

**Oracle Utilities Mobile Workforce
Management**

Installation Guide

Release 1.5.0.21

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Oracle Utilities Mobile Workforce Management, Release 1.5.0.21

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Chapter 1

Overview

Prior to beginning the installation process, you should have already determined which components of Mobile Workforce Management are required for your installation. If you have not already made this decision, the **Typical Environment** section of this document should aid you in the decision-making process. After reading this section, if you are still unsure about which components should be installed, contact Customer Support for help in determining which software configuration best suits your needs.

It is recommended that you read through this document thoroughly before beginning your product installation or upgrade. The information provided in this document is here to guide you through a successful product install. Complete all Pre-Installation and Installation steps in the required order before proceeding to any Post-Installation steps.

This chapter includes the following topics:

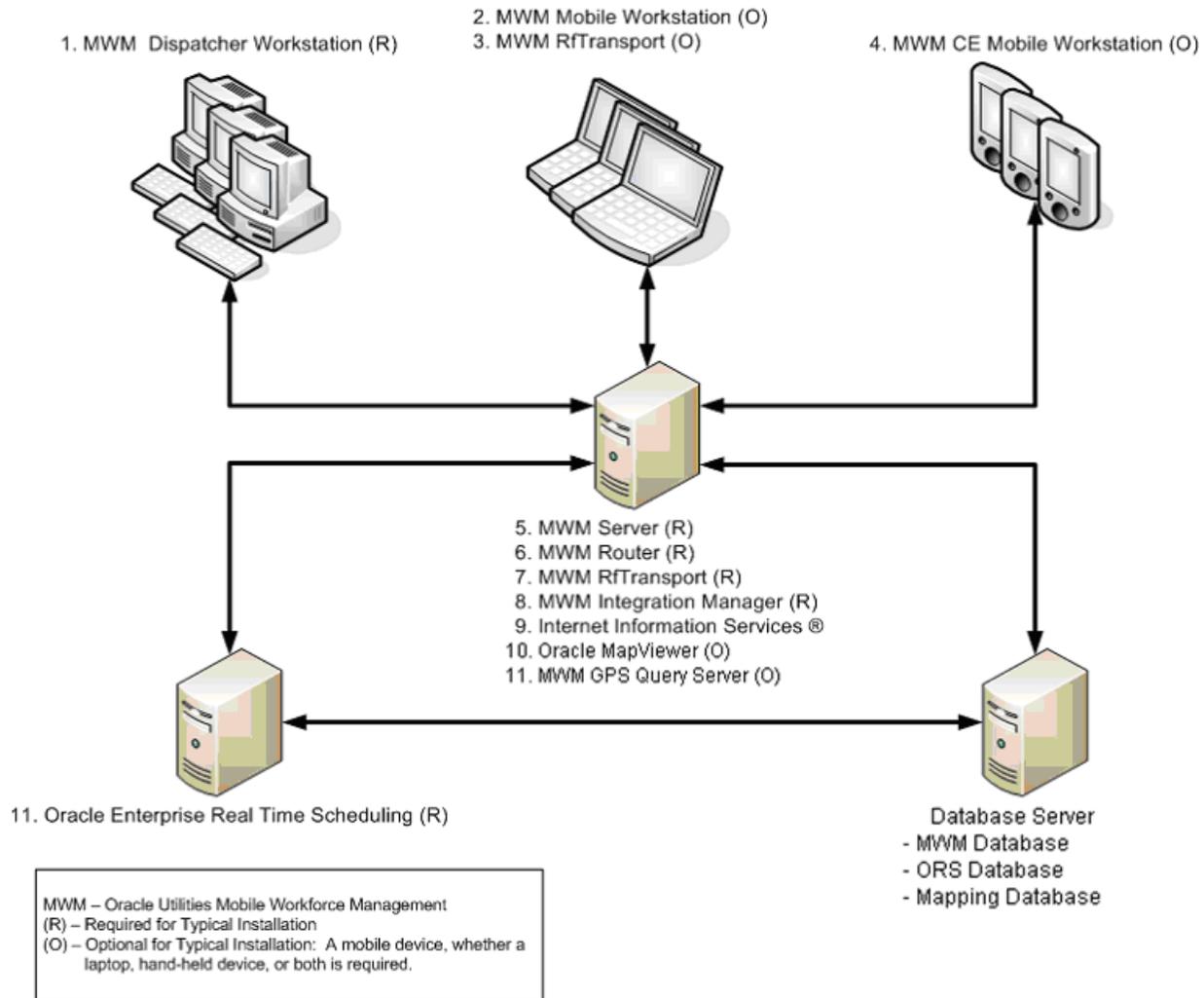
- **Delivery Notes**
- **Typical Environment**
- **Installation Process and Prerequisites By Functional Area**
- **New Install Procedure Overview**
- **Upgrade Procedure Overview**
- **Migration Procedure Overview**

Delivery Notes

The Oracle Utilities Mobile Workforce Management Media Pack containing the necessary installation files can be found on the Oracle Corporation eDelivery site as a zip file. Please see your account representative for instructions on access.

Typical Environment

Hardware and software configurations will vary, but the following diagram represents a typical environment for Oracle Utilities Mobile Workforce Management (MWM):



MWM Dispatch Workstation (DW): The Dispatch Workstation is the client application used by end users to monitor orders and crews. It accesses the Oracle Utilities Mobile Workforce Management database directly and communicates with the Oracle Utilities Mobile Workforce Management Server via TCP/IP sockets. The end user can use the DW application to perform maintenance to the Oracle Utilities Mobile Workforce Management resource tables (e.g., personnel, vehicles, and crews) and validation/lookup tables.

MWM Mobile Workstation (MW): The Oracle Utilities Mobile Workforce Management Mobile Workstation is used in the field to complete orders. Orders to be worked will be dispatched to the mobile device and displayed in the field order list. As orders are processed by the user, the statuses and completion information is returned via wireless communication or LAN connection. The Mobile Workstation always communicates with the Oracle Utilities Mobile Workforce Management RfTransport (Mobile-Side) application. When installing the Mobile Workstation component, the Oracle Utilities Mobile Workforce Management RfTransport (Mobile-Side) will automatically be installed.

MWM RfTransport (Mobile-Side): The Oracle Utilities Mobile Workforce Management RfTransport provides communication between the Oracle Utilities Mobile Workforce Management Server and the Oracle Utilities Mobile Workforce Management Mobile Workstation.

Installing the RfTransport on a mobile device occurs automatically when the Mobile Workstation component is selected.

MWM CE Mobile Workstation: The Oracle Utilities Mobile Workforce Management CE Mobile Workstation is used in the field to work orders. Orders to be worked will be dispatched to the mobile device and displayed in the field order list. As orders are processed by the user, the statuses and completion information is returned via wireless communication or LAN connection.

MWM Server: The Oracle Utilities Mobile Workforce Management Server is the epicenter of the Oracle Utilities Mobile Workforce Management environment. It processes orders, crews, personnel, dispatch functions, and status transactions, and it communicates the status of orders and users to the other connected applications.

MWM Router: The Oracle Utilities Mobile Workforce Management Router is used to convert and route transactions between the external applications, the Oracle Utilities Mobile Workforce Management Server, and the scheduling module.

MWM RfTransport (Server-Side): The Oracle Utilities Mobile Workforce Management RfTransport provides communication between the Oracle Utilities Mobile Workforce Management Server and the Mobile Workstation. Installing the RfTransport on a mobile device occurs automatically when the Mobile Workstation component is selected.

MWM Integration Manager (IM): The Oracle Utilities Mobile Workforce Management Integration Manager translates and manages communication of messages between Oracle Utilities Mobile Workforce Management and Oracle Real-Time Scheduler.

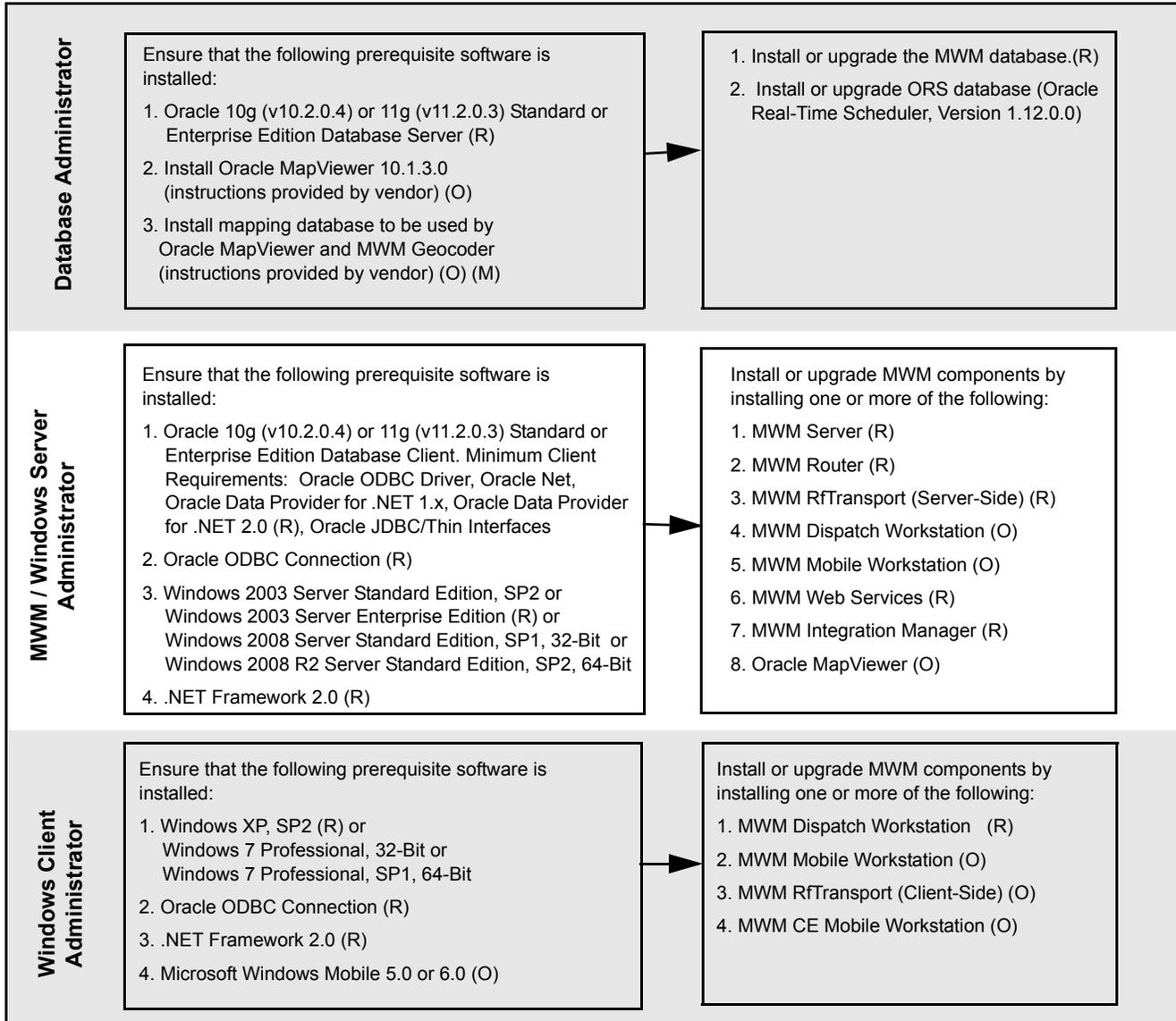
Internet Information Services (IIS): Microsoft Internet Information Services provides **Web Services** interfaces between Oracle Utilities Mobile Workforce Management and external applications.

MWM GPS Query Server: The GPS Query Server allows customers using external GPS modems in their vehicle fleet to capture vehicle location information. The GPS Query Server is a configurable application that listens to the user-defined port for incoming GPS data. When GPS data is received, the data is parsed for the timestamp, vehicle ID, latitude, and longitude information. The data is then inserted into the database and can be used to display the crew location in the Oracle Utilities Mobile Workforce Management mapping subsystem. The GPS Query Server supports NMEA and TAIP formats.

Oracle Real-Time Scheduler (ORS): Oracle Real-Time Scheduler provides optimization of orders and crews based on extensive cost, skill, and time parameters.

Installation Process and Prerequisites By Functional Area

The following diagram provides a high-level look at the installation process, broken down by functional area (database tasks, server-side tasks, and client-side tasks). The items in the first block of each row are prerequisites for executing the Oracle Utilities Mobile Workforce Management installation tasks in the second block of each row. Installation steps will be covered in detail in this installation guide, however installation instructions for prerequisite software are beyond the scope of this document.



(R) = Required for typical Installation.

(O) = May be required for some components, but not all; see individual component prerequisites later in this guide. A mobile device, whether a laptop, handheld device, or both, is required.

(M) Typically, Oracle MapViewer and Oracle Utilities Mobile Workforce Management Geocoder use the same mapping database. The mapping database may be installed in the same database instance as the Oracle Utilities Mobile Workforce Management database, however this is not a requirement.

Database Character Set Requirement: The database character set must match or be a superset of one of the following: NLS_CHARACTERSET AL32UTF8 or NLS_NCHAR_CHARACTERSET AL16UTF16.

New Install Procedure Overview

Use the following procedure if you are installing Oracle Utilities Mobile Workforce Management for the first time:

1. Ensure that all prerequisites listed in **Identify Component Prerequisites** on page 2-1 have been met for the components you want to install.
2. Follow the instructions in the **Database Construction Prerequisites** on page 2-1 to create database users, TNS service names, and ODBC connections for the databases you will be using with Oracle Utilities Mobile Workforce Management.
3. Complete the **Complete the Pre-Installation Checklist** on page 2-12 to identify and capture information required by the InstallShield installer.
4. Run the InstallShield installer as described in the **New Installations** on page 3-3 section.
5. Run the following scripts, as described in the **Database Table Creation or Update** on page 3-41:
 - BuildMWMTab_MWM150.sql – to build the base tables for Oracle Utilities Mobile Workforce Management.
 - BuildERTSTab_MWM150.sql – to build the base tables for Oracle Real-Time Scheduler, if you are installing this component.
 - MWM_Geocoder_install.sql – to set up the Oracle Utilities Mobile Workforce Management Geocoder, if you are installing this component.
 - LoadDemoMWMTab_MWM150.sql – to load demo data into the Oracle Utilities Mobile Workforce Management database. This is optional.
 - LoadDemoERTSTab_MWM150.sql – to load demo data into to Oracle Real-Time Scheduler. This is optional.
6. If you are installing the Oracle MapViewer component, complete the instructions in section **Oracle MapViewer Component Installation** on page 3-44.
7. Complete all installation steps in section **Oracle Utilities Mobile Workforce Management Integration Manager** on page 3-61. This is required if you are integrating Oracle Utilities Mobile Workforce Management with the Oracle Real-Time Scheduler.
8. If you are installing Oracle Real-Time Scheduler, follow the installation instructions in section **Oracle Real-Time Scheduler** on page 3-71.
9. Verify the installation, as instructed in section **Verifying Installation** on page 3-73. This is optional, but strongly recommended.

Upgrade Procedure Overview

If you are upgrading from v.1.5.0.11 to 1.5.0.12, the process is as follows:

1. Run the InstallShield installer as described in the **Previous Installations** on page 3-2.
2. To update your existing database, run the MWM1511_To1512_Master_Update_Script.sql. Refer to **Upgrading from Version 1.5.0.12** on page 3-43 for complete details.
3. Run the “Install MWMIM.bat” file as described on page 3-68. This is required to update the Integration Manager component, which is used for integrating Oracle Utilities Mobile Workforce Management with the Oracle Real-Time Scheduler.

Note: This step is only required for upgrades from version 1.5.0.11 to version 1.5.0.12.

Migration Procedure Overview

A migration script is provided so that you can migrate your existing Oracle Utilities Mobile Workforce Management database to support a different system configuration. This is useful in the following situations:

- You have established two environments for Oracle Utilities Mobile Workforce Management – one for testing and one for production, for example – and would like to migrate the database from one environment to use in the other.
- You have an existing Oracle Utilities Mobile Workforce Management installation and would like to reconfigure the environment without losing the data.

To migrate an existing Oracle Utilities Mobile Workforce Management database, first run the InstallShield installer to define the new configuration. Then run the MigrateConfig.sql script to migrate data from the existing database to run with the new installation/configuration., as described in **Running the Migration Script** on page 3-43.

Chapter 2

Pre-Installation Steps

This chapter describes the steps that should be taken before installing Oracle Utilities Mobile Workforce Management. It includes the following topics:

- **Identify Component Prerequisites**
- **Verify That Prerequisites Are Installed**
- **Database Construction**
- **Complete the Pre-Installation Checklist**

Identify Component Prerequisites

The sections below list pre-installation requirements for each component of Oracle Utilities Mobile Workforce Management. For your intended configuration, ensure that the prerequisites for each component have been met on the system where the component will reside. Do not begin the installation process until all prerequisites have been satisfied:

Database Construction Prerequisites

- Oracle 10g (v10.2.0.4) or 11g (v11.2.0.3) Standard or Enterprise Edition Database Server
- Oracle database used by Oracle Utilities Mobile Workforce Management Geocoder and Oracle MapViewer (Optional)

Note: The mapping database maybe be installed in the same database instance as the Oracle Utilities Mobile Workforce Management database, however this is not a requirement.

Router Prerequisites

- Oracle 10g (v10.2.0.4) or 11g (v11.2.0.3) Standard or Enterprise Edition Database Client
 - Note:** Minimum Client Requirements: Oracle ODBC Driver, Oracle Net, Oracle Data Provider for .NET 1.x, Oracle Data Provider for .NET 2.0, Oracle JDBC/Thin Interfaces
- Oracle ODBC Connection
- Windows 2003 Server Standard Edition, SP2, Windows 2003 Server Enterprise Edition, Windows XP SP2, Windows 2008 Server Standard Edition, SP1, 32- or 64-Bit, or Windows 7 Professional, 32- or 64-Bit
- .NET Framework 2.0
- Microsoft Internet Information Services (**IIS**) v.6.0

RfTransport Prerequisites

- Windows 2003 Server Standard Edition, SP2, Windows 2003 Server Enterprise Edition, Windows XP SP2, Windows 2008 Server Standard Edition, SP1, 32- or 64-Bit, or Windows 7 Professional, 32- or 64-Bit

Dispatch Workstation Prerequisites

- Oracle 10g (v10.2.0.4) or 11g (v11.2.0.3) Standard or Enterprise Edition Database Client
Note: Minimum Client Requirements: Oracle ODBC Driver, Oracle Net, Oracle Data Provider for .NET 1.x, Oracle Data Provider for .NET 2.0, Oracle JDBC/Thin Interfaces
- Oracle ODBC Connection for Oracle Utilities Mobile Workforce Management
Note: The mapping database may be installed in the same database instance as the Oracle Utilities Mobile Workforce Management database or separately. If stored separately, ODBC Connections are required for both.
- Oracle MapViewer v10.1.3.1 (required if Oracle MapViewer support is installed).
Note: Oracle MapViewer is hosted in an application server or “container” such as WebLogic, Oracle Application Server, or OC4J. Any version of the container (application server) that is supported by MapViewer may be used.
- .NET Framework 2.0
- Windows XP SP2, Vista, or Windows 7 Professional, 32- or 64-Bit

Mobile Workstation Prerequisites

- .NET Framework 2.0
- Windows XP SP2, Vista, or Windows 7 Professional, 32- or 64-Bit

Web Services Prerequisites

All Web Services require the following:

- Oracle 10g (v10.2.0.4) or 11g (v11.2.0.3) Standard or Enterprise Edition Database Client
Note: Minimum Client Requirements: Oracle ODBC Driver, Oracle Net, Oracle Data Provider for .NET 1.x, Oracle Data Provider for .NET 2.0, Oracle JDBC/Thin Interfaces
- Oracle ODBC Connection
- Windows 2003 Server Standard Edition, SP2, Windows 2003 Server Enterprise Edition, Windows XP SP2, Windows 2008 Server Standard Edition, SP1, 32- or 64-Bit, or Windows 7 Professional, 32- or 64-Bit
- .NET Framework 2.0
- Microsoft Internet Information Services (**IIS**) v.6.0

CE Mobile Workstation Prerequisites

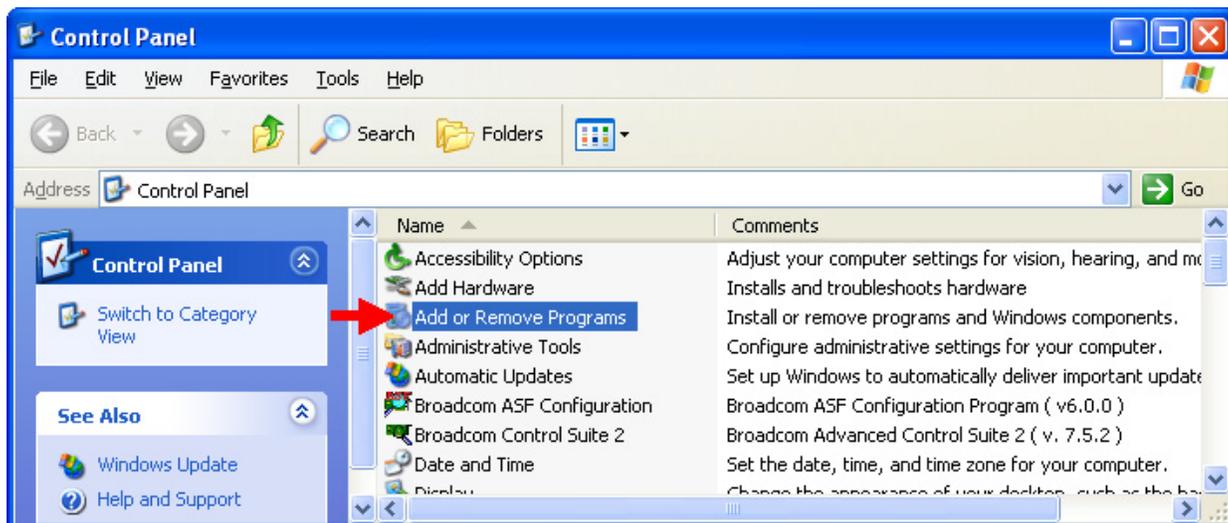
- Windows Mobile 5.0

Verify That Prerequisites Are Installed

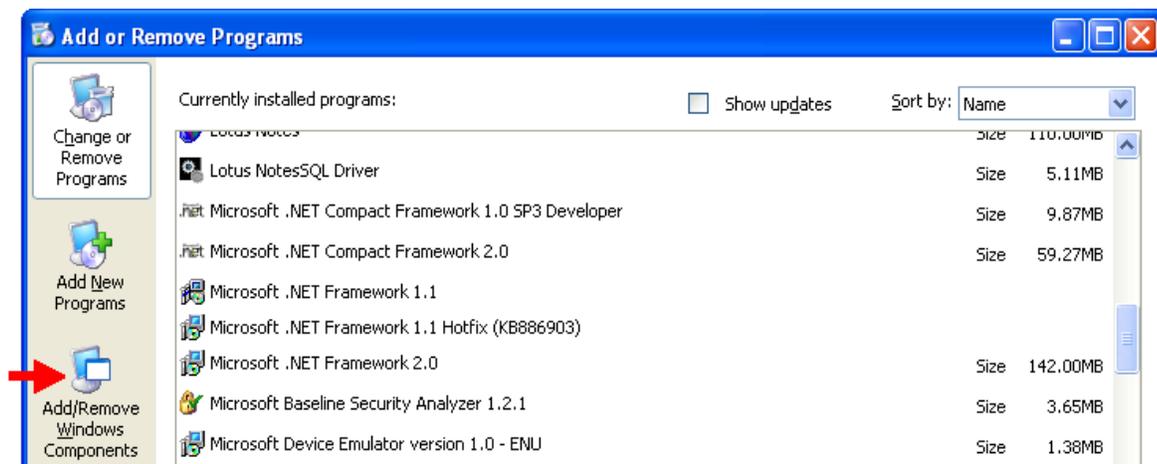
IIS

Internet Information Services (**IIS**) are required by the **Router** to employ **Web Services** via Oracle Utilities Mobile Workforce Management. Follow the steps below to determine if your operating system has IIS installed:

1. From the Control Panel, select Add or Remove Programs.



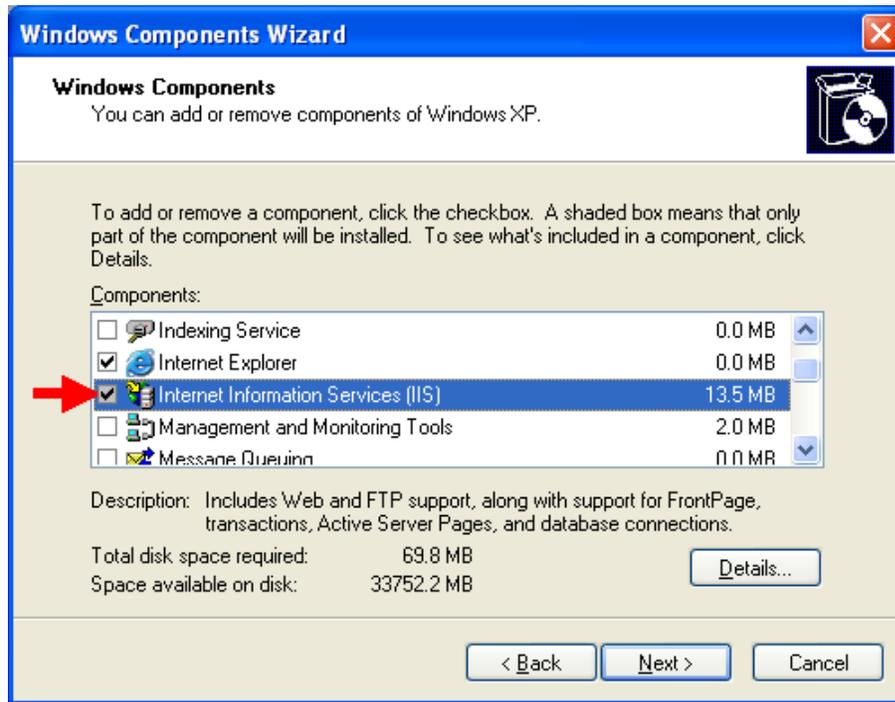
2. On the Add or Remove Programs dialog, select Add/Remove Windows Components.



3. On the Windows Components Wizard dialog, ensure that Internet Information Services (IIS) is selected (checked).

Note: For Windows Server 2003, IIS is located under the Application Server component.

If IIS is selected, the component is already installed and no further action is required. If IIS is **not** selected, continue on to the next step.

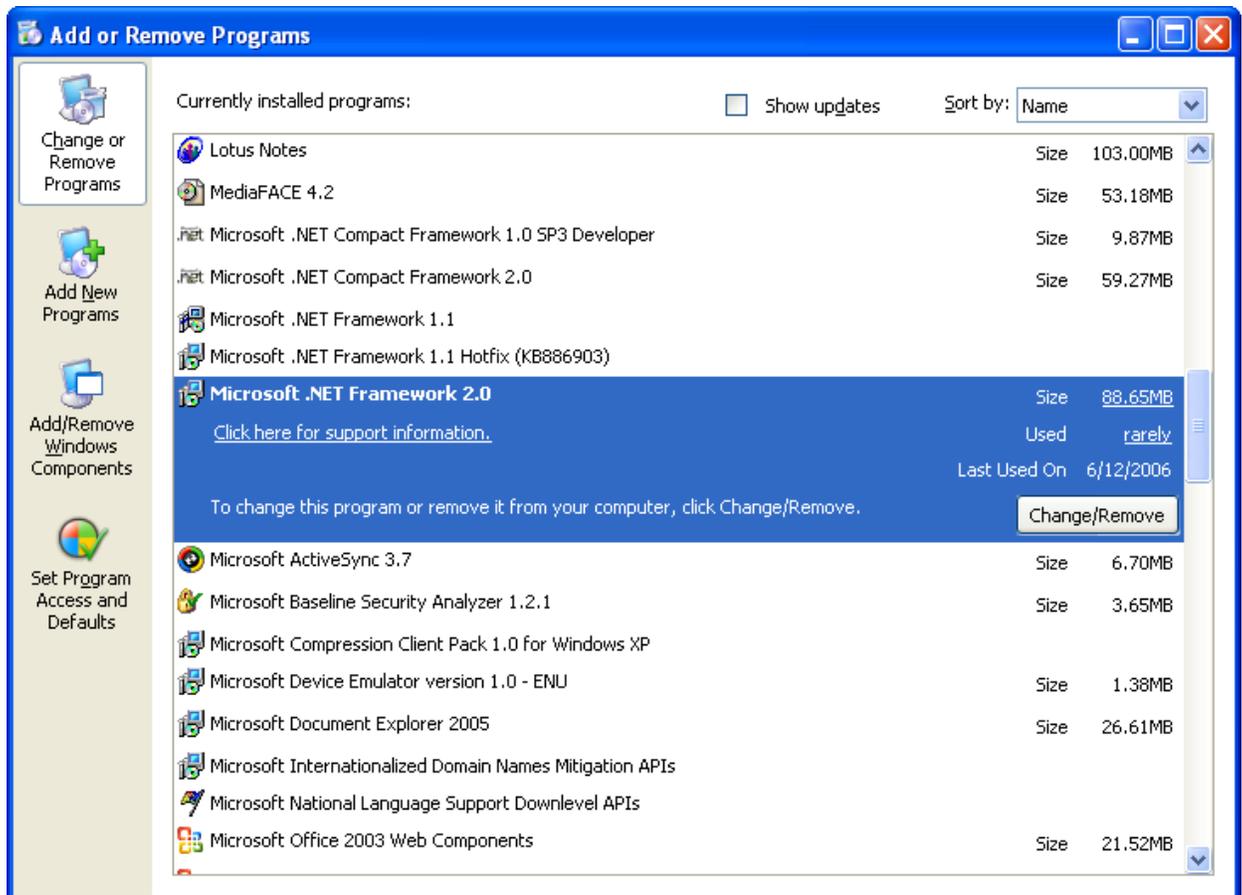


4. To install IIS, select it now and click the Next > button to begin the installation process.

Note: Depending on your operating system, an installation CD may be required.

Microsoft .NET 2.0

The Microsoft .NET Framework 2.0 (minimum) is required for MWM **Web Services** and for the Oracle Utilities Mobile Workforce Management Dispatch Workstation. To determine if the operating system is running the .NET Framework 2.0 or later, open the Add or Remove Programs from the Control Panel.



Note: Should the machine not be running an acceptable version of the .NET framework (Microsoft .NET Framework 2.0 or later is required), the necessary installation packages are available on the Microsoft website.

Database Construction

This section describes the database construction steps that are required before you begin installation of Oracle Utilities Mobile Workforce Management. It includes the following topics:

- **Create Users**
- **Create the Mapping Database**
- **Create TNS Service Names**
- **Create ODBC Connections**

Create Users

During the Oracle Utilities Mobile Workforce Management installation process, you will be prompted to supply User IDs and Passwords for databases that are used by Oracle Utilities Mobile Workforce Management and (if selected) Oracle Real-Time Scheduler.

Note: This installation process does not create the Oracle database used by the Oracle MapViewer and Oracle Utilities Mobile Workforce Management Geocoder, but its connection information will be required during installation if an Oracle database will be used to perform geocoding. Instructions for installing geocoding data are provided by the data vendor.

Creating the Oracle Utilities Mobile Workforce Management Database User

Note: If you wish to use an existing Oracle Utilities Mobile Workforce Management database, just make note of its User ID and Password and continue on to the next section.

On a machine where Oracle 10g or 11g Server is installed, use Oracle Enterprise Manager to create a User ID under which Oracle Utilities Mobile Workforce Management database data will be loaded. Grant the following roles to the new user:

- Connect
- Exp_Full_Database
- Imp_Full_Database
- Resource

Connect and **Resource** are required Roles; **Exp_Full_Database** and **Imp_Full_Database** are recommended as they provide Import and Export rights to the user which is helpful in support situations.

Creating the Oracle Real-Time Scheduler Database User

Note: If you do not intend to use the Oracle Real-Time Scheduler application with Oracle Utilities Mobile Workforce Management, you may skip this section. If you wish to use an existing Oracle Real-Time Scheduler database, just make note of its User ID and Password and continue on to the next section.

On a machine where Oracle 10g or 11g Server is installed, use Oracle Enterprise Manager to create the User ID under which Oracle Real-Time Scheduler database data will be loaded. Grant the following roles to the new user:

- Connect
- Exp_Full_Database
- Imp_Full_Database
- Resource

Connect and **Resource** are required Roles; **Exp_Full_Database** and **Imp_Full_Database** are recommended as they provide Import and Export rights to the user which is helpful in support situations.

Create the Mapping Database

Please refer to the installation instructions in the NAVTEQ™ Oracle Delivery Format Import Documentation for Transportable Tablespaces (v1.4) for specific instructions on loading and installing the mapping databases used by Oracle MapViewer and Oracle Utilities Mobile Workforce Management Geocoder.

Create TNS Service Names

TNS Service Name for the Oracle Utilities Mobile Workforce Management Database

Note: If the Oracle Utilities Mobile Workforce Management components you plan to install will reside on the same machine as your Oracle Utilities Mobile Workforce Management database, you may skip this section.

A **TNS** Service Name must exist for the Oracle Utilities Mobile Workforce Management database on machines where the following Oracle Utilities Mobile Workforce Management components are to be installed:

- Oracle Utilities Mobile Workforce Management Server
- Oracle Utilities Mobile Workforce Management Router
- Oracle Utilities Mobile Workforce Management Dispatch Workstation

Ensure that a TNS entry exists by adding a new entry or verifying that a valid entry already exists.

TNS Service Name for the Oracle Real-Time Scheduler database

Note: If you are not planning to integrate Oracle Real-Time Scheduler, or if your Oracle Real-Time Scheduler database will reside on the same host machine as your Oracle Utilities Mobile Workforce Management database, you may skip this section.

If the Oracle Real-Time Scheduler database will be hosted on a different machine than the Oracle Utilities Mobile Workforce Management database, a separate TNS entry must be created so the Oracle Utilities Mobile Workforce Management Dispatch Workstation's Administration Tool will be capable of accessing it. Ensure that a TNS entry exists for the Oracle Real-Time Scheduler database by adding a new entry or verifying that a valid entry already exists.

TNS Service Name for the Geocoding Database

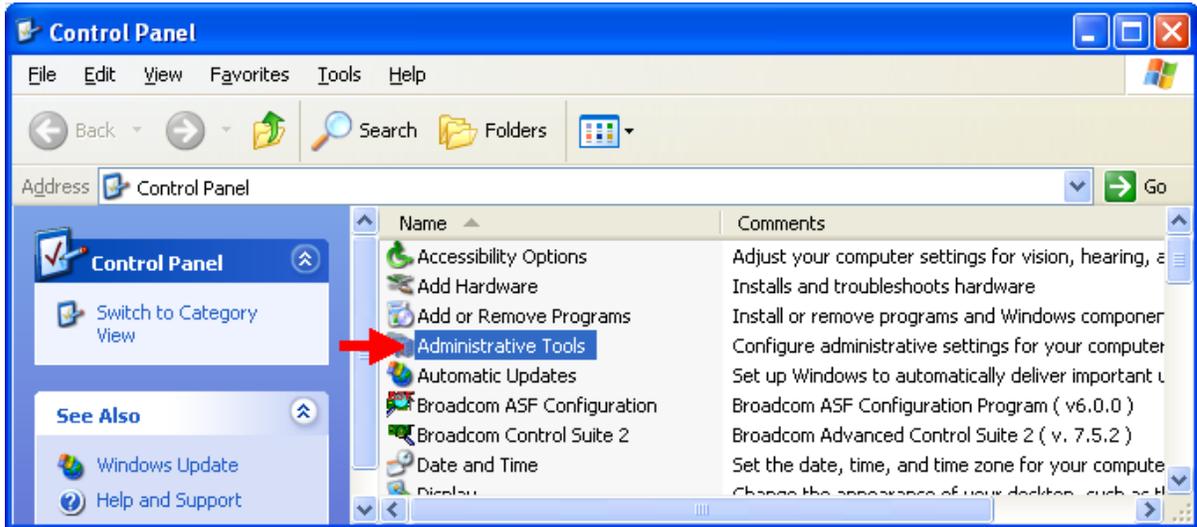
Note: If you are not planning to use an Oracle database for Geocoding, you may skip this section.

The Oracle Utilities Mobile Workforce Management Server and Oracle Utilities Mobile Workforce Management Dispatch Workstation can make use of a mapping database to perform Geocoding. If you are installing either of these applications and you plan to use an Oracle database for Geocoding, a TNS entry must exist for the database. Ensure that a **TNS** entry exists for the Geocoding database by adding a new entry or verifying that a valid entry already exists.

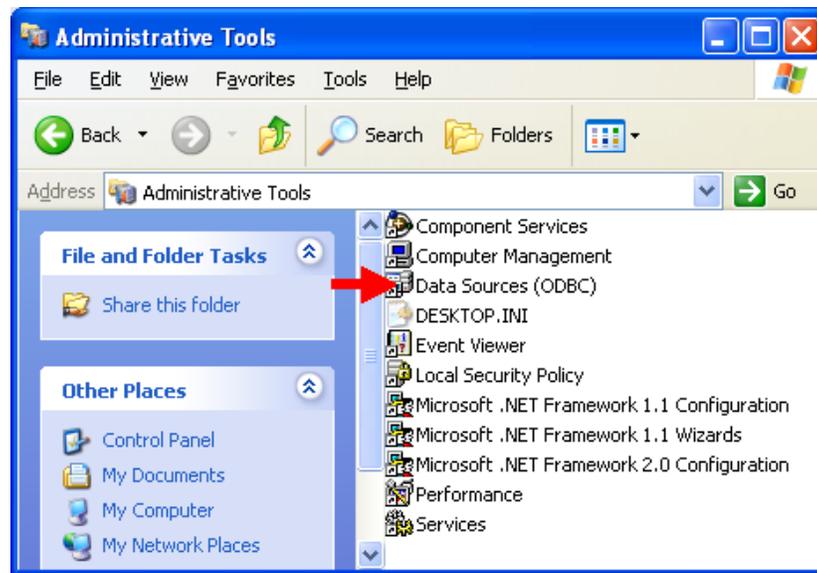
Create ODBC Connections

If the Oracle ODBC Connection was listed as a prerequisite for the component(s) you are installing, you must set up ODBC connections for databases at this time. Repeat the following steps to create ODBC connections for each of the databases that required TNS entries in the previous section (Oracle Utilities Mobile Workforce Management, Oracle Real-Time Scheduler, and Geocoding):

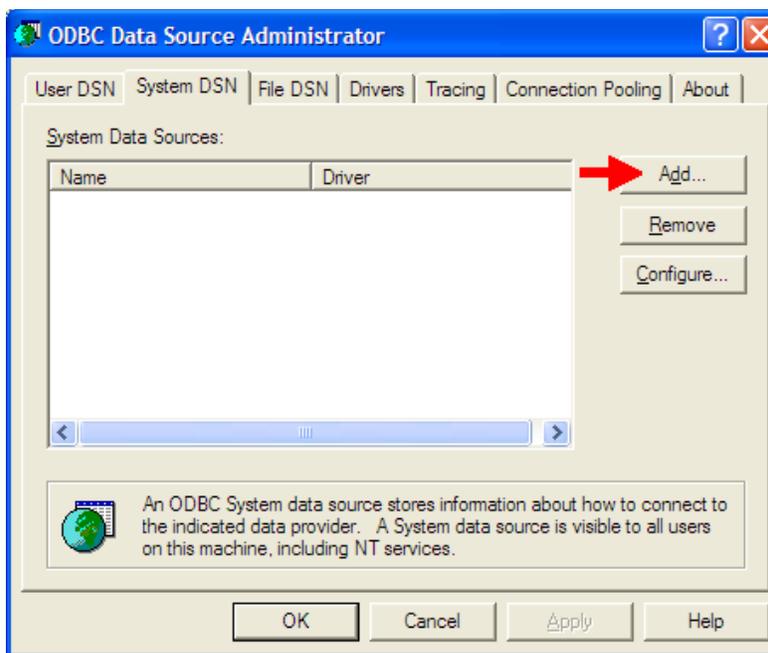
1. From the Start Menu, open the Control Panel.
2. In the Control Panel window, double-click on Administrative Tools.



