Sun Java System Mobile Enterprise Platform 1.0 Installation Guide

Contents

Preface

This guide explains how to install the Sun Java System Mobile Enterprise Platform 1.0 (MEP) server-side Gateway software and how to run a simple application to verify that installation succeeded.

MEP is a comprehensive mobility solution that enables offline data access, data synchronization, and secure access to EIS/EAI applications, such as Siebel and SAP.

MEP is based entirely upon open standards, including the following:

- Java Platform, Mobile Edition (Java ME)
- Java Platform, Enterprise Edition (Java EE)
- The dominant industry standard OMA DS, formerly known as SyncML. The specifications for Open Mobile Alliance Data Synchronization V1.1.2 and V1.2.1 are available at `http://www.openmobilealliance.org/Technical/release_program/ds_v112.aspx` and `http://www.openmobilealliance.org/Technical/release_program/ds_v12.aspx`.

Who Should Use This Book

This guide is intended for users who will install the Mobile Enterprise Platform software on systems running Sun Solaris, Linux, and Windows operating systems.

Before You Read This Book

Before reading this guide, you should be familiar with installing applications on systems running Sun Solaris, Linux, and Windows operating systems, be able to create and configure databases, database users, and tables with MySQL and Oracle databases. It also helps to have some familiarity with the Sun Java System Application Server as well as mobile devices that run Java Platform, Micro Edition (Java ME).

How This Book Is Organized

This book contains the following chapters:

- Chapter 1, "Installing Sun Java System Mobile Enterprise Platform 1.0," explains how to install the MEP software.

- Chapter 2, "Establishing Trust," explains how to establish trust between the gateway and enterprise tiers in a two-tiered MEP environment.

- Chapter 3, "Setting Up and Running the MusicDB Sample Application," explains how to run the MusicDB client application to verify your MEP installation.

Mobile Enterprise Platform Documentation Set

The Mobile Enterprise Platform documentation set is available at `http://docs.sun.com/coll/1780.1`. To learn about Mobile Enterprise Platform, refer to the books listed in the following table.

TABLE P–1   Books in the Mobile Enterprise Platform Documentation Set

Book Title	Description
Sun Java System Mobile Enterprise Platform 1.0 Release Notes	Late-breaking information about the software and the documentation. Includes a comprehensive summary of the supported hardware, operating systems, application server, Java™ Development Kit (JDK™), databases, and EIS/EAI systems.
Sun Java System Mobile Enterprise Platform 1.0 Architectural Overview	Introduction to the architecture of Mobile Enterprise Platform.
Sun Java System Mobile Enterprise Platform 1.0 Installation Guide	Installing the software and its components, and running a simple application to verify that installation succeeded.
Sun Java System Mobile Enterprise Platform 1.0 Deployment Guide	Deployment of applications and application components to Mobile Enterprise Platform.
Sun Java System Mobile Enterprise Platform 1.0 Developer's Guide for Client Applications	Creating and implementing Java Platform, Mobile Edition (Java ME platform) applications for Mobile Enterprise Platform that run on mobile devices.
Sun Java System Mobile Enterprise Platform 1.0 Developer's Guide for Enterprise Connectors	Creating and implementing Enterprise Connectors for Mobile Enterprise Platform intended to run on Sun Java System Application Server.
Sun Java System Mobile Enterprise Platform 1.0 Administration Guide	System administration for Mobile Enterprise Platform, focusing on the use of the MEP Administration Console.

Application Server Documentation Set

When you install MEP, it is deployed to Sun Java System Application Server 9.1 Update 2.

The Application Server documentation set describes deployment planning and system installation. The Uniform Resource Locator (URL) for Application Server documentation is `http://docs.sun.com/coll/1343.5`. For an introduction to Application Server, refer to the books in the order in which they are listed in the following table.

TABLE P–2 Books in the Application Server Documentation Set

Book Title	Description
Documentation Center	Application Server documentation topics organized by task and subject.
Release Notes	Late-breaking information about the software and the documentation. Includes a comprehensive, table-based summary of the supported hardware, operating system, Java Development Kit (JDK), and database drivers.
Quick Start Guide	How to get started with the Application Server product.
Installation Guide	Installing the software and its components.
Deployment Planning Guide	Evaluating your system needs and enterprise to ensure that you deploy the Application Server in a manner that best suits your site. General issues and concerns that you must be aware of when deploying the server are also discussed.
Application Deployment Guide	Deployment of applications and application components to the Application Server. Includes information about deployment descriptors.
Developer's Guide	Creating and implementing Java Platform, Enterprise Edition (Java EE platform) applications intended to run on the Application Server that follow the open Java standards model for Java EE components and APIs. Includes information about developer tools, security, debugging, and creating lifecycle modules.
Java EE 5 Tutorial	Using Java EE 5 platform technologies and APIs to develop Java EE applications.
WSIT Tutorial	Developing web applications using the Web Service Interoperability Technologies (WSIT). Describes how, when, and why to use the WSIT technologies and the features and options that each technology supports.
Administration Guide	System administration for the Application Server, including configuration, monitoring, security, resource management, and web services management.
High Availability Administration Guide	Post-installation configuration and administration instructions for the high-availability database.
Administration Reference	Editing the Application Server configuration file, `domain.xml`.

