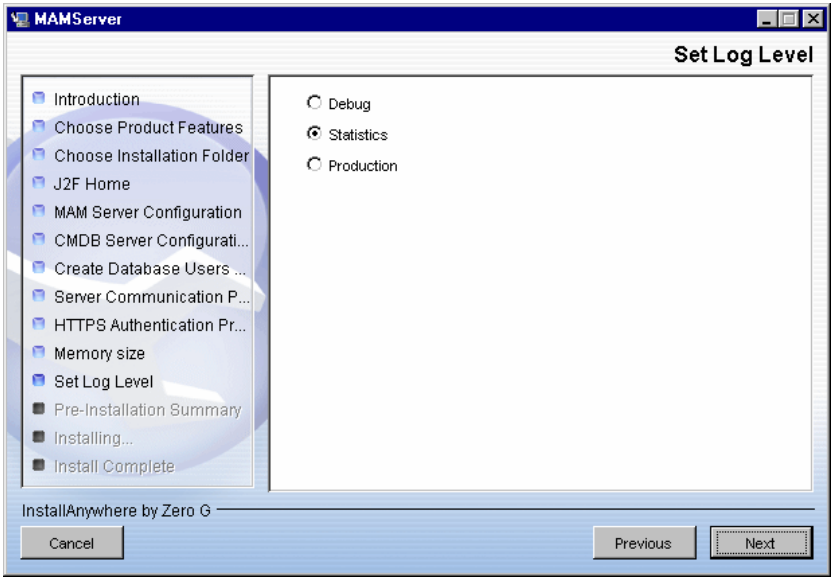



Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |

| Field | Description | Default Size |
|---|---|---|
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**11** Click **Next** to open the Set Log Level dialog box.



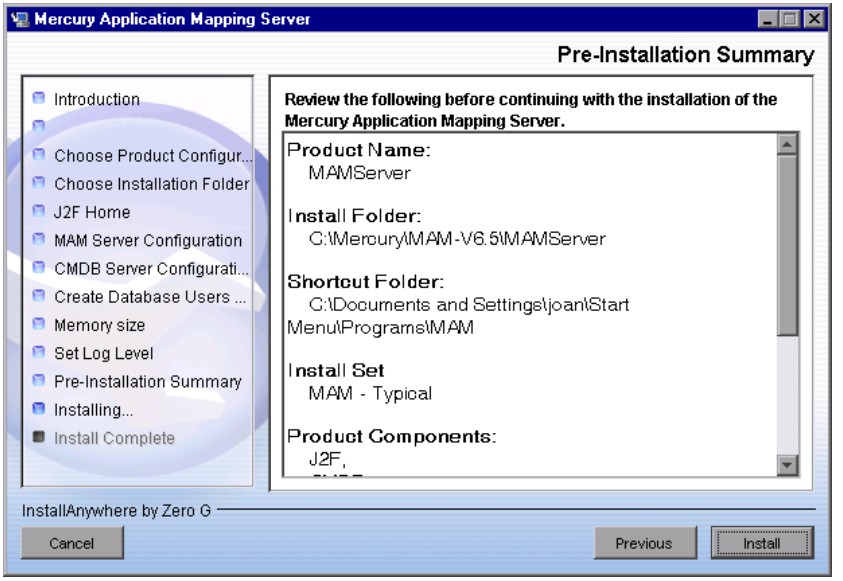

Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.

➤ **Production.** Only error messages are written to the log file.

If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**12** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**13** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When the installation is complete the Installation Completed dialog box is displayed.

**14** Click **Done**. Depending on which components are installed, Mercury Application Mapping shortcuts are added to the Windows Start menu.

# 5

# Distributed Deployment Installation with a Shared CMDB

This chapter describes the procedures to install a distributed deployment of Mercury Application Mapping when it connects to the configuration management database (CMDB) used by Mercury Business Availability Center. The shared CMDB environment enables Mercury Application Mapping to run additional functionality.


| This chapter describes: | On page: |
|---|---|
| Installation Workflow | 110 |
| Installing the Server with Oracle Server | 111 |
| Installing the Server with Microsoft MS SQL Server | 125 |
| Sharing the Mercury Business Availability Center CMDB | 137 |

# Installation Workflow

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**Note:** It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."

---

This chapter explains how to install Mercury Application Mapping in a distributed deployment that is integrated with Mercury Business Availability Center. Each dialog box in the installation procedure includes detailed instructions on that stage of the procedure.

The integrated deployment configuration of Mercury Application Mapping runs on two server machines:

- one machine on which the Mercury Application Mapping server and the JBoss application server (J2F) run
- one machine on which Mercury Business Availability Center runs; on this machine, you connect to the CMDB (unless Mercury Business Availability Center is running in a distributed deployment, in which case you connect to the CMDB running on the modeling server on the Data Processing Server machine)

This section includes the following topics:

- "Prerequisites" on page 110
- "Mercury Business Availability Center CMDB Deployment" on page 111

## Prerequisites

Before you install Mercury Application Mapping in an integrated deployment with Mercury Business Availability Center, verify that:

- Mercury Business Availability Center is already installed.
- An SQL client is installed on the Mercury Application Mapping server machine.

➤ The CMDB database exists as part of the Mercury Business Availability Center installation. During the shared installation procedure, Setup creates the History database only.

### Mercury Business Availability Center CMDB Deployment

For details on Mercury Business Availability Center CMDB deployment, see:

➤ "Sharing the Mercury Universal CMDB Environment" in *Working with the CMDB*.

➤ "Mercury Universal CMDB Management" in *Platform Administration*.

➤ "High Availability for the CMDB Directory" in *Deploying Servers*.

(These books are part of the Mercury Business Availability Center Documentation Library.)

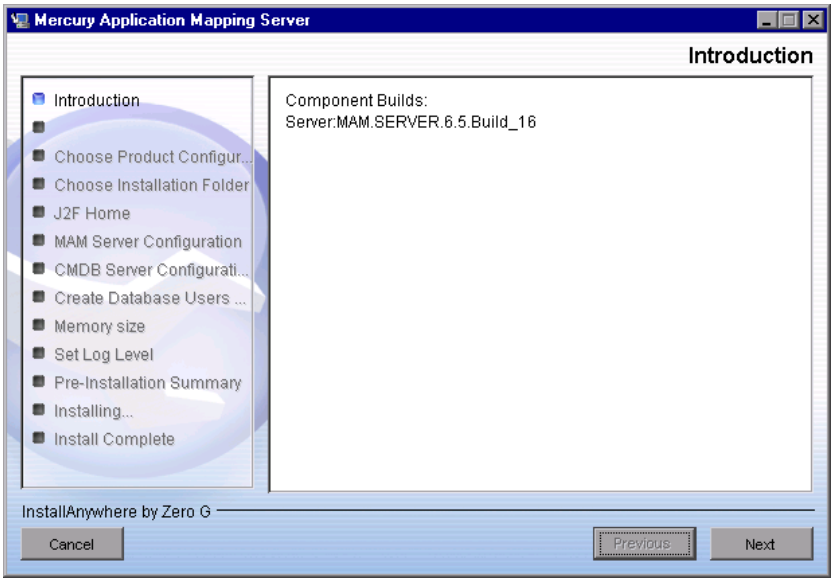
## Installing the Server with Oracle Server

The following procedure explains how to install the Mercury Application Mapping server (and the JBoss application server—J2F) on the Mercury Application Mapping server machine, when the CMDB schemas run on Oracle Server. This is the first part of the procedure. For the second part of the procedure, see "Sharing the Mercury Business Availability Center CMDB" on page 137.

**To install the Mercury Application Mapping server:**

1. Shut down Mercury Business Availability Center if it is running.
2. Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.
3. Double-click the **<CD-ROM root folder>\MAM66\MAMServer.exe** file.

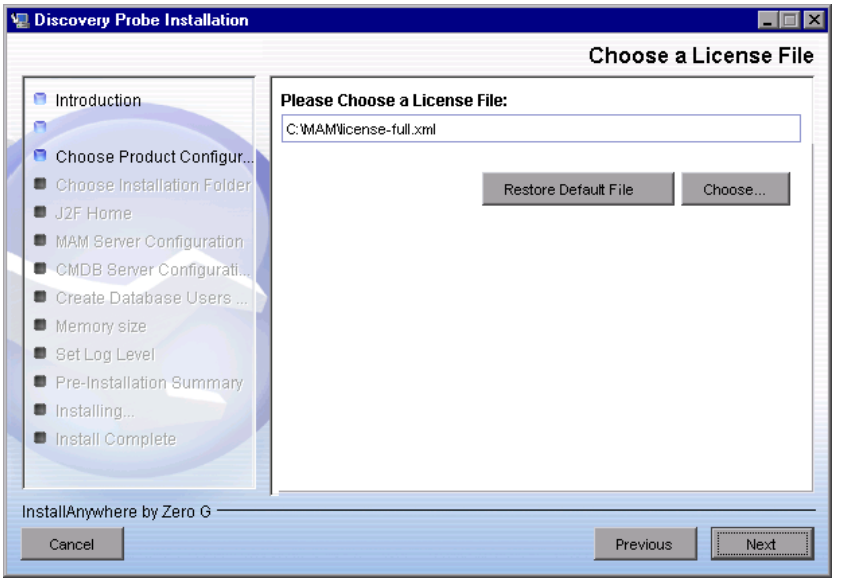
A progress bar is displayed. Once the initial process is complete, the Introduction dialog box opens.




**4** Click **Next** to open the Choose Product Configuration dialog box.

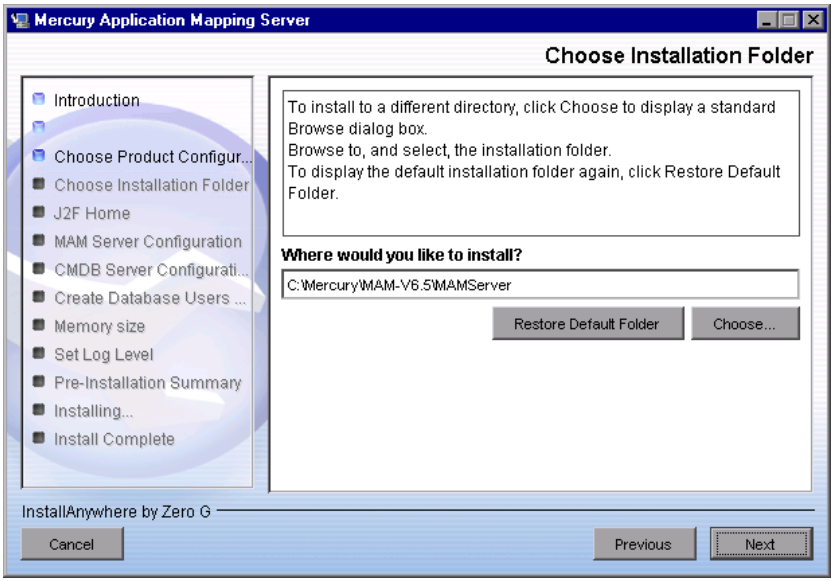


**5** Select the **MAM - Shared CMDB** icon and click **Next** to open the Choose a License File dialog box.




Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

**6** Click **Next** to open the Choose Installation Folder dialog box.



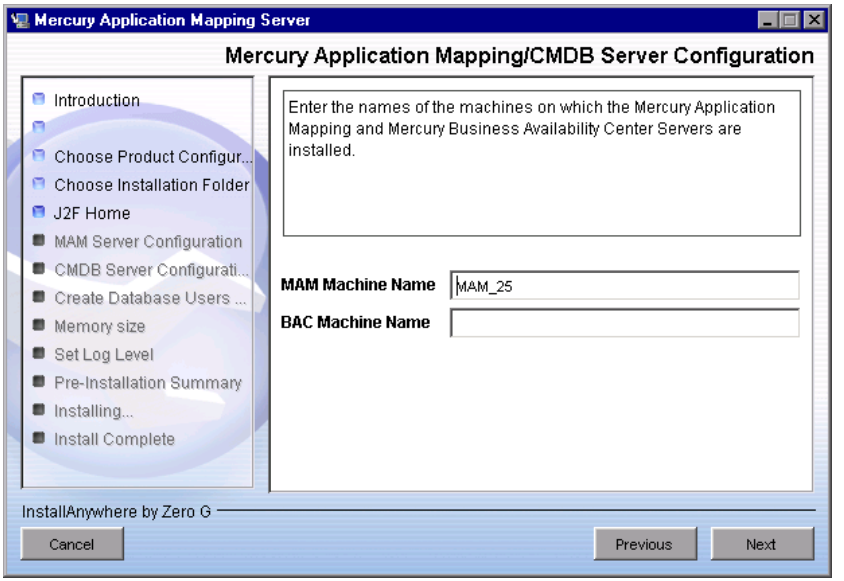

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

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**Tip:** To display the default installation folder again, click **Restore Default Folder**.

---

**7** Click **Next** to open the Mercury Application Mapping/CMDB Server Configuration dialog box.

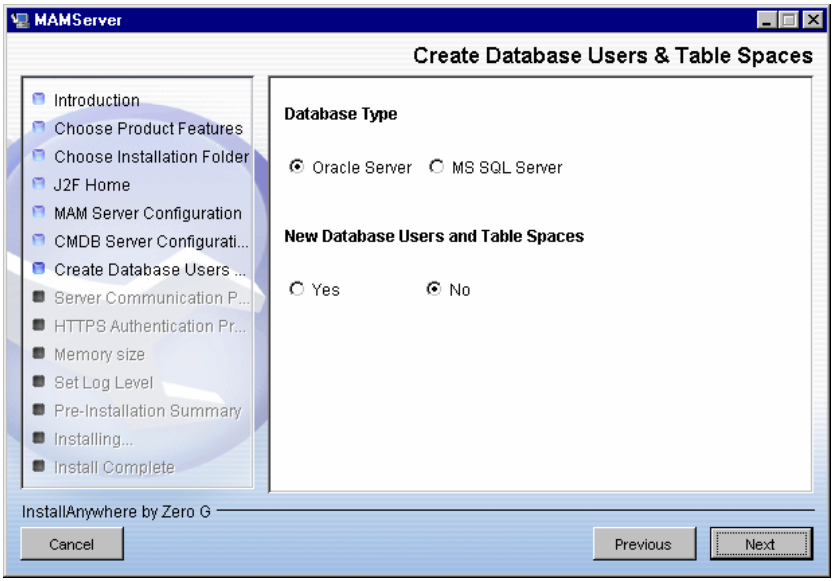



In the **MAM Machine Name** box, enter the machine name of the server on which you are installing Mercury Application Mapping, or accept the existing entry.

In the **BAC Machine Name** box:

- If Mercury Business Availability Center is running on one machine, enter the machine name.
- If Mercury Business Availability Center is running in a distributed deployment, enter the name of the Data Processing Server machine on which the CMDB runs (on the modeling server).

**8** Click **Next** to open the Create Database Users & Tablespaces dialog box.




Select **Oracle Server**.

Select **No** to use the existing users and tablespaces. For details on the difference between **Yes** and **No**, see “Database Users and Tablespaces” on page 18.

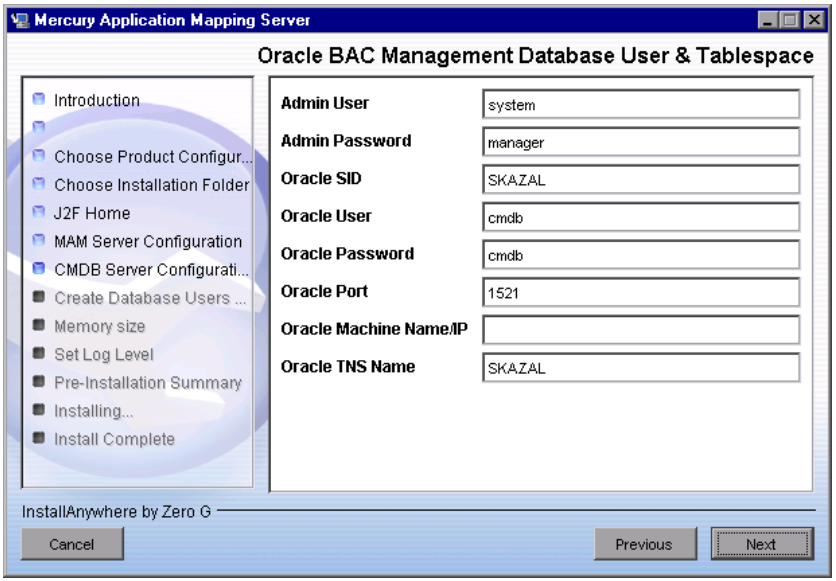
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**Note:** If you select **Yes**, Setup creates the History schema only, since the CMDB schema already exists in Mercury Business Availability Center (the Mercury Application Mapping server is registered in the Mercury Business Availability Center management database).

Select **No** to use an existing History schema.

---

**9** Click **Next** to open the Oracle BAC Management Database User and Tablespace dialog box.

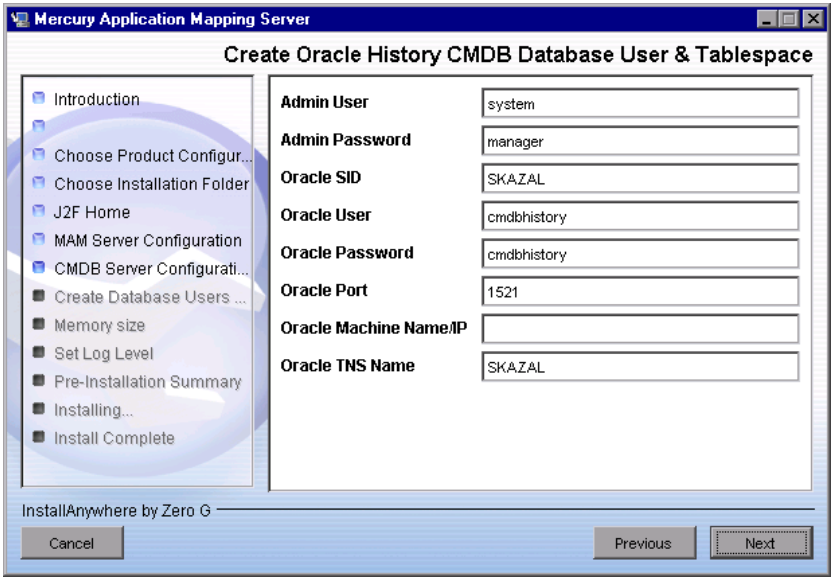



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the user with administrator access rights to the schema. | system |
| Admin Password | The password of the user with administrator access rights to the schema. | manager |
| Oracle SID | The schema SID to which you want to connect. | SKAZAL |
| Oracle User | The name of the Mercury Business Availability Center management database, needed for registration of the Mercury Application Mapping server in the Mercury Business Availability Center system. | cmdb |
| Oracle Password | The password Mercury Application Mapping uses to connect to the Mercury Business Availability Center management database. | cmdb |

| Field | Description | Default Value |
|---|---|---|
| Oracle Port | The port Mercury Application Mapping uses to connect to the Mercury Business Availability Center management database. For details on installing Mercury Application Mapping with a Mercury Business Availability Center distributed deployment, see “Mercury Business Availability Center CMDB Deployment” on page 111. | 1521 |
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server. | |
| Oracle TNS Name | A name resolved in the SQL client software. | SKAZAL |

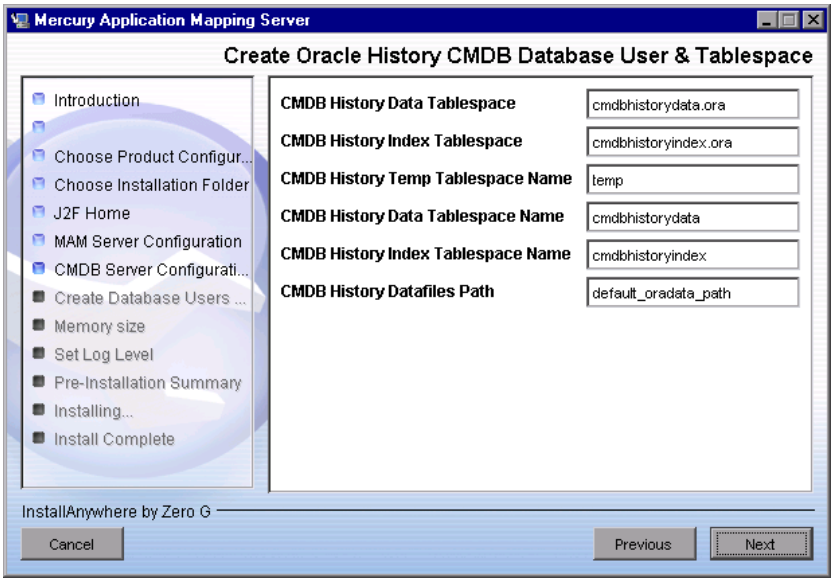
**10** Click **Next** to open the Create Oracle History CMDB Database User & Tablespace dialog box.



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the History schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the History schema. | manager |
| Oracle SID | The History schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Password | The password Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Port | The port Mercury Application Mapping uses to connect to the History schema. | 1521 |
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the History schema runs. | |
| Oracle TNS Name | The alias of Oracle Server as specified in **tnsnames.ora** client file. | SKAZAL |

**11** Click **Next** to open the next Create Oracle History CMDB Database User & Tablespace dialog box.

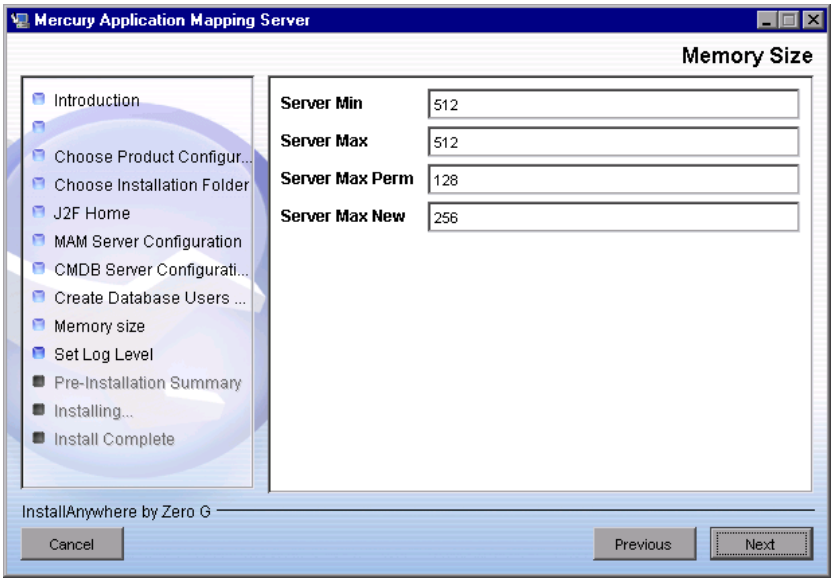



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB History Oracle Data Tspace | Name of the Mercury Application Mapping History tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistorydata.ora |
| CMDB History Oracle Index Tspace | Name of the Mercury Application Mapping History index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistoryindex.ora |
| CMDB History Oracle Temp File Name | Name of the Mercury Application Mapping temporary History tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |

| Field | Description | Default Value |
|---|---|---|
| CMDB History Oracle Data Tspace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistoryda ta |
| CMDB History Oracle Index Tspace Name | Name of the Mercury Application Mapping History index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistoryin dex |
| CMDB History Oracle Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change the location. | default_oradata _path |

**12** Click **Next** to open the Memory Size dialog box.

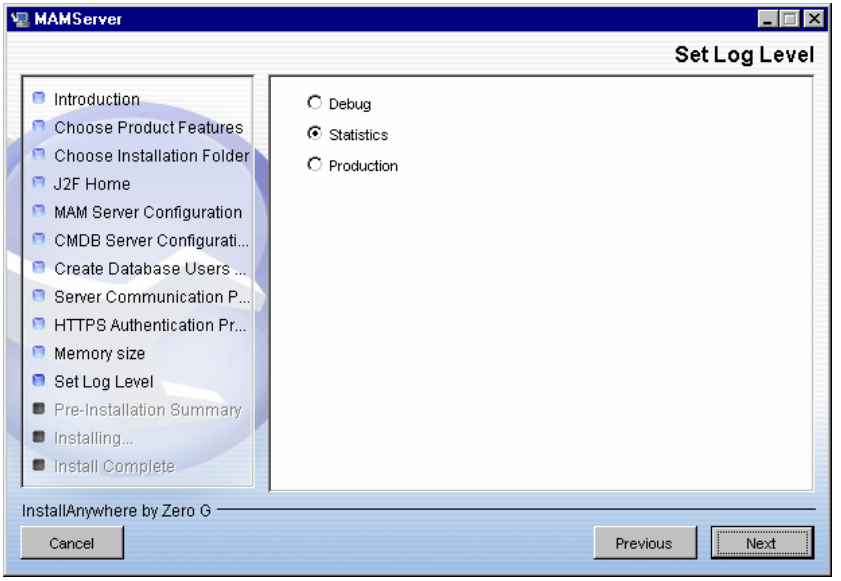



Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |

| Field | Description | Default Size |
|---|---|---|
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**13** Click **Next** to open the Set Log Level dialog box.



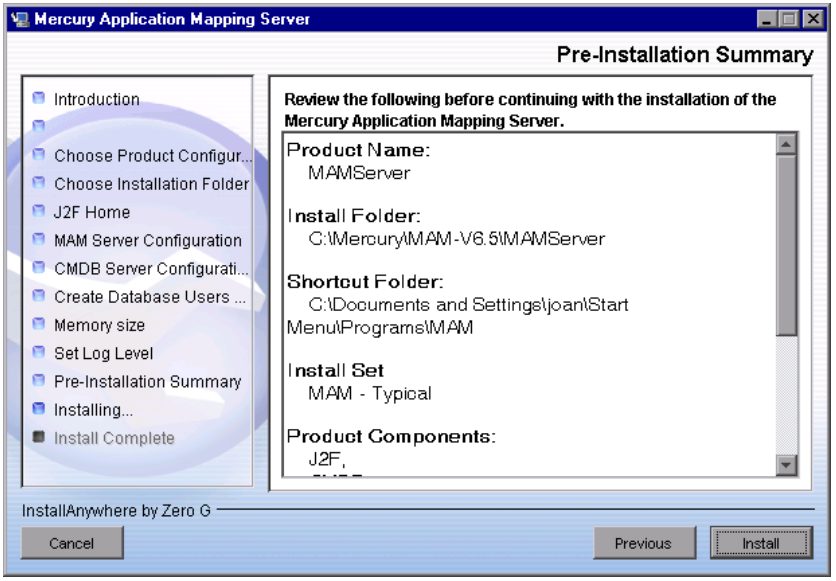

Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.

➤ **Production.** Only error messages are written to the log file.

If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**14** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**15** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When the installation is complete the Installation Completed dialog box is displayed.

**16** Click **Done**. Depending on which components are installed, Mercury Application Mapping shortcuts are added to the Windows Start menu.

**17** Start up Mercury Business Availability Center.

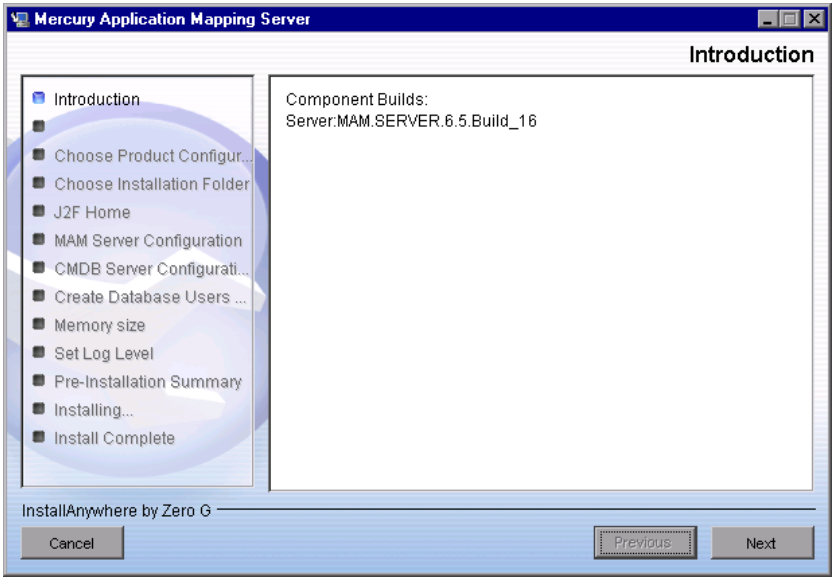
# Installing the Server with Microsoft MS SQL Server

The following procedure explains how to install the Mercury Application Mapping server (and the JBoss application server—J2F) on the Mercury Application Mapping server machine, when the CMDB databases run on Microsoft MS SQL Server. This is the first part of the procedure. For the second part of the procedure, see "Sharing the Mercury Business Availability Center CMDB" on page 137.

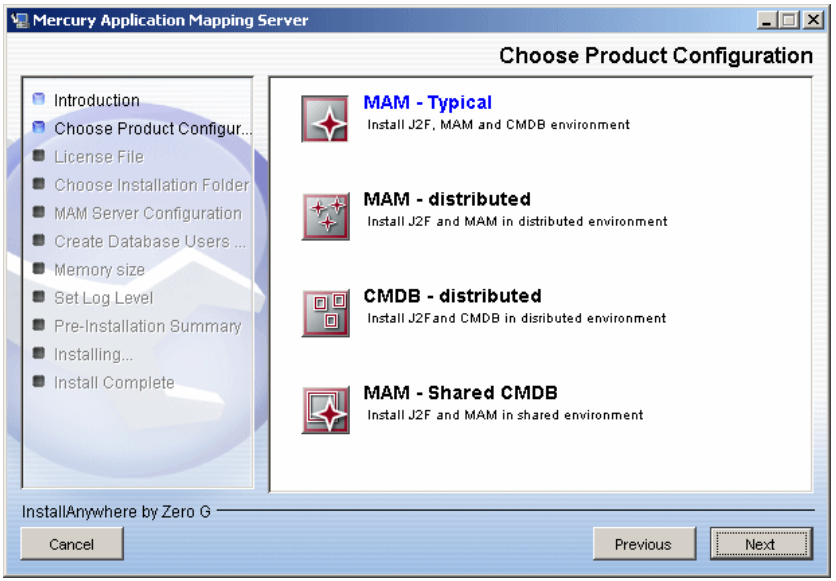
**To install the Mercury Application Mapping server:**

1. Shut down Mercury Business Availability Center if it is running.
2. Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.
3. Double-click the **<CD-ROM root folder>\MAM66\MAMServer.exe** file.

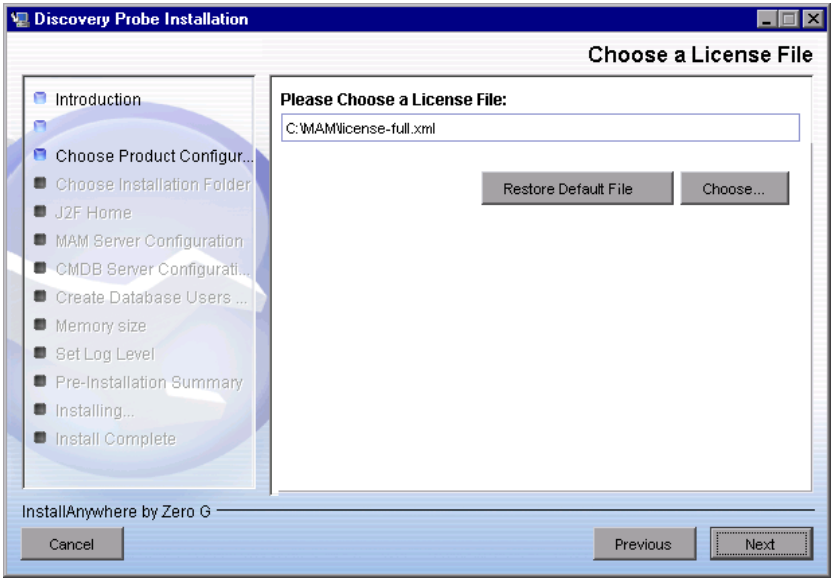
   A progress bar is displayed. Once the initial process is complete, the Introduction dialog box opens.



