Oracle9*i*AS Wireless

Getting Started and System Guide

Release 2 (9.0.2)

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Oracle9*i*AS Wireless Getting Started and System Guide, Release 2 (9.0.2)

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Preface

The Getting Started and System Guide discusses how you can use Oracle9*i*AS Wireless to develop and deliver mobile services. The guide includes these chapters:

More Information

You can also find information onOracle9*i*AS Wireless through these resources:

- Oracle Technology Network—Oracle Technology Network is dedicated to providing developers the best information on Oracle's products and technologies. Visit: http://otn.oracle.com

- javadoc—. . . /wireless/doc/javadoc/

- Studio—OracleMobile Online Studio is a 100% online environment for quickly building, testing, and deploying wireless applications. It enables any developer, systems integrator, or independent software vendor to quickly develop a mobile application that is immediately accessible from all devices. The Online Studio site includes technical papers and a FAQ. Visit: http://technet.oracle.com/hosted_dev/oracle_mobile/content.html

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Part I

Quick Start

1

Oracle9*i*AS Wireless Quick Start

This document gets you started using Oracle9*i*AS Wireless without spending time researching new information. Each section of this document presents a different topic. These sections include:

- Section 1.1, "Getting Started with Oracle9iAS Wireless"

- Section 1.2, "Creating Your First Oracle9iAS Wireless Applications"

> **Note:** This *Quick Start* is intended for advanced users who are familiar with principles and technologies for developing applications and with Oracle9*i*AS Wireless.

1.1 Getting Started with Oracle9*i*AS Wireless

This document provides you with the information you need to start using Oracle9*i*AS Wireless to create and test your first wireless applications.

1.1.1 Before You Begin

To use this walkthrough or configure the modules, you must be granted either the Administrator role or the Service Designer, Content Manager, and Helpdesk roles so that you can access the tools needed to build and configure wireless applications.

1.1.2 Logging into Oracle9*i*AS Wireless Webtool as an Administrator

To log into the Webtool:

1. Access the login page through the following URL:

http://hostname:7777/webtool/login.uix

Note: 7777 is the default port number for Oracle9*i*AS Wireless. The port number range is 7777 to 7877. To ensure that you are using the correct port number, check the port number for Oracle9*i*AS Wireless stored in [Oracle home]/install/portlist.ini. For more information on port usage, see Oracle9*i* Application Server Installation Guide and the Oracle9*i* Application Server Administrator's Guide.

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2. Enter your user name and then enter your password. If you are an administrator, enter *orcladmin* as your user name. (The password is set during installation, but can be changed with the User Manager.)

1.2 Creating Your First Oracle9*i*AS Wireless Applications

These walkthroughs acquaint you with the Service Designer by showing you how to build a Wireless service. You can apply these walkthroughs to your own projects which deploy mobile applications using Oracle9iAS Wireless services.

1.2.1 Creating the HttpAdapter Master Service, HelloMS

This walkthrough gives you an overview of theWireless Webtool, Wireless Customization, and the Wireless Web Server by creating a wireless application, HelloMS. In creating this application, you create a master service using the HttpAdapter, set the the HttpAdapter URL prefix and then test HelloMS. In addition, you use the User Manager to create a group and a user and then publish HelloMS to a user group as a service (Hello Service).

This walkthrough also guides you through configuring and starting a Wireless Web Server process, emulating the user experience by invoking the service from a device and view the both the system log and the service performance data.

1.2.1.1 Before You Begin

Before you access the Webtool, you must create the HelloMS and the HelloReplyMS JavaServer Pages.

1.2.1.2 Creating the HelloMS JavaServer Page Application

Using any editor, enter **HelloMS.jsp** as follows:

```
<?xml version = "1.0" encoding = "ISO-8859-1"?>
 <%@ page contentType="text/vnd.oracle.mobilexml; charset=ISO-8859-1" %>
<SimpleResult>
   <SimpleContainer>
      <SimpleForm title="NameForm" target="reply/HelloReplyMS.jsp"
method="POST">
   <SimpleFormItem name="UserName" title="Name:" />
      </SimpleForm>
   </SimpleContainer>
</SimpleResult>
```

1.2.1.3 Creating the HelloReplyMS JavaServer Page

Enter the **HelloReplyMS.jsp** as follows:

```
<?xml version = "1.0" encoding = "ISO-8859-1"?>
<%@ page contentType="text/vnd.oracle.mobilexml; charset=ISO-8859-1" %>
<%
   String name = request.getParameter("UserName");
%>
<SimpleResult>
   <SimpleContainer>
      <SimpleText>
         <SimpleTextItem>Oracle9iAS Wireless says hello
<%=name%></SimpleTextItem>
      </SimpleText>
   </SimpleContainer>
</SimpleResult>
```

After you create the **.jsps**, you then place them in folders. Under a running Web servlet container file, create a files for the .jsps as follows:

1. Create a subfolder entitled app under $ORACLE_HOME/j2ee/OC4J_Wireless/applications/examples/examples_web/

2. Copy **HelloMS.jsp** to the app folder.

3. Create a subfolder under the app folder entitled reply.

4. Copy **HelloReplyMS.jsp** to the reply folder.

> **Note:** These .jsps must be accessed from a Web browser. For example, the app folder is created under an OC4J application, examples, which runs at localhost port 7777 and in a browser. You access the .jsps by entering the following URLs:
>
> - http://localhost:7777/examples/app/HelloMS.jsp
> - http://localhost:7777/examples/app/reply/HelloReplyMS.jsp

1.2.1.4 Step 1: Creating the Master Service with the Service Designer

This step leads you through creating an HttpAdapter service and its attribute settings. To create this service, you must access Wireless Webtool as follows:

1. Log into the Wireless Webtool using orcladmin as your user name and manager as your password.

2. From the Wireless Webtool, select the Service Designer tab. The Browse Folders screen of the Service Designer appears.

Creating a Folder for the Master Service

You can use folders to organize your master services.

To create a folder:

1. Click Add Subfolder. The Create Folder screen appears.

2. Complete the Create Folder screen as follows:

    a. Enter *TestMSFolder* in the Folder Name field. This is a required field.

    b. Select Valid so that this folder can be published to user groups by the Content Manager.

3. Click Create. The folder, TestMSFolder appears in the Browse Folder screen.

Creating a Master Service

Next, you add a master service to TestMSFolder.

To create a master service:

1. From the Browse Folders screen, click TestMsFolder.

2. Click Create Master Service. The Master Service Creation Wizard appears, displaying the Basic Info. screen, the first screen of the master service creation sequence.

3. Complete the Basic Info. screen as follows:

   a. Enter *HelloMS* in the Name field. This is a required field.

   b. In the Description field, enter *Testing Master Service*.

   c. From the drop-down list of adapters, select HttpAdapter. This is a required field.

   d. Select *Valid* so that the Content Manager can publish this master service to user groups (and edit its values, if needed).

Note: Leave the Modulable and Location-Dependent check boxes clear. Also, you do not have to enter any values for the Menu Icon URI, Title Icon URI, Menu Audio URI, or Title Audio URI fields for this walkthrough.

---

4. Click Next. The Caching screen appears.

Setting the Caching for the Master Service

The Caching screen enables you to cache the master service pages in the Web Cache Server.

To set the caching options:

1. Select the Cacheable check box if you would like to cache the master service with the Web Cache Server. Leave the check box clear if you do not want to cache this master service.

2. If you want to cache the master service, set the frequency of the invalidation.

3. Click Next. The Init Parameters screen appears.

Note: Cacheable is an optional field, one that can be left unselected.

Setting the Init Parameters

Do not enter any values into the HttpAdapterInvokerListener field.

If you want to plug a listener in for such purposes as debugging, specify the listener class in the HttpAdapterInvokeListener field. These listener methods are called at the following times:

- When the HttpAdapter invocation starts.

- Before the connection to a remote **.jsp**

- After the connection to the remote **.jsp**

- At the end of the HttpAdapter invocation

- When errors occur.

> **Note:** The HttpAdapterInvokeListener field is optional. You can leave it clear. If you specify a listener, you must specify the classpath in the @ORACLE_HOME/j2ee/OC4J_Wireless /config/application.xml file or you must copy the .jar file to $ORACLE_HOME/j2ee/OC4J_Wireless /lib.

Entering the Input Parameters

Click Next. The Input Parameters screen appears.

1. Complete the input parameters screen as follows:

    a. In the URL field, enter http://hostname:7777/examples/app/HelloMS.jsp.

    b. In the REPACE_URL field, set *True* to enable the server to replace the relative URL in the **.jsp** with the entire URL. For example, the server replaces reply/HelloReplyMS.jsp as http://hostname:7777/examples/app/reply/HelloReplyMS.jsp. If you set the REPLACE_URL field to False as the the default setting, then Wireless does not replace the relative URLs. The default value is True.

    c. In the FORM_METHOD field, enter POST as the form method used between the Wireless Web server and the remote **.jsp**.

    d. Leave the INPUT_ENCODING field clear. If you specify an encoding, then the encoding you choose is used between the Wireless server and the .jsp.

2. Click Next. The Async Agent screen appears. Do not select the Async-Enabled check box.

3. Click Next. The Result Transformer screen appears. For this walkthrough, you do not have to specify a result transformer.

To complete the master service, click Finish. The master service, HelloMS appears in the Browse Folders screen under TestMSFolder.

1.2.1.5 Step 2: Using the Webtool Simulator to Test and Debug HelloMS

The Webtool simulator enables you to simultaneously view a master service on a phone simulator and its immediate XML results. In this step, you use the Webtool's Service Designer to search for HelloMS, view and debug HelloMS.

Logging into the Webtool

To test HelloMS on the Webtool simulator:

1. Log into the Webtool using orcladmin as your user name and welcome as your password. The Webtool appears.

2. Select the Service Designer tab. The Browse Folder screen appears.

Searching for HelloMS

To find HelloMS:

1. Enter *Hel** in the Name field.

2. From the drop-down menu, select Any Master Service.

3. Click Go.

4. The Search Results screen appears, displaying HelloMS. In the Full Path column, select the link TestMSFolder, which represents the folder containing HelloMS. The Browse Folder screen displays TestMSFolder as the current folder.

Viewing HelloMS on a Phone Simulator

To view HelloMS on a phone simulator:

1. Click the PhoneTest icon in the Test column. The phone simulator appears, displaying the page generated by **HelloMS.jsp**.

2. Enter your name (for example, Scott) in the Name field.

3. Click Submit. The next page, generated by HelloReplyMS.jsp, appears, displaying "Oracle9i Application Server Wireless Edition says hello Scott."

Debugging HelloMS

In this step, you use the debugging tool to view the Wireless XML result of HelloMS.

To view the Wireless XML result of HelloMS:

1. Select HelloMS in the Browse Folder screen.

2. Click Debug.

3. In the Debug screen, do the following:

   a. Select View Wireless XML Result.

   b. Click Set Parameters

   c. Click Run Service. The phone simulator appears, displaying the first page of HelloMS, which is generated by **HelloMS.jsp**. The Service Result section of the screen displays the intermediate result in Wireless XML, enabling you to see if this is the result that you want to generate.

   d. On the phone simulator, enter your name and then click Submit. The Service Result section of the screen displays the Wireless XML for the second page, which is generated by **HelloReplyMS.jsp**.

Viewing Another Device Result of HelloMS

If you want to see a device result other than Wireless XML for HelloMS:

1. In the Debug Parameter section, select View Device Result.

2. From the drop-down list, select a device result type, such as WML11. Click Set Parameters.

3. To view the device results for HelloMS, follow the steps 3c and 3d in Debugging HelloMS.

Viewing the System Log File

The System Log section enables you to view the number of lines from the end of the system log file (**sys_panama.log**)

1. To view a selected number of lines from the logging file:

2. Enter the number of lines you want to display in the System Log section. For example, enter 100.

3. Click Refresh Log. The designated number of lines of the logging file display.

> **Note:** See Chapter 10, "Developing Services" for more information on testing and debugging a master service.

1.2.1.6 Step 3: Creating a User and User Group

In this section, you create a user account and then assign the user to a user group. Log into the Webtool using *orcladmin* as your user name and *welcome* as your password. The Webtool appears.

Creating a User Group

You first create a user group:

1. Select the User Manager tab.

2. Select the Groups tab. The Groups screen appears, displaying the current user groups.

3. In the Create New Group section, enter *TestGroup* in the Group Name field.

4. Click Create. TestGroup appears in the Group Name section.

1.2.1.7 Creating a User

Next, you create a user for TestGroup.

To create a user:

1. Click the User tab. The User screen appears, displaying the current users.

2. In the Users screen, click Create. The Create a New User screen appears.

3. Complete the basic information for the new user by entering the following values:

   a. In the User Name field, enter *TestUser*

   b. Enter *Test User* in the Display Name field.

   c. In the Password field, enter *1234*.

   d. Enter *1234* once more in the Password Confirmation field.

   e. Enter *My Birthday* in the Password Hint field.

   f. Enter *01/01/1960* in the Password Answer field.

      g. Enter *12345* in the Account Number field. Having an account number enables Test User to access services from a hand-held device more easily than by entering an name.

      h. Enter *1234* as the PIN for the account number.

      i. Enter *1234* again in the PIN Confirmation field.

      j. Select *male* as the gender of the user.

      k. From the drop-down list, select *Registered User*.

      l. In the Date of Birth field, enter *01/01/1960.*

      m. Select *Enabled* so that Test User can log in.

4. Complete the User Preference section as follows:

      a. From the Language drop-down list, select English.

      b. Select Pacific Standard Time from the Time Zone drop-down list.

      c. Select User Home from the User Home Root drop-down list.

      d. Select Disclose Identity to External Application to disclose your identity to a third-party application.

      e. Select Disclose Location to an external application to disclose your current location to third-party application.

5. Complete the Group and Role sections as follows:

      a. From the Group list, select Test Group and then use the Select arrow (>).

      b. Do not assign any roles.

6. Click Finish. The User screen reappears, displaying Test User.

1.2.1.8 Step 4: Publishing HelloMS to TestGroup as a Service

You publish a master service to a user group by creating a service. A service is based on a master service and inherits its values. Services enable you to specialize a master service by modifying its values.

 In this section, you use the Content Manager to create a folder and then a service. You then publish the folder and the service to the user group, TestGroup.

To access the Content Manager, you must log into the Webtool using orcladmin as your user name and welcome as your password. The Webtool appears.

Creating a Folder

To create a folder:

1. Select the Content Manager tab. The service browse screen appears.

2. Click Add Folder. The General page of the New Folder screen appears.

3. Complete the general parameters of the folder as follows:

   a. Enter TestFolder in the Name field.

   b. In the Description field, enter TestFolder.

   c. Enter zero (0) in the Sequence field.

   d. Select System from the Renderer Type drop-down list. The System option sorts folders by sequence number, then by name.

   e. Select Personalizable so that you can reorder, hide, or show this folder.

4. Click Continue. The Rendering screen appears. From the drop-down list, select Name Ascend.

5. Click Finish the Service Browse screen reappears, displaying TestFolder. click Test Folder. Service Browse screen for Test Folder appears. Because Test Folder is new, the Browse Service screen for Test Folder displays no services.

Creating a Service

In this step, you use the Content Manager's Service Creation Wizard to create a service based on the master service, HelloMS. Because you create this service in the browse service screen of Test Folder, this service resides in Test Folder.

Entering the General Information for a Service

To create a service:

1. From the Browse Service screen of Test Folder, click Add Service. The General screen of the Service Creation Wizard appears.

2. Complete the General screen as follows. You need only to complete the fields noted here.

   a. Enter HelloService in the Service Name field.

   b. Enter Test Hello Service in the Description field.

   c. Enter zero (0) in the Sequence field.

   d. Enter zero (0) in the Cost field.

     e.   Select the Visible check box to make this service visible to Test User.

     f.   Select the Personalizable check box to enable you to reorder, or hide or show this service.

     g.   Select Normal Service.

3.   Select Next. The Master Service screen appears.

Basing Hello Service on a Master Service (HelloMS)

1.   Click TestMSFolder.

2.   Select HelloMS using the radio button.

3.   Click Next. The Input Parameters screen appears.

Setting the Input Parameters for HelloService

The Input parameters screen displays the input parameters that you set for Hello MS using the Service Designer. You do not have to change the input parameters. Click Next. The Async Services screen screen appears.

Setting the Async Services Parameters

The Async Services screen enables you to set the parameters for an async service. Since the master services, HelloMS is not async-enabled, you do not have to enter any values in this screen. Click Submit to complete Hello Service.

The Browse Service screen for TestFolder reappears, displaying HelloService.

Assigning Hello Service to a Group

In this section, you use the Content Manager to assign HelloService to a user group, TestGroup, which you created with the User Manager.

1.   Click the Groups Tab. The Groups List screen appears.

2.   Use the radio box to select TestGroup.

3.   Click Assign Services. The Service Content screen for TestFolder appears. The screen includes two tables: services accessible to the Test Group and the Available Services table, which lists services that currently exist in the repository.

4.   Using the Select check box, select TestFolder from the Available Services table.

5.   Click Add to Group. Test Folder appears in the available services for Test Group.

6. Click Finish. The Group List screen reappears.

1.2.1.9 Step 5: Running HelloService in the Wireless Web Server

Running Hello Service from Wireless Web Server enables you to see the device-level view of the service.

1. In the login page for Wireless Web server, enter TestUser and then 1234 as your password. Your home page appears, displaying the default settings.

2. Click Test Folder. Hello Service appears.

3. Click Hello Service.

Enter your name and then click Submit. The phone simulator displays "Oracle9i Application Server Wireless Edition says hello (your name)".

1.2.2 Creating a Wireless JavaServer Page Application

For this walkthrough, you create Wireless applications using the **Hello.jsp** and **Apps.jsp** samples. To complete this walkthrough, you must load these **.jsps** onto a server.

1. Login to Wireless with your administrator name and password.

2. Select the Service Designer. The Browse Folders and Services screen appears.

3. Create a Master Service as follows:

   a. From the Browse Folders and Services screen, click Create Master Service. The master service creation wizard's Basic Info. screen appears.

   b. Enter the Basic Information for the Master Service.

      – Enter a name for the application, such as *SampleJSPApp*.

      – Select Valid to publish the application to the Content Manager.

      – Choose Http Adapter from the drop-down list of adapters.

      – Click Next until you reach the Input Parameters screen.

4. Enter the Input Parameters as follows:

      – In the Default Value field for the URL parameter, enter the URL for **HelloName.jsp**. For example, enter http://localhost/HelloName.jsp.

5. Click Next until you reach the final screen of the master service creation wizard, the Result Transformer screen. Click Finish to complete the master service. The master service appears in the Browse Folders screen.

6. To view the master service on a phone simulator, click Test.

1.2.3 Creating a Database Query Application

1. Login to Wireless with your administrator name and password.

2. Select the Service Designer tab. The Browse Folders screen appears.

3. From the Browse Folder screen, click the Create Master Service button. The Basic Info. screen of the Master Service Creation Wizard appears.

4. Complete the Basic Info. screen as follows:

   a. For the Name field, enter *SQL Time*.

   b. Select the Valid check box to enable the master service.

   c. From the drop-down list, select SQLAdapter.

   d. Click Next until you reach the Init Parameters screen.

5. Complete the Init Parameters screen as follows:

   a. Enter the following information into the fields.

   b. For the JDBC_CONNECT_STRING, enter the JDBC connect string for the database on which to query, as follows. (Be sure to insert all colons; for example, `thin:@host`.)

   ```
   jdbc:oracle:thin:@host_name:port:SID
   ```

   c. For the Password and User Name fields, type the password and user name. For example, enter *1234* for both the user name and password.

   d. Under Type of Statement, enter *Query*.

   e. For the STATEMENT, enter

   ```
   select sysdate from dual
   ```

6. Click Next. The Input Parameters screen appears. You do not need to modify any of the input parameters.

7. Click Next to go to the Output Parameters screen. The Output parameters screen is populated with the output parameters for the SQL adapter. You do not need to modify any of the output parameters.

8. Click Next to go to the Result Transformer Screen. You do not need to modify this screen. Continue to click Next until you come to the end of the master service creation sequence.

9. Click Finish. The Browse Folders screen reappears. You have created the master service, SQL Time.

1.2.4 Creating Module Services

In this section, you learn how to create and run SMS and email services by configuring the Wireless PIM (personal information management) module services. The PIM module services, which require little or no configuration, enable customers to integrate corporate email, directory, address book, calendaring, and instant messaging applications into their mobile enterprise portals.

1.2.4.1 Sending a SMS Message

The short messaging module enables users to send short messages by entering the address of the recipient and the subject and body text of the message. For this walkthrough, you do not have to configure the SMS module, which provides "out-of-the-box" functionality. For more information on the SMS module, see the *Oracle9iAS Developer's Guide.*

To send a SMS message:

1. Login to Wireless with your administrator name and password.

2. Select Service Designer. The Browse screen appears.

3. Select the modules folder. The Wireless modules appear.

4. Select PIM and then select Short Messaging.

5. Click the phone icon in the Test column. The phone simulator appears, displaying the inputting interface for the short messaging module.

6. In the short messaging interface:

    a. Select Email as the type of message.

    b. In the Subject field, enter *Testing*.

    c. In the Body field, enter *This is a test*.

    d. Enter the address of the recipient, such as *scott.tiger@oracle.com.*

    e. Click Send.

Figure 1–1   Partial View of the Short Messaging Service Module Inputting Interface
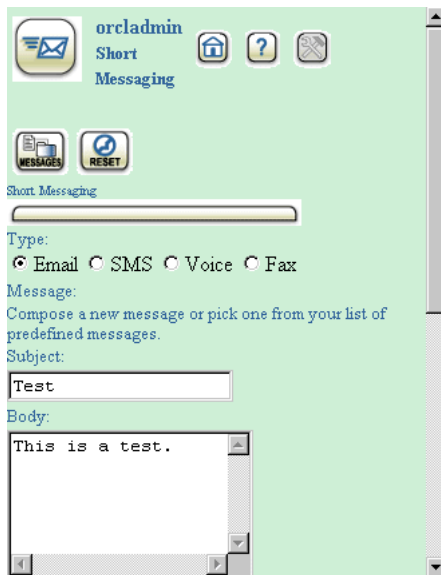
1.2.4.2 Accessing Email from a Mobile Device

For this walkthrough, you create a service that enables you to access your email from a mobile device by using the Service Designer to configure the Mobile Email Client service. This PIM module enables you to access email on an IMAP or POP3 server from any mobile device.

Step 1: Configuring the Mobile Email Client

To configure the Mobile Email Client:

1. Login to Wireless with your administrator name and password.

2. Select Service Designer. The Browse Services screen appears.

3. Select the PIM Folder.

4. Select Mail and then click Edit. The Edit Service screen appears.

5. From the left menu select Input Parameters. The Edit Input Parameters screen appears.

6. In the Edit Input Parameters screen, set the default values for the following input parameters. If you set default values, then Wireless does not ask the end user for an input value.

a. Enter the mail protocol (either POP3 or IMAP) as the default value for ORACLE_SERVICES_PIM_MAIL_SERVICE.

b. Enter the full host name of the mail server name as the default value for ORACLE_SERVICES_PIM_MAIL_SERVER_NAME. For example, enter *mailserver.oraclemobile.com*.

c. Enter the port number for the the mail server on the host as the default value for ORACLE_SERVICES_PIM_MAIL_SERVER_PORT. For IMAP, the default value is 143; for POP3, the default value is 110.

d. Enter the full host name SMTP (outgoing) mail server on the host as the default value for ORACLE_SERVICES_PIM_MAIL_SMTP_SERVER_ NAME. For example, enter *smtp.oraclemobile.com*.

e. Enter the SMTP port number on the host as the default value for ORACLE_ SERVICES_PIM_MAIL_SMTP_SERVER_PORT. The default is 25.

f. Enter the login name for the SMTP server, such as *john.doe@mycomp.com*, as the value for ORACLE_SERVICES_PIM_MAIL_SMTP_SERVER_LOGIN. If login for SMTP is not required, then this value is null or an empty # string ("");otherwise, Wireless uses this value for SMTP login.