TABLE P–2   Books in the Application Server Documentation Set   *(Continued)*

Book Title	Description
Upgrade and Migration Guide	Upgrading from an older version of Application Server or migrating Java EE applications from competitive application servers. This guide also describes differences between adjacent product releases and configuration options that can result in incompatibility with the product specifications.
Performance Tuning Guide	Tuning the Application Server to improve performance.
Troubleshooting Guide	Solving Application Server problems.
Error Message Reference	Solving Application Server error messages.
Reference Manual	Utility commands available with the Application Server; written in man page style. Includes the asadmin command line interface.

Typographic Conventions

The following table describes the typographic changes that are used in this book.

TABLE P–3   Typographic Conventions

Typeface	Meaning	Example
AaBbCc123	The names of commands, files, and directories, and onscreen computer output	Edit your .login file. Use ls -a to list all files. machine_name% you have mail.
AaBbCc123	What you type, contrasted with onscreen computer output	machine_name% **su** Password:
AaBbCc123	A placeholder to be replaced with a real name or value	The command to remove a file is rm *filename*.
AaBbCc123	Book titles, new terms, and terms to be emphasized (note that some emphasized items appear bold online)	Read Chapter 6 in the *User's Guide*. A *cache* is a copy that is stored locally. Do *not* save the file.

Symbol Conventions

The following table explains symbols that might be used in this book.

TABLE P–4 Symbol Conventions

Symbol	Description	Example	Meaning
[ ]	Contains optional arguments and command options.	ls [-l]	The -l option is not required.
{ | }	Contains a set of choices for a required command option.	-d {y|n}	The -d option requires that you use either the y argument or the n argument.
${ }	Indicates a variable reference.	${com.sun.javaRoot}	References the value of the com.sun.javaRoot variable.
-	Joins simultaneous multiple keystrokes.	Control-A	Press the Control key while you press the A key.
+	Joins consecutive multiple keystrokes.	Ctrl+A+N	Press the Control key, release it, and then press the subsequent keys.
→	Indicates menu item selection in a graphical user interface.	File → New → Templates	From the File menu, choose New. From the New submenu, choose Templates.

Documentation, Support, and Training

The Sun web site provides information about the following additional resources:

- Documentation (http://www.sun.com/documentation/)
- Support (http://www.sun.com/support/)
- Training (http://www.sun.com/training/)

Searching Sun Product Documentation

Besides searching Sun product documentation from the docs.sun.com^{SM} web site, you can use a search engine by typing the following syntax in the search field:

search-term site:docs.sun.com

For example, to search for "broker," type the following:

broker site:docs.sun.com

To include other Sun web sites in your search (for example, java.sun.com, www.sun.com, and developers.sun.com), use sun.com in place of docs.sun.com in the search field.

Third-Party Web Site References

Third-party URLs are referenced in this document and provide additional, related information.

Note – Sun is not responsible for the availability of third-party web sites mentioned in this document. Sun does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Sun will not be responsible or liable for any actual or alleged damage or loss caused or alleged to be caused by or in connection with use of or reliance on any such content, goods, or services that are available on or through such sites or resources.

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Installing Sun Java System Mobile Enterprise Platform 1.0

This chapter lists prerequisite software that must already be installed on your system and explains procedures that you must follow to install the Sun Java System Mobile Enterprise Platform 1.0 server-side software. Chapter 3, "Setting Up and Running the MusicDB Sample Application," explains how to set up and run the MusicDB client application to verify that your installation was successful.

The MEP software has been tested with the following operating systems:

- Solaris 10 (SPARC and x86)
- Red Hat Enterprise Linux 4
- Microsoft Windows (XP Professional and Server 2003)

Download the MEP installation bundle appropriate for your operating system and the MEP client bundle.

The MEP 1.0 FCS bundle contains the MEP Gateway, Sun Java System Application Server 9.1 Update 2, and Sun JCA Adapters.

The MEP 1.0 FCS client bundle includes the following items:

- API documentation for both the Mobile Client Business Object (MCBO) API and the Enterprise Connector Business Object (ECBO) API
- Secure MusicDB and Secure Siebel sample clients for the Palm and Blackberry mobile devices
- Sources for the Secure MusicDB and Secure Siebel sample client applications and the MusicDB sample Enterprise Connector

Before You Begin

Before you install the MEP software, ensure that the following software has already been installed:

- Java Platform, Standard Edition 6 (JDK 6)

  You can download JDK 6 from http://java.sun.com/javase/downloads/index.jsp.

- If you are going to use the MEP software with a back-end system, such as Siebel EAI, SAP BAPI, or Oracle Applications, the back-end software must be installed, configured, and operational before you begin the MEP installation. The back-end software must be installed on a different system from the one on which you install the MEP software.

- Database to use for MEP Sync database (MySQL or Oracle)

  MEP 1.0 can be used with MySQL 5.0 Community Server or Oracle 10g Release 2. The database does not need to be installed on the same system as the MEP software.