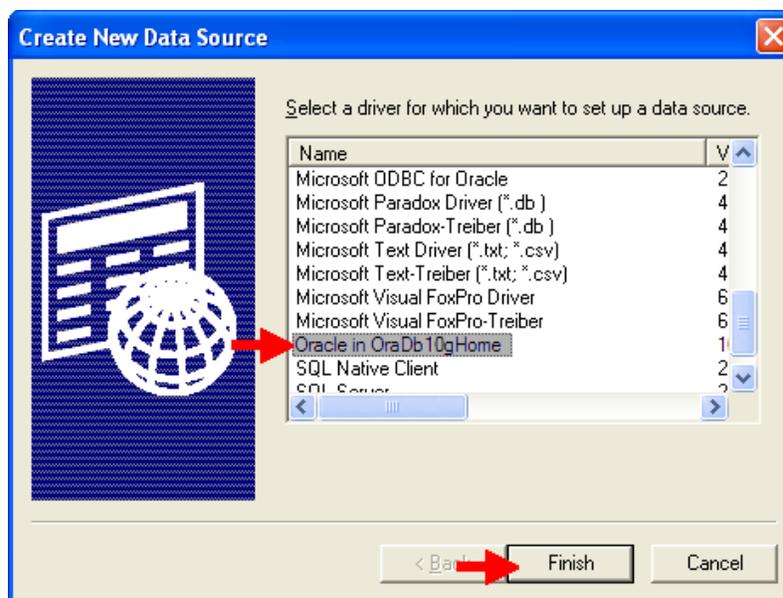
3. In the Administrative Tools window, double-click on Data Sources (ODBC).



4. On the ODBC Data Source Administrator dialog, select the System DSN tab and click the Add... button to add a new data source entry.



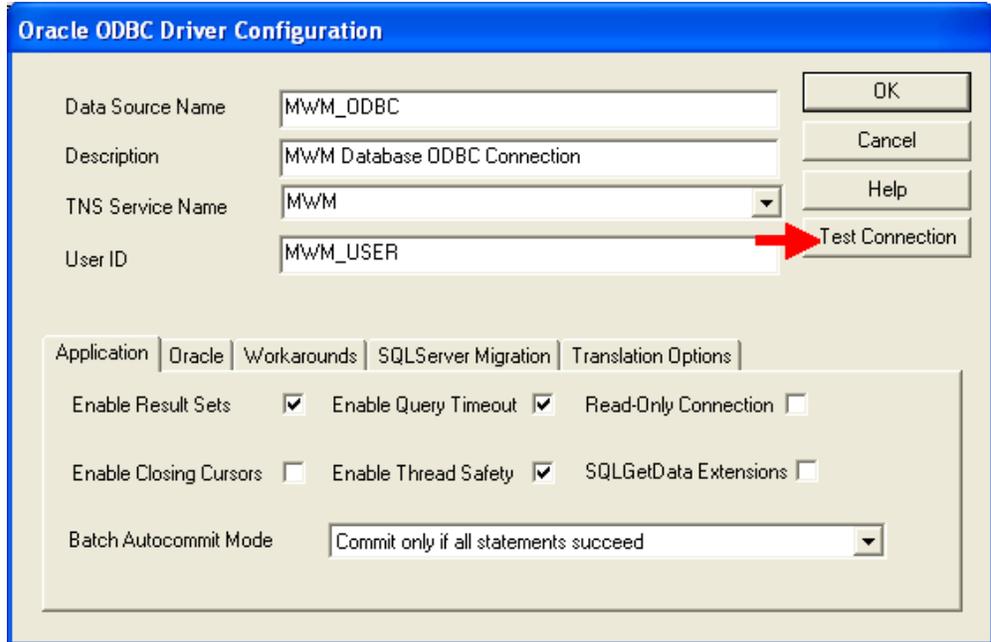
5. On the Create New Data Source dialog, select the Oracle driver, then click the Finish button.



Note: The “Oracle in OraDb10gHome” shown above is an example; your Oracle 10g or 11g ODBC driver may be labeled differently. Do not select the Microsoft Oracle driver, as it is not supported by the Oracle Utilities Mobile Workforce Management application.

6. Enter the ODBC information specific to this database installation:
 - **Data Source Name** – This is the ODBC name that Oracle Utilities Mobile Workforce Management applications will reference to connect to the database. This name will be required during the Oracle Utilities Mobile Workforce Management product installation to identify the ODBC data source name. This is a mandatory entry.
 - **Description** – An optional description of this database connection.

- **TNS Service Name** – The TNS Service Name associated with this database (this is the name of the TNS entry assigned to the database in the **Create TNS Service Names** section above).
 - **User ID** – This is the User ID that was created for the database in the **Create Users** section above.
7. Click the Test Connection button to verify that the driver was set up successfully:



8. On the Oracle ODBC Driver Connection window, enter the password and click OK:



9. If the test is successful, the following dialog appears. Click OK.



Note: If at any time during installation, the ODBC connection fails with the following error:

“SQORAS32 ñ An unsupported operation was attempted”

refer to metalink issue 403021.1 for information regarding a fix:

https://metalink.oracle.com/metalink/plsql/ml2_documents.showDocument?p_database_id=NOT&p_id=403021.1

Complete the Pre-Installation Checklist

Once all prerequisites have been met and database connections have been established, Oracle Utilities Mobile Workforce Management installation can begin. The installer will request a large amount of information that it uses to configure database scripts and initialization files (.INI) during the installation process.

It is strongly recommended you print this worksheet and fill in the required information prior to running the installer. This worksheet will guide you through the requirements for each Oracle Utilities Mobile Workforce Management component.

Component Selection

The installation program's Setup Type screens will require that you select the components that you wish to install. These selections will determine which data will be requested during installation.

Select the components that you wish to install:

- Oracle Utilities Mobile Workforce Management CE Mobile Workstation
- Oracle Utilities Mobile Workforce Management Dispatch Workstation
- Oracle Utilities Mobile Workforce Management Mobile Workstation
- Oracle Utilities Mobile Workforce Management Router
- Oracle Utilities Mobile Workforce Management RFTransport (Server-Side)
- Oracle Utilities Mobile Workforce Management Server

Additional options for Oracle Utilities Mobile Workforce Management Router:

- Oracle Real-Time Scheduling Web Service
- Customer Care and Billing Web Service*
- Network Management System Web Service*
- Work and Asset Management Web Service*
- Oracle Process Integration Pack for Utilities Field Work

Additional option for Oracle Utilities Mobile Workforce Management Server, Router, or Dispatch Workstation:

- Install Oracle MapViewer Support

Additional option for Oracle Utilities Mobile Workforce Management Server and Oracle Real-Time Scheduler:

- Install Geocoding Support

* If you do not have the information required to install these components at this time, do not select them. These items can be configured at a later time by referring to **Modifying Web Services for External Applications** on page 3-77.

Required Data

Each section below corresponds to a screen you might encounter during the installation process. If any of your selected components from step 1 are listed in a section, that screen will be displayed during installation. To ensure that you have all of the required information before beginning the installation process, fill in the required data for each screen that you will encounter during installation:

MWM Installation Root

This installation screen will be displayed when installing all products:

Required Data

Destination Folder: The path where Oracle Utilities Mobile Workforce Management software will be installed (default is C:\MWM).

Destination Folder: _____

MWM Installation Name

This installation screen will be displayed when installing all products:

Required Data

Installation Name: An Installation name is a way to group the contents of an installation instance so it can be more easily maintained and reduce confusion when more than one copy of Oracle Utilities Mobile Workforce Management is installed on a single system.

You must enter a unique name for each Installation, e.g., Test, Production, Training, etc.

Installation Name: _____

MWM Database Information (Part 1 of 2)

This installation screen will be displayed when installing the following products:

- Oracle Utilities Mobile Workforce Management Dispatch Workstation
- Oracle Utilities Mobile Workforce Management Router
- Oracle Utilities Mobile Workforce Management Server
- Oracle Real-Time Scheduler Web Service

Required Data

TNS: The TNS Service Name for the Oracle Utilities Mobile Workforce Management database (from section **TNS Service Name for the Oracle Utilities Mobile Workforce Management Database** on page 2-7).

SID: The Name of the System Identifier for the Oracle Utilities Mobile Workforce Management database.

TNS: _____

SID: _____

MWM Database Information (Part 2 of 2)

This installation screen will be displayed when installing the following products:

- Oracle Utilities Mobile Workforce Management Dispatch Workstation
- Oracle Utilities Mobile Workforce Management Router
- Oracle Utilities Mobile Workforce Management Server
- Oracle Real-Time Scheduler

Required Data

ODBC: The Name of the ODBC data source for the Oracle Utilities Mobile Workforce Management database (from **Create ODBC Connections** on page 2-7.)

Username: The User ID for the Oracle Utilities Mobile Workforce Management database (from **Creating the Oracle Utilities Mobile Workforce Management Database User** on page 2-6).

Password: The Password for the Oracle Utilities Mobile Workforce Management database (from **Creating the Oracle Utilities Mobile Workforce Management Database User** on page 2-6).

ODBC: _____
Username: _____
Password: _____

MWM Database Server Information

This installation screen will be displayed when installing the following products:

- Oracle Real-Time Scheduler Web Service

Required Data

IP: The TCP/IP address or machine name where the Oracle Utilities Mobile Workforce Management database resides.

Port: The port that Oracle Utilities Mobile Workforce Management should use to access the Oracle Utilities Mobile Workforce Management database. (The default is 1521.)

IP: _____

Port: _____

MWM Web Service Information

This installation screen will be displayed when installing the following products:

- Oracle Real-Time Scheduler Web Service

Required Data

IP: The TCP/IP address or machine name where the Oracle Utilities Mobile Workforce Management Web Service will be installed. This is the same machine where the Oracle Utilities Mobile Workforce Management Router is (or will be) installed. (The default is localhost).

Port: The port that the Oracle Utilities Mobile Workforce Management Web Service will use to communicate with the Oracle Utilities Mobile Workforce Management Integration Manager. (The default is 80.)

IP: _____

Port: _____

ORS Database Information

This installation screen will be displayed when installing the following products:

- Oracle Utilities Mobile Workforce Management Dispatch Workstation
- Oracle Real-Time Scheduler Web Service

Required Data

Username: The User ID for the Oracle Real-Time Scheduler database (from section **Creating the Oracle Real-Time Scheduler Database User** on page 2-6).

Password: The Password for the Oracle Real-Time Scheduler database (from section **Creating the Oracle Real-Time Scheduler Database User** on page 2-6).

TNS: The TNS Service Name for the Oracle Real-Time Scheduler database (from section **TNS Service Name for the Oracle Real-Time Scheduler database** on page 2-7).

Username: _____

Password: _____

TNS: _____

MWM Server Identifier¹

This installation screen will be displayed when installing the following products:

- Oracle Utilities Mobile Workforce Management CE Mobile Workstation
- Oracle Utilities Mobile Workforce Management Dispatch Workstation
- Oracle Utilities Mobile Workforce Management Mobile Workstation
- Oracle Utilities Mobile Workforce Management RfTransport (Server-Side)
- Oracle Utilities Mobile Workforce Management Router

Required Data

Name: The name of the MACHINE where Oracle Utilities Mobile Workforce Management Server is (or will be) installed.

Name: _____

MWM RfTransport (Server-Side) Identifier

This installation screen will be displayed when installing the following products:

- Oracle Utilities Mobile Workforce Management CE Mobile Workstation
- Oracle Utilities Mobile Workforce Management Mobile Workstation
- Oracle Utilities Mobile Workforce Management Server²

Required Data

Name: The name of the MACHINE where the RfTransport application is (or will be) installed.

Name: _____

Customer Care & Billing Login Information

This installation screen will be displayed when installing the following products:

- Oracle Utilities Customer Care and Billing Web Service

Required Data

User Id: The User ID for the Oracle Utilities Customer Care and Billing Web Service (default is <CCBUserID>).

Password: The Password for the Oracle Utilities Customer Care and Billing Web Service (default is <CCBPassword>).

User Id: _____

Password: _____

Customer Care & Billing Web Service Information

This installation screen will be displayed when installing the following products:

- Oracle Utilities Customer Care and Billing Web Service

Required Data

-
1. If you are installing Oracle Utilities Mobile Workforce Management Server at the same time as any of components listed, this dialog will not appear. The installer uses the local machine name.
 2. If you are installing Oracle Utilities Mobile Workforce Management RfTransport (Server-Side) at the same time as the Server, this dialog will not appear. The installer uses the local machine name.

IP: The TCP/IP address or machine name where the Oracle Utilities Customer Care and Billing Web service is (or will be) installed (default is <CCBMachineName>).

Port: Port that Oracle Utilities Mobile Workforce Management should use to communicate with Oracle Utilities Customer Care and Billing (default is <CCBPortNumber>).

IP: _____

Port: _____

Network Management System Web Service Information

This installation screen will be displayed when installing the following products:

- Oracle Utilities Network Management System Web Service

Required Data

IP: The TCP/IP address or machine name where the Oracle Utilities Network Management System Web service is (or will be) installed (default is <NMSMachineName>).

Port: Port that Oracle Utilities Mobile Workforce Management should use to communicate with Oracle Utilities Network Management System (default is <NMSPortNumber>).

IP: _____

Port: _____

Work and Asset Management Web Service Information

This installation screen will be displayed when installing the following products:

- Oracle Utilities Work and Asset Management Web Service

Required Data

IP: The TCP/IP address or machine name where the Oracle Utilities Work and Asset Management Web service is (or will be) installed (default is <WAMMachineName>).

Port: Port that Oracle Utilities Mobile Workforce Management should use to communicate with Oracle Utilities Work and Asset Management (default is <WAMPortNumber>).

IP: _____

Port: _____

Oracle Real-Time Scheduling Web Service Information

This installation screen will be displayed when installing the following products:

- Oracle Utilities Mobile Workforce Management Dispatch Workstation
- Oracle Real-Time Scheduler Web Service

Required Data

IP: The TCP/IP address or machine name where the Oracle Real-Time Scheduler Web Service is (or will be) installed.

Port: Port that Oracle Utilities Mobile Workforce Management should use to communicate with Oracle Real-Time Scheduler. (The default is 8090.)

IP: _____

Port: _____

MWM Integration Manager Web Service Information

This installation screen will be displayed when installing the following products:

- Oracle Real-Time Scheduler Service

Required Data

IP: The TCP/IP address or machine name where the Router component is (or will be) installed. (The default is localhost.)

Port: Port that Oracle Utilities Mobile Workforce Management should use to communicate with the Integration Manager. (The default is 8080.)

IP: _____

Port: _____

ORS Installation Root

This installation screen will be displayed when installing the following products:

- Oracle Real-Time Scheduler Web Service

Required Data

Destination Folder: The path where the Oracle Real-Time Scheduler application is (or will be) installed on the Oracle Real-Time Scheduler machine (if the Oracle Real-Time Scheduler application is not already installed, you will install it as a post-installation step).

(The default path for the Oracle Real-Time Scheduler application is “C:\Program Files\ORS”.)

Destination Folder: _____

Note: This installer will create a default Oracle Real-Time Scheduler configuration for Kansas City that you may copy to the Oracle Real-Time Scheduler machine to ensure connectivity with Oracle Utilities Mobile Workforce Management.

Oracle Geocoding Information (Part 1 of 3)

This installation screen will be displayed when installing the following products:

- Geocoding Support

Note: If you are not planning to use an Oracle database for Geocoding, you may skip this section.

Required Data

SID: System Identifier of the database used for Geocoding.

ODBC: ODBC data source of the Geocoding database (from **TNS Service Name for the Geocoding Database** on page 2-7).

SID: _____

ODBC: _____

Oracle Geocoding Information (Part 2 of 3)

This installation screen will be displayed when installing the following products:

- Geocoding Support

Required Data

IP: The TCP/IP address or machine name where the Geocoding database resides.

Port: Port that Oracle Utilities Mobile Workforce Management should use to access the Geocoding database.

IP: _____

Port: _____

Oracle Geocoding Information (Part 3 of 3)

This installation screen will be displayed when installing the following products:

- Geocoding Support

Required Data

Username: The User ID for the Geocoding database (default is <GeocoderUsername>).

Password: The Password for the Geocoding database (default is <GeocoderPassword>).

Username: _____

Password: _____

Oracle MapViewer Information (Part 1 of 4)

This installation screen will be displayed when installing the following products:

- Oracle MapViewer Support

Required Data

IP: The TCP/IP address or machine name where the Oracle MapViewer application server resides.

Port: Port that Oracle Utilities Mobile Workforce Management should use to access the Oracle MapViewer application server, typically port 8888.

IP: _____

Port: _____

Oracle MapViewer Information (Part 2 of 4)

This installation screen will be displayed when installing the following products:

- Oracle MapViewer Support

Required Data

Username: The User ID for the database used by Oracle MapViewer.

Password: The Password for the database used by Oracle MapViewer.

Username: _____

Password: _____

Oracle MapViewer Information (Part 3 of 4)

This installation screen will be displayed when installing the following products:

- Oracle MapViewer Support

Required Data

Data Src: The data source name for the Oracle MapViewer database, as configured within the MapViewer Administration Tool.

MapCache: The name of the Oracle MapViewer MapCache, as configured within the MapViewer Administration Tool.

Data Src: _____

Map Cache: _____

Oracle MapViewer Information (Part 4 of 4)

This installation screen will be displayed when installing the following products:

- Oracle MapViewer Support

Required Data

IP: The IP address or machine name for the Oracle MapViewer Tiling Server. If map images will reside on a different server than the one running Oracle MapViewer, you need to specify the IP address of that server. This will default to the IP address of the Oracle MapViewer database defined earlier.

Port: The port to use for connecting to the Oracle MapViewer Tiling Server, if a separate server is being used for map images.

IP: _____

Port: _____

Oracle Process Integration Pack for Utilities Field Work (Part 1 of 2)

This installation screen will be displayed when installing the following components:

- Oracle Process Integration Pack for Utilities Field Work

Required Data

Username: The Username to connect to the Utilities Field Work integration server.

Password: The Password for connecting to the Utilities Field Work integration server.

Username: _____

Password: _____

Oracle Process Integration Pack for Utilities Field Work (Part 2 of 2)

This installation screen will be displayed when installing the following components:

- Oracle Process Integration Pack for Utilities Field Work

Required Data

IP: The IP address or machine name of the Utilities Field Work integration server.

Port: The port number for the Utilities Field Work integration server.

IP: _____

Port: _____

Chapter 3

Oracle Utilities Mobile Workforce Management Installation

Oracle Utilities Mobile Workforce Management is installed using the InstallShield application, as described in the sections that follow.

Note: Oracle Application Server, when installed, is known to prepend '\$ORACLE_HOME/bin' to the PATH environment variable. As a result, the default tnsnames.ora file will be overridden by \$ORACLE_HOME/NETWORK/ADMIN/tnsnames.ora and the Oracle Utilities Mobile Workforce Management InstallShield application will fail to ping ODBC connections that were already set up. To resolve this issue, you can do either of the following:

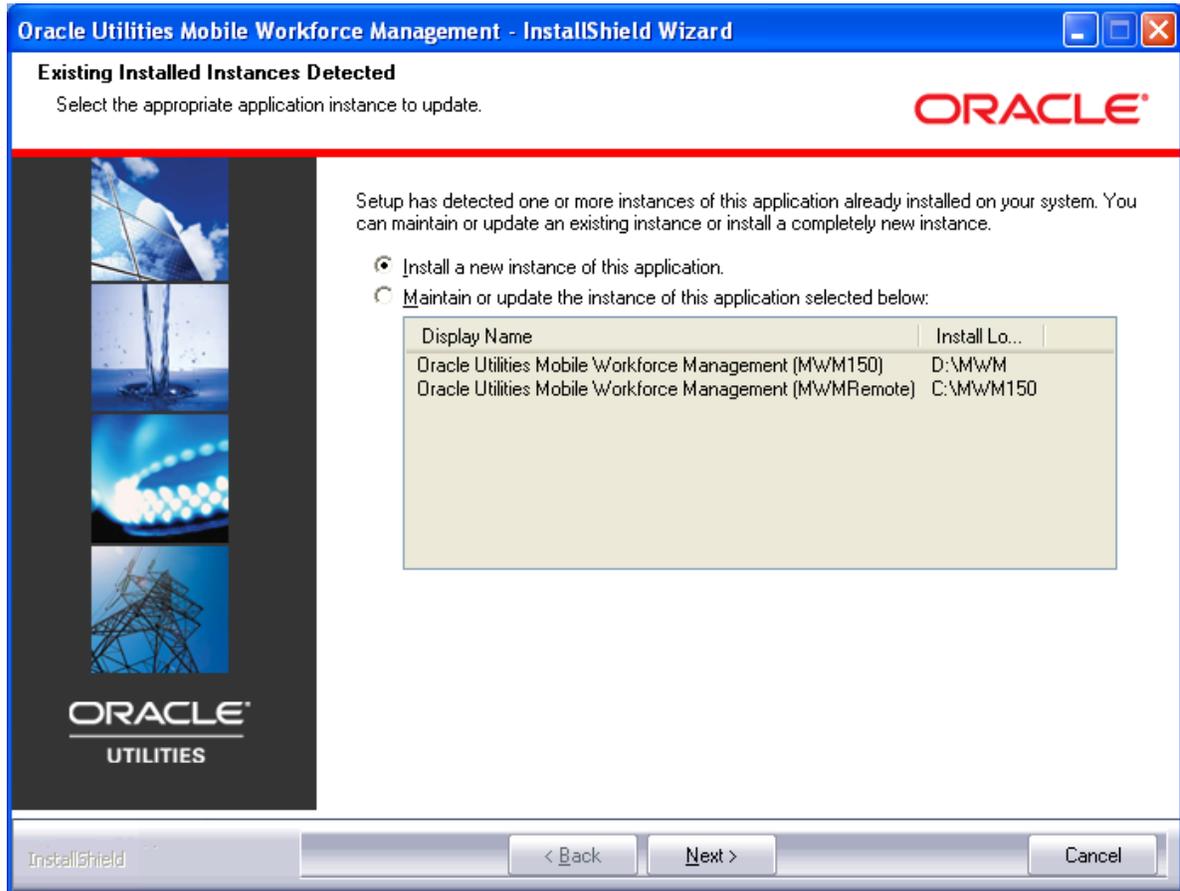
- manually **append** \$ORACLE_HOME/bin to the PATH environment variable, or
- copy the old tnsnames.ora file to \$ORACLE_HOME/NETWORK/ADMIN/tnsnames.ora

This chapter includes the following topics:

- **Previous Installations**
- **New Installations**
- **Database Table Creation or Update**
- **Oracle MapViewer Component Installation**
- **Installing Additional Components**
 - **Web Services**
 - **Oracle Utilities Mobile Workforce Management Integration Manager**
 - **Oracle Real-Time Scheduler**
- **Verifying Installation**

Previous Installations

If Oracle Utilities Mobile Workforce Management has been previously installed, the following screen is displayed to allow the user to update a previous installation.



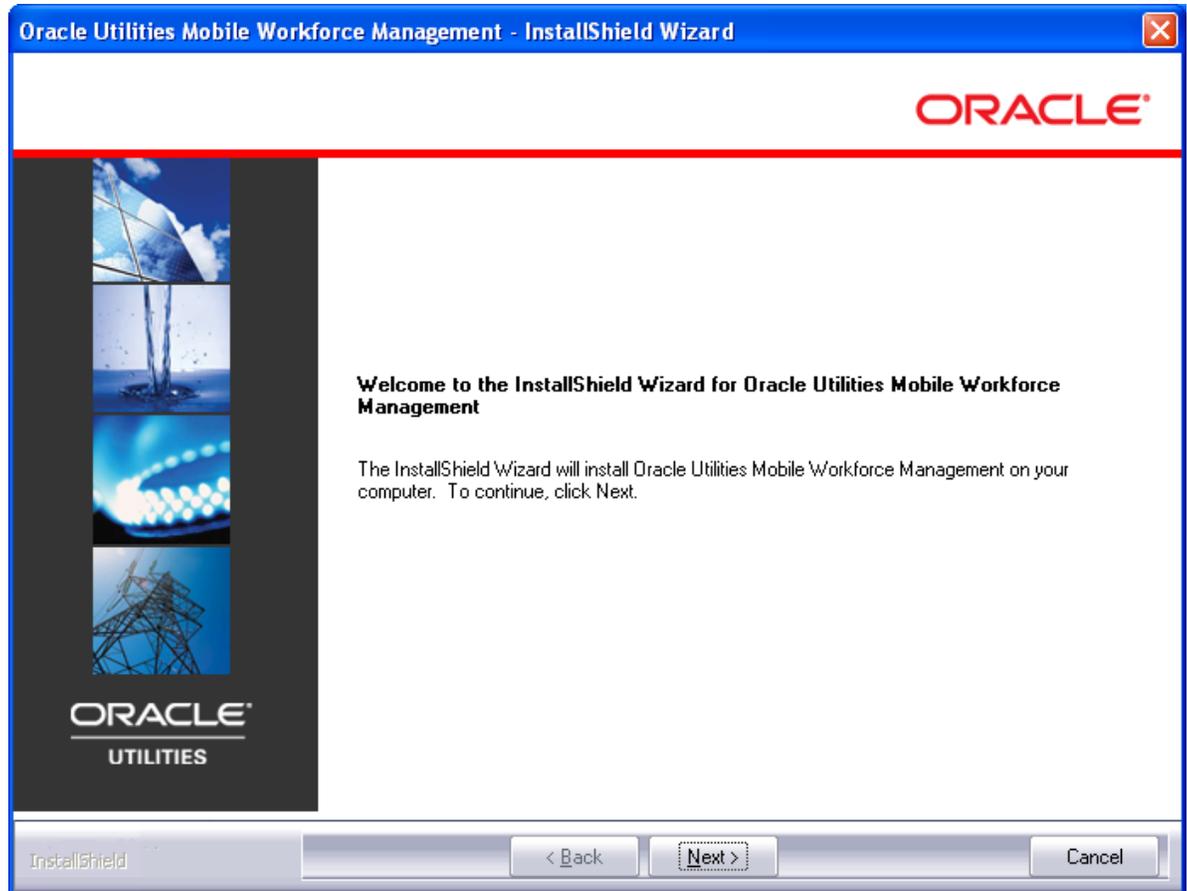
Selecting an existing instance takes the user through the regular installation process (as described in the next section) with two exceptions: all user selections from the prior install will be entered automatically (and can be changed) and previously selected components will remain selected.

New Installations

If the pre-installation checklist was successfully completed, the installation will go very quickly.

Note: Not all screens will be displayed for all installations.

1. Launch the InstallShield Package by double-clicking Setup.exe



- Click **Next** to continue.

2. Enter user information:

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

Customer Information
Please enter your information.

ORACLE

Please enter your name and the name of the company for which you work.

User Name:
John Doe

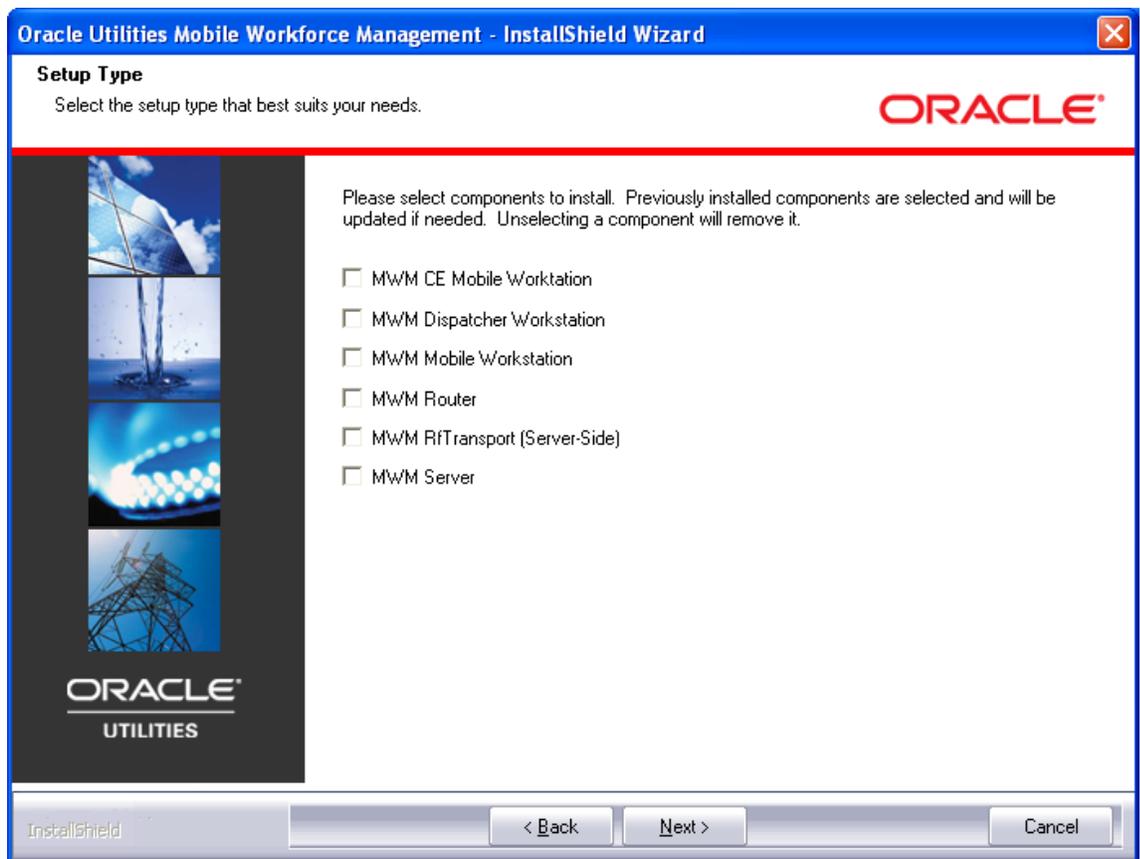
Company Name:
Oracle Corporation

ORACLE
UTILITIES

InstallShield < Back Next > Cancel

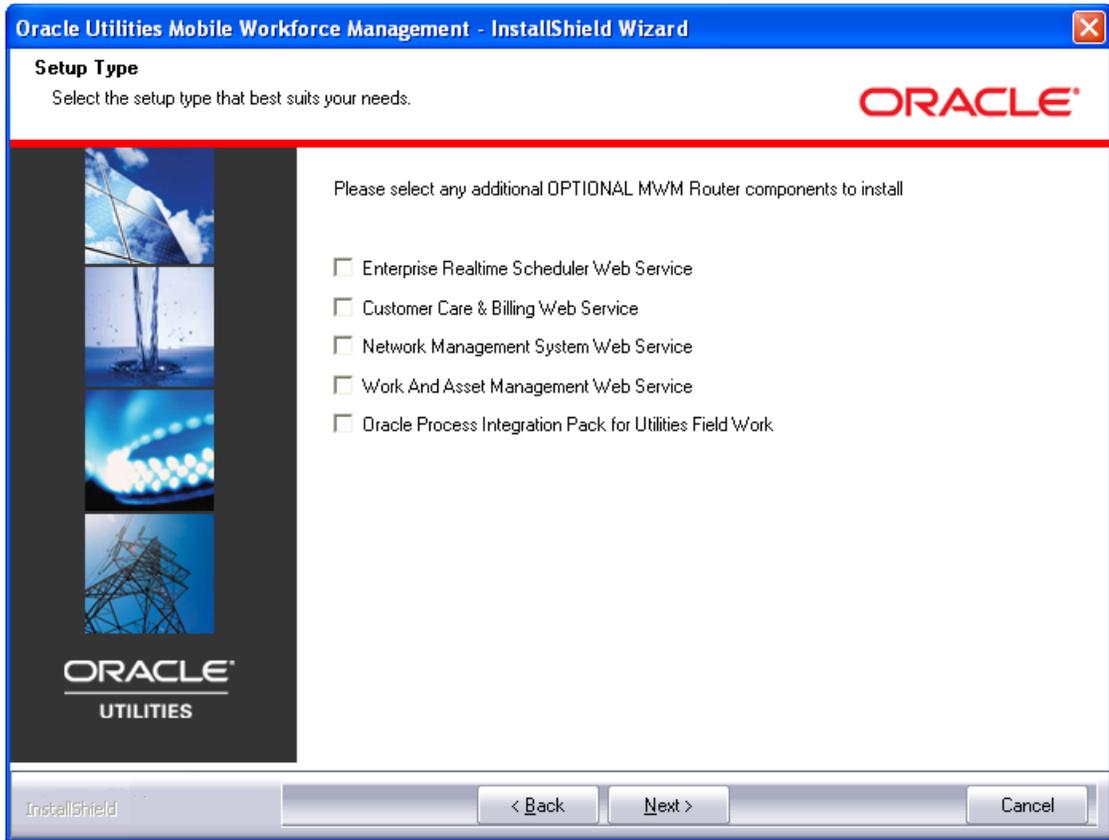
- Enter a User Name. (Default Value: Windows Registered User Name)
- Enter the Company Name. (Default Value: Windows Registered Company Name)
- Click **Next** to continue.

3. Select the components to be installed:



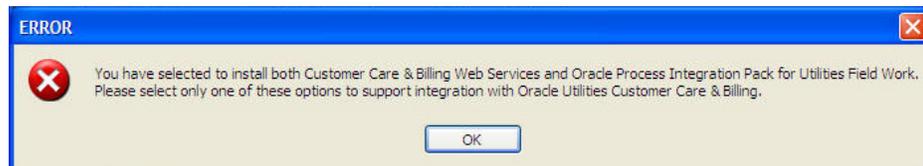
- Select the components to be installed. If this is an update, deselect any components you wish to remove.
- Click **Next** to continue.

4. If you selected MWM Router on the previous screen, select the optional Router support components to install:



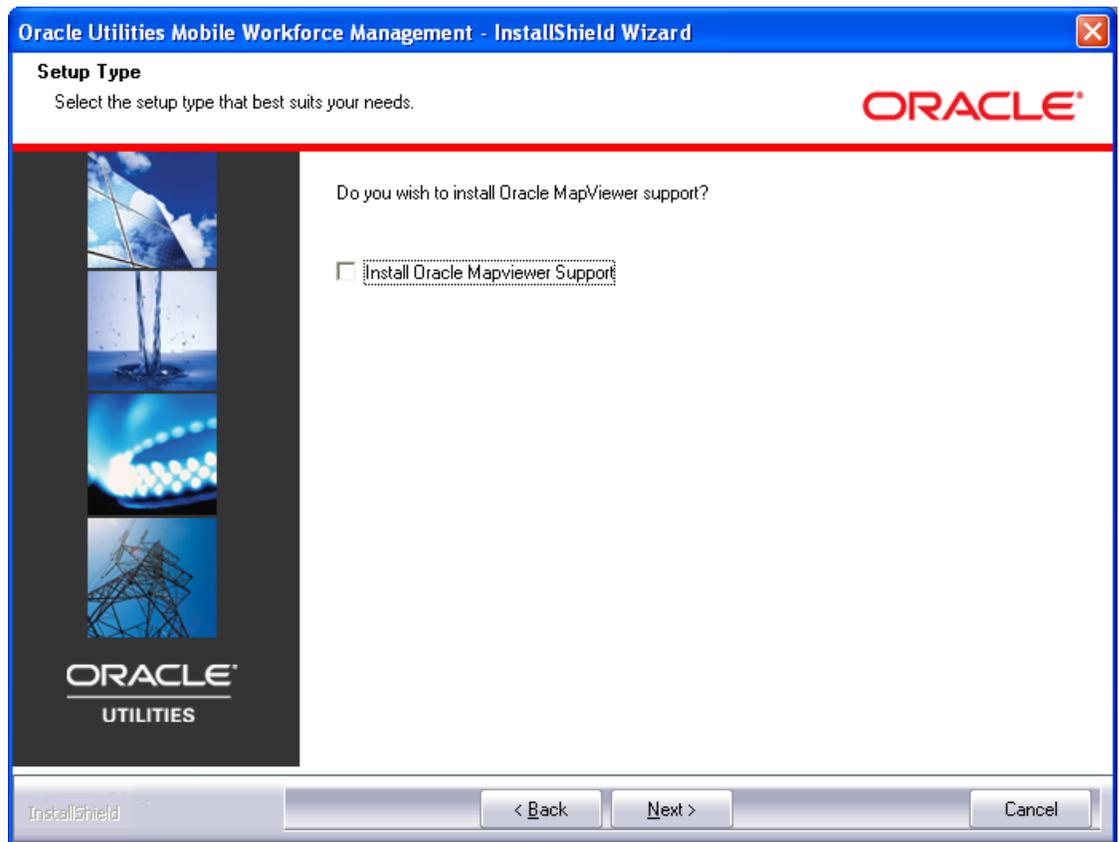
- Select the optional Router components to be installed.

Note: If you are integrating with Oracle Utilities Customer Care & Billing, select either **Customer Care & Billing Web Service** or **Oracle Process Integration Pack for Utilities Field Work**. If you select both of these options, an error message appears (see below). Click **Ok** to dismiss the message, then select only one of the two integration options.