If you do not specify the domain, then Wireless appends the value set for ORACLE_SERVICES_PIM_MAIL_AUTODOMAIN. If you do not specify that value, then Wireless uses the value set for ORACLE_SERVICES_PIM_ MAIL_DEFAULT_EMAILDOMAIN.

g. Enter the domain, such as *mycomp.com*, to be appended to any email addresses lacking a domain name as the value for ORACLE_SERVICES_ PIM_MAIL_AUTODOMAIN. The default value is *localhost*.

h. For ORACLE_SERVICES_PIM_MAIL_FOLDER_INBOX, enter the name of the inbox folder on the mail server. The default value is *INBOX*.

i. Enter the name of the Sent folder as the value for ORACLE_SERVICES_ PIM_MAIL_FOLDER_SENT. For example, enter *Sent*, or *SentItems*. The default value is *Sent*.

j. For ORACLE_SERVICES_PIM_MAIL_DEFAULT_EMAILDOMAIN, enter the default email domain for sending emails, such as *mycomp.com.* When sending emails, if the email domain is not specified, then the default email domain will be appended to the username. For example, if the default domain is *mycomp.com*, and a user sends an email to the user "john.doe", the email will be sent to john.doe@mycomp.com The default value is *localhost*.

k. Enter the maximum number of messages returned for one request as the value for ORACLE_SERVICES_PIM_MAIL_MSGFETCH_SETSIZE. For example, if a folder has 300 messages, only the first 200 will be returned for the first request. The default value is 200.

l. Enter the connection timeout, in milleseconds, as the value for ORACLE_SERVICES_PIM_MAIL_SERVER_CONNECT_TIMEOUT. The default value is 2000.

m. To enable advanced configuration, such as selecting a mail server host name based on runtime information, enter a configuration class as the value for ORACLE_SERVICES_PIM_MAIL_CONFIG_CLASS. For example, enter *oracle.panama.module.pim.mail.util.Config* or *mycomp.mail.config.MailConfig*. The default value is *oracle.panama.module.pim.mail.util.Config*.

n. Enter the temporary directory for downloading messages or attachements as the value for ORACLE_SERVICES_PIM_MAIL_TEMP_DIR. For example, e*nter /home/9iasuser/temp, D:\9iasuser\temp*. The default value is */temp*.

o. For ORACLE_SERVICES_PIM_MAIL_AUDIO_TMP_DIR, enter the temporary directory which stores the temporary audio files, such as the **.wav** files that are generated when a user replies to an email in the voice-enabled version of the application. For example, *enter /home/9iasuser/iaswv20/modules/modules-web/pim/mail/audiotemp*. The default value is */modules/modules-web/pim/mail/audiotemp*. This directory should be accessible through the Web.

p. Enter the URL for the temporary audio files directory as thevalue for ORACLE_SERVICES_PIM_MAIL_AUDIO_TMP_URL. For example, enter *http://localhost/modules/pim/mail/audiotemp*. The default value is *http://localhost/modules/pim/mail/audiotemp*.

q. Enter the encoding (such as UTF-8, Shift_JIS, Big5) that is used when sending an email as the value for ORACLE_SERVICES_PIM_MAIL_MESSAGE_ENCODING. If you do not enter a value into this field, then Wireless uses the default value, UTF-8.

7. Click Apply.

8. Return to the PIM folder either by using your browser's back button or by Selecting the PIM hyperlink at the top of the Edit Master Service screen.

Step 2: Testing the Mail Service on a Phone Simulator

To view the mail module on a phone simulator:

1. From the PIM folder in the Browse screen for masters services, select Mail.

2. Select the phone icon in the Test column. The login screen of the email module appears.

Figure 1–2   The Login Screen of the Email Module

3. Enter the username and password specific to your email server.

4. Click Submit. You can now access your email account.

Part II

System Guide

2

System Guide Overview

2.1 Overview of Wireless Management

The system management functions of Oracle9*i*AS Wireless enable you to centrally administer and configure Oracle9*i*AS Wireless. All the configuration data is stored in the database. In addition, you can monitor real-time performance data to assess system health and collect data to display historical trends.

You can manage Oracle9*i*AS Wireless from two views: the Wireless Server view and the Site view.

The Wireless Server view enables you to monitor and manage system performance for each server-level process and to start and stop the server processes both as a group and individually.

The Site view provides you with an overall view of all processes and their respective machines. The site view enables you to create a common configuration for these machines.

2.2 Accessing Wireless System Management through OEM

You access the system management and configuration functions for Wireless through the Oracle Enterprise Manager (OEM) console.

To access the OEM console, you enter the following URL into a browser:

http://Server:1810

> **Note:** The default ports are 1810 and 1811. The port number range is 1812 to 1820. To ensure that you are using the correct port number, check the port number for Oracle9*i*AS Wireless stored in [Oracle home]/install/portlist.ini. For more information on port usage, see Oracle9*i* Application Server Installation Guide and the Oracle9*i* Application Server Administrator's Guide.

Enter your user name and password. The Oracle9iAS Enterprise Manager Home Page appears. From the System Components table, select Wireless. The Wireless page appears and defaults to the Wireless Server tab.

2.2.1 Using Oracle Enterprise Manager

You can use Oracle Enterprise Manager for administering Wireless. Oracle Enterprise Manager provides a Web-based tool that allows you to perform some of the management tasks described in this book.

For more information about Oracle Enterprise Manager, see Oracle9i Application Server Administrator's Guide.

2.3 Managing the Wireless Server

You use the Wireless Server tab to view the performance of the server and the processes.

Figure 2–1   The Wireless Server Tab

The Wireless Server tab is divided into sections called General, Response and Load, Processes, and Administration.

The Response and Load section displays the overall performance of the Wireless Server. The Processes section includes a table that lists the following process types:

- Wireless Web Server

- Alert Engine

- Async Server

- Data Feeder

- Messaging Server

- Performance Monitor

- Industrial Device Portal

These process types, which represent the top-level of the Wireless server, display as hyperlinks in the Processes table; by clicking one, you drill down to screens that enable you to manage the processes themselves. For example, clicking the Data Feeder hyperlink in the Processes table enables you to navigate to the processes screen, which lists the current data feeder processes.

The processes screen includes a table that lists each processes by name and notes the current status for each process, such as started (running), stopped (suspended), or uninitialized (the process has never been run). The processes screen for the alert engine, data feeder, messaging server, and performance monitor process types also include columns that indicate if a process has been enabled, or if it participates in cache synchronization with other processes. In these columns, *true* indicates that the process has either been enabled or can particpate in cache synchronization with other processes; a value of *false* indicates that the process has not been enabled or cannot particpate in cache synchronization with other processes.

In addition to noting the status of a process, you can use the processes screen to perform such functions as adding, editing, deleting, or starting and stopping a selected a process.

.

> **Note:**   In the Wireless Server tab, you can view all processes by clicking Expand All. Likewise, you can hide all the processes by clicking Collapse All. If you view and manage many processes, you can create a view that isolates these processes of one type by clicking Focus.
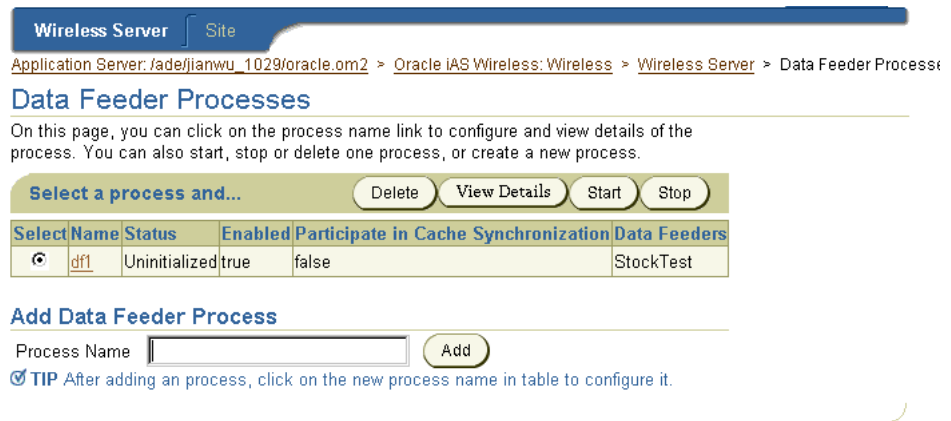
2.3.1 Accessing a Wireless Process

By selecting a process and clicking the View Details button (or by clicking the process itself, which is represented as hyperlink), you can drill down to a detail screen for the selected process. From the detail screen, you can start and stop the process, view its performance statistics, and configure it. A detail screen includes sections entitled General, Response and Load, Performance, and Administration.

Figure 2–2   The Processes Screen

From the General section, you can start or stop the selected performance monitor process by clicking the Start or Stop buttons. Next to the Current Status label, the General section displays the current state of the selected process, noting it as started stopped, or uninitialized. The General sections of the detail screens for the alert engine, data feeder, messaging server, and performance monitor process types include the Enabled label. If *true* displays next to this label, then the has been enabled; if *false* displays, then the process has not been enabled.

The Response and Load section of the detail screen lists the overall performance statistics for the selected process. The Performance section lists performance metrics types for the selected process. From the Administration section of the screen, you can configure and administer the selected process.

For information on starting and stopping the processes on the server, see Chapter 3, "Server Administration". For information on configuring the server-level processes, see Section 4.1 in Chapter 4, "Server Configuration". See Section 7.1 in Chapter 7, "Server Performance Monitoring" for information on viewing the performance metrics for a process on the server.

Figure 2–3   A Detail Screen for a Process

2.3.1.1 Navigating Through Wireless Management

Managing Wireless involves drilling down through the top-level screens, such as the Wireless Server tab or the Site tab (described in Section 2.2), to the detail and configuration screens for a selected process. This traversal displays as a navigation path at the top of each screen. For example, Figure 2–4 displays the navigation path from the Wireless Server tab to the detail screen for a data feeder process called *df1*. Each screen that you visit in this path displays as a hyperlink, enabling you to move back to any screen you have visited by clicking the hyperlink for that screen.

Figure 2–4   The Navigation Path

2.4 Managing Wireless Sites

The Site tab enables you to monitor and manage all the processes which run against a common database configuration. The site screen, invoked when you select the Site tab, displays overall site performance metrics in the Response and Load section. The Response and Load section includes overall performance statistics for the site-wide processes of the wireless web sever.

Wireless Management provides you with current snapshots of the system performance metrics of the Wireless Web server, alert, and feed components that enable you to assess system health and performance. These individual metrics may not directly point to a fault in the system; however, building an abductive reasoning model from the data collected by these metrics enables you to diagnose the system's health.

The Site screen includes a Processes table that displays the site-wide process types. The individuals processes are listed under the process types. For each site-wide process, the table lists the name of the process, the machine on which it runs, and current status of the process (started, stopped, or unitialized).

Like the Wireless Server screen, these process types are hyperlinks which give you access to detail screens that enable you to both configure a selected process and view its performance metrics. For more information on configuring the site-wide processes, see Section 4.2 in Chapter 4, "Server Configuration". See Section 7.2 in Chapter 7, "Server Performance Monitoring".

The Administration section of the screen enables you to configure such components as the proxy server, the JDBC connection pool, and runtime configuration (including session life time). In addition, you can upload and download repository objects and register providers. For more information, see Chapter 4, "Server Configuration".

Note: In the Site tab, you can view all processes by clicking Expand All. Likewise, you can hide all the processes by clicking Collapse All. If you view and manage many processes, you can create a view that isolates these processes of one type by clicking Focus.

Figure 2–5   The Site Tab

3

Server Administration

This chapter describes how to manage the Wireless Server. Each section describes a separate topic. These sections include:

- Section 3.1, "Managing the Wireless Server"

- Section 3.2, "Viewing the Server Processes"

- Section 3.3, "Viewing Log Files"

3.1 Managing the Wireless Server

From the Wireless Server tab, you can start and stop the Wireless processes. You can start these processes at the same time using the Start All and Stop All buttons, or individually by clicking the start and stop buttons in either the processes or detail screens.

Figure 3–1   The Wireless Server Tab

3.2 Viewing the Server Processes

The process types, which are hyperlinks in the Processes table of the Wireless Server tab, represent the top-level of the Wireless server. By default, these Wireless processes display in an expanded mode, meaning that each node representation of the processes on the server appears in the Processes table. From an expanded view, you can see which processes are started (running), stopped (suspended), or uninitialized (the process has never been run).

Clicking the nodes enables you to drill down to the processes screens and the detail screens for a selected process. These screens, which display the current state of a selected process (started, stopped, or unitialized), include buttons that enable you to start or stop a selected process. In addition, these screens enable you to create, edit, delete, and configure a process.

> **Note:**   Because it may take a few moments a process to start or stop, you must click the browser's Refresh button to get the current running status of a data feeder process.

See Section 2.3 in Chapter 2 for information on the processes or detail screens. For more information on creating, editing, deleting, and configuring processes, see Chapter 4, "Server Configuration".

Figure 3–2   Viewing a Wireless Server Process from the Processes Screen

Each section describes how to start or stop a Wireless process. These sections include:

- Section 3.2.1, "Starting and Stopping an Alert Engine Process"

- Section 3.2.2, "Starting and Stopping a Data Feeder Process"

- Section 3.2.3, "Starting and Stopping a Messaging Server Process"

- Section 3.2.4, "Starting and Stopping a Performance Monitor Process"

- Section 3.2.5, "Starting and Stopping an Industrial Device Portal Process"

3.2.1 Starting and Stopping an Alert Engine Process

To start an alert engine process:

1. From the Wireless Server screen, click the Alert Engine hyperlink. The Alert Engine processes screen appears.

2. Select the alert engine process you wish to start from the Alert Engine Processes section.

3. Click the Start button. The Status section displays "Started".

To stop an alert engine process:

1. From the Wireless Server screen, click the Alert Engine hyperlink. The Alert Engine processes screen appears.

2. Select the alert engine process you wish to stop from the Alert Engine Processes section.

3. Click the Stop button. The Status section displays "Stopped".

> **Note:**   You can only start or stop an alert engine process which has an assigned alert service. If the alert engine process has no assigned alert service, then the status for the process is stopped.

3.2.2 Starting and Stopping a Data Feeder Process

To start a data feeder process:

1. From the Wireless Server screen, click the Data Feeder hyperlink. The Data Feeder processes screen appears.

2. Select the data feeder process you wish to start.

3. Click the Start button. The Status section displays "Started".

To stop a data feeder process:

1. From the Wireless Server screen, click the Data Feeder hyperlink. The Data Feeder processes screen appears.

2. Select the data feeder process you wish to stop.

3. Click the Stop button. The Status section displays "Stopped".

3.2.3 Starting and Stopping a Messaging Server Process

To start a messaging server process:

1. From the Wireless Server screen, click the Messaging Server hyperlink. The Messaging Server processes screen appears.

2. Select the messaging server process you wish to start.

3. Click the Start button. The Status section displays "Started".

To stop a messaging server process:

1. From the Wireless Server screen, click the Messaging Server hyperlink. The Messaging Server processes screen appears.

2. Select the Messaging server process you wish to stop from the Messaging Server Processes section.

3. Click the Stop button. The Status section displays "Stopped".

3.2.4 Starting and Stopping a Performance Monitor Process

To start an performance monitor process:

1. From the Wireless Server screen, click the Performance Monitor hyperlink. The Performance Monitor processes screen appears.

2. Select the performance monitor process you wish to start from the Performance Monitor Processes section.

3. Click the Start button. The Status section displays "Started".

To stop an performance monitor process:

1. From the Wireless Server screen, click the Performance Monitor hyperlink. The Performance Monitor processes screen appears.

2. Select the performance monitor process you wish to stop.

3. Click the Stop button. The Status section displays "Stopped".

3.2.5 Starting and Stopping an Industrial Device Portal Process

To start an industrial device portal process:

1. From the Wireless Server screen, click the Industrial Device Portal hyperlink. The Industrial Device Portal screen appears.

2. Select the industrial device portal process you wish to start from the Industrial Device Portal Processes section.

3. Click the Start button. The Status section displays "Started".

To stop a industrial device portal process:

1. From the Wireless Server screen, click the Industrial Device Portal hyperlink. The Industrial Device Portal screen appears.

2. Select the industrial device portal process you wish to stop from the Industrial Device Portal Processes section.

3. Click the Stop button. The Status section displays "Stopped".

3.2.5.1 Starting an Industrial Device Portal Process from the Command Line

1. Change directory to ${ORACLE_HOME}/wireless/bin directory.

2. Type "**mwactl.sh start [port_number]**"   (use mwactl.cmd for Windows NT)

Parameters:

- port_number is the port number where you want to start the server.

3.2.5.2 Stopping an Industrial Device Portal Process from the Command Line

1. Change directory to ${ORACLE_HOME}/wireless/bin directory.

2. Type "mwactl.sh -login username/passwd stop_force|stop port_number" (use mwactl.cmd for Windows NT)

Parameters:

- *username/password* is an should be username and password of a user that has System Administrator Responsibility in the APPS schema.

- *stop_force* is used to stop the server instantly (forcefully).

- *stop* is used to stop the server gracefully. With this option, server will wait until all user have logged out before shutting itself down.

- *port_number* is the port number where the server is running on.

> **Note:**   If a process is started from the Wireless Server screen, then it cannot be stopped from the command line. If a process is started from the command line, it cannot be stopped from the Wireless Server screen.

3.2.5.3 Starting the Industrial Device Dispatcher from the Command Line

1. Change directory to ${ORACLE_HOME}/wireless/bin directory.

2. From the command line, run "mwactl.sh start_dispatcher". (use mwactl.cmd for Windows NT)

3.2.5.4 Stopping the Industrial Device Dispatcher from the Command Line

1. Change directory to ${ORACLE_HOME}/wireless/bin directory.

2.   From the command line, run "mwactl.sh stop_dispatcher". (use **mwactl.cmd** for Windows NT)

3.3 Viewing Log Files

The System Log Files screen, invoked by clicking System Log Files, displays all the files under the log directory on the Wireless Server machine. Wireless writes server error information to the files and directory specified in the configuration.

Figure 3–3   The System Log Files Screen

You can view a log file by clicking a file name link. (You can drill down to a subdirectory by clicking the link for that directory).

Figure 3–4   Viewing a System Log File
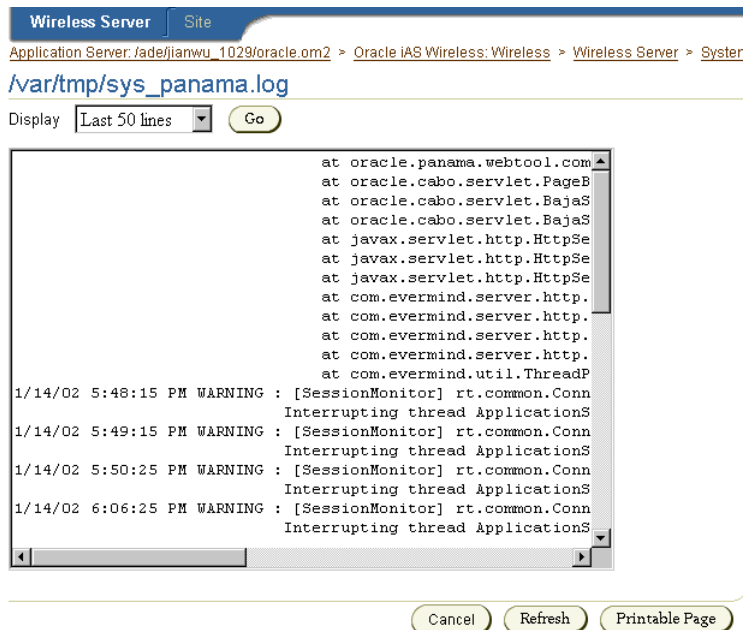
In addition to error messages, Wireless provides extensive runtime exception logging. When fatal exceptions occur, Wireless logs the exceptions and stack traces in the global log file.

Viewing and Printing Log Files

You can specify number of lines from the end of the log file to be displayed. You can also print a selected segment of the file as a text file by clicking Printable Page. The screen displays the segment of the log file to be printed. Use the browser's back button to navigate from this screen.

> **Note:**   You should have the log information available if you need to contact Oracle Support Services.

4

Server Configuration

This chapter describes how to configure the Wireless server at both the current host level and at the site level. Each section of this chapter describes a different topic. The topics include:

Section 4.1, "Server Configuration for the Current Host"

Section 4.2, "Configuring the Server for the Entire Site"

Section 4.3, "Other Configuration"

Section 4.4, "Administering the Site"

4.1 Server Configuration for the Current Host

From the Wireless server screen, you can manage and configure the processes in the Processes section. To access functions to manage and configure a process, you first click on a processes in the Processes section, and then drill down to the detail screen for that process. You can also start and stop a process from this screen and view both the performance metrics for the selected process. For more information on starting and stopping processes, see Chapter 3, "Server Administration". For more information on performance metrics, see Chapter 7, "Server Performance Monitoring".

You perform such management tasks as creating or deleting a process, through the processes screen. You can access this screen by clicking a process type in the Processes section of the Wireless Server tab.

You configure a process on the server using the detail screen, which you access by either drilling down from a selected process or by clicking the View Details button in the processes screen.

Figure 4–1   The Detail Screen for a Wireless Process on the Server

4.1.1 Managing Data Feeder Processes on the Server

From a data feeder processes screen, you can create and delete a data feeder process.

4.1.1.1 Creating a Data Feeder Process on the Wireless Server

To create a data feeder process on the Wireless Server:

1. In the Data Feeder screen, enter the name for the data feeder process in the Process Name field.

2. Click Create. The new data feeder process appears as a hyperlink in the Data Feeder Processes section of the screen.

Adding Data Feeders to a Data Feeder Process

To add a data feeder:

1. In the data feeder detail screen (invoked by clicking a data feeder process), select a data feeder from the drop-down list in the Data Feeder Names field. The list contains the names of the data feeders created by the Service Designer.

2. Select the appropriate data feeder.

3. Click Add. The new data feeder appears in the list of data feeders.

> **Note:** You can improve performance by adding the same data feeder multiple times.

Deleting a Data Feeder from a Data Feeder Process

To delete a data feeder:

1. In the data feeder processes screen, select a data feeder from the list.

2. Click Delete.

4.1.1.2 Deleting a Data Feeder Process on the Wireless Server

To delete a data feeder process:

1. From the Wireless Server screen, click the Data Feeder hyperlink. The Data Feeder processes screen appears.

2. Select the data feeder process you wish to delete.

3. Click the Delete button.

4.1.2 Configuring Data Feeder Processes

From the detail screen, you can configure the process identification, JDBC connection pool, and system logging.