**4** Click **Next** to open the Choose Product Configuration dialog box.

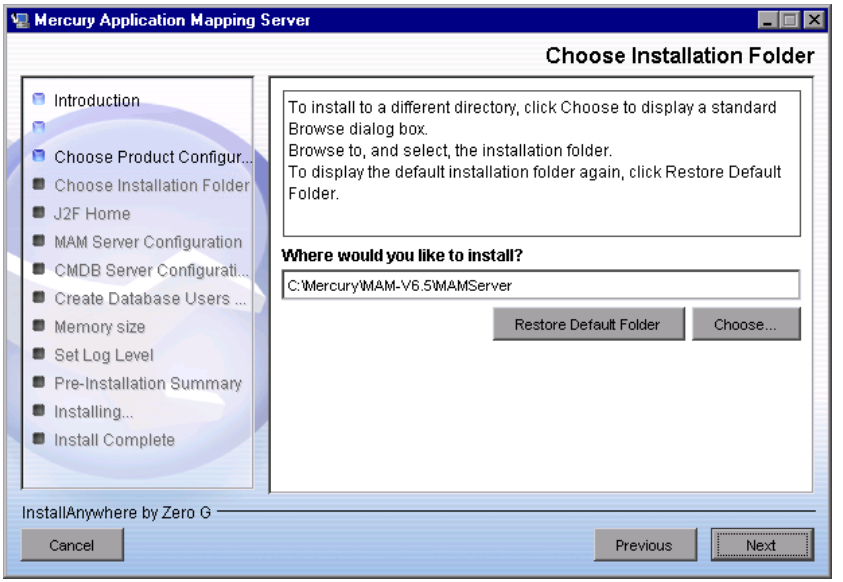



**5** Select the **MAM – Shared CMDB** icon and click **Next** to open the Choose a License File dialog box.



Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

**6** Click **Next** to open the Choose Installation Folder dialog box.



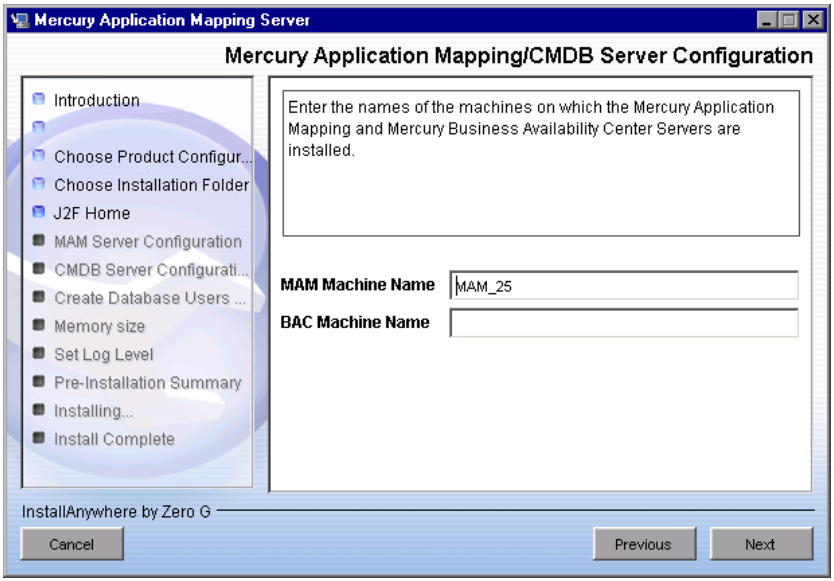

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

---

**7** Click **Next** to open the Mercury Application Mapping/CMDB Server Configuration dialog box.

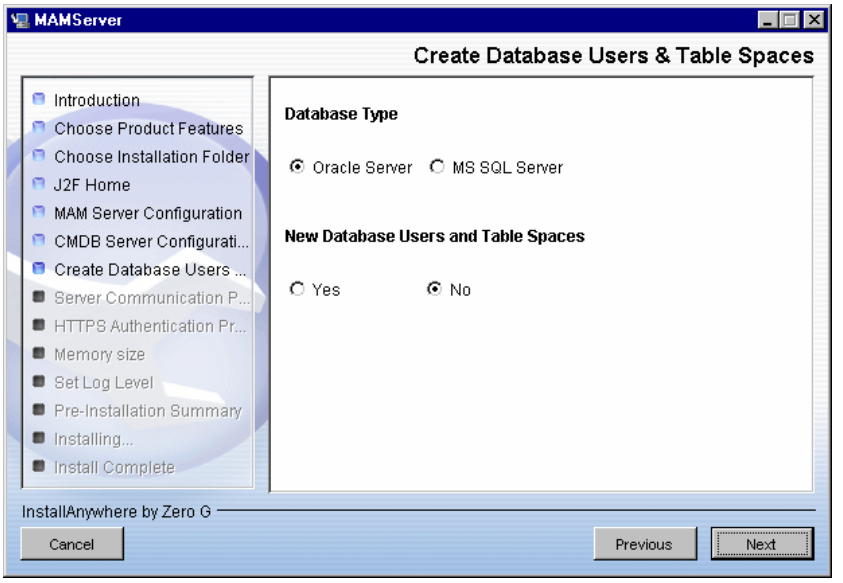



In the **MAM Machine Name** box, enter the machine name of the server on which you are installing Mercury Application Mapping, or accept the existing entry.

In the **BAC Machine Name** box:

- If Mercury Business Availability Center is running on one machine, enter the machine name.
- If Mercury Business Availability Center is running in a distributed deployment, enter the name of the Data Processing Server machine on which the CMDB runs (on the modeling server).

**8** Click **Next** to open the Create Database Users & Tablespaces dialog box.




Select **MS SQL Server**.

Select **No** to use the existing users and tablespaces. For details on the difference between **Yes** and **No**, see "Database Users and Tablespaces" on page 18.

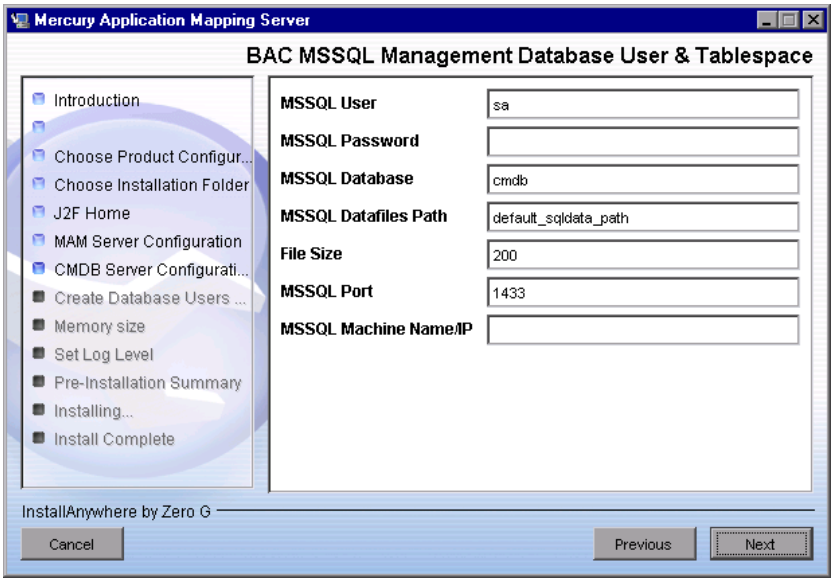
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**Note:** If you select **Yes**, Setup creates the History database only, since the CMDB database already exists in Mercury Business Availability Center (the Mercury Application Mapping server is registered in the Mercury Business Availability Center management database).

Select **No** to use an existing History schema.

---

**9** Click **Next** to open the BAC MSSQL Management Database User & Tablespace dialog box.

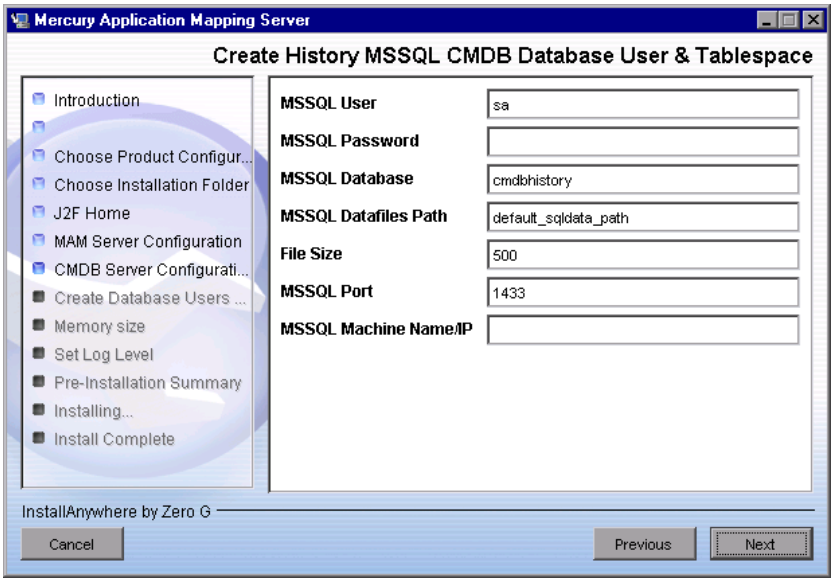



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| MSSQL User | The user name of the MS SQL Server login account. The account must have CREATE DATABASE permissions. To connect to an existing database, the login account with which you are connecting must be mapped to the dbo user in the database. | sa |
| MSSQL Password | The password of the MS SQL Server login account. | |

| Field | Description | Default Value |
|---|---|---|
| MSSQL Database | The name of the Mercury Business Availability Center management database, needed for registration of the Mercury Application Mapping server in the Mercury Business Availability Center system. For details on installing Mercury Application Mapping with a Mercury Business Availability Center distributed deployment, see "Mercury Business Availability Center CMDB Deployment" on page 111. | BACDB |
| MSSQL Datafiles Path | The location of the database data files. Change the default to create the files at a non-default location. | default_sqldata_path |
| File Size | The initial file size of the database. It is recommended to increase this value according to available space and expected deployment. Data files are created with **file growth** switched on; if you do not want to use this option, enter at least 1.5 GB in this parameter and switch off **file growth** after setup. | 200 |
| MSSQL Port | The port number for connecting to MS SQL Server. | 1433 |
| MSSQL Machine Name/IP | The name or IP address of MS SQL Server on which the CMDB database runs. | |

**10** Click **Next** to open the Create History MSSQL CMDB Database User & Tablespace dialog box.

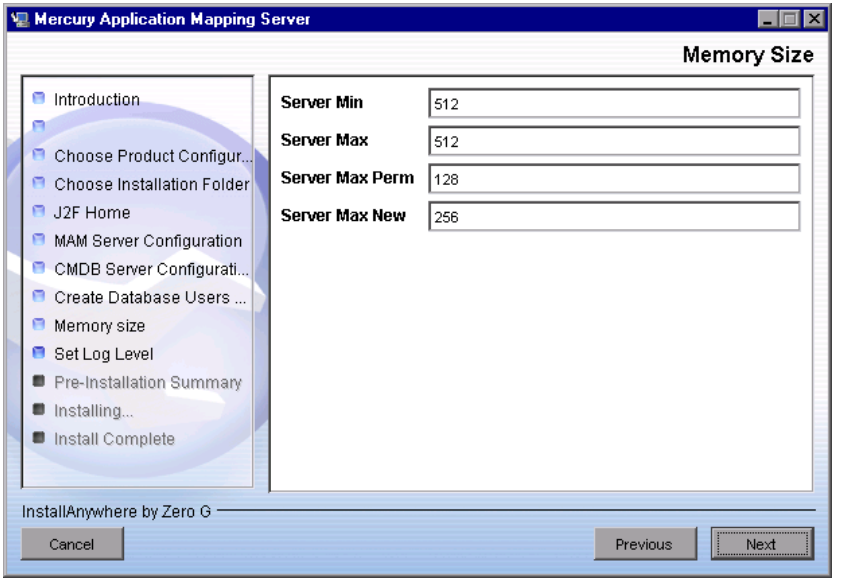



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| MSSQL User | The user name of the MS SQL Server login account. The account must have CREATE DATABASE permissions. To connect to an existing History database, the login account with which you are connecting must be mapped to the dbo user in the History database. | sa |
| MSSQL Password | The password of the MS SQL Server login account. | |
| MSSQL Database | The name of the History database to be created or the name of an existing History database. | cmdbhistory |
| MSSQL Datafiles Path | The location of the database data files. To create the files at a non-default location, enter the complete path. | default_sqldata _path |

| Field | Description | Default Value |
|---|---|---|
| File Size | The initial file size of the History database. It is recommended to increase this value according to available space and expected deployment. Data files are created with **file growth** switched on; if you do not want to use this option, enter at least 1.5 GB in this parameter and switch off **file growth** after setup. | 500 |
| MSSQL Port | The port number for connecting to the History database. | 1433 |
| MSSQL Machine Name/IP | The name or IP address of the server on which the CMDB schema runs. | |

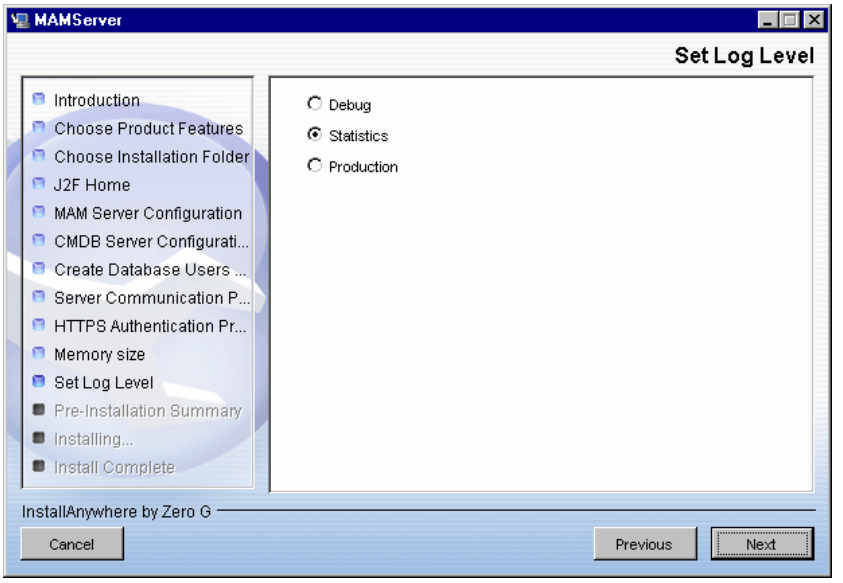
**11** Click **Next** to open the Memory Size dialog box.



Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**12** Click **Next** to open the Set Log Level dialog box.

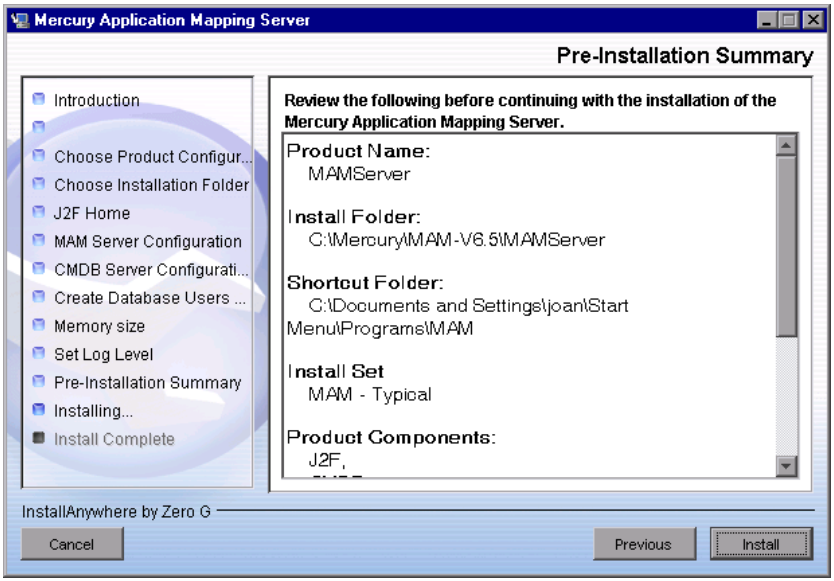



Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.
- **Production.** Only error messages are written to the log file.

  If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**13** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**14** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When the installation is complete the Installation Completed dialog box is displayed.

**15** Click **Done**. Depending on which components are installed, Mercury Application Mapping shortcuts are added to the Windows Start menu.

**16** Start up Mercury Business Availability Center.

# Sharing the Mercury Business Availability Center CMDB

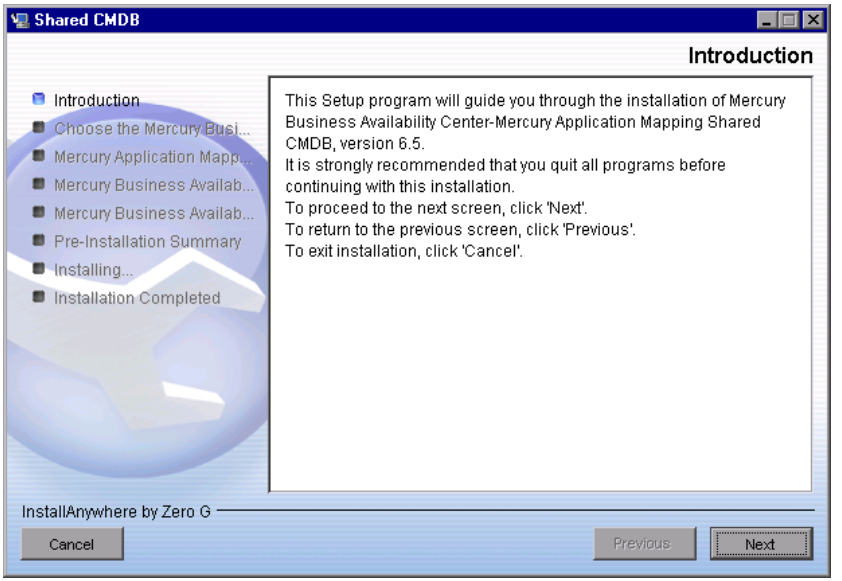
The following procedure explains how to share the configuration management database (CMDB) between Mercury Application Mapping and Mercury Business Availability Center. The CMDB is run as a service on the Mercury Business Availability Center modeling server on the Data Processing Server.

This is the second part of the procedure. For the first part of the procedure, see "Installing the Server with Oracle Server" on page 111 or "Installing the Server with Microsoft MS SQL Server" on page 125.

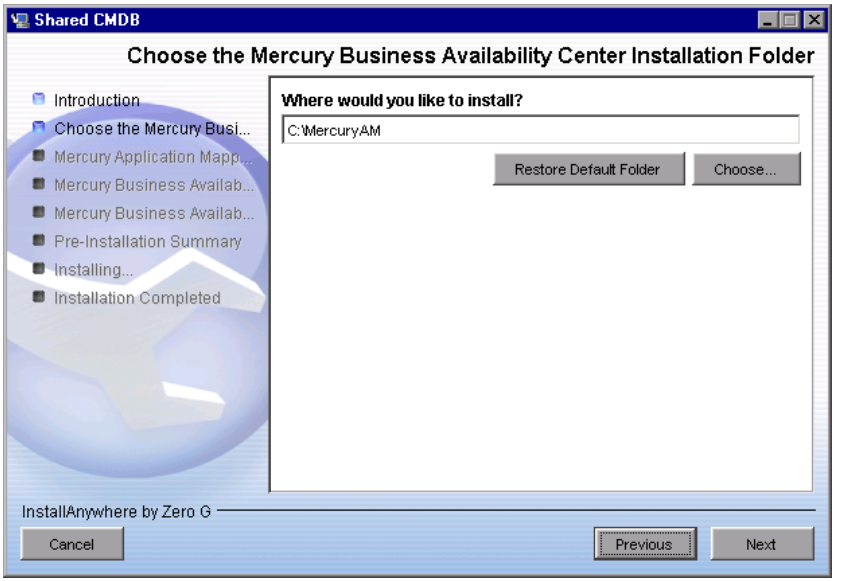
**To share the CMDB:**

1. Shut down Mercury Business Availability Center if it is running.
2. Insert the **Mercury Application Mapping *6.6* Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.
3. Double-click the **<CD-ROM root folder>\MAM66\ BACMAMShareCMDB.exe** file.

A progress bar is displayed. Once the initial process is complete, the Introduction dialog box opens.



**4** Click **Next** to open the Choose Mercury Business Availability Center Installation Folder dialog box.



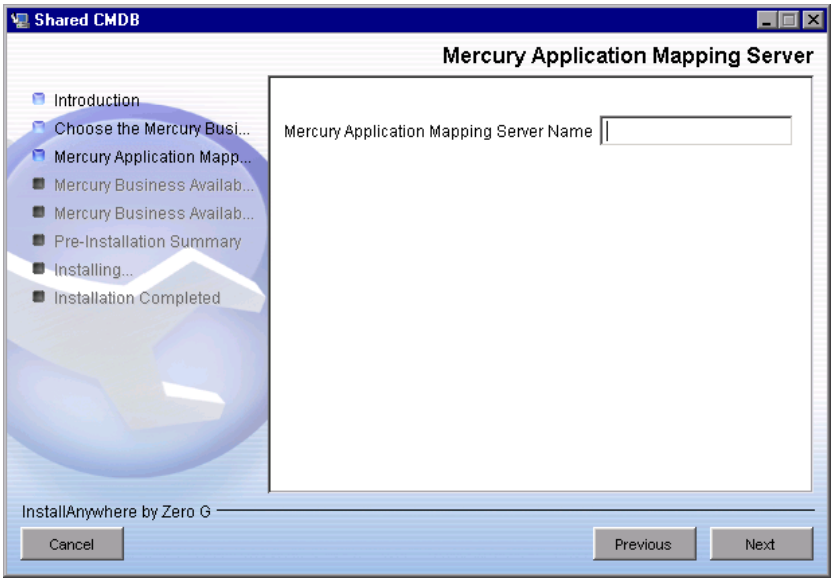

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

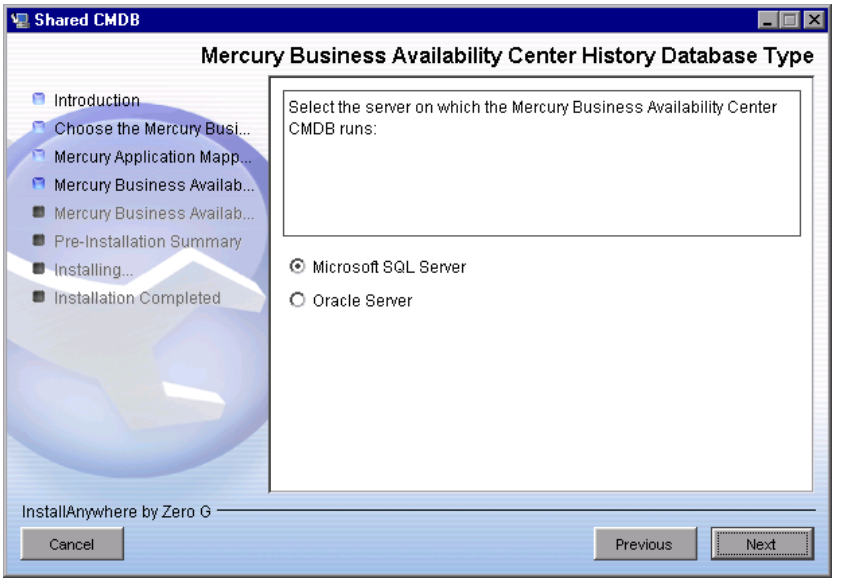
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**5** Click **Next** to open the Mercury Application Mapping Server dialog box.




Enter the name of the Mercury Application Mapping machine.

**6** Click **Next** to open the Mercury Business Availability Center History Database Type dialog box.



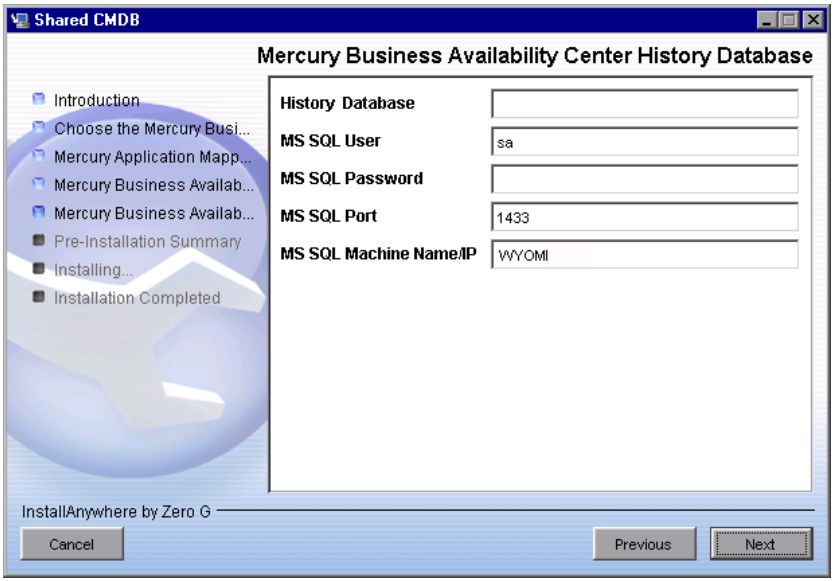

In this step, existing Mercury Application Mapping History database details are registered in the Mercury Business Availability Center configuration files. This step does not create a new database.

Select **MS SQL Server** or **Oracle Server** and click **Next**.

**7** If you chose **MS SQL Server**, continue to the next step.

If you chose **Oracle Server**, continue to step 10.

**8** Click **Next** to open the Mercury Business Availability Center History Database dialog box.

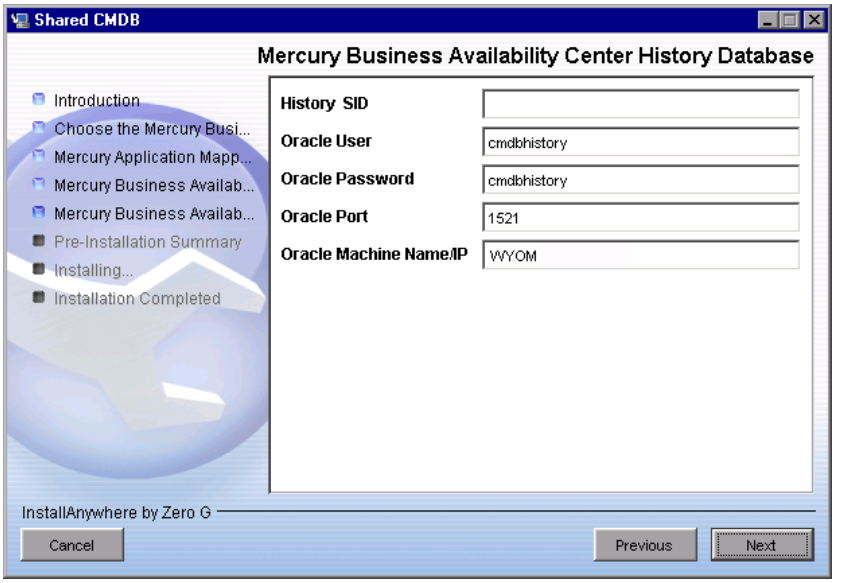



**9** Accept the default values or make changes to the following fields, click **Next** and skip to step 11.

| Field | Description | Default Value |
|---|---|---|
| History Database | The History database that you installed during the Mercury Application Mapping server installation. For details, see step 10 in "Installing the Server with Microsoft MS SQL Server" on page 125. | |
| MSSQL User | The user name of the MS SQL Server login account. The account must have CREATE DATABASE permissions. To connect to an existing History database, the login account with which you are connecting must be mapped to the dbo user in the History database. | sa |
| MSSQL Password | The password of the MS SQL Server login account. | |

| Field | Description | Default Value |
|---|---|---|
| MSSQL Port | The port number of the History database. | 1433 |
| MSSQL Machine Name/IP | The name of the physical IP or TCP address or server address of MS SQL Server on which the History database runs. | |

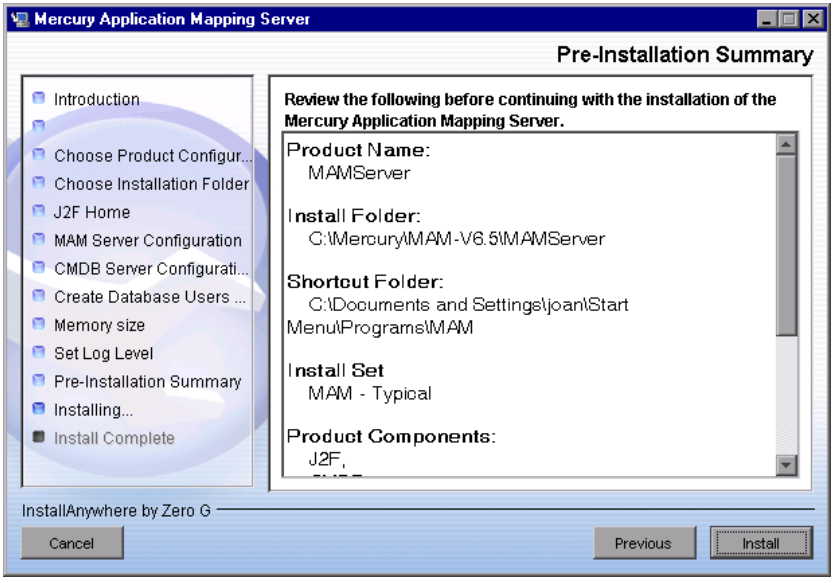
**10** Click **Next** to open the Mercury Business Availability Center History Database dialog box.



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| History SID | The History schema SID to which you want to connect (that you installed during the Mercury Application Mapping server installation). For details, see step 10 on page 118 in "Installing the Server with Oracle Server" on page 111. | |
| Oracle User | The user name Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Password | The password Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Port | The port Mercury Application Mapping uses to connect to the History schema. | 1521 |
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the History schema runs. | |

**11** Click **Next** to open the Pre-Installation Summary dialog box.



**12** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When the installation is complete, the Installation Completed dialog box is displayed.

**13** Click **Done**.

# 6

# Installing Packages

This chapter explains how to install Mercury Application Mapping packages. Packages contain definitions, resources, and tools that enable you to discover IT infrastructure resources such as network extensions, applications, and databases.


| This chapter describes: | On page: |
|---|---|
| Default Package Installation Overview | 147 |
| Deploying Default Packages | 148 |


## Default Package Installation Overview

**Note:** It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."

Mercury Application Mapping includes predefined packages.

This section includes the following topics:


➤ "Automatically Installed Packages" on page 148

### Automatically Installed Packages

Some packages do not appear in the installation wizard, but are installed automatically.

- The **Basic.zip** and **Rules.zip** files are installed automatically after installing and launching the Mercury Application Mapping server.
- The **Network.zip** package is a prerequisite for any discovery procedure. It is automatically installed with the package installation procedure. Therefore, even if you do not select any of the predefined packages, you must perform the package installation procedure to install the Network.zip package.

---

**Note:** After installing a package file, it is recommended that you set the file to open as read-only to prevent changes being made to the file.

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## Deploying Default Packages

This section explains how to install default packages.

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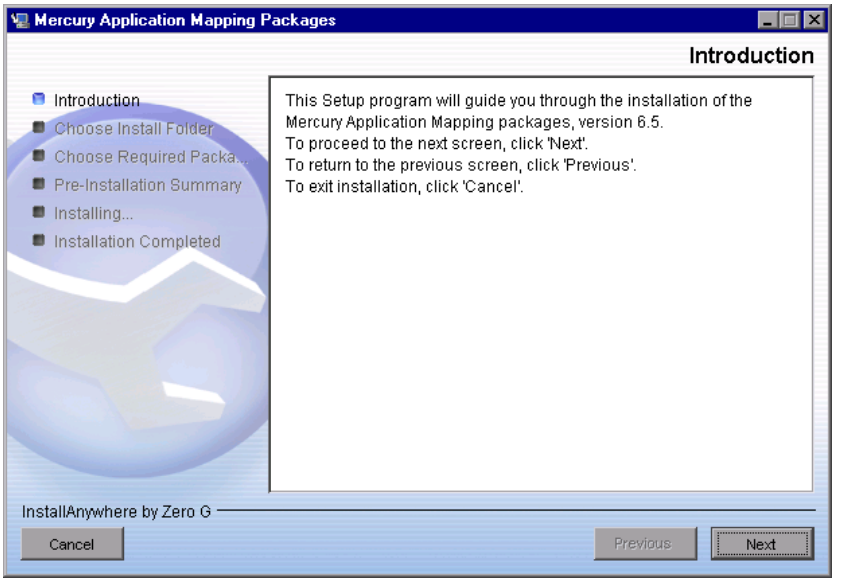
**Note:** You must perform this procedure even if you do not intend to install any packages, as the Network.zip package is automatically installed at the end of the procedure.

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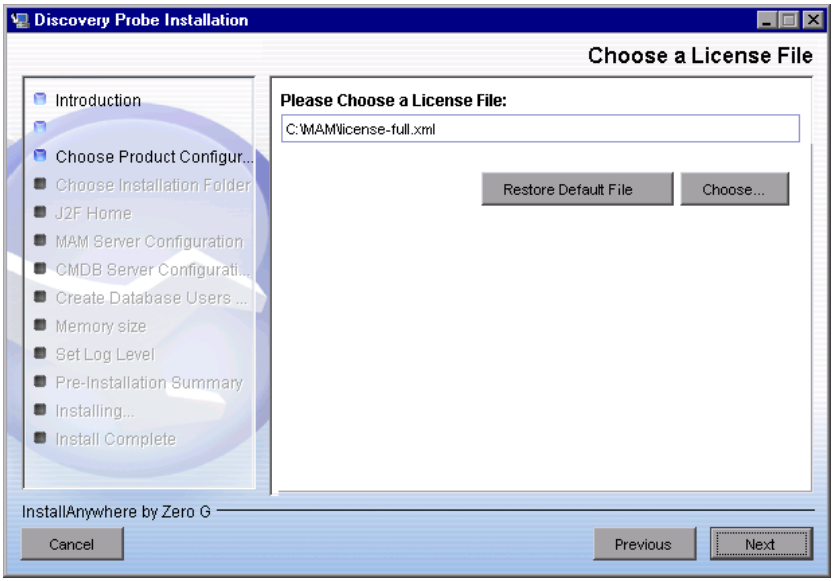
**To install Mercury Application Mapping packages:**

1. Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.
2. Double-click the **<CD-ROM root folder>\MAM66\MAMpackages.exe** file.

A progress bar is displayed. Once the initial process is complete, the Introduction dialog box opens.

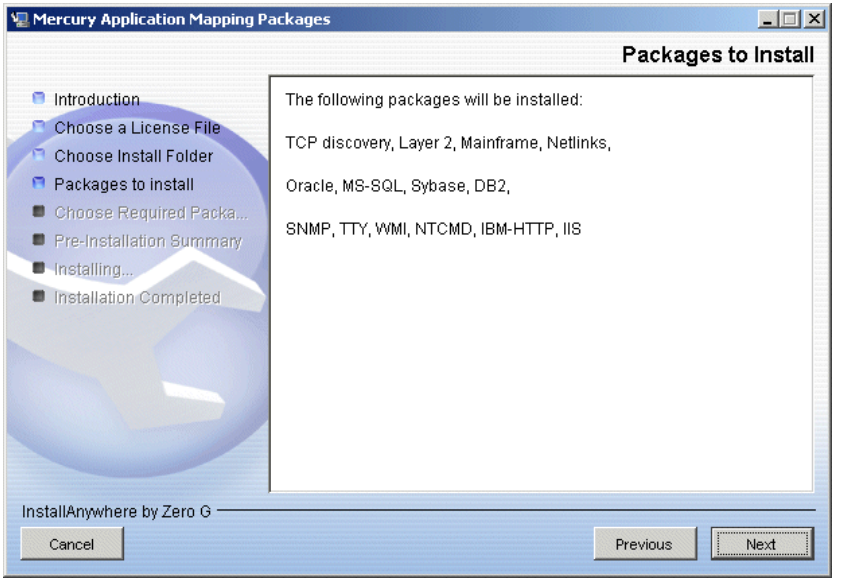


**3** Click **Next** to open the Choose a License File dialog box.



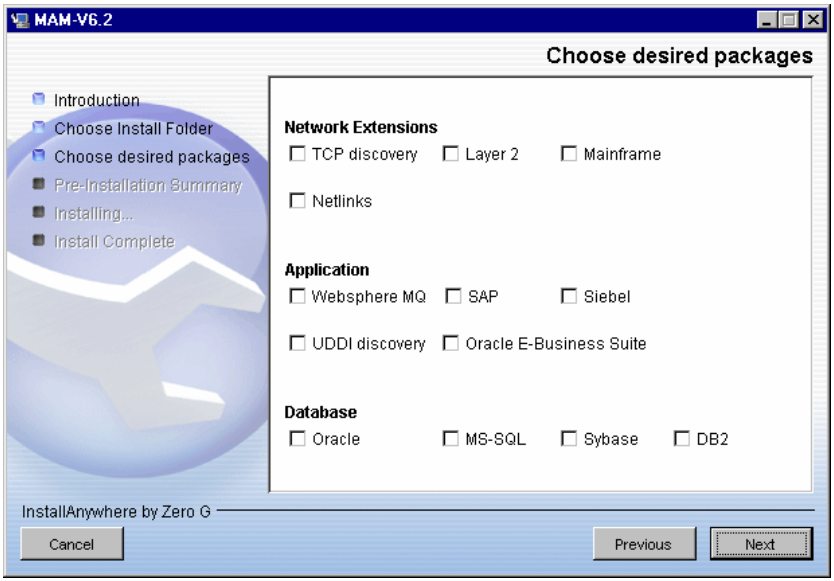

Enter the path to the file or browse to the file and select it. For details on the packages that are installed for each license, see “License Configurations” on page 6.