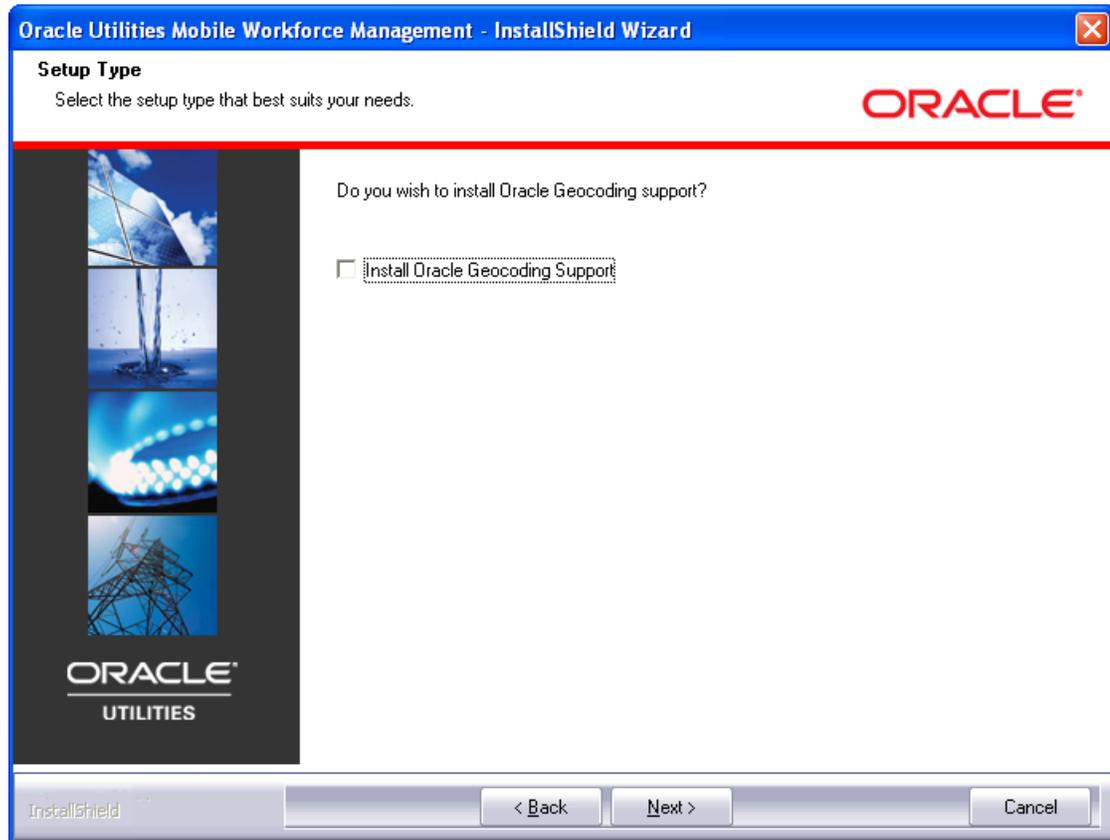
- Click **Next** to continue

5. If Dispatch Workstation, Server, or Router was selected, select whether you want to install the optional Oracle MapViewer support.



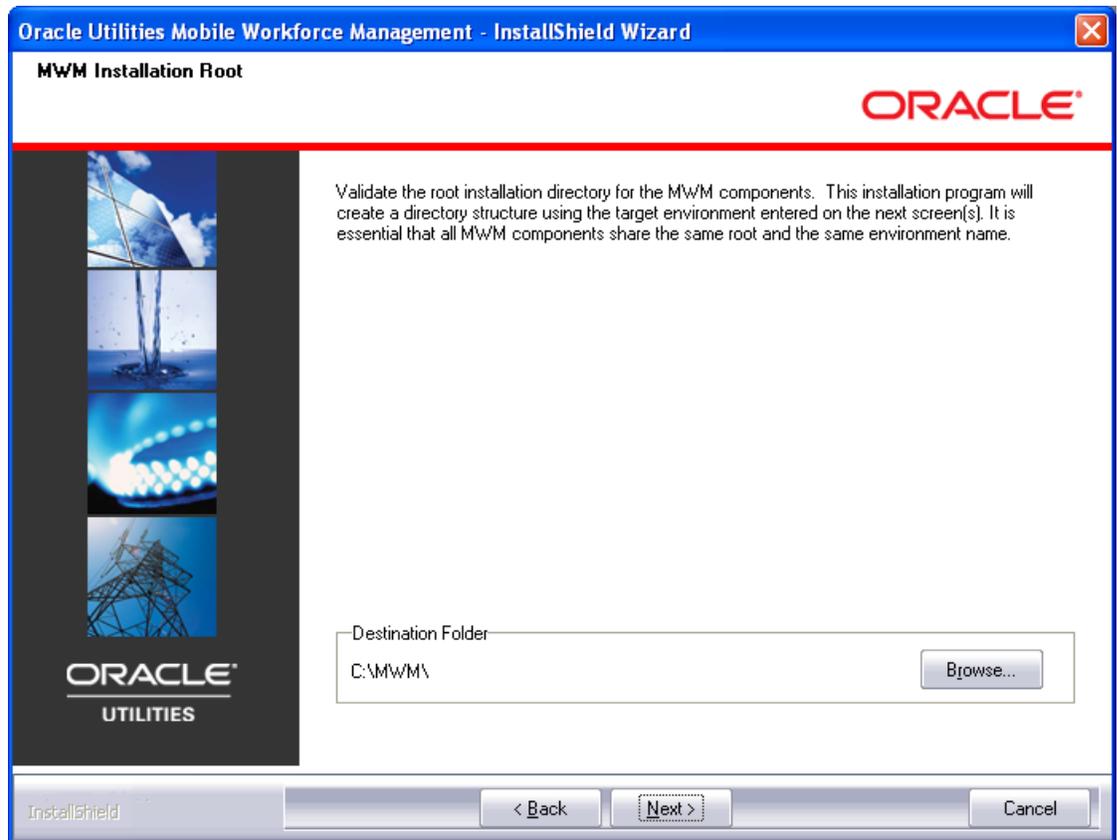
- Click **Next** to continue.

6. If Oracle Real-Time Scheduler Web Service or Oracle Utilities Mobile Workforce Management Server was selected, indicate whether support for Oracle Utilities Mobile Workforce Management Geocoding should be installed:

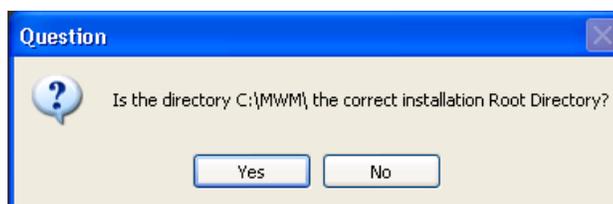


- Select the Install option if Oracle Utilities Mobile Workforce Management Geocoding is to be installed.
- Click **Next** to continue

7. Select the root installation directory for Oracle Utilities Mobile Workforce Management.

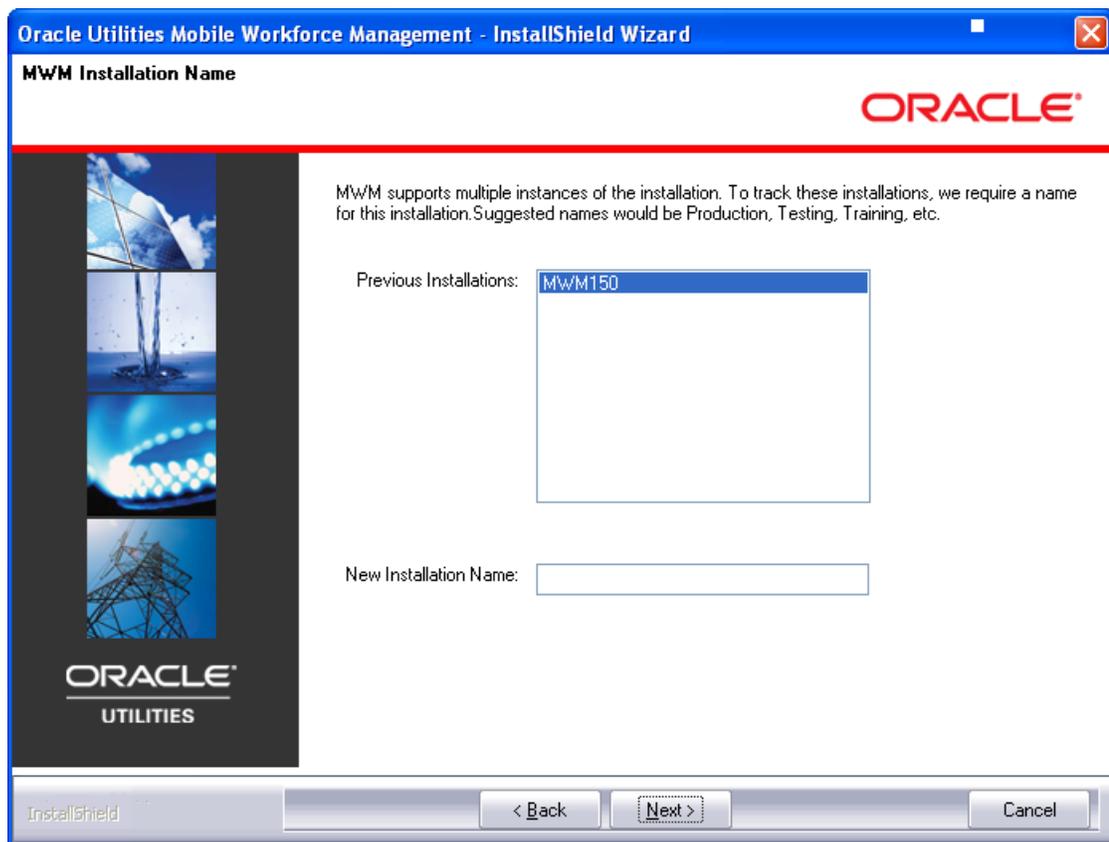


- Use the default install path of C:\MWM or press the Browse button to select a different directory.
- Click **Next** to continue. A dialog prompts you to confirm that the installation directory is correct:



- If the installation directory is correct, click **Yes** to continue. If it is incorrect, click **No** and specify the correct directory.

8. Enter an Installation Name. An installation name is a way to group the contents of an installation instance so it can be more easily maintained and reduce confusion when more than one copy of Oracle Utilities Mobile Workforce Management is installed on a single system.



- Enter the installation Name. You must enter a unique name for each Installation, e.g., Test, Production, Training, etc.
- Click **Next**.

9. Enter the TNS name and System Identifier for the Oracle Utilities Mobile Workforce Management database.

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

MWM Database Information (Part 1 of 2)

ORACLE

Enter the following information to set up the TNS and System Identifier for the MWM database.
TNS: name of the TNS data source when the ODBC Data source was created, SID: name of the System Identifier for the MWM database.

TNS:

SID:

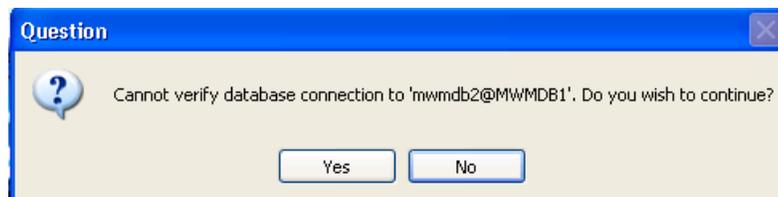
InstallShield

- Enter the TNS Service Name for the Oracle Utilities Mobile Workforce Management database. This will be the same name used when the ODBC data source was created.
- Enter the SID (System Identifier) for the Oracle Utilities Mobile Workforce Management database.
- Click **Next** to continue. The installation will attempt to verify that the TNS name is correct. If the TNS name cannot be verified, a warning is displayed (see below). Acknowledge the message by clicking **OK**, then enter a valid TNS Name.



10. Enter the Oracle Utilities Mobile Workforce Management database information:

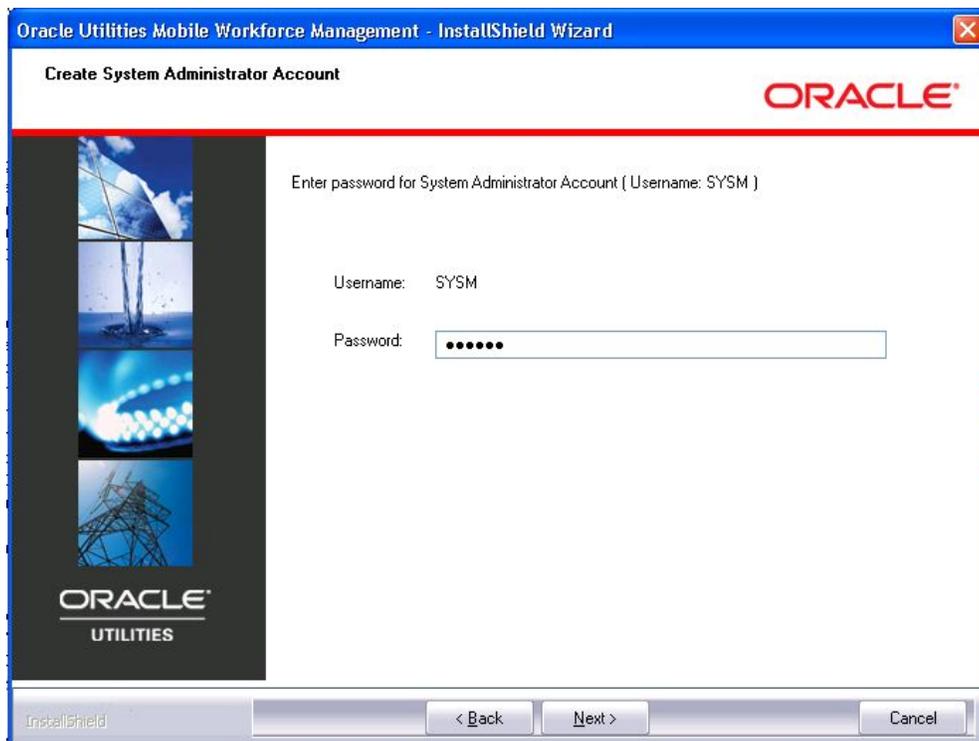
- Select the ODBC data source from the drop down menu.
- Enter the database user id for the Oracle Utilities Mobile Workforce Management database.
- Enter the password for the Oracle Utilities Mobile Workforce Management database User ID.
- Click **Next** to continue. The installation will attempt to verify the database configuration by attempting an ODBC connection. If the connection is not valid, the following screen will be displayed:



- Click **No** to return to the Database Information screen and enter the correct information.

Note: Please bear in mind this may cause problems after the installation, so it is highly recommended that you do not continue until this step completes successfully.

11. Enter the MWM system administrator password:



The screenshot shows a Windows-style dialog box titled "Oracle Utilities Mobile Workforce Management - InstallShield Wizard". The main heading is "Create System Administrator Account" with the Oracle logo in the top right. On the left is a vertical sidebar with four images (clouds, water, glowing lights, and a power tower) and the "ORACLE UTILITIES" logo at the bottom. The main area contains the text "Enter password for System Administrator Account (Username: SYSM)". Below this, the "Username:" field is pre-filled with "SYSM". The "Password:" field is empty and masked with six dots. At the bottom, there are "InstallShield" branding, a "< Back" button, a "Next >" button, and a "Cancel" button.

- Enter the password for the system administrator account.

Note: You cannot change the system administrator account's username, which is "SYSM".

12. Enter the Oracle Utilities Mobile Workforce Management database server information.

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

MWM Database Server Information

ORACLE

Enter the following information to set up the connection to the MWM Database. IP: the TCP/IP address or machine name, Port: port to use.

IP:

Port:

ORACLE
UTILITIES

InstallShield

< Back Next > Cancel

- Enter the IP address or machine name of the machine on which the Oracle Utilities Mobile Workforce Management database resides.
- Enter the port number for the database, typically 1521.
- Click **Next** to continue.

13. Enter the Oracle Utilities Mobile Workforce Management Web Service information.

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

MWM Web Service Information

ORACLE

Enter the following information to set up the web connection to MWM. IP: the TCP/IP address or machine name, Port: port to use.

IP:

Port:

ORACLE UTILITIES

InstallShield

< Back Next > Cancel

- Enter the IP address or machine name of the machine on which the Oracle Utilities Mobile Workforce Management Web Services will be installed.
- Enter the port number for the web service, typically port 80.
- Click **Next** to continue.

14. Enter the Oracle Real-Time Scheduler database username, password, and TNS name.

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

ERS Database Information

ORACLE

Enter the following information to set up the database connections for ERS. Username: specifies userid for ERS database, Password: Database password, TNS name: name of the ERS TNS data source when the ODBC Data source was created.

Username:

Password:

TNS:

InstallShield

- Enter the database user id for the Oracle Real-Time Scheduler database.
- Enter the password for the Oracle Real-Time Scheduler database User ID.
- Enter the TNS Service Name for the Oracle Real-Time Scheduler database. This will be the same name used when the ODBC data source was created.
- Click **Next** to continue. The installer will attempt to verify that the TNS name is correct. If the TNS name cannot be verified, you will be prompted again to give a valid TNS Name.



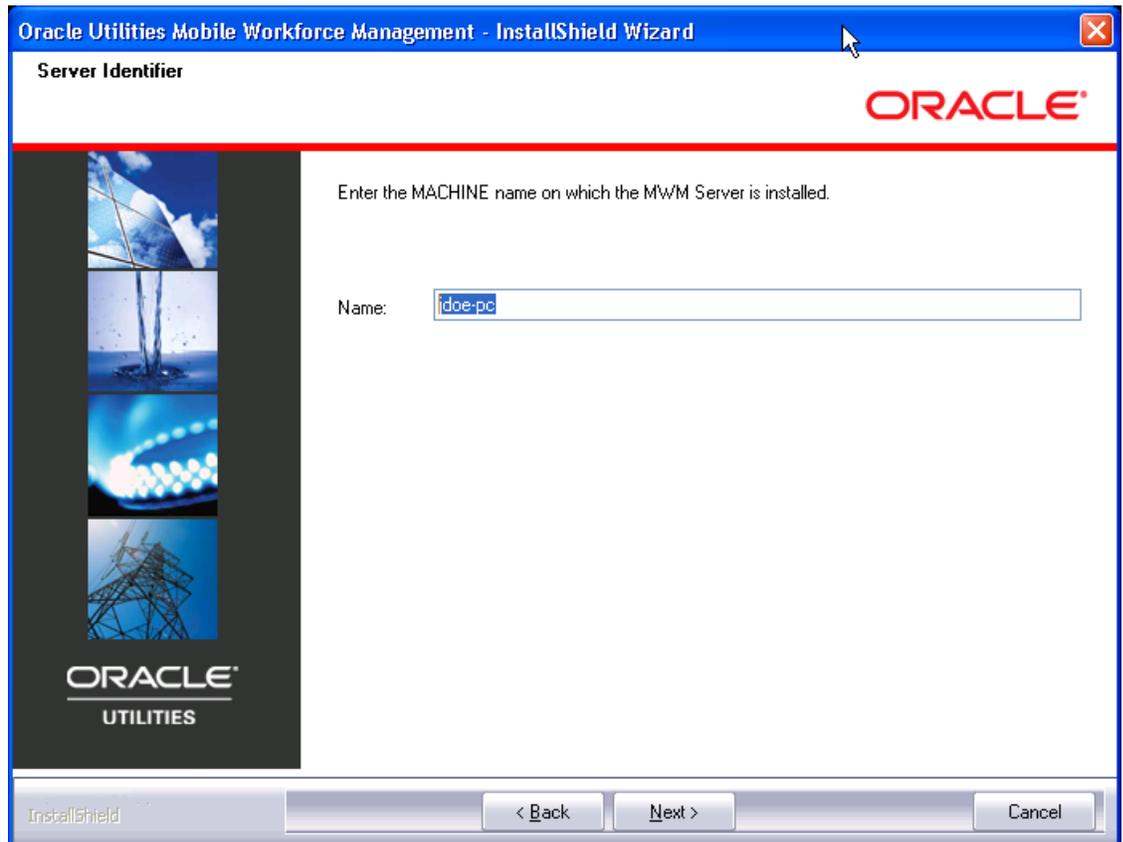
- The installation will then attempt to verify the database parameters. If the connection is not valid, the following screen will be displayed.



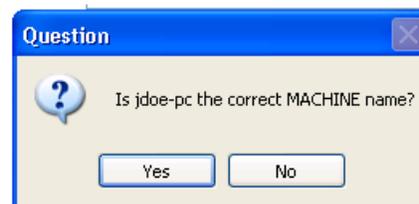
- Click **No** to return to the Database Information screen and enter the correct information.

Note: Please bear in mind this may cause problems after the installation so it is highly recommended that you do not continue until this step completes successfully.

- If the Oracle Utilities Mobile Workforce Management Server product is not being installed, you will be prompted for the name of the machine on which the Server is installed. If the Server **is** being installed, this machine name will default to the local machine.

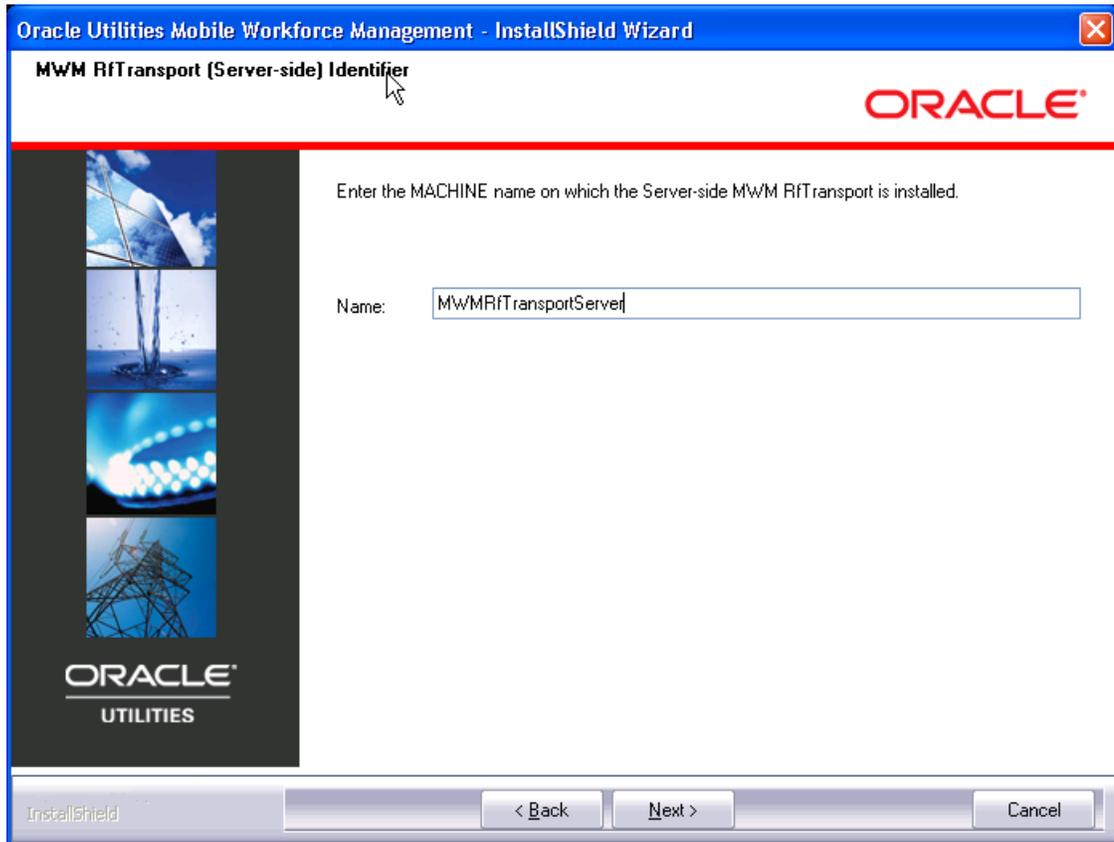


- Enter the machine name where Oracle Utilities Mobile Workforce Management Server is installed.
- Click **Next** to continue. You will be prompted to verify that the Oracle Utilities Mobile Workforce Management Server machine name is correct:

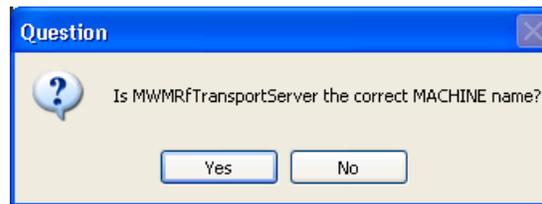


- If the Server machine name is correct, click **Yes** to continue. If it is incorrect, click **No** and specify the correct machine name.

16. If the Oracle Utilities Mobile Workforce Management RfTransport (Server-Side) product was not selected for installation, you will be prompted for the name of the machine where Oracle Utilities Mobile Workforce Management RfTransport (Server-Side) is installed:



- Enter the machine name where the Oracle Utilities Mobile Workforce Management RfTransport (Server-Side) application is installed.
- Click **Next** to continue. You will be prompted to verify that the Oracle Utilities Mobile Workforce Management RfTransport machine name is correct:



- If the Oracle Utilities Mobile Workforce Management RfTransport machine name is correct, click **Yes** to continue. If it is incorrect, click **No** to specify the correct machine name.

17. Enter the login information for Oracle Utilities Customer Care and Billing (if selected). If this information is not yet known, instructions for modifying the database are included in **Modifying Web Services for External Applications** on page 3-77.

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

Customer Care & Billing Login Information

ORACLE

Enter the following information to set up the web service authorization to CC&B. User Id: user id of the connection, Password: Database password.

User Id: <CCBUserID>

Password: ●●●●●●●●

ORACLE
UTILITIES

InstallShield < Back Next > Cancel

- Enter the User ID and Password for the connection.
- Click **Next** to continue.

18. Enter the web connection information for Oracle Utilities Customer Care and Billing (if selected):

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

Customer Care & Billing Web Service Information

ORACLE

Enter the following information to set up the web connection to CC&B. IP: the TCP/IP address or machine name, Port: port to use.

IP:

Port:

InstallShield

- Enter the IP address or machine name of the machine on which the Oracle Utilities Customer Care and Billing Web Service is installed.
- Enter the port number for the web service.
- Click **N**ext to continue.

19. Enter the web service information for Oracle Utilities Network Management System (if selected). If this information is not yet known, instructions for modifying the database are included in **Modifying Web Services for External Applications** on page 3-77.

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

Network Management System Web Service Information

ORACLE

Enter the following information to set up the web connection to NMS. IP: the TCP/IP address or machine name, Port: port to use.

IP:

Port:

InstallShield

- Enter the IP address or machine name of the machine on which the Oracle Utilities Network Management System Web Service is installed.
- Enter the port number for the web service.
- Click **Next** to continue.

20. Enter the web service information for Oracle Real-Time Scheduler (if selected):

The screenshot shows a Windows-style dialog box titled "Oracle Utilities Mobile Workforce Management - InstallShield Wizard". The main heading is "Enterprise Realtime Scheduler Web Service Information". The Oracle logo is in the top right. On the left is a vertical sidebar with four images: a power line tower, water splashing, a glowing blue grid, and another power line tower, with the "ORACLE UTILITIES" logo at the bottom. The main area contains the text: "Enter the following information to set up the web connection to the Enterprise Realtime Scheduler (ERS). IP: the TCP/IP address or machine name, Port: port to use." Below this are two input fields: "IP:" with the text "localhost" and "Port:" with the text "8090". At the bottom are three buttons: "< Back", "Next >", and "Cancel". The "InstallShield" logo is in the bottom left corner of the dialog.

- Enter the IP address or machine name of the machine on which the Oracle Real-Time Scheduler Web Service is installed.
- Enter the port number for the web service.
- Click **N**ext to continue.

21. Enter the web service information for the Oracle Utilities Mobile Workforce Management Integration Manager:

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

MWM Integration Manager Web Service Information

ORACLE

Enter the following information to set up the web connection to the Integration Manager Web Service. IP: the TCP/IP address or machine name, Port: port to use.

IP:

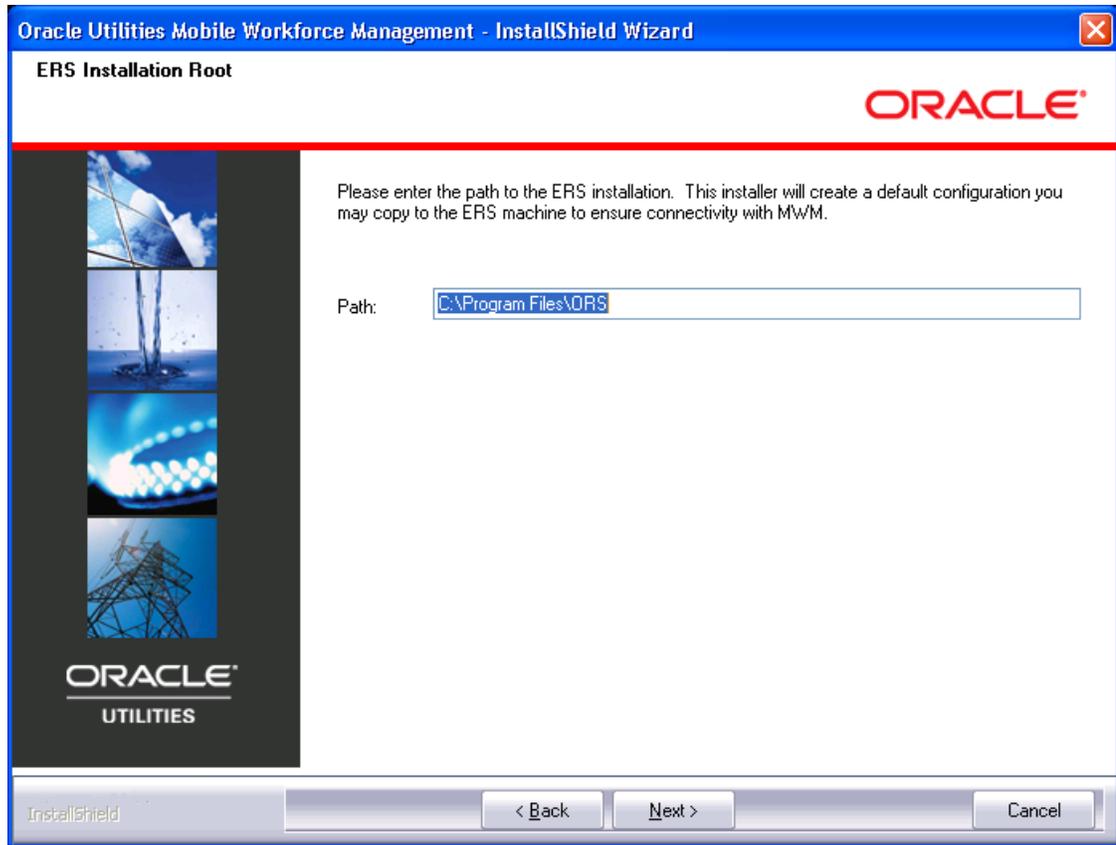
Port:

ORACLE
UTILITIES

InstallShield

- Enter the IP address or machine name of the machine on which the Oracle Utilities Mobile Workforce Management Integration Manager Web Service is installed, typically the same machine as Oracle Utilities Mobile Workforce Management Router.
- Enter the port number for the web service, typically 8080.
- Click **Next** to continue.

22. Enter the path to the Oracle Real-Time Scheduler application installation. This installer will setup a default configuration that can be copied into the Oracle Real-Time Scheduler installation directory to speed testing and connectivity. Note that this path does not need to exist on the installation machine, but on the machine that Oracle Real-Time Scheduler is (or will be) installed. After the installer completes, “<MWM Installation Directory>\Tools\ERTSSupportFiles” will contain the configured files.



- Click **Next** to continue.

23. Enter the ODBC data source name and SID for the Geocoding database:

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

Oracle Geocoding Information (Part 1 of 3)

ORACLE

Enter the ODBC Data Source and System Identifier for Oracle Geocoding.

ODBC: MWMDB1

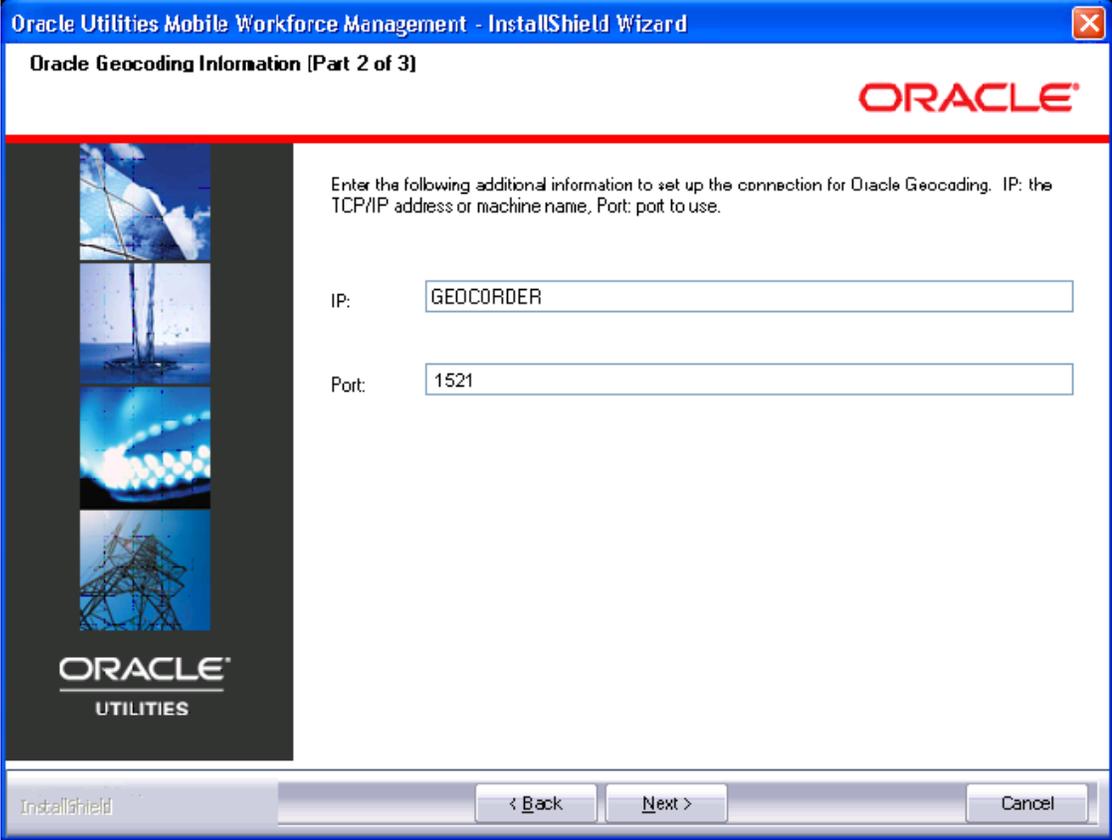
SID: MWMDB1

ORACLE
UTILITIES

InstallShield < Back Next > Cancel

- Select the ODBC Data Source name for the Geocoding database from the drop- down menu.
- Enter the SID (System Identifier) for the Geocoding database.
- Click **Next** to continue.

24. Enter the IP address and port for the Geocoding database:



Oracle Utilities Mobile Workforce Management - InstallShield Wizard

Oracle Geocoding Information (Part 2 of 3)

ORACLE

Enter the following additional information to set up the connection for Oracle Geocoding. IP: the TCP/IP address or machine name, Port: port to use.

IP:

Port:

ORACLE
UTILITIES

InstallShield

< Back Next > Cancel

- Enter the IP address or machine name of the machine on which the Geocoding database resides.
- Enter the port number for the database, typically 1521.
- Click **Next** to continue.

25. Enter the username and password to connect to the Geocoding database:

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

Oracle Geocoding Information (Part 3 of 3)

ORACLE

Enter the following additional information to set up the connection to Oracle Geocoding.
Username: the username which connects to the database. Password: Database password.

Username:

Password:

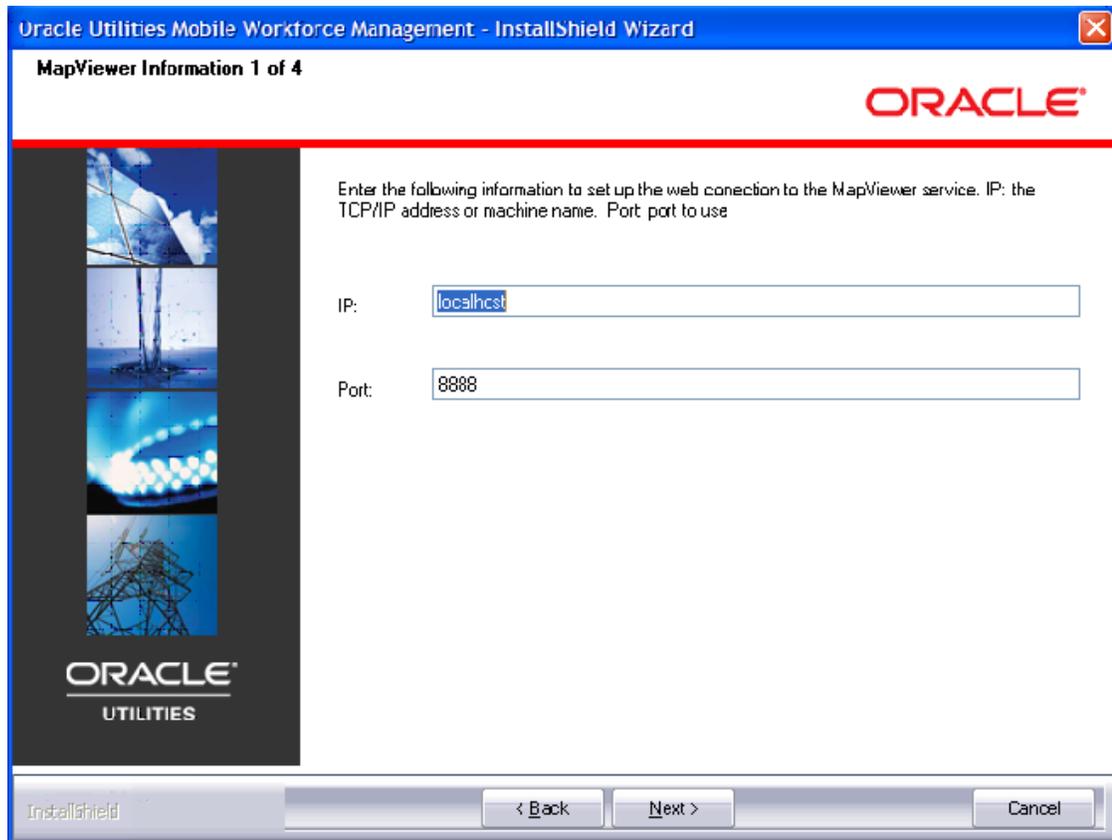
ORACLE
UTILITIES

InstallShield

< Back Next > Cancel

- Enter the database user name for the Geocoding database.
- Enter the password for the Geocoding database User ID.
- Click **Next** to continue.

26. Enter the IP address and port where the Oracle MapViewer application server resides:



- Enter the IP address or machine name where the Oracle MapViewer application server resides.
- Enter port to use when connecting to the Oracle MapViewer application server.
- Click **Next** to continue.