> **Note:** If you do not specify a value for the JDBC connection pool, or logging at the node level, then Wireless uses the value set at the site-level configuration.

4.1.2.1 Configuring the Process Identity

To configure a process identity:

1. Enter the process name. This is a required field.

2. Select, or clear the Process Enabled check box.

3. Select Participate in Cache Synchronization to enable cache synchronization with other processes.

4. Click Apply. In the General section of a detail screen, the enabled status for the process displays as *true*. If you wish to prevent the process from participating in cache synchronization, the enabled status displays as *false*.

4.1.2.2 Configuring the JDBC Connection Pool

To configure the JDBC connection pool:

1. In the overview screen, click JDBC Connection Pool. The JDBC Connection Pool screen appears.

2. Enter the following parameters in the JDBC Connection Pool screen:

    a. Enter the minimum number of connections for the JDBC connection pool. The default is 1.

    b. Enter the maximum number of connections for the JDBC connection pool. The default is 100.

    c. In the Connection Allocation Increment field, enter the number by which the allocation of new connections to the JDBC connection pool can be incremented. The default is 1.

3. Click Apply.

4.1.2.3 Configuring the System Logging

To configure the system logging:

1. Enter a name for the log file name pattern.

2. In the Maximum Log File Size field, enter the maximum log file size (in bytes).

3. Select a log level. The log can contain any of the following: Warning, Error, or Notify.

4. Click Apply.

4.1.3 Managing Alert Engine Processes on the Server

From an alert engine processes screen, the processes screen of an alert engine process, you can add and delete master alert services from the selected alert engine process. You can also configure an alert engine process.

4.1.3.1 Adding Master Alert Services to an Alert Engine Process

To add a master alert service to an alert engine process:

1. In the alert engine process screen, select an alert service from the drop-down list in the Master Alert Name field. The list contains the names of the master alert services created by the Service Designer.

2. Select the appropriate master alert service.

3. Click Create. The selected master alert service appears in the list of alert services.

4.1.3.2 Deleting an Alert Service from an Alert Engine Process

To delete an alert service from an alert engine process:

1. In the alert engine process screen, select an alert service from the list.

2. Click Delete.

4.1.4 Configuring an Alert Engine Process

From the detail screen, you can perform the following configuration tasks:

■ Section 4.1.4.1, "Configuring the Process Identity"

■ Section 4.1.4.2, "Configuring the JDBC Connection Pool"

■ Section 4.1.4.3, "Configuring the System Logging"

■ Section 4.1.4.4, "Configuring the Messaging Server Client"

4.1.4.1 Configuring the Process Identity

To configure a process identity:

1. Enter the process name. This is a required field.

2. Select, or clear the Process Enabled check box.

3. Select Participate in Cache Synchronization to enable cache synchronization with other processes.

4. Click Apply. In the General Status section of the detail screen, the enabled status for the process displays as *true*. If you wish to prevent the process from participating in cache synchronization, the enables status displays as *false*.

4.1.4.2 Configuring the JDBC Connection Pool

To configure the JDBC connection pool:

1. Enter the following parameters in the JDBC Connection Pool screen:

a. Enter the minimum number of connections for the JDBC connection pool. The default is 1.

b. Enter the maximum number of connections for the JDBC connection pool. The default is 100.

c. In the Connection Allocation Increment field, enter the number by which the allocation of new connections to the JDBC connection pool can be incremented. The default is 1.

2. Click Apply.

4.1.4.3 Configuring the System Logging

To configure the system system logging:

1. Enter a name for the log file name pattern.

2. In the Maximum Log File Size field, enter the maximum number of log records in the same file.

3. Select a log level warning. The warning can contain any of the following: Warning, Error, or Notify.

4. Click Apply.

4.1.4.4 Configuring the Messaging Server Client

The Messaging Server Client includes the following parameters:

Table 4–1   Parameters of the Messaging Server Client

Parameter	Value
Thread Pool Size	The total number of threads created by the transport for this client. The transport uses these threads to retrieve received messages and status reports for this client. Wireless uses the number of threads set at the site-level configuration as the default value if you do not set the thread pool size at the node level. The transport ignores this setting if the client neither receives status reports nor has any registered end-points at which to receive messages.

Parameter	Value
Number of Queues	The number of queues. The transport creates this value only if this client receives status reports or messages. The transport supports only one queue per client; the transport creates only one queue per client even if you specify more than one queue per client. The number set at the site-level configuration is the default value if you do not specify any value here. The transport ignores this setting if the client neither receives status reports nor has any registered end-points at which to receive messages.
Recipient Chunk Size	The number of recipients that receive messages in one send call by the client. If the number of recipients is too big, then the transport may send recipients messages on a chunk-by-chunk basis. In such cases, some may receive messages while the transport processes other recipients. As a result, some recipients get messages earlier than others. Sending messages chunk-by-chunk can improve performance. The chunk size cannot be more than 500; the transport uses a 500 chunk size even if the chunk size is set at greater than 500. If you do not specify a value at the node level, then Wireless uses the value set at the site-level configuration.
Carrier Finder Hook Class Name	Wireless uses this hook to find the carrier name from a phone number. The carrier name is then used by the driver finder to find a proper driver to send a message to this phone number. Use this hook for situations where there are several carrier-specific drivers, as using a carrier's driver with a phone number of that carrier improves performance. If you do not specify the carrier finder hook class name at the node level, then Wireless uses the one set at the site level. If you do not specify the carrier finder hook class name at the site level, then the driver finder cannot find an appropriate driver because it does not have the carrier information. If you do not specify the carrier finder driver hook class at either the site or node level, then Wireless uses the transport's default driver finder.
Driver Finder Hook Class Name	The name of the hook that the transport uses to find an appropriate driver to send a message to a given destination. The driver finder hook uses such criteria as delivery type, cost, or speed to assign a driver. If you do not specify the driver finder hook class name at the node level, then Wireless uses the driver finder hook specified at the server-level configuration. If you do not specify the hook at either the node or site level, then Wireless uses the transport's default driver finder.

Parameter	Value
■ Pre-Send Hook ■ Post-Send Hook ■ Pre-Receive Hook ■ Post-Receive Hook	These hooks can be called before or after sending a message (the pre-send and post-send hooks) or before or after receiving a message (the pre-receive and post-receive hooks). These hooks, which are in the same category, are called in the sequence in which they are specified. You can use these hooks to enable special client functions, such as checking or filtering, rather than having to implement an application on top of the transport.

To configure the messaging server client for the async server and alert engine process:

1. Enter the number of processing threads in the Thread Pool field.

2. Enter the number of queues. Wireless supports one queue per process type.

3. Enter the number of message recipients in the Recipient Chunk Size field. The chunk size cannot be more than 500; the transport uses 500 even if you set this value at greater than 500.

4. Enter the carrier finder hook class.

5. Enter the driver finder hook class.

6. Click Apply.

7. If needed, select (or add, delete, or update), the Java classes for pre-send hooks, post-send hooks, pre-receive hooks, and post-receive hooks.

8. Click Done.

> **Note:** If you do not specify a value at the process level, then Wireless uses the value set at the site-level configuration.

Adding a Hook Class

To add another hook:

1. Click Add Another Row.

2. Enter the Java class for the hook.

3. Select the row.

4. Click Apply.

Updating a Hook Class

To update a hook:

1. Select the hook.

2. Edit the Java class for the hook.

3. Click Apply.

Deleting a Hook

To delete a hook:

1. Select the hook you wish to delete.

2. Click Delete.

4.1.5 Managing Async Server Processes on the Server

The detail screen for an async server process on the server enables you to view the status of the selected async server process (stopped, started, or unitialized) or the performance metrics for the selected process. For more information on async server process performance metrics, see Section 7.1.4 in Chapter 7, "Server Performance Monitoring" .

4.1.6 Managing Messaging Server Processes on the Server

You can create or delete a messaging server process from the processes screen.

4.1.6.1 Creating a Messaging Server Process on the Wireless Server

To create an messaging server process on the Wireless Server:

1. In the Messaging Server screen, enter the name for the messaging server process in the Process Name field.

2. Click Add. The new messaging server process appears as a hyperlink in the Messaging Server Processes section of the screen.

4.1.6.2 Deleting a Messaging Server Process on the Wireless Server

To delete a messaging server process:

1. From the Wireless Server screen, click the Messaging Server hyperlink. The Messaging Server screen appears.

2. From the Messaging Server Processes section, select the messaging server process you wish to delete.

3. Click the Delete button.

4.1.7 Configuring a Messaging Server Process

From the messaging server process detail screen , you can perform the following configuration tasks:

- Chapter 4.1.7.1, "Configuring the Process Identity"

- Chapter 4.1.7.2, "Configuring the JDBC Connection Pool"

- Chapter 4.1.7.3, "Configuring the System Logging"

- Chapter 4.1.7.4, "Configuring the Driver Instance"

4.1.7.1 Configuring the Process Identity

To configure a process identity:

1. Enter the process name. This is a required field.

2. Select, or clear the Process Enabled check box.

3. Select Participate in Cache Synchronization to enable cache synchronization with other processes.

4. Click Apply. In the General Status section of the detail screen, the enabled status for the process displays as *true*. If you wish to prevent the process from participating in cache synchronization, the enables status displays as *false*.

4.1.7.2 Configuring the JDBC Connection Pool

To configure the connection pool:

1. In the overview screen, click JDBC Connection Pool. The JDBC Connection Pool screen appears.

2. Enter the following parameters in the JDBC Connection Pool screen:

   a. Enter the minimum number of connections for the JDBC connection pool. The default is 1.

   b. Enter the maximum number of connections for the JDBC connection pool. The default is 100.

    c. In the Connection Allocation Increment field, enter the number by which the allocation of new connections to the JDBC connection pool can be incremented. The default is 1.

3. Click Apply.

> **Note:** You configure the JDBC connection pool at either the site or the process level. If you do not specify the JDBC connection pool values at the process level, then the system uses the values set at the site level.

4.1.7.3 Configuring the System Logging

To configure the system logging:

1. Enter a name for the log file name pattern.

2. In the Maximum Log File Size field, enter the file size (in bytes).

3. Select a log level warning. The warning can contain any of the following: Warning, Error, or Notify.

4. Click Apply.

> **Note:** You configure the system logging at either the site or the process level. If you do not specify the logging values at the process level, then the system uses the values set at the site level.

4.1.7.4 Configuring the Driver Instance

The site configuration of the messaging server driver defines a driver and its parameters (that is, the driver definition). The server configuration selects a driver and assigns the parameter values.

To configure the driver instance for a messaging server process:

1. From a server process screen, click the Driver Instances Configuration hyperlink. The Driver Instances screen appears.

2. Select a driver.

3. Click Add Driver Instance, Delete, or Edit. To add a driver instance, see Section 4.1.7.5. To edit a driver instance, see Section 4.1.7.6. To delete a driver instance, see Section 4.1.7.7.

4.1.7.5 Adding a Driver Instance to a Messaging Server Process

You must create drivers for delivery type you use. To add a driver instance to a messaging server process:

1. From messaging server process screen, select the Driver Instances Configuration hyperlink. The Driver Instances screen appears.

2. In the Driver Instances screen, click Add Driver Instance. The Add Driver Instance screen appears.

3. Complete the Add Driver Instance screen as follows:

   a. Enter a name for the driver instance.

   b. Select from the available drivers, which are defined at the Site level.

4. Click Go.

   a. Enter the number of sending threads. This option appears if this driver is configured to send messages at the site level.

   b. Enter the number of receiving threads. This option appears if this driver is configured to receive messages at the site level.

   Note: The site-level configuration for a driver dictates whether the driver can both send and receive threads.

   ---

5. Enter the driver-specific parameters, which are defined for the selected driver at the site level.

6. Click Create.

   Note: The driver instance configuration applies only to the messaging server process.

4.1.7.6 Editing a Driver Instance

To edit a driver instance:

1. From a server process screen, click the Driver Instances hyperlink. The Driver Instances screen appears.

2. Select a driver.

3. Click Edit. The values for the selected driver appear.

4. Change the driver's values as needed. For more information, see Section 4.1.7.5.

5. Click Apply to commit your changes.

4.1.7.7 Deleting a Driver Instance

To delete a driver instance:

1. From the messaging server process screen, click the Driver Instance Configuration hyperlink. The Driver Instance screen appears.

2. From the drop-down list, select a driver.

3. Click Delete.

4.1.8 Managing Performance Monitor Processes on the Server

The Performance Monitor Processes screen enables you to create or delete a performance monitor process.

4.1.8.1 Creating a Performance Monitor Process on the Wireless Server

To create a performance monitor process on the Wireless Server:

1. In the Performance Monitor screen, enter the name for the performance monitor process in the Process Name field.

2. Click Create. The new performance monitor alert process appears as a hyperlink in the Performance Monitor Processes section of the screen.

> **Note:**   You can have only one performance monitor process per host. Therefore, if one performance monitor process already exists, then the Create option does not appear.

4.1.8.2 Deleting a Performance Monitor Process on the Wireless Server

To delete a performance monitor process:

1. From the Wireless Server screen, click the Performance Monitor hyperlink. The Performance Monitor screen appears.

2. From the Performance Monitor Processes section, select the performance monitor process you wish to delete.

3. Click the Delete button.

4.1.9 Configuring a Performance Monitor Process

You can perform the following configuration tasks from the detail screen for a performance monitor process.

- Chapter 4.1.9.1, "Configuring the Process Identity"
- Chapter 4.1.9.2, "Configuring the JDBC Connection Pool"
- Chapter 4.1.9.3, "Configuring the Thread Pool"

4.1.9.1 Configuring the Process Identity

To configure a process identity:

1. Enter the process name. This is a required field.

2. Select, or clear the Process Enabled check box.

3. Select Participate in Cache Synchronization to enable cache synchronization with other processes.

4. Click Apply. In the General section of the detail screen, the enabled status for the process displays as *true*. If you wish to prevent the process from participating in cache synchronization, the enables status displays as *false*.

4.1.9.2 Configuring the JDBC Connection Pool

To configure the connection pool:

1. In the Administration section of the detail screen, click JDBC Connection Pool. The JDBC Connection Pool screen appears.

2. Enter the following parameters in the JDBC Connection Pool screen:

   a. Enter the minimum number of connections for the JDBC connection pool. The default is 1.

    b. Enter the maximum number of connections for the JDBC connection pool. The default is 100.

    c. In the Connection Allocation Increment field, enter the number by which the allocation of new connections to the JDBC connection pool can be incremented. The default is 1.

3. Click Apply.

4.1.9.3 Configuring the Thread Pool

To configure the thread pool:

1. Enter the number of threads. This is the number of threads that the performance monitor process uses to collect performance data and write to the data base. For more information, see Chapter 8, "Activity and System Logging".

2. Click Apply.

4.1.10 Configuring the Industrial Device Portal

You can add or delete an industrial device portal process from the processes screen.

4.1.10.1 Creating Industrial Device Portal Processes

To create an industrial device portal process on the Wireless Server:

1. In the Industrial Device Portal screen, enter the name for the industrial device portal process in the Process Name field.

2. Click Create. The new industrial device portal process appears a a hyperlink in the Industrial Device Portal Processes section of the screen.

4.1.10.2 Deleting an Industrial Device Portal Process on the Wireless Server

To delete an industrial device portal process on the Wireless Server:

1. From the Wireless Server screen, click the Industrial Device Portal hyperlink. The Industrial Device Portal screen appears.

2. From the Industrial Device Portal Processes section, select the industrial device portal process you wish to delete.

3. Click the Delete button.

4.1.10.3 Configuring the DBC File and the Telnet Port

Each Industrial Device Portal has two configurable parameters: Oracle Applications Database Configuration File (the DBC file) and Telnet port number. You configure these parameters from the Administration section of the process detail screen. In addition, this section enables you to configure the process identity for the selected industrial device portal process.

To enter the DBC File Name and the Telnet Port Number:

1. Enter the name of the DBC file (located in the DBC Folder configured at the site level). The name entered at the process level overrides a name entered at the site level. If you do not enter a value, then the Wireless uses the name for the DBC file set at the site level. See Section 4.4.14 for more information on configuring the DBC file at the site level.

2. Enter the default port number in the Telnet Port Number field. This is the port on which all Industrial Server processes attempt to listen. If you leave this field blank, then Wireless uses the port number set at the site level; otherwise, any value you enter into this field overrides the port number set at the site level.

3. Click Apply.

4.1.10.4 Configuring the Process Identity

1. Enter the process name. This is a required field.

2. Select, or clear the Process Enabled check box.

3. Click Apply.

4.2 Configuring the Server for the Entire Site

You use the Site tab to configure components across the entire site.

From the Processes section, you can configure the processes for the site. Clicking a process invokes a detail screen, from which you can access both performance data and configuration functions.

4.2.1 Configuring the Site Processes of the Wireless Web Server

From the Administration section of the Wireless Web Server's detail screen, you can perform the following tasks:

- Section 4.2.1.1, "Configuring the Process Attributes"
- Section 4.2.1.2, "Configuring Folders"

4.2.1.1 Configuring the Process Attributes

To configure the process attributes, select (or clear) the Participate in Cache Synchronization check box and then click Apply.

4.2.1.2 Configuring Folders

To configure the folder sorting order and display:

1. Designate the sorting order for folders on the output devices by using the arrows to select (> or >>) or remove (< or <<). The settings include:

    a. ORDER_NAME_ASC (This is the default setting.)

    b. ORDER_NAME_ DESC

    c. ORDER_SEQNO_ASC

    d. ORDER_SEQNO_DESC

    e. ORDER_DATE_ASC

    f. ORDER_DATE_DESC

    Note: The ascending (ASC) and descending (DESC) sorting orders cannot be selected for the same property. For example, you cannot select both ORDER_NAME_ASC and ORDER_NAME_DESC.

    ---

2. Enter the control number of services displayed under a folder at one time in the Display Service Size under a Folder field.

3. From the list box, select from among the following options, which dictate the order for the services in the user home folder for the default sorter hook:

    - USER_ORDER_FIRST

    - GROUP_ORDER_SECOND

    - USE_ORDER_SERVICES

4. Enter, as needed, the URIs for the sound and image files for the following folder display and sound components:

- Generic Title Icon
- Home Icon
- Help Icon
- Login Icon
- Logoff Icon
- Register Icon
- User Info Icon
- User Profile Icon
- Customize Service Icon
- Global Preset Icon
- Setup Icon
- Top Bar Image
- Bottom Bar Image
- Generic Title Audio
- Home Audio
- Help Audio
- Logoff Audio
- Register Audio
- Setup Audio
- Setup Audio
- Top Bar Audio
- Bottom Bar Audio

5. Click Apply. The Wireless Web Server screen reappears.

4.2.1.3 Configuring the Applications Image Directory

To configure the applications image directory, enter the directory containing the system image files.

4.2.1.4 Configuring Events and Listeners

Next, you configure the request, session, and response events using the Event and Listener screen. This screen, invoked by clicking the Event and Listeners hyperlink on the Wireless Web Server screen, displays event options and available listeners. Using this screen, you enable or disable event generation by selecting from among the event options and listeners. You also use the screen to add or remove a listener.

The Event and Listener screen includes the following configuration options. When you select the check box for one of these options, you enable it. If you do not select a check box, then the option is disabled, the default setting.

Table 4–2   Request, Session, and Response Event Options

Option	Definition
Request Event	
Enable 'before request' Event	Declares a request event to be "just received".
Enable 'after request' Event	Declares a request event as "request object has been released".
Enable 'transform begin' Event	Declares an request event to be "before the transformation".
Enable 'request begin' Event	Declares a request event to"begin being processed".
Enable 'service begin' Event	Declares a request event to be "before the adapter is invoked".
Enable 'transform end' Event	Declares a request event to be "transformation complete".
Enable 'request end' Event	Declares a request event to be "request has been completely processed".
Enable 'service end' Event	Declares a request event to be "adapter execution complete".
Enable 'request error' Event	Declares a request event to be "error occurs during request processing."
Session Event	
Enable 'before session' Event	Declares a session event to be "before session starts".

Option	Definition
Enable 'session authentication' Event	Declares a session event to be "session has been authenticated".
Enable "session begin" Event	Declares a session event to be "session has been validated".
Enable 'session end' Event	Declares a session event to be "session has expired (implicitly and explicitly)".
Enable 'after session' Event	Declares a session event to be "session object has been released".
Response Event	
Enable 'response error' Event	Declares a response event to be "error in response" object.

Adding a New Listener

To add a new new listener:

1. Click Add Another Row.

2. Enter the name of the listener class For example, enter
   `oracle.panama.rt.event.Listener`.

3. Select the row.

4. Click Apply.

Deleting a Listener

To delete a listener:

1. Select a listener.

2. Click Delete.

Configuring the Request Event

1. In the Request Event section, select from among the following options:

   - Enable 'before request' Event

   - Enable 'after request' Event

   - Enable 'transform begin' Event

   - Enable 'request begin' Event

- Enable 'service begin' Event
- Enable 'transform end' Event
- Enable 'request end' Event
- Enable 'service end' Event
- Enable 'request error' Event

2. Click Apply
3. Select a runtime listener.
4. Click Apply.

Configuring the Session Event

1. Select from among the following options

   - Enable 'before session' Event
   - Enable 'session end' Event
   - Enable 'session begin' Event
   - Enable 'session authetication' Event.
   - Enable 'after session' Event

2. Click Apply.
3. Select, add, or delete a listener.
4. Click Apply.

Configuring the Response Event

To configure the response event:

1. Select the Enable 'Response Error' Event option.
2. Click Apply.
3. Select, add, or delete a listener.
4. Click Apply.
5. Click Done. The Wireless Web Server screen reappears.

4.2.1.5 Configuring Hooks

You can select, or change the hook implementation class for a selected hook using the Hooks screen.

The screen includes the following hooks:

Table 4–3   Hooks Listed in the Hooks Screen

Hook	Description
`wireless.http.locator.signon.pa ges.hook.class`	The hook to generate the sign-on page on the device. The default is `oracle.mwa.core.omap.panama.MWASign OnPage`.
`wireless.http.locator.caller.lo cation.hook.class`	Declares the hook for which acquires the user's current location. The default is `oracle.panama.rt.common.LocAcq`.
`wireless.http.locator.service.v isibility.hook.class`	Declares the hook to check for the show or hide status when Wireless starts. The default is `oracle.panama.rt.common.ServiceVisi blity`.
`wireless.http.locator.listener. registration.hook.class`	Declares the hook for the event registration listener. The default is `oracle.panama.rt.common.ListenerReg istration`.
`wireless.http.home.folder.sorte r.hook.class`	Declares the hook for sorting a user's home folder contents. The default is `oracle.panama.rt.common.HomeFolderS orter`.
`wireless.http.locator.mobile.id .hook.class`	Declares a hook to acquire a mobile ID. The default is `oracle.panama.rt.common.MobileIdHoo kImpl`.
`wireless.http.locator.pre.proce ssor.hook.class`	Declares a hook to be invoked before device transformation.
`wireless.http.locator.authoriza tion.hook.class`	Declares the hook for user service authorization. The default is `oracle.panama.rt.common.Authorizer`.
`wireless.http.locator.post.proc essor.hook.class`	Declares a hook to be invoked after device transformation.

