Oracle® CRM Gateway for Mobile Devices

Implementation Guide

Release 11*i*

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Oracle CRM Gateway for Mobile Devices Implementation Guide, Release 11*i*

Part No. A97295-03

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Preface

Audience for This Guide

Welcome to Release 11*i* of the Oracle CRM Gateway for Mobile Devices Implementation Guide.

This guide assumes you have a working knowledge of the following:

- The principles and customary practices of your business area.
- Oracle CRM Gateway for Mobile Devices

  If you have never used Oracle CRM Gateway for Mobile Devices, Oracle suggests you attend one or more of the Oracle CRM Gateway for Mobile Devices training classes available through Oracle University.
- The Oracle Applications graphical user interface.

  To learn more about the Oracle Applications graphical user interface, read the *Oracle Applications User's Guide*.

See Other Information Sources for more information about Oracle Applications product information.

How To Use This Guide

This document contains the information you need to understand and use Oracle CRM Gateway for Mobile Devices.

- Chapter 1, Implementing Oracle CRM Gateway for Mobile Devices, describes the system architecture and everything you need to install the Oracle CRM Gateway for Mobile Devices.

- Chapter 2, Administering Oracle CRM Gateway for Mobile Devices describes how to use the Oracle CRM Gateway for Mobile Devices, including starting and configuring it, creating and managing mobile users, and how to handle errors.
- Chapter 3, Troubleshooting and FAQs, provides answers to the most common problems that occur when using Oracle CRM Gateway for Mobile Devices.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Standards will continue to evolve over time, and Oracle Corporation is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For additional information, visit the Oracle Accessibility Program Web site at http://www.oracle.com/accessibility/.

Accessibility of Code Examples in Documentation

JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

Other Information Sources

You can choose from many sources of information, including online documentation, training, and support services, to increase your knowledge and understanding of Oracle CRM Gateway for Mobile Devices.

If this guide refers you to other Oracle Applications documentation, use only the Release 11*i* versions of those guides.

Online Documentation

All Oracle Applications documentation is available online (HTML or PDF). Online help patches are available on MetaLink.

Related Documentation

Oracle CRM Gateway for Mobile Devices shares business and setup information with other Oracle Applications products. Therefore, you may want to refer to other product documentation when you set up and use Oracle CRM Gateway for Mobile Devices.

You can read the documents online by choosing Library from the expandable menu on your HTML help window, by reading from the Oracle Applications Document Library CD included in your media pack, or by using a Web browser with a URL that your system administrator provides.

If you require printed guides, you can purchase them from the Oracle Store at http://oraclestore.oracle.com.

Documents Related to All Products

Oracle Applications User's Guide

This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI) available with this release of Oracle CRM Gateway for Mobile Devices (and any other Oracle Applications products). This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent processes.

You can access this user's guide online by choosing "Getting Started with Oracle Applications" from any Oracle Applications help file.

Documents Related to This Product

Oracle Field Service/Palm Devices Implementation Guide

This guide describes the tasks you must follow to implement the Oracle Field Service/Palm™ Devices.

Oracle Field Service/Laptop Implementation Guide

This guide describes the tasks you must follow to implement the Oracle Field Service/Laptop.

Oracle Field Service/Palm Devices Concepts and Procedures

In this guide you can read background information about the Oracle Field Service/Palm™ Devices and learn how to use its features.

Oracle Field Service/Laptop Concepts and Procedures

In this guide you can read background information about the Oracle Field Service/Laptop and learn how to use its features.

Oracle9*i* Installation Guide

This guide describes how to install and configure Oracle9*i*.

Net8 Administrator's Guide

This guide describes how to administer and configure Net8.

Oracle8*i* Lite for Handheld Devices Developer's Guide

This guide describes administration and development tasks for the Oracle8*i* handheld devices.

Installation and System Administration

Oracle Applications Concepts

This guide provides instructions for managing the installation of Oracle Applications products. In Release 11*i*, much of the installation process is handled using Oracle Rapid Install, which minimizes the time to install Oracle Applications, the Oracle8 technology stack, and the Oracle8*i* Server technology stack by automating many of the required steps. This guide contains instructions for using Oracle Rapid Install and lists the tasks you need to perform to finish your installation. You should use this guide in conjunction with individual product user's guides and implementation guides.

Installing Oracle Applications

This guide provides an introduction to the concepts, features, technology stack, architecture, and terminology for Oracle Applications Release 11*i*. It provides a useful first book to read before an installation of Oracle Applications. This guide also introduces the concepts behind Applications-wide features such as Business Intelligence (BIS), languages and character sets, and Self-Service Web Applications.

Oracle Applications Supplemental CRM Installation Steps

This guide contains specific steps needed to complete installation of a few of the CRM products. The steps should be done immediately following the tasks given in the Installing Oracle Applications guide.

Upgrading Oracle Applications

Refer to this guide if you are upgrading your Oracle Applications Release 10.7 or Release 11.0 products to Release 11*i*. This guide describes the upgrade process and lists database and product-specific upgrade tasks. You must be either at Release 10.7 (NCA, SmartClient, or character mode) or Release 11.0, to upgrade to Release 11*i*. You cannot upgrade to Release 11*i* directly from releases prior to 10.7.

Maintaining Oracle Applications

Use this guide to help you run the various AD utilities, such as AutoUpgrade, AutoPatch, AD Administration, AD Controller, AD Relink, License Manager, and others. It contains how-to steps, screenshots, and other information that you need to run the AD utilities. This guide also provides information on maintaining the Oracle applications file system and database.

Oracle Applications System Administrator's Guide

This guide provides planning and reference information for the Oracle Applications System Administrator. It contains information on how to define security, customize menus and online help, and manage concurrent processing.

Oracle Alert User's Guide

This guide explains how to define periodic and event alerts to monitor the status of your Oracle Applications data.

Oracle Applications Developer's Guide

This guide contains the coding standards followed by the Oracle Applications development staff. It describes the Oracle Application Object Library components needed to implement the Oracle Applications user interface described in the *Oracle Applications User Interface Standards for Forms-Based Products*. It also provides information to help you build your custom Oracle Forms Developer 6*i* forms so that they integrate with Oracle Applications.

Oracle Applications User Interface Standards for Forms-Based Products

This guide contains the user interface (UI) standards followed by the Oracle Applications development staff. It describes the UI for the Oracle Applications products and how to apply this UI to the design of an application built by using Oracle Forms.

Other Implementation Documentation

Multiple Reporting Currencies in Oracle Applications

If you use the Multiple Reporting Currencies feature to record transactions in more than one currency, use this manual before implementing Oracle CRM Gateway for Mobile Devices. This manual details additional steps and setup considerations for implementing Oracle CRM Gateway for Mobile Devices with this feature.

Multiple Organizations in Oracle Applications

This guide describes how to set up and use Oracle CRM Gateway for Mobile Devices with Oracle Applications' Multiple Organization support feature, so you can define and support different organization structures when running a single installation of Oracle CRM Gateway for Mobile Devices.

Oracle Workflow Guide

This guide explains how to define new workflow business processes as well as customize existing Oracle Applications-embedded workflow processes.You also use this guide to complete the setup steps necessary for any Oracle Applications product that includes workflow-enabled processes.

Oracle Applications Flexfields Guide

This guide provides flexfields planning, setup and reference information for the Oracle CRM Gateway for Mobile Devices implementation team, as well as for users responsible for the ongoing maintenance of Oracle Applications product data. This manual also provides information on creating custom reports on flexfields data.

Oracle eTechnical Reference Manuals

Each eTechnical Reference Manual (eTRM) contains database diagrams and a detailed description of database tables, forms, reports, and programs for a specific Oracle Applications product. This information helps you convert data from your existing applications, integrate Oracle Applications data with non-Oracle applications, and write custom reports for Oracle Applications products. Oracle eTRM is available on Metalink

Oracle Manufacturing APIs and Open Interfaces Manual

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes APIs and open interfaces found in Oracle Manufacturing.

Oracle Order Management Suite APIs and Open Interfaces Manual

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes APIs and open interfaces found in Oracle Order Management Suite.

Oracle Applications Message Reference Manual

This manual describes Oracle Applications messages. This manual is available in HTML format on the documentation CD-ROM for Release 11i.

Oracle CRM Application Foundation Implementation Guide

Many CRM products use components from CRM Application Foundation. Use this guide to correctly implement CRM Application Foundation.

Training and Support

Training

Oracle offers training courses to help you and your staff master Oracle CRM Gateway for Mobile Devices and reach full productivity quickly. You have a choice of educational environments. You can attend courses offered by Oracle University at any one of our many Education Centers, you can arrange for our trainers to teach at your facility, or you can use Oracle Learning Network (OLN), Oracle University's online education utility. In addition, Oracle training professionals can tailor standard courses or develop custom courses to meet your needs. For example, you may want to use your organization’s structure, terminology, and data as examples in a customized training session delivered at your own facility.

Support

From on-site support to central support, our team of experienced professionals provides the help and information you need to keep Oracle CRM Gateway for Mobile Devices working for you. This team includes your Technical Representative, Account Manager, and Oracle’s large staff of consultants and support specialists with expertise in your business area, managing an Oracle8*i* server, and your hardware and software environment.

Oracle*MetaLink*

Oracle*MetaLink* is your self-service support connection with web, telephone menu, and e-mail alternatives. Oracle supplies these technologies for your convenience, available 24 hours a day, 7 days a week. With Oracle*MetaLin*k, you can obtain information and advice from technical libraries and forums, download patches,

download the latest documentation, look at bug details, and create or update TARs. To use MetaLink, register at (http://metalink.oracle.com).

Alerts: You should check Oracle*MetaLink* alerts before you begin to install or upgrade any of your Oracle Applications. Navigate to the Alerts page as follows: Technical Libraries/ERP Applications/Applications Installation and Upgrade/Alerts.

Self-Service Toolkit: You may also find information by navigating to the Self-Service Toolkit page as follows: Technical Libraries/ERP Applications/Applications Installation and Upgrade.