27. Enter the username and password for the Oracle MapViewer database:

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

Oracle MapViewer Info (Part 2 of 4)

ORACLE

Enter the following additional information to set up the connection to Oracle MapViewer.
Username: the username which connects to the database. Password: Database password. Note:
If you have Navteq spatial data and MWM data in the same database, accept the default values.
Otherwise, enter the database information where Navteq spatial data is stored

Username: mwmdb1

Password: ●●●●●●●

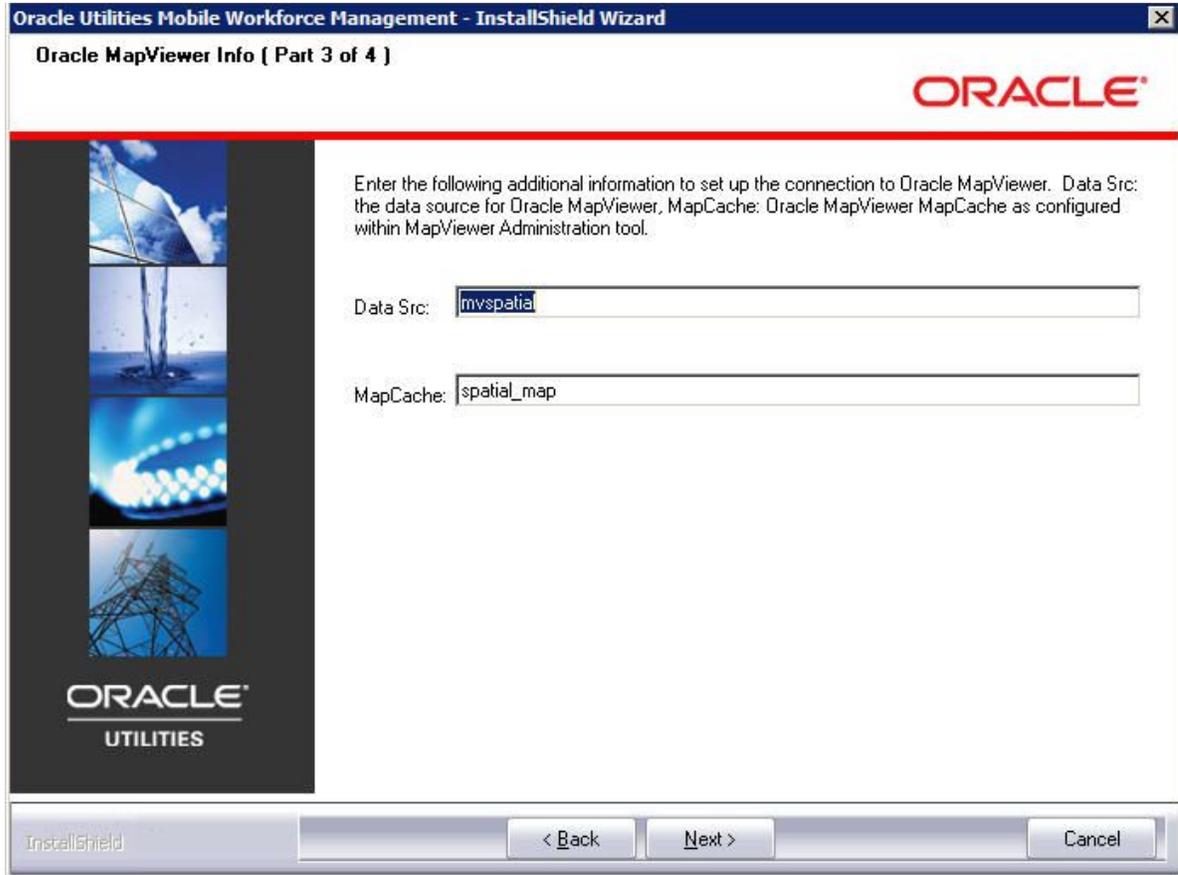
InstallShield < Back Next > Cancel

- Enter the user name for the Oracle MapViewer database.
- Enter the password for the Oracle MapViewer database.

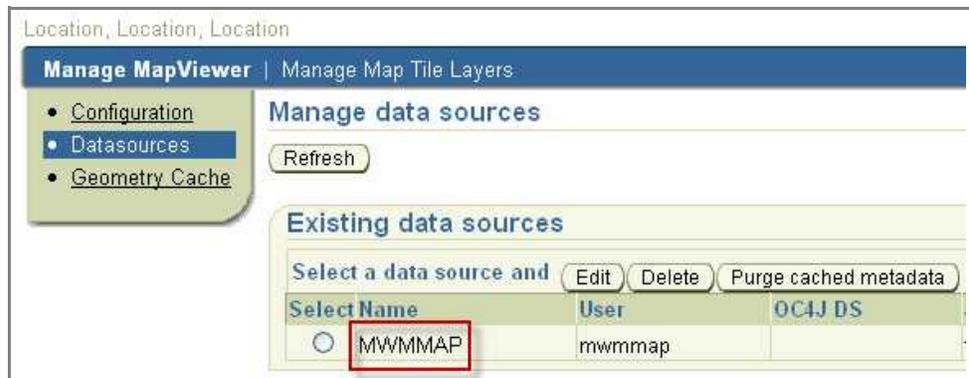
Note: These values default to the MWM database username and password. If spatial data is stored in a different database, enter the connection information for that database.

- Click **Next** to continue.

28. Enter the Data Source and MapCache for the Oracle MapViewer:



- Enter the data source name for the Oracle MapViewer database as configured within the MapViewer Administration Tool. This data source name can be found on the Manage MapViewer screen in the MapViewer Administration Tool, as shown below:



- Enter the name of the Oracle MapViewer MapCache, as configured within the MapViewer Administration Tool.
- Click **Next** to continue.

29. Enter the IP address and port for the Oracle MapViewer Tiling Server:

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

MapViewer Information 4 of 4

ORACLE

Enter the following information to set up the web connection to the MapViewer Tiling Server. IP: the TCP/IP address or machine name. Port: port to use

IP: localhost

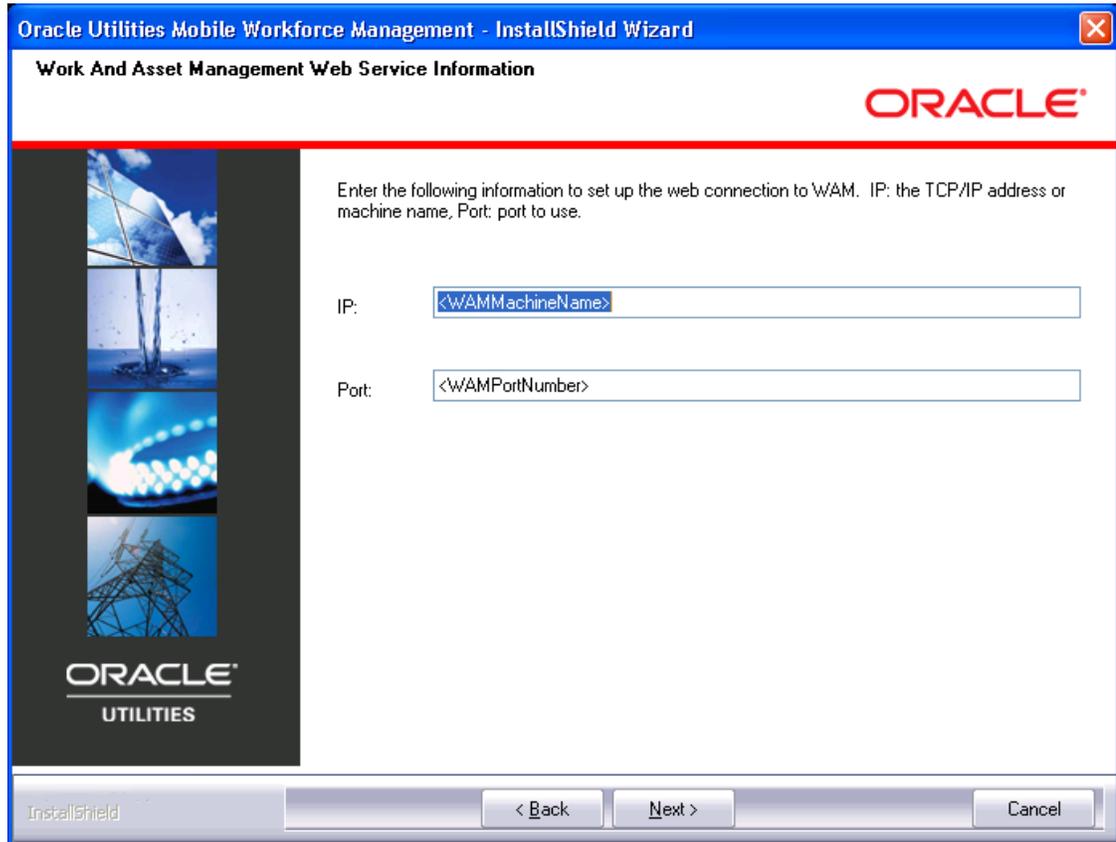
Port: 8888

InstallShield < Back Next > Cancel

Note: The values on this screen default to the IP address and port of the Oracle MapViewer database defined earlier. If you are not using a separate server for map images, click **Next** to accept the default values. If map images will reside on a different server than the one running Oracle MapViewer, specify the connection parameters for that server as described below.

- Enter the IP address or machine name for the Oracle MapViewer Tiling Server.
- Enter the port to use for connecting to the Oracle MapViewer Tiling Server.
- Click **Next** to continue.

30. Enter the web service information for Oracle Utilities Work and Asset Management (if selected). If this information is not yet known, instructions for modifying the database are included in **Modifying Web Services for External Applications** on page 3-77.



- Enter the IP address or machine name of the machine on which the Oracle Utilities Work and Asset Management Web Service is installed.
- Enter the port number for the web service.
- Click **Next** to continue.

31. If Oracle Process Integration Pack for Utilities Field Work was selected, enter the username and password for connecting to the Oracle Process Integration Pack for Utilities Field Work server.

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

Oracle Process Integration Pack for Utilities Field Work

ORACLE

Enter the following additional information to set up the connection to Oracle Process Integration Pack for Utilities Field Work Service Integration. Username: the username which connects to the Oracle Process Integration Pack for Utilities Field Work server. Password: password.

Username: kFw/UserId

Password: ●●●●●●●●●●●●

InstallShield < Back Next > Cancel

- Enter the username to connect to the Oracle Process Integration Pack for Utilities Field Work server.
- Enter the password for connecting to the Oracle Process Integration Pack for Utilities Field Work server.
- Click **Next** to continue.

32. Enter the machine name and port for the Oracle Process Integration Pack for Utilities Field Work (if selected).

Oracle Utilities Mobile Workforce Management - InstallShield Wizard

Oracle Process Integration Pack for Utilities Field Work

ORACLE

Enter the following additional information to set up the connection to Oracle Process Integration Pack for Utilities Field Work server. Machine Name: the server hostname or IP of the Oracle Process Integration Pack for Utilities Field Work server. Port Number: Port number for Oracle Process Integration Pack for Utilities Field Work server.

Machine

Port

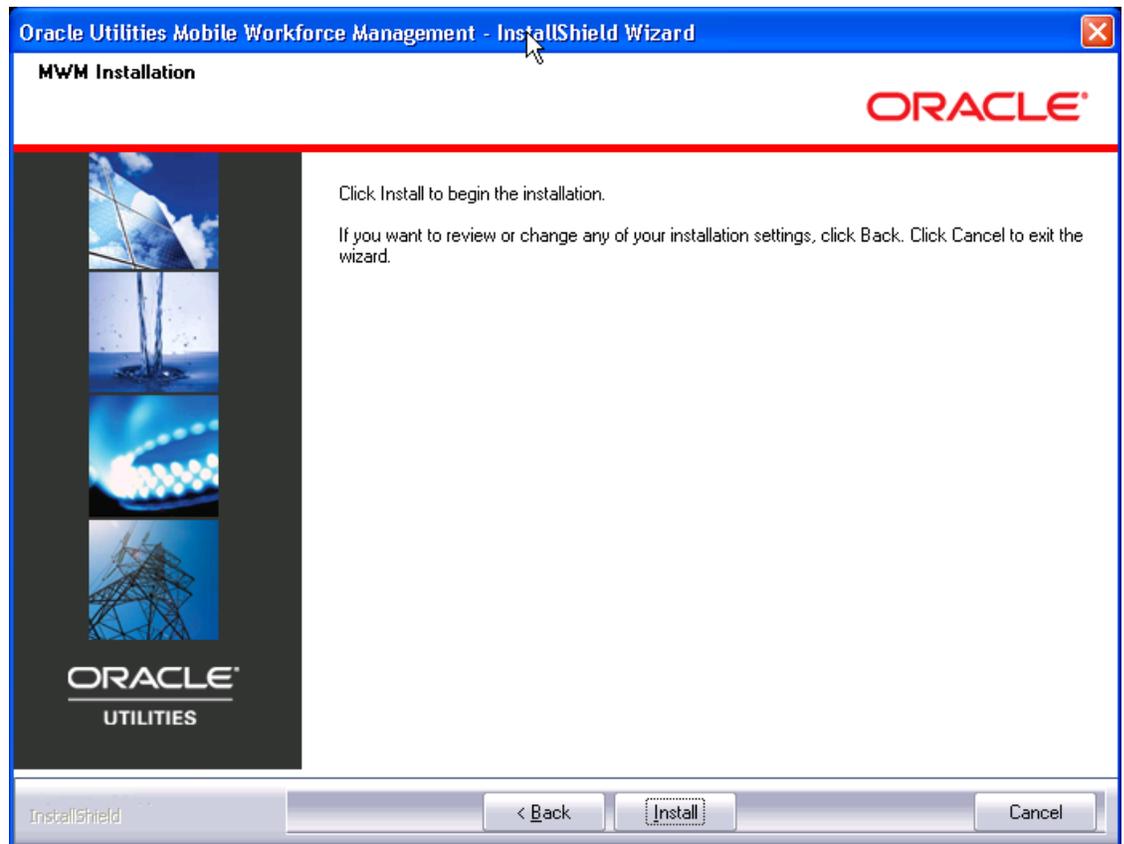
ORACLE
UTILITIES

InstallShield

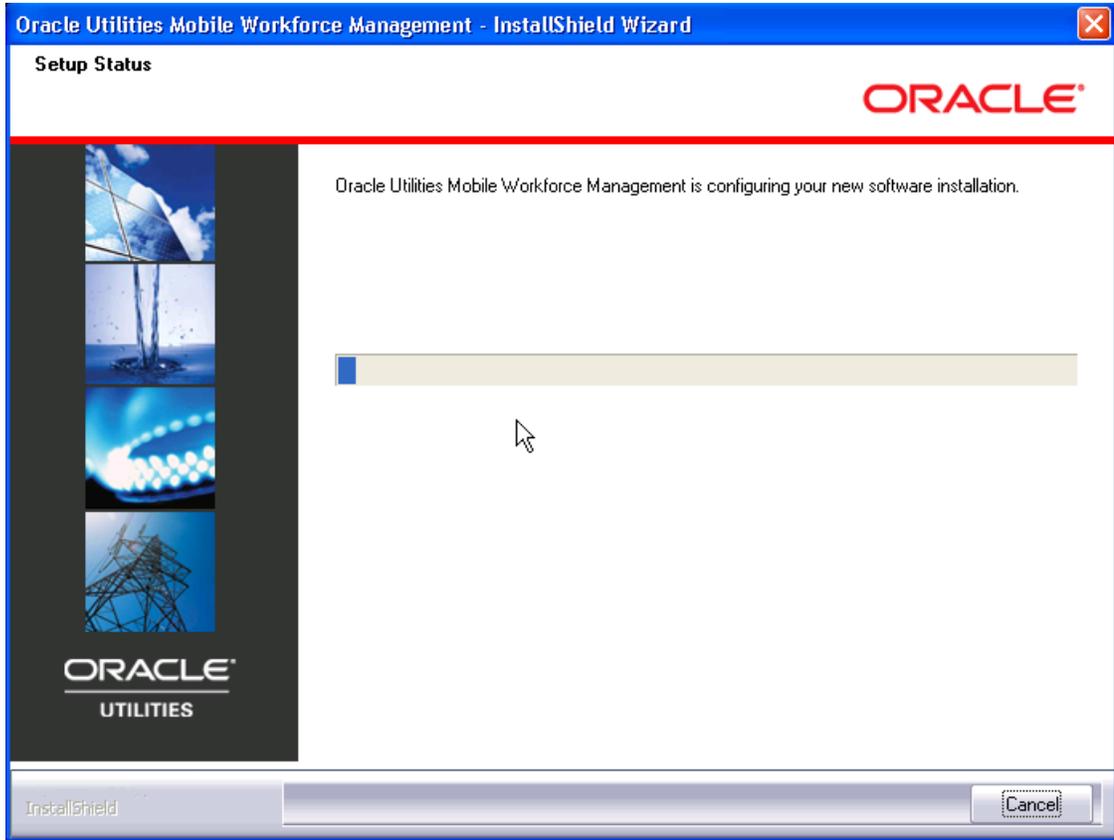
< Back Next > Cancel

- Enter the IP address or machine name of the Oracle Process Integration Pack for Utilities Field Work server.
- Enter the port number for the Oracle Process Integration Pack for Utilities Field Work server.
- Click **Next** to continue.

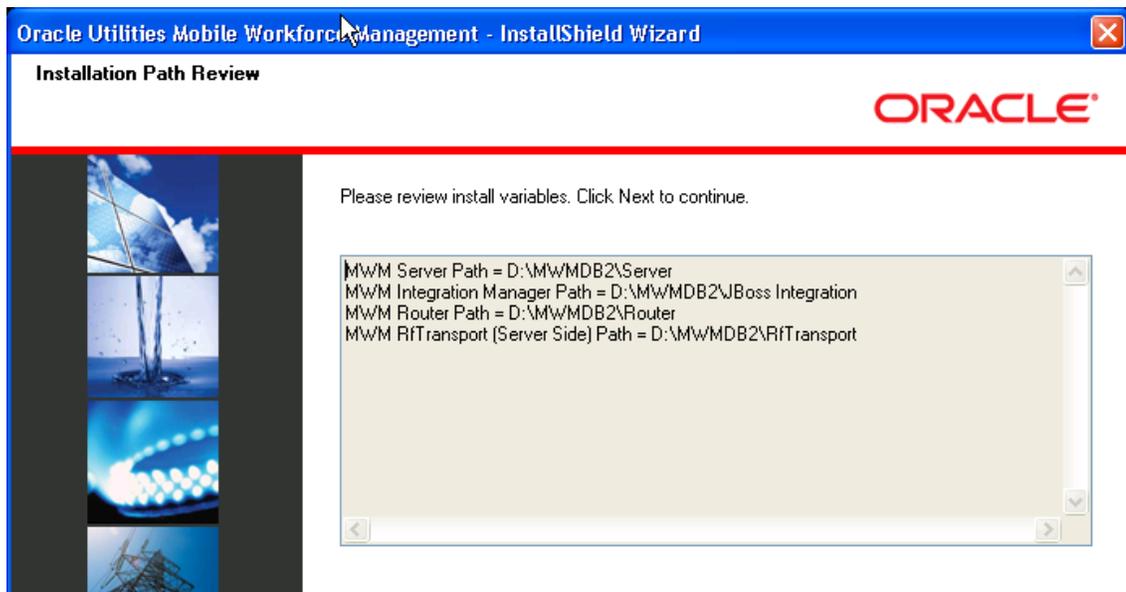
33. Click **Install** to continue:



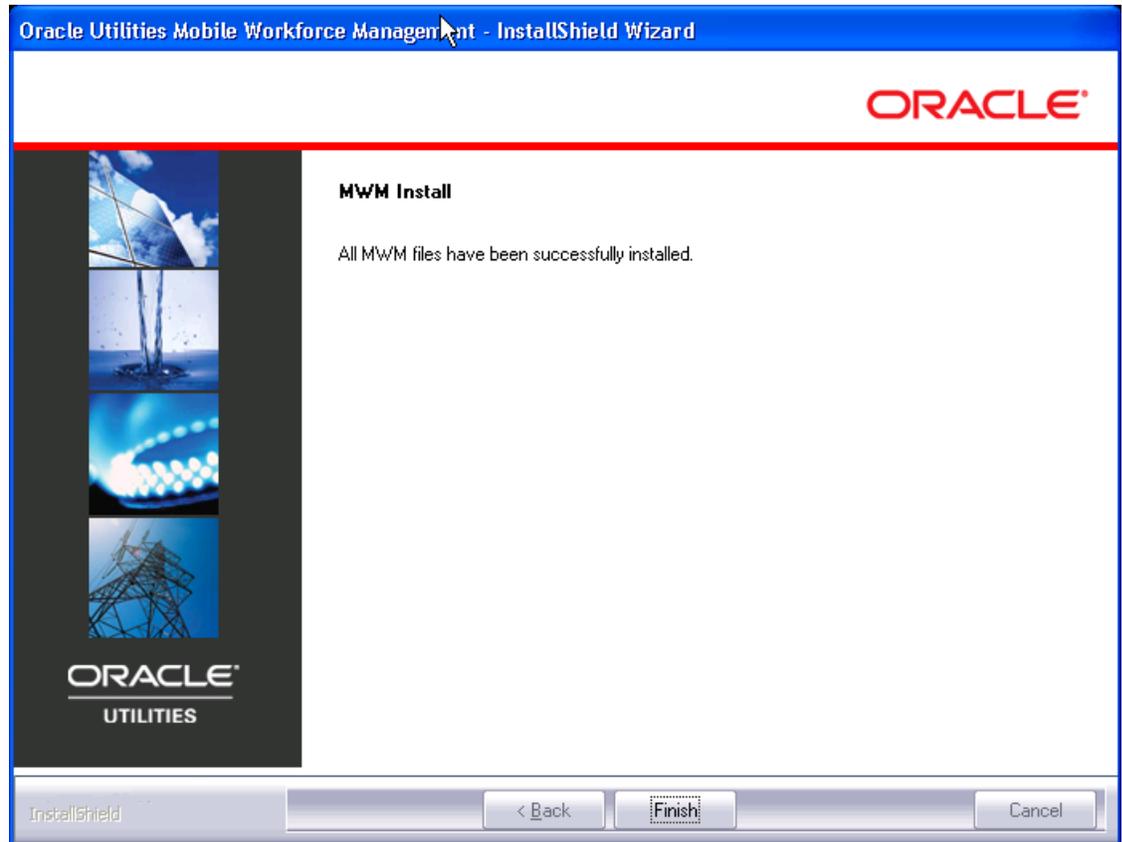
- A progress dialog displays during installation:



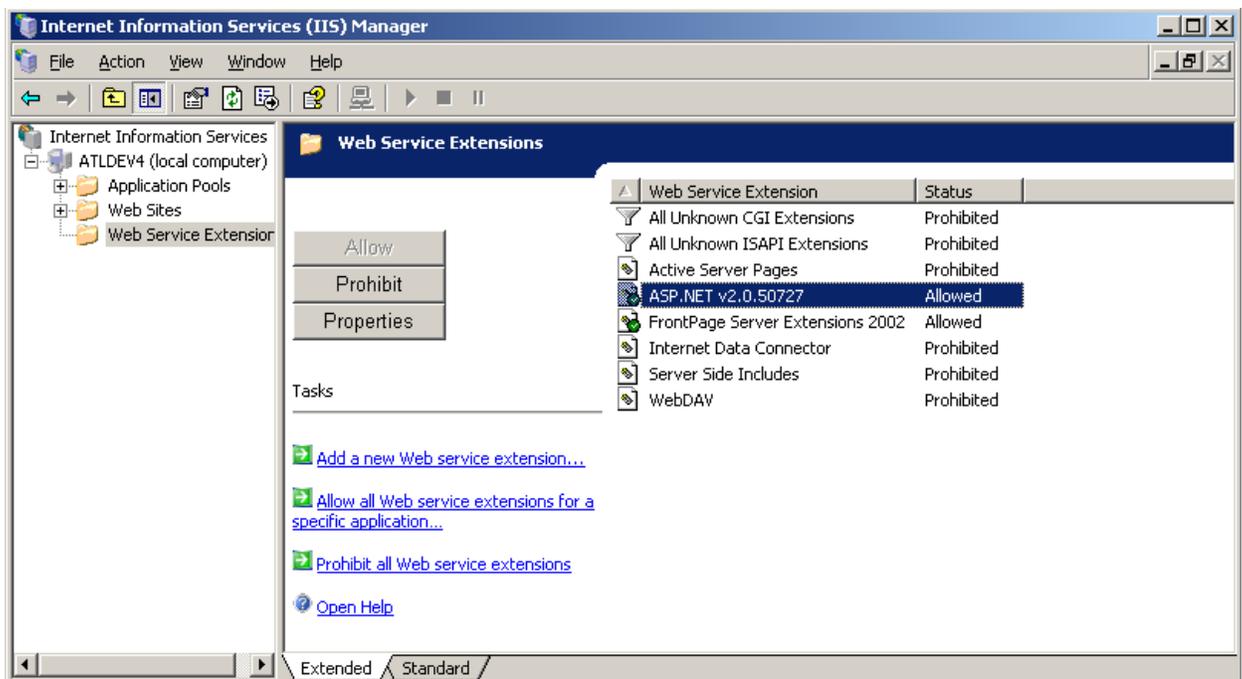
- The paths where all products were installed are displayed after successful installation as shown in the following figure:



34. Click **Finish** to leave the Installer:



Note: Installation on Windows Server 2003 may require updating the IIS permissions to Allowed. Open the Internet Information Services (IIS) manager. (From the Control Panel, select Administrative Tools, and then IIS). Select Allow all Web Services Extensions “ASP.NET” as illustrated in the following figure.



Silent Installation

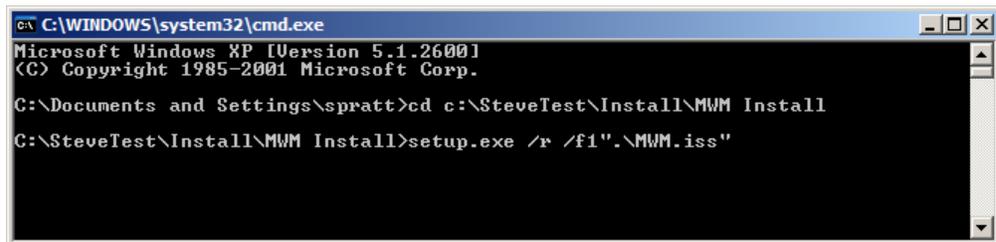
The Oracle Utilities Mobile Workforce Management installer has the capability to “record” and “playback” an installation such that installations can be replicated on numerous machines without user interaction. This is useful for Oracle Utilities Mobile Workforce Management components, such as the Mobile Station, that will be configured identically on numerous machines.

While recording a silent installation, the usual user interface will display while recording user responses. When performing (playing back) a silent installation, no user interface will be displayed and user interaction will take place.

Recording an Installation

To record an installation, open a command window and navigate to the directory in which setup.exe resides. Run the following command to record the installation responses:

```
setup.exe /r /f1".\MWM.iss"
```



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

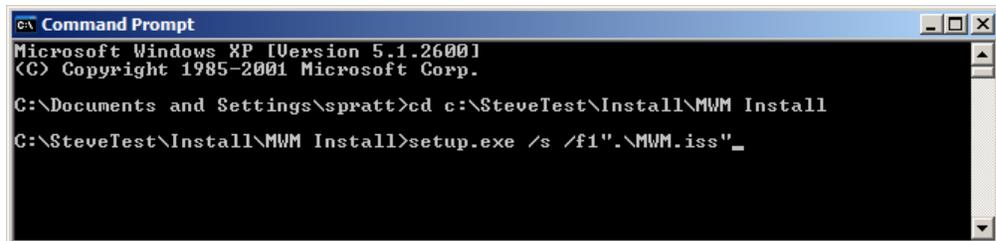
C:\Documents and Settings\spratt>cd c:\SteveTest\Install\MWM Install
C:\SteveTest\Install\MWM Install>setup.exe /r /f1".\MWM.iss"
```

In the example above, all responses are recorded in the file “MWM.iss”.

Playing Back an Installation

To perform (play back) the silent installation, copy the installation directory (Disk 1), including the new MWM.iss file, to the target machine (or run from a network drive). Open a command window and navigate to the directory in which setup.exe resides. Execute the following command to run the installation:

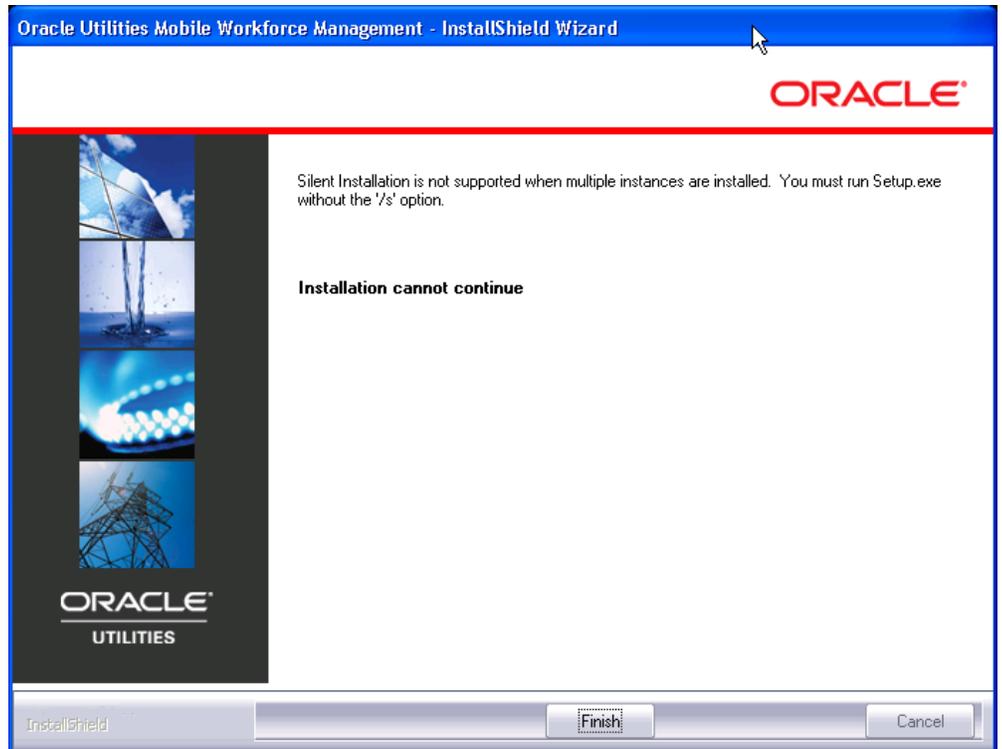
```
setup.exe /s /f1".\MWM.iss"
```



```
Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

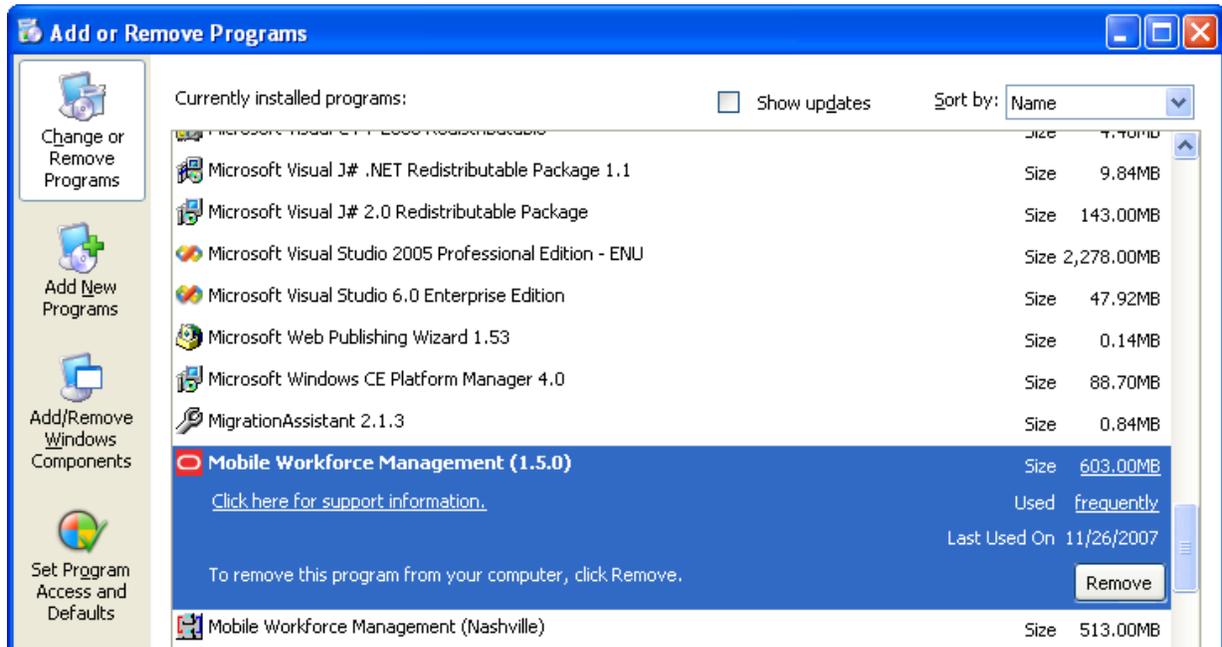
C:\Documents and Settings\spratt>cd c:\SteveTest\Install\MWM Install
C:\SteveTest\Install\MWM Install>setup.exe /s /f1".\MWM.iss" _
```

Note: Silent installation is not supported on any machine with multiple instances. Attempting silent installation in this situation will result in the following error message and installation will not be performed.



Uninstalling Oracle Utilities Mobile Workforce Management

Oracle Utilities Mobile Workforce Management can be uninstalled using the Add/Remove Programs Control Panel.



Multiple instances of Oracle Utilities Mobile Workforce Management can be identified by the Installation Name (shown in parentheses next to the title “Mobile Workforce Management”). You can determine the installation directory by clicking the “Click here for support information” link, which will display the installation directory in the Comments field.



Database Table Creation or Update

After installing the Oracle Utilities Mobile Workforce Management Server component, the database tables must be created for new installations, as described in the next section.

If you are upgrading an existing installation, refer to **Upgrading from Version 1.5.0.12** on page 3-43.

To migrate your existing Oracle Utilities Mobile Workforce Management database to support a different system configuration, refer to **Running the Migration Script** on page 3-43.

Note: The Oracle Utilities Mobile Workforce Management database employs the use of public synonyms. As a result, the database must only contain one MWM schema. This will ensure that the synonyms are referencing the correct schema.

Running the Database Scripts

First-Time Database Creation

If this is a first-time database creation on a new User ID, complete the following procedures.

To build the Oracle Utilities Mobile Workforce Management database tables:

1. Log in to the Oracle Utilities Mobile Workforce Management database user via SQL*Plus.
2. Navigate to and execute:

```
<MWM Install Directory>\Tools\DataBase\Oracle\BuildMWMTab_MWM150.sql
```

This will both create and populate the Oracle Utilities Mobile Workforce Management database with the foundation (Starter) data.

3. Log out of the Oracle Utilities Mobile Workforce Management database.

To build the Oracle Real-Time Scheduler database tables:

Note: These steps are required only if you have chosen to use the Oracle Real-Time Scheduler application with Oracle Utilities Mobile Workforce Management and you are not planning to use an existing Oracle Real-Time Scheduler database installation. If not integrating with Oracle Real-Time Scheduler, skip these steps:

1. Log in to the Oracle Real-Time Scheduler database user via SQL*Plus.
2. Navigate to and execute:

```
<MWM Install Directory>\Tools\DataBase\Oracle\BuildERTSTab_MWM150.sql
```

This will create the Oracle Real-Time Scheduler database.

3. Log out of the Oracle Real-Time Scheduler database.

To set up the Oracle Utilities Mobile Workforce Management Geocoder:

1. Log in to the mapping database (the database containing the Geocoding data) as SYSDBA.
2. Navigate to and execute:

```
<MWM Install Directory>\Tools\DataBase\Oracle\Geocoding\MWM_Geocoder_install.sql
```

3. Log out of the mapping database.

Rebuilding Existing Databases

If you wish to delete and recreate an existing database, complete the following procedures.

To rebuild the Oracle Utilities Mobile Workforce Management database:

1. Login to the Oracle Utilities Mobile Workforce Management database user via SQL*Plus
2. Navigate to and Execute:

```
<MWM Install Directory>\Tools\DataBase\Oracle\RebuildMWMTab_MWM150.sql
```

This will run the drop and create scripts for the Oracle Utilities Mobile Workforce Management database, and then load the foundation (Starter) data.

3. Log out of the Oracle Utilities Mobile Workforce Management database.

To rebuild the Oracle Real-Time Scheduler database:

1. Login to the Oracle Real-Time Scheduler database user via SQL*Plus
2. Navigate to and Execute:

```
<MWM Install Directory>\Tools\DataBase\Oracle\ReBuildERTSTab_MWM150.sql
```

This will run the drop and create scripts for the Oracle Real-Time Scheduler database.

3. Log out of the Oracle Real-Time Scheduler database.

Note: If any errors were encountered during processing of the script, they will be listed in the associated log files: BuildMWMTab_Results.txt, and FoundationData_Results.txt for Oracle Utilities Mobile Workforce Management loads, ERTSsrcmgrCreateLoad.txt, and ERTSFoundationData_Results.txt for Oracle Real-Time Scheduler loads.

Running the Demo Data Scripts

Once you have run the build scripts, you can run the following scripts to load demo data:

Oracle Utilities Mobile Workforce Management Database

1. Login to the Oracle Utilities Mobile Workforce Management database user via SQL*Plus
2. Navigate to and Execute:

```
<MWM Install Directory>\Tools\DataBase\Oracle\LoadDemoMWMTab_MWM150.sql
```

This will populate the Oracle Utilities Mobile Workforce Management database with the demo data.

3. Log out of the Oracle Utilities Mobile Workforce Management database.

Oracle Real-Time Scheduler Database

Note: These steps are required only if you have chosen to use the Oracle Real-Time Scheduler application with Oracle Utilities Mobile Workforce Management and you are not planning to use an existing Oracle Real-Time Scheduler database installation. If not integrating with the scheduler, skip these steps:

1. Login to the Oracle Real-Time Scheduler database user via SQL*Plus
2. Navigate to and Execute:

```
<MWM Install Directory>\Tools\DataBase\Oracle\LoadDemoERTSTab_MWM150.sql
```

This will populate the Oracle Real-Time Scheduler database with the demo data.

3. Log out of the Oracle Real-Time Scheduler database.

Note: If any errors were encountered during processing of the script, they will be listed in the associated log files: LOADTAB_RESULTS.txt for Oracle Utilities Mobile Workforce Management loads, LOADERTSTab_RESULTS.txt for Oracle Real-Time Scheduler loads.

Upgrading from Version 1.5.0.12

If you are upgrading from v.1.5.0.12 to v.1.5.0.13, follow these steps:

1. Log in to the Oracle Utilities Mobile Workforce Management database user via SQL*Plus.
2. Navigate to and execute:

```
<MWM Install Directory>MWM1512_To1513_Master_Update_Script.sql
```

This will update both the Oracle Utilities Mobile Workforce Management and Oracle Real-Time Scheduler schemas.

3. Log out of the database.

Running the Migration Script

The migration script migrates an existing Oracle Utilities Mobile Workforce Management database so that it can be used with a different system configuration.

Note: The migration script will use the configuration settings that were created and saved by the InstallShield installer. Make sure that you have run the Installer and provided all necessary configuration settings for the new installation/environment before running the migration script.

To migrate an existing Oracle Utilities Mobile Workforce Management database, follow these steps:

1. Log in to the Oracle Utilities Mobile Workforce Management database user via SQL*Plus.
2. Navigate to and execute:

```
<MWM Install Directory>\Tools\Database\Oracle\ MigrateConfig.sql
```

3. Log out of the database.

Note: The migration script migrates only the Oracle Utilities Mobile Workforce Management database. Data from other external applications, such as Oracle Real-Time Scheduler, are not migrated.

Oracle MapViewer Component Installation

Oracle MapViewer can be installed in the following configurations:

- **Important Note About Automated Theme and Style Import:**
- **Related Documentation**
- **Adding MapViewer Support to an Existing MWM Installation**
- **Oracle MapViewer Component Installation for OAS**
- **Oracle MapViewer Component Installation for WebLogic**

Note: Please see Appendix B for hints and tips on installing and configuring your MapViewer server prior to continuing with the following section.

Important Note About Automated Theme and Style Import:

The MWM installation assumes that the Oracle IMP (import) utility and SQL plus are installed and configured on the machine on which the MWM server will be installed. When the installation person checks **Enable Map Viewer Support**, a series of SQL scripts and an importing is done behind the scenes. If the MWM server machine doesn't have the IMP utility and SQL plus installed, this step will fail and MapViewer will not be supported. You may want to consider the benefits and costs of having IMP and SQL plus on the server. If you can't have these utilities on the MWM server then you can copy the appropriate script files to the MWM database server and run them from there.

Related Documentation

- Oracle WebLogic 11g Installation Guide (Use the documentation that is included with your package).
- Oracle MapViewer Installation Guide (mapviewer11r1_doc.pdf)
- Navteq Data Installation documentation (provided with your Navteq data)

Adding MapViewer Support to an Existing MWM Installation

Because MWM supports two different mapping systems (one that uses flat files and another that uses Navteq ODF data, the Oracle delivery format), the installer should be aware of the following potential issue. The table DHTMAPLM is used by both mapping systems but in a slightly different form. If you initially install MWM without map viewer support, it will create a version of this table that is incompatible with the Oracle MapViewer. Enabling map viewer support when you rerun the install will not fix this problem because the wrong table has already been created. To fix this problem, follow these steps using the MWM schema on the MWM database.

1. Logon to the MWM database and drop table **DHTMAPLM**.
2. Run the following script in SQL plus in the same session:

```
MWM_HOME\tools\database\oracle\TableSQL-DHT\DHTMAPLMMapviewer.sql
```

Oracle MapViewer Component Installation for OAS

Note: Oracle MapViewer is hosted in an application server or “container” such as WebLogic, Oracle Application Server, or OC4J. Any version of the container (application server) that is supported by MapViewer may be used.

The screenshots of Oracle Application Server shown in this document are taken from OAS version 10.2. While your version may be different, the concepts are the same.

Installation of the Oracle MapViewer component for OAS involves two steps:

- **Manually Update the Data Sources on the OAS Machine**
- **Deploy MWMMapviewer (OAS)**

Manually Update the Data Sources on the OAS Machine

1. Open the following files within the “<MWM Installation Directory>\Tools\MapViewer\Config” directory:
 - data-sources.xml
 - system-jazn-data.xml
 - mapviewer-data-source.xml
2. Copy the sections marked by “Begin Copy”/”End Copy” comments within data-sources.xml file (see the following figure).