Hook	Description
`wireless.http.locator.device.id entifcation.hook.class`	Declares the hook for identifying a logical device. The default is `oracle.panama.rt.hook.DeviceModels`.
`wireless.http.locator.location. service.visibility.hook.class`	Declares the hook to show or hide the contents of a folder based on its current location. The Default is `oracle.panama.rt.hook.Folder.Render erPolicy`.
`wireless.http.locator.folder.re nder.hook.class`	Hook for a folder renderer. The default value is `oracle.panama.rt.common.FolderRende rer`.
`wireless.http.locator.session.i d.hook.class`	Declares a hook for generating the session ID. The default is `oracle.panama.rt.common.SessionIDGe nerator`.
`wireless.http.locator.authentic ation.hook.class`	Declares the hook for user authentication. The default is `oracle.mwa.core.omap.panama.OMAPAut hentication`.
`wireless.http.locator.useragent .class`	Default implementation of the device recognition class. The default is `oracle.panama.core.xform.UserAgentI mpl`.
wireless.http.locator.normalizeaddress.ho ok.class	The hook for storing the address field of the DeviceAddress in normalized form, which is used to look up objects and to send the address by the transport. For example, the normalized form of an email delivery type can be lower-case letters, making the normalized form of Scott.Tiger@Oracle.com into scott.tiger@oracle.com. The normalized form of the SMS delivery type could be all non-numeric characters. For example, the normalized form for (650) 555-5000 is 6505555000. If some carriers have a space between the area code, then the normalized address logic converts the phone number to 650 555 5000.

4.2.2 Configuring the Site-Wide Processes of the Alert Engine

From the Adminsitration section of the Alert Engine screen, you can configure the alert engine processes on the site.

To Configure the site-wide process of the Alert Engine:

1. From the Site screen, click the Alert Engine hyperlink. The Alert Engine screen appears.

2. Click the Alert Engine Configuration hyperlink to invoke the Alert Engine Configuration screen.

3. Complete the form in the Alert Engine Configuration screen as follows:

   a. Enter the reply email address for the sent alert. For example, enter alert@oraclemobile.com

   b. Enter the SMS reply address for the sent alert.

   c. Enter the Pager reply address for the sent alert.

   d. Enter the Voice Reply address for the sent alert.

   e. Enter the WAP_PUSH reply address for the sent alert.

4. Click Apply.

4.2.3 Configuring Site-Wide Processes of the Async Server

From the Async Server detail screen, you can perform the following tasks:

- Section 4.2.3.1, "Configuring the Async Server Process Attributes"

- Section 4.2.3.2, "Configuring the Async Server"

- Section 4.2.3.3, "Configuring the Working Threads for the Async Server"

- Section 4.2.3.4, "Configuring the Messaging Server Client for the Async Server"

4.2.3.1 Configuring the Async Server Process Attributes

To configure the process attributes:

1. Select Participate in Cache Synchronization to enable cache synchronization with other processes.

2. Click Apply.

4.2.3.2 Configuring the Async Server

To configure the async server for the Wireless site:

1. From the Processes section of the Site Screen, select Async Server. The Async Server screen appears.

2. Select Async Server Configuration to access the Async Server Configuration screen.

3. Complete the Command Format section of the the Async Server Configuration screen as follows:

    a. Enter the Help command. The default value is *!h*.

    b. Enter the application Help command. the default value is *help*.

    c. Enter the Escape command. The default value is *!e*.

    d. Enter the Stop command. The default value is *!s*.

    e. Enter the Login command. The default value is *!l*.

    f. Enter the Logoff command. The default value is *!o*.

    g. Enter a text delimiter for the command line.

4. Complete the Site-Wide Addresses section. You can enter both of the following addresses:

    a. Enter the site email address (for example, ask@oraclemobile.com).

    b. Enter the SMS address for the site.

5. Enter the short name of the default service. If the async request does not specify which service to invoke, then the Async Server invokes this default service. The Async Server invokes Help if there is no default service has been set.

6. Click Apply.

> **Note:** These are site-wide addresses for the specific async request.

4.2.3.3 Configuring the Working Threads for the Async Server

To set the number of working threads for the async server:

1. In the Number of Working Threads field, enter the number of threads that the async server uses to invoke services. The default is 10.

2. Click Apply.

4.2.3.4 Configuring the Messaging Server Client for the Async Server

The Messaging Server Client includes the following parameters:

Table 4–4   Parameters of the Messaging Server Client

Parameter	Value
Thread Pool Size	The total number of threads created by the transport for this client. The transport uses these threads to retrieve received messages and status reports for this client. Wireless uses the number of threads set at the site-level configuration as the default value if you do not set the thread pool size at the node level. The transport ignores this setting if the client neither receives status reports nor has any registered end-points at which to receive messages.
Number of Queues	The number of queues. The transport creates this value only if this client receives status reports or messages. The transport supports only one queue per client; the transport creates only one queue per client even if you specify more than one queue per client. The transport ignores this setting if the client neither receives status reports nor has any registered end-points at which to receive messages.
Recipient Chunk Size	The number of recipients that receive messages in one send call by the client. If the number of recipients is too big, then the transport may send recipients messages on a chunk-by-chunk basis. In such cases, some may receive messages while the transport processes other recipients. As a result, some recipients get messages earlier than others. Sending messages chunk-by-chunk can improve performance. The chunk size cannot be more than 500; the transport uses a 500 chunk size even if the chunk size is set at greater than 500.
Carrier Finder Hook Class Name	Wireless uses this hook to find the carrier name from a phone number. The carrier name is then used by the driver finder to find a proper driver to send a message to this phone number. Use this hook for situations where there are several carrier-specific drivers, as using a carrier's driver with a phone number of that carrier improves performance. If you do not specify the carrier finder hook class name at the node level, then Wireless uses the one set at the site level. If you do not specify the carrier finder hook class name at the site level, then the driver finder cannot find an appropriate driver because it does not have the carrier information. If you do not specify the carrier finder driver hook class at either the site or node level, then Wireless uses the transport's default driver finder.

Parameter	Value
Driver Finder Hook Class Name	The name of the hook that the transport uses to find an appropriate driver to send a message to a given destination. The driver finder hook uses such criteria as delivery type, cost, or speed to assign a driver. If you do not specify the hook at either the node or site level, then Wireless uses the transport's default driver finder.
▪ Pre-Send Hook ▪ Post-Send Hook ▪ Pre-Receive Hook ▪ Post-Receive Hook	These hooks can be called before or after sending a message (the pre-send and post-send hooks) or before or after receiving a message (the pre-receive and post-receive hooks). These hooks, which are in the same category, are called in the sequence in which they are specified. You can use these hooks to enable special client functions, such as checking or filtering, rather than having to implement an application on top of the transport.

To configure the messaging server client for the async server and alert engine process:

1. Enter the number of processing threads in the Thread Pool field.

2. Enter the number of queues. Wireless supports one queue per process type.

3. Enter the number of message recipients in the Recipient Chunk Size field. The chunk size cannot be more than 500; the transport uses 500 even if you set this value at greater than 500.

4. Enter the carrier finder hook class.

5. Enter the driver finder hook class.

6. Click Apply.

7. Select, if needed, the Java classes for pre-send hooks, post-send hooks, pre-receive hooks, and post-receive hooks.

8. Click Done.

> **Note:** Wireless uses the values set at the site-level configuration as the default value if there are no values set specifically for the async server.

Adding a Hook Class
To add another hook:

1. Click Add Another Row.

2. Enter the Java class for the hook.

3. Select the row.

4. Click Apply.

Deleting a Hook

To delete a hook:

1. Select the hook you wish to delete.

2. Click Delete.

> **Note:** See Section 4.1.4.4 for information on configuring the messaging server at the process level.

4.2.4 Configuring the Site Processes of the Messaging Server

You can perform the following tasks from the detail screen of a messaging server process:

■   Section 4.2.4.1, "Setting the Default Configuration for the Messaging Server"

■   Section 4.2.4.2, "Configuring the Messaging Server Drivers for the Site"

4.2.4.1 Setting the Default Configuration for the Messaging Server

Clicking the Messaging Server Configuration hyperlink invokes the Messaging Server Configuration screen, which enables you set the default configuration for the messaging server.

To set the default configuration for the messaging server:

1. Enter the GSM smart message encoder class.

2. Enter the default number of queues for the driver. For example, enter 1.

3. Enter the default number of sending threads for the driver.

4. Enter the default number of receiving threads for the driver.

5. Enter the number of send retry times.

6. Click Apply.

4.2.4.2 Configuring the Messaging Server Drivers for the Site

Message Server Drivers screen, invoked by clicking the Messaging Server Drivers in the Messaging Server detail screen, enables you to define a driver and its parameters. From this screen, you can add, delete, or edit the messaging server drivers for the site

Adding a Messaging Server Driver

To add a messaging server driver:

1. From the Messaging Server Drivers screen, click Add Driver. The Add Driver screen appears. This is a required step.

2. Enter a name for the driver (for example, EmailDriver). This is a required step.

3. From the drop-down menu, select one of the following delivery categories:

    - Wap-Push

    - SMS

    - Voice

    - Email

    - Fax

    - Two-Way Pager

    - One-Way Pager

    This is required step.

4. Enter the protocols for the driver. Use a comma (,) to separate your entries. You can select all protocols by entering an asterisk (*) or by leaving the field clear.

5. Enter the carriers. Use a comma (,) to separate your entries.

6. From the drop-down list, select a speed level.

7. From the drop-down list, select a cost level.

8. From the drop-down, select SEND, RECEIVE, or BOTH for capability.

9. Enter the number of message queues.

10. Complete the Default Encoding and Locales section as follows:

    a. Enter the content encoding method. For example, enter UTF-8. Use a comma (,) to separate multiple methods.

   b. Select a local from the drop-down list.

11. Complete the driver class and parameters as follows. This is a required step.

   a. Enter the driver class. For example, enter
   `Oracle.panama.messaging.transport.driver.email.EmailDriv`
   `er`.

   b. Add or delete a driver class parameter as needed.

12. Click Apply. The Messaging Server Driver screen reappears.

Editing a Messaging Server Driver

To edit a messaging server driver:

1. From the Messaging Server Driver screen, use the select the driver you wish to edit.

2. Click Edit.

3. The Edit Driver screen appears, displaying the values for the selected driver.

4. Edit the values as needed.

5. Select, add, or delete the driver class parameters as needed.

6. Click Apply. The Messaging Server Drivers screen reappears.

Deleting a Messaging Server Driver

To delete a messaging server driver:

1. From the Messaging Server Driver screen, select the driver you wish to delete.

2. Click Delete.

4.2.5 Configuring the Site-Wide Processes of the Performance Monitor

Clicking the Performance Monitor hyperlink on the site screen enables you to access the Performance Monitor Configuration screen. This screen enables you to configure the performance monitor.

The performance monitor of a Wireless process must point to a database schema to log the performance information.

The Performance Monitor Configuration Screen includes the following parameters:

Table 4–5   Parameters of the Performance Monitor Configuration Screen

Parameter	Description
Basic Configuration	
Enable Performance Logging	Selecting this check box enables performance logging.
Delimiter for logged name/value pair	The delimiter for the logged name/value pairs. The default delimiter is #%=%#. This is a required parameter.
Delimiter for logger records	The delimiter for the logged records. The default is ~#$. This is a required parameter.
Wakeup Frequency (minute)	The number of minutes after which the logger thread wakes up to check for any new files in the process directory. The default is one minute. This is a required parameter.
Close Frequency (second)	The number of seconds to close a file. The default is 300. This is required parameter.
Batch Size for Performance logging	The batch size for the performance logging. The default is 15. This is a required parameter.
JDBC Driver	By default, a repository connection is used for performance monitoring. The values (if specified in this screen,) are used to specify a database other than the repository. These values must match the values in **targets.xml**.
Driver Type	Select one of the following from the drop-down menu: ■ THIN -- Thin JDBC driver ■ V7 -- Orcale7 OCI driver ■ V8 -- Oracle8 OCI driver
User Name	The name of the database user.
Password	The password of the database user.
Host Name	The host name of the log database (for example, ptgserver-sun.us.oracle.com).
Port Number	The port of the database listener. The default is 1521.
SID	The server identifier (SID) of the log database.

To configure the performance logger:

1. Complete the Basic Configuration section of the Performance Monitor Configuration screen as follows:

    a.   Select the Enable performance Logging check box to enable logging to the database.

    b.   Enter the delimiter for the logged name/value pair. The default delimiter is #%=%#.

    c.   Enter the delimiter for the logged records. The default delimiter is ~#$.

    d.   Enter the interval, in minutes, in which logger thread wakes up to check for any new files in the process directory. The default is one minute.

    e.   Enter the interval, in seconds, for closing a file.

    f.   Enter the batch size for the database logging. The default is 15.

2. Complete the JDBC Driver section if the performance data is stored in a different database other than the repository. To complete the JDBC Driver section:

    a.   From the drop-down list, select one of the following JDBC driver types:

    ■   THIN (Thin JDBC driver)

    ■   V7 (Oracle7 OCI driver)

    ■   V8 (Oracle8 OCI driver)

    b.   Enter the name of the database user.

    c.   Enter the password of the database user.

    d.   Enter the host name of the log database.

    e.   Enter the port number.

    f.   Enter the server ID.

3. Click Apply. The Site screen reappears.

> **Note:** You can specify a database other than the repository database to store the performance data.

4.2.6 Configuring the Site-Wide Processes of the Industrial Device Portal

To configure the site process of the Industrial Device Portal:

From the Site screen, click the Industrial Device Portal hyperlink. The Industrial Device Portal screen appears.

Figure 4–2   Site Overview for Industrial Device Portal

4.2.6.1 Configuring the Keyboard Mapping

1. In the Administration section of the Industrial Device Portal Screen, click on the Keyboard Mapping hyperlink. The Keyboard Mapping Configuration screen appears.

Figure 4–3   Industrial Device Portal Keyboard Mapping

2.   Select the device type from the Device drop-down list

3.   Click Update Settings. The mappings for the selective device profile appear.

4.   Change the mappings as needed.

5.   Click Commit to save your changes.

> **Note:** A function key can only be used once for each device profile and must be unique across the mapping.

4.2.6.2 Adding a Device Profile

To add a device profile:

1. Click Add New Device. The Add New Device screen appears.

2. Modify the appropriate entries.

3. Click Add Device to save the new device.

4.2.6.3 Deleting a Device Profile

To delete a device profile:

1. Select the device type from the drop-down list.

2. Click Delete Device.

4.2.6.4 Configuring the Industrial Device Dispatcher

1. In the file ${ORACLE_HOME}/wireless/secure/mwa.cfg, set the variable mwa.Dispatcher to the host name you will be running the dispatcher on, and to the port number on which it will listen for connections. For hostname, do not use "localhost".

2. In the file ${ORACLE_HOME}/wireless/secure/mwa.cfg, set the variable mwa.LogDir to the full path to the directory where you want the dispatcher log to be output. Make sure the directory is writable.

3. If "." is not one of the directories in your PATH environment variable, you have to either add it there, or go to ${ORACLE_HOME}/wireless/bin, and edit the file mwactl.sh as follows:

    a. Find the line that reads "cd ${ORACLE_HOME}/wireless/bin ; mwadis" and insert "./" before "mwadis", so that it reads: "cd ${ORACLE_HOME}/wireless/bin ; ./mwadis"

4.2.6.5 Configuring the Dispatcher Settings

To configure the dispatcher settings for the industrial server process:

1. In the Administration section of the Industrial Device Portal Screen, click Dispatcher Settings hyperlink. The Dispatcher Settings Configuration screen appears.

Figure 4–4   Industrial Device Portal Dispatcher Settings

2. Enter the hostname and the port number of the dispatcher in the Dispatcher Machine and Port field. These should be separated by a colon (for example, <hostname>:<port number>). Use the hostname of the machine on which the the dispatcher runs; do not use "localhost".

3. Click Apply.

4.2.6.6 Configuring the Network Settings

1. In the Administration section of the Industrial Device Portal Screen, click Networking Settings hyperlink. The Network Settings Configuration screen appears.

Figure 4–5   Industrial Device Portal Network Settings

2. Enter the default port number in the Telnet Port Number Field. The default port number is 9090.

3. Enter the time in minutes that a session should time out after its connection has been dropped in the Drop Connection Timeout Field.

4. Enter the time in minutes that a session can be inactive before the session is terminated in the Stale Session Timeout Field.

5. If the implementation of the Pushback Input Stream is broken on the JVM that will be running the portal, click the box next to JVM Pushback Input Stream Broken.

6. Click Apply.

4.2.6.7 Configuring the Device Mapping

In the Administration section of the Industrial Device Portal Screen, click Device Mappings Settings hyperlink. The Device Mappings Settings Configuration screen appears. This screen enables you to specify a device profile for a specific IP address mask (for example, 144.*.*.*) or an IP address mask with a keyboard mapping.

To specify a device profile or a specific IP address mask or an IP address mask with a keyboard mapping:

1. Enter the IP mask.

2. From the drop-down list, select a keyboard mapping.

3. Click Apply.

Figure 4–6   Industrial Device Portal Device Mapping

4.3 Other Configuration

This section describes the following configuration tasks:

- Section 4.3.1, "Configuring the Logging Directory"
- Section 4.3.2, "Setting the Process Debug Flag"

4.3.1 Configuring the Logging Directory

From the Wireless Server tab (the top screen used for managing the Wireless sever processes), you can designate the location for the system logging and view the system log files.

To configure the logging directory:

1. Click the Logging Directory link to invoke the logging screen.

2. Enter the name of the logging directory.

3. Click Apply.

4.3.2 Setting the Process Debug Flag

From the detail screen of a Wireless Web Server process, you can turn the process debug flag on or off:

1. Select the Switch Debug Flag hyperlink.

2. Select, or clear the Turn On Debug Flag check box.

3. Click Apply.

> **Note:** This configuration is not persistent; it is a runtime flag for Wireless Web Server processes.

4.4 Administering the Site

The Administration section of the Site screen enables you to perform the following functions:

- Section 4.4.1, "Configuring the Proxy Server"

- Section 4.4.2, "Configuring the Wireless Site Locale"

- Section 4.4.3, "Configuring the System Logging"

- Section 4.4.4, "Configuring the Runtime"

- Section 4.4.5, "Configuring Devices"

- Section 4.4.6, "Configuring the Site Processes of the WebCache Server"

- Section 4.4.7, "Configuring the WAP Provisioning"

- Section 4.4.8, "Configuring the URLs for the Wireless Web Server"

- Section 4.4.9, "Configuring the Messaging Server Client"

- Section 4.4.10, "Configuring the Wireless JDBC Connection Pool"

- Section 4.4.11, "Configuring User Provisioning"

- Section 4.4.12, "Configuring the Secure Sockets Layer (SSL)"

- Section 4.4.13, "Configuring the Object Cache Synchronization"

- Section 4.4.14, "Configuring Oracle Applications"

- Section 4.4.15, "Uploading and Downloading Repository Objects"

- Section 4.4.16, "Refreshing the WebCache"

- Section 4.4.17, "Registering a Portlet Provider"

4.4.1 Configuring the Proxy Server

The Proxy Server screen, invoked by selecting Proxy Server in the Administration section of the Site screen, enables you to configure the proxy properties used by Wireless when either HTTP or FTP protocols are required. If Wireless does not use an HTTP or FTP proxy server, then you do not have to configure the proxy sever properties.

To configure the proxy servers:

1. In the HTTP Proxy server section of the Proxy Server screen, select the Use check box if Wireless uses an HTTP proxy server.

2. Enter the name of the HTTP proxy host. For example, enter `www-proxy.us.oracle.com.`

3. Enter the proxy port number for the HTTP proxy server.

4. Enter the exception addresses. The default setting is `localhost|127.0.0.1.` Do not use a proxy for these host addresses. Separate your entries with a pipe bar (`|`).

5. In the FTP Proxy server section of the Proxy Server screen, select the Use check box if the Wireless uses an FTP proxy server. If you do not select this check box, then Wireless ignores the settings for both the FTP host and port.

6. Enter the name of the FTP proxy host.

7. Enter the FTP proxy server port number.

8. In the Authentication section of the Proxy Server screen, select the Use check box if the Wireless FTP proxy server requires authentication. Do not select this check box if you do not wish the FTP proxy server to require authentication.

9. Enter the authentication user name. This is a required parameter if the FTP proxy server requires authentication.

10. Enter the authentication password. This is a required parameter if the FTP proxy server requires authentication.

4.4.2 Configuring the Wireless Site Locale

The Site Locale screen, invoked by selecting the Site Locale hyperlink in the Site screen, enables you to configure the language, country and time zone for the site.

To configure the site locale:

1. Select the language for the site locale from the drop-down list. This list contains all of the supported locales.

2. Select the time zone for the site from the drop-down list.

3. Click Apply. The Site screen reappears.

Add a Supported Locale to the Site

To add a supported locale:

1. Select a locale from the drop-down list. This list contains all of the available locales.

2. Click Add. The new locale appears in the list of supported locales for Wireless Customization and Webtool.

Delete a Supported Locale from the Site

To delete a supported locale:

1. Select the appropriate locale from the list of supported locales.

2. Click Delete.

4.4.3 Configuring the System Logging

To configure the system logging:

1. Enter a name for the log file name pattern. The default is `sys_panama.log`.

2. In the Maximum Log File Size field, enter the maximum number of bytes in the same file. The default is 10000.

3. Select a log level. The log can contain any of the following: Warning, Error, or Notify. The default is Warning, Error.

4. Click Apply. The Site screen reappears.

4.4.4 Configuring the Runtime

To configure the runtime:

1. In the Runtime Session Expiration Time field, enter the time-to-live attribute of a session. The default is 600.

2. Enter the time required for the session monitor to check an open session. The default is 60.

3. In the Cache Object Life Time field, enter the time-to-live, in seconds, of a persistent object. After this time, Wireless reconstructs the object. The default is 600.

4. Enter the time required for the cache monitor to check the cache in the Cache Object Check Interval field. If the time is set to -1, Wireless does not invoke the cache monitor and the cache is not cleared. The default is 60.

5. Enter the number of seconds for the maximum execution time for threads. The default is 60. Wireless interrupts the threads for the request that take longer than this allotted time and returns an error.

6. Click Apply. The Site screen reappears.

4.4.5 Configuring Devices

The Device-Related Configuration screen enables you to add, edit, or delete HTTP header names that can contain information on the the device ID.

1. Select from among the following options in the Wireless Web Server Menu setup section:

   a. Enable Login

   b. Enable Logout

   c. Enable User Info.

   d. Enable Service Customization

   e. Enable Global Preset

   f. Enable User Profile

   g. Enable Self-Registration

   h. Enable Home

   i. Enable Help. You must enter the URL of the help files if you select Enable Help.

2. Click Apply.

3. Complete the Device ID section of the screen as follows:

   a. Select a header name.

   b. Click Apply.

4. Click Done.

Adding Header for Device IDs

To add a header name for subscription IDs:

1. In the Device ID section, click Add Another Row. A new row appears.

2. Enter the header name containing the subscription ID information.

3. Select the row.

4. Click Apply.

5. Click Done.

4.4.5.1 Deleting a Header Names

To delete a header name or cookie name:

1. Select the header.

2. Click Delete.

3. Click Done.

4.4.6 Configuring the Site Processes of the WebCache Server

WebCache is a Wireless component that accelerates site performance by caching the content transformation performed by Oracle9*i*AS Wireless.