  - If you are using MySQL 5.0 Community Server, enable TCP/IP networking when you configure the MySQL database. During the MEP installation, you will be prompted for the username and password for the MySQL database administrator account so the installer can create the databases and database users required by the MEP software.

    You can download the MySQL database software appropriate for your operating system from http://www.sun.com/software/products/mysql/getit.jsp.

  - If you are using Oracle 10g Release 2, it is recommended that you install the database on a different system from the one on which you install the MEP software. Only one MEP installation can use the database.

    You can download the Oracle database software appropriate for your operating system from http://www.oracle.com/technology/software/products/database/index.html. Before you can install the MEP software and use Oracle as a database, you must complete the configuration steps in "Configuring Oracle Databases and Database Users for Use with the MEP Software" on page 17.

- (Optional) Sun Java Wireless Toolkit 2.5.2 for CLDC

  You can use the Wireless Toolkit (WTK) to run a client emulator to validate your MEP installation. Download the WTK from http://java.sun.com/javame/downloads/index.jsp. The WTK runs on Windows and Linux X86 systems only.

In addition, ensure that your JAVA_HOME environment variable has been set.

Installing the MEP Server-Side Software

The following sections explain how to perform two types of installation:

- Single-tier install, in which all of the MEP software is installed on one system
- Two-tier install, in which the MEP Gateway engine is installed on the first system and the other MEP components, including the web service endpoint, enterprise connectors, and Sun JCA adapters are installed on a second system.

Performing a Single-Tier Installation

Complete the following steps to install all of the MEP components in a single tier.

1. If you are installing on a Solaris system, log in as root or use the `sudo` command.

   Use the `sudo` command if you are installing on a Linux system.

2. Unzip the `sjsmep-1_0-fcs-<operating_system>.zip` installation bundle appropriate for your operating system.

3. If you are using Oracle, download `ojdbc14.jar`, the Oracle JDBC driver, from `http://www.oracle.com/technology/software/tech/java/sqlj_jdbc/index.html`. Place this JAR file in the `lib` subdirectory under the top-level directory where you unzipped the MEP installation bundle.

4. Change to the directory where you unzipped the installation bundle and type the command to start the installation and run the installer appropriate for your operating system:
   - `install-solaris.sh` on Solaris
   - `install-linux.sh` on Linux
   - `install-windows.bat` on Windows

5. When you are prompted to select the installation type (single tier, tier1, or tier2), select "1" to perform a single-tier installation.

6. The first step in the MEP installation process is to install Application Server 9.1 Update 2:

   a. When you are prompted to install the Application Server, type "y".

   b. When you are prompted to display the Software License, press Enter.

   c. When you are prompted to accept the Software License, type "yes".

   d. When you are prompted to accept the default location of the installation directory, press Enter. If you want to install the Application Server in another location, type the full path to that directory then press Enter.

   e. If the directory does not exist, type "1" to create the directory or "2" to choose a new directory, then press Enter.

   f. If the installer finds a suitable Java SDK installation, it displays that installation directory as the default. If the default is a valid JDK 6 installation directory, press Enter to accept that installation directory or type the full path name of another JDK 6 installation.

g. When you are prompted for the admin user name, type the administrator user name or press Enter to accept the default (admin).

h. When you are prompted for the admin user's password, type the password then reenter it when you are prompted to do so.

i. When you are prompted to store the username and password in a file in your home directory, press Enter or type "yes".

j. When you are prompted to accept or override the initial Application Server port settings (Admin port, HTTP port, HTTPS port), press Enter.

k. When you are prompted to add the bin directory to the PATH, press Enter or type "yes".

l. When you are prompted to enable the Update Center client, press Enter or type "yes".

m. If you are prompted to create a Windows service, press Enter or type "no".

n. When you are prompted to create a desktop shortcut to the autodeploy directory, press Enter or type "no".

o. When you are prompted to upgrade from a previous version of the Application Server, press Enter or type "no".

p. When you are prompted to install now, start over, or exit the installation, type "1" to install the Application Server.

q. When you are prompted, press Enter to exit the installation program that just completed.

7. The next step in the MEP installation process is to install the MEP software:

a. When you are prompted, press Enter or type the full path to the Application Server installation directory.

b. When you are prompted to review the product license, press Enter.

    Press Enter repeatedly as you page through the license.

c. When you are prompted to accept the license, type "y" or "yes".

d. When you are prompted to select the database, type "1" for MySQL or "2" for Oracle, then press Enter.

    If you select Oracle, you must have completed the steps in "Configuring Oracle Databases and Database Users for Use with the MEP Software" on page 17 before you can proceed with the installation.

e. When you are prompted, type the database host name or press Enter to accept the default (localhost).

f. When you are prompted, type the database access port or press Enter to accept the default.

    The default is 3306 on MySQL and 1521 on Oracle.

g. When you are prompted, type the database JDBC driver class or press Enter to accept the default.

The default is `mysql.jdbc.Driver` on MySQL and `oracle.jdbc.OracleDriver` on Oracle.

h. If you selected MySQL, when you are prompted, type the userid of the database administrator account.