```

data-sources.xml - WordPad
File Edit View Insert Format Help

<?xml version="1.0" standalone='yes' ?>

<data-sources
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="http://xmlns.oracle.com/oracleas/schema/data-sour
  schema-major-version="10"
  schema-minor-version="1"
>

<!-- Begin Copy for MWM MapViewer -->
<!-- The Following connection pool and the datasource are defined to be used by MW
  Copy these sections to $ORACLE_HOME/j2ee/home, where $ORACLE_HOME is where th
  was installed. -->
<managed-data-source name="MWMMapviewerDS"
  connection-pool-name="MWMMapviewer Connection Pool"
  jndi-name="jdbc/MWMMapviewerDS"/>

<connection-pool name="MWMMapviewer Connection Pool">
  <connection-factory factory-class="oracle.jdbc.pool.OracleDataSource"
    user="mwmdb1"
    password="->pwForMWM"
    url="jdbc:oracle:thin:@//aerattup-pc.us.oracle.com:1521/MWMDb1">
  </connection-factory>
</connection-pool>

|

<!-- End Copy for MWM MapViewer -->

</data-sources>

```

3. Paste the contents to <oc4jhome>\j2ee\home\config\data-sources.xml, where <oc4jhome> is the directory where Oracle Application Server is installed.

```

data-sources.xml - WordPad
File Edit View Insert Format Help
<?xml version="1.0" standalone="yes"?>
<data-sources
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="http://xmlns.oracle.com/oracleas/schema/data-
  schema-major-version="10"
  schema-minor-version="1"
>
<managed-data-source name="mwmdb1"
  connection-pool-name="mwmdb1"
  jndi-name="jdbc/mwmdb1"/>
<connection-pool name="mwmdb1">
  <connection-factory factory-class="oracle.jdbc.pool.OracleDataSource"
    user="mwmdb1"
    password="->pwForMWM"
    url="jdbc:oracle:thin:@//aerattup-pc.us.oracle.com:1521/HWMDB1">
  </connection-factory>
</connection-pool>
<!--

```

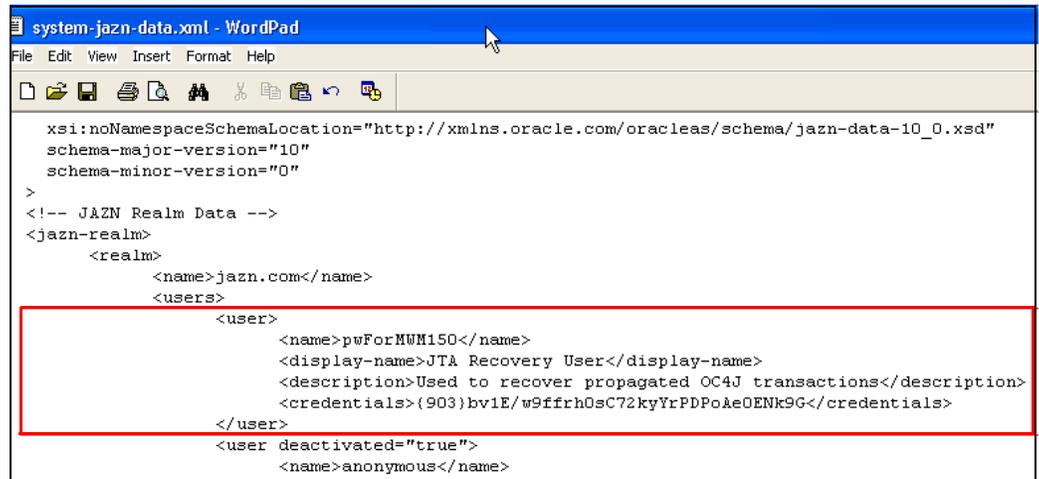
- Copy the sections marked by “Begin Copy”/“End Copy” comments within system-jazn-data.xml file, and enter the password for your MWM User Schema in the <credentials> tag.

```

system-jazn-data.xml - Notepad
File Edit Format View Help
<!-- Begin copy for MWM Mapviewer configuration -->
<!-- This section was added by the MWM Installer to configure the data sources for MWM Mapviewer.
Please copy this section to $ORACLE_HOME/j2ee/home/system-jazn-data.xml, where $ORACLE_HOME is
the directory where Oracle Application server was installed -->
  <user >
    <name>pwForMWM</name>
    <display-name>MWMMapviewer User</display-name>
    <description>Used to recover password for MWMMapviewer</description>
    <!-- Enter the password for your MWM user in place of "!yourMWMPassword" below.
Prefix the password with a "!" so that it will
be encrypted when the server starts.
-->
    <credentials>!yourMWMPassword</credentials>
  </user >
<!-- End copy for MWM Mapviewer configuration -->

```

- Paste it into `<oc4jhome>\j2ee\home\config\system-jazn-data.xml`, where `<oc4jhome>` is where Oracle Application Server is installed.

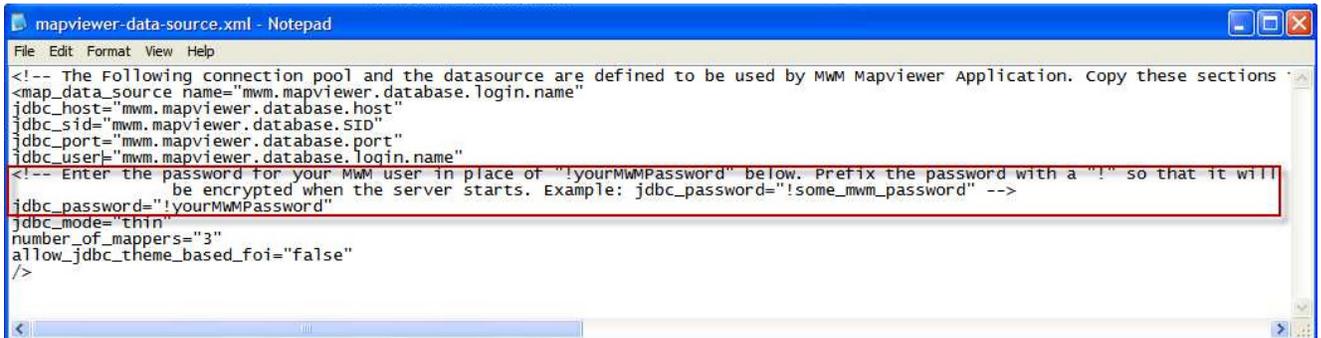


```

system-jazn-data.xml - WordPad
File Edit View Insert Format Help
xsi:noNamespaceSchemaLocation="http://xmlns.oracle.com/oracleas/schema/jazn-data-10_0.xsd"
schema-major-version="10"
schema-minor-version="0"
>
<!-- JAZN Realm Data -->
<jazn-realm>
  <realm>
    <name>jazn.com</name>
    <users>
      <user>
        <name>pwForMWM150</name>
        <display-name>JTA Recovery User</display-name>
        <description>Used to recover propagated OC4J transactions</description>
        <credentials>(903)bv1E/w9ffrh0sC72kyYrPDp0&e0ENk9G</credentials>
      </user>
      <user deactivated="true">
        <name>anonymous</name>
    </users>
  </realm>
</jazn-realm>

```

- Save the files in `<oc4jhome>\j2ee\home\config`.
- Copy the sections marked by "Begin Copy"/"End Copy" comments within the `mapviewer-data-source.xml` file, and enter the password for your MWM User Schema in the `<jdbc_password>` tag.

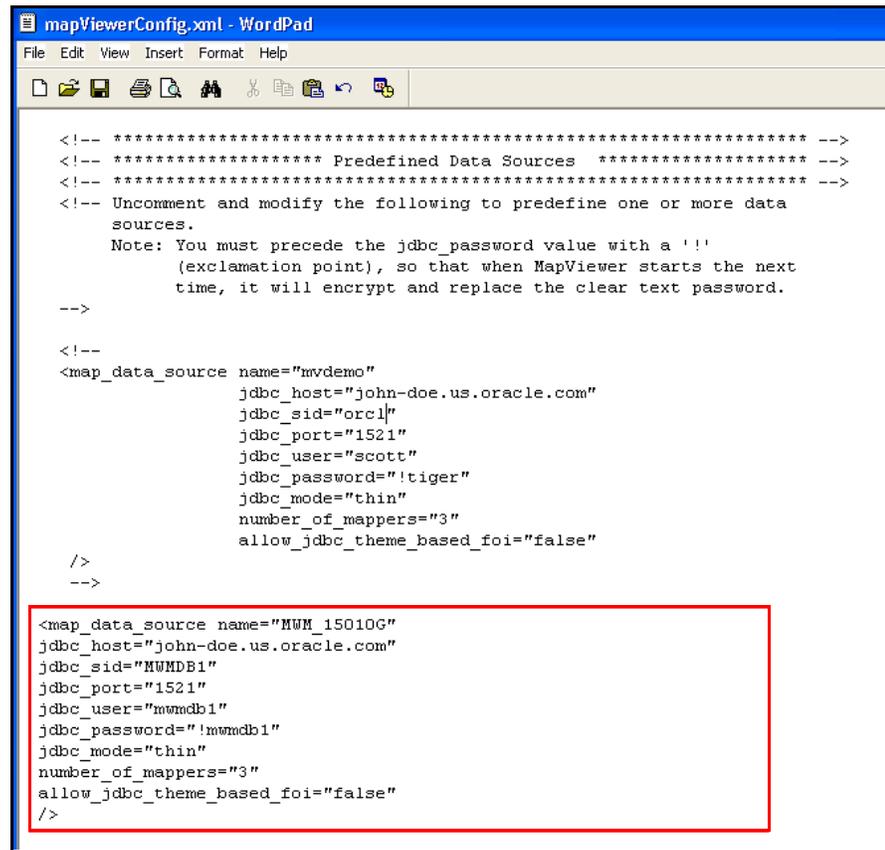


```

mapviewer-data-source.xml - Notepad
File Edit Format View Help
<!-- The Following connection pool and the datasource are defined to be used by MWM Mapviewer Application. Copy these sections -->
<map_data_source name="mwm.mapviewer.database.login.name"
  jdbc_host="mwm.mapviewer.database.host"
  jdbc_sid="mwm.mapviewer.database.SID"
  jdbc_port="mwm.mapviewer.database.port"
  jdbc_user="mwm.mapviewer.database.login.name"
  <!-- Enter the password for your MWM user in place of "!yourMWMPassword" below. Prefix the password with a "!" so that it will
  be encrypted when the server starts. Example: jdbc_password="!some_mwm_password" -->
  jdbc_password="!yourMWMPassword"
  jdbc_mode="thin"
  number_of_mappers="3"
  allow_jdbc_theme_based_foi="false"
/>

```

- Paste it to `<oc4jhome>/j2ee/home/applications/mapviewer/web/WEB-INF/conf/mapViewerConfig.xml`, where `<oc4jhome>` is the directory where Oracle Application Server is installed.



```
<!-- ***** -->
<!-- ***** Predefined Data Sources ***** -->
<!-- ***** -->
<!-- Uncomment and modify the following to predefine one or more data
sources.
      Note: You must precede the jdbc_password value with a '!'
           (exclamation point), so that when MapViewer starts the next
           time, it will encrypt and replace the clear text password.
-->

-->

<!--
<map_data_source name="mvdemo"
                jdbc_host="john-doe.us.oracle.com"
                jdbc_sid="orcl"
                jdbc_port="1521"
                jdbc_user="scott"
                jdbc_password="!tiger"
                jdbc_mode="thin"
                number_of_mappers="3"
                allow_jdbc_theme_based_foi="false"

/>
-->

<map_data_source name="MWM_15010G"
                jdbc_host="john-doe.us.oracle.com"
                jdbc_sid="MWMDB1"
                jdbc_port="1521"
                jdbc_user="mwmdb1"
                jdbc_password="!mwmdb1"
                jdbc_mode="thin"
                number_of_mappers="3"
                allow_jdbc_theme_based_foi="false"
/>
```

- Save `<oc4jhome>/j2ee/home/applications/mapviewer/web/WEB-INF/conf/mapViewerConfig.xml`.

- Restart Oracle Application Server, by clicking on **Restart** in the Oracle Enterprise Manager, as shown in the following figure:

ORACLE Enterprise Manager 10g
Application Server Control

Cluster Topology

Page Refreshed Apr 13, 2008 7:10:22 AM GMT • View Data Manual Refresh

Overview

Hosts 1 Application Servers 1
OC4J Instances 1 HTTP Server Instances 1

Members

View By Application Servers

Start Stop **Restart**

Select All | Select None | Expand All | Collapse All

Select	Focus	Name	Status	Type	Host	CPU (%)	Memory (MB)
<input type="checkbox"/>		▼ All Application Servers					
<input type="checkbox"/>		▼ OAS_1013_aerattup-pc.us.oracle.com		Application Server	aerattup-pc		
<input checked="" type="checkbox"/>		▶ home	↑	OC4J		0.43	121.49
<input type="checkbox"/>		HTTP_Server	↑	Oracle HTTP		0.04	59.68

Downloading from site: http://my.oracle.com/ Local intranet

Deploy MWMapviewer (OAS)

The following procedure describes how to deploy the MWMapViewer.war (Web archive) file.

Note: This procedure assumes that Oracle MapViewer has already been installed and configured.

- To deploy MWMapviewer, open the Applications tab, then select the **Deploy** button:

ORACLE Enterprise Manager 10g
Application Server Control

OC4J: home

Page Refreshed Feb 18, 2008 1:47:51 PM EST

Home Applications Web Services Performance Administration

This page shows the J2EE applications and application components (EJB Modules, WAR Modules, Resource Adapter Modules) deployed to this OC4J instance.

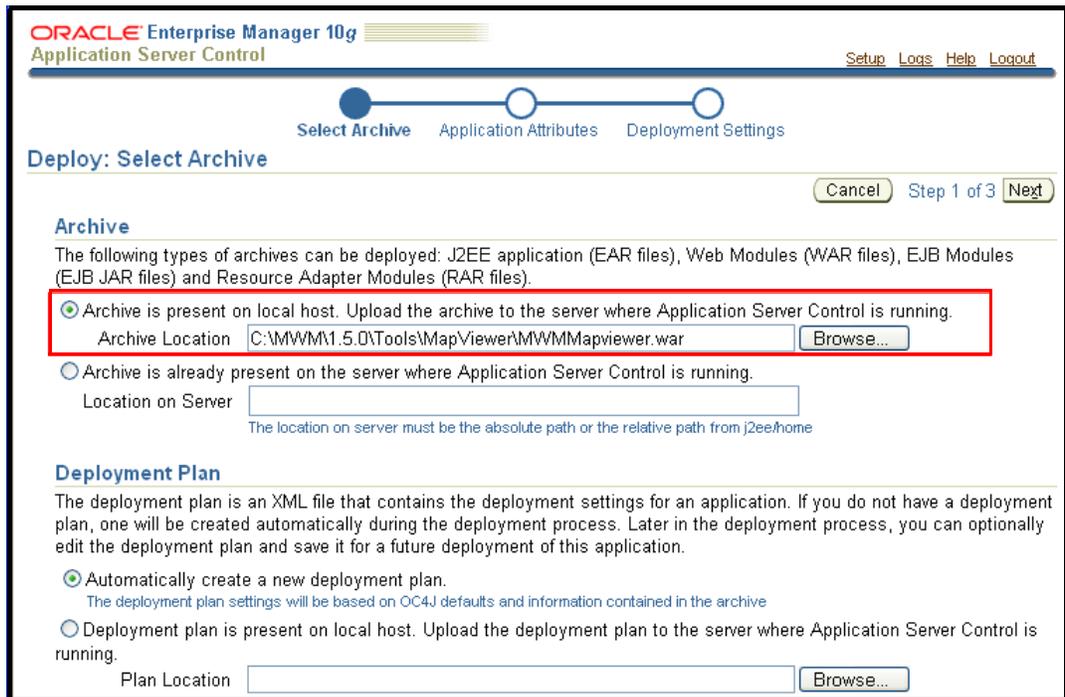
View Applications

Start Stop Restart Undeploy Redeploy **Deploy**

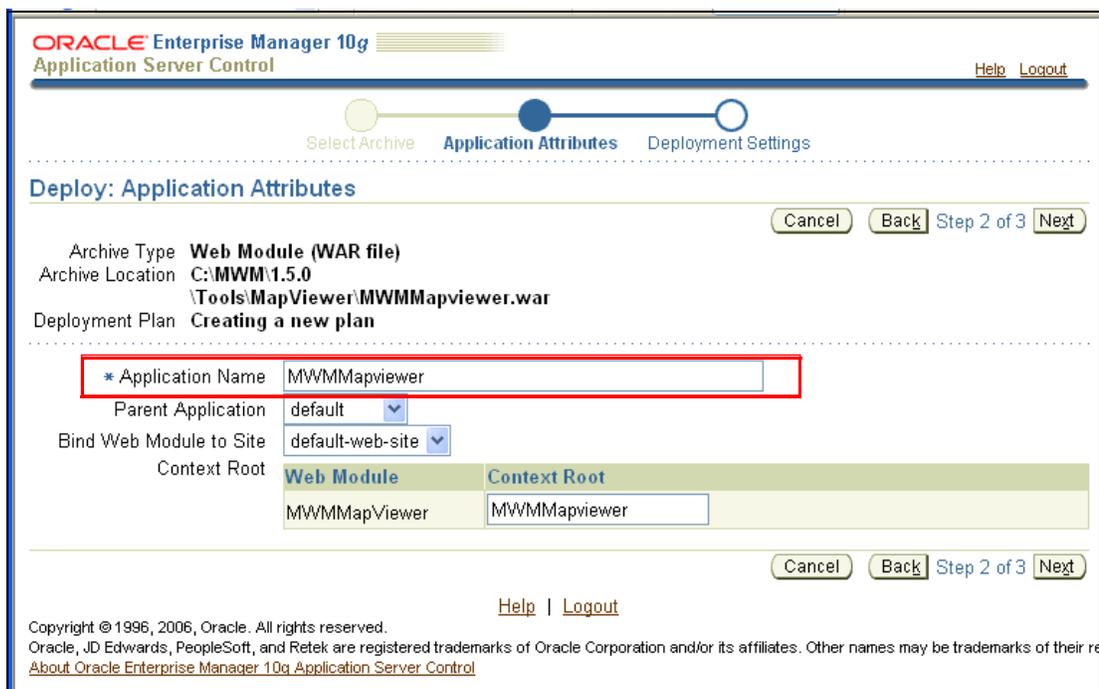
Select All | Select None | Expand All | Collapse All

Select	Name	Status	Start Time	Active Requests	Request Processing Time (seconds)	Active EJB Methods	Application Defined MBeans
<input type="checkbox"/>	▼ All Applications						
<input type="checkbox"/>	ascontrol	↑	Feb 18, 2008 1:30:45 PM EST	1	0.16	0	
<input type="checkbox"/>	▼ default	↑	Feb 18, 2008 1:30:45 PM EST	0	0.00	0	
<input type="checkbox"/>	mapviewer	↑	Feb 18, 2008 1:30:46 PM EST	0	0.00	0	

2. Navigate to the MWMMapviewer.war file located within the <MWMM Installation Directory>\Tools\MapViewer directory, and then click the **Next** button.



3. After OAS has examined the .war file, it will display the following dialog. Enter “MWMMMapviewer” for the default application name.



4. Click **Next**. The OAS admin screen will display a confirmation dialog.

5. Click **Deploy** to complete Oracle MapViewer deployment:

ORACLE Enterprise Manager 10g
Application Server Control

Select Archive Application Attributes **Deployment Settings**

Deploy: Deployment Settings [Cancel](#) [Back](#) Step 3 of 3 [Deploy](#)

Archive Type: **Web Module (WAR file)** Application Name: **MWMMapviewer**
 Archive Location: **C:\MWM\1.5.0** Parent Application: **default**
 \Tools\MapViewer\MWMMapviewer.war Bind Web Module to Site: **default-web-site**
 Deployment Plan: **Creating a new plan** Context Root: **MWMMapviewer**

Deployment Tasks

The table below provides a set of common deployment tasks you might want to perform for this application. Only those tasks that apply to the current application are enabled.

Task Name	Go To Task	Description
Map Environment References		Map any environment references in your application (for example, data sources) to physical entities currently present on the operational environment.
Select Security Provider		A security provider acts as the source for available users and groups when mapping security roles.
Map Security Roles		Map any security roles exposed by your application to existing users and groups. The list of users and groups is obtained from the security provider you selected for this application.
Configure EJBs		Configure the Enterprise JavaBeans in your application.
Configure Clustering		Configure clustering of your application.
Configure Class Loading		Manipulate the classpath of your application.

6. If deployment is successful, the following screen will be displayed providing status of the installation:

ORACLE Enterprise Manager 10g
Application Server Control

Confirmation [Return](#)

The Application "MWMMapviewer" has been successfully deployed.

Progress Messages

```

begins...
[Feb 18, 2008 1:58:21 PM] Unpacking MWMMapviewer.ear
[Feb 18, 2008 1:58:21 PM] Done unpacking MWMMapviewer.ear
[Feb 18, 2008 1:58:21 PM] Unpacking MWMMapviewer.war
[Feb 18, 2008 1:58:22 PM] Done unpacking MWMMapviewer.war
[Feb 18, 2008 1:58:22 PM] Initialize C:\Mapviewer\mv10131_qs\oc4j\2ee\home\applications\MWMMapviewer.ear
ends...
[Feb 18, 2008 1:58:22 PM] Starting application : MWMMapviewer
[Feb 18, 2008 1:58:22 PM] Initializing ClassLoader(s)
[Feb 18, 2008 1:58:22 PM] Initializing EJB container
[Feb 18, 2008 1:58:22 PM] Loading connector(s)
[Feb 18, 2008 1:58:22 PM] Starting up resource adapters
[Feb 18, 2008 1:58:22 PM] Initializing EJB sessions
[Feb 18, 2008 1:58:22 PM] Committing ClassLoader(s)
[Feb 18, 2008 1:58:22 PM] Initialize MWMMapviewer begins...
[Feb 18, 2008 1:58:22 PM] Initialize MWMMapviewer ends...
[Feb 18, 2008 1:58:22 PM] Started application : MWMMapviewer
[Feb 18, 2008 1:58:22 PM] Binding web application(s) to site default-web-site begins...
[Feb 18, 2008 1:58:22 PM] Binding MWMMapviewer web-module for application MWMMapviewer to site default-web-site under context root MWMMapviewer
[Feb 18, 2008 1:58:22 PM] Binding web application(s) to site default-web-site ends...
[Feb 18, 2008 1:58:22 PM] Application Deployer for MWMMapviewer COMPLETES. Operation time: 765 msec
  
```

[Return](#)

[Help](#) | [Logout](#)

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[Oracle Enterprise Manager 10g Application Server Control](#)

At this point, the Oracle MapViewer has been successfully deployed for OAS.

Oracle MapViewer Component Installation for WebLogic

This section describes how to install the Oracle MapViewer component for Oracle Utilities Mobile Workforce Management. For complete instructions on deploying Oracle MapViewer 11g in a WebLogic server environment, refer to the following document:

http://www.oracle.com/technology/products/mapviewer/pdf/mapviewer11gr1_ug.pdf

Note: Any version of Oracle WebLogic that is supported by MapViewer may be used.

The screenshots of Oracle WebLogic shown in this document are taken from WebLogic version 11g. While your version may be different, the concepts are the same.

Installation of the Oracle MapViewer component for WebLogic involves two steps:

- **Deploy MWMMapviewer (WebLogic)**
- **MWMMapviewer.war Data Source Configuration**

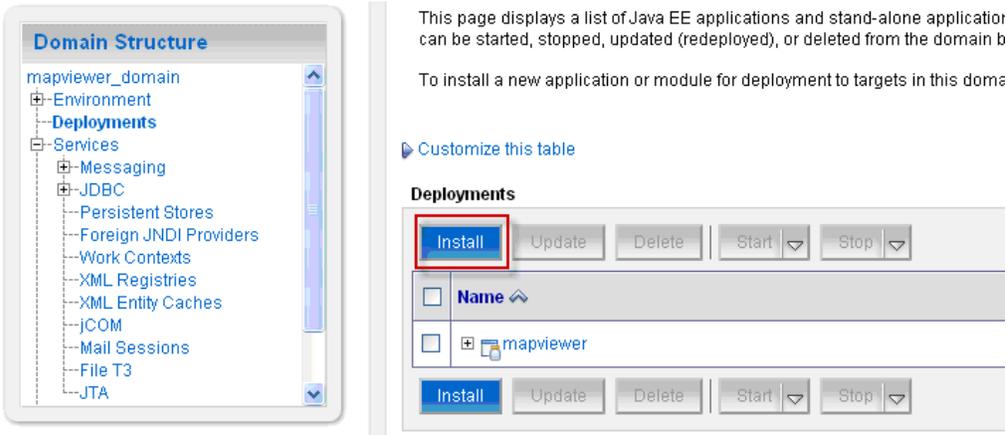
Deploy MWMMapviewer (WebLogic)

1. Browse to your WebLogic admin console at:

http://your_server_name:7141/console

Note: The example above uses port 7141. Your port may vary.

2. Within the Domain Structure, drill down into Deployments and click **Install**.



The screenshot shows the WebLogic Admin Console interface. On the left, the 'Domain Structure' tree is expanded to show 'mapviewer_domain' > 'Environment' > 'Deployments'. On the right, the 'Deployments' table is displayed. The table has columns for 'Name' and actions: 'Install', 'Update', 'Delete', 'Start', and 'Stop'. The 'Install' button for the 'mapviewer' deployment is highlighted with a red box. Above the table, there is a note: 'This page displays a list of Java EE applications and stand-alone application can be started, stopped, updated (redeployed), or deleted from the domain b'. Below the note, it says 'To install a new application or module for deployment to targets in this doma'. There is also a link 'Customize this table'.

3. Navigate to the <MWM Installation Directory>\Tools\Mapviewer directory and select the MWMMapviewer.war file.

Install Application Assistant

Back Next Finish Cancel

Locate deployment to install and prepare for deployment

Select the file path that represents the application root directory, archive file, exploded archive directory, or application archive file.

Note: Only valid file paths are displayed below. If you cannot find your deployment files, [upload your file\(s\)](#) and/or click [upload](#).

Path: c:\MWM1507\Tools\MapViewer\MWMMapviewer.war

Recently Used Paths: c:\MWM1505\Tools\MapViewer
d:\MapViewer\mapviewer11R1_extracted

Current Location: localhost\c:\MWM1507\Tools\MapViewer

MWMMapviewer.war

Back Next Finish Cancel

4. Click **Next**.
5. Select **Install this deployment as an application** and click **Next**.

Install Application Assistant

Back Next Finish Cancel

Choose targeting style

Targets are the servers, clusters, and virtual hosts on which this deployment will run. There are several ways to target your application.

Install this deployment as an application

The application and its components will be targeted to the same locations. This is the most common usage.

Install this deployment as a library

Application libraries are deployments that are available for other deployments to share. Libraries should be used for applications.

Back Next Finish Cancel

6. Unless you have reason to change them, accept the default values on the next page:

7. Click **Finish**.

MWMMapviewer.war Data Source Configuration

The MWMMapviewer.war file you deployed in the previous section contains .jsp page that make database calls against the Oracle Utilities Mobile Workforce Management database schema. Therefore, you must create a JDBC data source within WebLogic. This data source will connect to the Oracle Utilities Mobile Workforce Management database as the MWM user. This is the only JDBC data source created within WebLogic.

To create the JDBC data source:

1. Browse to the admin console for the WebLogic domain where you deployed the Oracle MapViewer.
2. Within the Domain Structure, drill down into JDBC/Datasources and create a new JDBC data source.

Note: The JDBC data source name should match the Oracle Utilities Mobile Workforce Management database username. For example, if the Oracle Utilities Mobile Workforce Management database username is “MWM”, the WebLogic JDBC connection should be named “MWM” and its JNDI name should be “jdbc/mwm”.

Create a New JDBC Data Source

Back Next Finish Cancel

JDBC Data Source Properties

The following properties will be used to identify your new JDBC data source.
* Indicates required fields

What would you like to name your new JDBC data source?

Name: MWMUserName

What JNDI name would you like to assign to your new JDBC Data Source?

JNDI Name: jdbc/MWMUserName

What database type would you like to select?

Database Type: Oracle

Back Next Finish Cancel

Create a New JDBC Data Source

Back Next Finish Cancel

JDBC Data Source Properties

The following properties will be used to identify your new JDBC data source.

Database Type: Oracle

What database driver would you like to use to create database connections? Note: * indicates that the driver is explicitly supported by Oracle WebLogic Server.

Database Driver: *Oracle's Driver (Thin) for Instance connections; Versions:9.0.1,9.2.0,10,11

Back Next Finish Cancel

3. Click Next.

4. Complete the next screen using the settings shown below:

The screenshot shows a dialog box titled "Create a New JDBC Data Source". At the top, there are four buttons: "Back", "Next", "Finish", and "Cancel". Below this is a section titled "Transaction Options" with the text: "You have selected non-XA JDBC driver to create database connection in your new data source." Below that is the question: "Does this data source support global transactions? If yes, please choose the transaction protocol". There are three radio button options: "Supports Global Transactions" (which is checked), "Logging Last Resource", and "Emulate Two-Phase Commit". Below these is the "One-Phase Commit" option, which is selected with a green dot. At the bottom, there are four buttons: "Back", "Next", "Finish", and "Cancel". The "Next" button is highlighted with a red rectangle.

5. Click **Next**.

6. Complete the next screen using the settings shown below:

Create a New JDBC Data Source

Back Next Finish Cancel

Connection Properties
Define Connection Properties.

What is the name of database you would like to connect to?

Database Name: ORCL

What is the name or IP address of the database server?

Host Name: my-server-name

What is the port on the database server used to connect to the database?

Port: 1521

What database account user name do you want to use to create database connections?

Database User Name: MWM150

What is the database account password to use to create database connections?

Password: ...

Confirm Password: ...

Back Next Finish Cancel

7. Click **Next**.

- Click **Test Configuration** and verify that the connection test was successful.

The screenshot displays the Oracle WebLogic console interface during the 'Create a New JDBC Data Source' wizard. On the left, the 'Domain Structure' tree shows the navigation path: mapviewer_domain > Environment > Deployments > Services > Messaging > JDBC > Data Sources. The main content area shows the 'Test Database Connection' step, which includes a 'Test Configuration' button (highlighted with a red box), 'Back', 'Next', 'Finish', and 'Cancel' buttons. A red arrow points to the 'Finish' button. A message box at the top of the wizard area displays a green checkmark and the text 'Connection test succeeded.' Below the buttons, the 'Test Database Connection' section contains instructions and input fields for 'Driver Class Name' (oracle.jdbc.OracleDriver), 'URL' (jdbc:kerma-us-svr:1521:ORCL), 'Database User Name' (mvdemo), and 'Password' fields.

- Click **Finish**.

Installing Additional Components

This section describes the additional steps required to configure Oracle Utilities Mobile Workforce Management and other external applications used as part of the Oracle Utilities Mobile Workforce Management solution.

Web Services

Web services are installed as part of the Router installation process. This section describes the Web services that are installed when the Router component is installed.

Oracle Utilities Mobile Workforce Management Web Services

MWMOMSWebService supports the following operations:

- ERT Expiration Notification
- Heartbeat Response – ensures the service is available
- Cancel Service Order – Cancels a given service order
- Create Service Order

SPLWebService supports the following operations:

- Submit – Creates a Mobility Service Request from other host systems.

MWMWebService supports the following operations:

- External Alert Message – Allows services outside Oracle Utilities Mobile Workforce Management (Oracle Real-Time Scheduler, Oracle Utilities Network Management System, etc.) to send messages to Oracle Utilities Mobile Workforce Management for display on Dispatch Workstations.
- Heartbeat – ensures the service is available
- ScheduledOrder – adds an order to the system
- ShiftDetails – retrieves the details for a given shift
- ShiftUpdate – updates a given shift with new information.

Verify Installation of Web Services

If the Router component was installed, you can verify the Oracle Utilities Mobile Workforce Management Web Services using the instructions below:

1. Open Internet Explorer and type in the link:

```
http://localhost:<port>/MWM/<Installation Name>/MWMWebService/MWMService
```

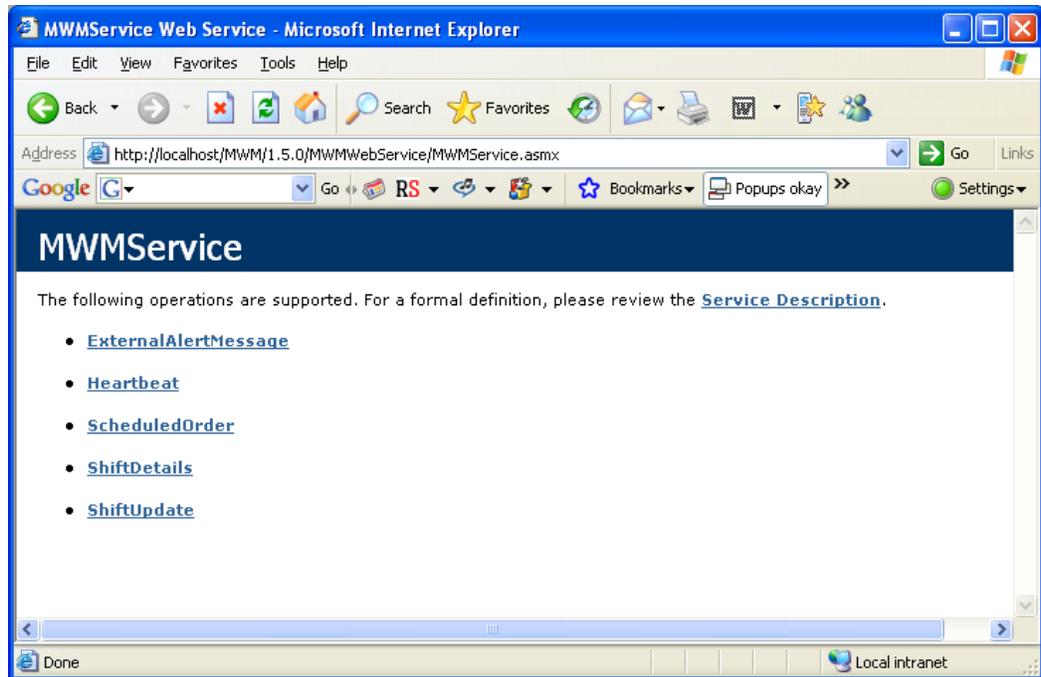
Where <port> refers to the port number the IIS web service is running on and <Installation Name> refers to the name given to this installation.

2. Open Internet Explorer and type in the link:

```
http://localhost:<port>/MWM/<Installation Name>/MWMOMSWebService/MWMOMSService
```

where <port> refers to the port number the IIS web service is running on and <Installation Name> refers to the name given to this installation.

A screen similar to the following is displayed:

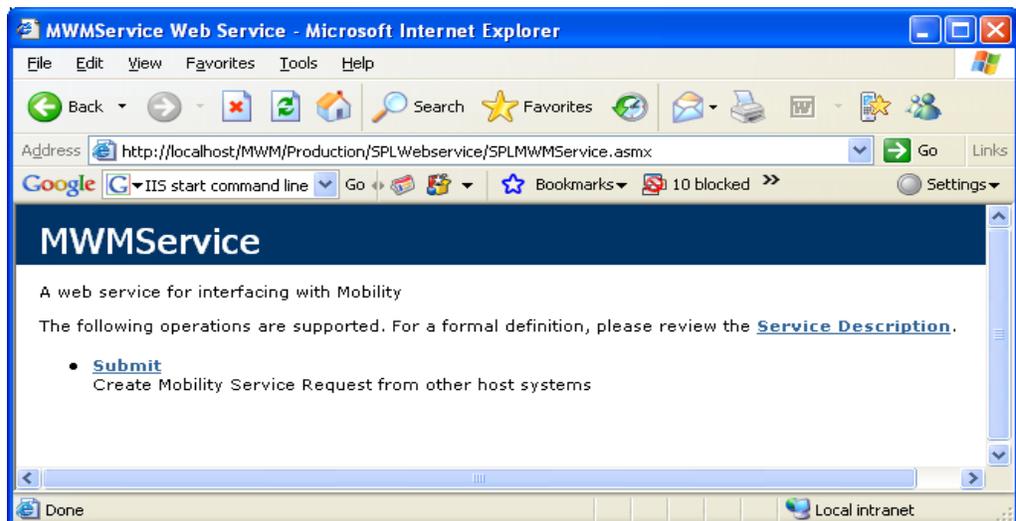


3. Open Internet Explorer and type in the link:

`http://localhost:<port>/MWM/<Installation Name>/SPLWebService/SPLMWMService`

where <port> refers to the port number the IIS web service is running on and <Installation Name> refers to the name given to this installation.

A screen similar to the following is displayed:



Note: Be sure to test each web service from another machine to make sure the security settings were correct. To test from another machine, you will need to change 'localhost' in the example link above to the machine name or IP address of the machine where the web service is installed.

Oracle Utilities Mobile Workforce Management Integration Manager

This section describes how to install the Oracle Utilities Mobile Workforce Management Integration Manager (IM) and its supporting components for integration to the Oracle Real-Time Scheduler system. The installation is composed of several component pieces of software along with several prerequisites.

Note: These steps should be performed on the machine where the Oracle Utilities Mobile Workforce Management Router is installed. If you are not integrating Oracle Utilities Mobile Workforce Management with the Oracle Real-Time Scheduler, you may skip all steps associated with installing the Oracle Utilities Mobile Workforce Management Integration Manager.

Step 1: Installing Java

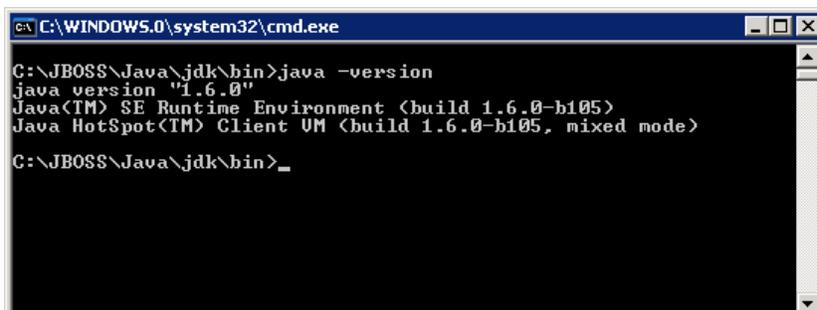
Verifying Your Java Installation

Before installing the JBOSS Integration Manager, you'll need to have JDK version 1.6 (sometimes referred to as JDK6) installed.

You can check the version used at the “system” level by running a command prompt and entering:

```
C:\Java -version
```

This command will give you the version of java installed (see below):



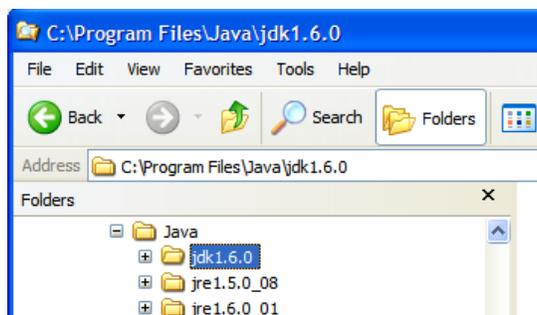
```

C:\WINDOWS\system32\cmd.exe
C:\JBOSS\Java\jdk\bin>java -version
java version "1.6.0"
Java(TM) SE Runtime Environment (build 1.6.0-b105)
Java HotSpot(TM) Client VM (build 1.6.0-b105, mixed mode)
C:\JBOSS\Java\jdk\bin>_
  
```

Tips:

- If the “java –version” command is not run from the \bin folder of the java installation folder, java.exe will be run from the first java\bin folder found in the “path” environment variable. Therefore, it is possible to view the version of a java installation that you did not intend to view.
- Quite often the easiest way to see which version(s) of java you have installed is to simply browse to *c:\program files\java* in a file explorer window and inspect the names of the subfolders.

Java is typically (though not always) installed to: “c:\program files\java\”



- Keep in mind that the objective is to verify that you have a recent enough version of the JDK installed and that the JAVA_HOME environment variable points to a JDK 1.6 or higher.

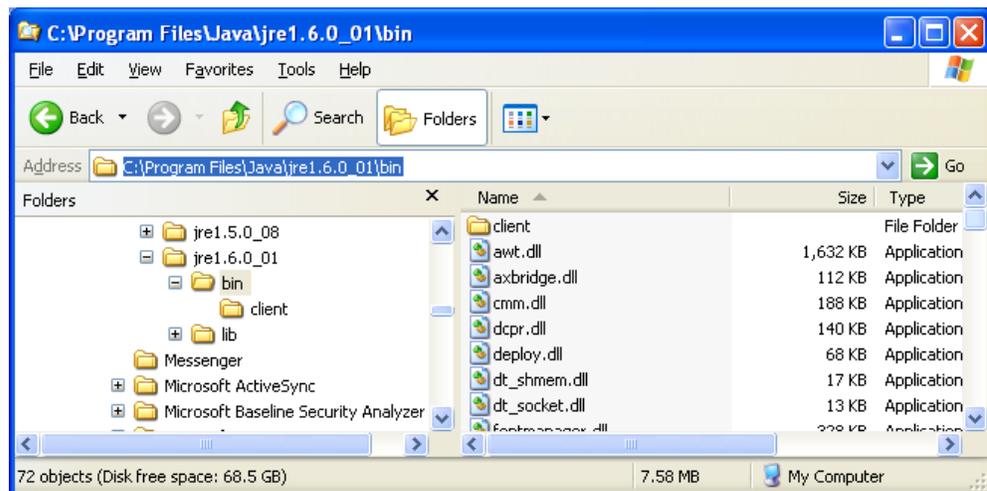
Note: The java version you are checking should be from a JDK (java development kit) not from the JRE (java runtime environment). The JRE is more common.

If you have both a JDK and a JRE installed, make sure that one of the following is true when you run the java –version command:

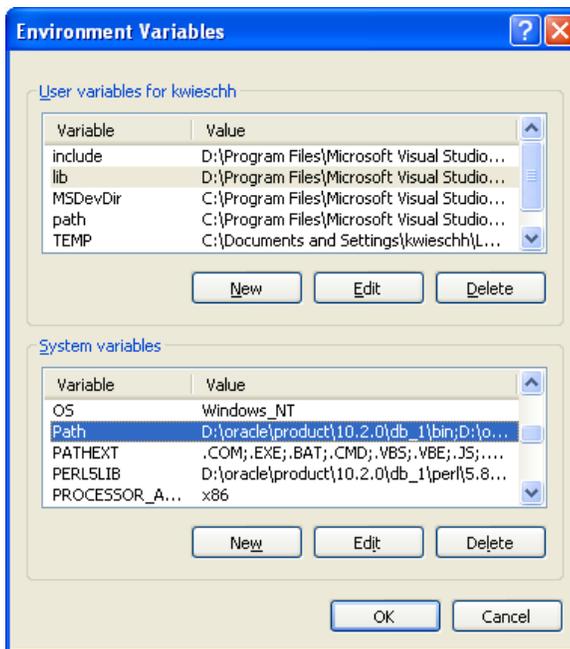
- At the command prompt, you have changed to the \bin folder of the java installation you are version-checking.
- When running the java –version command from an arbitrary folder, the path to \bin of the java executable you intend to run should exist in and should precede any other java\bin path in the “path” environment variable.

If Java 1.6 has been installed, but the correct version doesn't appear, it may be that an earlier version of Java was installed but the System Environment variable PATH was not set correctly.

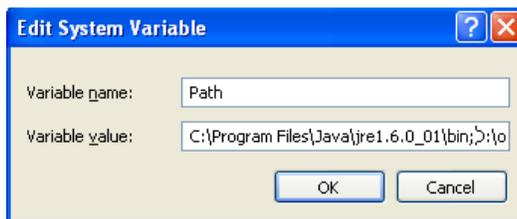
- Verify the required version of Java is installed by searching for the JDK in the Java Directory.
- Copy the path for the required version to the clipboard.



- Open the Control Panel, then select **System** to display the System Properties dialog.
- Select the Advanced tab, then click **Environment Variables**.



- Select the System Variable “Path” and click **Edit**.
- Paste the path name in front of the Variable value and follow it with a semi-colon (“;”).



- Click **OK** on all dialogs to save and close the System control panel.
- Open a new instance of the command prompt and type “java -version” at the command line:

```

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\kwieschh>java -version
java version "1.6.0_01"
Java(TM) SE Runtime Environment (build 1.6.0_01-b06)
Java HotSpot(TM) Client VM (build 1.6.0_01-b06, mixed mode, sharing)

C:\Documents and Settings\kwieschh>_
    
```

At this point, you should see the correct java version displayed.

Installing the Required Java Version

Note: This section is only required if during the above process, you have found that you do NOT have JDK 1.6 or higher installed; otherwise, proceed to the 'Setting Environment Variable' section.

If you do not have JDK 1.6 or higher, follow these steps:

1. Download jdk6 u32 **or later** from:

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

Note: JDK6, update 32 (JDK 6 u32) was the latest at the time of this writing, but may have been updated since then. It would be acceptable to install the most recent version.

The JDK download screen is shown below.

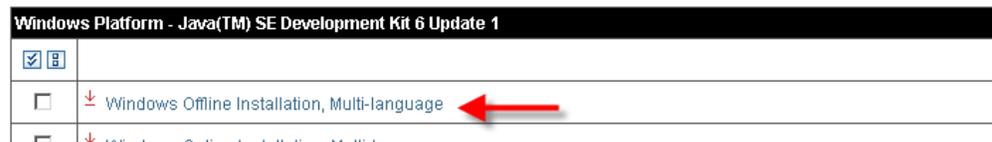


2. Click the **Download** button.
3. Click **Accept Agreement**, and then select the upgrade to install.

Required: You must accept the license agreement to download the product.

- Accept** License Agreement | [Review License Agreement](#)
 Decline License Agreement

Download selected with Sun Download Manager Easily manage your downloads (pause, resume, restart, verify). » [Learn more](#)

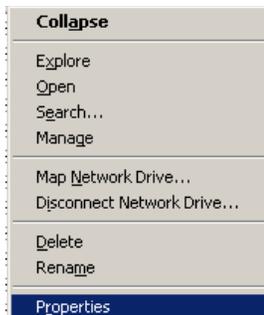


4. Once the file is downloaded, double-click on the file to start the installation wizard.

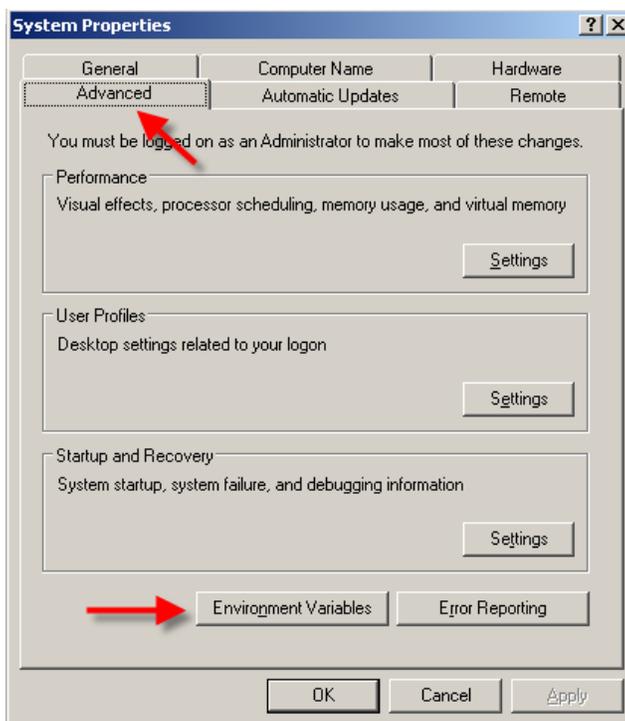
Setting Environment Variables

Once the required Java version is installed, follow these steps to add a system environment variable called JAVA_HOME:

1. From the Start Menu, Desktop, or Windows Explorer, right-click on **My Computer** and select **Properties** from the context menu.

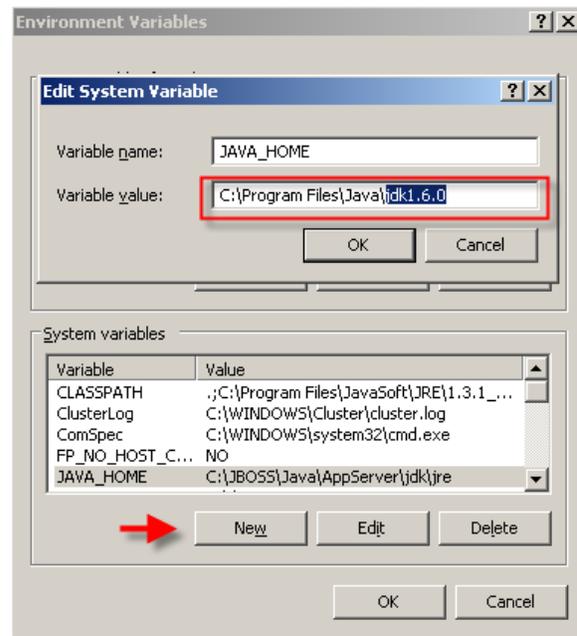


2. Select the **Advanced** tab and click the Environment Variables button.



- Click **New** to add a new System variable called JAVA_HOME. Specify the path to your Java JDK folder, as shown below.

IMPORTANT! This should not be a JRE folder!



- Click OK until all Properties dialogs are closed.

IMPORTANT! Any currently open command prompt windows must be closed for any changes to environment variables (“path”, “java_home” etc.) to take effect.

Step 2: Installing the JBoss Application Server

The JBoss Application Server / JBoss Messaging installation is now fully automated. All that is required is to download the ‘jems-installer-1.2.1.CR4.jar’ installer package to your MWM_INSTALL_ROOT/Jboss Integration/Deployment folder.

- Download the JBoss Application Server version 4.2.2.GA from:

<http://sourceforge.net/projects/jboss/files/JEMS-Installer/jems-installer-1.2.1.CR4/>

Looking for the latest version? [Download jboss-osi-installer-1.1.1.jar \(3.6 MB\)](#)

Home / JEMS-Installer / jems-installer-1.2.1.CR4

Name	Modified	Size	
Parent folder			
jems-installer-1.2.1.CR4.jar.SHA-256	2008-01-29	65 Bytes	
jems-installer-1.2.1.CR4.jar	2008-01-29	89.4 MB	
jems-installer-1.2.1.CR4.jar.MD5	2008-01-29	33 Bytes	
Totals: 3 Items		89.4 MB	

Note: Unlike prior versions, do NOT run the installer manually. It will be installed automatically with the appropriate options when the “Install MWMIM.bat” file is run later.

2. Save the file to: MWM_INSTALL_ROOT/JBoss Integration/Deployment

Step 3: Download Apache ANT

Apache ANT is required to build the JBoss Messaging release and deploy it properly to the JBoss Application Server. Once the build of messaging is done, the Oracle Utilities Mobile Workforce Management Integration Manager does not use ANT.

Follow these steps to install Apache ANT:

1. Download Apache ANT from the following location:
<http://archive.apache.org/dist/ant/binaries/apache-ant-1.7.0-bin.zip>
2. Save the zip file to <MWM Install Directory>\JBoss Integration\Deployment

Step 4: Download JBoss Rules

1. Download **Drools 4.0.7 Binaries** from the following location:
<http://download.jboss.org/drools/release/4.0.7.19894.GA/> (as shown below):



2. Save the downloaded zip file to:

<MWM Install Directory>\JBoss Integration\Deployment

Step 5: Download JBOSS Native

JBOSS Native is used to run the Integration Manager and JBOSS Application server as a Windows service. This functionality replaces the prior “Java Service Wrapper” functionality that was documented in: ‘Jboss Integration\SDK\Running JBOSS as a windows service.doc’.

1. Download the JBOSS Native package from:

<http://jboss.org/file-access/default/members/jbossws/downloads//jbossws-native-2.0.3.GA.zip>

Save the .zip file to <MWM Install Directory>\JBoss Integration\Deployment

The batch file ‘Install MWMIM.bat’ will take care of un-zipping the file to the proper location.

Important: The filename / version downloaded MUST be: **jboss-native-2.0.3-windows-i686-ssl.zip**

Step 6: Download Apache Axis

1. Download Apache Axis version 1.4 Final from:

http://www.globalish.com/am/ws/axis/1_4/axis-bin-1_4.zip

2. Save it to: <MWM Install Directory>\JBoss Integration\Deployment

Step 7: Install the Oracle Utilities Mobile Workforce Management Integration Manager

1. Verify that all zip files above have been downloaded to:

<MWM InstallDirectory>\JBoss Integration\Deployment

2. From a command prompt, run the following batch file, which updates JBoss settings to perform the package install and add the files necessary to run the Integration Manager:

<MWM InstallDirectory>\JBoss Integration\Install MWMIM.bat

3. When prompted, choose the install type:

```

=====Installing the JBOSS Application Server=====
=
=       List of Installed components:
=
= *Oracle MWM Integration Support
= *JBoss Application Server Version:   4.2.2 GA
= *JBoss Rules Version:               3.0.6 with dependencies
= *Apache Axis:                       1.4
= *Oracle YDK:                         10.2.0.2.0
=
=====
Choose an install type
-----
<I> Interactive Install - Choose this option if upgrading your JBOSS Installation
<A> Automated installation - This is a brand new MWM installation
<Q> Quit
  
```

The “Automated installation” option is for new installations. Selecting the ‘Interactive install’ will allow you to specify database connectivity information such as User Name, pwd, and TNS name.

Note: The JBOSS application server now utilizes an ORACLE TNS entry to support RAC environments, rather than a full JDBC ‘thin’ URL, which included the machine name, port, and SID.

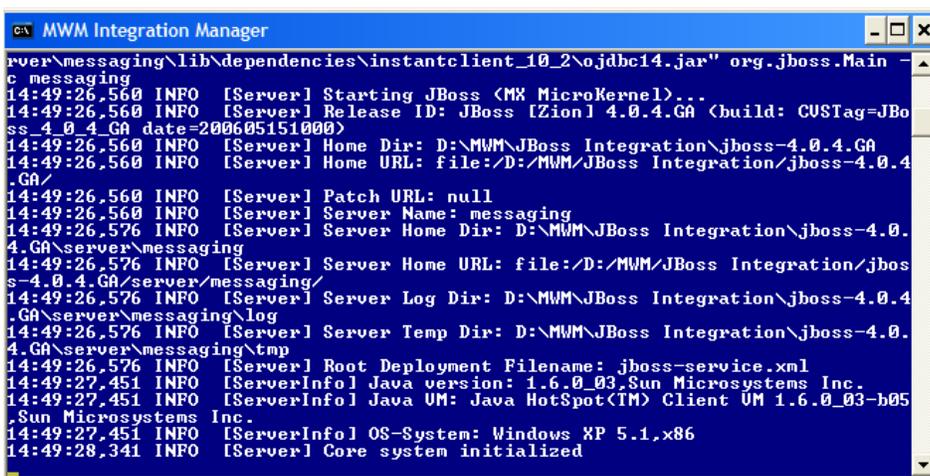
Step 8: Starting the Integration Manager / JBoss Server

As of the JBOSS version 4.2.2.GA install, the Oracle Utilities Mobile Workforce Management Integration Manager is installed as a Windows service. It is recommended that the integration be run from the service console.

Additionally, you may launch the integration manager from the Start menu (see the following figure).

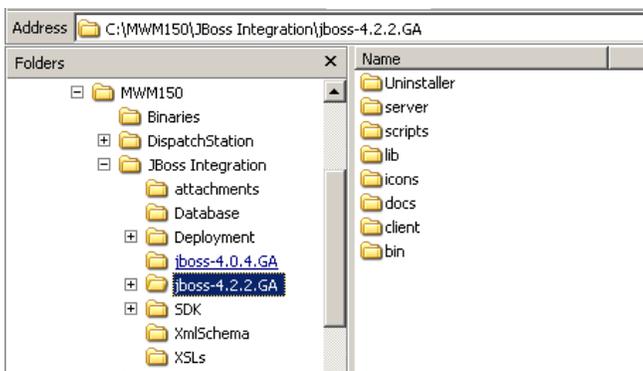


The Integration Manager dialog is displayed, as shown in the following figure:



Integration Manager Upgrade Notes

JBoss Application Server installations are version-specific. For example, if an existing Integration Manager installation utilizes the JBoss 4.0.4 release, your Oracle Utilities Mobile Workforce Management installation folder directory structure would look as follows:



Shortcuts

Any start menu, desktop, or quick launch shortcuts used to start the Integration Manager should be updated to reflect the new installation path. Also note that a new switch is required to start the integration on the command line. The previous command was:

```
run.bat -c messaging
```

The new command for 4.2.2.GA is:

```
run.bat -c messaging -b 0.0.0.0
```

The `-b` switch tells the JBOSS application server to allow connections from the IP address specified. For example, a value of 10.141.0.0 tells the server to accept connections from any IP address starting with 10.4. By default (without this switch), the application server will only allow connections from 127.0.0.1 (localhost). A value of 0.0.0.0 tells the server to accept connections from any IP address.

Services

The 4.2.2 GA version is automatically installed and configured as a service.

Oracle Real-Time Scheduler

This section describes how to install and configure Oracle Real-Time Scheduler v.1.12.0.0 to run with Oracle Utilities Mobile Workforce Management v.1.5.

Step 1: Install Oracle Real-Time Scheduler

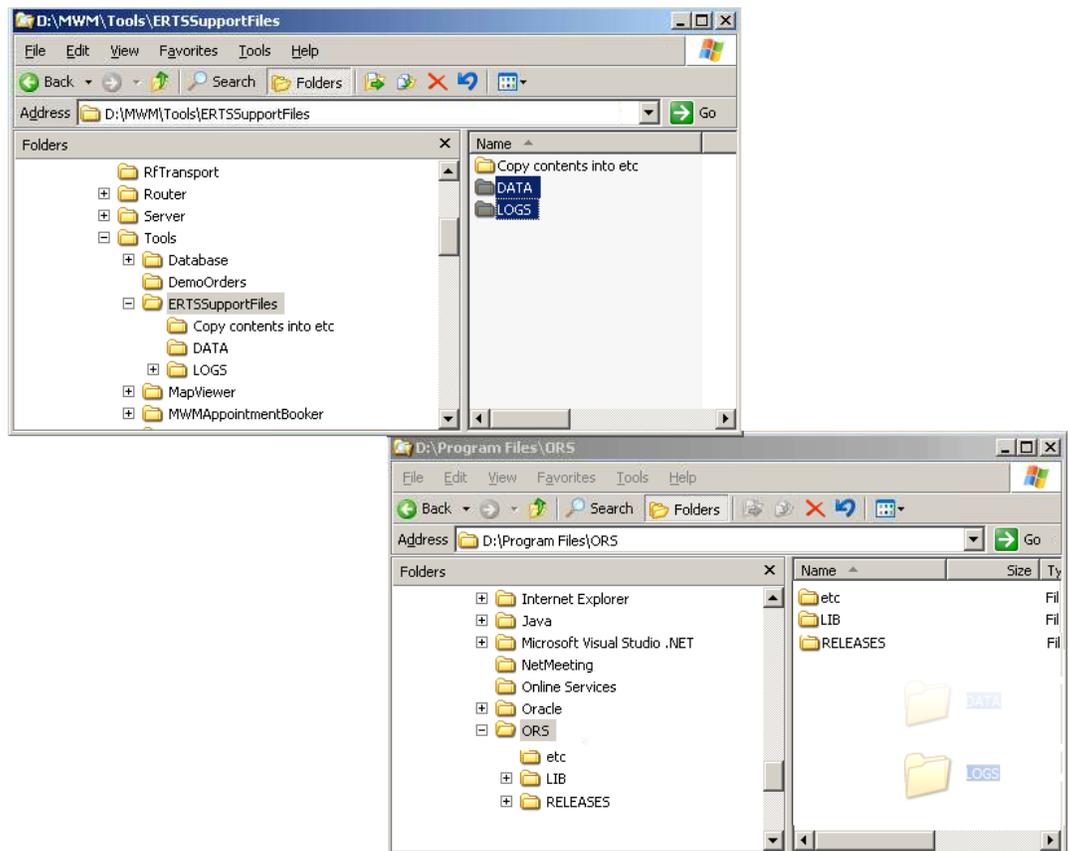
Follow the Oracle Real-Time Scheduler installation manual to install the Oracle Real-Time Scheduler Planner and Resource Manager applications.

Note: These are the only steps in the Oracle Real-Time Scheduler installation document that need to be performed.

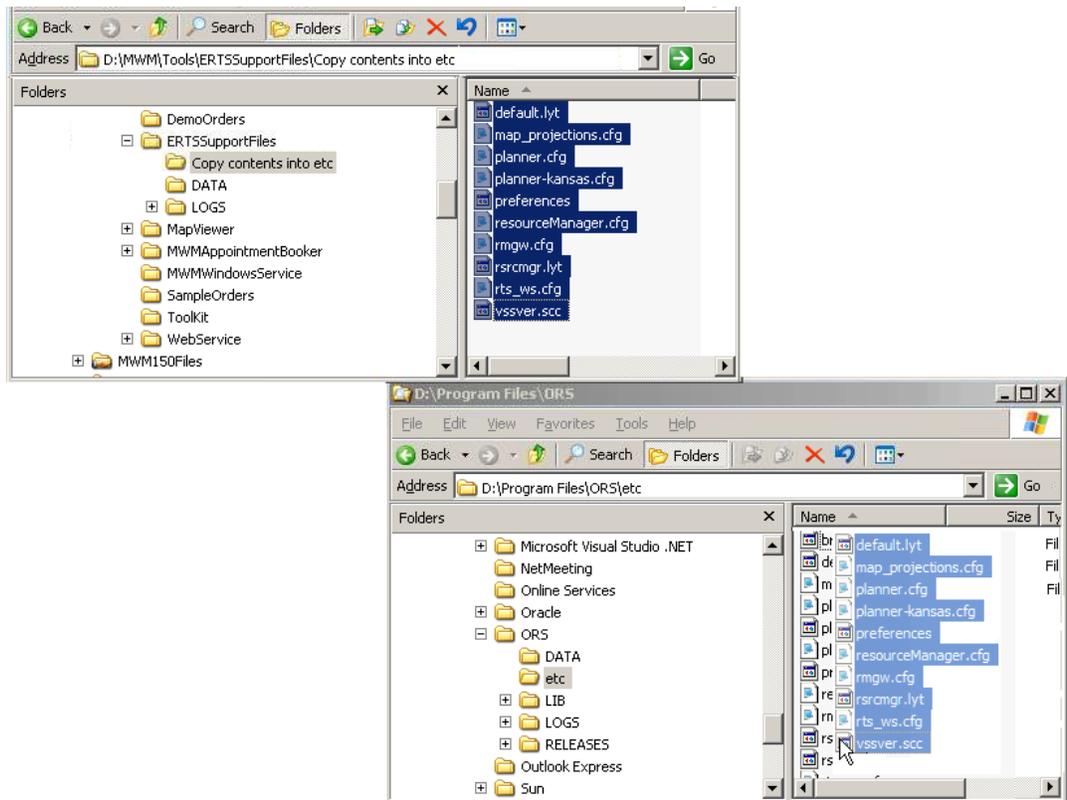
Step 2: Install Configuration Files

A set of configuration files is provided with Oracle Utilities Mobile Workforce Management. Follow these steps to install the configuration files:

1. Copy the <MWM Install Directory>\Tools\ERTSSupportFiles to the machine where Oracle Real-Time Scheduler is installed, as shown in the following figure.
 - Copy the “DATA” and “LOG” **folders** to the Oracle Real-Time Scheduler installation root directory (typically c:\Program Files\ORS):



- Copy the **contents** of “Copy contents into etc” into the “etc” folder. (Open the folder, then select and copy all the files within the folder.) Allow existing files to be overwritten.

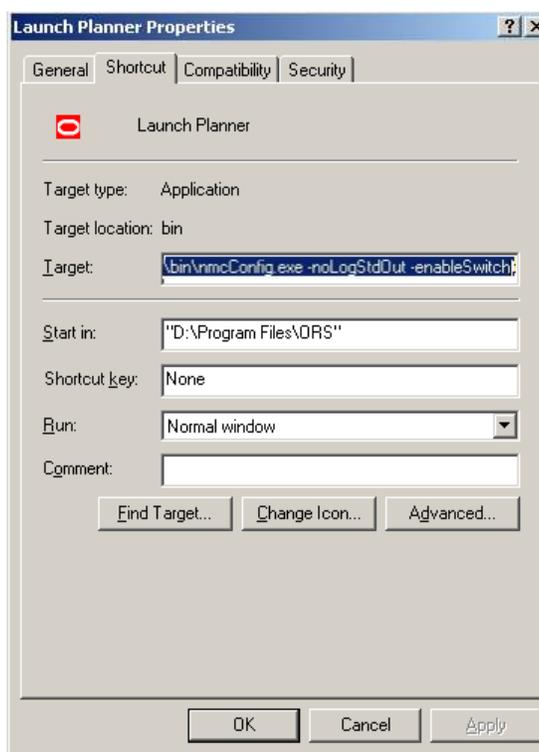


Verifying Installation

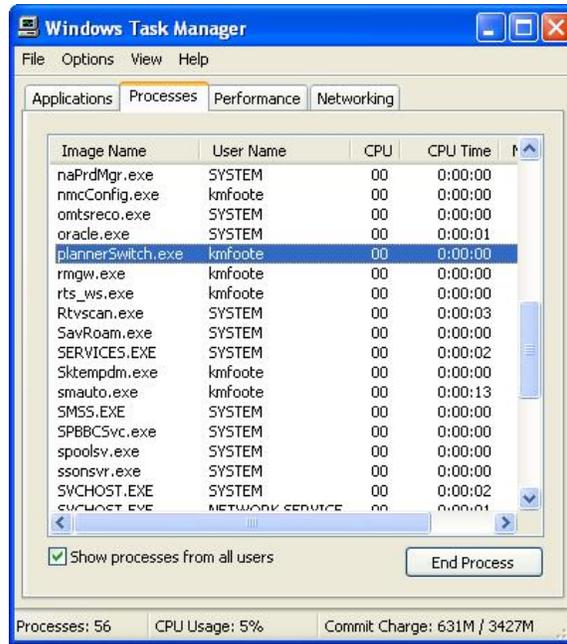
Follow the instructions in the following sections to verify that you have properly installed Oracle Utilities Mobile Workforce Management and additional components.

Verify Oracle Real-Time Scheduler Installation

1. From the Start Menu, select **ORS>Oracle Real-Time Scheduler**.
2. On the Launch Pad dialog, look for buttons labeled **Start Server** and **Start Switch**.
3. If Start Server and Start Switch buttons appear on the dialog, continue to step 4. If the Start Switch button is not present, follow these steps to enable it:
 - Select **ORS** from the Start Menu, then right-click on the **Launch Planner** menu option and select **Properties** from the context menu.
 - Add “-enableSwitch” to the end of the string in the Target box:



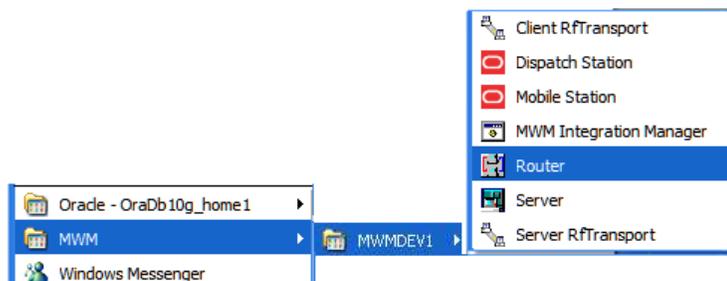
- Restart the Launch Pad by selecting **ORS>Launch Planner** from the Start Menu (the Start Switch button will now appear on the Launch Pad).
4. Click **Start Server**. This starts the smauto process.
 5. Click **Start Switch**. This starts the PlannerSwitch process.
 6. From the Start Menu, select **ORS>Resource Manager Gateway**. This starts the rmgw process.
 7. From the Start Menu, select **ORS>Resource Manager Web Service**. This starts the rts_ws process.
 8. Open the Task Manager and verify that the PlannerSwitch, smauto, rmgw, and rts_ws applications are running.



9. Once you have completed the above steps, you have verified that the Oracle Real-Time Scheduler installation was successful.

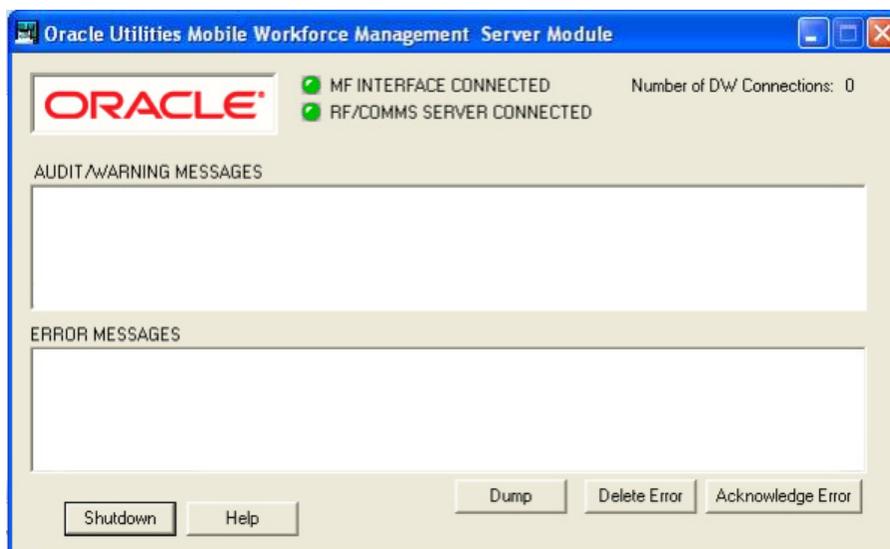
Starting Mobile Workforce Management Server-Side Components

1. If it is not already started, start the Integration Manager (Step 8 in the previous section).
2. From the Start Menu, select each of the following components:
 - Router
 - Server
 - Server RfTransport

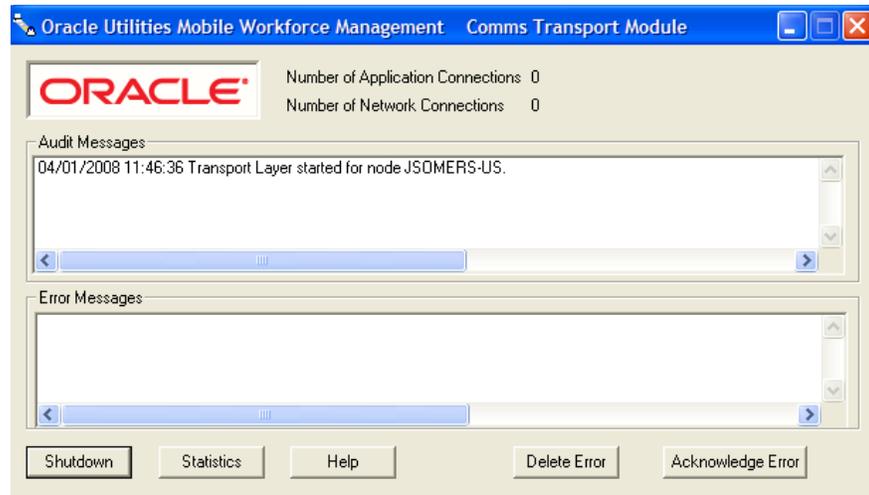


This will start the Oracle Utilities Mobile Workforce Management server-side applications. A dialog will open for each application, as described next.

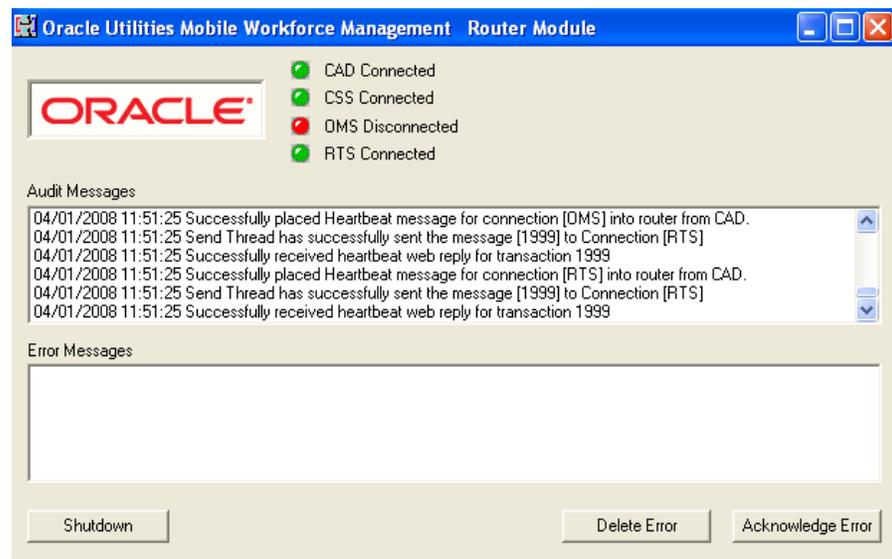
3. Monitor the Oracle Utilities Mobile Workforce Management Server dialog. The MF INTERFACE CONNECTED light will turn green when the Oracle Utilities Mobile Workforce Management Server has successfully connected to the Oracle Utilities Mobile Workforce Management Router. The RF/COMMS SERVER CONNECTED light will turn green when the Oracle Utilities Mobile Workforce Management Server has successfully connected to the RfTransport application.



The RfTransport dialog is shown below:



4. Monitor the Router dialog.



- The CAD Connected/Disconnected light indicates the status of the connection to the Oracle Utilities Mobile Workforce Management Server. The CAD Connected light will turn green when the Router successfully sends a heartbeat and receives a heartbeat from the Server.
- The RTS Connected/Disconnected light indicates the status of the connection to the Oracle Real-Time Scheduler system. The RTS Connected light will turn green when the Router successfully sends a heartbeat transaction and receives a heartbeat transaction from Oracle Real-Time Scheduler.
- The OMS Connected/Disconnected light indicates the connection status between the Router and the Oracle Utilities Network Management System.
- The CSS Connected/Disconnect light indicates the connection status between the Router and the Oracle Utilities Customer Care and Billing system.

5. If you have installed the Oracle Utilities Mobile Workforce Management Dispatch Workstation, start it from the Start Menu by selecting **Dispatch Station**.
6. Log on to the Dispatch Station by entering the UserId of 'SYSM' and the password of 'SYSM'. The application will prompt you to change your password. Enter a new password of your choice.
7. Once you have completed the above steps, you have verified that the Oracle Utilities Mobile Workforce Management server-side installation was successful. If you have installed the Mobile Workstation component, continue with the next procedure to verify communication between the server-side and client-side components.

Starting Mobile Workforce Management Client-Side Components

Note: The following procedure requires that you have either loaded the demo data as described earlier in this guide or have created your own set of base data (user, crew, vehicle, shift, etc.) required for valid logon.

1. On the mobile workstation, select **Client RfTransport** from the Start menu.
2. On the mobile workstation, select **Mobile Station** from the Start menu. The logon screen is displayed.
3. Complete the logon screen using the following credentials that were loaded in the demo data (or other valid user information):
 - User ID: FTEC1
 - Password: 00000
 - Vehicle: DTRUK1
 - Odometer: 123
4. From the Mobile Workstation Control menu, select **Emergency Request**.
5. At the confirmation dialog, click **OK**.
6. Go to the machine where the Dispatch Workstation is running and verify that the Emergency Request was received.
7. Once you have completed the above steps, you have verified that the Mobile Workstation component was successfully installed and is communicating with the server-side components.

Modifying Web Services for External Applications

This section describes how to configure the Web services for Oracle Utilities Customer Care and Billing and Oracle Utilities Network Management. If you selected these components during the Oracle Utilities Mobile Workforce Management installation process, the web services settings are configured automatically. Modification of these values is only necessary if you did not have the information available during the installation process (or if the information changes after initial installation).

Oracle Utilities Customer Care and Billing

To update Oracle Utilities Customer Care and Billing or Oracle Utilities Network Management System settings, use a SQL editor and open the DHTWBCNG table.

For Oracle Utilities Customer Care and Billing, search the HOST_SYSTEM column for 'CSS'. Modify fields in the WSDL_LINK per the description below.

<CCBUserID>Oracle Utilities Customer Care and Billing Web Service User ID

<CCBPassword>Oracle Utilities Customer Care and Billing Web Service password

<CCBMachineName>Oracle Utilities Customer Care and Billing Machine name or IP address

<CCBPortNumber>Oracle Utilities Customer Care and Billing Web Service port number

Oracle Utilities Network Management System

To update Oracle Utilities Customer Care and Billing or Oracle Utilities Network Management System settings, use a SQL editor and open the DHTWBCNG table.

For Oracle Utilities Network Management System, search the HOST_SYSTEM column for 'OMS'. Modify fields in the WSDL_LINK per the description below.

<NMSMachineName>Oracle Utilities Network Management System Machine name or IP address

<NMSPortNumber>Oracle Utilities Network Management System Web Service port number

Oracle Utilities Work and Asset Management System

To update Oracle Utilities Customer Care and Billing or Oracle Utilities Network Management System settings, use a SQL editor and open the DHTWBCNG table.

For Oracle Utilities Network Management System, search the HOST_SYSTEM column for 'WAM'. Modify fields in the WSDL_LINK per the description below.

<WAMMachineName>Oracle Utilities Work and Asset Management Machine name or IP address

<WAMPortNumber>Oracle Utilities Work and Asset Management Web Service port number

Chapter 4

Troubleshooting

This chapter contains troubleshooting information to assist you in identifying and resolving common issues. It includes the following topics:

- **Integration Manager Troubleshooting**
- **Troubleshooting Server Crashes**
- **Miscellaneous Problem Resolution**
- **General Troubleshooting Steps**
- **Required Data When Reporting Problems**
- **Known Issues**

Integration Manager Troubleshooting

JBoss Port Conflicts

It is possible that, when you start the Oracle Utilities Mobile Workforce Management Integration Manager (JBoss), previously installed software might be using the same ports that JBoss is attempting to use. Typically, these are ports 1098 and/or 8080.

To view the ports that are being used by various processes, execute the following command from a command prompt:

```
Netstat -a -o
```

This will show you the process IDs of processes, along with which ports they have open.

Port 1098

Port 1098 is the JMS Naming service, and is configured in file:

```
JBOSS_HOME\server\messaging\conf\jboss-service.xml
```

```
<attribute name="Port">1099</attribute>
<!-- The bootstrap JNP server bind address. This also sets the default
RMI service bind address. Empty == all addresses
-->
-->
<attribute name="BindAddress">${jboss.bind.address}</attribute>
<!-- The port of the RMI naming service, 0 == anonymous -->
<attribute name="RmiPort">1098</attribute>
<!-- The RMI service bind address. Empty == all addresses
-->
-->
```

It should be noted that changing the port “1099” to one at a higher range is also advised if you’re modifying 1098, but this is not required if you are not seeing port conflicts.

Port 8080

Port 8080 is the Web server port and is configured in:

```
JBOSS_HOME\server\messaging\deploy\jboss-web.deployer\server.xml
  <!-- A HTTP/1.1 Connector on port 8080 -->
  <Connector port="8080" address="{jboss.bind.address}"
    maxThreads="250" strategy="ms" maxHttpHeaderSize="8192"
```

and also in:

```
JBOSS_HOME\server\messaging\deploy\httpa-invoker.sar\META-INF\jboss-
service.xml
<attribute name="WebServicePort">8080</attribute>
```

Note: You must restart the Oracle Utilities Mobile Workforce Management Integration Manager after either of these changes has been made.

If you change port 8080 to something else, you'll also need to update the WSDL_LINK and ENPOINT_URL values in the DHTWBCNG table for those entries with a HOST_SYSTEM value of 'RTS', as this is the port that the Integration Manager Web service is running on.

Note: It is not necessary to change any occurrences of these port numbers within the JBOSS_HOME/server/default folder and its subfolders, as this is a default server instance, which is not run.

Port 4999 (or other TCP port conflict)

Port 4999 can be related to the hypersonic database service, and sometimes shows up as a port conflict with the apache webserver. If you see a conflict on port 4999, first identify the process that is using the port with the netstat -a -o command as described above in order to confirm the nature of the conflicting application. If the conflicting application is non-essential, remove it.

If the conflicting application IS essential, search within your MWM Installation folder for any file containing the text 4999 (or other conflicting port number). Once found (typically an xml configuration file) modify the port to another which is unused, save the xml file, and restart the MWM Integration Manager.

Other Port Conflicts

It is possible that, when you start the Oracle Utilities Mobile Workforce Management Server and RfTransport applications, previously installed software might be using the same ports that MWM is attempting to use. Oracle Utilities Mobile Workforce Management utilizes ports 6000 – 6010.

To view the ports that are being used by various processes, execute the following command from a command prompt:

```
Netstat -a -o
```

This will show you the process IDs of processes, along with which ports they have open.

The ports are configured in the networknames.ini. Each Oracle Utilities Mobile Workforce Management application uses this file for creating TCP/IP sockets. If a port is changed in one networknames.ini, the change needs to be replicated to all Oracle Utilities Mobile Workforce Management installation directories.

```
[SERVERS]
Server = SERVERNAME1, 6000
RF Comms - Remote API Connect = RFTSERVER1, 6005
RF Comms - API Connections = RFTLOCAL, 6001
RF Comms - DMP Connections = RFTLOCAL, 6002
RfComms = RFTLOCAL, 6003
RF Comms - Guarantd API Connect = RFTLOCAL, 6004
RF Comms - Nettech Connections = RFTLOCAL, 6006
```

```
RF Comms - Guarntd Nettech Conn = RFTLOCAL, 6007
RF Comms - Compressed Connect = RFTLOCAL, 6008
RF Comms - Remote CMPR Connect = RFTSERVER1, 6009
RF Comms - Guarantd CMPR Connect = RFTLOCAL, 6010
```

Log File Sizes

The JBoss log files can become QUITE large. It is recommended to remove or back them up in an automated fashion daily.

Note about XML Parsers

The Integration Manager uses the Oracle XDK 10 Parser. This parser supports XSL 2.0 while the parser used by Oracle Utilities Mobile Workforce Management for Router XSL translations is the MSXML v4 parser and therefore does NOT support some of the same functionality such as extension functions.

Java Version

The installed Java version (used by JBoss) must be 1.6 and higher. Use the procedure described in **Verifying Your Java Installation** on page 3-61 to determine if the correct Java version is running.

Reading the JBoss Log File(s)

The following sections describe how to read and interpret the contents of the JBoss log files. Log files are located in <MWM_INSTALL_ROOT>\JBoss Integration\jboss-4.2.2.GA\server\messaging\log.
The file name is: server.log.

Finding message “responses”

The following log file snippet shows the response from a Web service call to an endpoint. The call was made by Thread ID 12271 as shown by the “tID{12271}” entry:

```
2007-02-26 00:00:07,152 DEBUG [com.spl.im.common.WebServiceCaller]
tID{12271} Call Response: <?xml version = '1.0' encoding = 'UTF-8'?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/
envelope/" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://
rts.splwg.com/webservices/" xmlns:ns2="http://rts.splwg.com/
webservices/packets" xmlns:ns3="http://rts.splwg.com/webservices/
fields">
<SOAP-ENV:Body>
<ns2:SYNC_PLAN_RESPONSE>
<ns2:RESULT>
<ns3:RESULT>SUCCESS</ns3:RESULT>
</ns2:RESULT>
</ns2:SYNC_PLAN_RESPONSE>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Identifying XSL Transformation Results

The message identified by thread ID 12271 was transformed into the italicized XML shown below.

```
2007-02-26 00:00:07,105 DEBUG [com.spl.im.common.IMMessageHandler]
tID{12271} Transformed XML is: <SOAP-ENV:Envelope xmlns:xdt="http://
www.w3.org/2005/xpath-functions" xmlns:xs="http://www.w3.org/2001/
XMLSchema" xmlns:eg="local" xmlns:xsi="http://www.w3.org/2001/
```

```

XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns3="http://mwm.splwg.com/webservices/methods/"
xmlns:ns2="http://mwm.splwg.com/webservices/packets/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://
mwm.splwg.com/webservices/">
  <SOAP-ENV:Body>
    <SYNC_PLAN/>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

The transformed message is displayed after the text **"Transformed XML is."** If the transformed message is the same as the original message, this means that the path to your xsl file, as specified for this message in the IM_MESSAGES table, is invalid. Check the path, and also verify that the specified xsl transforms the message as predicted, using an external tool such as XMLNotepad.

Determining System Performance

The following line shows that a message was inserted into the Integration Manager queue via the Integration Manager Web service (not Oracle Utilities Mobile Workforce Management or Oracle Real-Time Scheduler) and was put into the queue in 47 milliseconds.

```

2007-02-26 00:00:07,168 INFO [com.spl.im.common.IMMessageHandler]
tID{12271} Processing Message: MWM -> SPLWFMRequestUpdates -> RTS
(total:78.0,pre:0.0,post:0.0,webservice:47.0)
Performance counters are described below:

```

Total: Total time spent processing the message.

Pre: time spent in the pre translation plugin class, if configured on the message in the IM_MESSAGES table.

Post: time spent in the post translation plugin class, if configured on the message in the IM_MESSAGES table.

Webservice: time spent calling the endpoint (i.e., Oracle Real-Time Scheduler or Oracle Utilities Mobile Workforce Management).

Console Logging Structure

In the JBoss console, you will typically see messages like:

```

2007-02-26 00:01:16,996 DEBUG
[com.spl.im.interfaceMBean.IntegrationManagerService] tID{65} Received
Message: ....

```

Or

```

2007-02-26 00:00:07,168 INFO [com.spl.im.common.IMMessageHandler]
tID{12271} Processing Message: MWM -> SPLWFMRequestUpdates -> RTS
(total:78.0,pre:0.0,post:0.0,webservice:47.0)

```

Or

```

2007-02-26 00:00:37,137 INFO [com.spl.im.listener.IMListener]
tID{11993} Listener done in: 141.0 ms.

```

The first message shows that a transaction was inserted into the Integration Manager queue via the Integration Manager Web service, and the Integration Manager returned to the calling application. Keep in mind that this does NOT mean that the message has been completely processed yet; it was only taken by the Integration Manager.

The second message shows that a transaction was picked up out of the Integration Manager queue and processed by the Integration Manager Listener in thread 12271 and that the message was a SPLWFMRequestUpdates message being sent from Oracle Utilities Mobile Workforce

Management to Oracle Real-Time Scheduler. It also indicates that the listener completed its operation, and includes the total time taken.

The third message shows that the Integration Manager Listener picked the message up out of the queue, and processed it in a total of 141 milliseconds.

Troubleshooting Server Crashes

There are two types of Server crashes: a normal crash and a run-time error.

- In a normal crash, the Server application will write information related to the crash in the `Server.crash` file. This file will contain an entry for each Server crash. Each entry will include the date/time of the crash and a dump of the program stack at the time of the crash. The most useful information in this file is usually the exact date/time of the crash. When the Server application crashes, all its threads, except the thread that crashes, are shut down. This will cause all Dispatch Workstation users to be disconnected.
- A run-time error is different, because the Server application cannot trap this error and write an entry in the crash file. A run-time error is usually caused by some type of error deep in the Microsoft Foundation Classes. Since the Server cannot trap this type of error, the Server application keeps running, except for the thread that crashed. Since the Server is still running, messages continue to be written to the log files. By the time the run-time error has been noticed, the Server could have been running for a few minutes to a few hours after the error occurred. It is hard to determine the actual time of the crash.

Repeated Server Crashes

If the Server application crashes repeatedly, it is usually due to a guaranteed transaction (e.g., `OrderComplete`). A guaranteed transaction will be sent to the Server repeatedly until it has been acknowledged or expires, which will remove the transaction from the `RfTransport` application. If the transaction causes the Server to crash, the acknowledgement is not sent and the `RfTransport` will continue to re-send the transaction until it expires.

If the Server continues to crash after it is restarted, this usually indicates a problem with a guaranteed transaction. The only way to stop the Server from crashing is to identify and remove the offending transaction.

A guaranteed transaction will reside in three locations: the server-side `RfTransport` queue, the mobile-side `RfTransport` queue, and in the mobile application's `Send` folder. The transaction must be removed from all three places or it will be regenerated and sent again. When the offending mobile device is identified, it should be removed from the network until the transaction can be deleted from all three locations. The following sections provide instructions for identifying the mobile device and removing the transaction.

Identifying the Mobile Device

In 95% of the cases, this type of repeatable crash is caused by an `OrderComplete` transaction. The other 5% would be a `MobileTimeReport` transaction or a transaction that is made guaranteed in the `DHTICDPR` table. The instructions below are specific to the `OrderComplete` transaction.

Follow these steps to identify the `OrderComplete` transaction and the mobile device that generated it:

View the most current [SvTrace@.log](#) and scroll to the bottom.

Search backwards for “`OrderComplete`”. You should find an entry similar to following:

```
INFO|12:56:02|3752|ICD: OrderComplete Hdr: ID=11, Len=3246, Ver=2,
Time=11-Mar-08 12:55:46, SourceNetName=UI_040689, Dest=, Ack=, Pri=0,
VarKey= DataLength=3134 [XBuffer: MsgPtr=$2315E1-/ Length=3134/
Exists=Yes] (XThreadSvFoEx::ProcessMobileCompletionIcd)
```

This is probably the transaction in error.

If you do not find an OrderComplete transaction, check the [SvTrace@.log](#) file immediately preceding the current one. Since the Server application continues to run after the run-time error occurs, the actual crash could have happened several hours earlier. Keep checking log files until you find the dump of the OrderComplete transaction.

There are several important pieces of information in this message. The “Time” is the time the transaction was generated on the mobile. This is probably very close to the time the order was worked. The “SourceNetName” is the mobile computer that sent in the transaction.

If you view the trace logs for each crash and repeat the above steps, you should see the same transaction logged repeatedly.

Removing the Transaction

Now that you have identified the offending transaction and the mobile device that generated it, you must remove the transaction. Since it is impossible to determine where the transaction was corrupted, you should remove it from all three locations.

Follow these steps to remove the offending transaction.

Contact the mobile and have the user logoff and/or disconnect from the network/wireless environment until the transaction is removed. Otherwise, there is a good chance, it might send the transaction again. Make sure the user does not logoff end of shift or their orders will be unassigned.

Shut down the mobile-side RfTransport application. This will stop the mobile from sending the transaction again.

Delete the DestinationNodeMap.bin file. This file is in the folder where the mobile-side RfTransport.exe resides. This file must be deleted, since this is where the RfTransport stores its queued transactions.

Shut down the server-side RfTransport application.

Delete the DestinationNodeMap.bin file. This file is in the folder where the server-side RfTransport.exe resides.

Note: Once you delete the DestinationNodeMap.bin file, the RfTransport application will not be able to send any transactions to the mobile until the mobile sends a transaction first. During a high-traffic time this should not be an issue; however, if you see the following message:

Trying to send to application MobileClient on node UI_032760 but no socket found. (::)

you might need to contact the mobile by voice and have the crew send in a transaction, such as a mail message. This will re-add the device to the DestinationNodeMap.bin file and allow the RfTransport application to send transactions to the mobile.

Once the server-side DestinationNodeMap.bin file has been deleted, the Server and server-side RfTransport applications can be restarted.

Sort the transactions in the Send folder on the mobile device by date. The oldest file in the folder is probably the bad transaction. The timestamp of the file should be close to the time of the ICD in the server trace log. The filename will identify the order number. Delete this file.

The order will have to be manually completed. You can review the order data by double-clicking on the order file in the Orders directory (it will have the same file name). Use Notepad to view the data.

After the file has been deleted from the Send folder, you can log back onto the Mobile Workstation application.

Additional Troubleshooting Tips for Server Crashes

Investigation

Test: Is the message from the CIS system in a format the server.exe application does not expect?

Possible Problem Area:

This could be an issue with a map file, either on the router side or the server side. Please make sure all your map files are up to date. The router maps provide the translation from the external (CIS, NMS, Scheduling) format to the Oracle Utilities Mobile Workforce Management format. Make sure these have not changed and/or are current. There is also a base structure map called FO.map that must match between all the systems. Please also check to make sure that the external system sending the message did not change formats. Please make sure that both applications are up to date in regards to the executables and DLLs.

Investigation

Test: If a message from a Mobile is causing the server to crash, are the mobile and the server executables and/or DLLs different?

Possible Problem Area:

Oracle Utilities Mobile Workforce Management uses communication objects called ICD's to transfer data between components. If a particular component is using an old .DLL or executable, the format of this ICD could be radically different. Please make sure that a particular application is not using out of date .exe or .dll files.

The following server logs should be collected:

SvAudit*.log

SvTrace*.log

SvError*.log

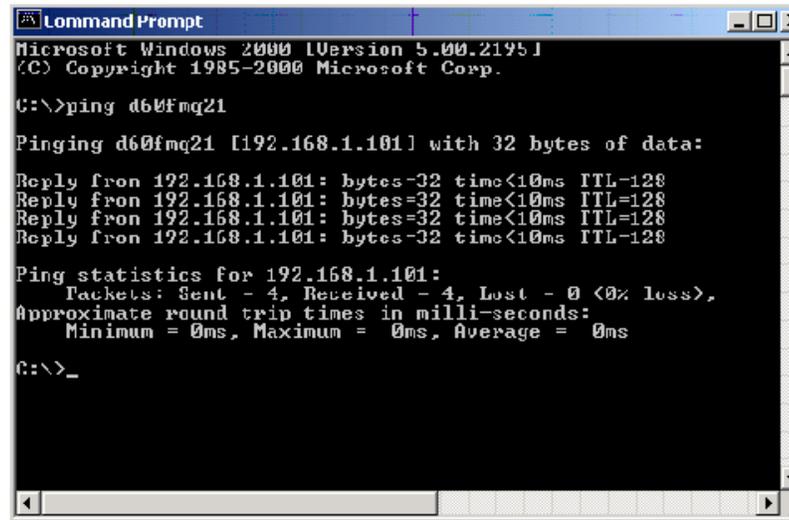
Server.crash

Miscellaneous Problem Resolution

Dispatch Station Unable to Connect to Server

This will generally point to a network problem. Try to ping the Server machine from the Dispatch Station machine. From a DOS prompt, enter:

```
>ping [server machine name or server IP address]
```



```
Microsoft Windows [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\>ping d60fmq21

Pinging d60fmq21 [192.168.1.101] with 32 bytes of data:

Reply from 192.168.1.101: bytes=32 time<10ms TTL=128

Ping statistics for 192.168.1.101:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>_
```

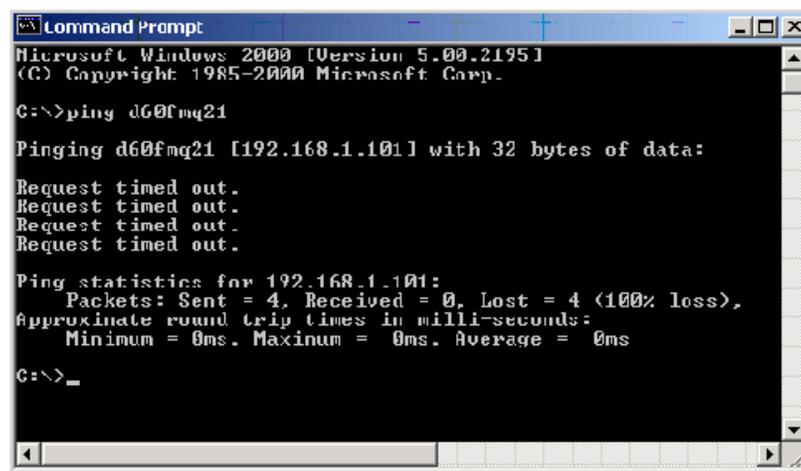
If you are successful at pinging the Server machine, you will see messages similar to the ones above. The IP address of the server machine will be displayed in place of the IP addresses above.

If you are able to ping the Server machine and the dispatch station cannot connect to the Server application, notify Oracle support. Please provide support with the dispatch station machine network Id, the date/time that the incident occurred, and provide the following required data.

Station – save off the networknames.ini and station.ini files.

Station\Logs – save off the logs in this directory for today. You can save off all the logs if you prefer.

If you are unable to ping the Server machine, you will see a display similar to the one below.



```
Microsoft Windows [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\>ping d60fmq21

Pinging d60fmq21 [192.168.1.101] with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.101:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>_
```

If you are unable to ping the server machine, please have the network group resolve the issue with why the server machine cannot be pinged from the dispatch station machine.

Unable to Dispatch Orders, MDT Login Problems, Slow Completion or Status Data

Symptoms of this issue include the following:

- No orders can be dispatched to the field
- 2 or 3 orders show up on the MDT (Mobile Data Terminal), but the dispatcher shows the orders in Trying or Ready status
- MDT's cannot logon (timeout)
- MDT's can logon but logon times are excessive
- Completions do not come up from the field or come up very slowly
- Status data (enroute/onsite) comes from the field very slowly or not at all

Generally, these issues can be attributed to two causes.

General communication (wireless/network) issues

Server processing issues

In order to properly diagnose the issue, it is important to gather some basic information.

- What is the scope of the issue? Is it all mobiles, mobiles within a certain region, seemingly random mobiles?
- When did the issue start, how long did it last?
- What exactly is the issue, unable to dispatch, unable to login, all of the above, completions, etc.?
- Note specific examples (order numbers, crew ID's, times/dates etc.) and make a log of this information. The application logs are quite large and providing that data will help support identify the issue quicker.

Please be clear in communicating these items, as they will help speedup resolution of the issue.

Data to collect:

Application logs give a status into the health and performance of your particular Oracle Utilities Mobile Workforce Management system. They are supports only view into the current state of your system. For issues like this, it is usually required that logs be collected to show a round trip of messages within the system. Support will need to track particular messages from the server application to server communication applications to the client communication applications to the mobile station application and visa versa. Partial logs, while helpful, only show a partial picture of the issue. It is best to collect all available logs. It is helpful when collecting the logs to zip them up in specific directories. For example:

```
Issue\server
Issue\serverRfTransport
Issue\station
Issue\stationRfTransport
```

It is also helpful in your log file collection process to retain the original date and time of the files. Logs should be collected quickly as logs may roll over as time progresses.

Collecting the current set of ini files for the applications is also important. This will insure that support is aware of the current parameters of your system.

The application log files are very large. It is important that as many specifics are given as possible. This may be specific transactions, order numbers, crew ID's, MDT ID's, times/dates, etc. It is a good idea to keep a log of your specific observations to pass along to support for problem resolution.

It may be necessary to collect an entire mobile application directory for further analysis.

Log files to collect:

- *Server*: SvAudit*.log, SvTrace*.log, SvError*.log, Server.crash
- *RfTransport (Server)*: RfTransportAudit*.log, RfTransportTrace*.log, RfTransportError*.log, Destinationnodemap.bin, RfTransport.crash
- *Station*: StationTrace*.log, StationError*.log, Station.crash
- *RfTransport (Station)*: RfTransportAudit*.log, RfTransportTrace*.log, RfTransportError*.log, Destinationnodemap.bin, RfTransport.crash

The * represents a letter (A-Z) in the log name.

INI Files to collect:

- *Server*: NetworkNames.ini, Server.ini, contents of DHTSVINI
- *RfTransport (Server)*: RfTransport.ini, NetworkNames.ini
- *Station*: Station.ini, NetworkNames.ini, contents of DHTMWINI & DHTICDPR (you can copy the .tbl file from the Tables folder)
- *RfTransport (Station)*:RfTransport.ini, NetworkNames.ini

Unable to Verify Database Connections

Oracle Application Server, when installed, is known to prepend '\$ORACLE_HOME/bin' to the PATH environment variable. As a result, the default tnsnames.ora file will be overridden by \$ORACLE_HOME/NETWORK/ADMIN/tnsnames.ora and the Oracle Utilities Mobile Workforce Management InstallShield application will fail to ping ODBC connections that were already set up. See the note on page 1 for details on resolving this problem.

Unable to Display Online Help

The Adobe Reader version 8 is used to view Oracle Utilities Mobile Workforce Management online help. The Reader must be installed on the user's computer, but can be downloaded free of charge from <http://www.adobe.com/products/acrobat/readstep2.html>.

The path to the Reader is specified in the following configuration parameters. If the Reader is installed in a different location on the user's computer, the default values must be changed.

Router Help

Table: DHTRTINI

Parameter: AdobePath

Default Value: C:\Program Files\Adobe\Reader 8.0\Reader\AcroRd32.exe

Server Help

Table: DHTSVINI

Parameter: AdobePath

Default Value: C:\Program Files\Adobe\Reader 8.0\Reader\AcroRd32.exe

Dispatch Workstation Help

File: Station.ini

Section: [DW]

DwHelp=Dispatch Workstation Application.pdf

AdobePath=C:\Program Files\Adobe\Reader 8.0\Reader\AcroRd32.exe

Mobile Workstation Help

File: Station.ini

Section: [MW]

General Troubleshooting Steps

Investigation

Test: From a network perspective, are the mobiles able to “see” the backend communication servers and visa versa? This may be done through a ping

Possible Problem Area: If the problem MDT's have visibility to the server and Visa Versa, this may indicate a server issue or a communications issue. Further steps will need to be taken to determine the issue. If the MDTs and server do not have mutual visibility from a Network perspective, this may be indicative of general network issues.

Investigation

Test: If you are able to log a MDT on the hardwire LAN, are these issues present for this MDT?

Possible Problem Area: If a mobile is able to logon the hardwired LAN and seems to function normally, this would indicate an issue with the network or the network components of the application.

Investigation

Test: Any recent network changes or OS patches applied?

Possible Problem Area: Depending on the change done, it may affect the system from a network or application server perspective.

If any of these are true, investigate the following:

- Were any network changes made to ports, IP addresses, subnets, switches, etc. that may impact the Oracle Utilities Mobile Workforce Management system or network layer?
- Have any Oracle database or ODBC changes occurred? Please make note of this.
- Were any OS system patches implemented, especially those related to security or network issues?
- Were any third party applications installed on any of the server or network application machines?

Investigation

Test: Was an Oracle Utilities Mobile Workforce Management upgrade recently implemented?

Possible Problem Area:

- This could affect the system from a network or application server perspective, although historically this tends to affect the application server in most cases.
- Were all of the MDT's updated? Was an MDT recently added to the system that may not have got an upgrade (user may have been on Vacation during the upgrade or a spare MDT was just put into service)? Were ini parameters checked and set properly (especially server.ini, rftransport.ini, networknames.ini and station.ini)?
- Was the send directory on the MDT cleared out? (This is usually done by making the crew successfully log off End of Shift in an area of clear communications prior to the upgrade.)
- Each MDT's RfTransport application has its own destinationnodemap.bin file that is unique to this mobile. This file should not be copied from mobile to mobile and should not be pushed out in an upgrade or new install. This file will be created automatically by the MDT's RfTransport and setup for that particular mobile. Unless otherwise instructed, it is always advisable to delete this file on each MDT during the upgrade.

Investigation

Test: Have any new MDT's been added to the system and logged on, or MDT's that have not logged on in some time logged on?

Possible Problem Area:

If TRUE, this may indicate a problem with the application server. This is usually caused if an MDT is added to the system with out-of-date software or out-of-date messages are being sent.

Investigation

Test: Have the Oracle Utilities Mobile Workforce Management server.exe, the server side RfTransport.exe, or server side XNetwork.exe (if used) crashed, constantly crashing or appear to not be functioning?

Possible Problem Area: Application crashes are frequently caused by messages of unexpected formats from other parts of the application. If a particular application is crashing the examination of log files will help determine the cause and the source of the crash. Crashes can impact performance and system communications, especially if they are frequent or the application only "hangs" and does not go down completely. When a code violation is detected, the application usually will try to write out information in its crash file to help with debugging. Sometimes only part of the application may crash and it may or may not write to the crash file and parts of the application will still continue to process.

Investigation

Test: Do some messages appear to get through OK? For example, are crews able to logon but order dispatch appears not to work?

Possible Problem Area: If the above test is true, the problem can lay with either the server application or the network communication applications. Messages in the system are given different priorities. If some messages get through while others do not, it may indicate these messages are higher priority and lower priority messages are not getting through and are expiring (due to message lifetimes) before they are received and processed. This could be an issue with volume or a performance issue with the server or communication applications.

Investigation

Test: Are there any unusual or high loads on the system or network?

Possible Problem Area: Things to look for would be a high number of orders being added from an external system (CIS, NMS, or the scheduler). Are there a large number of mobiles logging on all at the same time? Perhaps many changes were made to database tables and there is a large number of table downloads going to the mobile. Are there other applications or stresses on the network? System backups or download of third party applications or data? Depending on the load, different parts of the application could be affected.

Investigation

Test: Does the issue occur at certain times of the day but seems to alleviate when a certain shift of crews or crew logoff?

Possible Problem Area: If the above scenario does seem to have some kind of impact on the issue, it may indicate a volume issue or an issue with a particular mobile or set of mobiles.

Investigation

Test: Have any new virus scanning utilities, functions, firewalls or programs been utilized?

Possible Problem Area: Issues that have been seen are port blocking or scanning on ports used by the Oracle Utilities Mobile Workforce Management application and real time scanning of files on disk. Oracle Utilities Mobile Workforce Management uses disk queues and files and any Oracle Utilities Mobile Workforce Management directories should be excluded from any type of real time

scanning/virus detection. Ports used by the system (depending on your setup they may range from 6000-6010) should not be blocked or scanned.

Required Data When Reporting Problems

When problems occur with any Oracle Utilities Mobile Workforce Management component, it is important to collect as much information possible in order to troubleshoot the problem. Refer to the following sections for instructions on how to gather data when reporting problems.

Server

If the Oracle Utilities Mobile Workforce Management Server application terminates unexpectedly, the following folders should be saved and uploaded to the ftp site.

- **Server** – save the server.crash file found in this directory.
- **Server\SvLogs** – only the logs for the day of the crash are needed, but the entire folder can be saved
- **Server\SvExternalErrors** – only the logs for the day of the crash are needed, but the entire folder can be saved

Router

If the Oracle Utilities Mobile Workforce Management Router application terminates unexpectedly, the following folders should be saved and uploaded to the ftp site.

- **Router** – save the router.crash file found in this directory.
- **Router\MfLogs** – only the logs for the day of the crash are needed, but the entire folder can be saved
- **Router\MfExternalErrors** – only the logs for the day of the crash are needed, but the entire folder can be saved
- **Router\@SendLog** – where @ is the connection name (e.g., OMS, RTS, etc.). Save all files found in the SendLog directories, if any. These are the last transactions sent to the connection. Each connection in the Router will have its own SendLog folder
- **Router\@RecvLog** – where @ is the connection name (e.g., OMS, RTS, etc.). Save all files found in the SendLog directories, if any. These are the last transactions received from the connection. Each connection in the Router will have its own RecvLog folder.

RfTransport

If the RfTransport application terminates unexpectedly, the following folders should be saved and uploaded to the ftp site.

- **RfTransport** – the logs in this folder need to be saved. Only the logs for the day of the crash are needed, but all logs can be saved. The log files will have an extension of **log** (e.g., RfTransportAudit_A.log, etc.). You should also save RfTransport.crash found in this directory.

Dispatch Workstation

If the Dispatch Station application terminates unexpectedly, the following folders should be saved and uploaded to the ftp site.

- **Station** – save the Station.crash file found in this directory.
- **Station\Logs** – only the logs for the day of the crash are needed, but the entire folder can be saved

Mobile Workstation or Client-Side RfTransport Failures

If the Mobile Workstation application terminates unexpectedly, the following folders should be saved and uploaded to the ftp site.

- **Station** – save the Station.crash file found in this directory, if the mobile station crashed
- **Station\Logs** – only the logs for the day of the crash are needed, but the entire folder can be saved
- **Station\Orders** – save the files found in this directory, if any. These files will be the orders that were dispatched the mobile device.
- **Station\Send** – save the files found in this directory, if any. These files will be the guaranteed transactions that have not been processed by the Server application.
- **Station\RfTransport** – the logs in this folder need to be saved. Only the logs for the day of the crash are needed, but all logs can be saved. The log files will have an extension of **log** (e.g., RfTransportAudit_A.log, etc.). You should also save RfTransport.crash found in this directory if the client-side RfTransport crashed.

Known Issues

Integration Manager Message

The following warning message may be displayed in the Integration Manager dialog, but does not impact operations.

Example: 2008-04-21 00:02:31,187 WARN [org.jgroups.protocols.UDP] packet from xxx.xxx.xxx.xxx:Port has different version (12338) from ours (2.4.1). Packet is discarded

Decomposition Error

When the Integration Manager decomposes the sync_plan responses from Oracle Real-Time Scheduler, it sometimes takes a 3rd level message and tries to compose a new message to Oracle Utilities Mobile Workforce Management out of it. (For example, ns3:SHIFT)

The following error may be seen, and is benign. No message is actually sent to Oracle Utilities Mobile Workforce Management. The key to identifying this type of error is the existence of the “content is not allowed in prolog” text.