Do Not Use Database Tools to Modify Oracle Applications Data

Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle Applications data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle Applications data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle Applications tables are interrelated, any change you make using Oracle Applications can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

About Oracle

Oracle Corporation develops and markets an integrated line of software products for database management, applications development, decision support, and office automation, as well as Oracle Applications, an integrated

suite of more than 160 software modules for financial management, supply chain management, manufacturing, project systems, human resources and customer relationship management.

Oracle products are available for mainframes, minicomputers, personal computers, network computers and personal digital assistants, allowing organizations to integrate different computers, different operating systems, different networks, and even different database management systems, into a single, unified computing and information resource.

Oracle is the world's leading supplier of software for information management, and the world's second largest software company. Oracle offers its database, tools, and applications products, along with related consulting, education, and support services, in over 145 countries around the world.

1

Implementing Oracle CRM Gateway for Mobile Devices

This topic group describes the implementation and administration of the CRM Gateway for Mobile Devices, release 11*i*, and related components.

The topics include:

- Step 3. Installing the Gateway database
- Step 4. Installing Oracle9i Lite Mobile Server
- Step 5. Creating CRM Gateway for Mobile Devices

1.1 System Architecture

This section helps you to understand the function of the CRM Gateway for Mobile Devices and its relationship to other Oracle Applications.

Topics covered are:

- Overview
- Understanding the Synchronization Process
- Terminology

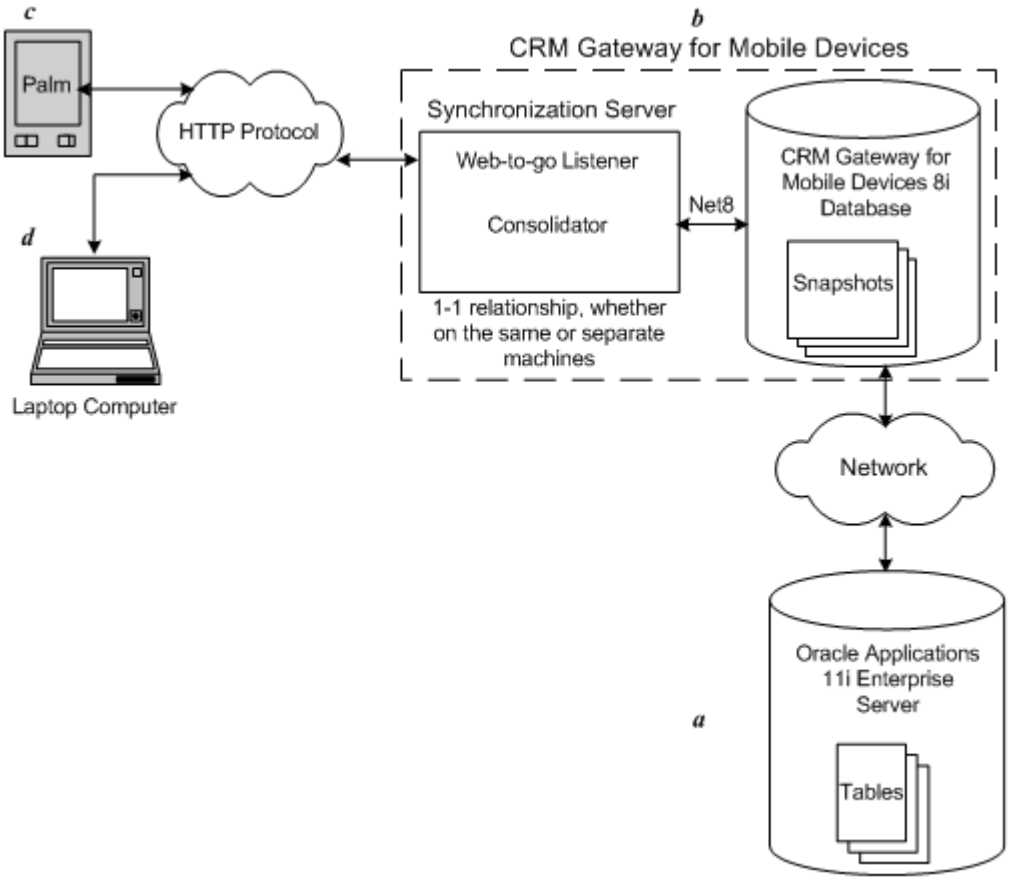
1.1.1 Overview

The CRM Gateway for Mobile Devices acts as the interface between the CRM enterprise database and the client palm and laptop applications. It is the middle tier in the following three-tier architecture:

- CRM Applications database
- CRM Gateway for Mobile Devices
- Mobile devices including: Oracle Field Service / Laptop and Oracle Field Service Palm Devices, Oracle Field Sales / Laptop and Oracle Field Sales / Palm Devices.

This architecture allows for scalability and strategic deployment of the server for data load balancing. Gateway servers can be located in remote sales and service offices close to the mobile worker while the server communicates with the main enterprise database over a LAN or a WAN.

The CRM Gateway for Mobile Devices transfers changed information between your field device and Oracle Applications 11*i*. The following diagram shows the components of the CRM Gateway for Mobile Devices and their functional relationships. The letters next to the component definitions relate to the letters on the diagram.



a. Oracle Applications Enterprise Server

This is the Oracle Applications database, Release 11*i*. You set up one or more CRM Gateway for Mobile Devices and your mobile users for this server.

b. CRM Gateway for Mobile Devices

The CRM Gateway for Mobile Devices consists of two parts:

The Mobile Server: This NT server is installed with the consolidator from Oracle9*i* Lite and the Oracle Web-to-go Server listener. The consolidator

synchronizes the data on the device with data in Oracle Applications using HTTP.

The Database: The Oracle8*i* database can reside on the same machine as the Mobile Server or on a different UNIX or NT box.

c. Palm Device

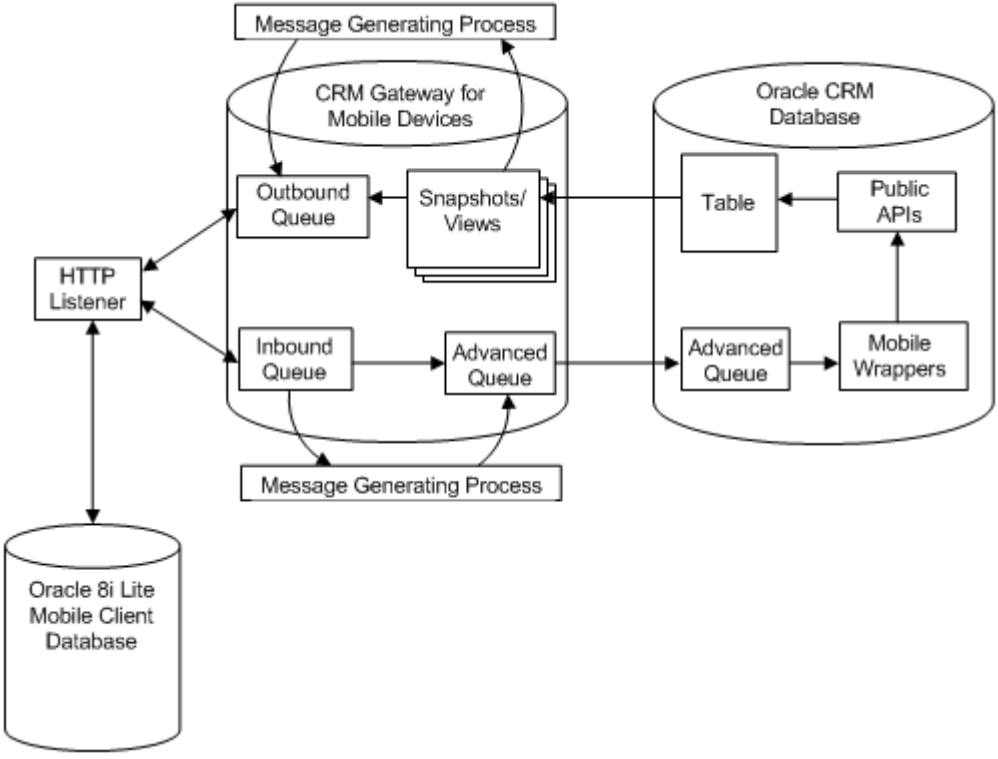
The hand-held Palm device. Each device is used by a mobile user who is assigned a unique mobile user name during installation to identify it within the system. The mobile user uses a URL to connect with the CRM Gateway for Mobile Devices.

d. Laptop Computer

Each laptop is used by a mobile user who is assigned a unique mobile user name during installation to identify it within the system. The mobile user uses a URL to connect with the CRM Gateway for Mobile Devices.

1.1.2 Understanding the Synchronization Process

The following diagram illustrates the CRM Gateway for Mobile Devices synchronization process.



The Oracle9*i* Lite Mobile Client database resides on the hand-held device. The client sends its changes through the HTTP listener to the Inbound Queue. The Message Generating Process (MGP) moves the data from the Inbound Queue to the Advanced Queues, which transmit the data to the CRM instance. Public application programming interfaces (APIs) are then called by the Mobile Wrappers, which are responsible for applying client changes and for resolving conflicts.

Views map multiple snapshot tables on the CRM Gateway for Mobile Devices to one client application table. The Message Generating Process (MGP) moves the data to the Outbound Queue, where it is picked up from the HTTP Listener.

The snapshots on the CRM Gateway for Mobile Devices are of two types:

- Lookup
- Transaction

Lookup snapshots are typically refreshed once every night while Transaction snapshots are refreshed every half an hour. These intervals can be customized.

1.1.3 Terminology

Applications Database: The Oracle 8*i* server that runs Oracle Applications 11i.

Gateway Database: The CRM Gateway for Mobile Devices Database that runs an Oracle 8*i* server.

CRM Gateway for Mobile Devices Server (Gateway NT Server): A WindowsNT Server that hosts both the Gateway Database and Oracle9*i* Lite Mobile Server.