On MySQL, the userid is usually `root`.

i. If you selected MySQL, when you are prompted, type the password for the root account (or database administrator account).

If you are using MySQL, the installer creates all of the necessary databases, users, and tables. No action is needed on your part.

j. When you are prompted to delete `domain1`, type "y" or "yes".

k. When you are prompted, press Enter or type the name for the new Application Server domain. The default is "mep".

l. When you are prompted, press Enter or type the Admin Port for the new domain. The default is "4848".

m. When you are prompted, press Enter or type the HTTP port for the new domain. The default is "8080".

n. When you are prompted, press Enter or type the HTTPS port for the new domain. The default is "8181".

o. When you are prompted, press Enter or type the admin password for the new domain. The default is "syncpass".

The installer configures the new domain. No action is needed on your part.

When the installation completes successfully, the following message is displayed:

```
Install was successful

BUILD SUCCESSFUL
```

Performing a Two-Tier Installation

Complete the following tasks to perform a two-tier installation, which installs the MEP Gateway engine on the first tier, the Gateway tier, and the other MEP components including the web service endpoint, enterprise connectors, and Sun JCA adapters, on the second tier, the Enterprise tier:

-
-

Installing MEP on the Tier 1 System

1. On the first system, the Gateway tier system, complete steps 1 through 3 in "Performing a Single-Tier Installation" on page 13 .

2. Change to the directory where you unzipped the installation bundle and type the command to start the installation. Type the command that is appropriate for your operating system:
   - `installer-solaris.sh` on Solaris
   - `installer-linux.sh` on Linux
   - `installer-windows.bat` on Windows

3. When you are prompted to select the installation type (single tier, tier1, or tier2), select "2" to install tier1 of a two-tier installation.

4. Perform step 6, installing the Application Server, in "Performing a Single-Tier Installation" on page 13.

5. Perform steps 7a through 7o in "Performing a Single-Tier Installation" on page 13.

6. When you are prompted to begin the tier 1 configuration, type "y" and press Enter, then type "y" and press Enter again.

7. When you are prompted to use an HTTPS connection, type "y" and press Enter or type "n" and press Enter to use an HTTP connection instead.

8. You are prompted to identify the host name and port number for the endpoint URL to the web service that will be installed on the system in the second tier. The web service uses the Sun JCA adapters configured on the system in the second tier that connects to the back-end system.

   a. When you are prompted for the host name, type the host name of the tier2 system and press Enter.

   b. When you are prompted for the port number, press Enter or type the port number for the tier2 system.

      If are using an HTTPS connection, the default is "8181". If are using an HTTP connection, the default is "8080".

   c. When you are prompted to confirm or correct the endpoint URL, check the URL that is displayed.

      If the correct host name and port number are displayed, press Enter.

      If either the host name or the port number, or both, are incorrect, retype the entire URL using the correct host name and port number, then press Enter.

   When the tier1 installation completes successfully, the following message is displayed:

   ```
   Install was successful

   BUILD SUCCESSFUL
   ```

Installing MEP on the Tier 2 System

1. On the second system, the Enterprise tier system, complete steps 1 through 3 in "Performing a Single-Tier Installation" on page 13 .

2. Change to the directory where you unzipped the installation bundle and type the command to start the installation. Type the command that is appropriate for your operating system:

   - `installer-solaris.sh` on Solaris
   - `installer-linux.sh` on Linux
   - `installer-windows.bat` on Windows

3. When you are prompted to select the installation type (single tier, tier1, or tier2), select "3" to install tier2 of a two-tier installation.

4. Perform step 6, installing the Application Server, in "Performing a Single-Tier Installation" on page 13.

5. Perform steps 7a through 7o in "Performing a Single-Tier Installation" on page 13.

6. When you are prompted to begin the tier2 installation, type "y" or "yes" and press Enter. You may need to do this twice.

   When the tier2 installation completes successfully, the following message is displayed:

   ```
   BUILD SUCCESSFUL
   ```

Next Steps

If you installed the MEP software in two tiers and you elected to use an HTTPS connection, follow the instructions in Chapter 2, "Establishing Trust," to establish trust between the gateway and enterprise tiers.

After successfully installing the MEP software, and optionally establishing trust between the gateway and enterprise tiers, follow the instructions in Chapter 3, "Setting Up and Running the MusicDB Sample Application," to install, deploy, and run the MusicDB client application using the WTK client emulator software. This will verify that your MEP software components are working correctly.

Configuring Oracle Databases and Database Users for Use with the MEP Software

Before you can install and use the MEP software, you must complete the following tasks:

- "Creating Databases" on page 18
- "Creating Database Users" on page 19
- "Starting the Oracle Listener" on page 20

- "Connecting to the MEP Databases" on page 20

Creating Databases

You need to manually create the gwdb and musicdb databases before you can select Oracle as your database during the MEP installation.