```
2007-02-25 13:45:06,855 ERROR [STDERR]
CAUSE:
2007-02-25 13:45:06,855 ERROR [STDERR] javax.xml.transform.TransformerException:
org.xml.sax.SAXParseException: Content is not allowed in prolog.
    at
    org.apache.xalan.transformer.TransformerIdentityImpl.transform(TransformerIdentityImpl.java:501)
    at
    com.sun.xml.internal.messaging.saaj.util.transform.EfficientStreamingTransformer.transform(EfficientStreamingTransformer.java:390)
    at
    com.sun.xml.internal.messaging.saaj.soap.EnvelopeFactory.createEnvelope(EnvelopeFactory.java:102)
    at
    com.sun.xml.internal.messaging.saaj.soap.ver1_1.SOAPPart1_1Impl.createEnvelopeFromSource(SOAPPart1_1Impl.java:71)
    at com.sun.xml.internal.messaging.saaj.soap.SOAPPartImpl.getEnvelope(SOAPPartImpl.java:125)
    at com.spl.im.common.WebServiceCaller.SendCall(WebServiceCaller.java:44)
    at com.spl.im.common.IMessageHandler.ProcessMessage(IMessageHandler.java:237)
    at com.spl.im.listener.IMListener.onMessage(IMListener.java:107)
    at sun.reflect.GeneratedMethodAccessor90.invoke(Unknown Source)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:25)
    at java.lang.reflect.Method.invoke(Method.java:597)
    at org.jboss.invocation.Invocation.performCall(Invocation.java:359)
    at
    org.jboss.ejb.MessageDrivenContainer$ContainerInterceptor.invoke(MessageDrivenContainer.java:495)
    at
    org.jboss.resource.connectionmanager.CachedConnectionInterceptor.invoke(CachedConnectionInterceptor.java:158)
    at
    org.jboss.ejb.plugins.MessageDrivenInstanceInterceptor.invoke(MessageDrivenInstanceInterceptor.java:116)
    at org.jboss.ejb.plugins.CallValidationInterceptor.invoke(CallValidationInterceptor.java:63)
    at org.jboss.ejb.plugins.AbstractTxInterceptor.invokeNext(AbstractTxInterceptor.java:121)
    at org.jboss.ejb.plugins.TxInterceptorCMT.runWithTransactions(TxInterceptorCMT.java:315)
    at org.jboss.ejb.plugins.TxInterceptorCMT.invoke(TxInterceptorCMT.java:181)
    at org.jboss.ejb.plugins.RunAsSecurityInterceptor.invoke(RunAsSecurityInterceptor.java:109)
    at org.jboss.ejb.plugins.LogInterceptor.invoke(LogInterceptor.java:205)
    at
    org.jboss.ejb.plugins.ProxyFactoryFinderInterceptor.invoke(ProxyFactoryFinderInterceptor.java:136)
    at org.jboss.ejb.MessageDrivenContainer.internalInvoke(MessageDrivenContainer.java:402)
    at org.jboss.ejb.Container.invoke(Container.java:954)
    at org.jboss.ejb.plugins.jms.JMSContainerInvoker.invoke(JMSContainerInvoker.java:987)
    at
    org.jboss.ejb.plugins.jms.JMSContainerInvoker$MessageListenerImpl.onMessage(JMSContainerInvoker.java:1287)
    at org.jboss.jms.asf.StdServerSession.onMessage(StdServerSession.java:266)
    at
    org.jboss.jms.client.remoting.MessageCallbackHandler.callOnMessage(MessageCallbackHandler.java:88)
    at org.jboss.jms.client.container.AsfAspect.handleRun(AsfAspect.java:165)
    at sun.reflect.GeneratedMethodAccessor73.invoke(Unknown Source)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:25)
    at java.lang.reflect.Method.invoke(Method.java:597)
    at org.jboss.aop.advice.PerInstanceAdvice.invoke(PerInstanceAdvice.java:130)
    at
    org.jboss.jms.client.delegate.ClientSessionDelegate$run_N8003352271541955702.invokeNext(ClientSessionDelegate$run_N8003352271541955702.java)
```

```
at org.jboss.jms.client.container.ClosedInterceptor.invoke(ClosedInterceptor.java:182)
at org.jboss.aop.advice.PerInstanceInterceptor.invoke(PerInstanceInterceptor.java:117)
at
org.jboss.jms.client.delegate.ClientSessionDelegate$run_N8003352271541955702.invokeNext(ClientSessionDelegate$run_N8003352271541955702.java)
at org.jboss.jms.client.container.ExceptionInterceptor.invoke(ExceptionInterceptor.java:69)
at
org.jboss.jms.client.delegate.ClientSessionDelegate$run_N8003352271541955702.invokeNext(ClientSessionDelegate$run_N8003352271541955702.java)
at org.jboss.jms.client.container.ClientLogInterceptor.invoke(ClientLogInterceptor.java:107)
at
org.jboss.jms.client.delegate.ClientSessionDelegate$run_N8003352271541955702.invokeNext(ClientSessionDelegate$run_N8003352271541955702.java)
at org.jboss.jms.client.delegate.ClientSessionDelegate.run(ClientSessionDelegate.java)
at org.jboss.jms.client.JBossSession.run(JBossSession.java:199)
at org.jboss.jms.asf.StdServerSession.run(StdServerSession.java:194)
at EDU.oswego.cs.dl.util.concurrent.PooledExecutor$Worker.run(PooledExecutor.java:748)
at java.lang.Thread.run(Thread.java:619)
Caused by: org.xml.sax.SAXParseException: Content is not allowed in prolog.
at com.sun.org.apache.xerces.internal.parsers.AbstractSAXParser.parse(AbstractSAXParser.java:1231)
at
com.sun.org.apache.xerces.internal.jaxp.SAXParserImpl$JAXPSAXParser.parse(SAXParserImpl.java:522)
at org.xml.sax.helpers.XMLFilterImpl.parse(Unknown Source)
at
org.apache.xalan.transformer.TransformerIdentityImpl.transform(TransformerIdentityImpl.java:484)
... 45 more
```

Appendix A

Core Services Installation

The core services are designed to run with the existing core components of Oracle Utilities Mobile Workforce Management: Server.exe, Router.exe, and RFTransport.exe. The MWM_SERVICE build produces modified versions of these executables designed to communicate with the administration GUI portion via Windows Message Queuing (MSMQ). A command-line switch, "/service", will switch off their GUI portions and switch on the messaging. They are also designed to run stand alone as previously when the switch is absent. The service wrapper executables, MobilitySvService.exe, MobilityRtrService.exe, and MobilityRFTrnsService.exe, shell the executable processes of the above components when started, passing them the command-line switch. All message queues are created and security-configured upon the first run of any of the services or service administrator. Some systems will not allow the auto-security configuration and these should be configured manually from the control panel after the application has created them. Please see **Message Queuing Notes** below for proper security-configuration.

The service wrapper executables can be used with the unmodified core executables also if needed, or with the config setting "RunAsService" set to false, but the administration piece will not function since it depends on the MSMQ. In these cases, simply install the services specifying the LocalSystem account, and after installation, change their settings to "interact with the desktop" from the control panel and they should also be stopped and started from the control panel in that case. This should only be necessary if MSMQ is not available, or if the modified MWM_SERVICE build executables are not functional or not available, as it may compromise network security and reduce the service autonomy.

System Requirements

- Windows 2000 or higher (or NT4 w/Svc pak 6a, also may work on prior OS w/latest SP)
- .NET Framework 1.1 - located on the CD (D:\DotNET Framework1.1\dotnetfx.exe) or downloadable from www.microsoft.com under ".NET Framework Redistributable 1.1". Should also come with Windows Service Pak 6.
- Windows message queuing, a part of the Windows installation and available from the "Add/Remove Windows components" part of "Add/Remove Programs" control panel snap-in (This may require access to a Windows OS installation CD or source directory if added after OS installation)

Install Steps

After standard Oracle Utilities Mobile Workforce Management installation directories are set up, the service-build executables, Server.exe, Router.exe, and RFTransport.exe should be used for the executables of those components. These should function in exactly the same way as their previous versions. In other words, running their executables will still have GUI interaction and will not

appear to be different in any way. A good level of confidence should be achieved as to the performance of the entire Oracle Utilities Mobile Workforce Management system employing and testing these in the standard fashion before moving on to the additional steps below for installing the service wrappers.

1. Run the MobilityAdminInstall.msi located in the [MWM_Installation_Directory]\Tools\MWMMWindowsService directory. The wizard will guide you through the following series of simple steps involved in setting up the services on the target machine. Note that you must run the installation again on each separate machine to install any of the components separately if doing a multi-server setup.
2. After the choosing the installation directory, you will be prompted to select which of the core components to install, including the admin portion. You can install any or all of these, depending on whether you are adding to a previous install or separating components between several machines. Generally you will choose all, but you may want to do a second install of just the Admin portion on a satellite machine for remote network control and monitoring of the services. This requires special message queue path name syntax described below.

****Note:** due to an apparent Visual Studio bug, portions that are not checked above may still install. This is not crucial since the drive space used is minimal and any unwanted pieces can be ignored. If preferred however, for an Admin-only install, the files for the Admin piece can be manually copied instead of running the installation MSI. In this case there is no registration process as with the MSI installation, and so it will not require removal via the Control Panel. These Admin-only files are specifically: AdminCtrlBase.dll, AppConfigLoader.dll, MAApp.ico, MobilityAdmin.exe, MobilityCoreServicesConfig.xml, RFTransAdminCtrl.dll, RouterAdminCtrl.dll, and ServerAdminCtrl.dll. This manual file copy cannot be done for the other files, MobilitySvService.exe, MobilityRtrService.exe, and MobilityRFTrnsService.exe, since they will require registration.

3. Next you are prompted to specify a path to import an existing config file.

****Note:** An apparent OS bug causes the .NET file-browser dialog to fail and hang on certain OS's. Therefore, choose the second option and either manually paste or type in the path to the included sample config file "MobilityCoreServicesConfig.xml", or choose the first option. Next you will edit or enter info manually on the dialogs (step 5) or choose to skip the configuration info input and edit the config file itself later by checking the "Set later in config file" checkboxes. Importing the sample file with step 4 is not necessary but will fill in the fields of step 5 with default and sample values which can be edited. Note that at install completion, a new config xml is automatically created locally called "MobilityCoreServicesConfig.xml", a standard .NET configuration file format, which will store the entered info, or will have null values if they were skipped. This is the one and only config file for all pieces and should be present in any directories of any pieces, including the admin GUI portion. It can be modified anytime after installation, but any changes will not take effect until the component they correspond to is restarted. You can also replace it with an existing MobilityCoreServicesConfig.xml from a different location and make any changes manually if needed. The sample one is included in the source directory of the MSI. When installing different components on separate machines you will want to import the settings from the previous machine installation directory onto any subsequent machines. You can do this by performing step 4 as above or by skipping the configuration parts and copying the xml file into the directory on the subsequent machine, then adding any missing info.

Additional limited GUI option: If you want a particular Admin GUI installation to only monitor 1 or 2 of the services, remove the portion of the config file corresponding to the service(s) you don't want displayed and use this with the Admin component.

-
- Next you will be given specific dialogs for each (if any) of the three service components chosen to be installed.

****Notes:** Avoid using the "..." browse buttons unless you know they work on the OS. Instead, type or paste in directory paths. All of the info on these dialogs can be adjusted at a later time if desired, either through the control panel Services snap-in or via the config file, depending on what you are setting. The default is to have each run as a service and start automatically on reboot. You will want to specify an account for the service, or you can choose the LocalSystem account if they are all running on the same machine and network security is minimal. Accounts other than LocalSystem must have "Log on as a service" rights set in the Control Panel Security policies, which may need to be set manually, but is generally handled automatically by the OS.

You will also want to change the queue names (if running as a service) from the sample config file so that the placeholder "MWMMACHINE" in the path is replaced with the machine name you are installing on or that the queue server is running on if using public queues. For private queues, the syntax is different if you are installing on a different machine than the queue is on. The application will attempt to create the queues at runtime if they do not exist. The machine the Admin app is first run on will create all queues for any services installed on that machine, so it is best to install and run the admin piece at least once on any server machines in order to set up the queues properly. If the Admin portion is not used and the services are run first via the control panel, queues will be created for each service component separately on its own machine as it is run. Any later use of the Admin will need to be configured to access the private queues on each machine using format-name syntax. Since queues are auto-generated there is no need to create any queues manually unless using remote public queues located on a separate machine. Any or all queues can be added or modified at any time however via the Windows control panel:

Administrative Tools->Computer Management->Service and Applications

Local private queues are recommended, but if using the public type of queue, where a remote queue server holds all public queues, you will want to create those queues on that machine prior to running the services (you can install the services at any time however). See **Message Queuing Notes** below for more info on message queue issues.

You can also specify the full path to each Oracle Utilities Mobile Workforce Management executable (i.e. C:\MWM_150\Server.exe, etc) at this time, and it will be inserted into the config file. (With or without the executable name are both acceptable, but avoid the "..." button.) Executable paths to remote machines are ignored and can be left out of the config file for that particular service, since they are not applicable. If the machine name for a given service is left out of the config file, the Admin piece will not show the main dialog for that service.

There is also an option to uncheck, thereby disabling the audio beeping that occurs from the components. (This does not disable beeping on the Admin GUI however, which requires a sound card to hear it). This is a good idea when the server is in a separate server room and you can't hear the beeps, but they may drive someone else crazy. Also, since the services may very well restart autonomously, sometimes a temporary error that was corrected would keep beeping because there's no-one there to acknowledge or delete it, such as when the router fails to connect then retries and connects.

Note that there is a QueueSize parameter in the xml config file that is not on these dialogs. This limits the overall size of each queue to an approximate amount. The default is 300 but it can be set much larger if you wish to have longer message tracking. Do not set this to less than 300 or greater than 300000. This is in place for message volume considerations. See the section below on Message Queuing for more info.

- Once the installation completes, you should check the Services control panel snap-in to see that the services chosen for install appear on the list. There will also be an icon in the

Programs group and on the desktop. Before running anything, be sure that the config file is complete if you had skipped any info during installation. You should first click the Admin icon to see if the Admin app runs properly. It will set up queues for any services installed on this machine. If you get an error message: "Unable to set security on new queue..." it means that the security settings on the new queues will have default OS settings. The app may run fine with these settings, but in many environments you will want to apply the more specialized settings described below in the "Message Queueing Notes" section by going into the control panel and accessing the security tab of their properties.

- From the Admin dialogs you can start and stop the components, but don't start any service until you are sure the xml config file is set up correctly with any info that was not finished in the install dialogs. Once you run the services, they should appear in the admin GUI as usual. You may want to check system application event log for logged events by the services also.

This completes the installation. The following sections are for additional support information.

Uninstallion

Uninstallation should be seamless via the Windows control panel Add/Remove Programs snap-in. This seems to work fine but if it should fail which is unlikely, it may be difficult to remove the registered services. If this happens with the service installation, you may not be able to re-install over the existing services. In this scenario it is best to try to recreate the proper environment if possible so that the Uninstall can run to completion. If all else fails, there is an emergency service deregistration Windows dialog-based utility located in the VSS directory which will remove the services from the control panel:

```
path:  
MWM_150\Visual Studio Projects\MobilityServices\MobilityAdminInstall\Release  
  
Filename: EmergencyServiceDeregister.exe
```

This may not remove the Add/Remove Programs entry, and may not allow re-installation, but at least they won't be registered as services any more. Beyond this point you would work on the Windows registry if you still have to re-install.

It is important to note that the main reason for the installation process is to register the services with the OS. The exe's and dll's themselves do not need to be registered. Therefore, as long as the service installation is successful and the registered paths are correct in the control panel Services viewer, the exe's and dll's can be manually copied to the appropriate directory locations and everything should work.

Troubleshooting Notes

Config File Notes

The config file, "MobilityCoreServicesConfig.xml", has standard xml configuration n/v pairs for all the service wrappers and admin app. It can be adjusted at any time to reflect new configuration changes, including queue changes, and these will be adopted by the portions next time they are restarted. It holds the flags for running the Oracle Utilities Mobile Workforce Management executables with service functionality as well as the queue names used by all the services for communications with the admin. It also has the local paths to the wrapped executables specified for each separate service. Many of these settings are passed to the Oracle Utilities Mobile Workforce Management executables via the command line.

Message Queuing Notes

The ability of the services to wrap the executables and allow them to operate behind the scenes depends on Windows Message Queuing (MSMQ) for its successful functionality. MSMQ can be installed on Windows via the Control Panel:

```
"Administrative Tools->Add/Remove Programs->Add/Remove Windows Components button"
```

Without MSMQ installed as part of the operating system, there is no functionality of the admin, and no real reason to use it. The individual service components should still be installed however, and administered via the Control Panel Services snap-in, setting them to run on the LocalSystem account with desktop interaction. A one-machine installation is recommended in that scenario.

Message queuing has two basic kinds of message queues: public and private. Public is more complex since it is accessible between machines across a network with a simple path name, and has additional routing capability for more advanced network configurations. Both allow for satellite monitoring and control of the service components from remote workstations on the network however. The difference in the queues is denoted by a simple change to the queue path name: adding the string "\\private\$" after the machine name. For example, the following is a public queue syntax for the Oracle Utilities Mobile Workforce Management Server output queue on machine named "QUEUEMACHINE":

```
QUEUEMACHINE\MWMSvToAdmin
```

and a private queue created on that machine would have the following syntax:

```
QUEUEMACHINE\Private$\MWMSvToAdmin
```

Queue names are case insensitive. Note that public queues can only be created on Windows Server OS's and not on workstations and must be specifically configured as queue servers. Workstations must either use private queues or specify the public queues already created on a separate server on the network. Private queues can be also created on servers and can be accessed over the network if the format name is used for the path name. For example, the following is the syntax for accessing a remote private queue from a different machine:

```
DIRECT=OS:QUEUEMACHINE\Private$\MWMSvToAdmin
```

Since the Oracle Utilities Mobile Workforce Management components are generally installed on servers this should not be an issue as long as MSMQ is configured on the server and any satellite admin installations have the proper queue format name syntax in the config file. Note that all the service components can run off only two queues (one inbound and one outbound) if need be, but this is not recommended! Currently the default is two queues (in and out) per service component. Also note that once everything is up and running, the queue configuration can be changed completely at any time, to switch to use a public queue server for example, simply by changing the queue names in the config file and restarting everything.

The queue security settings can be configured in various ways as desired but the default attempted by the application when they are created is:

```
Local Administrators: Full Control
```

```
Everyone: Rcv Msg, Peek Msg, Rcv Jnl, Get Props, Get Permissions, Write Msg
```

```
ANONYMOUS LOGON: Write Msg
```

If this default fails during the auto queue creation you will be shown a message that queue security will need to be configured manually.

Note that there is a QueueSize parameter in the xml config file. This limits the overall size of each queue to an approximate amount. The default is 300 but it can be set much larger if you wish to have longer message tracking. Do not set this to less than 300 or greater than 300000. This is in place for message volume considerations and essentially does the following:

- First messages up to QueueSize/3 are left on queue indefinitely.
- Last QueueSize/3 Events are left on queue in FIFO basis.
- Last QueueSize/3 other messages are left on queue in FIFO basis.

All messages are removed from its queue when a Oracle Utilities Mobile Workforce Management service is stopped. There is also a button on the Admin to turn off message queuing while the service is running. In this scenario, the first QueueSize/3 messages are still placed on the queue and after that the other FIFO segments are stored internally by the service and are placed on the queue when message queuing is turned on again. The services default to message queuing "off" if not started from the Admin, and whenever the Admin GUI runs it turns on the message queuing switch and when it is closed it turns off the switch.

Windows Services Notes

Windows services must be started via the built in windows service manager OS hook and this can be done from the admin app or from the Control Panel snap-in. Service accounts other than LocalSystem must have "Log on as a service" rights set in the Control Panel Security policies. Also, services must be installed and uninstalled by special apps designed to do so, there are no Windows methods for this. The installer here performs these daring feats, but as we know, Windows has some quirks and occasionally refuses to let you uninstall applications. See the Uninstall portion of this document for more info.

Known Issues

Avoid using the "..." file-browser dialog buttons during the installation unless you are sure the OS will handle it. So far my experience has been that Win2K Workstation is OK but Win2003 Server is not.

There may be a memory leak in the MSMQ service which is apparently a documented Windows bug. This may result in dwindling memory reserve even though queue messages are being deleted regularly from the queues. This is why the "Message Queuing Off" switch is in place, though there may be a patch for this from Microsoft.

There is an occasional warning in the application log relating to byte alignment in MQPERF.dll that appears to be a .NET bug of sorts and may have something to do with 64-bit hardware optimization. It happens prior to XP and Win2003. It is not functionally relevant and doesn't need to be addressed. This bug is a documented Microsoft bug identified on their website and their solution involves minor editing of the registry, so check the website if you really feel like addressing it(!)

MapViewer Parameters and Troubleshooting

Configurable Database Parameters:

Tables: DHTDWINI and DHTMWINI

Parameter	Example	Description
UseMapViewer	Y	Use map viewer on DW
SpatialMapCache	TILE_LAYER	Typically your tile layer (non image)
MapViewerIP	Mwfmmapssvr	Machine name where map viewer is installed
MapViewerPort	7001	Port that you access Oracle Map viewer on.

MapViewTilingBaseMapURL	mwfmapssvr	Use host name where map viewer is deployed.
MapViewTilingBaseMapURLPort	7001	Tiling port. Same as map viewer port.
SpatialDataSource	navteqtestdata	The data source that you created in your your Oracle Map Viewer config file XML to point to the Navteq database.
MapViewPageName	index.jsp	Default page.
DatabaseUserName	MWFUSER	MWM DB user.

The following coordinates (latitudes and longitudes) are intended to provide a default MBR (minimum bounding rectangle) when the map is opened and there are no field orders in the FO list.

MapViewDefaultRight	-121.1965
MapViewDefaultLeft	-121.4159
MapViewDefaultTop	38.0243
MapViewDefaultBottom	37.8844

Verifying that Spatial is installed and enabled:

1. SQL Statement to test if the DB has spatial components installed

```
Select COMP_NAME, STATUS from dba_registry WHERE UPPER (COMP_NAME) = 'SPATIAL';
```

If spatial is enabled you should see the output:

```
COMP_NAME STATUS
Spatial    VALID.
```

Spooling to a file in an SQL plus session.

To redirect script output to a file you can run the following command in the SQL plus window after logging in.

```
sql>Set echo on
sql>SPOOL c:\temp\MyLogFile.log
```

Then run your SQL statements:

```
sql>Set echo off
```

To turn spooling off run.

```
sql> SPOOL OFF
```

Mapping Related Database Schema Objects

Indexes

```
DHTMAPCREWLOC_LOCATION_SIDX
DHTMAPFOLOC_LOCATION_SIDX
DHTMAPLM_LOCATION_SIDX
RHTMAPFOLOC_LOcATION_SIDX
```

Triggers

```
TR_DELETE_DHTMAPCREWLOC
```

TR_UPDATE_DHTMAPCREWLOC
TR_DELETE_DHTMAPFOLOC
TR_INSERT_DHTMAPFOLOC
TR_UPDATE_DHTMAPFOLOC
TR_INSERT_DHTMAPLM
TR_DELETE_RHTMAPFOLOC
TR_INSERT_RHTMAPFOLOC
TR_UPDATE_RHTMAPFOLOC

Major Tables Used

DHTMAPCREWSAVE.sql
DHTMAPCREWUSER.sql
DHTMAPFOLOC.sql
DHTMAPFOSAVE.sql
DHTMAPFOUSER.sql
DHTMAPLM
DHTDEFMAPLOC.sql
RHTMAPFOLOC.sql
RHTMAPFOUSER.sql

Views

DHTMAPCREWVIEW.sql
DHTMAPFOVIEW.sql
RHTMAPFOVIEW.sql

Trouble Shooting

1. **Problem:** The MWM map viewer has been deployed, but when the map viewer server initializes I see the following in the logs.

WARNING: Cannot read USER_SDO_TILE_ADMIN_TASKS view from database.(mwmtestdata). Where "mwmtestdata" is my MWM data source.

Solution: You've had to run the file: mcsdefinition.sql against your Navteq database as user system when you installed and deployed the oracle map viewer (see instructions). Now you must run the same SQL statement as the system user on your MWM database.

2. **URL To independently Test the map viewer:** You can use this to view a map against the map viewer service without having to log on to the dispatcher workstation. This bypasses the dispatcher completely and lets you make sure that the map viewer service works.

Note: You'll need to make changes for your own setup.

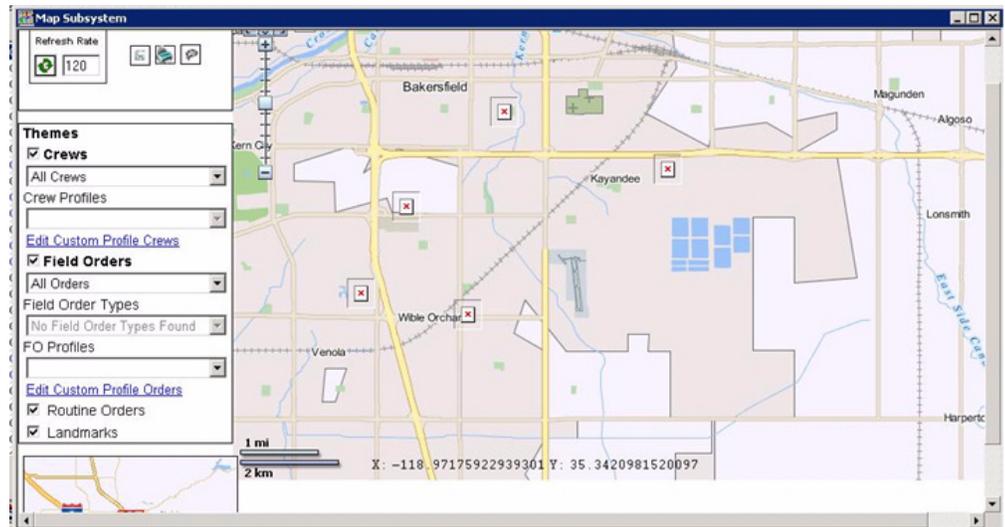
http://mwmapssvr:7001/MWMMapviewer/MapviewerMainPage.jsp?action=centerMap¢erX=-81¢erY=41&accessLevel=0&userID=SYSM&spatialCache=TILE_LAYER&spatialDS=navteqtestdata&tilingBaseMapURL=mwfmappssvr&tilingBaseMapURLPort=7001&isDW=true&MWMDBUser=MWFUSER

3. **Problem:** Support suspects that something may be wrong with my Oracle Spatial database. What should I do?

Solution: Often you can run a script called: MDINST.SQL as user SYSTEM against the database that you suspect has a spatial problem. This file can be found under the install directory of your database (on the db server machine). Before running this script, it would be a wise to contact Navteq support to see if they concur. If they want you to run it then you probably should run it in an SQL plus session with spooling turned on so that oracle support can check for any errors.

4. **Problem:** The map system comes up fine and with no errors but the field orders are represented by “X”s instead of the bit map symbol that we normally see:

Example:



Possible Cause/Solution: The MWM map viewer service (deployed via MWMMapviewer.war) is responsible for fetching this icon. If the JDBC connection defined in either OAS or WebLogic is not working then there is a good chance that it won't fetch the icon for you.

Check your JDBC connection on your admin console for your web service:

- The “Name” should match your MWM DB user name (schema name).
- The JNDI name should be prefaced with “jdbc”. i.e.) jdbc/MWMUserName.
- In the DHTDWINI table in your MWM schema, your DatabaseUserName parameter value should match this user name as well (i.e. MWMUserName).

In the case below our MWM system uses the schema: MWFUSER. That means that the jdbc connection below must also be named MWFUSER. For the JNDI path, don't forget the “jdbc/” prefix as shown below. If you leave this out the service won't be able to use it.

Also: Check your map viewer logs when you first start up the maps. Look for anything that starts with the word: “exception”. If you see something like this in the logs there is a good chance that your JDBC connections are not working like the MWM map viewer service thinks it should.

Settings for MWFUSER

Configuration Targets Monitoring Control Security Notes

General Connection Pool Transaction Diagnostics Identity Options

Save

Applications get a database connection from a data source by looking up the data source on the Java Naming and Directory Interface (JNDI) and then requesting a connection. The data source provides the connection to the application from its pool.

This page enables you to define general configuration options for this JDBC data source.

Name: MWFUSER A unique name WebLogic domain.

JNDI Name: jdbc/MWFUSER The JNDI path default, the JNDI name of the data source. [More](#)

Also. You should be able to test your connection as long as it is bound to a particular server (usually default AdminServer). If its not, then bind it to the appropriate server, save your config and then restart the server. You should then be able to log on to the admin console and test it out. **EVEN IF THE CONNECTION WORKS** it may not work in conjunction with the MWM map viewer if the three rules stated above are not met.

To see if your JDBC data source is bound to a server hit the “targets” tab. You **SHOULD** see something like the screen below. If not then you should check the “AdminServer” target, save your config, then restart your service.

Settings for MWFUSER

Configuration **Targets** Monitoring Control Security Notes

Save

This page allows you to select the servers or clusters on which you would like to deploy this data source.

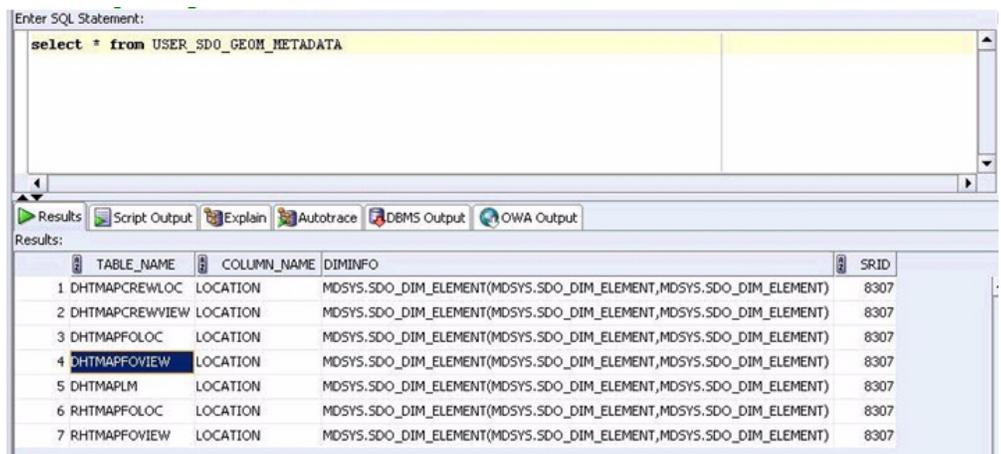
Servers
<input checked="" type="checkbox"/> AdminServer

Save

- Problem:** When we first bring up a map on a new map system we get the following error:

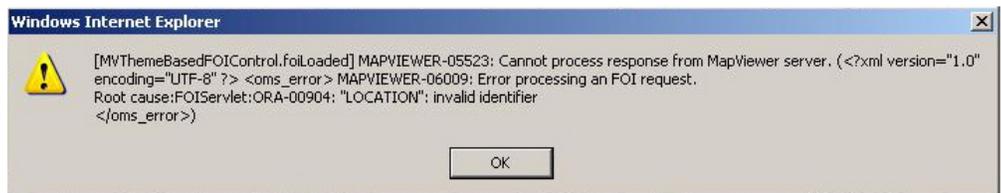


Solution: The chances are good that you are missing some indexes and views. If you have a “working” system to compare against, see if the problem system has the same number of indexes and views (related to the map viewer functionality) as the “working” system. You can also run the following query as seen in the screen shot below. If you don't see the same results that your DB isn't quite right.



To fix this situation please run the script: BuildMapviewerTab_MWM150.sql to recreate your views and indexes. Search for this script name in this doc and follow the instructions, then restart the map viewer service and your dispatcher workstation.

- Problem:** When I try to bring up the map viewer on the dispatcher I see the following error message:



Solution: See the instructions in **Important Note About Automated Theme and Style Import:** on page 3-44. You'll need to drop then recreate the DHTMAPLM table, recreate it, and then restart the map viewer service and the MWM dispatcher workstation.

Appendix B

MapViewer Installation

Note: Any installation instructions provided by the Navteq data products, or the MapViewer product group should supersede these instructions.

The MWM product instructions assume that you already have the Oracle MapViewer service deployed and working. You must do this BEFORE attempting to deploy the MWM map viewer. Follow these steps to install the Oracle MapViewer:

1. Have an Oracle 11g database installed and properly configured with Navteq data imported to it. The instructions that come with the Navteq map data are very good but rather involved. It is VERY IMPORTANT that you follow the instructions exactly as they appear. That includes the latter part of the document where you are running SQL scripts to get the configuration accurate. A trained DBA should handle the database configuration.
2. Install a compatible version of Oracle WebLogic server and create a default domain with an admin user ID and password. You can use the default settings when setting this up but make sure that you write down your user ID and password when you create your admin user. The instructions for installing WebLogic server accurate and complete. You should have no problem installing a default domain.
 - For a test environment you should deploy the WebLogic server in debug mode.
 - For a production environment you should deploy WebLogic server in production mode.
3. Get the Oracle MapViewer from Oracle E-delivery and install and deploy it on your application server according to the instructions that come with the package. A good version to use is 10.3.2.

You should create a separate domain just for MapViewer. When you later deploy the MWM map viewer you'll want to deploy it on this domain as well. The instructions that come with the oracle MapViewer are very good and you should have no trouble configuring this component.

Note: This is not in the instructions: you'll need to create two (not one) data sources. One that points to the MWM database and another that points to the Navteq database. You can do this after you have first deployed the Oracle MapViewer.

- The data source that points to the MWM database should use the same DB user ID and password that the rest of the MWM components use to access the database.
 - The data source that points to the Navteq database should use the schema that holds the navteq map data not the system user.
4. After deploying the Oracle MapViewer you'll want to logon to the admin console for the MapViewer service and click **Configuration**. Once you do this the file mapViewerConfig.xml should open for editing.

5. Now create two data sources via the XML config file:

- Data source one will point to the Navteq schema.
- Data source two will point to the MWM schema.

You can do this easily by going to the very bottom of the config file just above the tag: “</MapperConfig>” and pasting in the data source snippet found in file:

SampleMapViewDataSources.txt. This will give you a good template to work from. You can then customize them to point to your particular databases. When you are done click the **Save and Restart** button at the bottom of the page so the changes will take effect.

6. When your deployment is done and you have created your data sources, log on to the MapViewer admin console and make sure that they show up in your data sources list. If both data source names don't show up then you have done something wrong. Reexamine your parameters, make adjustments, and try again.
7. Start your MapViewer domain service back up and check the logs. If you see errors regarding such as creating MV_STRINGLIST types then you'll need to go to the “Running SQL Scripts” section of your Oracle MapViewer installation PDF file and run the scripts to create the MV_ array types against the Navteq schema that the MapViewer needs. See the section “Creating MapViewer Array Types”. Make sure that the user has privileges to create, delete or alter types. In fact if you give this user those privileges then the service itself will create these types for you and you won't have to do it by hand.
8. Unfortunately, the Navteq database does not come with a tile layer predefined. You need a tile layer to be able to use the map viewer in MWM. A tile layer can be easily created in the MapViewer admin console, shown below:



Note: If you have problems seeing the tile layers via the “Manage Map Tile Layers” tab you might want to check the following target tables on the Navteq database to see they are empty. If they are empty simply run these SQL statements against the Navteq schema.

```
insert into user_sdo_maps
select * from sdo_maps;
```

```
insert into user_sdo_themes
select * from sdo_themes;
```

```
insert into user_sdo_styles
select * from sdo_styles;
```

This won't necessarily fix your tile server but it needs to be done if the user_sdo_maps, user_sdo_themes and user_sdo_styles tables are empty.

Restart the server then go log on to the MapViewer admin console. Select **Manage Map Tile Layers**. You should see the two layers listed below. If you don't see them then make sure that you imported the dump file: MAP_CACHE_MD.DMP from the previous steps.

-
9. Now that you have Oracle MapViewer installed you should follow the instructions for deploying the MWM map viewer components provided by the MWM installer. Refer to **Oracle MapViewer Component Installation for WebLogic** on page 3-52.
 10. Create the one and only data source that the MWM map viewer uses. Make sure that it connects. You should be able to test the connection. This data source should point to the MWM database and use the same DB User ID that the other applications do.
 11. Run the following script against the MWM database to make sure that some basic map viewer views and themes are set up: `automated_scripts.bat`

Note: If your MWM server machine has the Oracle IMP utility installed AND SQL plus then you can simply run the MWM install again, but this time enable the map viewer support by selecting the appropriate check box. The install will run this script for you. If you can't rerun the install or don't have IMP and SQL plus installed on the server machine then you must copy the `MWM_HOME\tools\database\oracle` directory and all of its subdirectories to the MWM DB server machine and run the script from there. This script file is usually found on the machine that the MWM server was installed on.

One typical path might be:

`C:\MWM\Tools\Database\Oracle`

You'll need to make the following edits to the file before you actually run the script where the user, password and TNS point to the MWM database that you wish to use.

```
set MWM_DB_USER=MWFUSER
set MWM_DB_PWD=PutPasswordHere
set MWM_TNS_NAME=MWFPILOT
set MAPVIEWER_DB_USER=MWFUSER
set MAPVIEWER_DB_PWD=PutPasswordHere
set MAPVIEWER_TNS_NAME=MWFPILOT
set MAPVIEWERSUPPORT=TRUE
```

Notice that the users and passwords all point to the MWM DB not the navteq DB.

Now run the batch file. It should run without errors.

12. **MapViewer Parameters and Troubleshooting** on page A-6 has a list of the indexes and triggers that are used by the MapViewer. If any one of these indexes or triggers is not present in the MWM database schema then you must run the following script against the MWM schema to rebuild them. MWM schema:

```
BuildMapviewerTab_MWM150.sql
```

This script can be found off of the directory where you installed the MWM server.

Example: `C:\MWM\Tools\Database\Oracle\BuildMapviewerTab_MWM150.sql`

Note: You might get some errors if some of the triggers and indexes already exist, but you can ignore them.

You'll also want to run the following script to create the appropriate synonyms for these tables and views:

```
MWM_HOME\tools\database\oracle\BuildMWMMapviewerSynonyms_MWM150.sql
```

Note: The script above calls another file, `CreateMapviewerSynonyms.sql`. You must edit this file to replace the keywords "mwm.mapviewer.database.login.name" in the file with your MWM database user.

Glossary

CC&B - The Oracle Utilities Customer Care and Billing application provides comprehensive support for all customer and billing operations. Oracle Utilities Customer Care and Billing is a separate application and is not part of the Oracle Utilities Mobile Workforce Management installation; however, some information about your Oracle Utilities Customer Care and Billing installation will be required during the install process if you choose to integrate with Oracle Utilities Customer Care and Billing by selecting the Oracle Utilities Customer Care and Billing Web Service option during installation.

CE Mobile Workstation - The Oracle Utilities Mobile Workforce Management CE Mobile Workstation is used in the field to work orders. Orders to be worked will be dispatched to the mobile device and displayed in the field order list. As users process orders, statuses and completion information are returned via wireless communication or LAN connection.

DW - The Oracle Utilities Mobile Workforce Management Dispatch Workstation is the client application used by the users to monitor orders and crews. It accesses the Oracle Utilities Mobile Workforce Management database directly and communicates with the Oracle Utilities Mobile Workforce Management Server via TCP/IP sockets. The user can use the Oracle Utilities Mobile Workforce Management Dispatch Workstation application to perform maintenance to the Oracle Utilities Mobile Workforce Management resource tables (e.g., personnel, vehicles, and crews) and validation/lookup tables.

ORS - (formerly ERS/ERTS): The Oracle Real-Time Scheduler application provides optimization of orders and crews based on extensive cost, skill, and time parameters. This is a separate application and is not part of the Oracle Utilities Mobile Workforce Management installation; however, some information about your Oracle Real-Time Scheduler installation will be required during the install process if you choose to integrate with Oracle Real-Time Scheduler by installing the Oracle Utilities Mobile Workforce Management Integration Manager.

IIS - Microsoft Internet Information Services provides Web service interfaces between Oracle Utilities Mobile Workforce Management and external applications.

IM - The Oracle Utilities Mobile Workforce Management Integration Manager translates and manages communication of messages between Oracle Utilities Mobile Workforce Management and the Oracle Real-Time Scheduler.

MW - The Oracle Utilities Mobile Workforce Management Mobile Workstation application is used in the field to complete orders. The Mobile Workstation always communicates with the Oracle Utilities Mobile Workforce Management Server via the Oracle Utilities Mobile Workforce Management RfTransport application. When installing the Mobile Workstation component, the RfTransport will automatically be installed.

NMS - The Oracle Utilities Network Management System is a comprehensive, integrated suite of real-time applications for managing network resources and outages. Oracle Utilities Network Management System is a separate application and is not part of the Oracle Utilities Mobile Workforce Management installation; however, some information about your Oracle Utilities Network Management System installation will be required during the Oracle Utilities Mobile Workforce Management install process if you choose to integrate with Oracle Utilities Network

Management System by selecting the Oracle Utilities Network Management System Web Service option during installation.

OAS - The Oracle Application Server is a robust applications web server used to service the Oracle MapViewer.

RfTransport - The Oracle Utilities Mobile Workforce Management RfTransport application provides communication between the Oracle Utilities Mobile Workforce Management Server and the Oracle Utilities Mobile Workforce Management Mobile Workstation. Installing the Oracle Utilities Mobile Workforce Management RfTransport on a mobile device (Client-Side) occurs automatically when the Oracle Utilities Mobile Workforce Management Mobile Workstation component is selected.

Router - The Oracle Utilities Mobile Workforce Management Router application is used to convert and route transactions between external applications, the server, and the scheduling module.

Server - The Oracle Utilities Mobile Workforce Management Server application is the epicenter of the Oracle Utilities Mobile Workforce Management environment. It processes orders, crews, personnel, dispatch functions and status transactions, and communicates the status of orders and users to the other connected applications.

SID - The Oracle System Identifier that refers to the instance of the Oracle database running on the server. (The default SID when configuring an Oracle database is “orcl”)

TNS - TNS (Transparent Network Substrate) is a communication layer used by Oracle databases. A TNS Name is the database connection identifier by which an Oracle database instance is known on a network. You assign a TNS Name when you configure connectivity to the Oracle database. The TNS Listener -- the network interface between a database client and the database server -- uses the TNS Name to establish connections.

Web Services - A web service is a software component that is used to facilitate the exchange of information between applications or systems over a network.