Wireless performs transformations at two levels. At the first level of transformation, Wireless converts the adapter result, which is obtained as a result of the adapter pulling content from an external data source. The runtime adapters convert this into SimpleResult XML. Wireless performs a second transformation (that is, content transformation) when converting the SimpleResult XML into a device-specific markup language.

The WebCache configuration screen enables you to set the cache policy and includes the following parameters.

Table 4–6   Parameters of the WebCache Configuration Screen

Parameter	Value
Enable WebCache	Selecting this check box enables caching.
WebCache Server URL	The URL of the WebCache server.

Parameter	Value
Webcache Invalidation Port	The port in the Webcache machine to which the invalidation messages are sent.
Webcache Invalidation Password	The invalidation password for WebCache.
Webcache Timeout (second)	The interval (in seconds) after which the Webcache times out.

To configure the Web Cache:

1. In the Basic Configuration section of the screen, perform the following:

   a. Enable caching by selecting the Enable WebCache check box. Clearing the check box disables caching

   b. Enter the URL of the WebCache server.

   c. Enter the WebCache invalidation port.

   d. Enter the WebCache invalidation password.

   e. Enter the number of seconds for the timeout.

2. Click Apply. The Site screen reappears. If you do not wish to save your entries, click Cancel.

4.4.7 Configuring the WAP Provisioning

You can create, edit, and delete WAP profiles using the Profile screen, which you access by selecting the WAP Provisioning hyperlink. The Profile screen displays a list of current WAP profiles. You can also add a WAP profile by defining the following parameters:

Table 4–7   WAP Profile Parameters

Parameter	Value
WAP Profile Name	The name of the WAP profile. You can name the profile for the WAP provider.
WAP Bearers	A list of the transport technologies.

Parameter	Value
GSM/CSD	Circuit-Switched Data (CSD) over a GSM (Global System for Mobile communication) network. This is the basic transfer protocol in GSM phones.
GSM/SMS	Short-Messaging Service over a GSM (Global System for Mobile communication) network. Select this store-and-forward technology to enable alphanumeric messaging between mobile phones and such other platforms as email or voice mail.
GSM/USSD	Unstructured Supplementary Service Data (USSD) over a GSM (Global System for Mobile communication) network. USSD is both session- and transaction-oriented.
GPRS	General Packet Radio Service (GPRS). Select this bearer technology to use WAP on a per-transaction basis. GPRS enables services to be on at all times; a GPRS customer does not have to invoke a service to receive content.
WAP Gateway Proxy	The address of the WAP proxy server. For GSM/CSD, it is an IP address. For GSM/SMS, this is service or phone number. For GSM/USSD, this is either an IP address or an MSISDN number. This is a required field.
Port	The port number. The default port numbers are: ■ 9200 (connection-less) ■ 9201 (connection-oriented) ■ 9202 (secure and connection-less) ■ 9203 (secure and connection-oriented)
Secure Wap Session	Select if you want to enable WTLS (Wireless Transport Layer Security).
Phone Model	The brand and model of the wireless phone.
Home Page	The home page of the ISP provider accessed by the WAP user.
GSM/CSD Parameters	
Call Type	A drop-down list of the call types (analog or ISDN) used for the connection.
Call Speed	The call speed of the connection.
Authentication Type	Select one of the following protocols used for user authentication: ■ PAP (Password Authentication Protocol) ■ CHAP (Challenge Handshake Authentication Protocol) .

Parameter	Value
ISP Name	The name of the internet service provider.
ISP Login Name	The user name.
ISP Login Password	The user's password.
GSM/SMS Parameters	
SMSC Address	The number of the SMSC (Short Message Service Center).
USSD Parameters	
Proxy Type	The phone number or IP address of the WAP provider.
USSD Service Code	The USSD code (for example, *555*), that precedes the destination number.
Timeout	The time, in seconds, after which the session expires.

4.4.7.1 Adding a WAP Profile

To add a WAP Profile:

1. From the Profiles screen, select Add Profile.

2. Complete the Add Profile screen as follows:

   a. Enter the WAP profile name.

   b. Using the Bearers drop-down list, select from among the available transport types

   - GSM/CSD

   - GSM/SMS

   - GSM/USSD

   - GPRS

3. Enter the WAP gateway proxy. This is a required field.

4. Click Go. Complete the following parameters appropriate to the selected transport type.

   - Enter one of the following port numbers:

     – 9200 (connection-less)

     – 9201 (connection-oriented)

　　　　　　　– 9202 (secure and connection-less)

　　　　　　　– 9203 (secure and connection-oriented)

　　a. Select the Secure WAP Session check box if you want to enable WTLS (Wireless Transport Layer Security). Selecting this option overrides port numbers 9200 and 9201.

　　b. Enter the brand name and model of the phone.

　　c. In the Access field, enter an access point for GPRS (for example, wap.us.companyname.com). If you selected GMS, enter a telephone number.

GSM/CSD Parameters

　　a. Select a call type from the drop-down menu:

　　■　Analog

　　■　ISDN

　　b. Select from the following user authentication types:

　　■　PAP (Password Authentication Protocol)

　　■　CHAP (Challenge Handshake Authentication Protocol)

　　c. Enter the ISP login name.

　　d. Enter the ISP password.

　　e. Enter home page URL of the service provider.

GSM/CMS Parameters

　　a. Enter the address for the (SMSC) Short Messaging Service Center.

　　b. Enter the time out, in seconds.

GSM/USSD Parameters

　　a. Enter the proxy type. For example, enter a phone number or IP address of a WAP provider.

　　b. Enter the USSD service code.

　　c. Enter the timeout, in seconds, after which the session expires.

5. Click Create.

4.4.7.2 Editing a WAP Profile

To edit a WAP profile:

1. Select the WAP profile that you want to edit.

2. Click Edit. The Edit screen appears, with its fields populated by the values set for the selected WAP profile.

3. Edit the values as needed. See Section 4.4.7.1 for information on entering values.

4. Click Apply to confirm your changes to the WAP Profile.

4.4.7.3 Deleting a WAP Profile

To delete a WAP Profile:

1. Select the WAP profile that you want to delete.

2. Click Delete.

4.4.8 Configuring the URLs for the Wireless Web Server

To configure the URLs for the Wireless Web Server

1. Enter the Wireless Web Server's URL in HTTP mode. The default setting is http://localhost:7777/ptg/rm.

2. Enter the Wireless Web Server's URL in HTTPS mode. The default setting is https://localhost:7777/ptg/rm.

3. Enter the Async Server HTTP URL. The default setting is http://localhost:7777/async.

4. Enter the Wireless Webtool URL in HTTP mode. The default setting is http://localhost:7777/webtool/login.uix. You must configure this URL before you can use the Repository Download and Upload Utility and WebCache Refresh.

5. Enter the HTTP Adapter URL prefix. The default setting is http://localhost:7777.

    This is the URL prefix for the remote **.jsp** page that is invoked by the HttpAdapter. Entering the URL prefix enables the sever to automatically attach this prefix to a **.jsp** entered in the Input Parameters screen of the Master Service Creation Wizard. You need only enter the **.jsp**.

    For example, a remote **.jsp**, **myAPP.jsp**, has the following URL:

http://remotehost:port/apps/myApp.jsp

The URL prefix is http://remotehost:port/apps/. You enter only **myApp.jsp** as the default value in the Input Parameters screen of the Master Service Creation Wizard. Wireless automatically attaches the prefix to the **.jsp**.

6. Click Apply.

4.4.9 Configuring the Messaging Server Client

The Messaging Server Client includes the following parameters:

Table 4–8   Parameters of the Messaging Server Client

Parameter	Value
Thread Pool Size	The total number of threads created by the transport for this client. The transport uses these threads to retrieve received messages and status reports for this client. The transport ignores this setting if the client neither receives status reports nor has any registered end-points at which to receive messages.
Number of Queues	The number of queues. The transport creates this value only if this client receives status reports or messages. The transport supports only one queue per client; the transport creates only one queue per client even if you specify more than one queue per client. The number set at the site-level configuration is the default value if you do nor specify any value here. The transport ignores this setting if the client neither receives status reports nor has any registered end-points at which to receive messages.
Recipient Chunk Size	The number of recipients that receive messages in one send call by the client. If the number of recipients is too big, then the transport may send recipients messages on a chunk-by-chunk basis. In such cases, some may receive messages while the transport processes other recipients. As a result, some recipients get messages earlier than others. Sending messages chunk-by-chunk can improve performance. The chunk size cannot be more than 500; the transport uses a 500 chunk size even if the chunk size is set at greater than 500. .

Parameter	Value
Carrier Finder Hook Class Name	Wireless uses this hook to find the carrier name from a phone number. The carrier name is then used by the driver finder to find a proper driver to send a message to this phone number. Use this hook for situations where there are several carrier-specific drivers, as using a carrier's driver with a phone number of that carrier improves performance. If you do not specify the carrier finder hook class name at the node level, then Wireless uses the one set at the site level. If you do not specify the carrier finder hook class name at the site level, then the driver finder cannot find an appropriate driver because it does not have the carrier information. If you do not specify the carrier finder driver hook class at either the site or node level, then Wireless uses the transport's default driver finder.
Driver Finder Hook Class Name	The name of the hook that the transport uses to find an appropriate driver to send a message to a given destination. The driver finder hook uses such criteria as delivery type, cost, or speed to assign a driver. If you do not specify the driver finder hook class name at the node level, then Wireless uses the driver finder hook specified at the server-level configuration.
■ Pre-Send Hook ■ Post-Send Hook ■ Pre-Receive Hook ■ Post-Receive Hook	These hooks can be called before or after sending a message (the pre-send and post-send hooks) or before or after receiving a message (the pre-receive and post-receive hooks). These hooks, which are in the same category, are called in the sequence in which they are specified. You can use these hooks to enable special client functions, such as checking or filtering, rather than having to implement an application on top of the transport.

To configure the messaging server client for the async server and alert engine process:

1. Enter the number of processing threads in the Thread Pool field.

2. Enter the number of queues. Wireless supports one queue per process type.

3. Enter the number of message recipients in the Recipient Chunk Size field. The chunk size cannot be more than 500; the transport uses 500 even if you set this value at greater than 500.

4. Enter the carrier finder hook class.

5. Enter the driver finder hook class.

6. Click Apply.

> **Note:** Wireless uses the values set at the site level as the default values if no values are set at the node level.

7. Select, if needed, the Java classes for pre-send hooks, post-send hooks, pre-receive hooks, and post-receive hooks.

8. Click Done.

4.4.9.1 Adding a Hook Class

To add another hook:

1. Click Add Another Row.

2. Enter the Java class for the hook.

3. Select the row.

4. Click Apply.

4.4.9.2 Deleting a Hook

To delete a hook:

1. Select the hook you wish to delete.

2. Click Delete.

4.4.10 Configuring the Wireless JDBC Connection Pool

The JDBC Connection Pool screen, invoked by selecting the JDBC Connection Pool hyperlink in the Site screen, enables you to configure the JBDC connection for the site. If no JDBC connection pool values are set at the server level, then the values set at the site level become the default values for the the server level

To configure the JDBC connection:

1. Enter the minimum number of connections for the JDBC connection pool. The default is 1.

2. Enter the maximum number of connections for the JDBC connection pool. The default is 100.

3. In the Connection Allocation Increment field, enter the number by which the allocation of new connections to the JDBC connection pool can be incremented. The default is 1.

4. Click Apply. The site screen reappears.

4.4.11 Configuring User Provisioning

The User Provisioning screen enables you to set the properties used by the Provisioning adapter, which enables you to integrate your repository with an existing provisioning system.

To set the properties for the provisioning adapter:

1. Enter the name of the parent folder for the user's home folder. A new subfolder is created for every new user. The default is /Users Home.

2. From the drop-down list, select the default groups to which the user belongs. The default is Users. (You can select or de-select groups using Control + click).

> **Note:**   A virtual user is a user who accesses a Wireless site, but does not register. When such a user accesses a Wireless site, Wireless detects the user and creates a virtual user account for that user.

3. Select Disclose User Location to enable the users' location to be disclosed to a third-party application

4. Select Disclose User Identity to enable the users' identities to be disclosed to a third party application.

5. Complete the Virtual User Provisioning Section as follows.

6. Enter the parent folder for the home for virtual users.

    a. Select the groups to which the virtual users belong. You can select or de-select groups by using Control+left click.

    b. Select Enable Virtual User to enable a virtual user to create an account

7. Click Apply. The Site screen reappears.

4.4.12 Configuring the Secure Sockets Layer (SSL)

The SSL Configuration screen enables you to configure your security certificates as either Base64 or PKCS#7-formatted certificate files to enable use of the HTTPS protocol.

4.4.12.1 Adding a Base64 Certificate File

To add a Base64 Certificate file:

1. In the Base64 Certificate Files Section, click Add another row:

2. Enter the absolute file name. All Base64 certificate files are bounded at the beginning with '--BEGIN CERTIFICATE--' and at the end with '--END CERTIFICATE--'.

3. Click Apply.

4.4.12.2 Adding a PKCS#7-Formatted Certificate File

To add a PKCS#7-formatted Certificate file:

1. In the PKCS#7-Formatted Certificate Files Section, click Add another row:

2. Enter the absolute file name.

3. Click Apply.

4.4.12.3 Editing a Certificate File

To edit a certificate file:

1. Select the certificate file.

2. Change the file name as needed.

3. Click Apply.

4.4.12.4 Deleting a Certificate File

To delete a certificate file:

1. Select the certificate file.

2. Click Delete.

> **Note:** You must configure the Secure Sockets Layer to use HTTPS in the HttpAdapter.

4.4.13 Configuring the Object Cache Synchronization

The Object Cache screen enables you to configure the thread pool that handles the cache syncrhonization messages.

To configure the Object Cache Synchronization:

1. Enter the minimum number of threads in the thread pool.

2. Enter the maximum number of threads in the thread pool.

3. Enter the timeout, in minutes, for the threads in the thread pool.

4. Click Apply.

4.4.14 Configuring Oracle Applications

The Oracle Applications configuration screen, invoked by selecting Oracle Applications in the Administration enables you to configure the Oracle Application properties used by Wireless. If Wireless is not running Oracle Applications, then you do not have to configure the Oracle Applications properties.

Figure 4–7 Applications Configuration

To configure Oracle Applications:

1. Enter the name of the log file for Oracle Applications to use in the Log File Name Field.

2. Enter the max size (in bytes) that the log file can reach in the Max Log File Size Field.

3. If the log should be rotated after reaching the max file size, click on Enable Log Rotation?.

4. Enter the location of the DBC Folder in the DBC Folder Field.

5. Enter the name of the DBC File in the DBC File Name Field.

6. Enter the number of initial Application's database connections in the Initial Pool Size Field.

7. Enter the location of APPL_TOP in the APPL_TOP Field.

8. Enter the comma-separated list of **.jar** or **.zip** files that should be in the Classpath of the Wireless Server into the Applications Classpath Field.

4.4.15 Uploading and Downloading Repository Objects

You can perform the following tasks from the Utilities section of the Site screen:

4.4.15.1 Downloading Repository Objects

The Repository Objects Download screen, invoked by selecting the Repository Objects Download hyperlink in the Utilities section, enables you to download repository objects. You can specify the types of repository objects to download. For example, you can download only adapters.

In addition, you can download by OID, and you can download by folder or by user. You can also download all objects by user.

You can only download repository objects to a local file.

To download repository objects:

Entering the Location for the Log Files

1. Enter the location of the logging activity. This is a server-side generated log file. For example, enter /temp/activity.log.

2. Enter the location for logging errors. This is a server-side generated log file. For example, enter /temp/error.log.

Specifying the Objects for Download

To specify the objects for downloading:

1. Enter the filter expression for the name of the objects to be extracted. For example, enter \"/home/master*\". You can include wildcards, such as [*%_].

Note: This filter expression applies only to downloading specific types of objects, such as groups, or adapters. This filter does not work if you select the *Download All Objects, Download by Object ID, Download by Users*, or *Download by Folder* options.

---

2. Select from among the following options:
   - Download All Objects

- Download All Adapters

- Download All Logical Devices

- Download All Groups

- Download All Location Marks

- Download All Services

- Download All Transformers

- Download All Users

- Download by Object ID (OID). You must enter a range or comma-separated list of OIDs. Use a comma (,) to separate your entries.

- Download Services by Folder. For this option, you must enter the folder path or folder URL.

- Download Services by User Name. You must enter the user name. You cannot enter multiple user names.

3. Click Download. A Windows dialog appears.

4. In the Windows dialog, specify the local XML file for the downloaded objects. The Site screen reappears. Clicking Cancel returns you to the Site screen and clears all your entries.

4.4.15.2 Uploading Repository Objects

The Repository Objects Upload screen, invoked by selecting the Repository Objects Upload hyperlink in the Utilities section, enables you to upload repository objects.

You can upload repository objects from a local file.

The upload function performs the following:

- Checks for the objects in the repository by logical unique name.

- Loads all dependencies.

- If the objects exist in the repository, then the uploading facility updates the objects.

- If the objects do not exist, then the uploading creates them.

- After each object type is successfully loaded, the uploading facility performs a commit unless you specify a different commit frequency. The commit includes all referenced objects (dependencies).

Wireless does not validate the XML file you import into the repository using the upload facility. To avoid errors, work in an XML file that you have exported from the repository. This gives you a "known good" Repository XML framework for adding, removing, and modifying individual elements.

To upload repository objects:

1. Enter the name and location of the file you want to upload, or select it using the Browse function.

2. Enter the location of the logging activity. This is a server-side generated log file. For example, enter /temp/activity.log. This is a required field.

3. Enter the location for logging errors. This is a server-side generated log file. For example, enter /temp/error.log. This is a required field.

4. Enter the number of objects uploaded that triggers a commit. Entering 0 causes a commit after the utility has completed the upload.

4.4.16 Refreshing the WebCache

From the Utilities section of the site screen, you can perform the following WebCache-related tasks:

- Section 4.4.16.1, "Refreshing the WebCache for Master Services"
- Section 4.4.16.2, "Refreshing the WebCache for Logical Devices"

4.4.16.1 Refreshing the WebCache for Master Services

This utility enables you to explicitly purge the pages of a selected master service. For example, you would use this utility if you wish to clear stale content from a master service at a time other than that one set programmatically with the Service Designer.

To purge and refresh the pages for a selected master service:

1. Select a master service.

2. Click Refresh Content.

4.4.16.2 Refreshing the WebCache for Logical Devices

Using this utility, you can explicitly purge the pages of a specific logical device from the WebCache.

To purge and refresh the pages of a selected logical device:

1. Select a device.

2. Click Refresh Content.

4.4.17 Registering a Portlet Provider

From the Utilities section of the site screen you can perform the following provider registration-related tasks:

- Section 4.4.17.1, "Registering an Oracle Portal Provider for the Wireless Webtool"

- Section 4.4.17.2, "Registering an Oracle Portal Provider for Wireless Customization"

4.4.17.1 Registering an Oracle Portal Provider for the Wireless Webtool

To register a provider for the Webtool portlet:

1. Enter the name of the provider to be registered.

2. Enter the display name of the provider.

3. Enter the timeout, in seconds, for the provider.

4. Enter the timeout message. For example, enter Timed Out!

5. From the drop-down list, specify the frequency by which the call to the provider for session initialization is performed. The frequency options include:

   - Always

   - Once Per Session

   - Never

6. Enter the URL of the provider being registered with the Webtool.

7. Click Register

   Note: You can register a Webtool only when you access the Oracle Portal through the Enterprise Manager console.

4.4.17.2 Registering an Oracle Portal Provider for Wireless Customization

To register a provider for the Wireless Customization portlet:

1. Enter the name of the provider to be registered.

2. Enter the display name of the provider.

3. Enter the timeout, in seconds, for the provider.

4. Enter the timeout message. For example, enter Timed Out!

5. From the drop-down list, specify the frequency by which the call to the provider for session initialization is performed. The frequency options include:

   - Always

   - Once Per Session

   - Never

6. Enter the URL of the provider being registered with Wireless Customization.

7. Click Register.

Note: You can register the Wireless Customization provider with the Oracle Portal only when you access Wireless through the Enterprise Manager console.

5

Load Balancing and Failover

This chapter discusses Oracle9*i*AS Wireless load balancing and failover and includes the following sections:

- Section 5.1, "Overview"

- Section 5.2, "Clustering Architecture"

- Section 5.3, "Clustering Configuration"

- Section 5.4, "High-Availability for Wireless"

5.1 Overview

Oracle9*i*AS Wireless offers a scalable, reliable server infrastructure through clustering and high availability. The clustering structure includes the following two features.

- Load Balance: mod_oc4j on top of Oracle Http Server (OHS) distributes the request workload among multiple Wireless server processes.

- Fault Tolerance (Failover): mod_oc4j on top of OHS redirects a client to another working Wireless server process if a Wireless server process failure occurs.

5.2 Clustering Architecture

Each Wireless server process which runs on a single Java Virtual Machine (JVM) is referred to as a node. One or more nodes comprise an island. Nodes within an island are capable of serving the same applications, because the session for each client is replicated among all the nodes within an island in preparation of failover. One or more islands together form an OC4J (Oracle Containers for Java) instance for the purpose of load balancing. The entire OC4J instance is linked by mod_oc4j to a

simple front-end, Oracle Http Server (OHS). Typically, an island has two to four nodes.

By default, the requests from the same client are always redirected to the same Wireless server process. If one process goes down, then the fault tolerance feature is supported for both stateful and stateless requests as follows:

- Stateless Requests – Fault tolerance is acheived by redirecting the client to another working process.

- Stateful Requests – The session state is propagated to the processes within the same island, which enables another process in that same island to pick up the request from a given client if a failover occurs.

5.3 Clustering Configuration

This section describes how to configure the Oracle Http Server (OHS), Oracle Process Management and Notification (OPMN), and Oracle Containers for Java (OC4J).

5.3.1 Configuring Oracle Http Server (OHS)

The configuration file for OHS is **httpd.conf**, which includes **mod_oc4j.conf**, located in $ORACLE_HOME/Apache/Apache/conf/ directory. The mounting point from HTTP request to the Wireless server clustering instance is specified in **mod_oc4j.conf** as follows:

```
LoadModule oc4j_module libexec/mod_oc4j.so
<IfModule mod_oc4j.c>
Oc4jMount /ptg OC4J_Wireless
Oc4jMount /ptg/* OC4J_Wireless
Oc4jMount /modules OC4J_Wireless
Oc4jMount /modules/* OC4J_Wireless
</IfModule>
```

When installing the Wireless server from Oracle Universal Installer (OUI), these lines should be automatically populated in **mod_oc4j.conf** file.

5.3.2 Configuring Oracle Process Management and Notification (OPMN)

The major configuration file for OPMN is **opmn.xml**, located in $ORACLE_HOME/opmn/conf/directory.

The oc4J oc4jInstanceID in **opmn.xml** should be the exactly same as it appears in the mounting specification of the **mod_oc4j.conf**. The number of islands, the number of processes, and the other configuration parameters are also defined within **opmn.xml**. A sample configuration is as follows:

```
<oc4j oc4jInstanceID="OC4J_Wireless" gid="OC4J_Wireless">
<config-file path="$ORACLE_HOME/j2ee/OC4J_Wireless/config/server.xml" />
<base-port ajp="0", jms="2402", rmi="2502" />
<island id="OC4J_WirelessIslandA" numProcs="2" />
<island id="OC4J_WirelessIslandB" numProcs="3" />
</oc4j>
```

For this OC4J_Wireless cluster, two islands (OC4J_WirelessIslandA and OC4J_WirelessIslandB) share the request workload. OC4J_WirelessIslandA is comprised of two wireless server processes while OC4J_WirelessIslandB is comprised of three Wireless server processes. Altogether, five ports are needed for each type of protocol. The port number range is from the base-port number to the base-port number plus five. The base-port numbers are dynamically allocated during the installation time.