To create the gwdb and musicdb databases, complete the following steps:

1. Start the Database Configuration Assistant (DBCA) utility.
2. On the Operations screen, select the Create a Database radio button and click Next.
3. On the Database Template screen, select the General Purpose radio button and click Next.
4. On the Database Identification screen, specify "gwdb" in the Global Database Name field and accept the default SID setting, which is also "gwdb". Click Next.
5. On the Management Options screen, accept the default settings and click Next.
6. On the Database Credentials screen, select the Use the Same Password for All Accounts radio button. Type any password, such as gwdb, in the Password and Confirm Password fields, then click Next.
7. On the Storage Options screen, accept the default settings, then click Next.
8. On the Database File Locations screen, accept the default settings, then click Next.
9. On the Recovery Configuration screen, accept the default settings, then click Next.
10. On the Database Content screen, accept the default settings, then click Next.
11. On the Initialization Parameters screen, select the Character Sets tab.
12. Select the radio button labeled "Choose from the list of character sets", then select UTF8 from the menu. Click Next.
13. On the Database Storage screen, click Next.
14. On the Creation Options screen, accept the default setting of Create Database, then click Finish.
15. On the Confirmation screen, click OK.

    DBCA creates and starts the Oracle database instance and completes the database creation.
16. Repeat steps 1–15 for the musicdb database, replacing "gwdb" with "musicdb" in step 4 and step 6.

Creating Database Users

You must create a database user for each database.

To create a user for the musicdb database instance, complete the following steps.

1. Log in as the Oracle user.
2. In a terminal window, type the following command:

   setenv ORACLE_SID musicdb
3. In a terminal window, type the following command:

   sqlplus / as sysdba

   After some messages are displayed, the SQL prompt is displayed.
4. Type the following command to create musicdbuser:

   SQL> **create user musicdbuser identified by musicdbpass;**
5. Type the following command to grant privileges to musicdbuser:

   SQL> **grant connect, resource to musicdbuser;**
6. Type the following command to log out of sqlplus:

   SQL> **quit**

To create a user for the gwdb database instance, complete the following steps.

1. In a terminal window, type the following command:

   setenv ORACLE_SID gwdb
2. In a terminal window, type the following command:

   sqlplus / as sysdba

   After some messages are displayed, the SQL prompt is displayed.
3. Type the following command to create gwdbuser:

   SQL> **create user gwdbuser identified by gwdbpass;**
4. Type the following command to grant privileges to settingsdbuser:

   SQL> **grant connect, resource to gwdbuser;**
5. Type the following command to log out of sqlplus:

   SQL> **quit**

Starting the Oracle Listener

The lsnrctl utility manages the Oracle listener processes, which enable database applications to connect to specific Oracle database instances through SQLPlus. Refer to your Oracle documentation on how to configure and setup the listener.ora and tnsname.ora configuration files for the lsnrctl utility.

1. Log in as the Oracle user.

2. Type the following command to enter the lsnrctl shell:

   ```
   $ lsnrctl
   ```

3. Type the following command to start up the listener:

   ```
   LNSRCTL> startup
   ```

4. Type the following command to see the status of the listener process:

   ```
   LNSRCTL> status
   ```

5. Type the following command to exit the lsnrctl shell:

   ```
   LSNRCTL> exit
   ```

Connecting to the MEP Databases

To connect to the gwdb and musicdb databases as the database as gwdbuser and musicdbuser database users, complete the following steps after you start the Oracle listener.

1. Log in as the Oracle user.

2. In a terminal window, type the following command to connect to the gwdb database:

   ```
   $ sqlplus gwdbuser/gwdbpass@gwdb
   ```

3. Type the following command to connect to the musicdb database:

   ```
   $ sqlplus musicdbuser/musicdbpass@musicdb
   ```

Uninstalling the MEP 1.0 Software

Complete the following steps to uninstall the Application Server and MEP 1.0 software.

1. If you are on a system running the Solaris operating system, log in as root or use the sudo command.

   If you are on a Linux system, use the sudo command.

2. Change to your AS_HOME directory.

3. Execute the `./uninstall` command.

   The Application Server and MEP 1.0 software are both uninstalled.

4. Drop all tables, databases, and users that were created for MEP.

2

Establishing Trust

This chapter explains how to establish trust between tier 1, the Gateway tier, and tier 2, the Enterprise tier. The procedure included in this chapter uses self-signed certificates that are automatically generated by the Application Server. In a production environment, you would obtain certificates from a certificate authority (CA), a trusted third party that issues digital certificates for use by other parties. There are many commercial CAs, such as Verisign, that charge for their services. Some institutions and governments have their own CAs and there are even some CAs that issue certificates free of charge.

A CA issues digital certificates that contain a public key and the identity of the owner. The CA attests that the public key contained in the certificate belongs to the person, organization, server or other entity noted in the certificate. The CA verifies an applicant's credentials, so other users and parties that rely on the veracity of the credentials can trust the information in the CA's certificates.

A self-signed certificate, on the other hand, is an identity certificate that is signed by its own creator. The person that created the certificate also signed off on its legitimacy. The Gateway and Enterprise tiers in a MEP environment can use either self-signed or CA-issued certificates.

Trust is established in two phases:

1. Configuring the Enterprise tier to trust the Gateway tier
2. Configuring the Gateway tier to trust the Enterprise tier

The following sections explain these phases.