Oracle Lite DBMS: A small-footprint Java-enabled database-management system built specifically for laptops, hand-held computers, PDAs, and information appliances.

iConnect: Integrated components that allow for the synchronization of application data and the creation of store-and-forward messaging applications with advanced-queuing functionality.

Web-to-Go (also called the 'Mobile Server'): A collection of components and services that facilitates development, deployment, and management of mobile Web applications.

Http Listener: A component of Web-to-Go that services mobile devices.

Oracle Lite Consolidator: The Oracle Lite Consolidator allows new and existing mobile applications and data to be replicated, synchronized, and shared with the Oracle8 server.

Message Generator And Processor (MGP): At the heart of the Oracle Lite Consolidator is the Message Generator and Processor (MGP), a Java background process. The MGP serves two purposes:

- Uploads transactions from the applications running on the Mobile devices.
- Generates new updates (data) for the Mobile client devices to download.

Inbound Queue and Out bound Queue: Internal Oracle Lite Structures that store and forward the data from and to Mobile devices.

Snapshots: Tables created on the Gateway Database using Advanced Replication that are refreshed regularly with the Applications Database.

Transaction Snapshots: Snapshots that are refreshed very often, for example every 15 minutes.

Lookup Snapshots: Snapshots that are refreshed less frequently, for example once every day.

Advanced Queues: A queuing technology used to send and receive messages between the Gateway Database and Applications Database.

Application Views / System Queues: Views created on the Gateway Database that correspond to the objects created on the mobile device for each application.

Mobile Wrappers: Stored procedures installed at the Applications Database corresponding to Application Views that call the appropriate Public APIs.

Applications Portal Site: Apache website that hosts Oracle Application 11i.

1.2 Installation Prerequisites

This section describes hardware, software, and other installation requirements for the CRM Gateway for Mobile Devices.

Topics covered are:

- Minimum hardware requirements
- Minimum software requirements
- Additional requirements
- CRM applications database verification
- Scheduling concurrent programs

1.2.1 Minimum Hardware Requirements

The following table provides the hardware requirements to support two configurations of mobile users on the CRM Gateway for Mobile Devices.

Registered users are all mobile users of a CRM Gateway for Mobile Devices. The Gateway can potentially support more than 1000 registered users. Concurrent users refers to users who are simultaneously connected to the CRM Gateway for Mobile Devices. Both requirements and performance features are discussed using concurrent users because this is a more critical metric from an organizational standpoint. These are only baseline requirements.

Requirements	5- 10 Concurrent Users	100 Concurrent Users
CPU	IBM Compatible Pentium Processor	IBM Compatible with 4 or more Pentium Processors
RAM	512 MB	Greater than 1 GB

1.2.1.1 Minimum Software Requirements

The following table shows the software requirements for the CRM Gateway for Mobile Devices.

Tier	Software Requirements
Enterprise	Oracle Applications release 11i ■ At minimum, you must fully install AOL and JTF.
CRM Gateway for Mobile Devices Database	Oracle8*i* Enterprise Edition, release 8.1.7 ■ **Note:** Oracle Corporation recommends the Oracle CRM Gateway for Mobile Devices to be installed on a fresh installation and that no other applications make use of the database. ■ The machine must be on the same LAN / WAN as the Oracle Applications Release 11i database server. ■ Refer to the readme file for the Oracle database patch that you are installing. Oracle9i Lite, release 5.0, Mobile Server ■ Microsoft Windows NT version 4.0 (service pack 5 recommended). ■ JDK 1.2.2 (can be downloaded from: http://www.javasoft.com). ■ The latest patch version needs to be installed (8.0 or higher.) Refer to the readme file of the patch that you are installing.

1.2.2 Additional Requirements

After you install all of the required products, you must reboot your machine to run the components properly. Consult your network specialist or system administrator for more information.

1.2.3 CRM Applications Database Verification

Before you can create a CRM Gateway for Mobile Devices, verify that these steps have been correctly completed. If they are not correct, fill in the Enterprise Installation Worksheet and follow the steps described in this section.

Verification requires that the following tasks be completed:

- Ensuring advanced replication is installed (database option)
- Checking for advanced queues
- Verifying the unique global name
- Setting init.ora parameters

1.2.3.1 Enterprise Installation Worksheet

The following information is needed to perform the Oracle Applications Release 11*i* portion of your installation. Record the schema username and password in the Oracle Applications Release 11*i* database for the following:

Schema	Username	Password
SYS schema		
SYSTEM schema		
ASG schema		
CS schema		
JTF schema		
APPLSYS schema		
HR schema		
AR schema		
CSP schema		
CSF schema		
APPS schema		
INV schema		
ONT schema		
OSM schema		
AK schema		

1.2.3.2 Ensuring Advanced Replication is Installed (Database Option)

See Oracle8*i* replication documentation for further information on how to enable replication. If you have not chosen the replication option at database creation or already installed the replication catalogs, perform the following steps:

1. For both NT and UNIX, start Server Manager at the command prompt:

   ```
   $ svrmgrl   (UNIX)
   ```

2. Connect to the database as INTERNAL with appropriate password if necessary.

3. The CATREP.SQL script is to be found in the **RDBMS80\ADMIN** (Windows NT) or **rdbms/admin** (Unix) sub-directory of your **<ORACLE_HOME>** directory. It is a good idea to spool output to a log file first before you run CATREP.SQL.

   ```
   SVRMGR> SPOOL <log file name>
   ```

   Execute the script CATREP.SQL.

   Once CATREP.SQL has completed, turn off the output spooling.

   ```
   SVRMGR> SPOOL OFF
   ```

   The log file is created in the directory from which Server Manager is invoked. Check this for error messages before you proceed. You can safely ignore ORA-01432, ORA-01434, and ORA-00955 errors.

4. To confirm that CATREP.SQL ran correctly, run a query on ALL_OBJECTS where STATUS = INVALID. For example,

   ```
   SVRMGR> SELECT * FROM ALL_OBJECTS WHERE STATUS = 'INVALID';
   ```

   If you find any invalid objects, then recompile them manually. For example:

   ```
   SVRMGR> ALTER PACKAGE <package_name> COMPILE BODY;
   ```

   If CATREP.SQL has run successfully, then a number of replication tables are created in the SYSTEM tablespace. The Oracle Applications database is now set up for advanced replication.

1.2.3.3 Checking for Advanced Queues

You can use SQL*Plus to query these values with this command: SELECT * FROM SYS.DBA_QUEUES. To determine whether the values for DEF$_AQERROR and DEF$_AQCALL are enabled or disabled, look at the values in the columns ENQUEUE and DEQUEUE shown after the select statement. If these values

are FALSE for both columns, they are disabled. If this is the case, you need to connect to the Oracle Applications database as SYSTEM and execute the following commands to enable the queues:

```
EXECUTE SYS.DBMS_AQADM.START_QUEUE('DEF$_AQERROR', TRUE, TRUE);
EXECUTE SYS.DBMS_AQADM.START_QUEUE('DEF$_AQCALL', TRUE, TRUE);
```

1.2.3.4 Verifying the Unique Global Name

The Applications database needs to have a unique global name for this application.

> **Note:** It is highly recommended that GLOBAL_NAME has a DB_DOMAIN. However, if the applications database global name does not have a domain name, do not set domain names for any of the Mobile Device Gateways. Do not use a hyphen (-) in the global name. If you do so, the database link will not be created.

To identify the global name of a database, connect to the database through SQL*Plus as any schema and run the following query:

```
SELECT * FROM GLOBAL_NAME;
```

The global name is typically DB_NAME + DB_DOMAIN from init<SID>.ora.

If replication was previously installed in the database, replication groups will be associated with the database. You can use the following query to find the details:

```
select sname, DBLINK from system.repcat$_repschema;
```

For example:

SNAME	DBLINK
OSMREP_UPDATE	GlobalName
ASREP_UPDATE	GlobalName
ASGREP_UPDATE	GlobalName

If the GlobalName returned by the query is different from the desired global name or the current global name, all the replication groups need to be dropped before you change the global name. Use the following query to drop replication groups:

connect sys/&pw_sys;

```
BEGIN dbms_repcat.suspend_master_activity('OSMREP_UPDATE');
END;
/
BEGIN dbms_repcat.drop_master_repgroup('OSMREP_UPDATE');
END;
/
```

To alter the global name, connect as SYS or SYSTEM and run the following command:

```
ALTER DATABASE RENAME GLOBAL_NAME to <new global name>;
COMMIT;
```

1.2.3.5 Setting init.ora Parameters

Check the following in your Oracle Applications database:

1. Edit init<SID>.ora with:

Parameter Name	Recommended Value
DB_NAME	The Release 11*i* database name
DB_DOMAIN	The domain in which the Release 11*i* database is located.
GLOBAL_NAMES	TRUE
JOB_QUEUE_INTERVAL	10
JOB_QUEUE_PROCESSES	2 (Add 1 per additional master)
AQ_TM_PROCESSES	Add 2 to the present value (minimum should be 2)

2. Make sure that the table space for the ASG schema is at least 30MB.
3. Shut down and restart your database to make the changes effective.

1.2.4 Scheduling Concurrent Programs

Schedule the following concurrent programs in Oracle Applications for each CRM Gateway for Mobile Devices:

Concurrent Program	Function	Schedule
Purge Snapshot Logs	Purges snapshot logs that have become very large.	Schedule for once every week.
Verify Advanced Queues	Verifies if queues are functional from Application databases to CRM Gateway for Mobile Devices.	Schedule for once every two hours.

Refer to the *Oracle Application 11i Implementation Guide* for concurrent program setup detail.

1.3 Installation Overview

You can create multiple CRM Gateway for Mobile Devices servers for each enterprise database.