**4** If you selected to install the basic or application licence packages (for example, using the license-basic.xml file), the Packages to Install dialog box opens.




The basic packages that are to be installed are listed. Click **Next** to open the Pre-Installation Summary dialog box. Skip to step 7 on page 155.

**5** If you selected to install all packages (using the license-full.xml file), the Choose Required Packages dialog box opens.



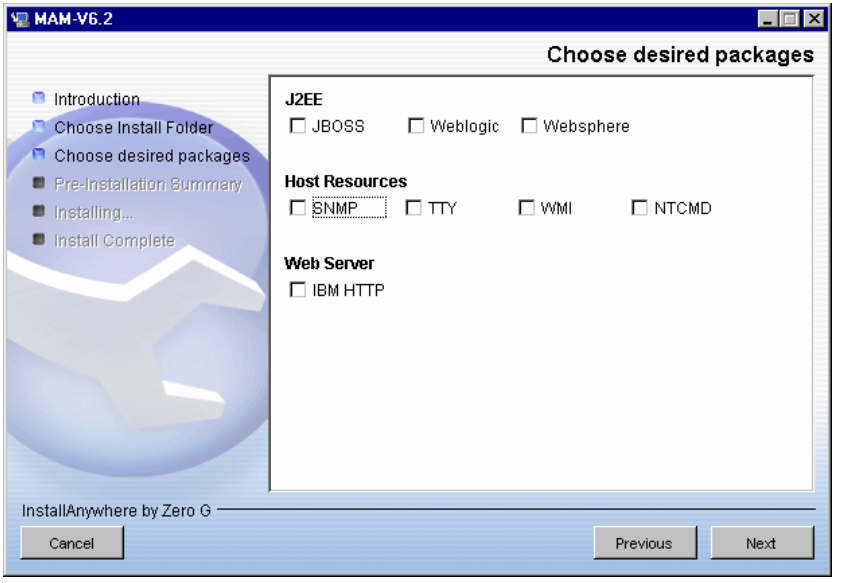

Select the check box for each package you want to install.

The following table contains a list of the default packages in the package directory and their descriptions:

| Type of Package | Package Name | Resources Needed For Discovery |
|---|---|---|
| Network Extensions | TCP Discovery | TCP connections between hosts |
| | Layer 2 | Layer 2 structure of the network |
| | Mainframe | Mainframe environment using the SNMP protocol |
| | Netlinks | NetFlow protocol for collecting IP traffic information |

| Type of Package | Package Name | Resources Needed For Discovery |
|---|---|---|
| Application | Websphere MQ | Websphere MQ components and the internal links between them |
| | SAP | SAP ERP system |
| | Siebel | Siebel CRM system |
| | UDDI Discovery | UDDI registry |
| | Oracle E-Business Suite | Oracle E-Business Suite |
| Database | Oracle | Oracle database |
| | MS-SQL | Microsoft MS SQL Server database |
| | Sybase | Sybase database |
| | DB2 | DB2 database |

**6** Click **Next** to select more packages.

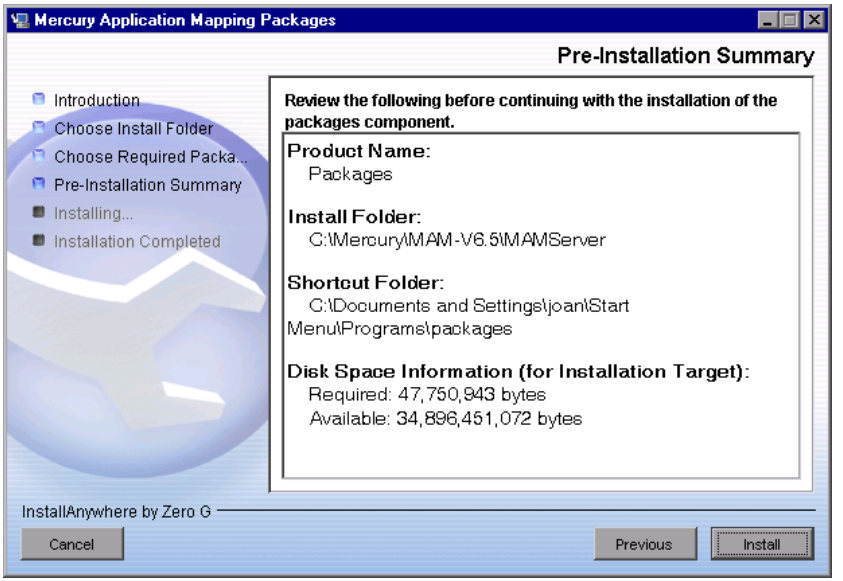



Select the check box for each package you want to install.

The following table contains a list of the default packages in the package directory and their description:

| Type of Package | Package Name | Resources Needed For Discovery |
|---|---|---|
| J2EE | JBoss | JBoss components |
| | Weblogic | Weblogic components |
| | Websphere | Websphere MQ components and the internal links between them |
| Host Resources | SNMP | Host hardware and software components using SNMP queries |
| | TTY | Host hardware and software components using Telnet and SSH connections |
| | WMI | Host hardware and software components using WMI technology |
| | NTCMD | Host hardware and software components using NTCMD technology |
| Web Server | IBM HTTP | IBM HTTP components |

**7** Click **Next**. The Pre-Installation Summary dialog box opens, listing the installation options you have selected.




**8** Click **Install** to complete the installation of the packages in the package directory.

**9** Click **Done**.

# 7

# Installing the Application (GUI)

This chapter describes the procedures that are needed to install the Mercury Application Mapping application (GUI).

---

**Note:**

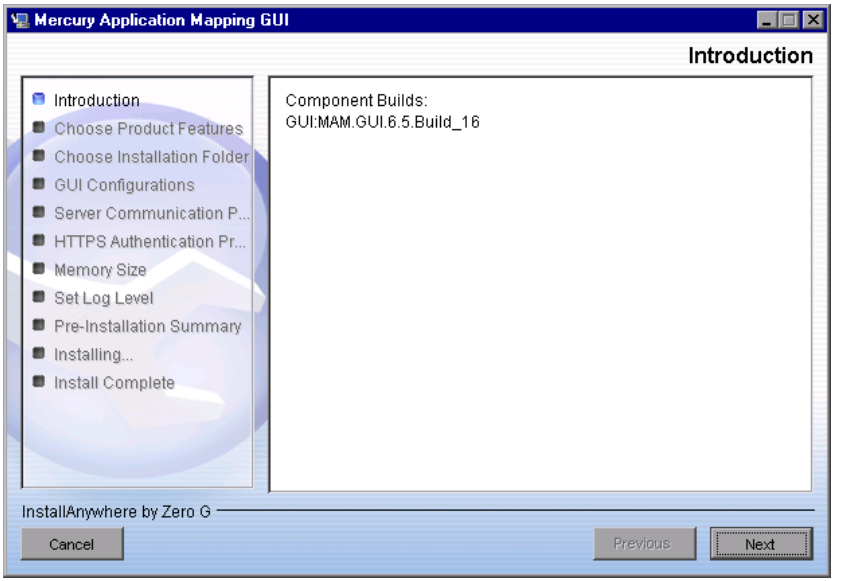
- It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."
- You can install Mercury Application Mapping GUI before or after you install Mercury Application Mapping on the servers and the Mercury Application Mapping packages.
- For a Solaris installation, you install the Mercury Application Mapping application (GUI) from the Windows CD-ROM.

---

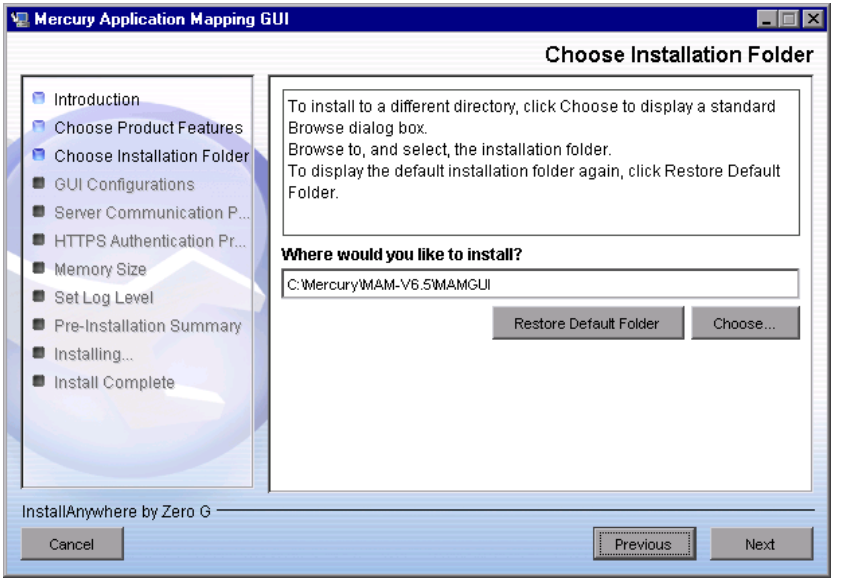
**To install Mercury Application Mapping GUI:**

1. Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.
2. Double-click the <**CD-ROM root folder**>**MAM66****MAMGUI.exe** file.

A progress bar is displayed. Once the initial process is completed, the Introduction dialog box is displayed.




**3** Click **Next** to open the Choose Installation Folder dialog box.



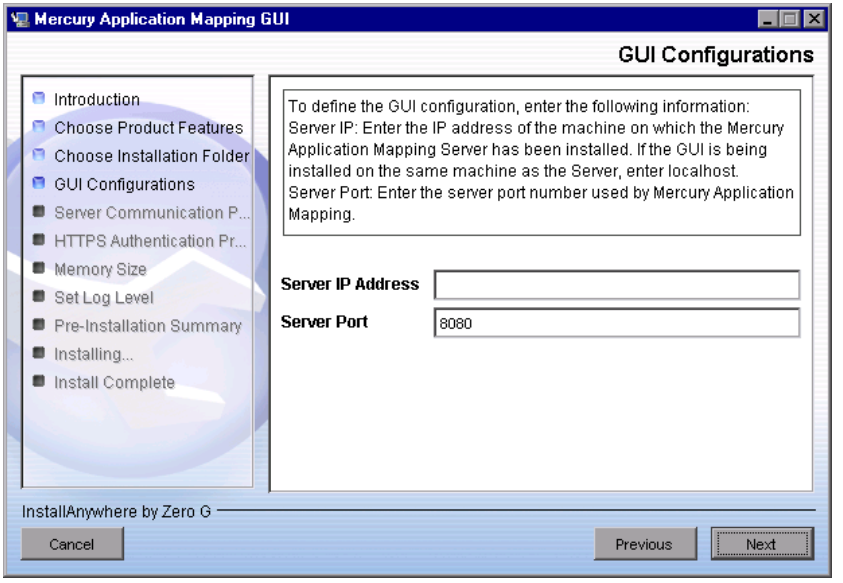
Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

---

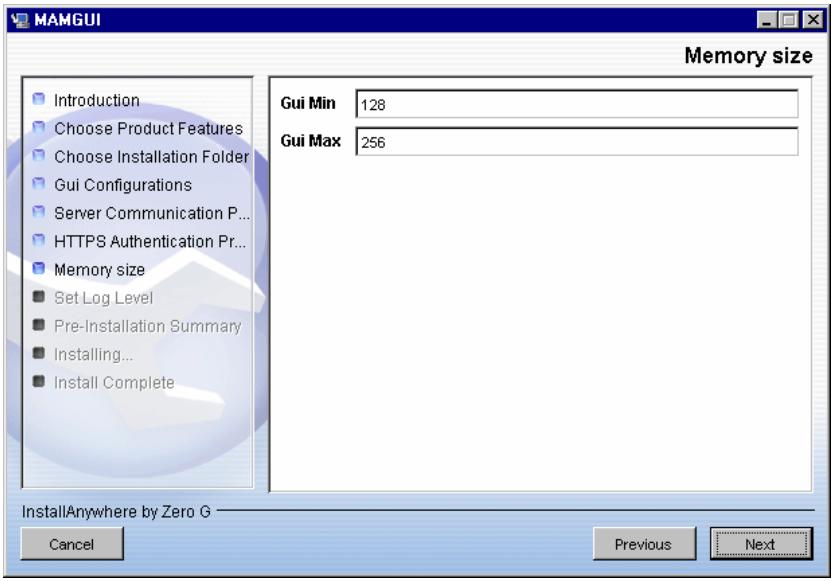
**4** Click **Next** to open the GUI Configurations dialog box.




Accept the default values or make changes to the information:

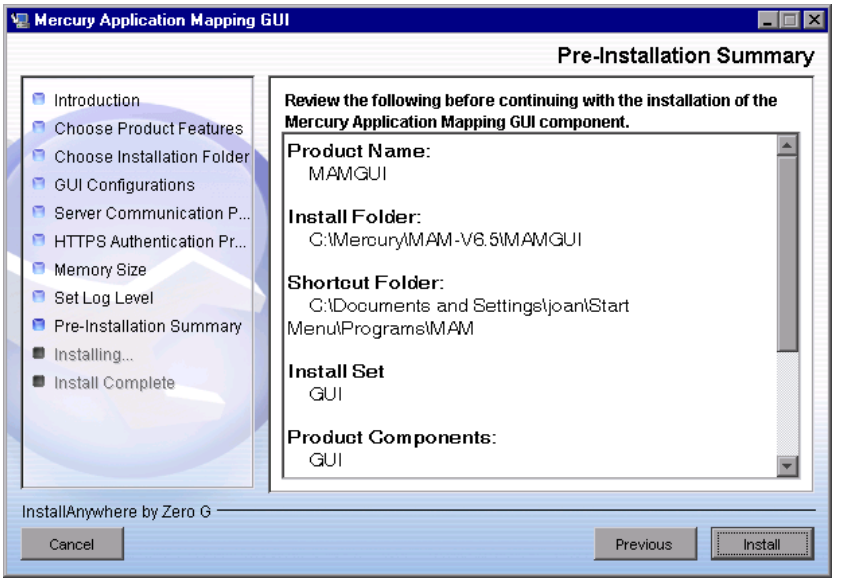
- **Server IP.** The IP address of the machine on which the Mercury Application Mapping server has been installed.
- **Server Port.** The server port number used by Mercury Application Mapping.

**5** Click **Next** to open the Memory Size dialog box.




If necessary, change the minimum or maximum GUI memory sizes. Click **Next**.

**6** The Pre-Installation Summary dialog box is displayed listing the installation options you have selected.




If you are satisfied with the summary, click **Install** to install the Mercury Application Mapping GUI application.

**7** Click **Done**.

# 8

# Installing the Discovery Probes

This chapter describes the procedures that are needed to install the Mercury Application Mapping Discovery probes.

The probes can be installed before or after you install the Mercury Application Mapping server. However, during probe installation you must provide the server name, so it is preferable to install the server before installing the probe.

---

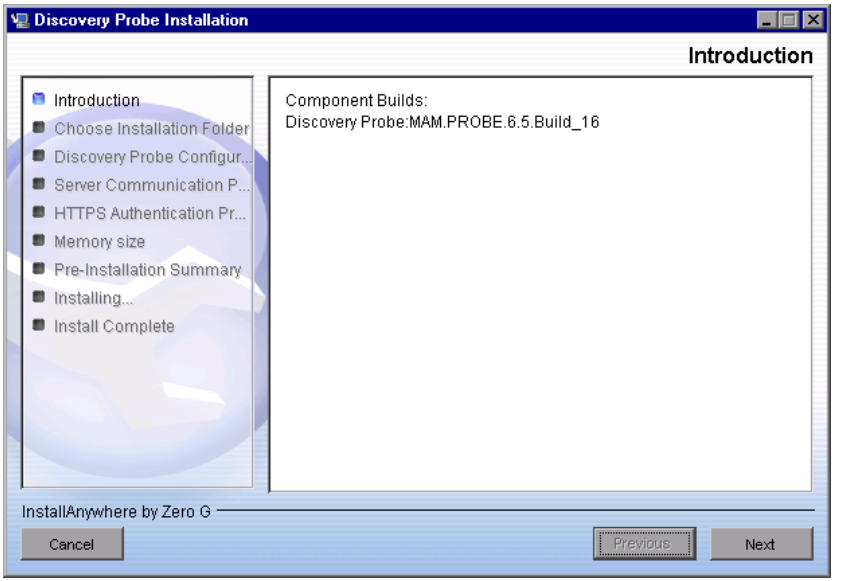
**Note:** For a Solaris installation, you install the Mercury Application Mapping application discovery probes from the Windows CD-ROM.

---

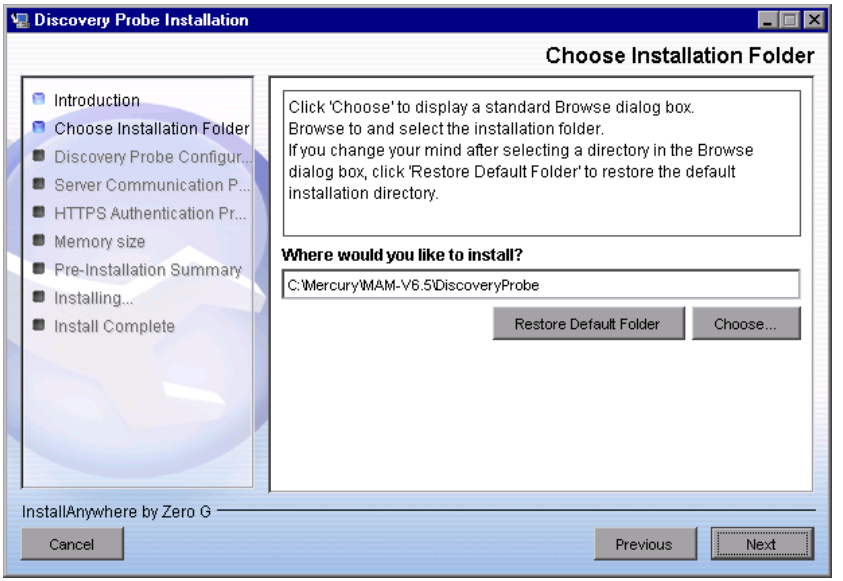
**To install Mercury Application Mapping probes:**

1. Insert the **Mercury Application Mapping *6.6* Setup Windows** CD-ROM into the drive from which you want to install. If you are installing from a network drive, connect to it.
2. Double-click the **<CD-ROM root folder>\MAM66\MAMDiscoveryProbe.exe** file.

A progress bar is displayed. Once the initial process is complete, the Introduction dialog box opens.



**3** Click **Next** to open the Choose Installation Folder dialog box.



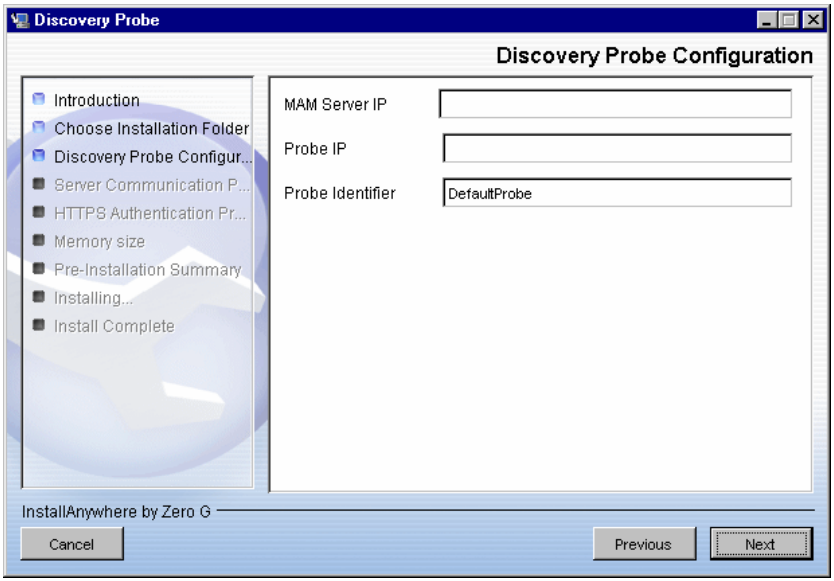

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

---

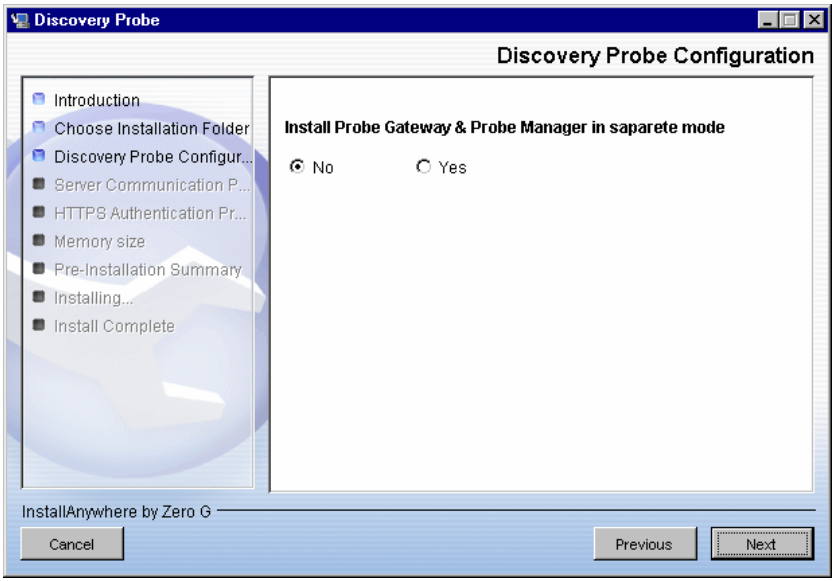
**4** Click **Next** to open the Discovery Probe Configuration dialog box.




Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| MAM Server IP | The IP address of the Mercury Application Mapping server to which the Mercury Application Mapping Discovery Probe is to be connected. | |
| Probe IP | The IP address of the Discovery Probe that you are currently installing. | |
| Probe Identifier | The name of the Probe identifier. | DefaultProbe |

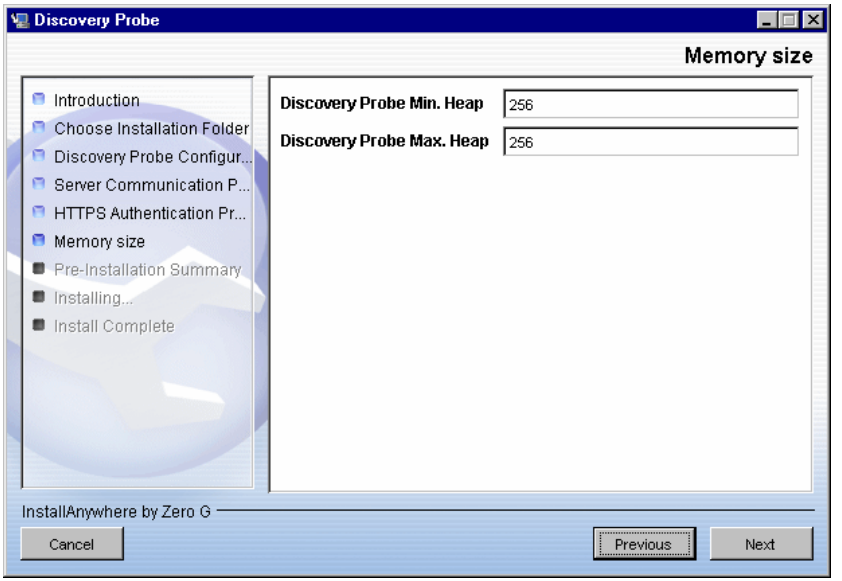
**5** Click **Next** to open the Discovery Probe Configuration dialog box.




You can run the Probe Gateway and Manager as one service or as separate services. You would probably run them as separate services when Mercury Application Mapping is installed on a large network.

Click **No** to run Probe Gateway and Probe Manager as one service. Click **Yes** to run Probe Gateway and Probe Manager as two services.

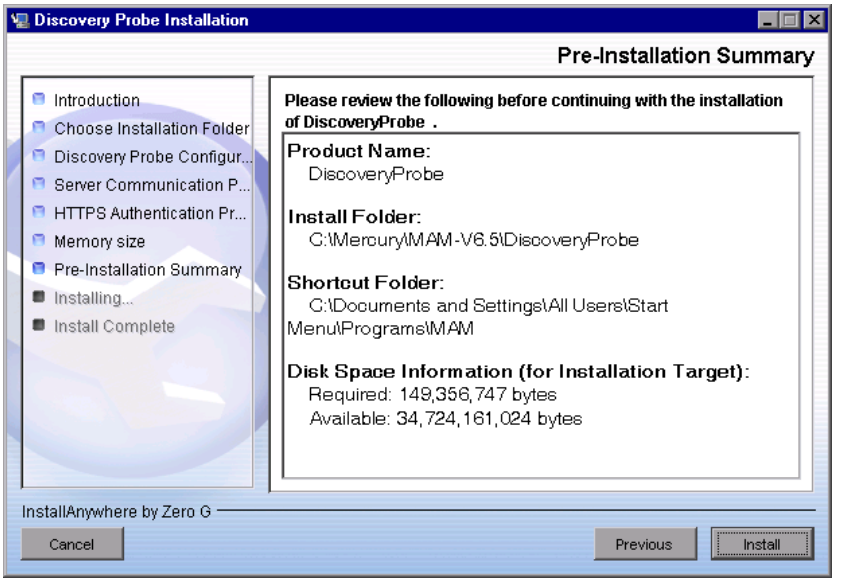
**6** Click **Next** to open the Memory Size dialog box.




Change the minimum or maximum Discovery Probe heap size.

For large systems, it is recommended to enlarge the minimum and maximum heaps to 1 GB.

**7** Click **Next** to open the Pre-Installation Summary dialog box.




**8** Click **Install** to install the Mercury Application Mapping discovery probes.

**9** Click **Done**.

# Part III

## Installation for Solaris

# 9

# Single Machine (Typical) Deployment

This chapter describes the procedures to be performed for a typical installation of Mercury Application Mapping with Oracle Server in a single machine deployment on a Solaris platform. For details on using the installation wizard, see "Using the Installation Wizard" on page 10.

---

**Note:** It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."

---


| This chapter describes: | On page: |
|---|---|
| Installation Procedure with Oracle Server | 173 |


## Installation Procedure with Oracle Server

The following procedure explains how to install Mercury Application Mapping when the CMDB schemas run on Oracle Server.

You install the Mercury Application Mapping server from the Mercury Application Mapping 6.6 Setup Solaris CD-ROM provided with the Mercury Application Mapping distribution package.

**To install Mercury Application Mapping:**

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

2 Insert the **Mercury Application Mapping 6.6 Setup Solaris** 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.

```
cd /cdrom/cdrom0
```

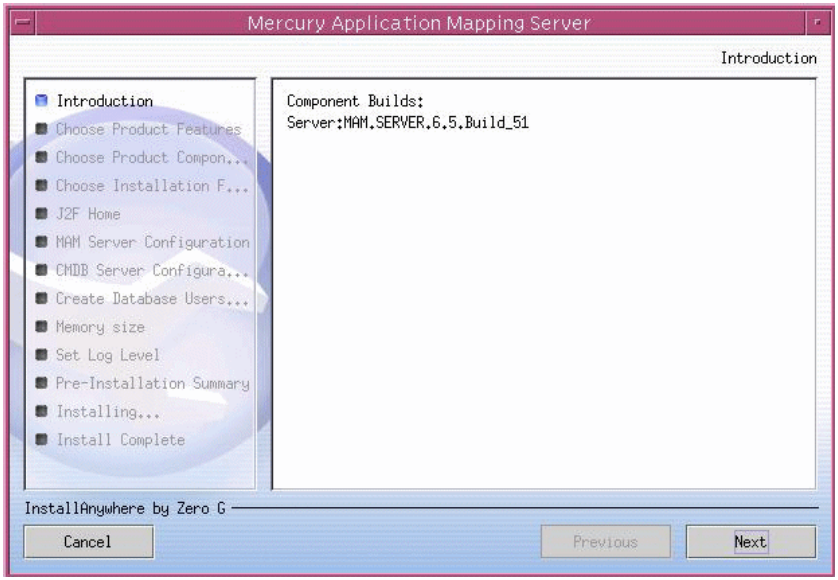
4 Move to the Mercury Application Mapping 6.6 directory:

```
cd mam66
```

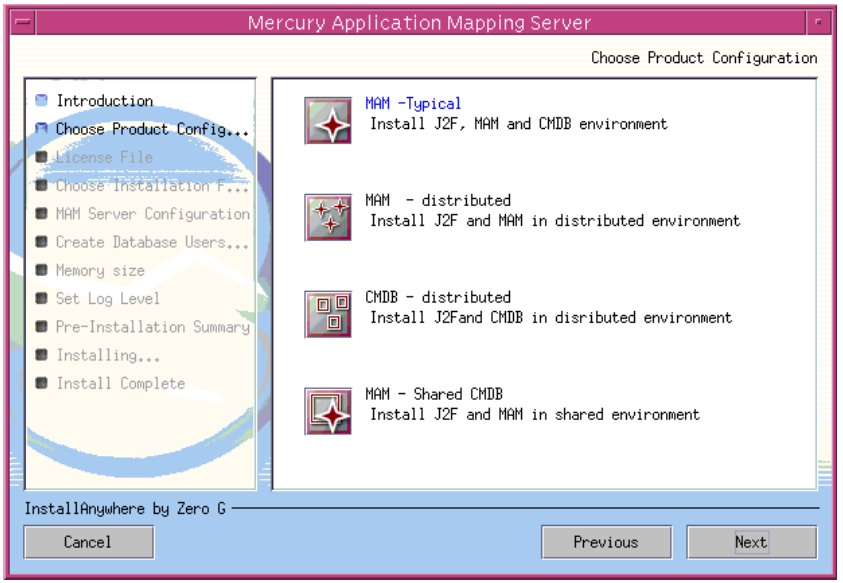
5 Run the command to install the Mercury Application Mapping server:

```
./MAMServer.bin
```

6 The installation begins. Follow the on-screen instructions for server installation.



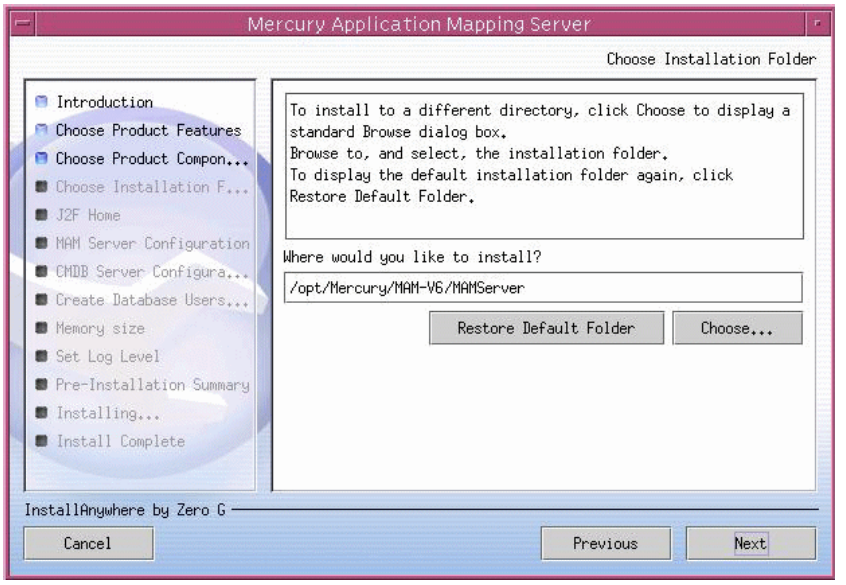
**7** Click **Next** to open the Choose Product Configuration dialog box.




**8** Select the **MAM - Typical** icon and click **Next** to open the Choose a License File dialog box.

Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

**9** Click **Next** to open the Choose Installation Folder dialog box.



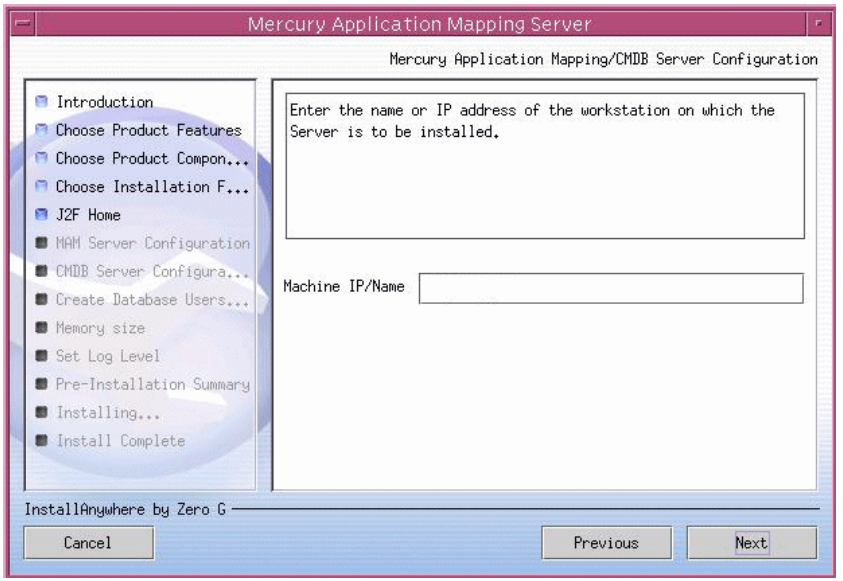

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

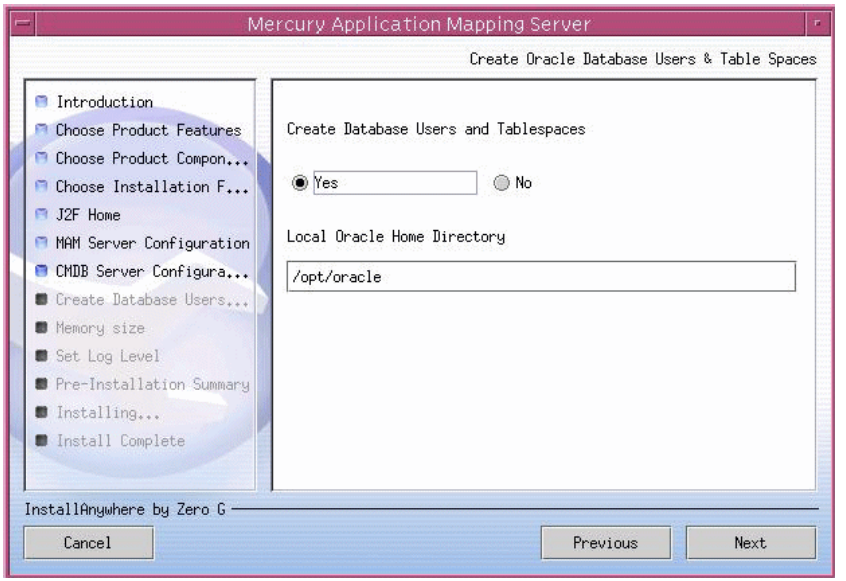
---

**10** Click **Next** to open the Mercury Application Mapping/CMDB Server Configuration dialog box.




Enter the IP address or the machine name of the workstation on which the Mercury Application Mapping and CMDB servers are to be installed in the **Machine IP/Name** box, or accept the entry.