Configuring the Enterprise Tier to Trust the Gateway Tier

There is a two-step process to configure trust between the Gateway tier and the Enterprise tier:

1. On the Gateway tier, export the keystore then copy it to the Enterprise tier.

   a. Change to the config subdirectory in the Gateway tier MEP installation:

      ```
      $ cd as-install/domains/domain-dir/config
      ```

   b. Export the keystore to a file:

      ```
      $ keytool -export
      -keystore keystore.jks
      -alias s1as
      -file tier1_sjsas.cer
      -storepass adminpass
      ```

   c. Copy the exported keystore to the config subdirectory in the Enterprise tier MEP installation:

      ```
      $ cp tier1_sjsas.cer /net/tier2-hostname/as-install/domains/domain-dir/config
      ```

      In this case, *as-install* is the location where the Application Server has been installed and *domain-dir* is the name of the MEP domain, usually mep.

2. On the Enterprise tier, import the keystore from the Gateway tier.

   a. Change to the config subdirectory in the Enterprise tier MEP installation:

      ```
      $ cd as-install/domains/domain-dir/config
      ```

   b. Import the keystore that was exported from the Gateway tier:

      ```
      $ keytool -import
      -keystore cacerts.jks
      -alias tier1_sjsas
      -file tier1_sjsas.cer
      -storepass adminpass
      -trustcacerts
      -noprompt
      ```

3. Stop then restart the Application Server on the Enterprise tier to use the new security settings.

   a. Stop the Application Server:

      ```
      $ asadmin stop-domain domain-dir
      ```

   b. Restart the Application Server:

      ```
      $ asadmin start-domain domain-dir
      ```

Configuring the Gateway Tier to Trust the Enterprise Tier

There is a two-step process to configure trust between Enterprise tier and the Gateway tier.

1. On the Enterprise tier, export the keystore and copy it to the Gateway tier.

   a. Change to the config subdirectory in the Enterprise tier MEP installation:

      ```
      $ cd as-install/domains/domain-dir/config
      ```

   b. Export the keystore to a file:

      ```
      keytool -export
      -keystore keystore.jks
      -alias s1as
      -file tier2_sjsas.cer
      -storepass adminpass
      ```

   c. Copy the exported keystore to the config subdirectory in the Gateway tier MEP installation:

      ```
      $ cp tier2_sjsas.cer /net/tier1-hostname/as-install/domains/domain-dir/config
      ```

2. On the Gateway tier, import the keystore from the Enterprise tier.

   a. Change to the config subdirectory in the Gateway tier MEP installation:

      ```
      $ cd as-install/domains/domain-dir/config
      ```

   b. Import the keystore that was exported from the Enterprise tier:

   ```
   $ keytool -import
   -keystore cacerts.jks
   -alias tier2_sjsas
   -file tier2_sjsas.cer
   -storepass adminpass
   -trustcacerts
   -noprompt
   ```

3. Stop then restart the Application Server on the Gateway tier to use the new security settings.

   a. Stop the Application Server:

      ```
      $ asadmin stop-domain domain-dir
      ```

   b. Restart the Application Server:

      ```
      $ asadmin start-domain domain-dir
      ```

3

Setting Up and Running the MusicDB Sample Application

This chapter explains how to set up and run the a sample application, secure MusicDB, to verify your MEP software installation. This exercise is an optional part of the installation process. You only need to complete it to verify that your MEP installation was successful.

Overview of the Secure MusicDB Application

Secure MusicDB is a simple application that quickly shows you how to set up and use the MEP software to complete an end-to-end run from the client through to a MySQL or Oracle database without having to undergo the arduous process of setting up and configuring a more complex EIS/EAI system. The application can be run in a single-tier or two-tier environment.

Figure 3–1 shows the secure MusicDB application running in a single tier.
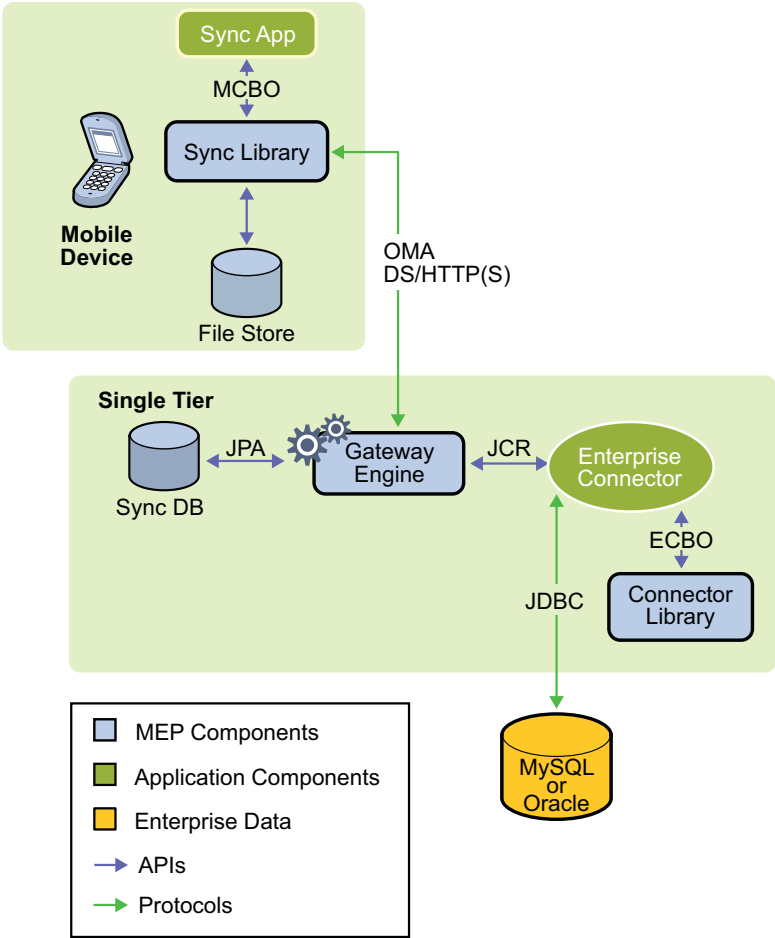
FIGURE 3–1   Secure MusicDB Application Running in a Single-Tier Environment