Before you set up the CRM Gateway for Mobile Devices, the following Oracle applications or components must be installed and fully implemented:

- A database with Oracle Applications 11*i*
- AOL and JTF (Foundation) components on the Oracle Applications 11*i* database

Before you begin the installation, fill out the CRM Gateway for Mobile Devices Installation Worksheet.

For information about the installation and implementation of these applications and components, see the appropriate documentation for each product.

This overview section contains the following topics:

- Important note
- CRM Gateway for Mobile Devices installation worksheet

1.3.1 Important Note: Do Not Change the Item Segment After Installation

Never change the SYSTEM ITEMS key flexfield definition after you have installed a CRM Gateway for Mobile Devices.

The CRM Gateway for Mobile Devices installation installs a snapshot on Oracle Applications view MTL_SYSTEM_ITEMS_B_KFV (for which there is a synonym MTL_SYSTEM_ITEMS_KFV). However, this view is created dynamically in apps and the datatype can change, for example, for the CONCATENATED_SEGMENTS column. When you first create a CRM Gateway for Mobile Devices and then change this view, the snapshot based on this view becomes invalid and you can't refresh it anymore. To fix this, you would have to recreate the whole CRM Gateway for Mobile Devices. To avoid this situation, do not change the Item Segment after you have installed the CRM Gateway for Mobile Devices.

1.3.2 CRM Gateway for Mobile Devices Database Installation Worksheet

Complete the following worksheet for each of the CRM Gateway for Mobile Devices you want to install before you proceed with the installation

Parameter	Example	Your Value
Global Name	middle1.us.oracle.com Usage: **name.domain** for example: myserver.mydomain	
SYS Password	change_on_install	
SYSTEM Password	manager	
Gateway / Admin Password to be Set	admin	
Consolidator / Mobile Admin Password	manager	
Machine Name / IP Address	middle1-pc.us.oracle.com Usage: **name.domain** e.g.: myserver.mydomain	
TNS Listener Port Number	1521	
SID	MIDDLE1	

1.4 Installing the CRM Gateway for Mobile Devices

The steps given in this section describe how to install a single instance of the CRM Gateway for Mobile Devices, given that the enterprise database has been properly installed and configured as described in the previous sections. To install the CRM Gateway for Mobile Devices, perform the following steps:

- Step 1. Creating the Oracle Application User
- Step 2. Setting System Profile Option Values
- Step 3. Installing the Gateway Database
- Step 4. Installing Oracle9i Lite Mobile Server
- Step 5. Creating CRM Gateway for Mobile Devices

1.4.1 Step 1. Creating the Oracle Application User

In this step you create the Oracle application user for the CRM Gateway for Mobile Devices for the web administration console.

1. Login to Oracle Applications Self Service with System Administrator responsibility.
2. Create a new Oracle Application user **ASGADM** with the following responsibility:

   Mobile Admin, Oracle CRM Gateway for Mobile Devices

1.4.2 Step 2. Setting System Profile Option Values

To set profile option values:

1. Log in to Oracle Applications with the System Administrator responsibility.
2. Navigate to **Profile -> System** to bring up the Find System Profile Values dialog.
3. Click **Find** to display the System Profile Values window with a list of all values. Scroll down the list to select specific values.
4. Check if the profile option **ASG: Maximum Client Number** value is appropriate for your needs.

Note: The default value for this option is one million, which allows a maximum of one million users.

This setting cannot be modified after the system is in use.

5. When you use the Oracle Field Service / Palm Devices application, set the profile option **ASG Field Service/Palm Organization ID.**

   Indicate the inventory organization used to filter data for the Oracle Field Service / Palm Devices users.

6. When you use the Oracle Field Service / Laptop application set the profile option **ASG Field Service/Laptop Organization ID**.

   Indicate the inventory organization used to filter data for the Oracle Field Service / Laptop users.

7. Setup User Level Profiles:

   a. Go to the Profile screen.

   b. Enter the following values in the Find System Profile Values screen:

Option	Value
User	ASGADM
Profile	JTF%

   c. Set the following Profile Option Values at User Level:

Option	Value
JTF_PROFILE_DEFAULT_APPLICATION	689
JTF_PROFILE_DEFAULT_RESPONSIBILITY	21759

1.4.3 Step 3. Installing the Gateway Database

This step is performed at the Gateway Database that requires the Oracle8*i* CD and describes the following tasks:

- Creating Oracle 8i (8.1.7) Database
- Setting init.ora parameters

- Creating ADMIN users and tablespaces
- Loading the asgmtran.jar file into the CRM Gateway for Mobile Devices database (copied from the applications file system)
- Verifying unique global name

1.4.3.1 Creating Oracle 8i (8.1.7) Database

1. Install the Oracle 8.1.7 Database Server Enterprise Edition for Windows NT with Advanced Replication and JVM Options. (See Oracle Server 8.1.7 Installation Guide for detail.)

   Note : The Gateway database must be created with the same character set, or a subset of it, as the enterprise database.

2. You must install Oracle Database Server 8.1.7 patches 8.1.7.1 if you are installing the Gateway database on a Unix platform. If you are installing the gateway database on an NT server, the installation of patch 8.1.7.2 is required only if you have Oracle9*i* database on the enterprise side. Refer to the readme file for the patch you are installing for the correct version levels.

   Note: Before you apply the patches, make sure that the TNSlistener service and the Oracle Web Assistant service are running.

3. Record the details on the CRM Gateway for Mobile Devices Installation Worksheet.

1.4.3.2 Setting init.ora Parameters

To set the init.ora parameters, in your Gateway database, edit init<SID>.ora to read the following recommended initial parameter value for each Oracle8*i* installation.

Parameter Name	Recommended Value
COMPATIBLE	8.1.5 or later
SHARED_POOL_SIZE	32000000 (Memory specified in bytes)
AQ_TM_PROCESSES	2 or more. For enterprise server it should be 4 as long as JOB_QUEUE_PROCESSES is set to AQ_TM_PROCESSES + 2.
JOB_QUEUE_INTERVAL	15 or less

Parameter Name	Recommended Value
JOB_QUEUE_PROCESSES	4 or more
OPEN_CURSORS	500
DB_FILE_MULTIBLOCK_READ_COUNT	8
HASH_JOIN_ENABLED	TRUE
OPTIMIZER_PERCENT_PARALLEL	0
OPTIMIZER_MODE	CHOOSE
OPTIMIZER_FEATURES_ENABLE	8.1.5
CURSOR_SPACE_FOR_TIME	TRUE
GLOBAL_NAMES	TRUE

1.4.3.3 Creating ADMIN User and Tablespaces

Use the following table to create the ADMIN user with the tablespaces shown.

Tablespace Name	Recommended Data File Name	Recommended Size	Purpose
SYNCSERVER	mobile01.dbf mobile02.dbf etc.	500 MB + ((1/2 size of mobile database) * (number of mobile users))	Objects created by the Mobile Server (needed by Oracle 9i Lite) **schemas that use the tablespace:** MOBILEADMIN
CRMUSER	user01.dbf user02.dbf etc.	2 GB in total	snapshots at CRM Gateway for Mobile Devices **schemas that use the tablespace:** ASG, CS, JTF, APPLSYS, HR, AR, INV, CSP, CSF, ONT
CRMINDEX	index01.dbf index02.dbf etc.	1/5 the size of the CRMUSER tablespace	indexes for snapshots **schemas that use the tablespace:** ASG, CS, JTF, APPLSYS, HR, AR, INV, CSP, CSF
CRMADMIN	admin01.dbf admin02.dbf etc.	100 MB in total	**schemas that use the tablespace:** ADMIN

Note: Verify that auto-extend is turned on for all tablespaces as well as for their datafiles and make sure that the RBS tablespace is at least 500 MB.

Note: The rollback segments requirements for the MDG can be huge. To maintain optimal performance, do not use any rollback segment by more than four concurrent sessions.

To find the correct number of rollback segments, calculate the following:

(MAX_NUMBER_OF_CONCURRENT_USER /4) + 4

To find the size of the rollback segments, calculate the following:

((SIZE_OF_THE_MOBILE_RDBMS *3)*4)

It is also recomended that the initial size of the rollback segments be set to the result of the above formula, to avoid expensive extends during the synchronization session.

Use this procedure to create the ADMIN user:

1. Connect to the SYS database schema and create a new user named admin.

```
connect sys/<SYS_password>;
create user admin identified by admin default tablespace crmadmin;
```

2. Grant connect and session privileges.

```
connect SYS/<SYS_password>;
grant connect, resource to admin;
```

1.4.3.4 Loading the asgmtran.jar File

To load the jar file asgmtran.jar from the application file system into the Gateway Database, perform the following steps:

1. Connect to your APPS environment (using rlogin or telnet).
2. Execute the following command:

```
loadjava -thin -user admin/admin@<gateway_host_name>:<port_number>:<gateway_
database_sid> -order -resolve -verbose -force $JAVA_
TOP/oracle/apps/asg/jar/asgmtran.jar
```

1.4.3.5 Verifying the Unique Global Name

The gateway database needs to have a unique global name among all the databases used for Oracle Apps and Mobile Device Gateways. The global name is used to

distinguish each Gateway Database from the other. To identify the global name of a database, connect to the database through SQL*Plus as any schema and run the following query:

```
SELECT * FROM GLOBAL_NAME;
```

The global name is typically DB_NAME + DB_DOMAIN from init<SID>.ora. To change it, connect as SYS or SYSTEM and run the following command:

```
ALTER DATABASE RENAME GLOBAL_NAME to <new global name>;
COMMIT;
```

Note: Do not have DB_DOMAIN as part of the global name if the Applications Database does not have a domain name.

By default, each installation of Oracle8*i* has the same global name. You must manually change each of the global names. We recommend that you use a naming scheme such as middle01, middle02, and so on, to ensure uniqueness.

The global name of a database should not be altered once the system is in use. For example, when the database is being used by concurrent users, the global name of all instances should remain the same.