By default, the Wireless server <oc4j> element should be populated within **opmn.xml**. However, the populated entry only supports single Wireless server process and thus is not suitable for load balancing and failover. The configuration for load balancing and failover must be manually added.

5.3.3 Configuring OC4J

The OC4J-related configuration files are located in $ORACLE_HOME/j2ee/OC4J_Wireless/config directory. The default configuration is set for running single Wireless server process.

To support load balancing and failover features, you must modify the the OC4J configuration files **orion-web.xml** and /WEB-INF/web.xml as described in the following steps.

1. Modify **orion-web.xml**

There are two **orion-web.xml** files, one for Wireless web server, one for the wireless modules. They are located in the following directories:

- $ORACLE_HOME/j2ee/OC4J_Wireless/application-deployments/ptg/ptg-web/

- $ORACLE_HOME/j2ee/OC4J_Wireless/application-deployments/modules/modules-web/

For both of these files, add the following to the main body of the `<orion-web-app>` tag:

```
<cluster-config />
```

2. Modify /WEB-INF/web.xml

   There are two **web.xml** files, one for Wireless web server and one for the Wireless modules. They are located in the following directories:

   - $ORACLE_HOME/j2ee/OC4J_Wireless /applications/ptg/ptg-web/WEB-INF/

   - $ORACLE_HOME/j2ee/ OC4J_Wireless /applications/modules/modules-web/WEB-INF/

   For both of these files, add the `<distributable />` tag to the main body of `<web-app>`

5.4 High-Availability for Wireless

In Oracle9*i*AS 9.0.2, wireless applications cannot be clustered using the Oracle9*i*AS clustering mechanism. However, you can configure Oracle9*i*AS 9.0.2 to achieve a high-availability deployment by completing the following steps.

> **Note:** You must back up all files before you modify them.

1. Install the Oracle9*i*AS 9.0.2 Infrastructure tier on one machine and install multiple middle-tiers on separate machines. Ensure that each of these middle-tier installations point to the infrastructure tier.

2. Shut down DCM and all process by running the command

   ```
   [oracle home]/dcm/bin/dcmctl stop
   ```

3. Shut down Oracle Enterprise Manager (OEM) by running the command

   ```
   [oracle home]/bin/emctl stop
   ```

4. Verify that the file `[oracle home]/opmn/conf/ons.conf` exists on each of the mid-tiers. Verify that the infrastructure tier contains IP-address entries for all the other tiers. If not, file and add missing IP-address entries.

5. On each middle-tier, increase the number of processes that need to participate in the default island for the OC4J_Wireless OC4J instance to the desired number.

This can be done from the EM console or by modifying the file:

```
[oracle home]/opmn/conf/opmn.xml.
```

For details and concepts of OC4J instance and OC4J islands, refer to the OC4J Administration Guide. For instance, if you modify `opmn.xml`, a typical entry to start four OC4J processes in the default island would be of the form:

```
<oc4j maxRetry="3" instanceName="OC4J_Wireless" gid="OC4J_
Wireless" numProcs="4">
```

6. In the `mod_oc4j` configuration file for each middle-tier (that is, `[oracle home]/Apache/Apache/conf/mod_oc4j.conf`), modify the mount-point entries for the Wireless runtime. If two mid-tiers [M1 and M2] are used, the entries should be of the form:

```
Oc4jMount /ptg instance://m1.c1.mysite.com:OC4J_
Wireless,m2.c2.se4637-u-sr006.us.oracle.com:OC4J_Wireless
```

and

```
Oc4jMount /ptg/* instance://m1.c1.mysite.com:OC4J_
Wireless,m2.c2.se4637-u-sr006.us.oracle.com:OC4J_Wireless
```

`c1` and `c2` are the respective Oracle9*i*AS 9.0.2 instance names. You determine instance names by running the command:

```
[oracle home]/dcm/bin/dcmctl whichInstance.
```

These entries should be exactly the same for all middle tier machines.

7. Run `[oracle home]/dcm/bin/dcmctl updateConfig` to update the DCM repository with the configuration file changes.

On slow machines, a DCM error (timeout) of the form ADMN-906005 may appear. If this occurs, run the command `[oracle home]/dcm/bin/dcmctl getReturnStatus` and wait until the command exits. This confirms that the changes have been propagated to the DCM repository.

8. Add the tag `<cluster-config/>` under the `<orion-web-app>` tag in the file `[oracle home]/j2ee/OC4J_wireless/application-deployments/ptg/ptg-web/orion-web.xml`.

9. Start DCM and all processes by running the command

```
[oracle home]/dcm/bin/dcmctl start.
```

10. Start EM by running the command

```
[oracle home]/bin/emctl start
```

11. Configure a hardware load-balancer to point to the middle-tiers.

Currently, high-availability support is only available for the core server runtime (by default mapped to the URI /ptg/rm).

For more information, refer to the OC4J documentation.

6

Globalization

This chapter includes the following sections:

6.1 Overview

Oracle9*i*AS Wireless supports multi-locale and multi-encoding. The Wireless server dynamically determines locale and request and response encoding basedon the runtime context.

6.2 Determining a User's Locale

The Wireless Server dynamically determines the appropriate locale of a user by using such locale information as PALocale, the user's preferred locale, the Accept Language header, and the site locale.

`PALocale` is a HTTP parameter that specifies the preferred value before login. The possible value for the `PALocale` parameter follows the http accept-language header format. For example, PALocale = en-US. This format is distinct from the java locale format (`en_US`).

The user's preferred locale is the language preference of a Wireless user, which i*s* set with the User Manager. For more information, see Section 6.2.3.

The Accept Language header is a HTTP protocol parameter which user agents (Web browsers) send with HTTP requests.

> **Note:** For information on the HTTP accept-language header format, see the HTTP specification of the World Wide Web Consortium (W3C).

Site Locale is an instance-wide default locale of the Wireless Server. For more information, see Section 6.2.4.

6.2.1 After Login

After login, the Wireless Server respects the user's preferred locale.

6.2.2 Before Login

Before login, the Wireless Web Server (ptg/rm), Async Server, Webtool and Wireless Customization each determine the appropriate locale of a user's device.

Table 6–1 illustrates how the Async Server, the Wireless Web Server, the Webtool and Wireless Customization determine the locale of a user. The numeric value indicates the preference for the detection methods in descending order.

Table 6–1   Locale Determination

Method	Async Server	Wireless Web Sever (ptg/rm)	Webtool and Customization
HTTP parameter: PAlocale.	N/A	1	1
Locale of the registered user.	1	2	N/A
Accept-language http header	N/A	3	N/A
Site default locale	2	4	2

6.2.2.1 Wireless Web Server

The Wireless Web Server (ptg/rm) determines the locale of a user in the following order:

1. Use `PAlocale` (if present).

2. Use the user's preferred locale if the connecting user can be identified through the device id.

3. Use the Accept_Language HTTP header (if present).

4. Use the site default locale.

6.2.2.2 The Webtool and Wireless Customization

The Webtool and Wireless Customization determine the location of a user in the following order:

1. Use `PAlocale` (if present).

2. Use the site default locale.

6.2.2.3 Async Server

The Async Server determines the location of a user in the following order:

1. Use the user's preferred locale if the connecting user can be identified through the device id.

2. Use the site default locale.

6.2.3 Setting the Locale for a User Profile

You can set a preferred location for a user when you create a user or edit a user profile. If the preferred location is not specified, then the default site locale is used. For more information, see Section 12.3.4 in Chapter 12, "Managing Users".

6.2.4 Setting the Site Locale

From the Site screen (accessed through the OEM console), you can specify the both the default site locale and a list of locales that the site is intended to support. Use a java locale (such as en_US) for the default site locale and for the list of supported locales. For more information, see Section 4.4.2 in Chapter 4, "Server Configuration".

6.3 Determining the Encoding of a Logical Device

The content encoding of a logical device is used to transport of the result of the device type. The default encoding for all shipped logical devices is set to UTF-8. The encoding format of a logical device is that of the Internet Assigned Numbers Authority (IANA).

You use the Service Designer in the Webtool to update the logical device encoding appropriate to your country. For more information, see Section 10.6.2.1 in Chapter 10, "Developing Services".

The following table illustrates how the encoding is determined

Table 6–2   Determining Encoding

Component	Factor
Wireless Web Server	The encoding of the requesting logical device.
Async Server	Determined by the corresponding transport driver.
Webtool and Customization	Encoding of the logical device called 'PAPZ'. The default encoding is UTF-8.
Module Service	Use UTF-8 for reading the request and writing the response.
Alert Message	Determined by the corresponding transport driver.

6.3.1 HttpAdapter – Based Service

To encode the request and response of a HTTPAdapter-based service:

6.3.1.1 Encoding for the request of a HTTPAdapter-based Service

When sending the http request to the remote content provider, only the parameters of the HTTPAdapter service are encoded using the `input_encoding` of the service (if it is specified). Use the encoding format of the IANA (Internet Assigned Numbers Authority) when specifying the value for `input_encoding`.

6.3.1.2 Encoding for the response of a HTTPAdapter-based Service

Wireless determines the encoding of the response of a HTTPAdapter-based Service in the following order:

1. Charset as part of the content-type header on the response.

2. Input-encoding (if present) of the input parameter of the service.

3. ISO-8859-1 (the default).

6.3.2 Languages Available for On-Line Help

Users can view the online help for the the Wireless Webtool and the Wireless Customization in 29 languages. The site locale, configured through the System Manger, determines the display language.

In this release, the built-in labels and on-line help for the Wireless Webtool and the Wireless system management and monitoring functions display in nine languages.

The Wireless Web Server (ptg/rm) can display the built-in labels in 29 different languages.

6.3.3 Driver Encoding

Each driver handles encoding individually .

7

Server Performance Monitoring

This chapter describes server- and site-level performance monitoring and includes the following sections:

- Section 7.1, "Server Performance Monitoring for the Current Host"

- Section 7.2, "Server-Side Performance Monitoring for the Site"

7.1 Server Performance Monitoring for the Current Host

From the Wireless page accessed through OEM, you can monitor real-time performance data to assess system health and collect data to display historical trends.

The Response and Load section of the Wireless Server tab displays the following Wireless statistics, which are an overview of the process performance metrics:

- Number of Active Sessions

- Average Response Time (second)

- Average Session Duration (second)

- Total Number of Alerts Sent Today

- Total Number of Data Downloads Today

- Average Download Time Today (second/batch)

- Total Number of Messages Sent Today

- Number of Messages Received Today

Figure 7–1   The Response and Load Section of the Wireless Server Tab
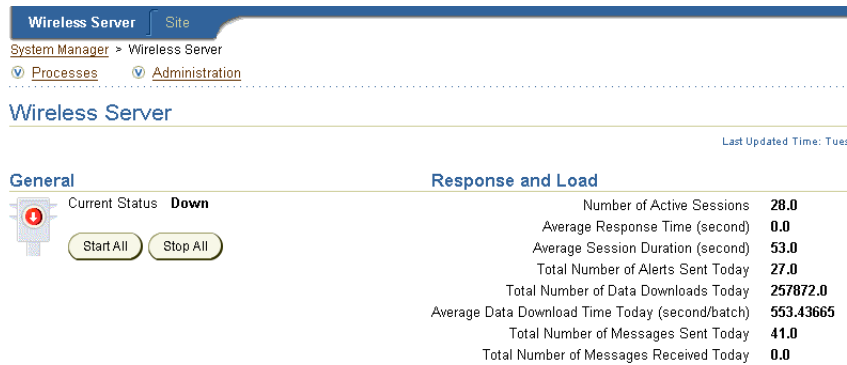
You can view the performance metrics of a Wireless Server process using the detail screen. The Response and Load section of the detail screen lists the overall performance for the selected process. The Performance section of the screen lists the individual metrics.

Figure 7–2   A Detail Screen for a Wireless Server Process
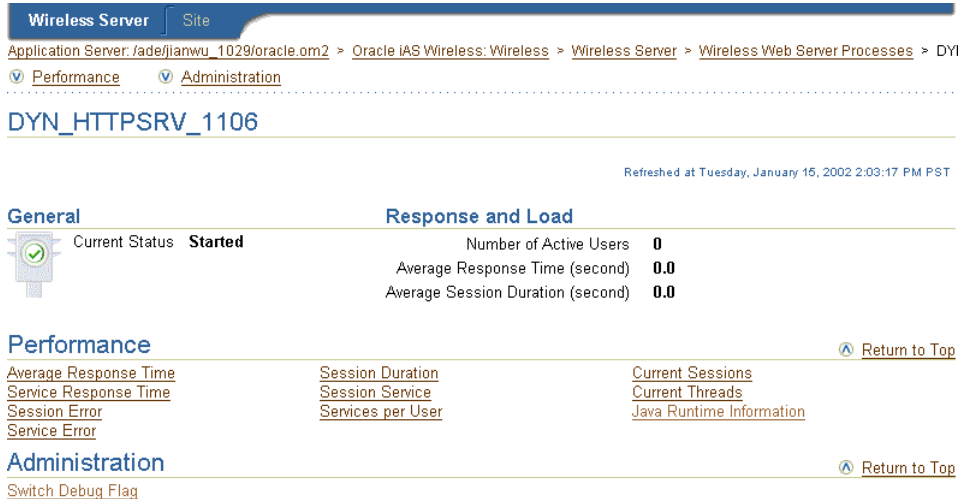
7.1.1 Viewing the Performance Data Metrics for a Wireless Web Server Process

The Response and Load section of the screen displays the overall performance the selected Wireless Web Server process for the following categories:

- Number of Active Users
- Average Response Time (second)
- Average Session Duration (second)

The Performance section of a Wireless Web Server process detail screen includes the following:

Average Response Time

A view of the process measured against the following:

- Average response time of the invoked services.
- The percentage of time spent for such service actions as adaptation time, transformation time, and other processes. You can use this to diagnose the service bottlenecks.
- Service Invocations per minute for the sample period. You can use this to identify the activity of the system over the past sample period.

See Section 7.1.1.1 for information on selecting a specific time period for this metric.

Average Response Time for Service

The process measured against the average service response time for sample period. You can use this to study the performance of the services in each process over the sample period.

See Section 7.1.1.1 for information on selecting a specific time period for this metric.

Service Error

A view of the process to the number of service errors.

See Section 7.1.1.1 for information on selecting a specific time period for this metric.

Session Error

A view that maps the session ID by session errors. It is also a view of the process to the service errors per second sampled over a finite period. You can use this metric to identify such problems as improper configuration or other external factors which cause services to fail in one process more frequently than others.

See Section 7.1.1.1 for information on selecting a specific time period for this metric.

Session Duration

A view that maps the session ID of the process by login duration.

See Section 7.1.1.1 for information on selecting a specific time period for this metric.

Session Service

A view that maps the session ID of the process to the number of invoked services for that session.

See Section 7.1.1.1 for information on selecting a specific time period for this metric.

Services per User

A view of the user of the process measured against the number of times the services were invoked on a per-user basis. You can use this to categorize active users.

See Section 7.1.1.1 for information on selecting a specific time period for this metric.

7.1.1.1 Selecting the Sample Period for the Performance Data

For these sample metrics, you can select the sample time period, from the last five minutes to the last seven days.

To set a sample period:

1. Select a sample period from the drop-down list.

2. Click Go. When you have finished viewing the statistics, Click OK to return to the detail screen.

Current Sessions

A view of the runtime sessions and users for a Wireless web server process. Wireless records each service invocation request and each successful user session. The Current Sessions screen includes the following:

Table 7–1 Elements of the Current Sessions Screen

Element	Description
Session ID	The identifier for the active session.
Login User Name	The user name.

Element	Description
Login User ID	The OID for the user.
Last Access Time	The last time the user accessed the session.

When you have finished viewing the statistics, Click OK to return to the detail screen.

Current Threads

A view the of the active threads, separated by groups for a wireless web server process. The Current Threads screen displays the threads as follows:

Table 7–2   The Runtime Threads

Object	Description
Name	The name of the thread.
Description	A description of the thread.
IsInterrupted	If "false", then the thread is not interrupted. If "true", then the thread has been interrupted.
IsAlive	If "true", then the thread is alive. If "false", then the thread has been started and is not yet dead.

When you have finished viewing the statistics, Click OK to return to the detail screen.

Java Runtime Information

A view such Java runtime information as Java version and classpath for a wireless web server process.

7.1.2 Viewing the Performance Metrics for a Data Feeder Process on the Server

The Response and Load section of the screen displays the overall performance the selected data feeder process displays the average download time (in seconds) per batch for the selected data feeder process today.

The Performance section of a data feeder process detail screen includes the following:

Data Feeder Downloaded Rows Today

Clicking the Data Feeder Downloaded Rows hyperlink in the Performance section displays the number of data feeder downloads today for each data feeder for this process.

7.1.3 Viewing the Performance Metrics for an Alert Engine Process on the Server

The Performance section of an alert engine process detail screen includes the following:

Number of Alerts Sent Today

The total number of alerts sent per alert service for today.

Error Count Today

An overall view of the errors per alert service for today.

Number of Subscribers Notified Today

The total number of users who received alerts per alert service for today. A subscriber is a user who accesses and sets trigger conditions for an alert.

Number of Alerts Sent Last Hour

The total number of alerts sent per alert service in the previous hour.

Error Count Last Hour

An overall view of errors per alert service in the previous hour.

Number of Subscribers Notified Last Hour

The total number of users (for each alert service) who received alerts in the previous hour.

7.1.3.1 Viewing the Messaging Server Performance Metrics

For each of the Messaging Server Performance metrics, Wireless displays performance by client process name and delivery type (for example, SMS). The performance metrics include:

Average Sending Response Time

The average time of a sending method. On the client side, a sending method is called to send a message. This time is the period from when the method is called to

the time the method returns. When the method returns, the message is saved in a database persistently, but is not delivered.

Total Number of Sending Requests
This is the total time the sending method is called by the client process. The sending method can be called once to send a message to a set of destinations.

Total Number of Sending Requests Sent
The total number of successful calls, where a message is delivered to a proper gateway and its receipt is acknowledged. The client process can call the sending method many times to send many messages. Some of these requests fail, as in the case where a destination cannot be reached. Other requests could be undergoing processing.

Total Number of Sending Requests Failed
The total number of all calls that are known to have failed.

Average Receiving Process Time
The performance of the listener in terms of the time taken by the `onMessage` call-back.

See Section 7.1.1.1 for information on selecting a specific time period for this metric.

7.1.4 Viewing the Performance Metrics of Async Server Processes
From the detail screen, you can view the number of messages received today in the Response and Load section.

The Performance section of the screen lists the following performance metrics:

Received Message Count by Hour Today
The number of messages received on an hourly basis for today.

Average Message Queue Size Today
The average size of the message queue on an hourly basis for today.

Average Message Queued Duration Today
The average time a message stayed in the message queue on an hourly bases for today.

Average Service Processing Time Today

The average service invocation time on an hourly basis for today.

Average Message Response Time Today

The average time a message stayed on the Async server on an hourly basis for today.

Service Access Count Today

The number of times that each service was accessed today.

Error Count Today

The number of errors on an hourly basis for today.

7.1.4.1 Viewing the Messaging Server Performance Metrics

For each of the Messaging Server Performance metrics, Wireless displays performance by client process name and delivery type (for example, SMS). The performance metrics include:

Average Sending Response Time

The average time of a sending method. On the client side, a sending method is called to send a message. This time is the period from when the method is called to the time the method returns. When the method returns, the message is saved in a database persistently, but is not delivered.

Total Number of Sending Requests

This is the total time the sending method is called by the client process. The sending method can be called once to send a message to a set of destinations.

Total Number of Sending Requests Sent

The total number of successful calls, where a message is delivered to a proper gateway and its receipt is acknowledged. The client process can call the sending method many times to send many messages. Some of these requests fail, as in the case where a destination cannot be reached. Other requests could be undergoing processing.

Total Number of Sending Requests Failed

The total number of all calls that are known to have failed.

Average Receiving Process Time

The performance of the listener in terms of the time taken by the `onMessage` call-back.

7.1.4.2 Selecting the Sample Period for the Performance Data

For these sample metrics, you can select the sample time period of activity, from the previous day or the last 30 days.

To set a sample period:

1. Select a sample period from the drop-down list.

2. Click Go.

7.1.5 Viewing Performance Metrics for a Messaging Server Process

The Performance Section of the screen displays the following performance metrics:

Average Sending Process Time

The Average Sending Process screen displays the performance of a driver in terms of the time taken by the sending method of the driver. The screen measures driver performance by delivery type (for example, SMS), process time (the time taken by a driver to send a message to the proper gateway), dequeue time, and driver process time. When you measure the performance of the transport system, you can deduct the process time, because the transport system is waiting while the driver sends a message. If the driver is fast, then the system does not wait long.

Average Receiving Response Time

Once a transport driver receives a message, the message is passed to the transport system by an `onMessage` method. The response time is the time taken by the `onMessage` method. Once the the `onMessage` returns, the received message is saved in a database for dispatching.

Total Number of Received Messages

The total number of times the transport drivers call the `onMessage` call-back method.

Total Number of Received Messages Dispatched

The total number of received messages which are dispatched to, and are accepted by, listeners. Among received messages, some may be in processing. Others may

not have been dispatched to listeners, or listeners may have failed to process dispatched messages.

Total Number of Received Messages Dispatch Failed

The total number of received messages which failed to dispatch to a listener.

7.1.5.1 Selecting the Sample Period for the Performance Data

For these sample metrics, you can select the sample time period of activity, from the previous day or the last 30 days.

To set a sample period:

1. Select a sample period from the drop-down list.

2. Click Go.

7.1.6 Viewing the Performance Metrics from a Industrial Device Portal Process on the Server

From the industrial device portal process screen, you can access the following performance metrics:

- Number of Active Sessions

- Total Number of Sessions

- Average Response Time

- Average Session Duration

- Uptime (days), Uptime (hours), Uptime (minutes), Uptime (seconds)

- Memory Used

- Total Memory

7.2 Server-Side Performance Monitoring for the Site

The Site tab, displays overall site performance metrics in the Response and Load section. The Response and Load section includes overall performance statistics for the site-wide processes of the wireless web sever, which include :
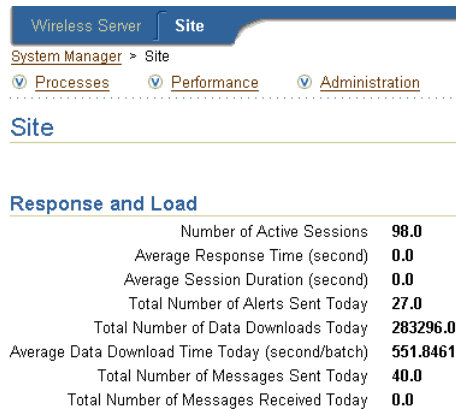
- Number of Active Sessions

- Average Response Time (second)

- Average Session Duration (second)

- Total Number of Alerts Sent Today

- Total Number of Data Downloads Today

- Average Data Download Time Today (second/batch)

- Total Number of Messages Sent Today

- Total Number of Messages Received Today

Using the system metrics for the performance of the runtime, alert, and feed components, you can assess system health and performance. These individual metrics may not directly point to a fault in the system; however, building an abductive reasoning model from the data collected by these metrics enables you to form a diagnosis of the system's health.