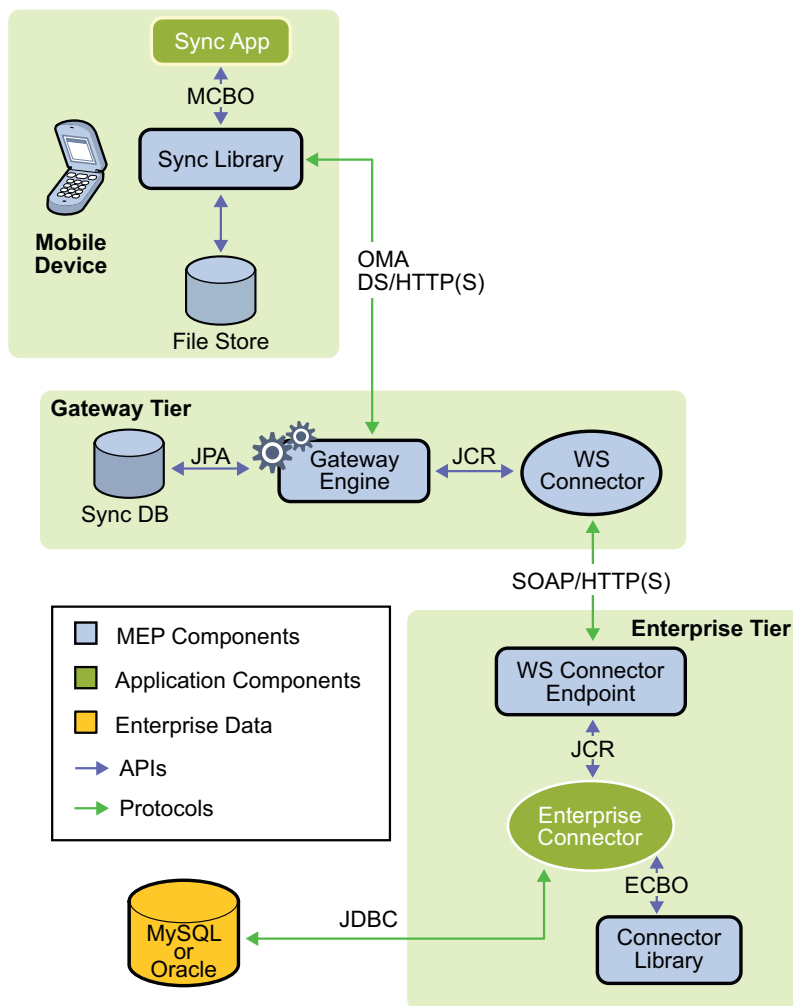Figure 3–2 shows the secure MusicDB application running in a two-tier environment.

FIGURE 3–2   Secure MusicDB Application Running in a Two-Tier Environment

To run the secure MusicDB application you need to do the following:

1.   Configure the MEP Gateway

2.   Download the client application JAD file

3.   Populate the album table

4.   Run the MusicDB client application using the WTK client emulator on a Windows system

Configuring the Gateway

Create a MEP user for the MusicDB sample application.

If you have a two-tier MEP installation, perform this task on the tier1, or Gateway tier, system.

1. In a browser window, open `http://tier1host:8080/sync/admin`.

   The Gateway Administration Console login screen appears.

2. Log in using user `admin` and password `syncpass`.

   The Sun Java System Mobile Enterprise Platform Administration Console appears.

3. Click the Users tab, then click the Create User tab.

4. In the Email Address field, type the user's email address, such as `musicdbuser@mycompany.com`.

5. In the Password field, type `musicdbpass`.

6. In the Username field, type `musicdbuser`.

7. Do not type anything in the Phone Number field.

8. Select MusicDb from the Enterprise Connector drop-down list.

9. Click Register.

10. Click the Edit User tab to verify that the user was created.

Downloading the MusicDB Client Application

Complete the following steps to download and unzip the MEP client bundle and locate the `secure-musicdb.jad` file that you will run with WTK 2.5.2 in a subsequent procedure to verify your MEP installation.