1.4.4 Step 4. Installing Oracle9*i* Lite Mobile Server

This step is performed at the CRM Gateway for Mobile Devices NT Server. The Oracle9*i* Lite 5.0 CD, the Oracle9*i* Lite patch (Version 8.0 or higher), and JDK 1.2.2 are required. Refer to the readme file for the patch you are installing for the latest Oracle Lite Patch version.

The following tasks are required:

- Installing Oracle9*i* Lite Mobile Server 5.0
- Installing the Oracle9*i* Lite patch

1.4.4.1 Installing Oracle9*i* Lite Mobile Server 5.0

The Mobile Server for Handheld Devices installation option installs the components to synchronize data and deploy applications to the mobile devices. Perform the following steps:

1. Make sure the gateway database and TNSListener service are running.

2. Make sure that the version of JDK on the machine is 1.2.2:

   Type java -version in the command line to check JDK version.

   If the version is lower than 1.2.2, install JDK 1.2.2 (the software can be downloaded from http://www.javasoft.com).

Note: If you are installing Oracle 9*i* Lite Mobile Server on the same NT system as the Gateway database, then you should use a different Oracle Home for Olite.

Note: Choose the MobileServer Repository schema as MobileAdmin.

Note: If you are upgrading Oracle Lite from 4.0.0.6.0 to 5.0, then upgrade the mobileadmin schema only while applying the patch.

1.4.4.2 Installing the Oracle9*i* Lite patch

Install the Oracle Lite patch (version 8.0 or higher) on the CRM Gateway for Mobile Devices Gateway NT Server. Refer to the readme file for the patch you are installing for the correct patch levels.

1.4.5 Step 5. Creating CRM Gateway for Mobile Devices

Creation of the CRM Gateway for Mobile Devices, includes the following steps:

1. Create the core MDG .
2. Enable mobile applications such as Oracle Field Service/Palm, Oracle Field Service/Laptop, and Oracle Field Sales/Laptop. If there is any failure during MDG installation, you can restart at the application level.

The creation is a long running process. First the core MDG is created, after which the applications are enabled.

If enabling an application fails, adequate safeguards are in place to re-enable the failed application. You can also create a core MDG first and then enable mobile applications. There are detailed logs that provide information on the status of the MDG creation and enabling mobile applications. To enable mobile applications make sure that the appropriate mobile application patch levels are applied.

After you have installed the CRM Gateway for Mobile Devices database and the Mobile Server, you can create the CRM Gateway for Mobile Devices server. Do this by performing the following steps:

1. Navigate to the Oracle Applications JTF login site.
2. Login to the CRM Gateway for Mobile Devices administration console using the username ASGADM.
3. Click the Enterprise information subtab under Home Tab. Verify that the enterprise details are correct.
4. Click the Gateway Server tab.
5. In the Gateway Server tab, choose **Create.**

   The Create Gateway Server page appears.
6. Enter the gateway database global name, port number, and all the other information of the CRM Gateway for Mobile Devices machine.

   For details refer to the CRM Gateway for Mobile Devices Installation Worksheet.
7. Check the mobile applications that you want to enable. You can also create the core gateway server and enable mobile applications later.
8. Choose an adequate log level. (Full, Minimal and Normal)
9. Enter the required passwords. Click Next. The Verify Logic Page displays, where you can verify whether all preliminary information has been validated successfully. If it is not correct, go back and correct the entries and then proceed.
10. Click **Create**. The creation process might take a long time. Check the status of creation on the Gateway Server tab by opening the creation log.
    - **Confirmed.** The core CRM Gateway for Mobile Devices creation process is completed successfully.
    - **Not Confirmed.** The CRM Gateway for Mobile Devices creation process was aborted. Click **Open Logs** in the Gateway Servers screen to check the errors in the creation logs.
    - **Pending.** The CRM Gateway for Mobile Devices creation process is in progress. If the status Pending shows for a very long time, click **Open Logs** in the Gateway Servers screen to check the creation logs.

When the status shows **Confirmed**, the core CRM Gateway for Mobile Devices has been successfully created created and all the selected applications have been

enabled. At this point you can enable other mobile applications, create users, and start using the CRM Gateway for Mobile Devices server as described in Administering CRM Gateway for Mobile Devices.

1.4.5.1 Viewing the Creation Logs

Depending on the level of detail you have chosen to create the logs, information is shown in the logs. To see this information, perform the following steps:

1. Click the Gateway Server tab.
2. In the Gateway Server tab, choose **Administer.** The list of gateway servers appears.
3. Choose a gateway server
4. Click **View logs.**

   The logs available for that server are visible, including core MDG creation, enabling applications and MDG upgrade logs.
5. Click the log that you want to see.

1.4.5.2 Enabling Mobile Applications

At the time of MDG creation you can check all the mobile applications that you wish enabled. However you can also create just the core MDG with 0 or more mobile applications checked. At a later stage, you can enable other mobile applications.

To enable mobile applications, perform the following steps:

1. Click the Gateway Server tab.
2. In the Gateway Server tab, choose **Administer.** The list of gateway servers appears.
3. Choose a gateway server.
4. Check the mobile applications that you want to enable.
5. Click **Enable applications**.
6. Check the logs as described earlier to view the enabling status.

2

Administering CRM Gateway for Mobile Devices

This topic group provides task-based procedures required for ongoing system maintenance and includes information on administration tools and utilities. It is performed at Applications and Applications Portal Site.

Perform any of the following tasks:

- Starting the Mobile Server
- Configuring Oracle9i Lite Message Generating Process (MGP)
- Entering CRM Parameters
- Creating Mobile Users
- Managing Users
- Gateway Server Administration
- Implementing Mobile Applications
- Handling Errors Using Error Logs
- Handling Errors Using Transaction Reapply
- Viewing Deferred Transactions
- Viewing Pending Transactions
- Viewing Successful Transactions
- Viewing Discarded Transactions
- Upgrading the CRM Gateway for Mobile Devices
- Migrating the CRM Gateway for Mobile Devices

2.1 Starting the Mobile Server

The Mobile Server (Web-to-Go Server) is installed as a part of the Oracle Lite Installation as a manual Windows NT service. You can configure the service to run automatically. You can also start the Mobile Server (Web-to-Go Server) running the following command in the following directory:

%ORACLE_LITE_HOME%\mobile\server\bin > webtogo -d0 mobileadmin/manager@webtogo.world

2.2 Configuring Oracle9*i* Lite Message Generating Process (MGP)

To configure Message Generating Process (MGP) on the server, edit the mgp.bat file or run the following command in the following directory:

%ORACLE_HOME%\mobile\server > mgp 60 10 mobileadmin manager

This batch file starts the MGP in background process, which will continue to run.

2.3 Entering CRM Parameters

1. Navigate to the Home tab, and then to the Enterprise tab. The CRM Database Parameter Setup screen appears. Enter the following information:
   - **CRM Server Machine or IP Address**.
   - Oracle SID. The Oracle Server identification.
   - **Port number**.

2.4 Creating Mobile Users

Before you set up the mobile user, make sure that the gateway server is created with the status of Confirmed. Also, each CRM Gateway for Mobile Devices mobile user should be based on an existing Oracle Application User that is registered as a CRM Human Resource. Refer to *Oracle Applications 11i Implementation Guide* and *Oracle CRM Foundation Implementation Guide* for setup details. Refer also to the appropriate mobile application Implementation Guide for application-specific setup details.

Prerequisites

The gateway server must be created and have a status of Confirmed.

Steps

1. Navigate to the Oracle Applications Portal Site.
2. Login to the CRM Gateway for Mobile Devices administration console using the username ASGADM.
3. Click the Mobile User tab.
4. In the Mobile User tab, choose **Create.**

   The Create Mobile User page appears. Search for the Oracle Applications user to be set up as mobile users. You can search based on name or territory.
5. Choose **Next.** The search results are shown. Select the users you want to create as mobile users.
6. Choose **Next.** Enter default information about all the users. You can choose a common prefix, suffix (for their usernames), password, application, and so on.
7. Choose **Next.** A list appears of all the Oracle Application users you want to create as mobile users with all the relevant information such as mobile username, application, and so on. You can change the information for any user in this page.
8. Choose **Create.** Check the status of creation on the mobile user tab:
   - **Confirmed.** The mobile user creation process is completed successfully.
   - **Not Confirmed.** The mobile user creation process was aborted. Click **Open Logs** in the Mobile User screen to check the errors in the creation logs. To fix the errors and re-create the user, delete the user and create it again.
   - **Pending**. The mobile user creation process is in progress. If the status Pending shows for a very long time, click **Open Logs** in the Mobile User screen to check the creation logs.

   Note: Always wait until the status of creation of the very first user is set to **Confirmed** before you create the subsequent users for a given application. The user creation might fail if you attempt to create another user while the status of the very first user is still **Pending**.

   A mobile user cannot start to synchronize unless the status has been set to **Confirmed**.

2.5 Managing Users

After you have created users for a particular gateway server, you can move them between two gateway servers. This helps in case of failover of a particular middle tier because you can move the users from one gateway server to another. In addition, you can migrate users from one application to another, for example you can move an Oracle Field Service/Laptop user to an Oracle Field Service/Palm user and so on. You can also change the passwords of mobile users with the User administer screens.

2.5.1 Changing a User Password

To change a user password, perform the following steps:

1. Go to the Mobile User tab in the MDG administration page.
2. Choose the Admin tab and search for the mobile user for which you want to change the password.

   The search results display the relevant information for the mobile user.
3. Choose **Reset Password**.
4. In the popup box enter the new password and confirm it.

2.5.2 Searching for Users

1. Navigate to the Mobile User tab in the MDG administration page.
2. Choose the Admin tab.
3. Enter the information for the mobile users you want to find.
4. Click **Search.** The search results display the relevant information for the mobile user.

2.5.3 Reading the Mobile User Detail

When you follow the procedure to search for users, the search results display the following information for the mobile user:

- **Select**. Click the **Select** box to mark this user for an action such as remove or move.
- **User Name**. The user's login name.