Figure 7–3   The Response and Load Section of the Site Tab

You view the performance metrics for a site-wide process using the detail screen, which you invoke by drilling down from a process type in the Processes table of the Site tab.

Figure 7–4   A Detail Screen for a Site-Wide Process
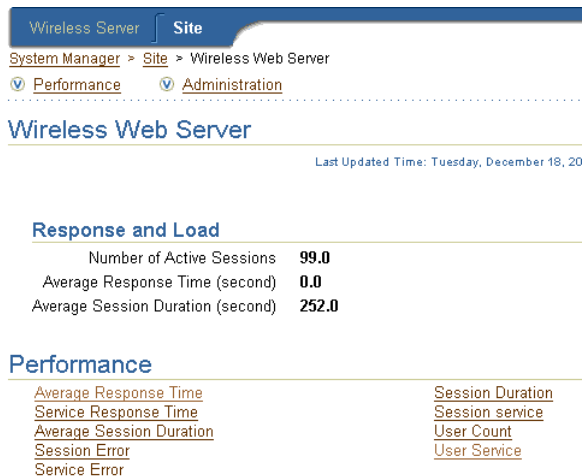
7.2.1 Viewing the Performance Metrics for the Site-Wide Processes of the Wireless Web Server

The Response and Load section lists the following overall performance metrics:

- Number of Active Sessions

- Average Response Time (second)

- Average Session Duration (second)

The Performance section lists the following:

Average Response Time

A view of overall service performance for the system, showing the process name to the average response time of the invoked services over a specified time period.

Service Response Time

The service response time statistics are a class of statistics for the average response time for each service that was invoked across processes. The service response time statistics are grouped by service names and process IDs. If the response time exceeds a configurable threshold value, then the Oracle Performance Manager generates a warning or an error. You can use this metric to study the performance of the services in each process over the sample period.

Average Session Duration

A view of the process name to the average session duration. This metric, when sampled at different times of the day, can be used to estimate both the peak user hours and slow user hours.

Session Error

Session error statistics are a class of statistics that represent the number of errors for each session. For session duration statistics, the data is grouped by process IDs.

Service Error

Service error statistics are a class of statistics that represent the number of services which have runtime errors. The service error data is grouped by process IDs.

Session Duration

Session duration statistics are a class of statistics that present the duration of each session. The data is grouped by process IDs. The duration of each session is computed using the login time and the expiry time (or the current time if the session is still operational). Session duration statistics are presented as table.

Session Service

Session service statistics is a class of statistics that represent the number of services invoked during each session. The data is grouped by process IDs.

User Count

A view of the process name to the number of active users. This metric can be used for new user redirection to manage the user loads in each process.

Service per User

The service per user statistics are a class of statistics that presents the number of services invoked by a specific user across processes. The user service statistics data is grouped by user name and by process IDs.

7.2.1.1 Selecting the Sample Period for the Performance Data

For these sample metrics, you can select the sample time period, from the last five minutes to the last seven days.

To set a sample period:

1. Select a sample period from the drop-down list.

   2. Click Go.

7.2.2 Viewing the Site Performance Metrics of Async Server

The Response and Load section displays the following performance statistics for the alert server processes:

- Total Number of Messages Received Today

- Average Message Response Time Today (second)

- Total Number of Errors Today

From the Performance section of the Async Server screen, you can view the following performance metrics:

Received Message Count Today

The number of messages received today (grouped by process name).

Received Message Count by Hour Today

The number of messages received on an hourly basis for today.

Average Message Queue Size Today

The average size of the message queue for today.

Average Message Queued Duration Today

The average time a message stayed in the message queue on an hourly basis for today.

Average Service Processing Time Today

The service invocation time on an hourly basis for today.

Average Message Response Time Today

The average time a message stayed on the server on an hourly basis for today.

Service Access Count Today

The number of times each services was accessed today.

User Access Count Today

The number of messages issued by each user device.

Error Count Today

The number of errors on an hourly basis for today.

7.2.3 Viewing the Site-Wide Performance Metrics for a Messaging Server Process

The Response and Load section of the detail screen lists the following overall performance metrics:

- Total Number of Messages Sent Today

- Total Number of Messages Received Today

The Performance section lists the server-side and client-side Performance Metrics for the Messaging Server

From a messaging server process screen, you can access the following views of the performance of the selected messaging server process on the server. For each of these metrics, the Client Send Performance screen displays performance by client process name and delivery type (for example, SMS). For the Average Sending Response Time, the screen displays the performance for each client process name and the delivery type by response time and enqueue time.

The Server-Side section of the Messaging Server screen includes the following metrics:

Average Sending Processing Time

The Average Sending Process screen displays the performance of a driver in terms of the time taken by the sending method of the driver. The screen measures driver performance by delivery type (for example, SMS), process time (the time taken by a driver to send a message to the proper gateway), dequeue time, and driver process time. When you measure the performance of the transport system, you can deduct the process time, because the transport system is waiting while the driver sends a message. A fast driver reduces waiting time.

Average Receiving Response Time

Once a transport driver receives a message, the message is passed to the transport system by an `onMessage` method. The response time is the time taken by the `onMessage` method. Once the the `onMessage` returns, the received message is saved in a database for dispatching.

Total Number of Received Messages

The total number of times the transport drivers call the `onMessage` call-back method.

Total Number of Received Messages Dispatched

The total number of received messages which are dispatched to, and are accepted by, listeners. Among received messages, some messages may be in processing. Others may not have been dispatched to listeners, or listeners may have failed to process dispatched messages.

Total Number of Received Messages Dispatch Failed

The total number of received messages which failed to dispatch to a listener.

Average Sending Response Time

The average time of a sending method. On the client side, a sending method is called to send a message. This time is the period from when the method is called to the time the method returns. When the method returns, the message is saved in a database persistently, but is not delivered.

Total Number of Sending Requests

This is the total time the sending method is called by the client process. The sending method can be called once to send a message to a set of destinations.

Total Number of Sending Requests Sent

The total number of successful calls, where a message is delivered to a proper gateway and its receipt is acknowledged. The client process can call the sending method many times to send many messages. Some of these requests can fail; for example, a destination cannot be reached. Other requests could be undergoing processing.

Total Number of Sending Requests Failed

The total number of all calls that are known to have failed.

Average Receiving Process Time

The performance of the listener in terms of the time taken by the `onMessage` call-back.

7.2.3.1 Selecting the Sample Period for the Performance Data

For these sample metrics, you can select the sample time period of activity, from the previous day or the last 30 days.

To set a sample period:

1. Select a sample period from the drop-down list.

2. Click Go.

7.2.4 Viewing the Site-Wide Performance Metrics of an Alert Engine Process

The Response and Load Section of the detail screen displays the overall performance metric of *Total Number of Alert Sent Today.*

7.2.5 Viewing the Site-Wide Performance Metrics for an Industrial Device Portal Process

The Performance of the detail screen includes the following performance metrics:

Session Duration

The average length of all the sessions of each server that is currently running.

Memory Usage

The memory usage of each server currently running.

Response Time

The average response time of each of the sessions on the server.

7.2.6 Viewing Site Performance

You can view the overall performance by servers on the site by clicking the Summary hyperlink in the Performance section of the Site screen. For each server on the site, the Site screen displays Wireless Web Server process performance by the number of active users and average session duration in seconds.

7.2.6.1 Selecting the Sample Period for the Performance Data

You can select the sample time period of activity, from seven days ago to the last five minutes.

To set a sample period:

1. Select a sample period from the drop-down list.

2. Click Go.

8

Activity and System Logging

8.1 Activity and System Logging Overview

The Oracle9*i*AS Wireless Performance Manager provides system administrators with information on the running status of Wireless Web Server, alert engine, message gateway server, data feed engine, and the async server. The Performance Manager also provides statistical information, enabling system administrators to study past performance and historical data to perform future trend analysis.

Wireless integrates with the OEM (Oracle Enterprise Manager) framework to provide a web-based monitoring tool which displays metrics for diagnosis based on the data logged.

8.1.1 Overview of Activity Logger Internals

The Activity Logger provides the common logging framework used by the runtime components. Database logging is handled asynchronously because the runtime logging on the database carries a huge overhead. The runtime data is generated as files, which are less expensive. The data thus generated is picked up by the Performance Logger framework and written onto the database. In this way, database logging is handled asynchronously without impacting the runtime performance of the respective servers.

For the Wireless web server, the logging process is handled in the callback of the different events, which are generated (that is, thep, the session begin and end). These events are enabled by default for logging purposes. If the administrator chooses not to generate the logging, then there is a provision to turn off the Wireless web server logging. When this happens, the callbacks do not generate log files. For other modules, such as the Alert Engine, Async Server, and Transport Server, logging into the files occurs when the corresponding request is fulfilled. The Data Feeder logs the runtime data directly to the database in batches.

Figure 8–1   Performance Logger Interactions
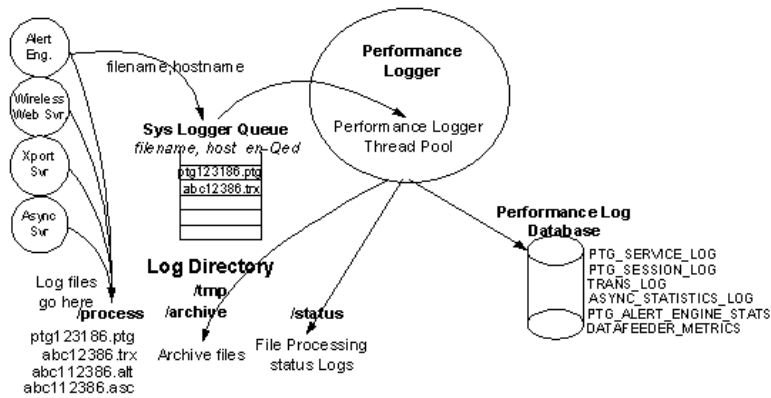
The generated log files follow a common directory structure, which can be configured using the system management functions at the node (process) level. The top level Logging Directory is specified here, the Logger Framework, which all modules use, creates sub-directories: *process, status and archive.* At runtime, the log files generated by the different modules have distinct file suffixes. These files are stored in the *process* directory and the file names and the machine name are enqueued into a *'SYS_LOGGER_QUEUE'.* The file can be made available for processing based on a configurable file size. Additionally, Wireless supports log file aging by which the log file is automatically made available for processing after a fixed time. This ensures that the skew introduced by the asynchronous nature of the logging process is reduced. The log file age (also known as close frequency) can be configured using the system management functions for the site-level configuration of the Performance Logger.

The modules (which generate these log files with distinct suffixes), provide a Database Log File Handler Class, which processes these files. The handler classes are created by extending a common abstract class, which provides the connection and directory and file information. The handler to suffix mapping is pre-seeded in Wireless during installation.

Starting Performance Logger starts up multiple threads, each containing an instance of the different handlers. Each logger thread dequeues the filenames belonging to the local machine, inspects the file suffix and delegates it to the corresponding handler class for further processing.

The administrator can control the number of Performance Logger threads using the system management functions for the process-level configuration.

For details regarding the Performance Monitor configuration see Section 4.1.9 in Chapter 4, "Server Configuration".

8.1.2 Activity **Log Table Description**

> **Note:** Since these tables tend to grow during the life of the servers, the administrator may choose to purge the data off these tables periodically.

PTG_SERVICE_LOG

Table 8–1 Service Activity Log

Column Name	Description
Service_id	The Object Identifier for the invoked service.
Service_name	The name of the invoked service.
ptg_instance_id	The unique identifier identifying the instance.
final_service_id	The Object Identifier of the final service (that is, master service folder).
final_service_name	The name of the final service.
session_id	The Session Identifier of the Session in whose context the service is invoked.
bookmark	The service bookmark.
service_type	The type of service.
invocation_hour	The hour when the service was invoked.
invocation_time	The date when the service was invoked.
response_time	The response time for the service.
request_status	The status of the request. Non-zero values indicate the error number.
error_description	The error message (if there was an error while invoking the service).
user_id	The Object Identifier for the user.
user_name	The name of the user.
remote_address	Gateway IP address and host name.

Table 8–1   Service Activity Log

Column Name	Description
host_id	Host IP address and name.
logical_device	The Logical Device from where the Service was invoked.
external_user_id	The external user id of the which forwarded this request.
external_user_name	The external user name of the which forwarded this request.
adapter_type	The type of the adapter which is servicing this request (not logged currently).
adaptor_time	Time taken by the adapter to service this request.
transformation_time	Time taken by the transformer to service this request.
timestamp	Logged event timestamp (generated by trigger).

Table 8–2   DATAFEEDER_METRICS

Column Name	Description
HOST_NAME	The host name of this data feeder.
INSTANCE_NAME	The instance name of this data feeder.
FEED_NAME	The name of this data feeder.
UPDATE_DATE	The date and time of this batch run.
ACTUAL_BATCHTIME	The actual time spent on this batch.
DOWNLOADED_ROWS	The publishing rate (data rows stored).
ERROR_DESCRIPTION	Errors encountered for this batch for future use.

PTG_ALERT_ENGINE_STATS

Table 8–3   Alert Server Activity Log

Column Name	Description
host_name	The host name of the machine this alert server instance is running on.
instance_name	The alert instance name.

Table 8–3   Alert Server Activity Log

Column Name	Description
malert_name	The name of the master alert service which generates this alert message.
malert_oid	The Object Identifier of the master alert service which generates this alert message.
subscriber_name	The name of the subscriber to receive this alert message.
device_address	The device address this alert message is delivered to.
device_oid	The device address object identifier.
device_type	The type of the device.
message_id	The message id generated by the message gateway for this alert message.
message_length	The length of this alert message.
message_status	The dispatch status of this alert message.
dispatch_time	The time stamp of this alert message being dispatched to the message gateway.
error_description	The error message - if there was an error while dispatching this alert message.

ASYNC_STATISTICS_LOG

Table 8–4   Async Service Activity Log

Column Name	Description
host	Name of the host where the Async server is running.
instance_id	The unique id to identify an instance of the Async server.
source_addr	The source address of the received message.
dest_addr	The destination address of the received message.

Table 8–4   Async Service Activity Log

Column Name	Description
delivery_type	The network delivery type of the message. The possible values are: ■ WAP-Push ■ SMS ■ Voice ■ Email ■ Fax ■ Two-Way Pager ■ One-way Pager
encoding	The character encoding for the message.
queue_size	The number of messages waiting in the queue when the message is received.
msg_rcv_time	The message received time.
msg_rcv_hour	The message received hour.
start_execute_time	The time to start invoking the service requested from the message.
end_execute_time	The time to finish the service invocation.
error_description	The error description on failure of the service invocation.
service_id	The ID of the service the user is requesting to access.
async_name	The Async short name of the service the user is requesting to access.
message_size	The size of the message.
timestamp	Time when the message is logged into the database

TRANS_LOG

Table 8–5   Message Gateway Activity Log

Column Name	Description
MESSAGE_ID	The message id assigned by the transport, which is unique for every message.

Table 8–5 Message Gateway Activity Log

Column Name	Description
MESSAGE_TYPE	The type of the message, which can be 'R' for received message, 'S' for message to send.
DELIVERY_TYPE	The delivery type, which can be: ■ Wap-Push ■ SMS ■ Voice ■ Email ■ Fax ■ Two-Way Pager ■ One-Way Pager
REQUEST_INSTANCE_HOST	The transport instance host on which the message is accepted. For a sending message, this is the host of the client; for a received message, this is the host of the driver.
REQUEST_INSTANCE_ID	The Wireless instance id on which the message is accepted. For a sending message, this is the instance id of the client. For a received message, this is the host of the transport server that the driver is on.
REQUEST_BEGIN_TIME	The time the message is to be accepted. For sending message, it is the time the send method is called. For a received message, it is the time the onMessage method is called. All time is Java system time.
REQUEST_END_TIME	The time the message is accepted. For a sending message, it is the time the send method returned. For received message, it is the time the onMessage method returned.
HANDLE_INSTANCE_HOST	The host name on which the message is dequeued to a process. For a sending message, it is the host on which the driver ran. For received message, it is the host on which the driver ran.
HANDLE_INSTANCE_ID	The Wireless instance id on which the message is dequeued to process.
HANDLE_BEGIN_TIME	The time the dequeue method to be called.
HANDLE_END_TIME	The time the message is processed. For sending message, the message is sent. For received message, the message is processed by the listener.
ENQUEUE_BEGIN_TIME	The time the enqueue call started.

Table 8–5   Message Gateway Activity Log

Column Name	Description
ENQUEUE_END_TIME	The time enqueue call returned.
DEQUEUE_BEGIN_TIME	The time the dequeue call started.
DEQUEUE_END_TIME	The time the dequeue call returned.
PROCESS_STATUS_ CODE	The status code of the message processing, which can be: unknown failed succeeded ignored
PROCESS_BEGIN_TIME	The time the processing call was called. For sending message, the driver's send method was called. For received message, the listener's `onMessage` method was called.
PROCESS_END_TIME	The time the processing call returned. For sending message, the driver's send method returned. For received message, the listener's `onMessage` method returned.

System Logging

The System Logger logs the runtime debug log information generated by the runtime processes. The Wireless server generates log information, which is stored in the log file. The different levels of logging and the log file size can be configured as follows:

To configure the System Log file using Wireless Management at either the site or process level:

1. Enter a name for the log file name pattern. The default is **sys_panama.log**.

    This pattern enables you to identify the log file generated by the different server processes. Currently, the only supported pattern is *<filename>{0}.log*. For example, *sys_panama{0}.log* would generate a file with a name *sys_ panama<timestamp in long>.log*. Using this pattern enables administrators to identify log files pertaining to the different server processes based on their start timestamp. The setting of the pattern is optional. The default log file name **sys_ panama.log**

    At the Wireless server or host level, the log directory may be specified using Wireless Management. The default log directory is the default temp directory for that operating system (typically *c:\temp* for windows and */var/tmp* on UNIX).

2. In the Maximum Log File Size field, enter the maximum number of log file size (in bytes).

3. Select a log level. The log can contain any of the following: Warning, Error, or Notify. The default is Warning, Error, and Notify.

4. Click Apply.

> **Note:** The System Log file configuration can be unique to each instance of the server. It defaults to the site level configuration if nothing is specified at the instance level.

Part III

Tools Guide

9

Wireless Tools

This document describes the tools you can use to develop and maintain Oracle9*i*AS Wireless. Each section of this document presents a different topic. These sections include:

- Section 9.1, "Overview"

- Section 9.2, "The Service Designer"

- Section 9.4, "The User Manager"

- Section 9.5, "Wireless Customization"

9.1 Overview

Wireless provides a set of Web-based tools to help you create, manage, and deliver mobile services. These tools include wizards for developing and managing repository objects, and utilities for managing the server and deploying Wireless. Wireless provides the following development tools:

- Service Designer

- Content Manager

- User Manager

- Wireless Customization

These tools are role-specific; users can only access tools associated with the roles that the User Administrator has assigned to them. For example, a user assigned to the Content Management Tool role can only access the Content Management Tool tool and a user with Content Developer privileges can only access the Service Designer.

Wireless provides the following user roles:

Table 9–1   Wireless User Roles

User Role	Description	Available Tools
Administrators	The Wireless administrator, a user who can access all of the webtools and manage the system from the OEM console.	Service Designer Content Manager User Manager Wireless Customization
Designers	Users assigned the Designers role perform the following functions: ■ Create, modify, and delete adapters from the Wireless Repository. ■ Create, modify, delete, and test master services and master alerts. ■ Manage transformers for logical devices. ■ Develop applications using Mobile XML. ■ Develop, modify and delete data feeders. ■ Develop, modify and delete presets. ■ Develop location-based services ■ Develop, modify, and delete regions used for creating location-based services.	Service Designer
Organizers	Users assigned the Organizers role perform the following functions: ■ Manage service folders. ■ Create services based on master services. ■ Create alerts based on master alerts. ■ Deploy applications to groups. ■ Assign regions to location-based services.	Content Manager
System	Users assigned the System role manage the system.	Wireless systems management functions (through the OEM console)

Table 9–1   Wireless User Roles

User Role	Description	Available Tools
Helpdesk	Users assigned the Helpdesk role perform the following functions: ■ Check user profiles and services. ■ Create new groups and users. ■ Manage user access privileges. ■ Assign different roles to a user.	User Manager
Consumer	Users assigned the consumer role are end users of Wireless services. End-users can customize their own services either from a desktop or from a device. Customization for end-users includes: ■ Create Logical Devices to receive alerts. ■ Set Presets ■ Reorder services. ■ Set Locationmarks.	Wireless Customization
Guest User	An unregistered user.	Wireless Customization

Users assigned to the Administrators, Designers, Organizers, System, and Helpdesk roles also have end-user privileges.

> **Note:**   For a full overview of Wireless, see *Oracle9iAS Developer's Guide.*

9.2 The Service Designer

You use the Service Designer to create and modify objects in the Wireless repository. These objects include:

Table 9–2   Objects in the Wireless Repository

Object Type	Description
Folder	You can use folders to group services. Folders make services available to end users. Every user has a "home" folder. This contains the services, usually referenced by an alias, that the user can access. A user can also access any service in a folder owned by a group to which the user belongs.
Master service	The master service object implements the service and invokes a specific adapter. You can associate a custom transformer with a master service. Custom transformers are service- and device-specific. They can be used by only one device and one master service.
Preset Definitions	Preset definitions, which are specifically associated with a service, enable users to personalize services by entering their own input parameters to an application by creating presets. When a user requests a service, a service loads the user-defined input parameters, (or presets). Typically, the service may list these presets for the user, who must select an item to execute the application.
Master Alert	A template for an alert service, that specifies the content data feeder for an alert and the type of trigger parameters used by the alert.
Data Feeder	A data feeder is a repository object that retrieves content from both internal and external content sources and converts that content into a standard XML format.
Adapter	Adapter objects represent the Wireless interface to content sources. Adapter objects have an attribute called `classes`. This attribute identifies the archive file that contains the actual Java implementation of the adapter.
Transformer	A transformer converts the content returned by the Wireless adapters. Transformer types include:
	■ Result transformers, which convert Adapter Result content into SimpleResult content.
	■ Device transformers, which convert SimpleResult content into the final target format.
	A device transformer can be either the default transformer for a logical device, or a custom transformer, which is used to render a specific master service for a specific logical device.
Logical Device	A logical device object associates a physical device or an abstract device, such as email, with a transformer.

Object Type	Description
Regions	Wireless uses regions to enable developers to assign a location to a service, making the service location-based, unique to a specified area.

The Service Designer provides a set of wizards for the creation of master services, master alerts, logical devices, and data feeds. The Service Designer's wizards present the creation of each of these components as a discrete task broken down into a series of steps. The Service Designer prompts you through each step, ensuring that you successfully create the component quickly and easily.

In addition to these wizards, the Service Designer includes a screen for testing and creating transformers. Transformers, in the form of XSLT stylesheets or Java classes, convert the content returned by Wireless adapters into the format best suited to a particular platform. Using the Service Designer, you can both test and create transformers. The tool allows you to view and edit adapter input parameters and the transformers of the source content. See the *Oracle9iAS Developer's Guide* for more information on Wireless Edition XML.