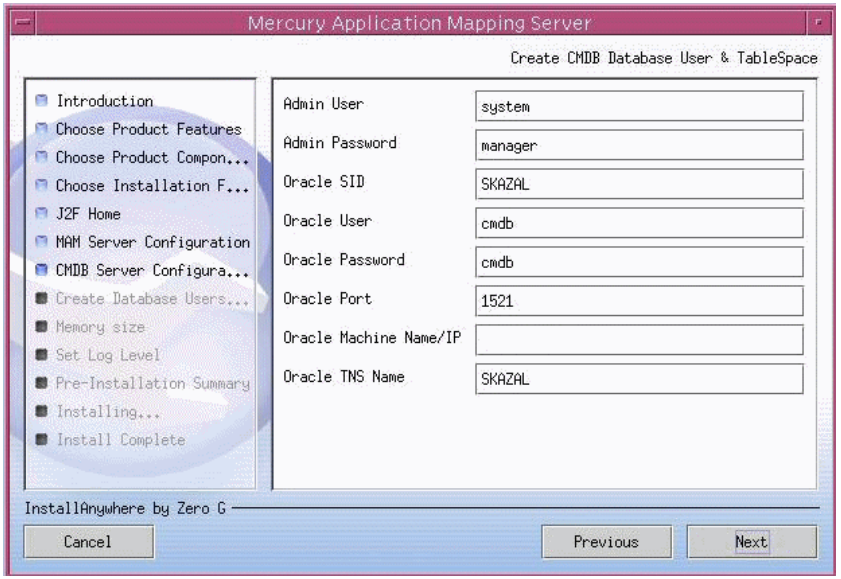
**11** Click **Next** to open the Create Oracle Database Users & Tablespaces dialog box.




Select **Yes** to create new users and tablespaces. Select **No** to use the existing users and tablespaces. For details on the difference between **Yes** and **No**, see "Database Users and Tablespaces" on page 18.

Accept the local Oracle home directory, or enter another path.

**12** Click **Next** to open the Create CMDB Database User & Tablespace dialog box.

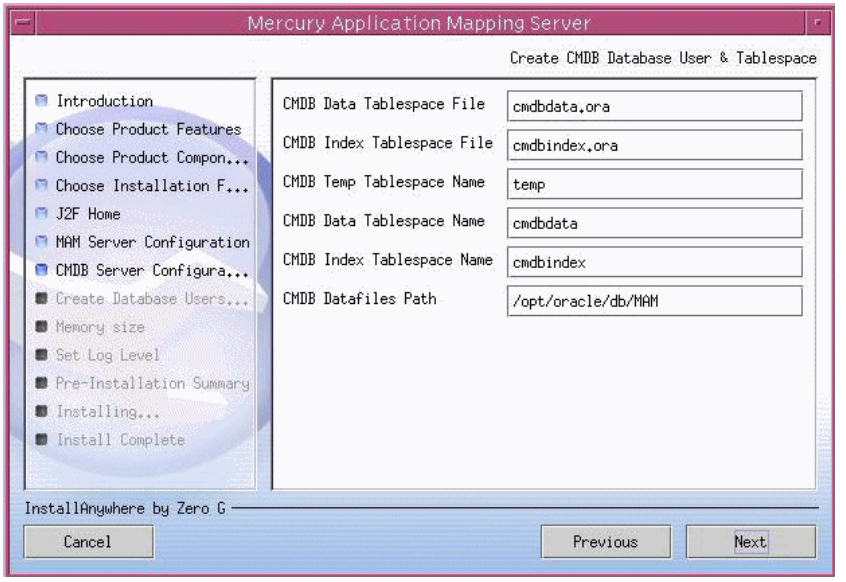



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the schema. | manager |
| Oracle SID | The schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping server uses to connect to the CMDB schema. | cmdb |
| Oracle Password | The password Mercury Application Mapping server uses to connect to the CMDB schema. | cmdb |
| Oracle Port | The port Mercury Application Mapping uses to connect to the CMDB schema. | 1521 |

| Field | Description | Default Value |
|---|---|---|
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server. | |
| Oracle TNS Name | The alias of Oracle Server as specified in the **tnsnames.ora** client file. | SKAZAL |

**13** Click **Next** to open the Create CMDB Database User & Tablespace dialog box.

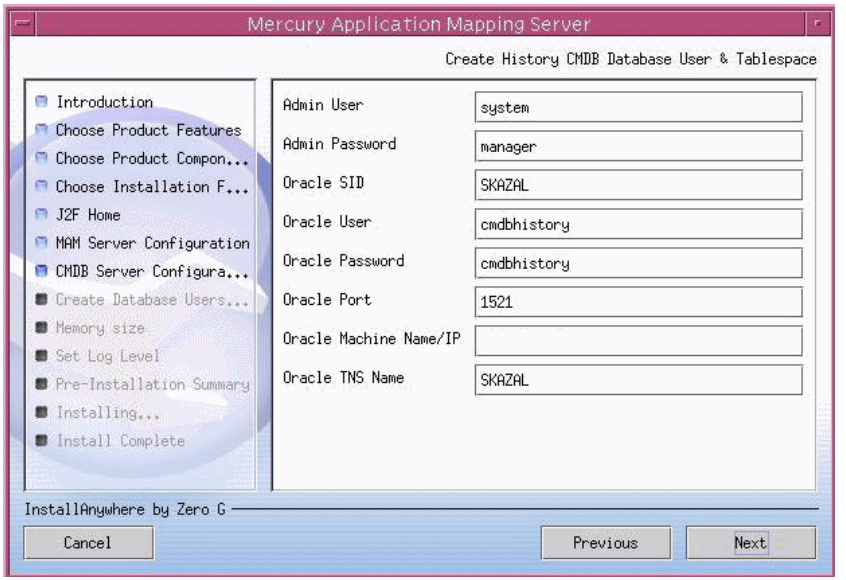



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB Data Tablespace File | Name of the Mercury Application Mapping tablespace file. Only relevant if you chose to create the tablespaces. | cmdbdata.ora |
| CMDB Index Tablespace File | Name of the Mercury Application Mapping index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbindex.ora |

| Field | Description | Default Value |
|---|---|---|
| CMDB Temp Tablespace Name | Name of the Mercury Application Mapping temporary tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB Data Tablespace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbdata |
| CMDB Index Tablespace Name | Name of the Mercury Application Mapping index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbindex |
| CMDB Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change this location. | default_oradata_path |

**14** Click **Next** to open the Create History CMDB Database User & Tablespace dialog box.

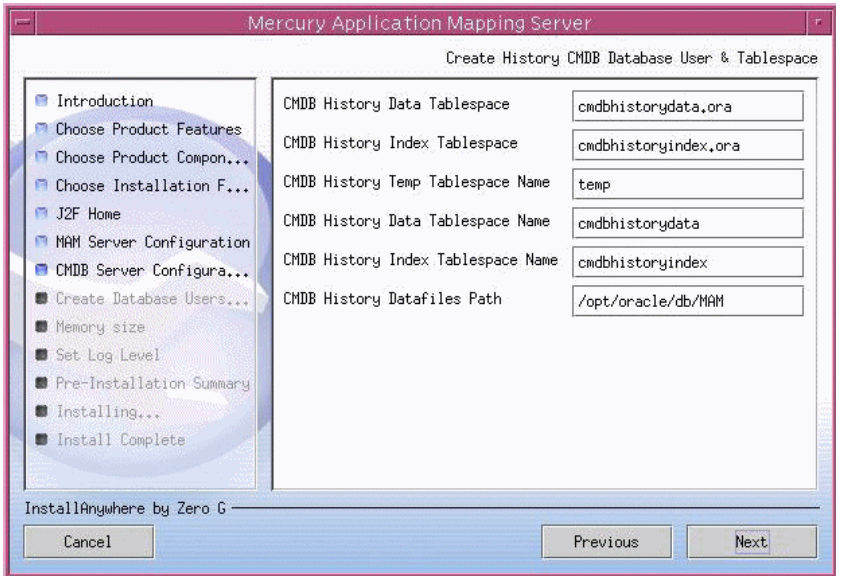



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the History schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the History schema. | manager |
| Oracle SID | The History schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Password | The password Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |

| Field | Description | Default Value |
|---|---|---|
| Oracle Port | The port Mercury Application Mapping uses to connect to the History schema. | 1521 |
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the History schema runs. | |
| Oracle TNS Name | The alias of Oracle Server as specified in **tnsnames.ora** client file. | SKAZAL |

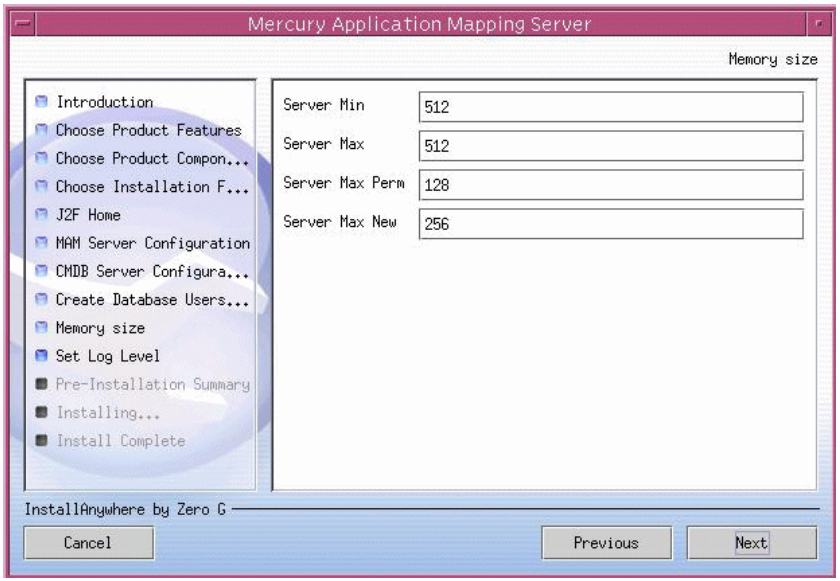
**15** Click **Next** to open the next Create History CMDB Database User & Tablespace dialog box.



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB History Data Tablespace | Name of the Mercury Application Mapping History tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistorydata.ora |
| CMDB History Index Tablespace | Name of the Mercury Application Mapping History index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistoryindex.ora |
| CMDB History Temp Tablespace Name | Name of the Mercury Application Mapping temporary History tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB History Data Tablespace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistorydata |
| CMDB History Index Tablespace Name | Name of the Mercury Application Mapping History index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistoryindex |
| CMDB History Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change the location. | default_oradata_path |

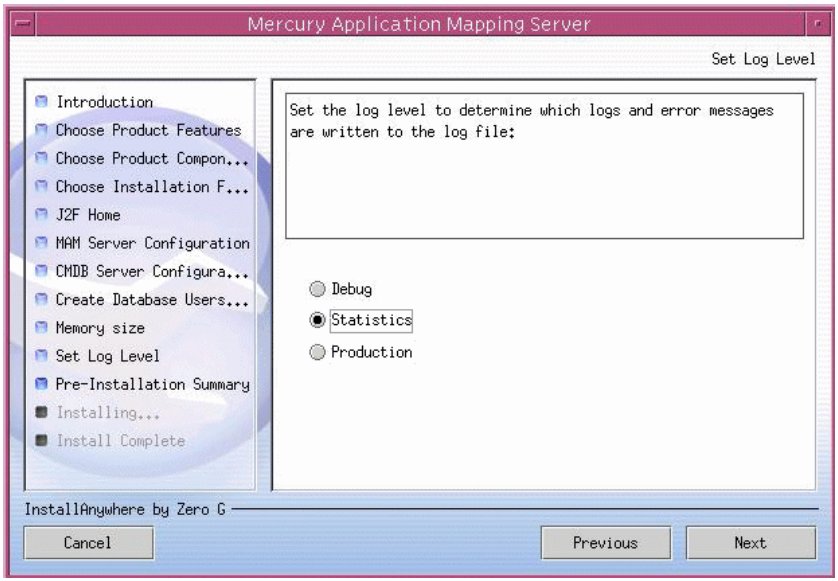
**16** Click **Next** to open the Memory Size dialog box.




Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**17** Click **Next** to open the Set Log Level dialog box.

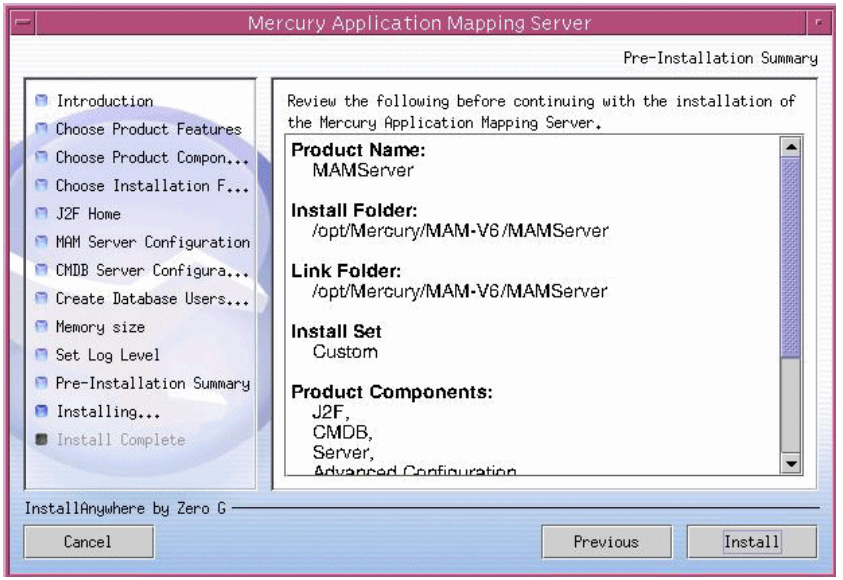



Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.
- **Production.** Only error messages are written to the log file.

  If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**18** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**19** If you are satisfied with the summary, click **Install**. A message is displayed indicating that the installation is currently being performed. When the installation is complete, Setup displays the Installation Completed dialog box.

**20** Click **Done**.

# 10

# Installing the Server in a Distributed Deployment

This chapter explains how to install the Mercury Application Mapping server on a Solaris platform, when the CMDB server is installed on a separate machine. For details on installing the CMDB server, see Chapter 11, “Installing the CMDB Server in a Distributed Deployment.”


| This chapter describes: | On page: |
|---|---|
| Installation Workflow | 190 |
| Installing the Server in a Distributed Deployment with Oracle Server | 191 |

# Installation Workflow

---

**Note:** It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."

---

The distributed deployment configuration of Mercury Application Mapping uses two server machines, one machine for the Mercury Application Mapping server and one machine for the CMDB server. During installation on both machines, the JBoss application server (J2F) is also installed.

You can deploy Mercury Application Mapping to run on Oracle Server.

---

**Note:** You can create CMDB schema users and tablespaces during Mercury Application Mapping installation and also during the CMDB server installation. However, only one schema definition is required. It is recommended, therefore, to provide schema details during the Mercury Application Mapping server installation and to create users and tablespaces during the CMDB server installation.

---

For details on using the installation wizard, see "Using the Installation Wizard" on page 10.

# Installing the Server in a Distributed Deployment with Oracle Server

The following procedure explains how to install the Mercury Application Mapping server (and the JBoss application server—J2F) on the Mercury Application Mapping Server machine, when the CMDB schemas run on Oracle Server. This is the first part of the procedure. For the second part of the procedure, see Chapter 11, "Installing the CMDB Server in a Distributed Deployment."

You install the Mercury Application Mapping server from the Mercury Application Mapping 6.6 Setup Solaris CD-ROM provided with the Mercury Application Mapping distribution package.

**To install Mercury Application Mapping:**

1. Log into the server as user **root**.
2. Insert the **Mercury Application Mapping 6.6 Setup Solaris** 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:

```
cd /cdrom/cdrom0
```

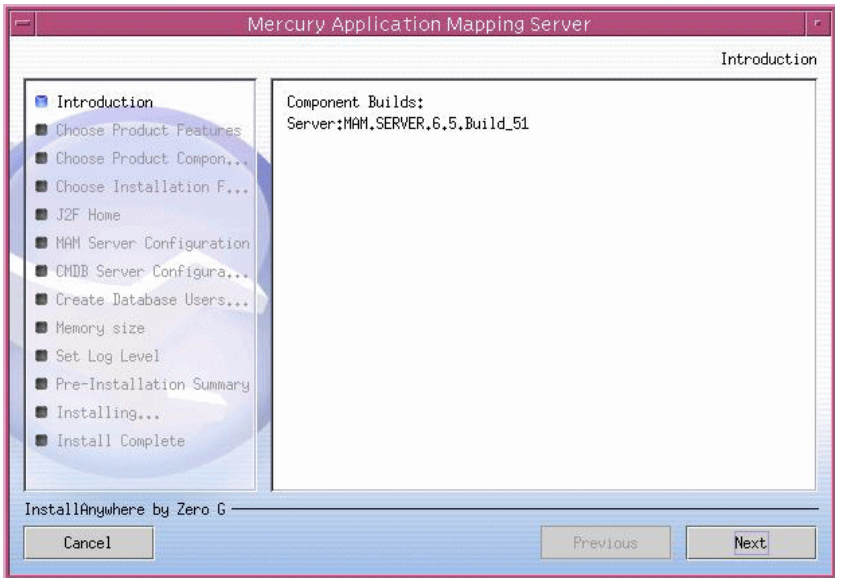
4. Move to the Mercury Application Mapping 6.6 directory:

```
cd mam66
```

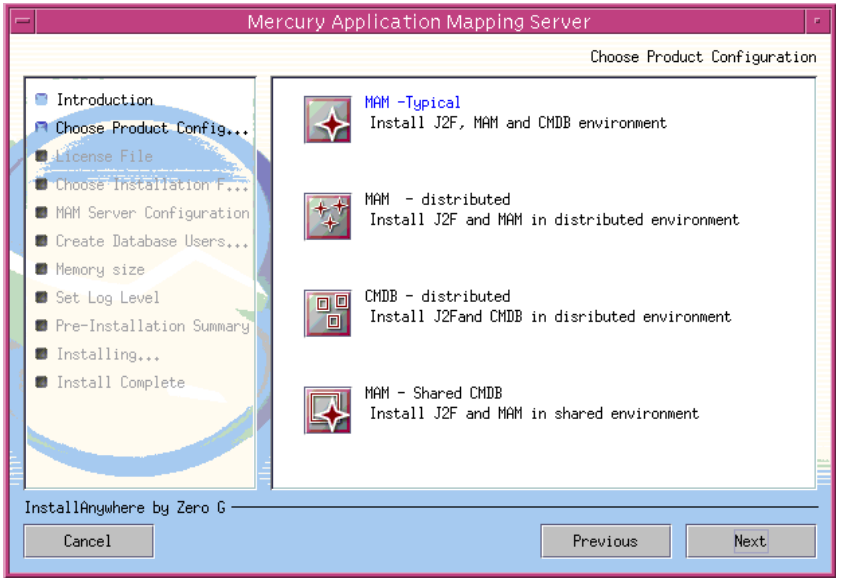
5. Run the command to install the Mercury Application Mapping server:

```
./MAMServer.bin
```

**6** The installation begins. Follow the on-screen instructions for server installation.



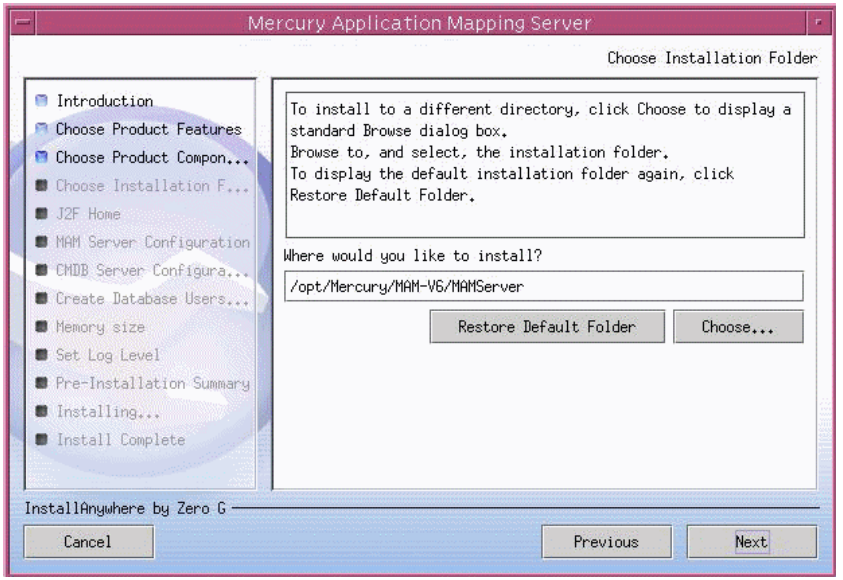

**7** Click **Next** to open the Choose Product Configuration dialog box.



**8** Select the **MAM – Distributed** icon and click **Next** to open the Choose a License File dialog box.

Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

**9** Click **Next** to open the Choose Installation Folder dialog box.



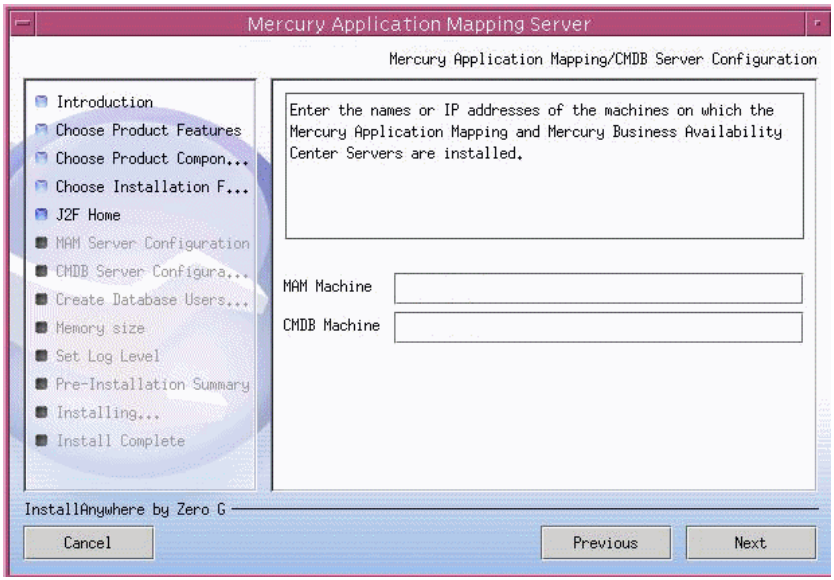

Accept the entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

---

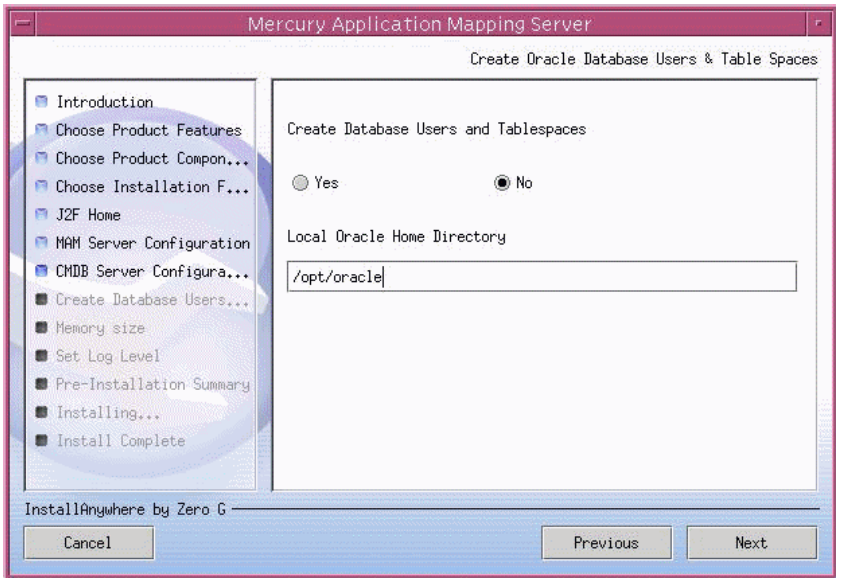
**10** Click **Next** to open the Mercury Application Mapping/CMDB Server Configuration dialog box.




Accept the default values or make changes to the following fields:

- **MAM Machine.** Enter the machine name or IP address of the machine on which you are installing the Mercury Application Mapping server.
- **CMDB Machine.** Enter the machine name or IP address of the machine on which you are installing the CMDB server.

**11** Click **Next** to open the Create Oracle Database Users & Tablespaces dialog box.

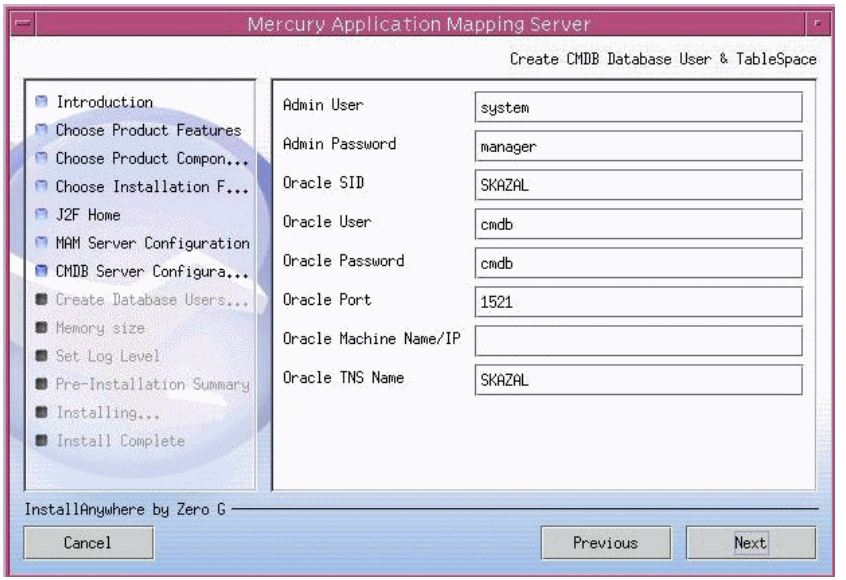



Select **No** to use existing users and tablespaces. It is recommended to create users and tablespaces during the installation on the CMDB server.

For details on the difference between **Yes** and **No**, see "Database Users and Tablespaces" on page 18.

Accept the default local Oracle home directory, or enter another home directory.

**12** Click **Next** to open the Create CMDB Database User & Tablespace dialog box.

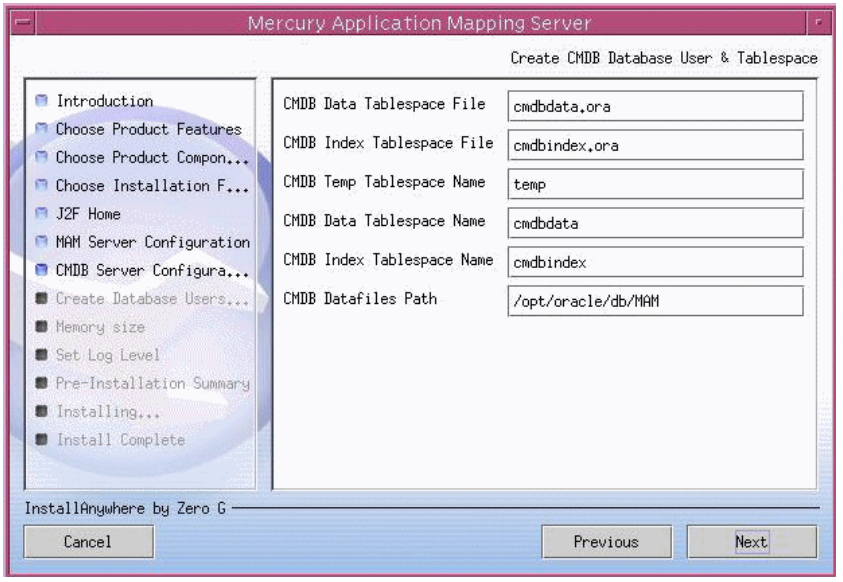



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the CMDB schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the CMDB schema. | manager |
| Oracle SID | The CMDB schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping server uses to connect to the CMDB schema. | cmdb |
| Oracle Password | The password Mercury Application Mapping server uses to connect to the CMDB schema. | cmdb |
| Oracle Port | The port Mercury Application Mapping uses to connect to the CMDB schema. | 1521 |

| Field | Description | Default Value |
|---|---|---|
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server. | |
| Oracle TNS Name | The alias of Oracle Server as specified in the **tnsnames.ora** client file. | SKAZAL |

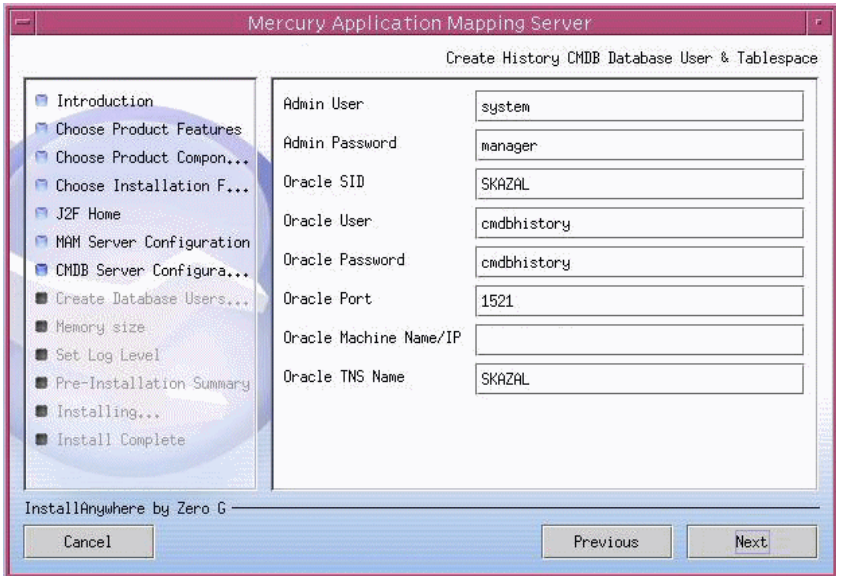
**13** Click **Next** to open the Create CMDB Database User & Tablespace dialog box.