- **Mobile User Name**. The user's name in the CRM Gateway for Mobile Devices application.
- **Application**. The application in which this user is entered.
- **Language.** The user's preferred language.
- **Gateway Server**. The CRM Gateway for Mobile Devices on which this user is entered.
- **Last Synchronization Date**. The date on which this user was most recently synchronized with the main database.
- **Creation Status**. The user's creation status can be Confirmed, Not Confirmed or Pending.
- **Creation Logs**. Click **Open Logs** if you want to check the progress or reasons for failure of mobile user creation.
- **Mobile User Password**. The mobile user password is not shown for security reasons.

2.5.4 Moving Mobile Users

1. Navigate to the Mobile User tab in the MDG administration page.
2. Choose the Admin tab and search for the mobile users you want to move to either a different MDG or a different application.

   The search results display the relevant information for the mobile user. Select the users you want to move.
3. Choose **Move**. On the Move user screen, enter the information for the users you need to move.
4. Choose **Next**. Verify all the information for the users.
5. Choose **Move**.
6. Check the logs to make sure that the move users is correctly completed.

2.5.5 Deleting Users

1. Navigate to the Mobile User tab in the MDG administration page.
2. Choose the Admin tab and search for the mobile users you want to delete.
3. The search results display the relevant information for the mobile user. Select the users you want to delete.

4. Choose **Remove**. The page will refresh without these users.

2.6 Gateway Server Administration

In this release, the administrator can monitor the condition of various processes on each gateway server.

2.6.1 Home Page

The Home tab with the Summary subtab gives a quick overview of all pending and failed actions. These include creation of gateway servers, users, and errors and transactions that have failed.

2.6.2 Verify Enterprise database links

Use this procedure to restore database links.

1. Log in to the Enterprise portal (apache login) in the Enterprise server.
2. Navigate to the Enterprise tab.
3. Click on the Enterprise subtab of the Home tab to view the enterprise database links. If the links need to be changed, change them and click **Restore** to restore the database links to the new database.
4. Edit the information for the following:
   - CRM System Access
   - Gateway Server
   - Gateway SYS Access
   - Gateway System Access
5. Use the restore links utility provided to restore database links to the new database instance for every CRM Gateway for Mobile Devices you have configured. Please enter all the relevant passwords as well.

Note: If you need to change the Gateway database passwords, use the above steps to recreate the database links.

2.6.3 Viewing Gateway Server Logs

Logs for creating the core MDG, upgrading the MDG, enabling applications are available.

1. Navigate to the Gateway Server tab, and then to the Admin subtab.
2. In the Creation / Upgrade Logs column for the CRM Gateway for Mobile Devices you want to see, click **Open Logs**. The Log Search results for this gateway appear.
3. Click **Log** in one of the following rows to see its log:
   - Creating MDG log
   - Upgrading MDG log
   - Change intervals log

2.6.4 Monitoring the Refresh and Queue Jobs on the Gateway Database

The following jobs have been submitted at Mobile Device Gateway Database during creation. You can use the Oracle Enterprise Manager - Replication Manager to modify the schedule of the jobs. After you log in as ADMIN using the ADMIN password (see the Mobile Device Gateway Installation Worksheet), they are shown as local jobs under Administration.

Note: Make sure that the system date reflects the current date, otherwise the refreshes will not work.

Job	Function	Schedule
BEGIN ADMIN.ASG_QUEUE_PKG.refresh_LOOK; END;	Refreshes Lookup Snapshots.	Default set to once a day.
BEGIN ADMIN.ASG_QUEUE_PKG.refresh_TXN; END;	Refreshes Transaction Snapshots.	Default set to once every 20 minutes.

Job	Function	Schedule
BEGIN ADMIN.ASG_QUEUE_PKG.VERIFY_QUEUES; END;	■ Verifies whether queues are functional. ■ Verifies if refresh jobs are running. ■ Re-starts queues if necessary and re-submits refresh jobs if they are broken.	Default set to once every 15 minutes.

2.7 Implementing Mobile Applications

This step is performed at the Gateway NT server. Make sure that the Web-to-Go server is running before you publish the mobile applications.

2.7.1 Publishing Mobile Applications

Refer to *Installing Field Service/Laptop, Installing Field Service/Palm Devices,* or *Installing Field Sales/Laptop* for details.

2.7.2 Inform all Mobile Users

After all the mobile users have been successfully created, give each user the following information:

- The CRM Gateway for Mobile Devices URL to use to log in and download the application
- Username
- Password

2.8 Handling Errors Using Error Logs

The CRM Gateway for Mobile Devices handles errors in two ways:

- Error logs, described in this section
- Transaction Reapply, described in the next section, Handling Errors Using Transaction Reapply.

Error logs are maintained for all kinds of package, snapshot refresh related errors and so on. The administrator should purge the log at frequent intervals.

2.8.1 Setting Up Logs

If you need to set up logs or trace files, follow the instructions in Troubleshooting and FAQs.

2.8.2 Viewing Error Logs

After error logs have been set up, you can use them to see what has gone wrong.

Steps

Use this procedure to view the error logs.

1. Navigate to the Error Handling tab. Choose the Error logs sub tab.
2. View all the errors.
3. Click **Details** to view the detailed error description (if they have been defined). If you click details and the detailed error messages are available, you can view and purge them in the following screen.
4. Select the error logs that you wish to purge.
5. Click **Purge** to remove the error logs.

2.9 Handling Errors Using Transaction Reapply

When a mobile user enters a new service request or enters new customer data and synchronizes, the data should get populated into the CRM enterprise application. However it could fail due to a variety of reasons. These include user defined errors such as setup issues or faulty data, system errors, and exceptions. Server Side transaction reapply allows an administrator to modify data and reapply failed service requests. The administrator can view all these incomplete actions and reapply them after any required changes. This transaction reapply mechanism handles errors and forces the reentry of the sales or service users into the process only if absolutely warranted.

The transaction reapply process works as follows: All failed transactions are thrown into a table. You can first view all failed transactions for a given gateway server. You can then change some data or system elements and reapply these transactions to the main enterprise database.

The reapplied transactions are applied as a batch. Following reapplication, the transactions are successfully reapplied or they could fail yet again. If they are successful, you will be able to view them as being successfully reapplied and you

can delete them from the error tables. If they fail again, you can choose to modify them again and then reapply them. You can also choose to discard these transactions altogether and delete them from the error tables.

You can view deferred transactions on the **Deferred Transactions** screen. These are the different types of transaction:

- Viewing Deferred Transactions. Deferred Transactions are transactions that did not go through to the main tables. It is possible that they were never reapplied or it is possible that they have been reapplied more than once and failed in the reapplication each time.
- Viewing Pending Transactions. Pending Transactions are transactions that have been reapplied, but are waiting for the result of reapplication. Reapplication is a batch process, and not real time.
- Viewing Successful Transactions. Successful Transactions: These are transactions that have been successfully reapplied.
- Viewing Discarded Transactions. Discarded Transactions: These are transactions that you are ready to discard, because the reapplication was never successful. You can purge all discarded transactions whenever the table size needs to be reduced.

2.10 Viewing Deferred Transactions

You can view and edit deferred transactions, to see what may have caused the problem and correct it before you reapply the transaction.

Steps

Use this procedure to view the deferred transactions.

1. Navigate to the Error Handling tab, and from there to the Transaction Log Summary tab. A table showing the four types of transactions appears. The **Count** column shows how many of each type of transaction exist.
2. To view all deferred transactions, choose **View Details**. A table showing the details of deferred transactions appears. You can filter the deferred transactions by gateway server. The table contains the following columns:
   - **Select**: Select any transaction to reapply it, discard it, or view its details.
   - **Deferred Transactions ID**: The ID of the deferred transaction.
   - **MDG User:** The name of the mobile user whose data had errors.

- **Synch Time:** The time at which the user last synchronized the data.
- **Error:** The type and nature of error.
- **Object:** The object or package that failed and caused the error.
- **Fail Count:** This displays the count of the number of times the transaction was applied but failed. For a fresh transaction the value is 1.

3. Click **Details** to view the detailed error description.
4. Click **Discard** to discard all items that have a checkmark in the **Select** box.
5. Click **Reapply** to reapply all transactions that have a checkmark in the **Select** box.
6. Click **Select All** to select all the transactions before performing an operation on them.
7. Click **Clear All** to remove all the checkmarks from transactions that have a checkmark in the **Select** box.

2.10.1 Editing Deferred Transactions

You can edit deferred transactions to correct problems before you reapply the transaction.

Steps

Use this procedure to edit the deferred transactions.

1. Navigate to the Error Handling tab, and from there to the Transaction Log Summary tab. A table showing the four types of transactions appears. You can filter the deferred transactions by gateway server. The table contains the following columns:
2. Choose **View Details** in the same row as **Deferred Transactions** to see a list of all the deferred transactions.
3. Click **View** in the row of the transaction you want to edit. The **Edit Deferred Transactions** screen appears, showing the following columns:
   - Columns: Shows all the relevant columns of the table or view where the transaction failed.
   - Current Values: Shows all the present values of the transaction that failed
   - Edit Values: Lets you change the values of the transaction.

4. Click **Apply Cascading** to reapply not only this transaction but also all the subsequent transactions in this session.
5. Click **Reapply** to reapply selected transactions.
6. Click **Discard** to discard selected transactions.
7. Click **Quit Without Reapply** to stop the reapply.

2.11 Viewing Successful Transactions

You can view successful transactions, to see all the transactions that have been completed successfully.

Steps

Use this procedure to view the successful transactions.