1. Download the `sjsmep-client-1_0_02–fcs.zip` client bundle if you haven't already done so.

2. Unzip the client bundle.

   The bundle unzips into the `sjsmep-client-1_0–fcs` directory.

3. Check the contents of the `samples/mcbo/secure-musicdb` subdirectory and locate the `secure-musicdb.jad` file.

   This is the client application file that you will run in a subsequent section.

Populating the album **Table**

The album table in the musicdb database was created during the MEP installation, but it does not contain any data. This procedure explains how to populate the album table so you have data to manipulate with your client application in subsequent steps.

If you have a two-tier MEP installation, perform this task on the tier2, or Enterprise tier, system.

Complete the following steps to add data to the album table:

1. Connect to the musicdb database.

   If you are using Oracle, start SQL*Plus and connect as follows:

   ```
   $ sqlplus musicdbuser/musicdbpass@musicdb
   ```

   If you are using MySQL, start the mysql utility and connect as follows:

   ```
   $ mysql -umusicdbuser -pmusicdbpass musicdb
   ```

2. Verify that the album table was created during the MEP installation and that it has no contents:

   ```
   select * from album;
   ```

3. Add your first album:

   ```
   insert into album (name, artist, date_published, rating, username)
   values ('Crossroads', 'Eric Clapton', DATE '1988-04-18', 5, 'musicdbuser');
   ```

4. Add another album:

   ```
   insert into album (name, artist, date_published, rating, username)
   values ('Unplugged', 'Eric Clapton', DATE '1992-08-25', 5, 'musicdbuser');
   ```

5. Add a third album:

   ```
   insert into album (name, artist, date_published, rating, username)
   values ('The Road to Escondido', 'Eric Clapton', DATE '2006-11-06',
   5, 'musicdbuser');
   ```

6. If you are using Oracle, commit your changes.

   ```
   sqlplus> commit;
   ```

7. Check that the album table contains the three albums that you just added:

   ```
   select * from album;
   ```

8. Exit the utility:

   ```
   exit
   ```

Running the Secure MusicDB Client Application

Start the client emulator on a Windows system:

1. Choose Start→All Programs→Sun Java Wireless Toolkit 2.5.2 for CLDC→Wireless Toolkit 2.5.2.

   The Sun Java Wireless Toolkit 2.5.2 for CLDC screen is displayed.

2. To configure the toolkit security settings, complete the following steps:

   a. Select Edit from the menu bar and then select Preferences.

      The Preferences screen is displayed.

   b. Select Security in the Category pane.

      The Security tab is displayed.

   c. Ensure that MSA is selected for the Security Policy.

   d. Ensure that maximum is selected for the Security domain.

   e. Click OK when you are done.

      The console will display messages indicating that your Preferences have been updated and saved.

3. Select File from the menu bar, then select Create project from JAD/JAR file.

   The Create new project from JAD screen is displayed.

4. Locate the `secure-musicdb.jad` file in the `samples/mcbo/secure-musicdb` subdirectory, then click Open.

   After the WTK opens the project, it displays the following message:

   ```
   Project "secure-musicdb" loaded
   ```

5. Click Run in the toolbar.

   The emulator appears with `MepSecureJdbcMIDlet` selected.

6. To launch the client application, click Launch (the top right button on the keypad, with a dot on it).

   The Initialize PIN screen displays.

7. In the Enter Secret field, type any sequence of characters. You do not need to remember what you typed.

8. In the Set Your PIN field, type a sequence of alphanumeric characters. You can type up to 32 characters but keep in mind that you need to remember what you typed for your PIN.

9. Click OK.

   The MEP JDBC Client configuration screen displays. This screen includes several settings for the application.

10. In the sync server url field, type `http://`*hostname.dnsdomainname*`:`*port-number*`/sync`.

You'll need to edit the URL that is shown by default.

If you have a two-tier MEP installation, type the *hostname.dnsdomainname* :*port-number* of the tier1, or Gateway tier, system.

11. In the username field, type the email address that you used when you created the musicdbuser in "Configuring the Gateway" on page 30 (for example, musicdbuser@mycompany.com).

12. In the password field, type musicdbpass.

13. In the syncType pane, use the emulator arrow keys and the Select button (the big square button) to select Slow sync.

14. Click Menu and select Sync.

    A Sync Successful message appears briefly, followed by a description of the synchronization results.

15. To verify that the albums have been downloaded from the server, click Menu then select Albums.

    The three albums that you created in "Populating the album Table" on page 31 appear.

16. Create a new album.

    a. Click Menu and select New Album.

    b. Type data in the Name, Artist, Publish Date, and Rating fields and click OK when you are done.

        The album name appears with a .alb suffix.

    c. Click Back.

        The MEP JDBC Client screen appears.

17. Synchronize the data with the MusicDB database.

    a. Select the Two-way sync type, then click Menu and then select Sync.

        A Sync Successful message appears, and the synchronization results are displayed.

    b. Click Ok.

        The albums are displayed.

        The data on your client device and the data in the MusicDB database are now synchronized.