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB Data Tablespace File | Name of the Mercury Application Mapping tablespace file. Only relevant if you chose to create the tablespaces. | cmdbdata.ora |
| CMDB Index Tablespace File | Name of the Mercury Application Mapping index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbindex.ora |
| CMDB Temp Tablespace Name | Name of the Mercury Application Mapping temporary tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB Data Tablespace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbdata |
| CMDB Index Tablespace Name | Name of the Mercury Application Mapping index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbindex |
| CMDB Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change this location. | default_oradata_path |

**14** Click **Next** to open the Create History CMDB Database User & Tablespace dialog box.

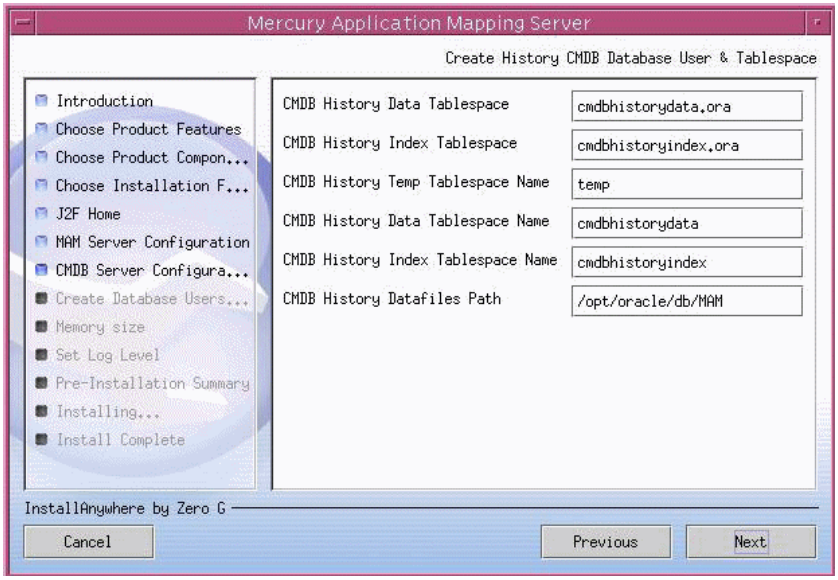



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the History schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the History schema. | manager |
| Oracle SID | The History schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Password | The password Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Port | The port Mercury Application Mapping uses to connect to the History schema. | 1521 |

| Field | Description | Default Value |
|---|---|---|
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the History schema runs. | |
| Oracle TNS Name | The alias of Oracle Server as specified in **tnsnames.ora** client file. | SKAZAL |

**15** Click **Next** to open the next Create History CMDB Database User & Tablespace dialog box.

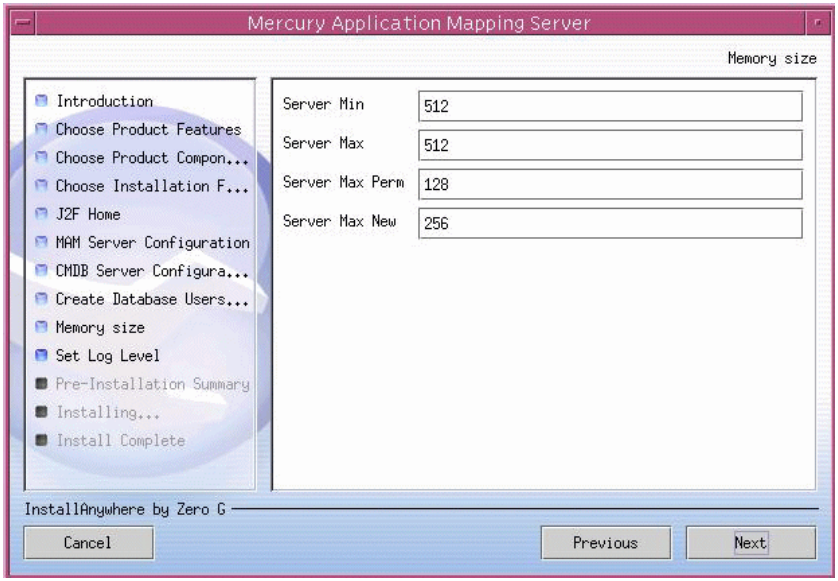


Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB History Data Tablespace | Name of the Mercury Application Mapping History tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistorydata.ora |
| CMDB History Index Tablespace | Name of the Mercury Application Mapping History index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistoryindex.ora |
| CMDB History Temp Tablespace Name | Name of the Mercury Application Mapping temporary History tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB History Data Tablespace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistorydata |

| Field | Description | Default Value |
|---|---|---|
| CMDB History Index Tablespace Name | Name of the Mercury Application Mapping History index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistoryindex |
| CMDB History Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change the location. | default_oradata_path |

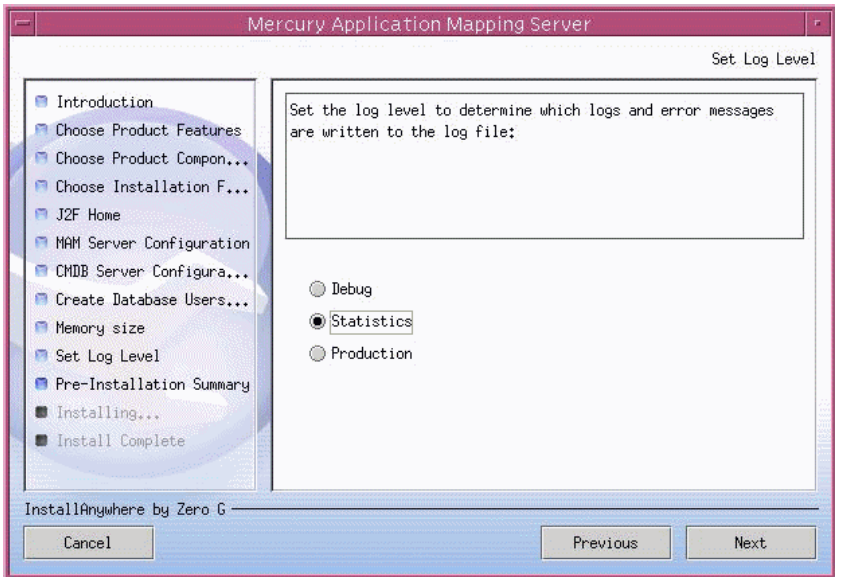
**16** Click **Next** to open the Memory Size dialog box.



Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**17** Click **Next** to open the Set Log Level dialog box.

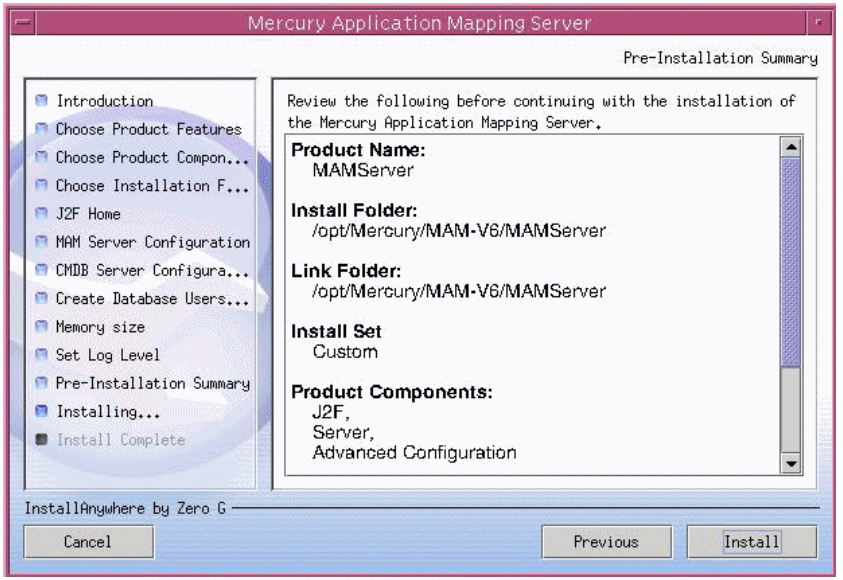



Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.
- **Production.** Only error messages are written to the log file.

  If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**18** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**19** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When installation is complete, the Installation Completed dialog box is displayed.

**20** Click **Done**.

# 11

# Installing the CMDB Server in a Distributed Deployment

This chapter explains how to install the CMDB server on a Solaris platform, when the Mercury Application Mapping server is installed on a separate machine. For details on installing the Mercury Application Mapping server, see Chapter 10, “Installing the Server in a Distributed Deployment.”


| This chapter describes: | On page: |
|---|---|
| Installation Workflow | 208 |
| Installing the CMDB Server in a Distributed Deployment with Oracle Server | 209 |

# Installation Workflow

---

**Note:** It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."

---

The distributed deployment configuration of Mercury Application Mapping uses two server machines, one machine for the Mercury Application Mapping server and one machine for the CMDB server. During installation on both machines, the JBoss application server (J2F) is also installed.

You can deploy Mercury Application Mapping to run on Oracle Server.

---

**Note:** You can create CMDB database users and tablespaces during Mercury Application Mapping installation and also during the CMDB server installation. However, only one database definition is required. It is recommended, therefore, to provide database details during the Mercury Application Mapping server installation and to create the users and tablespaces during the CMDB server installation.

---

For details on using the installation wizard, see "Using the Installation Wizard" on page 10.

# Installing the CMDB Server in a Distributed Deployment with Oracle Server

The following procedure explains how to install the CMDB server (and the JBoss application server—J2F) on the CMDB server machine, when the CMDB schemas run on Oracle Server. This is the second part of the procedure. For the first part of the procedure, see Chapter 10, "Installing the Server in a Distributed Deployment."

**To install the CMDB server:**

1. Log into the server as user **root**.
2. Insert the **Mercury Application Mapping 6.6 Setup Solaris** 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:

```
cd /cdrom/cdrom0
```

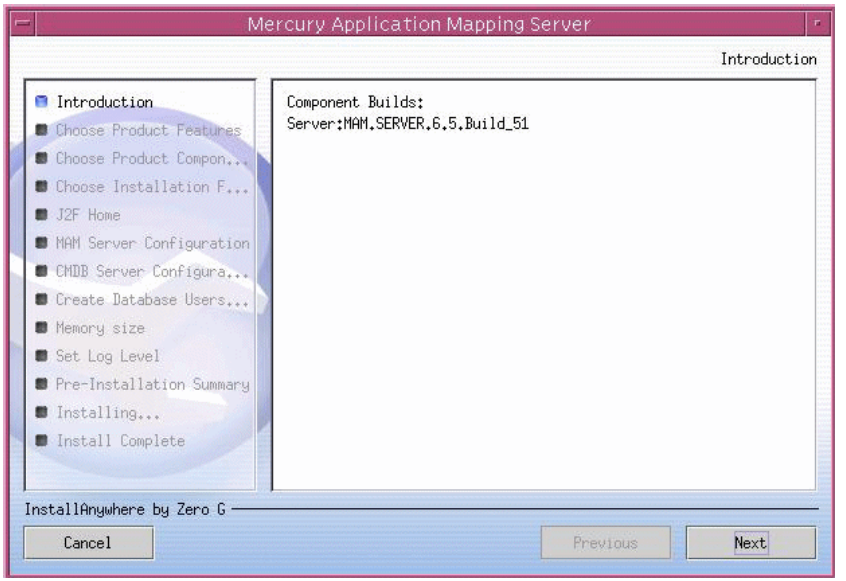
4. Move to the Mercury Application Mapping 6.6 directory:

```
cd mam66
```

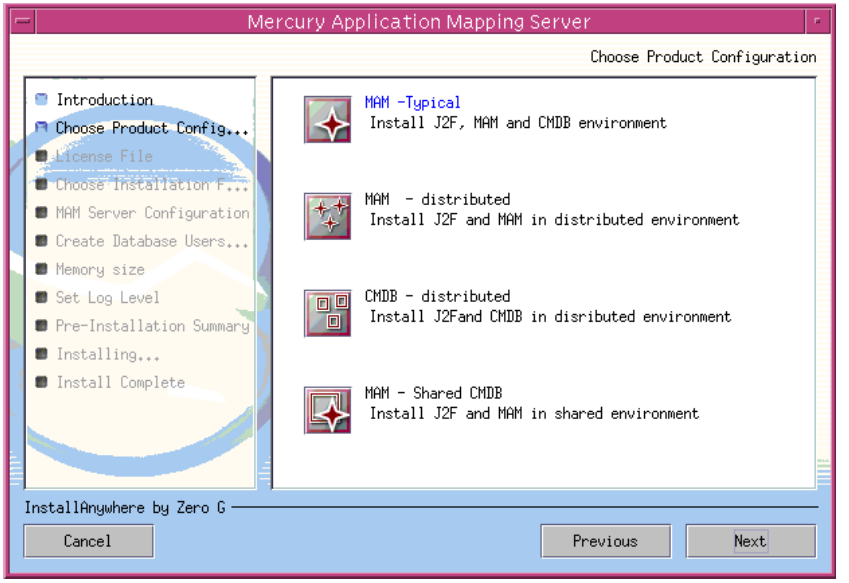
5. Run the command to install the Mercury Application Mapping server:

```
./MAMServer.bin
```

**6** The installation begins. Follow the on-screen instructions for server installation.



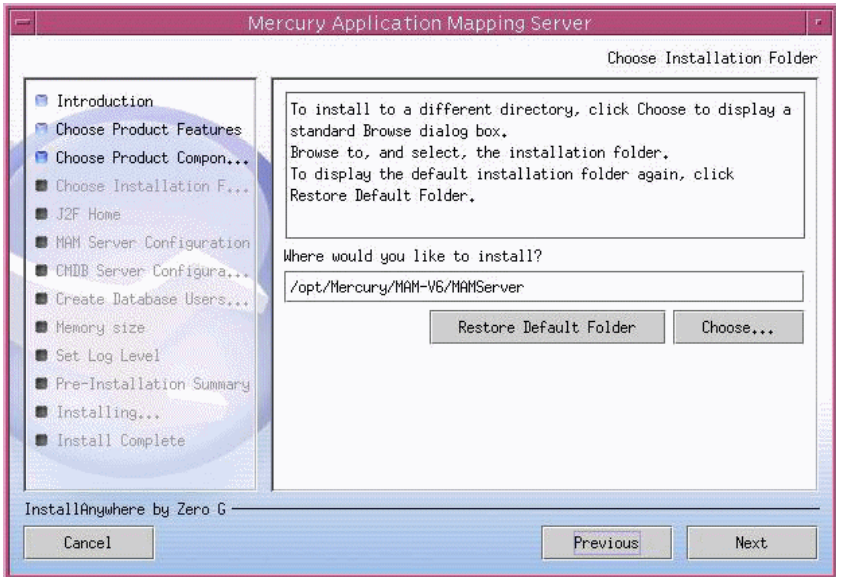

**7** Click **Next** to open the Choose Product Configuration dialog box.



**8** Select the **CMDB – Distributed** icon and click **Next** to open the Choose a License File dialog box.

Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

**9** Click **Next** to open the Choose Installation Folder dialog box.



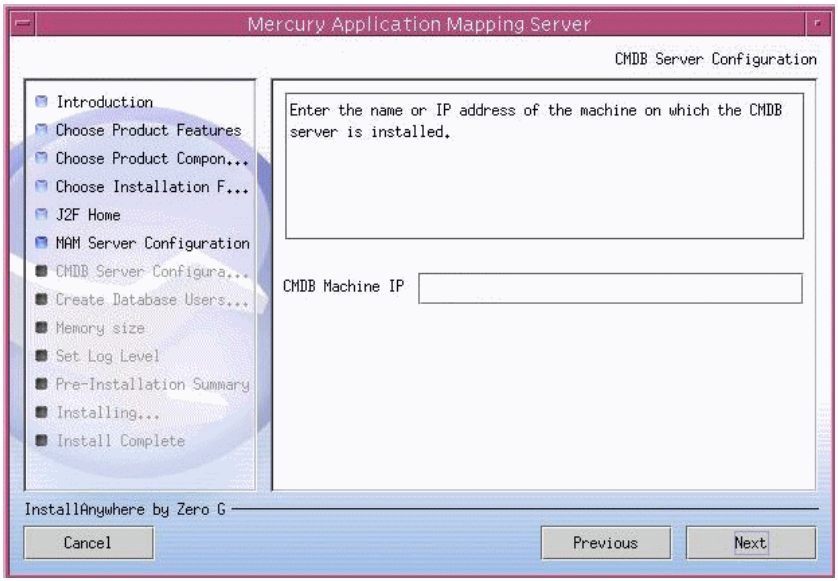

Accept the entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

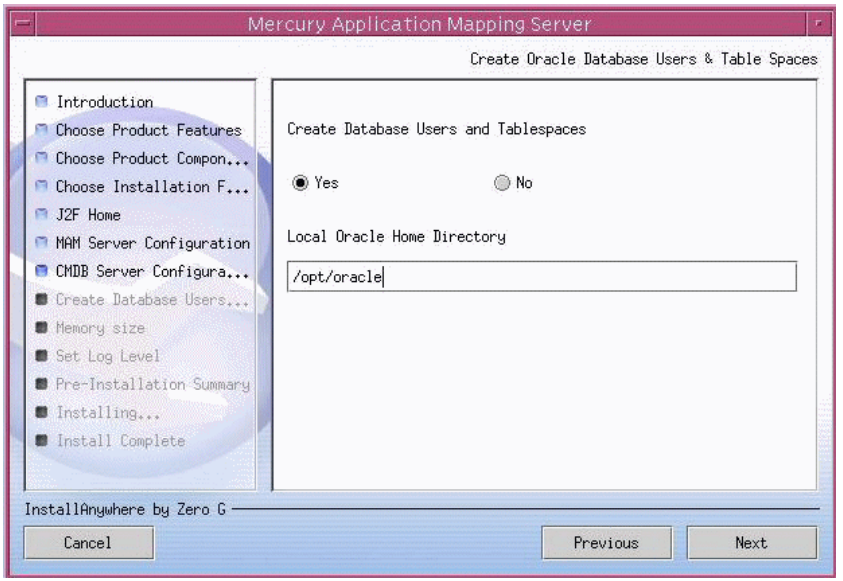
---

**10** Click **Next** to open the CMDB Server Configuration dialog box.




The default CMDB machine IP in the **CMDB Machine IP** box is the address you entered during installation of the Mercury Application Mapping server. Accept the default entry, or enter the host name or IP address of the machine on which you are installing the CMDB server. For details, see step 10 on page 194.

**11** Click **Next** to open the Create Oracle Database Users & Tablespaces dialog box.

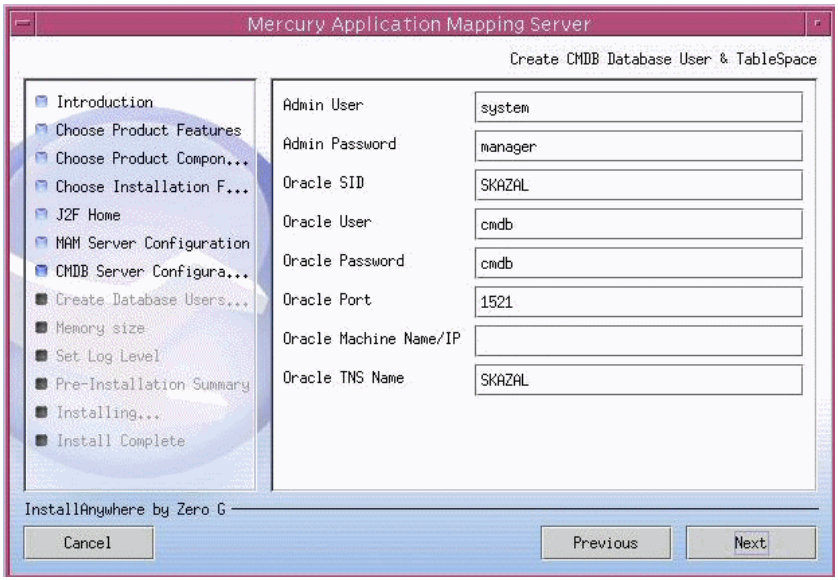



Select **Yes** to create new users and tablespaces, and to update the Mercury Application Mapping configuration files with the database details.

Accept the default local Oracle home directory, or enter another home directory.

For details on the difference between **Yes** and **No**, see "Database Users and Tablespaces" on page 18.

**12** Click **Next** to open the Create CMDB Database User & Tablespace dialog box.

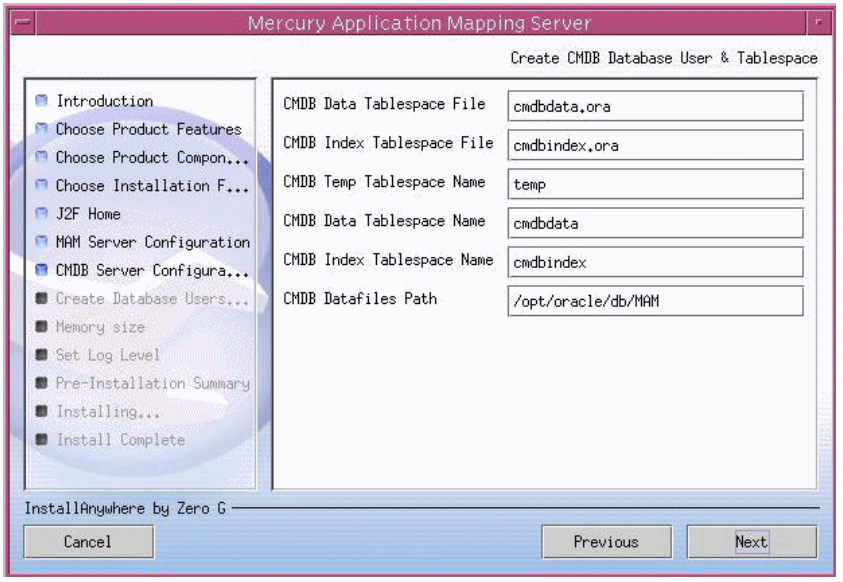



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the CMDB schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the CMDB schema. | manager |
| Oracle SID | The CMDB schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping server uses to connect to the CMDB schema. | cmdb |
| Oracle Password | The password Mercury Application Mapping server uses to connect to the CMDB schema. | cmdb |
| Oracle Port | The port Mercury Application Mapping uses to connect to the CMDB schema. | 1521 |

| Field | Description | Default Value |
|---|---|---|
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server. | |
| Oracle TNS Name | The alias of Oracle Server as specified in the **tnsnames.ora** client file. | SKAZAL |

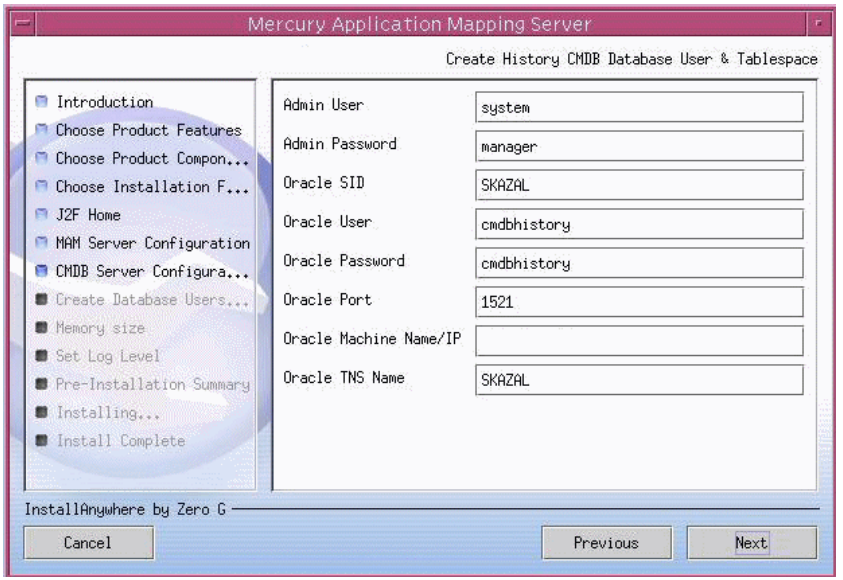
**13** Click **Next** to open the Create CMDB Database User & Tablespace dialog box.



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB Data Tablespace File | Name of the Mercury Application Mapping tablespace file. Only relevant if you chose to create the tablespaces. | cmdbdata.ora |
| CMDB Index Tablespace File | Name of the Mercury Application Mapping index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbindex.ora |
| CMDB Temp Tablespace Name | Name of the Mercury Application Mapping temporary tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB Data Tablespace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbdata |
| CMDB Index Tablespace Name | Name of the Mercury Application Mapping index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbindex |
| CMDB Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location in <Oracle_home_directory> /database. You can change this location. | default_oradata_path |

**14** Click **Next** to open the Create History CMDB Database User & Tablespace dialog box.

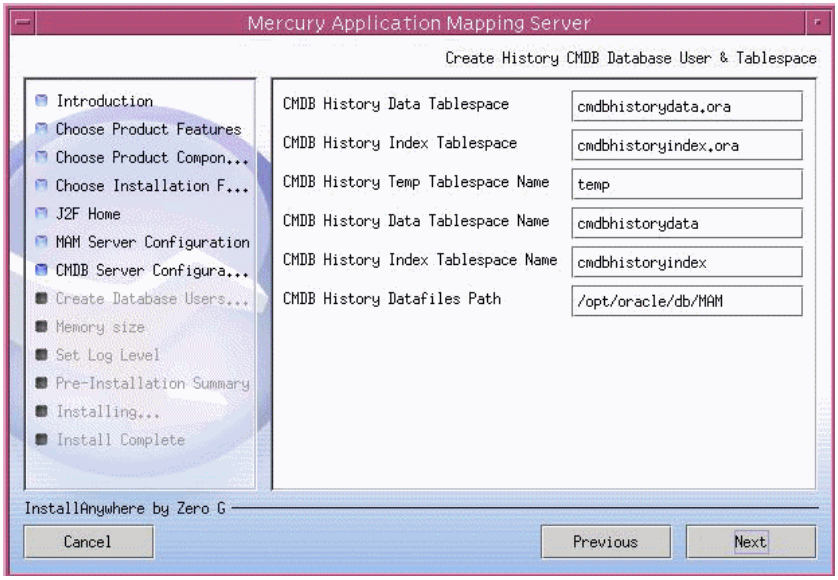



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the Oracle System user with administrator access rights to the History schema. | system |
| Admin Password | The password of the Oracle System user with administrator access rights to the History schema. | manager |
| Oracle SID | The History schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Password | The password Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Port | The port Mercury Application Mapping uses to connect to the History schema. | 1521 |

| Field | Description | Default Value |
|---|---|---|
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the History schema runs. | |
| Oracle TNS Name | The alias of Oracle Server as specified in **tnsnames.ora** client file. | SKAZAL |

**15** Click **Next** to open the next Create History CMDB Database User & Tablespace dialog box.

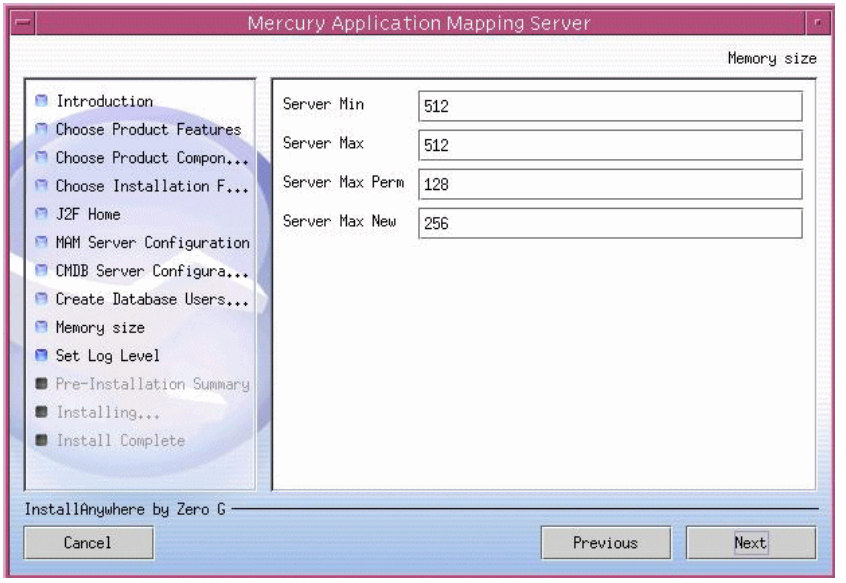


Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB History Data Tablespace | Name of the Mercury Application Mapping History tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistorydata.ora |
| CMDB History Index Tablespace | Name of the Mercury Application Mapping History index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistoryindex.ora |
| CMDB History Temp Tablespace Name | Name of the Mercury Application Mapping temporary History tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |
| CMDB History Data Tablespace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistorydata |

| Field | Description | Default Value |
|---|---|---|
| CMDB History Index Tablespace Name | Name of the Mercury Application Mapping History index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistoryindex |
| CMDB History Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location in <Oracle_home_directory>/database. You can change the location. | default_oradata_path |

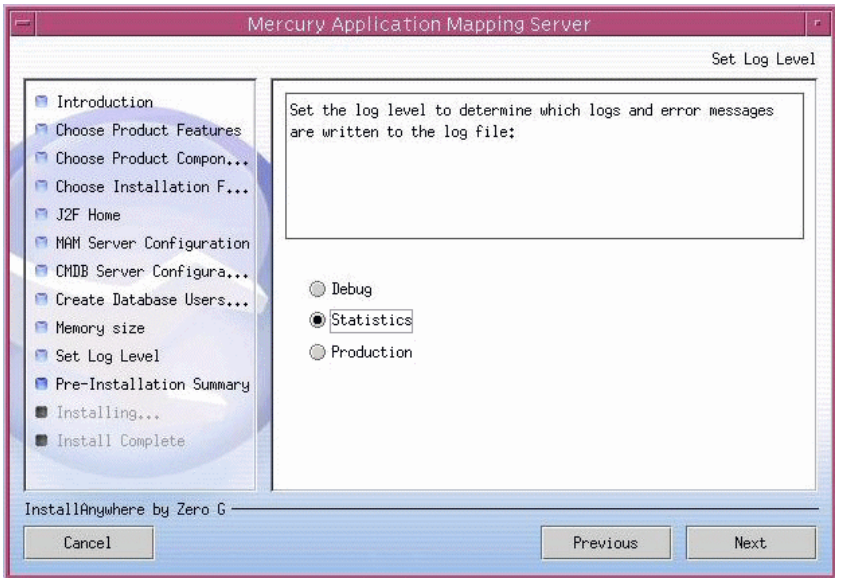
**16** Click **Next** to open the Memory Size dialog box.



Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**17** Click **Next** to open the Set Log Level dialog box.

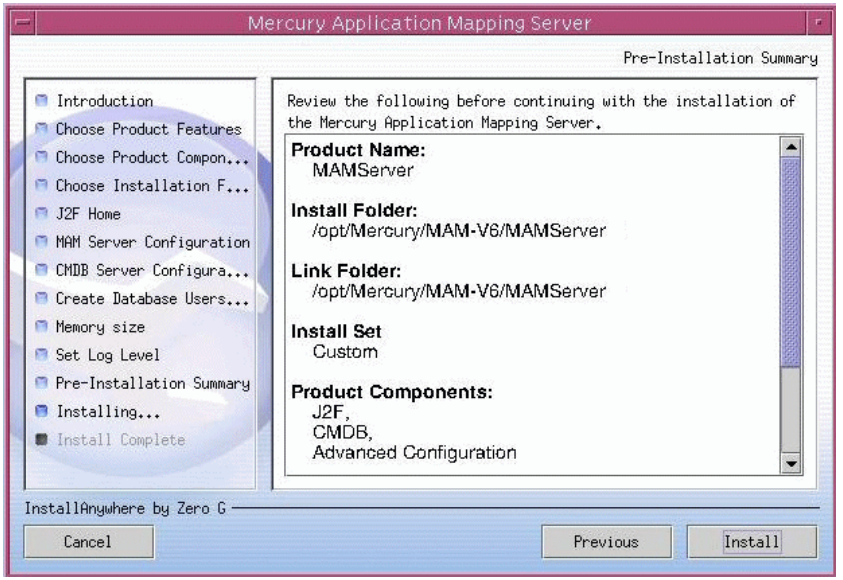



Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.
- **Production.** Only error messages are written to the log file.

  If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**18** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**19** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When the installation is complete the Installation Completed dialog box is displayed.

**20** Click **Done**.

# 12

# Distributed Deployment Installation with a Shared CMDB

This chapter describes the procedures to install a distributed deployment of Mercury Application Mapping when it connects to the configuration management database (CMDB) used by Mercury Business Availability Center. The shared CMDB environment enables Mercury Application Mapping to run additional functionality.


| This chapter describes: | On page: |
|---|---|
| Installation Workflow | 226 |
| Installing the Server with Oracle Server | 227 |
| Sharing the Mercury Business Availability Center CMDB | 240 |

# Installation Workflow

---

**Note:** It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."

---

This chapter explains how to install Mercury Application Mapping in a distributed deployment that is integrated with Mercury Business Availability Center. Each dialog box in the installation procedure includes detailed instructions on that stage of the procedure.

The integrated deployment configuration of Mercury Application Mapping runs on two server machines:

- one machine on which the Mercury Application Mapping server and the JBoss application server (J2F) run
- one machine on which Mercury Business Availability Center runs; on this machine, you connect to the CMDB (unless Mercury Business Availability Center is running in a distributed deployment, in which case you connect to the CMDB service running on the modeling server on the Data Processing Server machine)

This section includes the following topics:

- "Prerequisites" on page 227
- "Mercury Business Availability Center CMDB deployment" on page 227

### Prerequisites

Before you install Mercury Application Mapping in an integrated deployment with Mercury Business Availability Center, verify that:

- Mercury Business Availability Center is already installed.
- During the shared installation procedure, Setup creates the History database only. The CMDB should already exist as part of the Mercury Business Availability Center installation. Details of the CMDB are passed to Setup during installation.

### Mercury Business Availability Center CMDB deployment

For details on Mercury Business Availability Center CMDB deployment, see:

- "Sharing the Mercury Universal CMDB Environment" in *Working with the CMDB*.
- "Mercury Universal CMDB Management" in *Platform Administration*.
- "High Availability for the CMDB Directory" in *Deploying Servers*.

(These books are part of the Mercury Business Availability Center Documentation Library.)

## Installing the Server with Oracle Server

The following procedure explains how to install the Mercury Application Mapping server (and the JBoss application server—J2F) on the Mercury Application Mapping server machine, when the CMDB schemas run on Oracle Server. This is the first part of the procedure. For the second part of the procedure, see "Sharing the Mercury Business Availability Center CMDB" on page 240.

You install the Mercury Application Mapping server from the Mercury Application Mapping 6.6 Setup Solaris CD-ROM provided with the Mercury Application Mapping distribution package.

**To install Mercury Application Mapping:**

1 Shut down Mercury Business Availability Center if it is running.

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

3 Insert the **Mercury Application Mapping 6.6 Setup Solaris** CD-ROM into the drive from which you want to install. If you are installing from a network drive, mount it.

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

```
cd /cdrom/cdrom0
```

5 Move to the Mercury Application Mapping 6.6 directory.

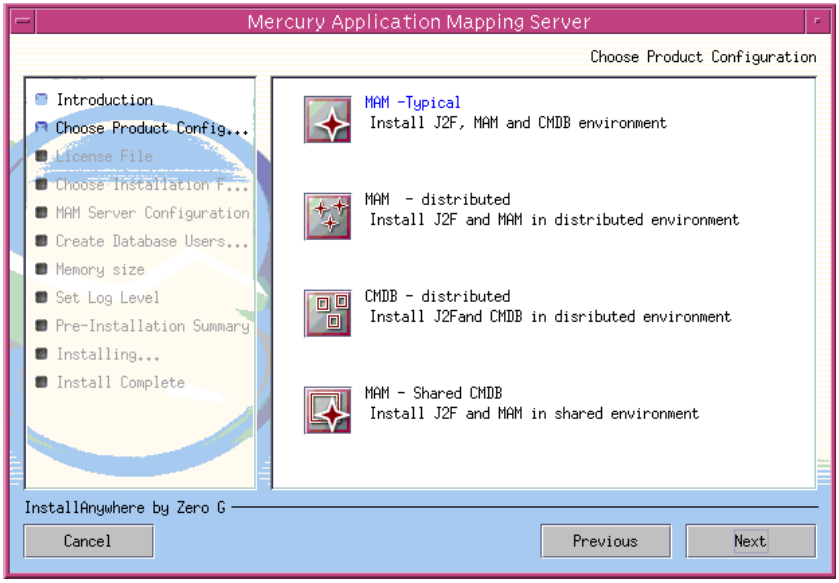
```
cd mam66
```

6 Run the command to install the Mercury Application Mapping server.

```
./MAMServer.bin
```

7 The installation begins.

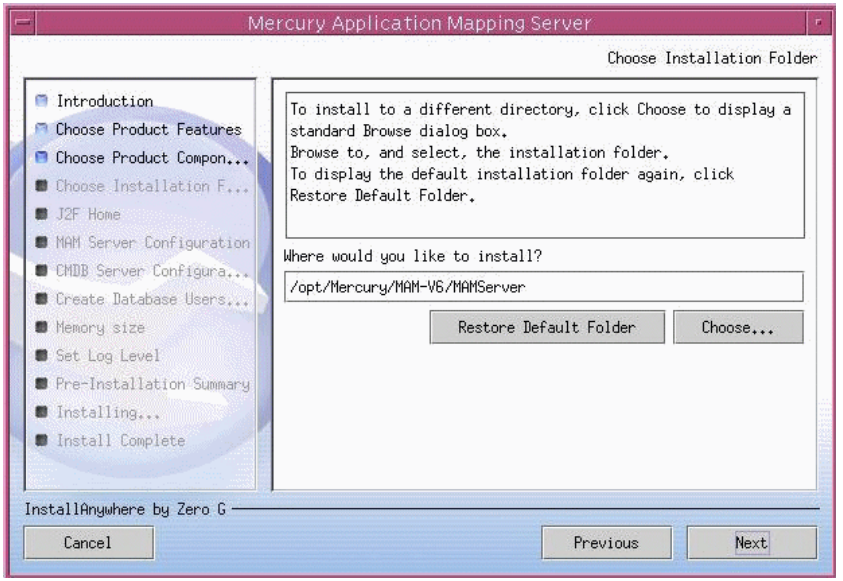
8 Click **Next** to open the Choose Product Configuration dialog box.