1. Navigate to the Error Handling tab, and from there to the Transaction Log Summary tab. A table showing the four types of transactions appears. You can filter the deferred transactions by gateway server. The **Count** column shows how many of each type of transaction exist.
2. To view all successful transactions, choose **View Details** of successful transactions. A table showing the details successful transactions appears, containing the following columns:
   - **Select:** Select any transaction to reapply it, discard it, or view its details.
   - **Successful Transactions ID:** The ID of the successful transaction.
   - **MDG User:** The name of the mobile user whose data had errors.
   - **Synch Time:** The time at which the user last synchronized the data.
   - **Error:** The type and nature of error.
   - **Object:** The object or package that failed and caused the error.
   - **Fail Count:** This displays the count of the number of times the transaction was applied but failed. For a fresh transaction the value is 1.
3. Click **Details** to view the detailed error description.
4. Click **Purge** to delete all the items that have a checkmark in the **Select** box.
5. Click **Select All** to select all the items before performing an operation on them.

6. Click **Clear All** to remove all the checkmarks from transactions that have a checkmark in the **Select** box.

2.12 Viewing Pending Transactions

You can view pending transactions to see the transactions that are waiting to be reapplied.

Steps

Use this procedure to view the pending transactions.

1. Navigate to the Error Handling tab, and from there to the Transaction Log Summary tab. A table showing the four types of transactions appears. You can filter the deferred transactions by gateway server. The **Count** column shows how many of each type of transaction exist.
2. To view all pending transactions, choose **View Details** of pending transactions. A table showing the details pending transactions appears, containing the following columns:
   - **Select**: Select any transaction to reapply it, discard it, or view its details.
   - **Pending Transactions ID**: The ID of the pending transaction.
   - **MDG User**: The name of the mobile user whose data had errors.
   - **Synch Time**: The time at which the user last synchronized the data.
   - **Error**: The type and nature of error.
   - **Object**: The object or package that failed and caused the error.
   - **Fail Count**: This displays the count of the number of times the transaction was applied but failed. For a fresh transaction the value is 1.
3. Click **Details** to view the detailed error description.
4. Click **Reapply** to reapply selected transactions.
5. Click **Discard** to discard selected transactions.

2.13 Viewing Discarded Transactions

You can view discarded transactions, to see the transactions that have been discarded.

Steps

Use this procedure to view the discarded transactions.

1. Navigate to the Error Handling tab, and from there to the Transaction Log Summary tab. A table showing the four types of transactions appears. You can filter the deferred transactions by gateway server. The **Count** column shows how many of each type of transaction exist.
2. To view all discarded transactions, choose **View Details** of discarded transactions. A table showing the details discarded transactions appears, containing the following columns:
   - **Select**: Select any transaction to reapply it, discard it, or view its details.
   - **Discarded Transactions ID**: The ID of the discarded transaction.
   - **MDG User**: The name of the mobile user whose data had errors.
   - **Synch Time:** The time at which the user last synchronized the data.
   - **Error**: The type and nature of error.
   - **Object**: The object or package that failed and caused the error.
   - **Fail Count**: This displays the count of the number of times the transaction was applied but failed. For a fresh transaction the value is 1.
3. Click **Details** to view the detailed error description.
4. Click **Purge** to purge selected transactions.

2.14 Upgrading the CRM Gateway for Mobile Devices

The CRM Gateway for Mobile Devices Upgrade Utility is used when schema changes occur for the mobile applications, such as Oracle Field Service/Laptop or Oracle Field Service/Palm Devices. The upgrade utility is run after you have applied the respective patches to the CRM machine.

2.14.1 How the Upgrade Utility Operates

This Upgrade Utility operates based on versioning. The CRM Gateway for Mobile Devices version is maintained in the asg_server table, while the applications (CRM

Gateway for Mobile Devices base objects, for example, Field Service / Laptop) version is maintained in the asg_server_pubs and asg_publications tables.

The version in the asg_server_pubs table corresponds with the current version. The version in asg_publications table is the target version to which the applications on the CRM Gateway for Mobile Devices needs to be upgraded to. In turn each publication item also maintains it's own version. At any given time the max version in asg_publication_items equals the version in asg_publications.

2.14.2 What is Upgraded

The following objects are upgraded:

- Snapshots
- System Packages
- System Queues
- User Queues
- Sequences

No standalone upgrade is possible for User Queue dependent objects like Primary Key Hint, Parent Hint and Client Indexes. An upgrade for any of these objects requires an User Queue upgrade.

2.14.3 Executing the CRM Gateway for Mobile Devices Upgrade Utility

To upgrade the CRM Gateway for Mobile Devices, perform the following steps:

> **Note:** Follow the details provided in the patch readme file, or the 11.5.7 maintenance pack readme file. Make sure to load the asgmtran.jar file into both the CRM Apps database and the Gateway database following the steps in 1.4.3.4.

1. Schedule a downtime for the CRM Gateway for Mobile Devices and inform the users of the CRM Gateway for Mobile Devices about the upgrade. All mobile users with changes in the client should sync and then stop making changes until the upgrade is run successfully.
2. On the CRM Gateway for Mobile Devices NT server, stop the webtogo listener and the MGP process.

3. Login to the CRM instance as a unix user, with appropriate appsenv set.
4. To execute the Upgrade utility, type the following in the unix prompt:

   ```
   java oracle.apps.asg.gateway.AsgServerUpgrade
   ```

5. Enter the following information:

Field	Value
mdg_host_name	Host Name / IP Address of CRM Gateway for Mobile Devices.
mdg_port_number	Port Number of Listener For CRM Gateway for Mobile Devices.
mdg_oracle_sid	Oracle SID of CRM Gateway for Mobile Devices Database.
mdg_admin_passwd	Password of Admin User on CRM Gateway for Mobile Devices.
crm_host_name	Host Name / IP Address of CRM Database.
crm_port_number	Port Number of Listener For CRM.
crm_oracle_sid	Oracle SID of CRM Database.
crm_apps_user	Apps User Name on CRM Database.
cr,_apps_passwd	Password of Apps User on CRM Database.
upgrade Service Laptop (Y / N)	Y: If you want to upgrade the Field Service Laptop N: If you do not want to upgrade the Field Service Laptop
upgrade Service Palm (Y / N)	Y: If you want to upgrade the Field Service Palm N: If you do not want to upgrade the Field Service Palm
upgrade Service iMobile (Y / N)	Y: If you want to upgrade the Field Service Imobile N: If you do not want to upgrade the Field Service Imobile
upgrade Sales Laptop (Y / N)	Y: If you want to upgrade the Field Sales Laptop N: If you do not want to upgrade the Field Sales Laptop
upgrade Sales Palm (Y / N)	Y: If you want to upgrade the Field Sales Palm N: If you do not want to upgrade the Field Sales Palm
upgrade Sample MDG	Y: If you want to upgrade the Sample App N: If you do not want to upgrade the Sample App
log debug-level(0,1,2)	0: Lowest Debug Level 1: Medium Debug Level 2: Highest Debug Level

Note: During an upgrade, the webtogo listener and MGP process need to remain shut down.

6. If the upgrade was successful, start the webtogo listener and the MGP process on the CRM Gateway for Mobile Devices NT server, and inform the users. After the upgrade is complete, users should sync once more before making changes. When this sync is completed, users can resume normal operations.
7. If you encounter errors during the upgrade, contact the technical support group.

2.15 Migrating the CRM Gateway for Mobile Devices

If you have an existing 11.5.5 mobile installation (Oracle Field Service / Laptop, Oracle Field Service / Palm Devices, or Oracle Field Sales / Laptop) and need to migrate to 11.5.7, you also need to migrate the CRM Gateway for Mobile Devices. After the Gateway is successfully migrated, follow the instructions in the relevant application's implementation guide to migrate the mobile application.

Perform the following tasks to migrate the CRM Gateway for Mobile Devices:

- Pre Migration Task
- Migration Task

2.15.1 Pre Migration Task

If you have already installed the CRM Gateway for Mobile Devices (11.5.5 or earlier) perform the following pre migration tasks:

Steps

1. When using any of the following applications, get all the mobile users to synchronize all their data, before applying the 11.5.7 MDG patch:
   - Oracle Field Service / Laptop
   - Oracle Field Service / Palm Devices
   - Oracle Field Sales / Laptop
2. Upgrade the MDG database to 8.1.7.2 (with patch for ST bug 1836101) before starting the actual migration.

2.15.2 Migration Task

Prerequisites

The MDG database has been upgraded to 8.1.7.2 (with patch for ST bug 1836101).

Steps

1. Apply the latest 11.5.7 MDG patch.
2. Load the asgmtran.jar file. Follow the instructions as described in section 1.4.3.4 of this guide.
3. Run $APPL_TOP/asg/patch/115/sql/asgmgrnt.sql in the CRM database.
4. Check whether JDK 1.2.2 is installed in the APPS environment (running java -version will return the version of the JDK).
5. Create a backup of the mobileadmin schema in the MDG database. Stop the Webtogo and MGP service. Edit the init.ora file of the MDG database to set JOB_QUEUE_PROCESSES = 0 (please remember the original value). Now do a cold database backup.
6. Remove the olite40 from classpath in UserClasspath on the Oracle Lite NT machine.
7. Connect to the MDG Database as sys and grant drop any table to system (connect sys/ &password; grant drop any table to system;).
8. Install Oracle Lite 5.0 according to the Oracle Lite installation document.

   Note: When it prompts to Install Mobile Server Repository, click **NO.**

9. Apply the Oracle Lite 5.0.0.8.0 patch (check the MDG ARU readme or the 11.5.7 maintenance pack readme file to get the appropriate patch number).

   Note: When it prompts to Install Mobile Server Repository, click **No.** Run the repository wizard manually by running @ <ORACLE_HOME>/mobile/server/admin/repwizard.bat.-

10. Run the MDG upgrade utility as described in the preceding section.

11. Edit the MDG database's init.ora file to set JOB_QUEUE_PROCESSES back to its original value. Bounce the MDG database.
12. Restart the webtogo and the MGP processes.

3

Troubleshooting and FAQs

This topic group discusses Frequently Asked Questions (FAQs) for the implementation of the CRM Gateway for Mobile Devices. Use this for troubleshooting implementation problems. The FAQs are divided into two sections, one for installation and the other for administration problems.