**9** Select the **MAM - Shared CMDB** icon and click **Next** to open the Choose a License File dialog box.

Enter the path to the file or browse to the file and select it. For details on licenses, see “License Configurations” on page 6.

**10** Click **Next** to open the Choose Installation Folder dialog box.



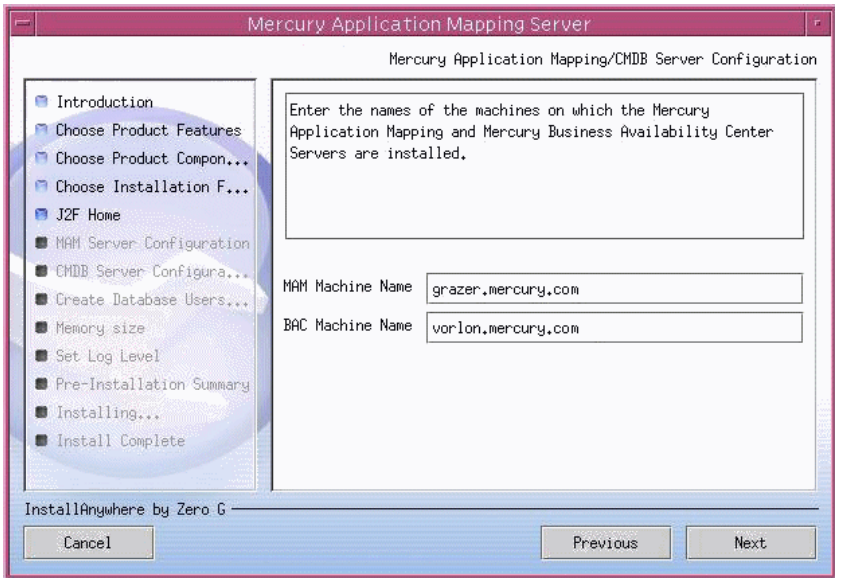

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

---

**11** Click **Next** to open the Mercury Application Mapping/CMDB Server Configuration dialog box.

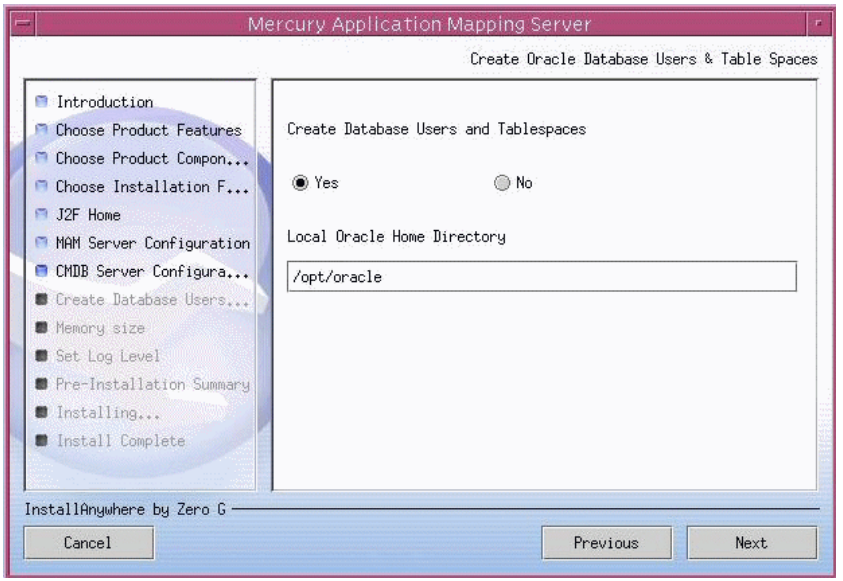



In the **MAM Machine Name** box, enter the machine name of the server on which you are installing Mercury Application Mapping.

In the **BAC Machine Name** box:

- If Mercury Business Availability Center is running on one machine, enter the machine name.
- If Mercury Business Availability Center is running in a distributed deployment, enter the name of the Data Processing Server machine on which the CMDB service runs (on the modeling server).

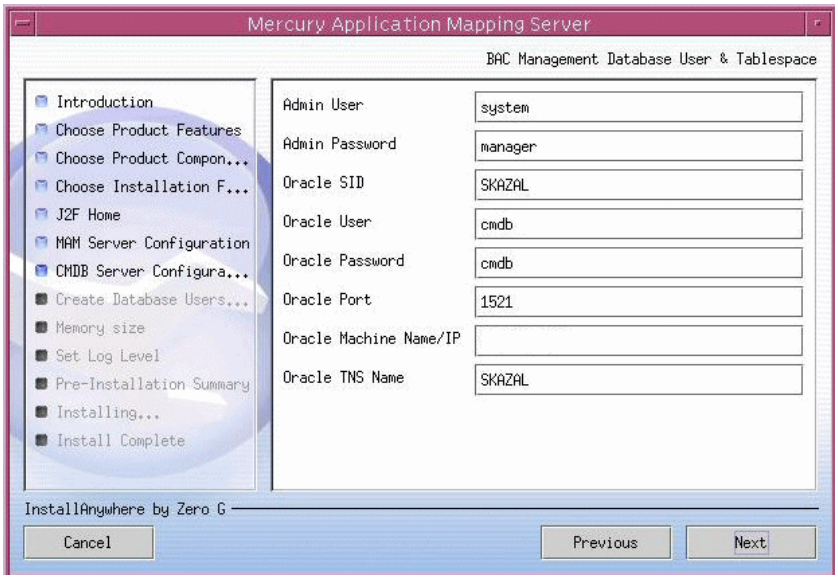
**12** Click **Next** to open the Create Oracle Database Users & Tablespaces dialog box.




Select **Yes** to create new users and tablespaces, or **No** to use the existing users and tablespaces. For details on the difference between **Yes** and **No**, see "Database Users and Tablespaces" on page 18.

The next stage is to register Mercury Application Mapping in the Mercury Business Availability Center management database. You can enter the existing users and tablespaces information in the CMDB configuration files without creating users and tablespaces.

**13** Click **Next** to open the BAC Management Database Users & Tablespaces dialog box.

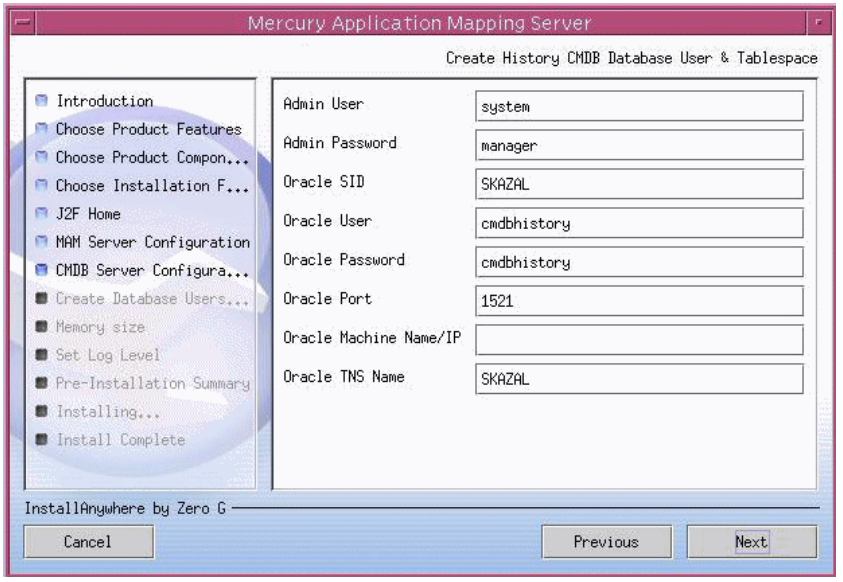



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the user with administrator access rights to the CMDB schema. | system |
| Admin Password | The password of the user with administrator access rights to the CMDB schema. | manager |
| Oracle SID | The CMDB schema SID to which you want to connect. | SKAZAL |
| Oracle User | The name of the Mercury Business Availability Center management database, needed for registration of the Mercury Application Mapping server in the Mercury Business Availability Center system. | cmdb |
| Oracle Password | The password to connect to the Mercury Business Availability Center CMDB schema. | cmdb |

| Field | Description | Default Value |
|---|---|---|
| Oracle Port | The port Mercury Application Mapping uses to connect to the CMDB schema. | 1521 |
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server. | |
| Oracle TNS Name | A name resolved in the SQL client software. | SKAZAL |

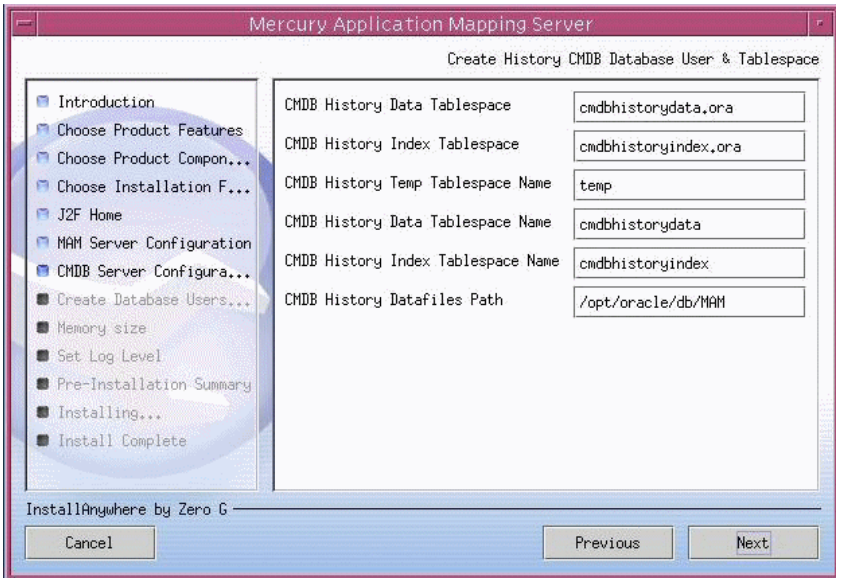
**14** Click **Next** to open the Create History CMDB Database User & Tablespace dialog box.



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| Admin User | The name of the user with administrator access rights to the History schema. | system |
| Admin Password | The password of the user with administrator access rights to the History schema. | manager |
| Oracle SID | The History schema SID to which you want to connect. | SKAZAL |
| Oracle User | The user name Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Password | The password Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Port | The port Mercury Application Mapping uses to connect to the History schema. | 1521 |
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the History schema runs. | Local IP name |
| Oracle TNS Name | The alias of Oracle Server as specified in the **tnsname.ora** client file. | SKAZAL |

**15** Click **Next** to open the next Create History CMDB Database User & Tablespace dialog box.

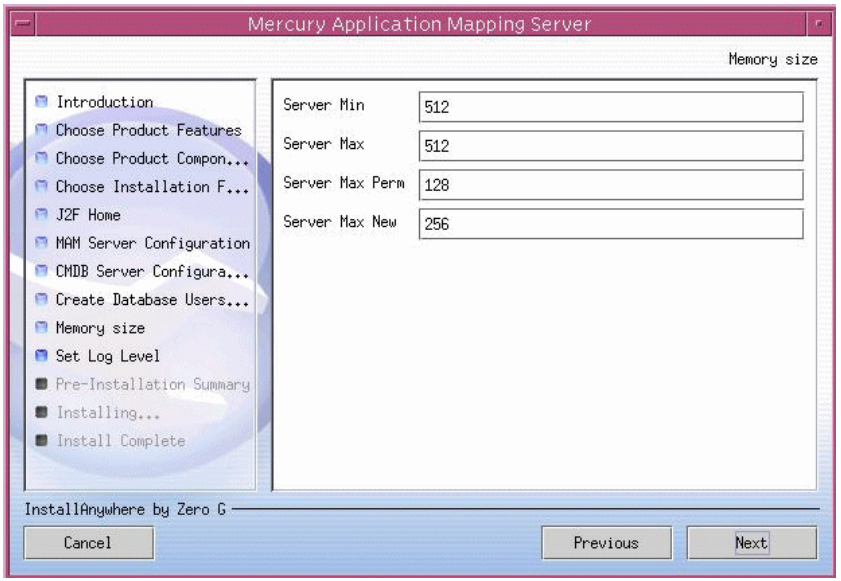



Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| CMDB History Oracle Data Tspace | Name of the Mercury Application Mapping History tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistorydata.ora |
| CMDB History Oracle Index Tspace | Name of the Mercury Application Mapping History index tablespace file. Only relevant if you chose to create the tablespaces. | cmdbhistoryindex.ora |
| CMDB History Oracle Temp File Name | Name of the Mercury Application Mapping temporary History tablespace. If your database administrator created a non-default temporary tablespace, replace the default **temp** with the correct value. | temp |

| Field | Description | Default Value |
|---|---|---|
| CMDB History Oracle Data Tspace Name | Name of the Mercury Application Mapping tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistorydata |
| CMDB History Oracle Index Tspace Name | Name of the Mercury Application Mapping History index tablespace.<br>If you already created Mercury Application Mapping tablespaces according to Mercury Application Mapping database guidelines, replace the default name with the correct tablespace name. For details, see "Mercury Application Mapping Tablespace Settings" in *Preparing the Database Environment*. | cmdbhistoryindex |
| CMDB History Oracle Datafiles Path | The data files of the CMDB and History schemas are created in the default Oracle location for Microsoft in <Oracle_home_directory>/database. You can change the location. | default_oradata_path |

**16** Click **Next** to open the Memory Size dialog box.

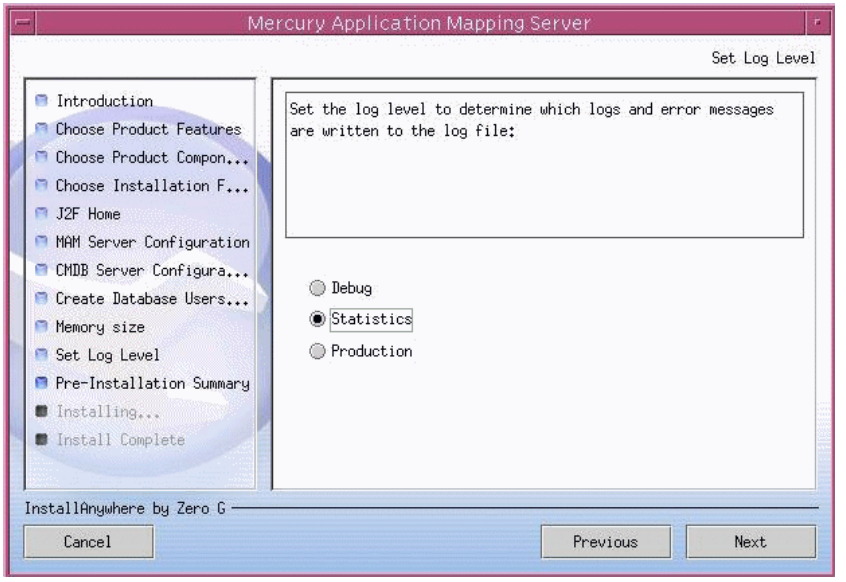



Change the minimum and maximum memory sizes of the installed components according to the following table. Values are measured in megabytes.

| Field | Description | Default Size |
|---|---|---|
| Server Min | Minimum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |
| Server Max | Maximum amount of memory to be allocated to the Mercury Application Mapping Server. | 512 MB |

| Field | Description | Default Size |
|---|---|---|
| Server Max Perm | Maximum amount of memory allocated for program code and other permanent constructs such as configuration item types (CITs). | 128 MB |
| Server Max New | Amount of memory allocated to newly created objects such as CIs. The Java Virtual Machine (JVM) separates the heap into old and new generations to improve garbage collection performance. | 256 MB |

**17** Click **Next** to open the Set Log Level dialog box.



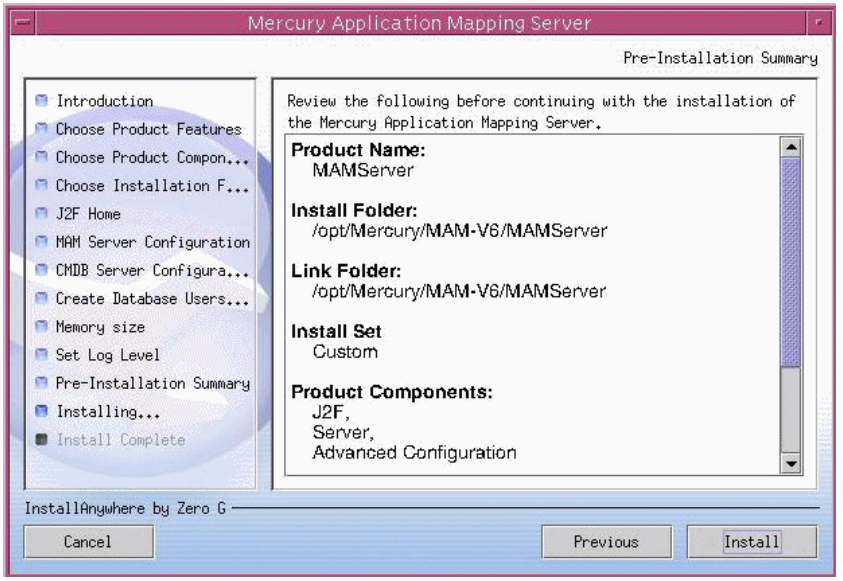

Choose an option:

- **Debug.** All messages are written to the log file.
- **Statistics.** Only statistics logs and error messages are written to the log file. This is the default.

➤ **Production.** Only error messages are written to the log file.

If you are using a production server, you should work in Production mode. However, no logs are generated in this mode.

**18** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**19** Click **Install** in the Pre-Installation Summary dialog box. A message is displayed indicating that the installation is currently being performed. When the installation is complete the Installation Completed dialog box is displayed.

**20** Click **Done**.

**21** Start up Mercury Business Availability Center.

# Sharing the Mercury Business Availability Center CMDB

The following procedure explains how to share the CMDB between Mercury Application Mapping and Mercury Business Availability Center. For details on deployment, see "Mercury Business Availability Center CMDB deployment" on page 227.

This is the second part of the procedure. For the first part of the procedure, see "Installing the Server with Oracle Server" on page 227.

**To share the CMDB:**

1. Shut down Mercury Business Availability Center if it is running.
2. Insert the **Mercury Application Mapping 6.6 Setup Solaris** CD-ROM into the drive from which you want to install. If you are installing from a network drive, mount it.
3. Log into the CMDB server on the Mercury Business Availability Center Data Processing server as user **root**.
4. Move to the root directory of the CD-ROM drive:

```
cd /cdrom/cdrom0
```

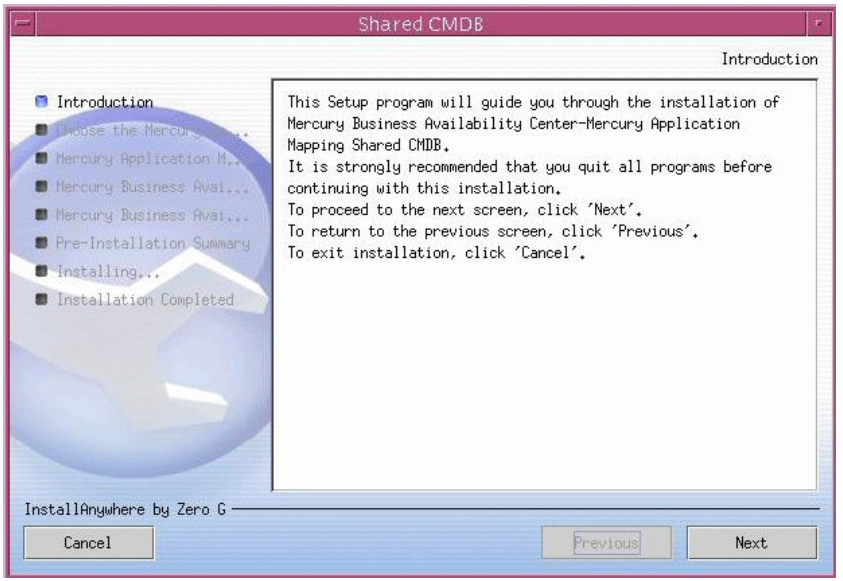
5. Move to the Mercury Application Mapping 6.6 directory:

```
cd mam66
```

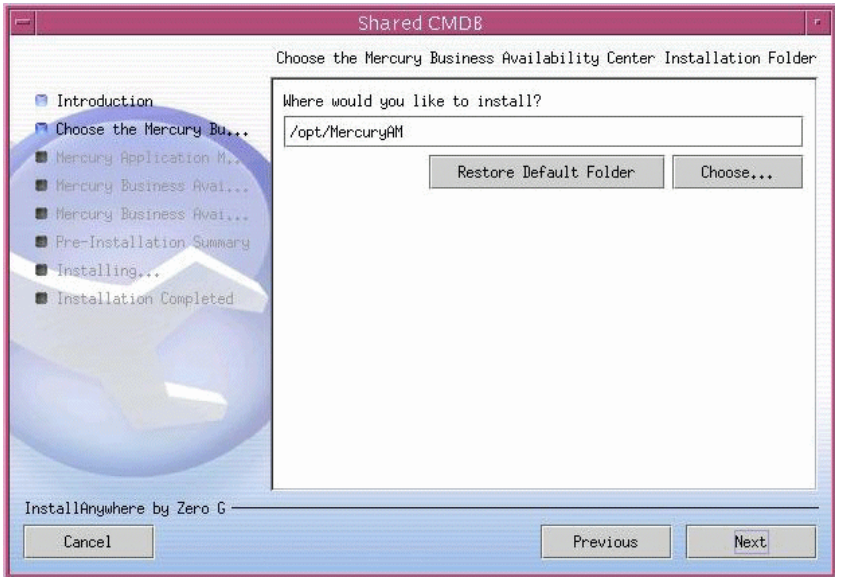
6. Run the command to install the shared CMDB server:

```
BACMAMShareCMDB.bin
```

The installation begins. Follow the on-screen instructions for server installation.



**7** Click **Next** to open the Choose Mercury Business Availability Center Installation Folder dialog box.



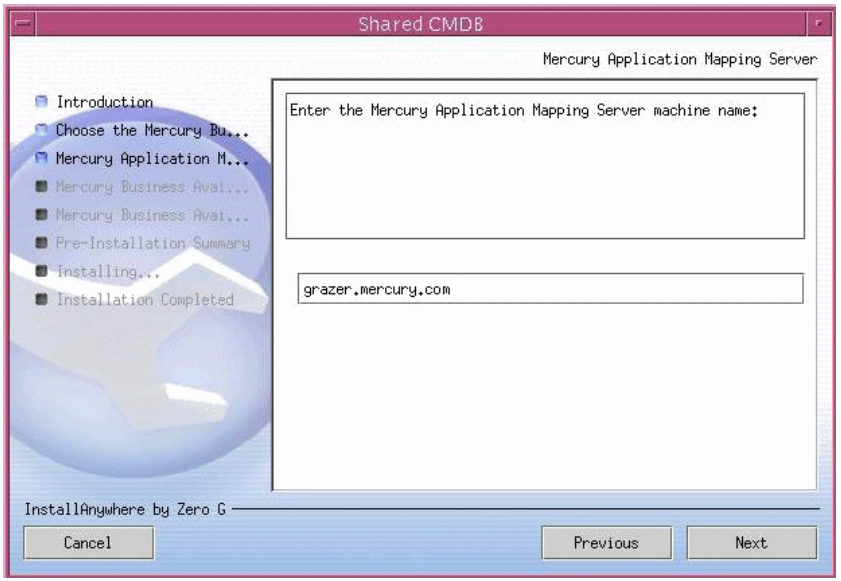

Accept the default, or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

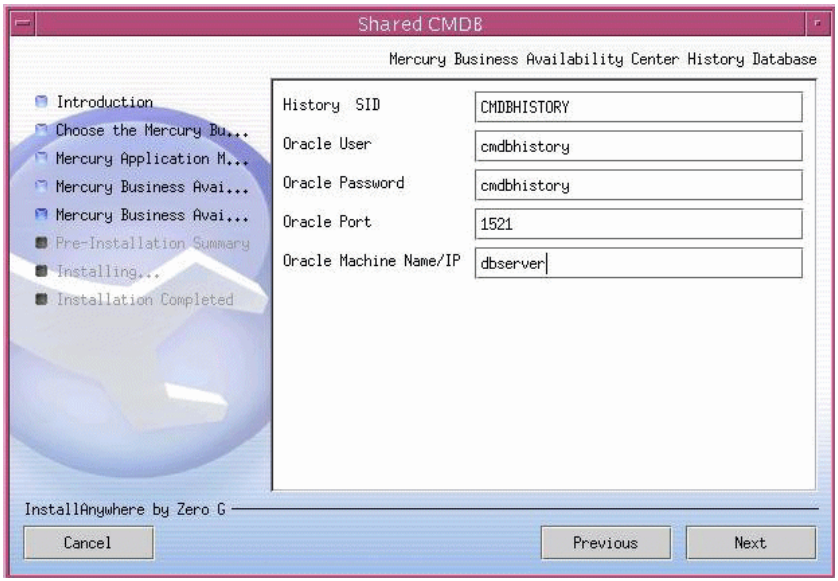
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**8** Click **Next** to open the Mercury Application Mapping Server dialog box.




Enter the machine name of the Mercury Application Mapping server.

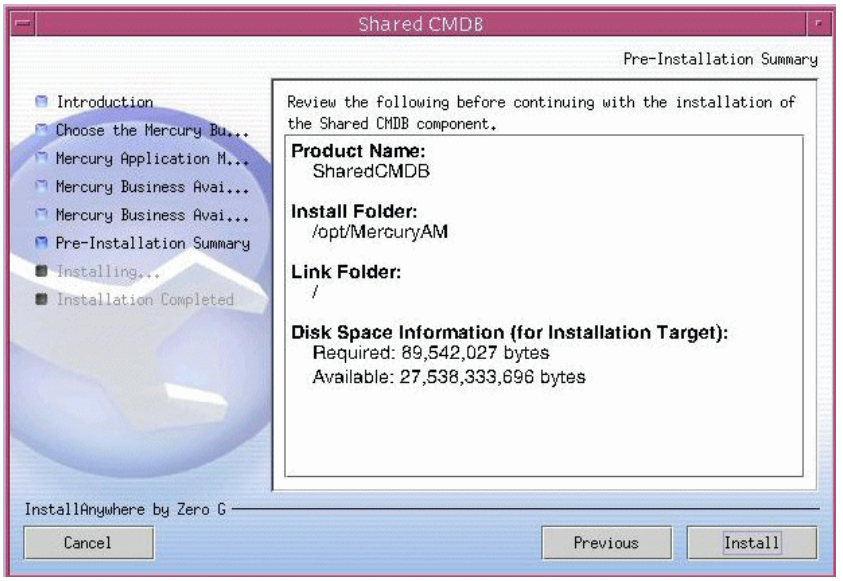
**9** Click **Next** to open the Mercury Business Availability Center History Database dialog box.




Accept the default values or make changes to the following fields:

| Field | Description | Default Value |
|---|---|---|
| History SID | The History schema SID to which you want to connect (that you installed during the Mercury Application Mapping server installation). | |
| Oracle User | The user name Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Password | The password Mercury Application Mapping uses to connect to the History schema. | cmdbhistory |
| Oracle Port | The port Mercury Application Mapping uses to connect to the History schema. | 1521 |
| Oracle Machine Name/IP | The name of the physical IP or TCP address or server address of Oracle Server on which the History schema runs. | |

**10** Click **Next** to open the Pre-Installation Summary dialog box.




**11** Click **Install**. A message is displayed indicating that the installation is currently being performed. When the installation is complete, the Installation Completed dialog box is displayed.

**12** Click **Done**.

# 13

# Installing Packages

This chapter explains how to install Mercury Application Mapping packages. Packages contain definitions, resources, and tools that enable you to discover IT infrastructure resources such as network extensions, applications, and databases.


| This chapter describes: | On page: |
|---|---|
| Default Package Installation Overview | 247 |
| Deploying Default Packages | 248 |


## Default Package Installation Overview

**Note:** It is highly recommended to thoroughly read the introduction to this guide before commencing installation. For details, see Chapter 1, "Introduction to Installation."

Mercury Application Mapping includes predefined packages.

This section includes the following topics:


➤ "Automatically Installed Packages" on page 248

### Automatically Installed Packages

Some packages do not appear on the installation wizard, but are installed automatically.

- the **Basic.zip** and **Rules.zip** files are installed automatically after installing and launching the Mercury Application Mapping server.
- the **Network.zip** package is a prerequisite for any discovery procedure. It is automatically installed with the package installation procedure regardless of whether you have selected any of the predefined packages from the installation wizard. Therefore, even if you do not select any of the predefined packages, you must perform the package installation procedure to install the **Network.zip** package.

---

**Note:** After installing a package file, it is recommended that you set the file to open as read-only to prevent changes being made to the file.

---

## Deploying Default Packages

This section explains how to install default packages.

**To install the Mercury Application Mapping default packages:**

1. Log into the server as user **root**.
2. Insert **Mercury Application Mapping 6.6 Setup Solaris** 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:

```
cd /cdrom/cdrom0
```

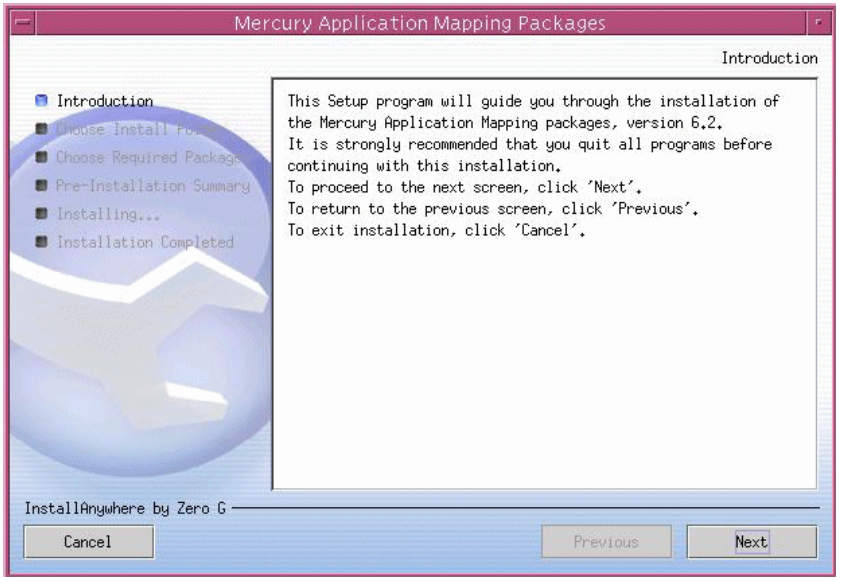
4. Move to the Mercury Application Mapping 6.6 directory:

```
cd mam66
```

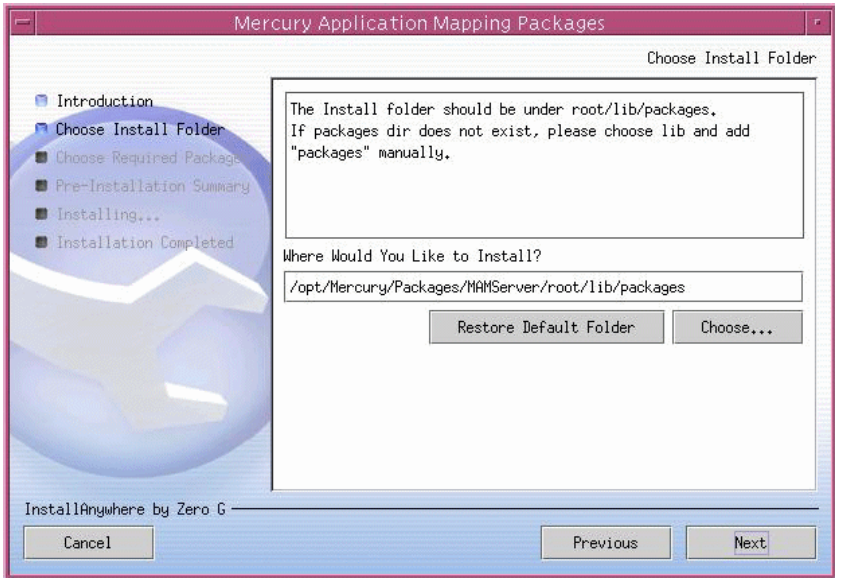
**5** Run the command to install the Mercury Application Mapping packages:

```
./MAMpackages.bin
```

**6** The installation begins. Follow the on-screen instructions for server installation.



**7** Enter the directory to which you want to install the packages. Install the packages under **root\lib\packages**. If the packages directory does not exist, create it manually under lib before performing this step.



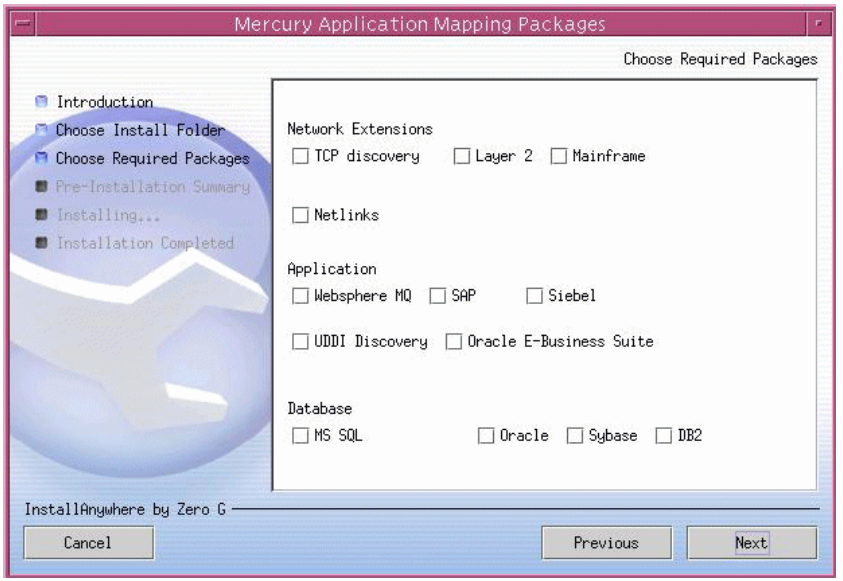

**8** Click **Next** to open the Choose a License File dialog box.

Enter the path to the file or browse to the file and select it. For details on the packages that are installed for each license, see "License Configurations" on page 6.

**9** If you selected to install the basic or application licence packages (for example, using the license-basic.xml file), the Packages to Install dialog box opens.

The basic packages that are to be installed are listed. Click **Next** to open the Pre-Installation Summary dialog box. Skip to step 12 on page 254.

**10** If you selected to install all packages (using the license-full.xml file), the Choose Required Packages dialog box opens.



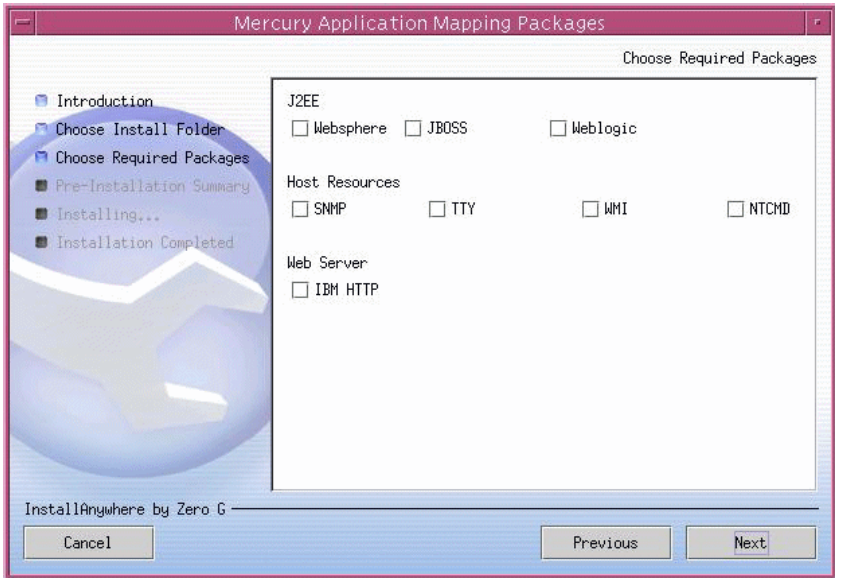

Select the check box for each package you want to install.

The following table contains a list of the default packages in the package directory and their descriptions:

| Type of Package | Package Name | Resources Needed For Discovery |
|---|---|---|
| Network Extensions | TCP Discovery | TCP connections between hosts |
| | Layer 2 | Layer 2 structure of the network |
| | Mainframe | Mainframe environment using the SNMP protocol |
| | Netlinks | NetFlow protocol for collecting IP traffic information |

| Type of Package | Package Name | Resources Needed For Discovery |
|---|---|---|
| Application | Websphere MQ | Websphere MQ components and the internal links between them |
| | SAP | SAP ERP system |
| | Siebel | Siebel CRM system |
| | UDDI Discovery | UDDI Registry |
| | Oracle E-Business Suite | Oracle E-Business Suite |
| Database | Oracle | Oracle database |
| | MS-SQL | Microsoft MS SQL Server database |
| | Sybase | Sybase database |
| | DB2 | DB2 database |

**11** Click **Next** to select more packages.

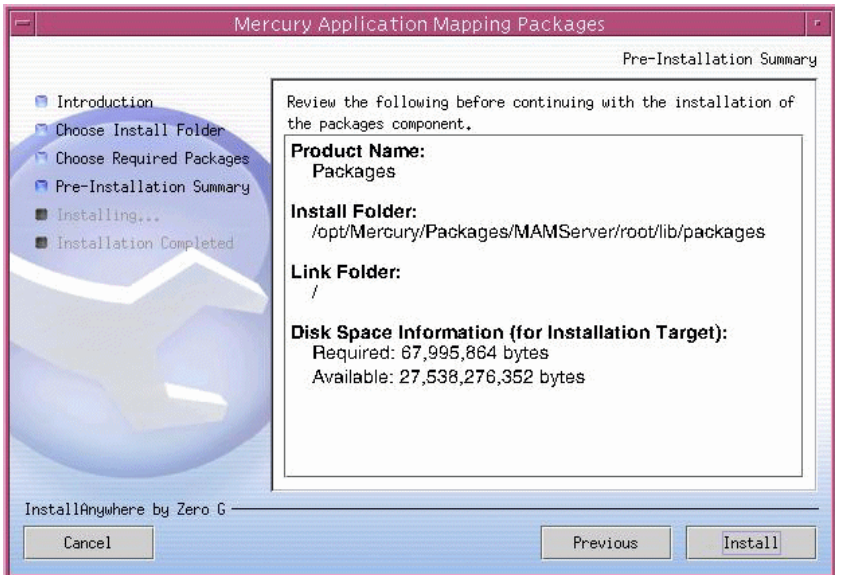



Select the check box for each package you want to install.

The following table contains a list of the default packages in the package directory and their description:

| Type of Package | Package Name | Resources Needed For Discovery |
|---|---|---|
| J2EE | Websphere | Websphere MQ components and the internal links between them |
| | JBoss | JBoss components |
| | Weblogic | Weblogic components |
| Host Resources | SNMP | Host hardware and software components using SNMP queries |
| | TTY | Host hardware and software components using Telnet and SSH connections |
| | WMI | Host hardware and software components using WMI technology |
| | NTCMD | Host hardware and software components using NTCMD technology |
| Web Server | IBM HTTP | IBM HTTP components |

**12** Click **Next**. The Pre-Installation Summary dialog box is displayed, listing the installation options you have selected.




**13** Click **Install** to complete the installation of the default packages in the package directory.

**14** Click **Done**.

# Part IV

## Hardening Mercury Application Mapping

# 14

# Introduction to Hardening

This chapter introduces the concept of a secure Mercury Application Mapping application and discusses the planning and architecture required to implement security. It is strongly recommended that you read this chapter before proceeding to the hardening discussion in the following chapters.


| This chapter describes: | On page: |
|---|---|
| Hardening Overview | 257 |
| Hardening Preparations | 258 |
| Deploying Mercury Application Mapping in a Secure Architecture | 259 |
| Security Settings Configuration Instructions | 260 |


## Hardening Overview

Mercury Application Mapping is designed so that it can be part of a secure architecture, and can therefore meet the challenge of dealing with the security threats to which it might be exposed.

The hardening guidelines deal with the configuration required to implement a more secure (hardened) Mercury Application Mapping. The hardening guidelines relate to both single machine and distributed deployments of Mercury Application Mapping.

The hardening information provided is intended primarily for Mercury Application Mapping administrators who should familiarize themselves with the hardening settings and recommendations prior to beginning the hardening procedures.

It is strongly recommended that you use a reverse proxy with Mercury Application Mapping to achieve a secure architecture. For details on configuring a reverse proxy for use with Mercury Application Mapping, see Chapter 15, "Using a Reverse Proxy."

If you must use another type of secure architecture with Mercury Application Mapping, contact Mercury Customer Support to determine which architecture is the best one for you to use.

---

**Important:**

- The hardening procedures are based on the assumption that you are implementing only the instructions provided in these chapters, and not performing other hardening steps not documented here.
- Where the hardening procedures focus on a particular distributed architecture, this does not imply that this is the best architecture to fit your organization's needs.
- It is assumed that the procedures included in the following chapters are to be performed on machines dedicated to Mercury Application Mapping. Using the machines for other purposes in addition to Mercury Application Mapping may yield problematic results.
- The hardening information provided in this section is not intended as a guide to making a security risk assessment for your computerized systems.

---

## Hardening Preparations

- Evaluate the security risk/security state for your general network, and use the conclusions when deciding how to best integrate Mercury Application Mapping into your network.
- Develop a good understanding of the Mercury Application Mapping technical framework and Mercury Application Mapping security capabilities.

- Review all the hardening guidelines.
- Verify that Mercury Application Mapping is fully functioning before starting the hardening procedures.

## Deploying Mercury Application Mapping in a Secure Architecture

Several measures are recommended to securely deploy your Mercury Application Mapping servers:

- **DMZ architecture using a firewall**

  The secure architecture referred to in this document is a typical DMZ architecture using a device as a firewall. The basic concept of such an architecture is to create a complete separation, and to avoid direct access between the Mercury Application Mapping clients and the Mercury Application Mapping servers.

- **Secure browser**

  Internet Explorer in a Windows environment and FireFox in a Solaris environment must be configured to securely handle Java scripts, applets, and cookies.

- **SSL communication protocol**

  Secure Sockets Layer protocol secures the connection between the client and the server. URLs that require an SSL connection use a secure version (HTTPS) of the Hypertext Transfer Protocol.

- **Reverse proxy architecture**

  One of the more secure and recommended solutions suggests deploying Mercury Application Mapping using a reverse proxy. Mercury Application Mapping fully supports secure reverse proxy architecture.

## Security Settings Configuration Instructions

Instructions for configuring security settings can be found in the appropriate Web server documentation, available at the following sites:

- **for IIS 5.0/6.0.** The Microsoft's Web site (http://support.microsoft.com/default.aspx?scid=kb;EN-US;298805)
- **for Apache.** The Apache Jakarta Web site (http://tomcat.apache.org/tomcat-5.0-doc/ssl-howto.html)
- **for Sun Java System Web Server.** The Sun Web site (http://docs.sun.com).

# 15

# Using a Reverse Proxy

This chapter describes the security ramifications of reverse proxies and contains instructions for using a reverse proxy with Mercury Application Mapping. Security aspects of a reverse proxy are discussed but not other aspects such as caching and load balancing.


| This chapter describes: | On page: |
|---|---|
| Reverse Proxy Overview | 261 |
| Security Aspects of Using a Reverse Proxy Server | 262 |
| Using a Reverse Proxy | 263 |
| Apache 2.0.x – Example Configuration | 266 |
| Supporting Applets and Export to PDF Format | 267 |


## Reverse Proxy Overview

A reverse proxy is an intermediate server that is positioned between the client machine and the Web servers. To the client machine, the reverse proxy appears to be a standard Web server that serves the client machine's HTTP protocol requests.

The client machine sends ordinary requests for Web content, using the name of the reverse proxy instead of the name of a Web server. The reverse proxy sends the request to one of the Web servers. Although the response is sent back to the client machine by the reverse proxy, it appears to the client machine as if it is being sent by the Web server.

## Security Aspects of Using a Reverse Proxy Server

A reverse proxy server functions as a bastion host. The proxy is configured to be the only machine addressed directly by external clients, and thus obscures the rest of the internal network. Use of a reverse proxy enables the application server to be placed on a separate machine in the internal network.

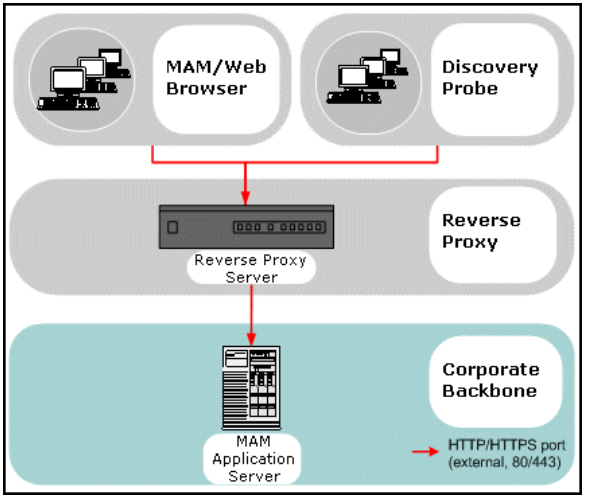
This chapter discusses the use of a DMZ and reverse proxy in a back-to-back topology environment.

The following are the main security advantages of using a reverse proxy in such an environment:

- No DMZ protocol translation occurs. The incoming protocol and outgoing protocol are identical (only a header change occurs).
- Only HTTP access to the reverse proxy is allowed, which means that stateful packet inspection firewalls can better protect the communication.
- A static, restricted set of redirect requests can be defined on the reverse proxy.
- Most of the Web server security features are available on the reverse proxy (authentication methods, encryption, and more).
- The reverse proxy screens the IP addresses of the real servers as well as the architecture of the internal network.
- The only accessible client of the Web server is the reverse proxy.
- This configuration supports NAT firewalls (as opposed to other solutions).
- The reverse proxy requires a minimal number of open ports in the firewall.
- The reverse proxy provides good performance compared to other bastion solutions.

# Using a Reverse Proxy

Mercury Application Mapping supports a reverse proxy in DMZ architecture. The reverse proxy is an HTTP mediator between the Mercury Application Mapping Discovery probe and the Mercury Application Mapping servers.




A reverse proxy server can be used with a single machine installation (the Mercury Application Mapping server and CMDB server are installed on one machine) and with a distributed installation (the Mercury Application Mapping server and the CMDB server are installed on separate machines).

---

**Note:** Different types of reverse proxies require different configuration syntaxes. For an example of an Apache 2.0.x reverse proxy configuration, see “Apache 2.0.x – Example Configuration” on page 266.

---

This section includes the following topics:


- "Support for Discovery Probe" on page 264
- "Configuring the Discovery Probe to Work Against a Reverse Proxy" on page 264
- "Support for Mercury Application Mapping GUI and Web Clients" on page 265
- "Configuring the Mercury Application Mapping GUI to Work Against a Reverse Proxy" on page 265
- "Support for Discovery Probe and Web Clients" on page 265


## Support for Discovery Probe

The following configuration is required if Discovery probes only are connected via a reverse proxy to Mercury Application Mapping:

| Requests for... on the Reverse Proxy Server | Proxy Request to be Served by: |
|---|---|
| /mam-collectors/* | http://[Mercury Application Mapping server]/mam-collectors/* |

## Configuring the Discovery Probe to Work Against a Reverse Proxy

Edit the **appilog-remote.properties** file and set the **serverIP** property to the reverse proxy server's IP or DNS name. The file resides in <DiscoveryProbe home directory>\root\lib\collectors.

## Support for Mercury Application Mapping GUI and Web Clients

The following configuration is required if application users only are connected via a reverse proxy to Mercury Application Mapping:

| Requests for... on the Reverse Proxy Server | Proxy Request to be Served by: |
|---|---|
| /mam/* | [Mercury Application Mapping server]/mam/* |
| /mam_images/* | [Mercury Application Mapping server]/mam_images/* |
| /webapp/* | [Mercury Application Mapping server]/webapp/* |
| /site | [Mercury Application Mapping server]/site/* |

## Configuring the Mercury Application Mapping GUI to Work Against a Reverse Proxy

Edit the **server.properties** file and set the address attributes to the location of the reverse proxy server. The file resides in <Mercury Application Mapping GUI home directory>\root\lib\gui.

## Support for Discovery Probe and Web Clients

The following configuration is required if both Discovery probes and application users are connected via a reverse proxy to Mercury Application Mapping:

| Requests for... on the Reverse Proxy Server | Proxy Request to be Served by: |
|---|---|
| /mam/* | [Mercury Application Mapping server] /mam/* |
| /mam_images/* | [Mercury Application Mapping server]/mam_images/* |
| /mam-collectors/* | [Mercury Application Mapping server]/mam-collectors/* |

| Requests for... on the Reverse Proxy Server | Proxy Request to be Served by: |
|---|---|
| /webapp/* | [Mercury Application Mapping server]/webapp/* |
| /site | [Mercury Application Mapping server]/site/* |

## Apache 2.0.x – Example Configuration

Below is a sample configuration file that supports the use of an Apache 2.0.x reverse proxy in a case where both discovery probes and application users connect to Mercury Application Mapping.

---

**Note:** In the example below, the Mercury Application Mapping machine's DNS name is **MAM_server**.

---

1 Open the <**Apache machine root directory**>**Webserver****conf****httpd.conf** file.

2 Enable the following modules:

- LoadModule proxy_module modules/mod_proxy.so
- LoadModule proxy_http_module modules/mod_proxy_http.so

**3** Add the following lines:

```
ProxyRequests off
<Proxy *>
        Order deny,allow
        Deny from all
        Allow from all
</Proxy>
ProxyPass             /mam             http://MAM_server/mam
ProxyPassReverse      /mam             http://MAM_server/mam
ProxyPass             /mam_images      http://MAM_server/mam_images
ProxyPassReverse      /mam_images      http://MAM_server/mam_images
ProxyPass             /mam-collectors  http://MAM_server/mam-collectors
ProxyPassReverse      /mam-collectors  http://MAM_server/mam-collectors
ProxyPass             /webapp          http://MAM_server/webapp
ProxyPassReverse      /webapp          http://MAM_server/webapp

ProxyPass             /site            http://MAM_server/site
ProxyPassReverse      /site            http://MAM_server/site
```

## Supporting Applets and Export to PDF Format

To support the display of applets and to enable export to the PDF format when a reverse proxy is configured, perform the following procedure.

**To enable applets and export to PDF:**

**1** Locate the file **<Mercury Application Mapping root directory>\j2f\conf\mamWithReverseProxy.config**. Open the file in a text editor.

**2** Enter values for the three attributes (**proxy.scheme**, **proxy.name**, and **proxy.port**).

**3** Save the file.

# 16

# Enabling Secure Sockets Layer (SSL) Communication

This chapter explains how to configure Mercury Application Mapping to support communication using the Secure Sockets Layer (SSL) channel.


| This chapter describes: | On page: |
|---|---|
| Enabling SSL on the Tomcat Web Server | 269 |
| Enabling SSL on the Discovery Probe | 272 |
| Enabling SSL on the Application GUI | 273 |
| Enabling SSL on the Web Clients | 274 |


## Enabling SSL on the Tomcat Web Server

Mercury Application Mapping uses the Tomcat 5 HTTP Coyote connector as the default Web server. A complete guide to enabling SSL on Tomcat 5 using the Coyote connector can be found at **http://tomcat.apache.org/tomcat-5.0-doc/ssl-howto.html**.

The Mercury Application Mapping keystore (JKS type) should be placed at <Mercury Application Mapping server root directory>\j2f\EJBContainer\server\mercury\conf.

**To enable SSL on the Tomcat Web server using a self-signed certificate:**

**1** Create a keystore (JKS type) with a self-signed certificate and matching private key:

```
%JAVA_HOME%\bin\keytool -gnekey -alias MAMserver -keyalg RSA
-keystore MAMkeystore
```

A console dialog box opens.

- Enter the keystore password.
- Choose a password that you will use when exporting the self-signed certificate (<your password>).
- To answer the question **What is your first and last name?** enter the Mercury Application Mapping Web server name.

  Enter the other parameters according to your organization.
- Enter a key password, or press ENTER to cause the key password to be the same as the keystore password chosen above.

  A JKS keystore is created named MAMkeystore.

**2** Export the self-signed certificate.

For every client that needs to communicate with Mercury Application Mapping over SSL using this self-signed certificate, place this certificate in the client's trusted stores:

```
%JAVA_HOME%\bin\keytool -export -alias MAMserver -keystore
MAMkeystore -keypass <your password> -file MAMCert
```

A certificate named MAMCert is created. This certificate can be sent or imported by all clients that need to communicate with Mercury Application Mapping over SSL.

**3** Copy the created keystore (MAMkeystore) to **<Mercury Application Mapping server root directory>\j2f\EJBContainer\server\mercury\conf**.

**4** Edit the Tomcat 5 Coyote connector configuration file:

- Open the **server.xml** file located at <Mercury Application Mapping server root directory>\j2f\EJBContainer\server\mercury\deploy\jbossweb-tomcat50.sar.
- Locate:

```
<!-- SSL/TLS Connector configuration using the admin devl guide
keystore
    <Connector port="8443" address="${jboss.bind.address}"
        maxThreads="100" minSpareThreads="5" maxSpareThreads="15"
        scheme="https" secure="true" clientAuth="false"
        keystoreFile="${jboss.server.home.dir}/conf/chap8.keystore"
        keystorePass="rmi+ssl" sslProtocol = "TLS" />
    -->
```

- Replace with:

```
<!-- SSL/TLS Connector configuration using the admin devl guide
keystore-->
<Connector port="8443" address="${jboss.bind.address}"
maxThreads="100" minSpareThreads="5" maxSpareThreads="15"
scheme="https" secure="true" clientAuth="false"
keystoreFile="../../conf/MAMkeystore" keystorePass="<your password>"
sslProtocol = "TLS" />
```

- Replace the **keystorePass** value with the password that you defined when creating a keystore in step 1.

**5** Save the file and restart Tomcat.

# Enabling SSL on the Discovery Probe

If the certificate used by the Mercury Application Mapping Web server is issued by a well-known Certificate Authority (CA), it is most likely that you do not have to perform the following procedure. To validate trust, try connecting to the Mercury Application Mapping Web server using SSL and check whether the certificate is already trusted.

**To enable SSL on the Discovery probe:**

**1** Open the <Discovery Probe root directory>\root\lib\collectors \appilog-remote.properties file and set the following values:

```
appilog.agent.probe.protocol = HTTPS
serverPortHttps = 8443
```

**2** Import the certificate (for example, MAMCert) into the trusted store used by the discovery probe at <Discovery Probe root directory>/jre/lib/security /cacerts.

The following example demonstrates how to import the MAMCert certificate created in step 2 on page 270:

```
%JAVA_HOME%\bin\keytool -import -file <MAM Certificate file>
–Keystore <MAM GUI folder>
\root\lib\security\MAMTrustStoreExp.jks –alias MAMserver
–storepass logomania
```

**3** When asked by the keytool to approve the certificate's import into the Trust store, enter **Y.** For example:

```
Owner: CN=MAMserver.com, OU=MY_UNIT , O=ME , L=Odessa,
ST=Ukraine, C= UA
Issuer: CN= MAMserver.com, OU=MY_UNIT, O=ME, L=Odessa,
ST=Ukraine, C =UA Serial number: 456d836b Valid from: Wed Nov 29
14:56:11 EET 2006 until: Tue Feb 27 14:56:11 EET 2007 Certificate
fingerprints:
MD5: 8A:60:F7:4B:91:4A:B5:11:9C:12:44:49:7E:BE:4E:9B
SHA1: 5D:30:31:16:A3:64:99:44:43:BA:79:16:3B:02:56:30:DA:50:A4:2B
Trust this certificate? [no]: Y
```

4 The certificate is added to the keystore.

5 Save the file and restart the Discovery probe.

## Enabling SSL on the Application GUI

If the certificate used by the Mercury Application Mapping Web server is issued by a well-known Certificate Authority (CA), it is most likely that you do not have to perform the following procedure. To validate trust, try connecting to the Mercury Application Mapping Web server using SSL and check whether the certificate is already trusted.

**To enable SSL on the application GUI:**

1 Open the <Mercury Application Mapping GUI root directory>/lib/gui /server.properties file, and set the following value:

```
url : https://<MAM server name>:<port>/mam/
```

where

- **<MAM server name>.** The Mercury Application Mapping server name as defined in step 1 on page 270.
- **<port>.** The port number detailed in the Coyote connector in **server.xml**, as defined in step 4 on page 270.

2 Import the certificate (for example, MAMCert) into the trusted store used by the Mercury Application Mapping GUI application at **<Mercury Application Mapping GUI root directory>/jre/lib/security/cacerts**.

The following example demonstrates how to import the MAMCert certificate created in step 2 on page 270:

```
%JAVA_HOME%\bin\keytool -import -file MAMCert  -Keystore
      <Mercury Application Mapping root directory>/jre/lib/security/cacerts
-alias mamcert -keypass changeit
```

3 Save the file and restart the Mercury Application Mapping GUI application.

# Enabling SSL on the Web Clients

If the certificate used by the Mercury Application Mapping Web server is issued by a well-known Certificate Authority (CA), it is most likely that your Web browser can validate the certificate without any further action.

If the CA is not trusted by the Web browser, you should either import the entire certificate trust path or import the certificate used by Mercury Application Mapping explicitly into the browser's trust store.

The following example demonstrates how to import the self-signed MAMCert certificate into the Windows trust store to be used by Internet Explorer.

**To import a certificate into the Windows trust store:**

1. Locate and rename the MAMCert certificate to **MAMCert.cer**.

   In Windows Explorer, the icon shows that the file is a security certificate.

2. Double click **MAMCert.cer** to open the Internet Explorer Certificate dialog box.

3. Follow the instructions for enabling trust by installing the certificate with the Certificate Import Wizard.

# 17

# Hardening with a Domain Scope Document (DSD)

This chapter focuses on the securing of external credentials with a domain scope document (DSD) used by the Mercury Application Mapping system when performing Discovery.


| This chapter describes: | On page: |
|---|---|
| Overview | 275 |
| Domain Scope Document (DSD) Management | 277 |


## Overview

External credentials entered into the Discovery management console are saved in an encrypted file termed a domain scope document (DSD). This DSD contains Discovery probe data. Each Discovery probe entry in the document contains the network scope for that probe and the credentials the probe may use.

---

**Note:** Security features related to Mercury Application Mapping user management—for example, authentication and authorization—are not discussed.

---

This section includes the following topics:

➤ "Basic Security Assumptions" on page 276

➤ "Credentials Encryption Management" on page 276

➤ "HTTPS\SSL Configuration" on page 277

## Basic Security Assumptions

Note the following security assumptions:

➤ You have secured the Server and probe file systems for authorized access only.

➤ You have secured the Mercury Application Mapping Server JMX console to enable access to Mercury Application Mapping system administrators only, preferably only through localhost access.

## Credentials Encryption Management

Note the following guidelines for managing credential encryption:

➤ The DSD is encrypted for both transfer and persistency processes.

➤ The DSD should be encrypted to the data stores using standard, symmetric encryption.

➤ A default, symmetric key is distributed with the Mercury Application Mapping installation. As all default keys are identical, you should replace this key with a locally-generated binary file.

➤ The DSD is exportable and importable in encrypted file form. To import a file you should supply the matching key used for the encryption of the file. Perform the import and export operations through the Server JMX console (the Discovery Manager service). For details, see "DSD Export and Import" on page 279.

➤ You can exchange the key while the system is up to keep the consistency of the system without losing any data. This is managed through the Auto Discovery JMX console.

➤ When a key is updated, you can automatically distribute the key to probes. This option is easier to deploy but is considered less secure.

### HTTPS\SSL Configuration

The DSD can be managed using either HTTP or HTTPS (for secure mode). You can configure communication between the Mercury Application Mapping Server and the Discovery probe to use HTTPS\SSL. This enables better DSD security during transit.

---

**Note:** As a result of using SSL, other aspects of the Mercury Application Mapping product may become more secure.

---

## Domain Scope Document (DSD) Management

This section explains how to manage the DSD file.

This section includes the following topics:


- "Viewing the DSD (Data Direction: Server to Client)" on page 277
- "Updating the DSD (Data Direction: Client to Server)" on page 277
- "DSD Distribution to Probes" on page 278
- "Encryption Key Management" on page 278
- "DSD Export and Import" on page 279


### Viewing the DSD (Data Direction: Server to Client)

Passwords are not sent from the Server to the application GUI. That is, Mercury Application Mapping displays asterisks (*) in the password field, regardless of content.

### Updating the DSD (Data Direction: Client to Server)

- All communication in this direction is not encrypted using a secure key. You must install the Discovery probe with a secure communication using HTTPS\SSL.

- The symmetric key encryption ensures that passwords are not being sent as clear text on the network. This encryption does not use a strong cipher.
- The password field is limited to 40 characters in UI (20 characters in Mercury Application Mapping 6.5). The length of the password is not limited in other ways since it is saved only in a file.
- You can use special characters and non-English characters as passwords.

## DSD Distribution to Probes

The DSD file (**DomainScopeDocument.bin**) is downloaded to the probe as part of the downloading mechanism for probe configuration files.

The symmetric encryption key is located both on the probe and Server file systems.

## Encryption Key Management

You can distribute the encryption key to probes either offline or online (while the system is running). The key file is a 3DES, 192 bits, binary file.

**To distribute the encryption key offline:**

1. Shutdown the Mercury Application Mapping Server and probes.
2. Replace the key file on the Server and probe file systems.
3. Reactivate the Mercury Application Mapping Server and probes.

The locations of the key are as follows:

- Server: root/lib/server/discovery/customer_1/key.dat
- Probe: root/lib/collectors/probeManager/binaryData/key.dat

**To update the encryption key online:**

1. Launch the Web browser and enter the following address: http://localhost:8080/jmx-console.

   You may have to log in with a user name and password.
2. Under MAM, click **service=Discovery manager** to open the JMX MBEAN View page.

3 Locate the **changeEncryptionKey** operation and enter the new key file name.

4 Click **Invoke** to update the encryption key.

## DSD Export and Import

You can export and import DSD files in encrypted format. (You would probably import a DSD file during recovery following a system crash or during upgrade.)

**To export or import a DSD file:**

1 Launch the Web browser and enter the following address: http://localhost:8080/jmx-console.

You may have to log in with a user name and password.

2 Under MAM, click **service=Discovery manager** to open the JMX MBEAN View page.

3 Locate the **ExportDomainScopeDocument** or **importDomainScopeDocument** operation and enter the new file name.

4 Click **Invoke** to export or import the encryption key.

# Part V

## Upgrading Mercury Application Mapping

# 18

# Migrating Mercury Application Mapping from Version 3.0 to Version 6.6

This chapter explains how to migrate (upgrade) Mercury Application Mapping from version 3.0 to 6.6. You install the upgrade application and run it to migrate Mercury Application Mapping resources such as TQLs, views, and packages. For a list of resources that are upgraded, see "Migrated Resources" on page 295.


| This chapter describes: | On page: |
|---|---|
| Upgrade Workflow | 284 |
| Prerequisites | 284 |
| Installing the Upgrade Application | 285 |
| Running the Upgrade Application to Migrate Mercury Application Mapping | 288 |
| Preparing Resources with Errors for Migration | 294 |
| File Locations | 296 |
| Notes and Limitations | 297 |

# Upgrade Workflow

This section describes the upgrade workflow for upgrading Mercury Application Mapping from version 3.0 to 6.6.

**To upgrade Mercury Application Mapping:**

1 **Install Mercury Application Mapping version 6.6.**

For details, see "Prerequisites" on page 284.

2 **Install the upgrade application.**

For details, see "Installing the Upgrade Application" on page 285.

3 **Run the upgrade migration program.**

For details, see "Running the Upgrade Application to Migrate Mercury Application Mapping" on page 288.

4 **Repair the resources that were not upgraded automatically.**

For details, see "Preparing Resources with Errors for Migration" on page 294.

5 **Rerun the upgrade program.**

For details, see "Running the Upgrade Application to Migrate Mercury Application Mapping" on page 288.

# Prerequisites

The following tasks must be performed before beginning the upgrade procedure.

- Prepare a new machine on which to install Mercury Application Mapping version 6.6.
- Install the Mercury Application Mapping server, version 6.6. For details on installation options, see Chapter 1, "Introduction to Installation."

---

**Note:** Changes made to Python scripts that are used by Discovery patterns are not saved during the upgrade process.

---

# Installing the Upgrade Application

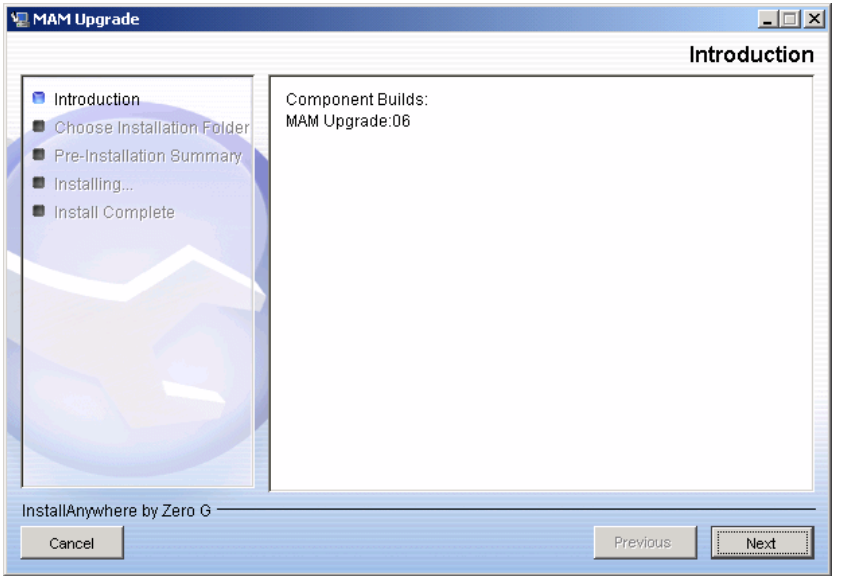
The first step of the procedure for upgrading Mercury Application Mapping is to install the upgrade application. You install the upgrade application on any machine that has a connection to the Mercury Application Mapping server.

**To install the upgrade application:**

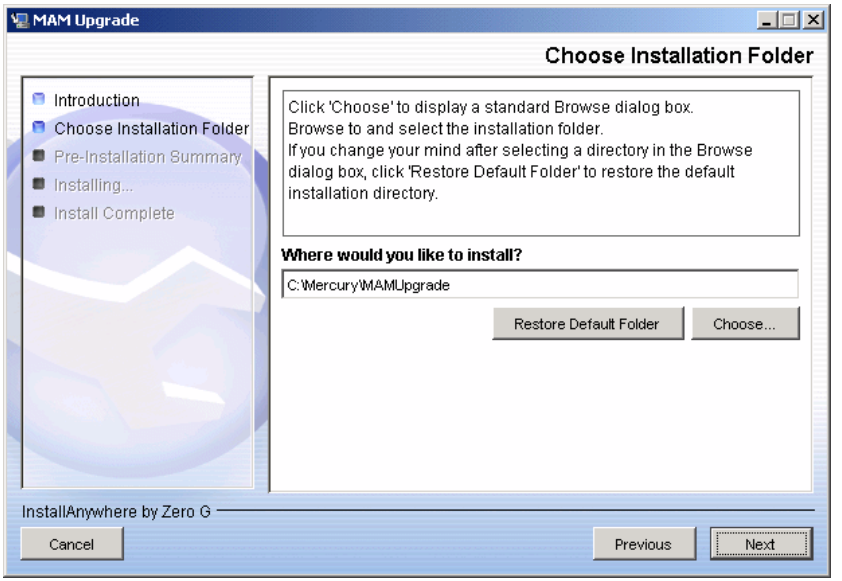
1 Insert the **Mercury Application Mapping 6.6 Setup Windows** CD-ROM into the drive of the machine on which you want to install. If you are installing from a network drive, connect to it.