3.1 Installation FAQs

3.1.1 FAQ 1: Software Components

What other software components do I need to implement the CRM Gateway for Mobile Devices?

Resolution

You need the following software components:

- Oracle8i
- Oracle9*i* Lite

You also need the latest version of the patches corresponding to the two products.

Refer to the product availability and certification page, or to Installation Prerequisites for further details.

3.1.2 FAQ 2: Creating a CRM Gateway for Mobile Devices

How do I create a CRM Gateway for Mobile Devices? What are the related issues?

Resolution

A CRM Gateway for Mobile Devices can be created using the Enterprise application portal with an apache login. See Step 5. Creating CRM Gateway for Mobile Devices for details. You can create more than one CRM Gateway for Mobile Devices for the same gateway server.

3.1.3 FAQ 3: Reasons for Creation Process Failure

What are the most common reasons for the CRM Gateway for Mobile Devices creation process to fail?

Resolution

The CRM Gateway for Mobile Devices creation is a long running process, creating many snapshots and other objects for replication. The most common reasons for the CRM Gateway for Mobile Devices creation to fail are:

- The CRM Gateway for Mobile Devices can be created with the Field Service or Field Sales applications. To create it successfully with the application, the Field Service or Field Sales patches must be applied. Make sure you have applied all the required patches.
- The information about the Enterprise server is not correct. Check to see that the values for server, port number, and the Oracle SID are correct on the Enterprise Tab of the Admin screens. This can occur when you clone the apps database, for example from test to production.
- The information about the Enterprise server is not correct. Check to see that the values for server, port number, and the Oracle SID are correct on the Enterprise Tab of the Admin screens.
- The CRM Gateway for Mobile Devices server name is not correct. The CRM Gateway for Mobile Devices server name must be the same as the global_name of the CRM Gateway for Mobile Devices database. Check Verifying the Unique Global Name for details. Make sure that the global_name does not contain a hyphen (-) or any other special characters. A database link cannot be created with a hyphen in the global name.
- The CRM Gateway for Mobile Devices creation is run as a background thread on the Apache server. This thread may be aborted when the Apache server is shut down or is not stable. In this case the CRM Gateway for Mobile Devices server creation status remains Pending. Make sure that you resolve the problems with the Apache environment and that you re-create the CRM Gateway for Mobile Devices.
- Sometimes the CRM Gateway for Mobile Devices creation fails if Oracle9*i* Lite is not installed correctly. Verify and make sure that there were no errors during the installation of Oracle9*i* Lite.

3.1.4 FAQ 4: Character Set Requirements

What are the character set requirements for the MDG database?

Resolution

The character set chosen for the MDG database must be either equal to or a subset of the character set chosen for enterprise database.

3.2 Administering FAQs

3.2.1 FAQ 1: Creating a Mobile User

How do I create a mobile user? What are the related issues?

Resolution

A mobile user can be created using the Enterprise application portal with the Apache login. See Creating Mobile Users for details.

3.2.2 FAQ 2: Common Reasons for Mobile User Creation Failure

What are the most common reasons for the mobile user creation process to fail?

Resolution

The most common reasons for the mobile user creation process to fail are:

- The creation of the very first mobile user for the application takes a long time. This is because of the instantiation of many Olite objects. The creation of the subsequent users for the same application is faster.

  Note: Always wait until the status of creation of the very first user is set to Confirmed, before you create the subsequent users for a given application. The user creation can fail if you attempt to create another user while the status of the very first user is still Pending.

- The profile options are not set. See Step 2. Setting system profile option values for details.

3.2.3 FAQ 3: Mobile Users Cannot Synchronize

The mobile users are not able to synchronize or they get errors while they are doing a synchronize operation.

Resolution

Check to see whether the Windows NT service Oracle Web-to-Go is running. If necessary, start it.

3.2.4 FAQ 4: Mobile Users Do Not Receive Data

The mobile users are able to synchronize successfully, but they do not receive data from the Enterprise database on their mobile devices.

Resolution

Check the following:

- Check to see that the MSDOS batch script mgp.bat is running and that there are no errors. If necessary, start it.
- Check to see that the replication process is running.
- Start the Oracle Enterprise Manager / Replication Manager.
- Connect to the CRM Gateway for Mobile Devices database as user admin.
- Check to see that the dbms_jobs ADMIN.ASG_QUEUE_PKG.refresh_TXN and ADMIN.ASG_QUEUE_PKG.refresh_look are running.

3.2.5 FAQ 5: Mobile Users Cannot Send Data

The mobile users are able to synchronize successfully, but data from their mobile devices is not sent to the Enterprise database.

Resolution

Verify the following:

- Check to see that the MSDOS batch script mgp.bat is running and that there are no errors. If necessary, start it.
- Check to see that the Queue propagation is enabled:
- Start the Oracle Enterprise Manager / Schema Manager.
- Connect to the CRM Gateway for Mobile Devices database as user admin.
- Check to see that the queue table asg.asg_mtran_q is enabled and the queue is being propagated to the enterprise server.
- Check to see that the job to process the queue is running:
- Start the Oracle Enterprise Manager / Replication Manager.
- Connect to the Enterprise database as user apps.
- Check to see that the job ASG_MOBTRAN.process_queue_transaction is running.

3.2.6 FAQ 6: Enabling the Trace for Web-to-go Server

How do I enable the trace and collect trace data for Web-to-Go server?

Resolution

Perform these steps:

1. Stop the web-to-go server.
2. Open the webtogo.ora file and set the parameter TRACE = TRUE.
3. Start the web-to-go server. Now the trace is shown on the screen.
4. Alternatively, you can edit the http.bat file to redirect the output to a log file for example, http.log.

3.2.7 FAQ 7: Enabling the Trace for MGP

How do I enable the trace and collect trace data for MGP?

Resolution

Perform these steps:

1. Stop the MGP.
2. Open the webtogo.ora file and set the parameter TRACE = TRUE.
3. Start the MGP. Now the trace is shown on the screen.
4. Alternatively, you can edit the mgp.bat file to redirect the output to a log file, for example, mgp.log.

3.2.8 FAQ 8: Poor Synchronization Performance

The synchronization performance is not very good.

Resolution

Make sure that the queries have been optimized by following these steps:

1. Check to make sure that the database memory is properly tuned.
2. Check whether the redo log has a large size.
3. Check to make sure that the database is not checkpointed frequently.

3.2.9 FAQ 9: Special Characters Not Viewed Correctly

Special characters are not viewed on the device correctly after synchronization.

Resolution

Ensure that the Oracle Lite ini file polite.ini has the following entry:

```
DbCharEncoding = NATIVE
```

3.2.10 FAQ 10: Cloning Precautions

There are certain precautions that you need to take while cloning. Use the following procedire when you make a copy of the production system to use as a test system (for example, when copying the enterprise database from PROD to TEST):

1. Connect to the TEST database as an APPS user in SQLPLUS.
2. Execute the following SQL commands for the cloned system:
   a. Delete from ASG_DEVICE_USERS
   b. Delete from ASG_SYNCH_SERVER wher server_id !=0
   c. Update ASG_SYNCH_SERVER set port_number='&new_port',

      oracle_sid='&new_sid',

      host_name='&new_hostname' where server_id=0

      new_port, new_sid, new_hostname are the port, sid, and host name of the TEST Apps DB.
3. Now both the users and the MDGs in the cloned database have been deleted.
4. To create a new MDG in the cloned database:
   a. Enter the correct enterprise details in the MDG Admin UI.
   b. Use the UI to create a new MDG.

3.2.11 FAQ 11: Changing the Host or Machine

What do I need to do if the host changes or if I need to restore the CRM instance in a different machine?

Resolution

You need to edit the information about the CRM instance. Perform the following steps:

1. Log in to the Enterprise portal (apache login) in the Enterprise server.
2. Navigate to the Enterprise tab and edit the information for the following:
   - Host name
   - Port
   - Oracle server ID
3. Use the restore links utility provided to restore database links to the new database instance for every CRM Gateway for Mobile Devices you have configured.

3.2.12 FAQ 12: Where are the MDG errors logged ?

Resolution

The CRM Gateway for Mobile Devices Administrator Portal provides the capability to log the errors for the following operations:

- CRM Gateway for Mobile Devices creation / upgrade
- Mobile user creation
- User synch
- Deferred transactions

1. Navigate to the View Log tab to view the errors related to the CRM Gateway for Mobile Devices creation and mobile user creation operations.
2. Navigate to the Error Log tab to view the error descriptions and error messages in details related to the user synch and transaction refreshment operations.

3.3 Quick Reference for CRM Gateway for Mobile Devices Implementation

Use to following table to make sure you have done all the steps to implement CRM Gateway for Mobile Devices.

Step	Action	Done	Issues
1. CRM applications database prerequisites	Make sure that Advanced Replication is installed Check advanced queues Verify unique global name Set init.ora parameters Run snapshot log creation scripts Schedule concurrent programs		
2. CRM Gateway installation	Set system profile option values Create Oracle application user for CRM Gateway for Mobile Devices web administration console		
3. CRM Gateway installation (Oracle 9i database installation)	Create the Oracle8*i* (8.1.7.2) database for CRM Gateway for Mobile Devices Install all relevant patches Set init.ora parameters Create ADMIN users and tablespaces Load the asgmtran.jar file into the CRM Gateway for Mobile Devices database (copied from the applications file system) Verify unique global name		
4. CRM Gateway installation (Oracle Lite installation)	Install Oracle9*i* Lite Mobile Server 5.0 Install the Oracle9*i* Lite patch (Version 5.0.0.8.0 or above)		
5. CRM Gateway Installation (creation)	Use all relevant passwords Start creation View creation logs		

Step	Action	Done	Issues
6. CRM Gateway Administration	Enable synchronization Create mobile users Publish mobile applications Enable and disable logging for the Synchronization Server Configure Oracle 9*i* Lite MGP Monitor the refresh and queue jobs on the Gateway database Use the CRM Gateway upgrade utility		