2 Double-click the **<CD-ROM root folder>\MAM66\MAMUpgrade.exe** file.

A progress bar is displayed. Once the initial process is complete, the Introduction dialog box opens.



**3** Click **Next** to open the Choose Installation Folder dialog box.



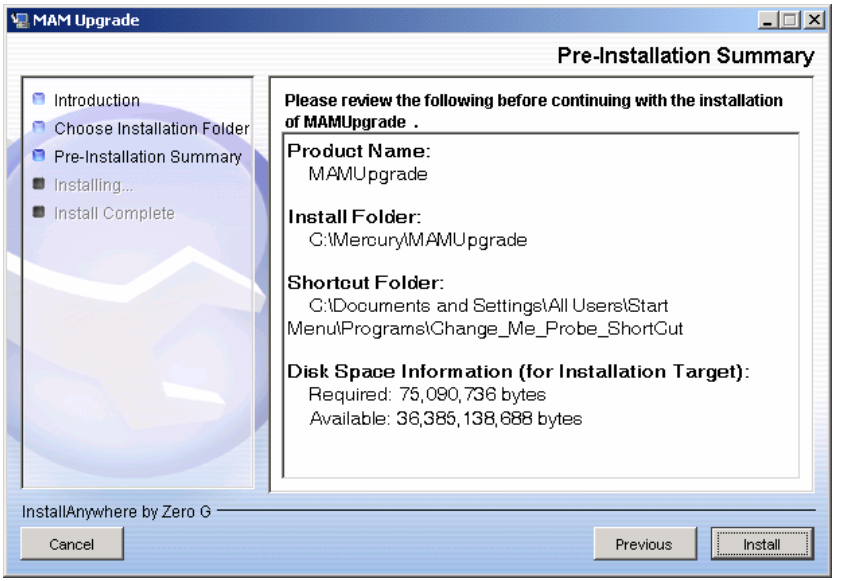

Accept the default entry or click **Choose** to display a standard Browse dialog box. To install to a different directory, browse to and select the installation folder.

---

**Tip:** To display the default installation folder again, click **Restore Default Folder**.

---

**4** Click **Next** to open the Pre-Installation Summary dialog box that lists the installation options you have selected.




**5** If you are satisfied with the summary, click **Install**. A message is displayed indicating that the installation is currently being performed. When the installation is complete, Setup displays the Installation Completed dialog box.

**6** Click **Done**.

The next stage of the upgrade procedure is to access the upgrade application. For details, see the next section.

# Running the Upgrade Application to Migrate Mercury Application Mapping

The second stage in the procedure to upgrade Mercury Application Mapping is to run the upgrade application.

**To migrate Mercury Application Mapping from version 3.0 to 6.6:**

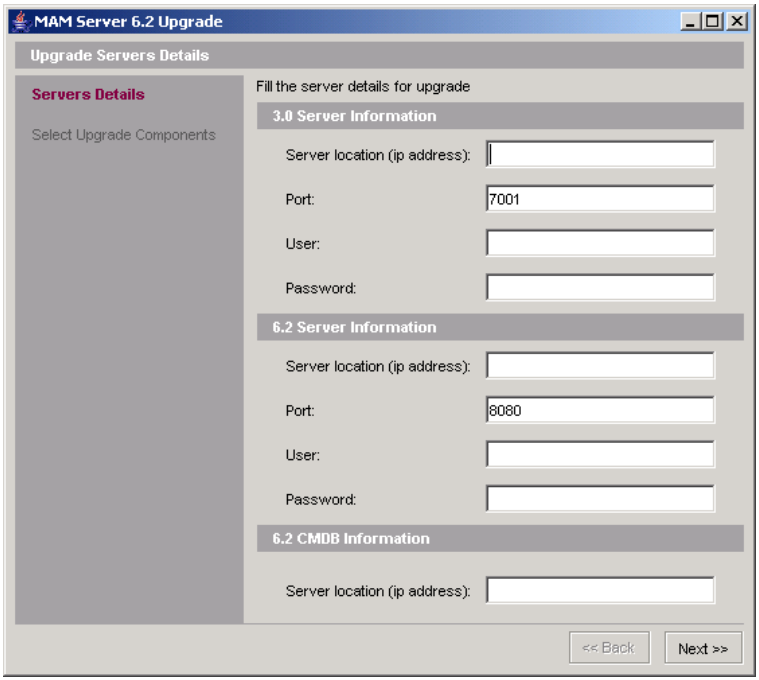
**1** Locate the **runGUIUpgrade.cmd** file in **<root folder>\Mercury\MAMUpgrade\scripts**.

---

**Note:** The **runUpgrade.cmd** file is intended for internal Mercury use only.

---

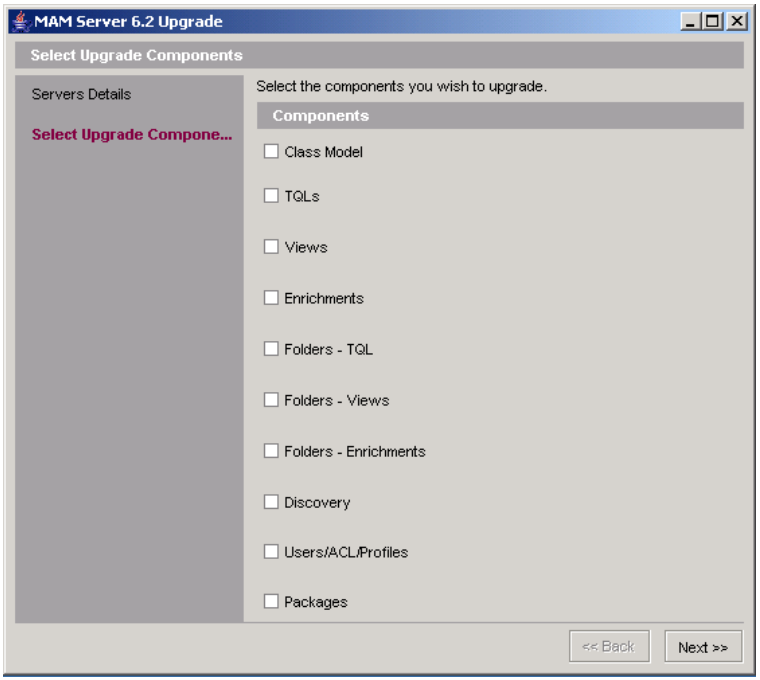
**2** Double-click the file to display the upgrade wizard.



**3** Enter the IP, port, and user and password (if necessary) of the machines running versions 3.0 and 6.6. Enter the IP of the machine on which the CMDB server is installed.

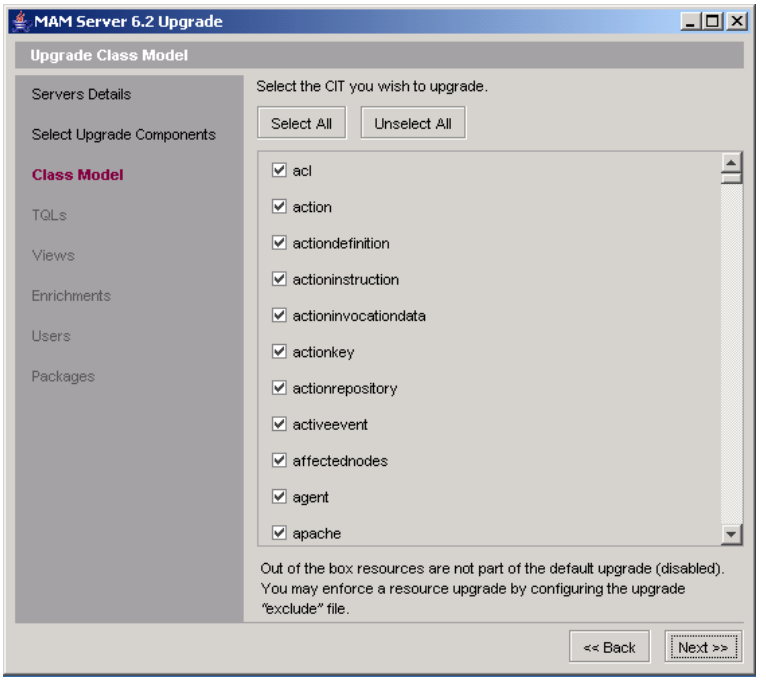
When you run the upgrade program for the first time, these fields are empty (apart from the port fields). On subsequent occasions the fields contain the values you are entering now. You may need to change the values if you are upgrading further Mercury Application Mapping resources.

**4** Click **Next** to open the Select Upgrade Components dialog box.




All components that can be upgraded are listed.

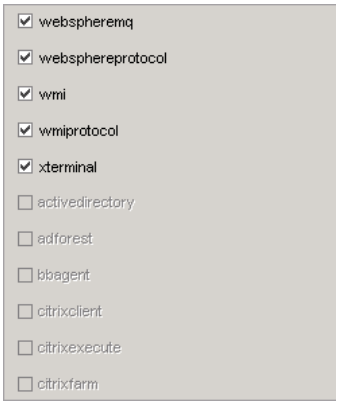
**5** Select the component to be upgraded, and click **Next** to open the Upgrade dialog box.




Depending on which component you chose in the previous step, Upgrade displays all resources of the component that is to be upgraded. All resources are selected by default.

You can clear all resources by clicking **Unselect All**.

Resources that will not be upgraded, because they are out of the box resources, are displayed at the end of the list and are disabled:




You can upgrade these excluded resources. For details, see "Including Resources Previously Excluded" on page 295. For a complete list of resources that are not upgraded, see "Non-Migrated Resources" on page 296.

Note the following:

- **Class Model.** Although class models are out of the box components and, therefore, should be excluded from upgrade, they are not disabled. This is because users may have added attributes to the class models, or other changes may have been made. Only the changes are migrated to the new version.
- The site class cannot be migrated because this class no longer exists in version 6.6.
- **Users.** All users are migrated to the new version with the permissions that were defined for them in version 3.0. The exception is the Administrator user which is excluded from the migration. You can change Administrator user permissions only in version 6.6.
- All users are migrated as is, with their given permissions except Administrator which is excluded and remains as defined in version 6.6.
- **Packages.** Before upgrading packages, you must upgrade the class, TQL, enrichment, and view resources that are included in a package. If a package includes resources that are not being upgraded, the resources do not appear in the version 6.6 package.

➤ Class, TQL, enrichment, and view resources are upgraded in a package. Resources from other subsystems are not upgraded.

**Example of package migration from test to production environment and from version 3.0 to version 6.6**: Mercury Application Mapping is being run in two environments: test and production. You want to migrate packages from the version 3.0 test environment to the version 6.6 test environment:

➤ Place the version 3.0 packages in the following folder on the version 6.6 server machine: **<root folder>:\Mercury\MAMUpgrade\packages30**.

➤ Migrate the Mercury Application Mapping version 3.0 test environment to a version 6.6 test environment.

➤ Migrate the packages by running the upgrade procedure and entering the IP addresses of the test machines.

➤ Perform a version 6.6 production installation.

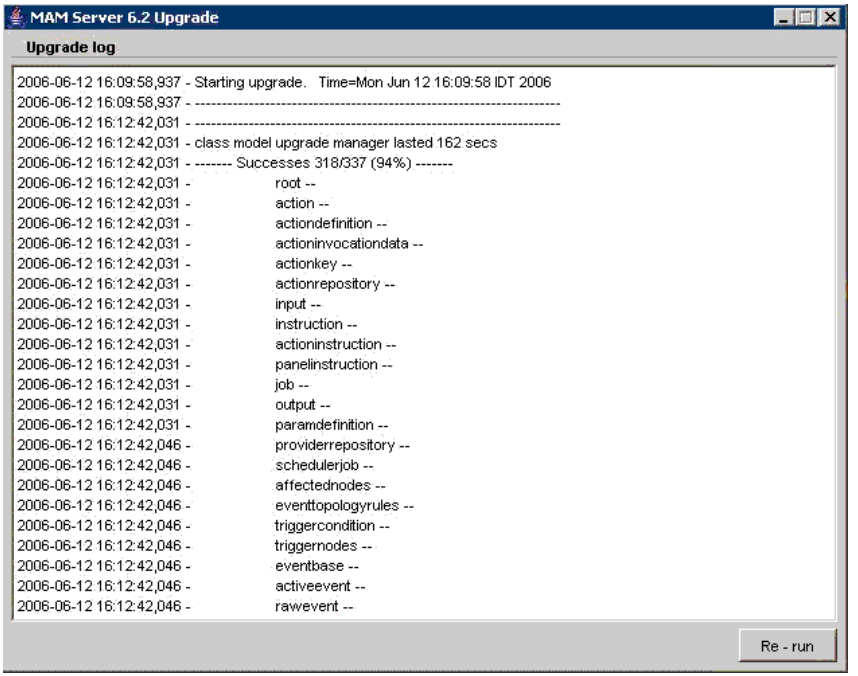
➤ Import the package contents to the version 6.6 production environment.

➤ Package contents must be migrated before the packages themselves. Certain package resources are not migrated.

➤ Import the packages to the version 6.6 production environment.

**6** Click **Upgrade**. Answer **Yes** to the message that is displayed. The upgrade process may take a few minutes, depending on the number of resources in the system that must be migrated.

At the end of the upgrade process, a report displays the results of the process, that is, the status of each component, as follows:




- **Success.** The resource was migrated successfully to version 6.6.
- **Warning.** The resource could not be migrated because of an error. However, once you fix the error, you can rerun the upgrade process and migrate the resource.
- **Failed.** The resource could not be migrated. For example, the site class cannot be migrated because this class no longer exists in version 6.6. Once you fix a failure error, you can rerun the upgrade process. For example, a view is not upgraded because it includes a TQL that cannot be upgraded. Fix the TQL error, upgrade the TQL, and migrate the view again.

The Warning and Failed categories include the reason for the non-migration.

You can also view this information in the **<root folder>:\Mercury\MAMUpgrade\log\upgrade.log** log file.

---

**Note:** The upgrade process creates other log files which contain more detailed data about each component. These log files are generally intended for internal Mercury use.

---

**7** To run the upgrade process again, without making any changes, click **Rerun** in the report window. However, if the report includes warnings about resource errors and you fix the errors, do not click the Rerun button as your changes will not be included in the upgrade. For your changes to be loaded into the upgrade application, close it and open it again.

Upgrade displays the Upgrade wizard again and you can begin to upgrade another version 3.0 installation.

The next stage in the procedure is to fix the errors (for which a warning appears in the log file). For details, see the next section.

## Preparing Resources with Errors for Migration

The next stage in the migration process is to decide whether any of the resources that did not migrate should be repaired and the migration process rerun. Resources that did not migrate appear in the Warning list at the end of a migration run and in the <root folder>:\Mercury\MAMUpgrade\log\upgrade.log log file.

This section includes the following topics:

➤ "Including Resources Previously Excluded" on page 295

➤ "Migrated Resources" on page 295

➤ "Non-Migrated Resources" on page 296

## Including Resources Previously Excluded

Resources that have been excluded from migration are recorded in the **.excluded** files in the <root folder>:\Mercury\MAMUpgrade\excluded folder. (For a complete list of resources that are not upgraded, see "Non-Migrated Resources" on page 296.)

Usually these resources are out of the box resources and, as they exist in Mercury Application Mapping version 6.6, there is no need to migrate them. However, you can include a resource in the upgrade process by deleting it from the exclude file and rerunning the upgrade process. For example, an out of the box class host may include customized attributes or classes that you want to migrate.

**To include a class attribute in a migration run:**

1. Display the **classes.excluded** file in a text editor.
2. Locate the class and its attribute that you want to migrate.
3. Delete the attribute from the file.
4. Run the migration process.

## Migrated Resources

The following resources are upgraded.

- Class Model
- TQLs
- Views
- Enrichments
- TQL folders
- Views folders
- Enrichment folders
- Discovery
- Users/ACL/Profiles
- Packages

### Non-Migrated Resources

The following resources are not upgraded:

- CI instances
- Snapshots
- Reports
- Correlations
- Events
- Server scheduling
- Discovery patterns
- Out of the box components (for examples of resources that are not upgraded, see the contents of the files in **<root folder>:\Mercury\MAMUpgrade\excluded**)
- The Administrator user

## File Locations

The upgrade process creates the following folders in the <root folder>:\Mercury\MAMUpgrade\ folder that enable you to migrate resources:

- **excluded.** The *.excluded files contain all resources that must not be migrated.
- **included.** The *.included files contain all resources that have been upgraded.
- **packages30.** Version 3.0 packages are placed here to be upgraded.
- **log.** This folder contains all logs connected with the upgrade process. The main log is upgrade.log.
- **upgradedPackages.** The upgrade application moves upgraded packages to this folder.
- **namesMaps.** The *.map files contain name mapping for all types of resources. A resource's version 3.0 name is mapped to its new name in version 6.6.

## Notes and Limitations

A TQL cannot be migrated to version 6.6 under the following condition: If a TQL relationship is configured with a join_f condition on the root_id attribute, the upgrade application cannot migrate the TQL. This is because version 6.6 does not include the root_id attribute.

# 19

# Upgrading Mercury Application Mapping from Version 6.x to Version 6.6

This chapter explains how to upgrade Mercury Application Mapping from version 6.x to 6.6 in a standalone version and when Mercury Application Mapping shares the CMDB with Mercury Business Availability Center.


| This chapter describes: | On page: |
|---|---|
| Upgrade Workflow | 300 |
| Upgrade Procedure: Version 6.x – 6.6 | 301 |
| Upgrading Mercury Application Mapping: Version 6.x – 6.6 with a Shared CMDB | 306 |
| Backing Up Configuration Files | 310 |
| Redeploying and Undeploying Packages | 312 |

## Upgrade Workflow

The following workflow explains the upgrade procedure that is described in full in the next section.

1 **Back up 6.x.**

Back up the directory, the databases, and configuration files modified by users.

2 **Rename the existing shortcut.**

Relevant for Windows installations only.

3 **Verify the number of process CIT instances running in 6.x.**

The procedure for removing processes depends on this number. Record for later reference.

4 **Shut down 6.x.**

Shut down the server, the GUI, and the probes.

5 **Install the version 6.6 server.**

Do **not** start the server at this stage.

6 **Manually update the 6.6 configuration files.**

Use the backed up files as reference only.

7 **Remove Process CIT instances.**

This procedure depends on the number of processes: you follow one procedure when there are 10,000 or more process CIT instances and another procedure when there are 9,999 or less.

8 **Install the version 6.6 components.**

Install the version 6.6 GUI, probes, and packages.

9 **Start the 6.6 server.**

Start the Mercury Application Mapping version 6.6 server.

10 **Remove the Webservices CIT instances.**

Use the JMX console.

**11 Redeploy packages.**

Use the JMX console.

**12 Reactivate Discovery patterns.**

This step enables newly installed probes to receive their tasks.

**13 Run Discovery for Webservice (UDDI module) and Process (Host resource) packages.**

This step recreates the CIT instances in the version 6.6 CMDB.

## Upgrade Procedure: Version 6.x – 6.6

This section explains how to upgrade Mercury Application Mapping from version 6.x to version 6.6.

---

**Note:** As part of the upgrade procedure you remove existing version 6.x **process** and **webservice** CIT instances from the CMDB. This is required because the definitions of those CI types are changed in version 6.6. After installing version 6.6, you must run Discovery for webservices (UDDI module) and processes (Host resource package) to recreate the instances in your version 6.6 CMDB.

---

**To upgrade Mercury Application Mapping:**

**1** Back up the Mercury Application Mapping directory, for example, D:\Mercury.

**2** Back up all Mercury Application Mapping databases. For details, see *Preparing the Database Environment*.

---

**Note:** (Relevant for Windows installations only.) If you are installing version 6.6 on the same server as the previous version, you must rename the MAM shortcut to **MAM6.x**, where **x** is the current version number (**Start** > **Programs** (or **All Programs**) > **MAM**, right-click and select **Rename**).

---

**3** Back up any Mercury Application Mapping 6.x configuration files that have been modified by users. For details, see "Backing Up Configuration Files" on page 310.

**4** Verify the number of Process CIT instances in the system via the JMX console:

**a** Launch the Web browser and enter the following address:

```
http://<machine name or IP address>:8080
```

where <**machine name or IP address**> is the machine on which Mercury Application Mapping is installed.

**b** Click the JMX Console link. You may have to log in with the **admin** user and password.

**c** Click the **Topaz** > **service=CMDB Model Services** link.

**d** In the JMX MBEAN View page, locate the following operation: **retriveObjectCounts**

**e** In the customerID field, enter **1;** in the type field, enter **process**; select **true** for isDerived.

**f** Click **Invoke**. A message is displayed showing the number of processes in the system. Record this number for later reference.

---

**Tip:** You can verify the number of processes also by accessing the CI Type Manager: Display the map by CI Types. Locate **Host Resources** > **Process**. The number of processes should be the same as the number in the JMX console. Next, log in to version 6.x and verify that the number is the same in that version.

---

**5** Shut down the version 6.x components: Mercury Application Mapping server, GUI, and probes.

**6** Install the Mercury Application Mapping version 6.6 server. For details, see the relevant sections:

- Part II, "Installation for Windows"
- Part III, "Installation for Solaris"

---

**Important:**

- Do **not** start the Mercury Application Mapping version 6.6 server before performing the following steps.
- During installation of the Mercury Application Mapping version 6.6 server, in the Create Oracle CMDB Database User and Tablespaces (or Create Database Users & Tablespaces) dialog box, select **No**.

---

**7** Using the modified configuration files that you backed up in step 3 as a reference only, manually update the 6.6 configuration files similarly (if required). If a modified file appears in multiple locations, make the change to all instances of the file.

---

**Caution:** Do not overwrite any version 6.6 configuration files with configuration files from previous versions.

---

**8** If the number of process CIT instances in the system, as calculated in step 4 above, is 10,000 or greater, and an Oracle Server database is being used, perform the following steps to remove them:

**a** Make sure the Mercury Application Mapping version 6.6 server is not running.

**b** Run from the command line **66_upgrade.bat process**. The batch file is located in **\MAM-V6.6\MAMServer\j2f\cmdb\dbscripts\oracle**.

---

**Note:** Do not use the **66_upgrade.bat** script to remove any other type of CIT instance.

---

**9** If the number of **process** CIT instances in the system, as calculated in step 4 above, is 9,999 or less, perform the following steps to remove them:

**a** Launch the Web browser and enter the following address:

```
http://<machine name or IP address>:8080
```

where <**machine name or IP address**> is the machine on which Mercury Application Mapping is installed.

**b** Click the JMX Console link. You may have to log in with the admin user and password.

**c** Click the **Topaz** > **service=CMDB Model Services** link.

**d** In the JMX MBEAN View page, locate the following operation: **deleteByClassType()**

**e** In the classType field, enter **process** as the type to be removed; in the chunkSize field, enter **500** (recommended); click **Invoke**. A message is displayed, signifying that the operation is successful.

**10** Install the Mercury Application Mapping version 6.6 GUI, probes, and packages.

**11** Start the Mercury Application Mapping version 6.6 server.

**12** Remove the **webservice** CIT instances:

**a** Launch the Web browser and enter the following address:

```
http://<machine name or IP address>:8080
```

where <**machine name or IP address**> is the machine on which Mercury Application Mapping is installed.

**b** Click the **JMX Console** link. You may have to log in with the **admin** user and password.

**c** Click the **Topaz** > **service=CMDB Model Services** link.

**d** In the JMX MBEAN View page, locate the following operation:

**deleteByClassType()**

**e** In the classType field, enter **webservice** as the class type to be removed and click **Invoke**. A message is displayed, signifying that the operation is successful.

**13** Redeploy all packages. For details, see "Redeploying and Undeploying Packages" on page 312.

---

**Note:** If your pre-version 6.6 Mercury Application Mapping CMDB included the IIS topology view, verify that it is not corrupt after the upgrade procedure. If it is, manually undeploy the IIS discovery package before redeploying all packages. For details, see "Redeploying and Undeploying Packages" on page 312.

---

**14** Reactivate the active Discovery patterns, so that newly installed probes receive their tasks.

# Upgrading Mercury Application Mapping: Version 6.x – 6.6 with a Shared CMDB

This section explains how to upgrade Mercury Application Mapping from version 6.x to 6.6 when Mercury Application Mapping shares the CMDB with Mercury Business Availability Center.

---

**Note:** As part of the upgrade procedure you are required to remove existing version 6.x **Process** and **Webservice** CIT instances from the CMDB. This is required because the definitions of these CI types change in version 6.6. After installing version 6.6, you must run Discovery for the webservices (UDDI module) and process (Host Resource) packages to recreate the instances in your version 6.6 CMDB.

---

**To upgrade Mercury Application Mapping:**

1 Back up all Mercury Application Mapping databases. For details, see *Preparing the Database Environment* included with Mercury Application Mapping.

---

**Note:** (Relevant for Windows installations only.) If you are installing version 6.6 on the same server as the previous version, you must rename the MAM shortcut to **MAM6.x**, where **x** is the current version number (**Start** > **Programs** (or **All Programs**) > **MAM**, right-click and select **Rename**).

---

2 Back up any Mercury Application Mapping 6.x configuration files that have been modified by users. For details, see "Backing Up Configuration Files" on page 310.

3 Verify the number of Process CIT instances in the system via the JMX console:

**a** Launch your Web browser and enter the following address:

```
http://<machine name or IP address>:8080
```

where <**machine name or IP address**> is the machine on which the Modeling Data Processing Server is installed.

**b** Click the JMX Console link. You may have to log in with the **admin** user and password.

**c** Click the **Topaz** > **service=CMDB Model Services** link.

**d** In the JMX MBEAN View page, locate the following operation: **retriveObjectCounts**

**e** In the customerID field, enter **1;** in the type field, enter **process**; select **true** for isDerived.

**f** Click **Invoke**. A message is displayed showing the number of process CIT instances in the system. Record this number for later reference.

---

**Tip:** You can verify the number of processes also by accessing the CI Type Manager: Display the topology map organized by CI Types. Locate **Host Resources** > **Process**. The number of processes should be the same as the number in the JMX console. Next, log in to version 6.x and verify that the number is the same in that version.

---

**4** Shut down the version 6.x components: Mercury Application Mapping server, GUI, and probes.

**5** Install the Mercury Application Mapping version 6.6 server. For details, see the relevant sections:

- **Windows**: Chapter 5, “Distributed Deployment Installation with a Shared CMDB”
- **Solaris**: Chapter 12, “Distributed Deployment Installation with a Shared CMDB”

**6** Upgrade Mercury Business Availability Center to version 6.6. For details, see *Upgrading Mercury Business Availability Center*.

**7** Stop all Mercury Business Availability Center 6.6 servers and run **BACMAMShareCMDB.exe**. For details, see "Sharing the Mercury Business Availability Center CMDB" on page 137.

**8** Using the modified configuration files that you backed up in step 2 as a reference, manually update the 6.6 configuration files similarly (if required). If a modified file appears in multiple locations, make the change to all instances of the file.

---

**Caution:** Do not overwrite any version 6.6 configuration files with configuration files from previous versions.

---

**9** If the number of process CIT instances in the system, as calculated in step 3 above, is 10,000 or greater and an Oracle Server database is being used, remove all process CIT instances as follows:

- Make sure the Modeling Data Processing Server is not running and ensure that **env_cmdb.bat** lists accurate database locations.
- Run from the command line **66_upgrade.bat process**. The batch file is located in: <**Mercury Business Availability Center root directory**>**\cmdb\dbscripts\oracle** (version 6.6).

---

**Note:** Do not use the **66_upgrade.bat** script to remove any other type of CIT instance.

---

**10** If the number of process CIT instances in the system, as calculated in step 3 above, is 9,999 or less, remove all process CIT instances as follows:

**a** Launch the Web browser and enter the following address:

```
http://<machine name or IP address>:8080
```

where <**machine name or IP address**> is the machine on which the Modeling Data Processing Server is installed.

**b** Click the JMX Console link. You may have to log in with the admin user and password.

**c** Click the **Topaz** > **service=CMDB Model Services** link.

**d** In the JMX MBEAN View page, locate the following operation: **deleteByClassType()**

**e** In the classType field, enter **process** as the type to be removed; in the chunkSize field, enter **500** (recommended); the isDerived parameter should be set to **true**; click **Invoke**. A message is displayed, signifying that the operation is successful.

**11** Start all version 6.6 servers.

**12** Remove **webservice** CIT instances:

**a** Launch the Web browser and enter the following address:

```
http://<machine name or IP address>:8080
```

where <**machine name or IP address**> is the machine on which the Modeling Data Processing Server is installed.

**b** Click the **JMX Console** link. You may have to log in with the **admin** user and password.

**c** Click the **Topaz** > **service=CMDB Model Services** link.

**d** In the JMX MBEAN View page, locate the following operation:

**deleteByClassType()**

**e** In the customerID field, enter **1;** in the classType field, enter **webservice** as the class type to be removed. The isDerived parameter should be set to **true**.

**f** Click **Invoke**. A message is displayed, signifying that the operation is successful.

**13** Redeploy all packages. For details, see “Redeploying and Undeploying Packages” on page 312.

---

**Note:** If your pre-version 6.6 Mercury Application Mapping CMDB included the IIS topology view, verify that it is not corrupt after the upgrade procedure. If it is, manually undeploy the IIS discovery package before redeploying all packages. For details, see "Redeploying and Undeploying Packages" on page 312.

---

**14** Reactivate the active Discovery patterns, so that newly installed probes receive their tasks.

## Backing Up Configuration Files

Before you install Mercury Application Mapping 6.6, back up the configuration files that you have modified to another directory.

If a change has been made to one of these files, repeat the change in the version 6.6 file.

---

**Tip:** Use a different backup mechanism to back up these files than the one you used for the full backup.

---

### CMDB Configuration Files

- ..\MAMServer\j2f\conf\cmdb.conf
- ..\MAMServer\j2f\conf\core\Tools\log4j\EJB\cmdb.properties
- .. \MAMServer\j2f\conf\core\Tools\log4j\PlainJava\cmdb.properties
- ..\MAMServer\scripts\install\J2F\conf\core\Tools\log4j\EJB\cmdb.properties
- ..\MAMServer\scripts\install\J2F\conf\core\Tools\log4j\PlainJava\cmdb.properties

### Server Configuration Files

- ..\MAMServer\root\lib\server\appilogConfig.properties
- ..\MAMServer\root\lib\server\backup.properties
- ..\MAMServer\root\lib\server\collectorsConfig.properties
- ..\MAMServer\root\lib\server\dbupgrade.properties
- ..\MAMServer\root\lib\server\icon.properties
- ..\MAMServer\root\lib\server\jms.properties
- ..\MAMServer\root\lib\server\mam4j-dbcreator.properties
- ..\MAMServer\root\lib\server\mam4j-scripts.properties
- ..\MAMServer\root\lib\server\mam4j-simulator.properties
- ..\MAMServer\root\lib\server\mam4j_db.properties
- ..\MAMServer\root\lib\server\scripts_db.properties
- ..\MAMServer\root\lib\server\shape.properties
- ..\MAMServer\root\lib\server\mam4bac4j.properties
- ..\MAMServer\root\lib\server\mam4j-debug.properties
- ..\MAMServer\root\lib\server\mam4j-non-debug.properties
- ..\MAMServer\root\lib\server\mam4j-stat.properties

### Application Configuration Files

- ..\MAMServer\j2f\EJBContainer\server\mercury\tmp\deploy\tmp<###>mam.war\appilog\gui\server.properties
- ..\MAMGUI\root\lib\gui\mam4j_gui.properties
- ..\MAMServer\root\lib\web\gui.properties – located under a specific server

### Discovery Probe Configuration Files

- ..\MAMDiscoveryProbe\root\lib\collectors\appilog-remote.properties

# Redeploying and Undeploying Packages

Use the below procedures to redeploy or undeploy discovery packages:

**To redeploy packages:**

1 Launch the Web browser and enter the following address:

```
http://<machine name or IP address>:8080
```

where <**machine name or IP address**> is the machine on which Mercury Application Mapping (or the Mercury Business Availability Center Modeling Data Processing Server, in the case of a shared CMDB environment) is installed.

2 Click the JMX Console link. You may have to log in with the admin user and password.

3 Click the **MAM** > **service=Package manager** link.

4 In the JMX MBEAN View page, locate the following operation: **deployPackages**

5 In the customerID field, enter **1**; in the packageNames field, enter the package name—to redeploy all packages, enter ***.***; ignoreTimestamp should be set to **true**.

6 Click **Invoke**. A message is displayed, signifying that the operation is successful.

**To undeploy packages:**

1 Launch the Web browser and enter the following address:

```
http://<machine name or IP address>:8080
```

where <**machine name or IP address**> is the machine on which Mercury Application Mapping (or the Mercury Business Availability Center Modeling Data Processing Server, in the case of a shared CMDB environment) is installed.

2 Click the JMX Console link. You may have to log in with the admin user and password.

3 Click the **MAM** > **service=Package manager** link.

4 In the JMX MBEAN View page, locate the following operation: **undeployPackage**

5 In the customerID field, enter **1**; in the packageNames field, enter the name of the package to undeploy.

To undeploy the IIS discovery package, enter **IIS.zip**.

6 Click **Invoke**. A message is displayed, signifying that the operation is successful.

# Part VI

## Appendix

# A

# Troubleshooting

This chapter describes a common problem that you may encounter when installing Mercury Application Mapping, and the solution to this problem.


| This chapter describes: | On page: |
|---|---|
| Server and Database Connection | 317 |


## Server and Database Connection

The connection between the JBoss application server (J2F) and the Oracle database may fail after Mercury Application Mapping is installed for the first time. The indication is that after the server is started up, the following message does **not** appear in the console or log:

```
Server is up
```

**To verify that the database connection is valid:**

In the Windows command interpreter (cmd.exe), type:

```
sqlplus cmdb/cmdb@skazal
```

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