Using the Service Designer, you can create location-based master services, which are are visible to users at specific locations. The Service Designer enables developers to create these services by assigning a location to a master service from the spatial data repository. The tool enables you to view a spacial object as a map image with its corresponding geometry. In addition, the tool enables you to access, view, and modify the data stored in the spatial database in the repository. See Chapter 10 for more information on the Service Designer.

9.3 The Content Manager Tool

The Content Management Tool enables you to create services and alerts based on the master services and master alerts created by Content Developers. The Content Manager Tool tool enables you to assign services, alerts, and topics to each user group. Using the Content Manager Tool, you can organize the wireless portal in a business context appropriate to a user group. The Content Manager Tool provides you with wizards to ensure that you create services easily. See Chapter 11 for more information on the Content Manager Tool.

9.4 The User Manager

This tool enables you to perform such help desk functions as creating and modifying users and groups and assigning services to users and groups. See Chapter 12 for more information on the User Manager.

Manager enables you to centrally manage property files at both the server and site levels.

9.5 Wireless Customization

Wireless Customization enables users to personalize their device portals from a desktop computer or from a mobile device by providing default pages for modifying service, folder, user, group and other repository objects. Wireless Customization enables users to set frequently entered parameters, such as email addresses, passwords, or PINs.

See Chapter 13 for more information on Wireless Customization. See Chapter 14 for more information on personalizing services from a device.

10

Developing Services

This chapter describes how Content Developers use the Service Designer to create and manage objects of the Oracle9*i*AS Wireless repository. Each section of this document presents a different topic. These sections include:

- Section 10.1, "Overview of the Service Designer"

- Section 10.2, "Logging into the Service Designer"

- Section 10.3, "Managing Master Services"

- Section 10.4, "Managing Master Alerts"

- Section 10.5, "Managing Data Feeders"

- Section 10.6, "Managing Logical Devices"

- Section 10.7, "Managing Preset Definitions"

- Section 10.8, "Managing Transformers"

- Section 10.9, "Managing Adapters"

- Section 10.10, "Setting Adapter Parameters"

- Section 10.11, "Managing Regions"

10.1 Overview of the Service Designer

The Service Designer is a Web-based interface that enables Content Developers to create the following objects:

Master Services

Master services provide the actual implementation of the service. They specify the adapter used for the service and any service-specific parameters. By mapping an

adapter to device transformers, master services link Wireless content sources to delivery platforms. Each master service is based on one adapter. A master service creates its own instance of the adapter it uses. Therefore, several services can use the same type of adapter, and each can pass its own service-specific argument values.

Content Managers create services based on master services and assign them to user groups.

Async Agent Services

The Service Designer enables you to augment master services by making them accessible by protocols other than HTTP. For example, you could assign an async agent service for services accessed by users whose devices do not have a Web browser, but support two-way messaging or email.

With async agent-enables services, users can access Web content. For example, async agent services enable end users who subscribe to OracleMobile to retrieve such Web content as stock quotes, traffic reports, or horoscopes by sending a message to Ask@OracleMobile.com. The Ask listener running on the *i*AS Wireless Server intercepts this message, which can be either an email or a short message, routes the request to the correct service or application, and then sends the requested information back to the user.

Master Alerts

A master alert is a template for an alert, a notification service delivered to users based on the trigger conditions they set when subscribing to an alert service. Master alerts designate the data feeders used for an alert service as well as the trigger parameter definition, trigger condition definition and optionally input parameter definition for an alert service. In addition, the master alert presents a simple result XML message template.

An alert service can deliver alert messages which are drawn from data feeds on a determined value, or at a scheduled time.

The default delivery mechanism of the alert message is through the transport module. The alert engine may provide hooks to invoke a customized message delivery mechanism to handle the alert delivery event.

Data Feeder

A data feeder is a repository object that retrieves content from both internal and external content sources and then converts that content into a standard XML format. The data feeder mechanism then publishes the content to the alert engine,

which formats and sends alert messages that use the content that the data feeder retrieved and rendered from the content source.

Logical Devices

A logical device is a repository object that represents either a physical device, such as an Ericsson mobile phone, or an abstract device, such as an email server. Logical devices represent the interface between transformers and the target devices or applications

Preset Definitions

Presets enable users to personalize services by defining their own input parameters for an application. When a user requests a service, an adapter loads the user-defined input parameters, or presets. The service presents these presets as a list for the user, who must then select an item to execute the application. Wireless saves users presets on a table specific to each service.

Transformers

Transformers are Java programs or XSLT stylesheets that convert a document into either the target format or to another Wireless format. Transformers not only map source tags to target format tags, but they can also manipulate content. Because transformers can rearrange, filter, and add text, you can present content in the format, as well as the form factor that is best suited for the target device.

The Wireless initial repository includes transformers for several target formats, such as CHTML, HDML, HTML, MML, VoiceXML, VoxML, and WAP (WML). By modifying the provided transformers, or by creating new ones, you can target new device platforms and optimize content presentation for specific devices. Wireless publishes device transformation rule files so that anyone can create support for any type of device and markup language.

The transformer associated with a logical device is that device's default transformer. Default transformers are typically generalized for a markup format, but they can also be specific to a target device. Wireless uses the device's default transformer to convert any service targeted for that type of device, unless a custom device transformer overrides the default transformer. A custom device transformer enables you to control how a service appears on a specific device. While several devices can use a single default transformer, a custom transformer can be associated with only one master service and one device. The custom transformer optimizes the presentation of that service for a particular device and can only be used for that device.

When you create a transformer, you map the elements in the source content to the result format.

Adapters

An adapter is a Java application that retrieves data from an external source and renders it in Wireless XML. In the Oracle9*i*AS Wireless architecture, adapters constitute the interface between the Wireless server and the content source. When invoked by a master service, an adapter returns an XML object that contains the service content. This XML object is processed by the core of the Wireless and then delivered to the user's device as a the response to the user's service request.

Regions

Wireless uses regions to enable developers to assign a location to a service, making the service location-based, unique to a specified area.

10.2 Logging into the Service Designer

Before using the Service Designer, you must first log into the Webtool as follows:

1. Access the login page through the following URL:

    http://hostname:7777/webtool/login.uix

    Note: 7777 is the default port number for Oracle9*i*AS Wireless. The port number range is 7777 to 7877. To ensure that you are using the correct port number, check the port number for Oracle9*i*AS Wireless stored in [Oracle home]/install/portlist.ini. For more information on port usage, see Oracle9*i* Application Server Installation Guide and the Oracle9*i* Application Server Administrator's Guide.

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2. Enter your user name and then enter your password. If you are an administrator, enter *orcladmin* as your user name. (The password is set during installation, but can be changed with the User Manager.)

After you successfully login, the Service screen of the Service Designer appears with the Service Designer Tab selected. The Service Designer Tab contains the following subtabs:

■   Master Services

- Data Feeders

- Master Alerts

- Data Feeders

- Logical Devices

- Preset Definitions

- Transformers

- Adapters

- Regions

The Service Designer provides a tab for each of these repository objects. Each tab has a browsing screen, which enables you to search for an object, as well as access to functions for creating, editing and deleting, and testing objects.

Figure 10–1   The Browse Folder Screen of the Service Designer's Master Service Tab
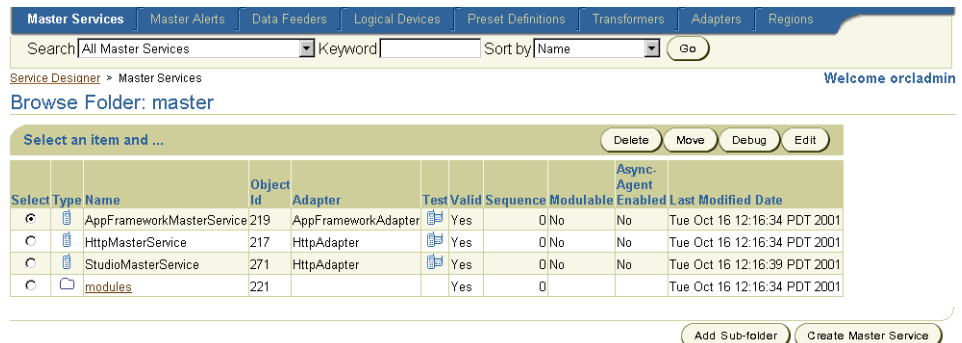
10.3 Managing Master Services

Selecting the Master Services tab displays the Browse Folder screen, which enables you to create, edit, delete, debug, and move master services and folders. The screen also enables you to test master service and view it on a phone simulator.

The Browse Folder screen enables you to view the top-level folders in the hierarchy, which the Service Designer displays as hyperlinks. These hyperlinks allow you to "drill down" or traverse deeper into the hierarchy with each successive click. Wireless displays the structure of the hierarchy, enabling you to see level you currently access.

The Browse Folder screen displays Wireless objects as follows:

Table 10–1   Elements of the Browse Folder Screen of the Service Designer

Element	Description
Type	The type of objects
Name	The display name of the folder or service. The Service designer displays folders as hyperlinks, enabling you to "drill down" to view a folder's contents.
Object ID	The Object ID (OID) of the master service.
Adapter	The adapter used by the master service.
Test	Clicking the phone icon enables you to view the selected master service on a phone simulator.
Valid	If the column displays "Yes", the folder or service is enabled. If "No", then the folder or service is not enabled.
Sequence	The order in which services and folders appear on output devices. By default, these appear in order by sequence number, then name.
Last Modified	The last time the folder or service was modified.

10.3.1 Searching for a Master Service

The Browse Folder screen of the Service Designer enables you to search for a master service using a search field in conjunction with drop-down lists of search options, which you can use to either narrow or broaden your searches. The search results display as a list on the Search Result screen.

To find an object, perform one or more of the following and then click Go.

1. From the drop-down list, select one of the following options to narrow or broaden your search:

    - All Master Services

    - Async-Agent-Enabled Master Services

    - Modulable Master Services

    - Folders

2. Enter a keyword.

3. From the drop-down list, select one of the following sorting options for the search results:

- Name. Select this option to sort results by the name of the master service or folder.

- Last Modified Date. Select this option to sort results by the last time the object was modified.

4. Click Go. The Search Result screen appears. The Search Result screen organizes objects as follows:

Table 10–2   Elements of the Search Results Screen of the Service Designer

Element	Description
Type	The type of object.
Name	The display name of the folder or service. The Service designer displays folders as hyperlinks, enabling you to "drill down" to view a folder's contents.
Object ID	The Object ID (OID) of the master service.
Full Path	The route to a repository object, with Master as the root. Each node on the route is displayed as a hyperlink. Clicking a hyperlink reveals a browse screen, showing the subfolders, services, and bookmarks organized under the folder. Using this browse screen, you can perform such functions as assigning objects to user groups, and creating and deleting services, bookmarks, and folders.
Adapter	The adapter used by the master service.
Test	Clicking the phone icon enables you to view the selected master service on a phone simulator.
Valid	If the column displays "Yes", then the folder or service is enabled. If "No", then the folder or service is not enabled.
Modulable	If "Yes", then the service can be deployed as a module; if "No", then the service cannot be deployed as a module.
Async-Agent Enabled	If the column displays "Yes", then the master service is accessed by protocols other than HTTP.
Last Modified Date	The last time the folder or service was modified.

5. To return to the Browse screen, click OK.

Figure 10–2   A Search Result Display
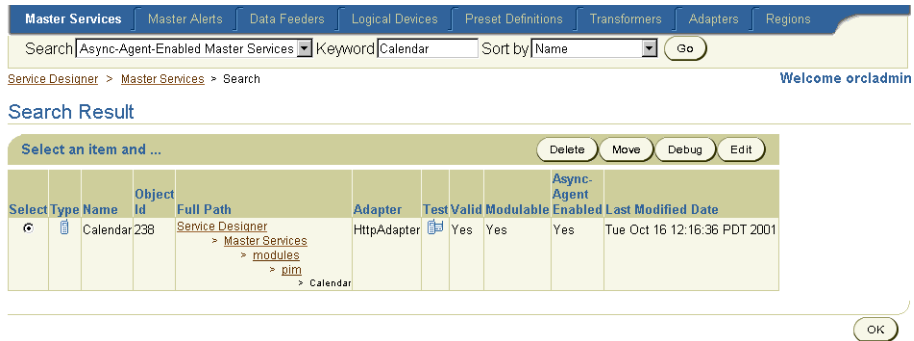
10.3.2 Creating a Folder

You can organize your repository objects by creating subfolders. These subfolders, which can represent topic areas, can be nested into other subfolders. When you create a subfolder, the Service Designer displays it as a hyperlink in the Browse screen. Clicking this hyperlink enables you to see the folder's contents.

To create a folder:

1. From the Browse Folder screen, click the Add Sub-Folder button. The Create Folder Screen appears, displaying the following parameters:

Table 10–3   Parameters of the Create Folder Screen

Parameter	Value
Folder Name	The name of the folder. This is a required field.
Description	A description of the folder.
Valid	Selecting this option enables the folder.
Title Icon URI	The URI of an image used as the icon that appears on top of the screen when this folder becomes the current folder. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.

Parameter	Value
Menu Icon URI	The URI of an image used as the icon that appears next to the folder in a menu listing. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.
Title Audio URI	The URI of the audio file (for example, a **.wav** file) read aloud by voice-reader software when users access a folder. You do not need to specify the format type in this URI, as Wireless selects the audio file format appropriate to the user's device.
Menu Audio URI	The URI of the audio file (for example, a **.wav** file) read aloud by voice-reader software along with a folder in a menu listing. You do not need to specify the format type in this URI, as Wireless selects the audio file format appropriate to the user's device.

2. Complete the form as follows:

    a. Enter a name for the folder in the Name field. This is a required field.

    b. Enter a brief description of the folder in the Description field.

    c. Select the Valid check box to enable the folder.

    d. Enter the URI of an image used as the icon that appears on top of the screen when this folder becomes the current folder.

    e. Enter the URI of an image used as the icon that appears next to the folder in a menu listing.

    f. Enter the URI of the audio file read aloud by voice-reader software when users access a folder.

    g. Enter the URI of the audio file read aloud by voice-reader software along with the folder name in the menu listing.

3. Click Create.

10.3.3 Creating a Master Service

The Service Designer enables you to create a master service using the Master Service Creation Wizard. This tool provides you with a separate screen for each step of the creation process.

Note: You must follow the sequence to its end to create a master service; if you exit the wizard at any point by selecting Cancel, you lose all the values you have entered.

10.3.3.1 Step 1: Entering the Basic Information for the Master Service.

From the Browse Folder Screen, click Create Master Service. The Basic Information screen of the Master Service Creation Wizard appears. You use this screen to enter the configuration properties for the master service. The Screen contains the following fields:

Table 10–4   Basic Configuration Parameters for the Master Service

Parameter	Value
Name	The name of the master service.
Description	An optional description of the master service.
Adapter	A drop-down list of available adapters.
Valid	Select the Valid check box to enable the master service.
Moduable	Clicking this check box creates a service that can be deployed as a module component within another service. A module can be reused across services and, in the case of services which require input from end users, provide a consistent user interface.
Location-Dependent	Select this check box to make the service specific to a designated region. Use this option to enable location-acquisition at runtime.
Region Name	If you select the Location-Dependent option, then you must select a region by clicking this button.
Language	A drop-down list of display languages.
Title Icon URI	The URI of an image used as the icon that appears on top of the screen when this service becomes the current service. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.
Menu Icon URI	The URI of an image used as the icon that appears next to the service in a menu listing. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.

Parameter	Value
Title Audio URI	The URI of the audio file (for example, a **.wav** file) read aloud by voice-reader software when users access a service. You do not need to specify the format type in this URI, as Wireless selects the audio file format appropriate to the user's device.
Menu Audio URI	The URI of the audio file (for example, a **.wav** file) read aloud by voice-reader software along with the service in a menu listing. You do not need to specify the format type in this URI, as Wireless selects the audio file format appropriate to the user's device.
Title Icon URI	The URI of an image used as the icon that appears on top of the screen when this service becomes the current service. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.
Sequence	The integer value that you enter in this field lets you alter the order in which services and folders appear on output devices. By default, these appear in order by sequence number, then by name. You can enter values in the sequence fields to rearrange the order in which the services and folders appear.

Enter the following in the Basic Information screen:

1. Enter the name for the master service in the Name field. This is a required field.

2. Enter a description for the service in the Description field.

3. Select an adapter from the drop-down list. This is a required field.

> **Note:** The SQL adapter and the Web Integration adapter are deprecated in this release. See the *Oracle9iAS Developer's Guide* for more information on adapters.

4. Select the Support Module check box if you wish to create a service that can be deployed as a module within other services.

5. Select the Location-Based check box to create a service with content specific to a location.

   a. Click the flashlight icon to browse a list of region IDs.

   b. Click the appropriate region ID.

6. Enter the URI of an image used as the icon that appears next to a service when this service becomes the current service.

7. Enter the URI of an image used as the icon that appears next to the service in a menu listing.

8. Enter the URI of the audio file read aloud by voice-reader software when users select the service from a menu.

9. Enter the URI of the audio file read aloud by voice-reader software along with the service in a menu listing.

10. Enter a sequence number.

11. Click Next. The Caching screen appears.

Figure 10–3   The Basic Info. Screen of the Master Service Creation Wizard
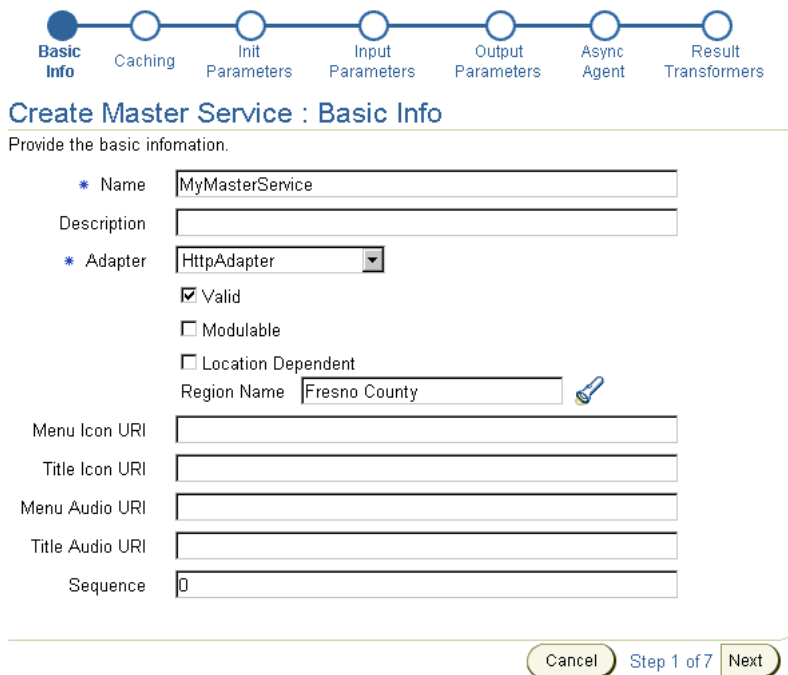
10.3.3.2 Step 2: Entering Caching Information

You select the Cacheable check box for a service with changing content. Selecting the Cacheable option saves the adapter invocation and transformation. If you create

a caching master service, then you must specify the frequency at which the Wireless server notifies the cache when a Web page has changed by issuing an invalidation report. If you do not wish to create a services that can be cached, leave the Cacheable check box clear, and click Next.

To create a service that can be stored in cache:

1. Select the Cacheable check box. The Invalidation Frequency section of the screen appears.

2. In the Cardinal field, enter the frequency, as a number value, of the unit selected from the Unit drop-down list.

3. Using the Unit drop-down list, select from among the following time units:

   - Second

   - Minute

   - Hour

   - Day

   - Week

   - Month

4. Using the drop-down lists, select the day and time (if applicable) for the invalidation frequency.

5. Click Next. The Init Parameters screen appears.

Figure 10–4   The Caching Information Screen of the Master Service Creation Wizard

10.3.3.3 Step 3: Entering the Init Parameters of the Master Service

The Init Parameters screen contains the init parameters for the adapter you chose in Step 2. Not all adapters have init parameters. Enter the values for the init parameters and click Next. If the selected adapter does not contain init adapters, click Next.

> **Note:** The SQL adapter and the Web Integration adapter are deprecated in this release. See Section 10.10 for more information on setting the parameters for the AppsFramework adapter, the Mobile Applications Framework adapter, the SQL Adapter and the Web Integration adapter.

If you want to plug in a listener for such purposes as debugging, specify the listener class in the HttpAdapterInvokerListener field. These listener methods are called at the following times:

- When the HTTP adapter invocation starts.

- Before the connection to a remote **.jsp**

- After the connection to the remote **.jsp**

- At the end of the HttpAdapter invocation

- When errors occur.

> **Note:** You must specify the classpath in the OC4J config/application .XML file or you must copy the **.jar** file to wirless/lib.

10.3.3.4 Step 4: Selecting the Input Parameters for the Master Service

The Input Parameters Screen displays the input parameters for the adapter you selected in Step 1. The Master Service Creation Wizard queries the adapter definition to determine the parameters that appear in this screen. The input parameters for master services using the HTTP Adapter and the OC4J Adapter include the following:

Table 10–5   Input Parameters for the HTTP Adapter and the OC4J Adapter

Parameter	Value
Name	The name of the input parameter. The Wireless Service Creation Wizard sets the name of the input parameter by querying the adapter definition.
Comment	In the case of master services based on the Web Integration adapter, Wireless automatically populates this cell with the name of the WIDL service that uses the parameter.
	For services based on other adapters, you can use this column to document the parameter. The comment is only used internally.
Mandatory	Select this check box if this parameter must have a value. Remove the selection for optional parameters.
Default Value	For most parameters, this value represents the default value for the parameter. If you specify a default value, Wireless does not prompt the user for a value. Default values can be overridden by a value specified by a service created by the Content Manager, if the parameter is visible to the user, by the user with Wireless Customization.
	The PAsection parameter is used by the Web Integration adapter. For PAsection, this value is the name of the WIDL service that the Web service should use. You can select the names from a drop-down selection list. If you do not specify a value for PAsection, Wireless service includes all WIDL services in the WIDL interface.

The Input Parameters screen enables you to select an input parameter as well as add and delete input parameters to the adapter implementation for this master service.

Selecting an Input Parameter

To select an input parameter for the master service, Click on the Select radio button next to the input parameter you want to use and then click Next.

Adding a New Input Parameter to the Adapter

To add a new parameter to the adapter you selected in Step 1:

1. Click Add Another Row.

2. In the blank row, enter a name for the input parameter in the Name field.

3. Enter a description for the input parameter in the Comment field. This can be the same information as both the Name and Caption.

4. Select the Mandatory check box if this input parameter requires a value.

5. Enter, if needed, a default value for the parameter. If you do not enter a default value, then Wireless prompts the user for a value.

6. Click Next.

See Section 10.10 for information on the parameters for the SQL Adapter and WebIntegration Adapter.

Deleting an Input Parameter

To delete an input parameter,

1. select the parameter you want to remove from the adapter implementation of this master service.

2. Click Delete.

3. Click Next.

Figure 10–5   The Input Parameters Screen of the Master Service Creation Wizard
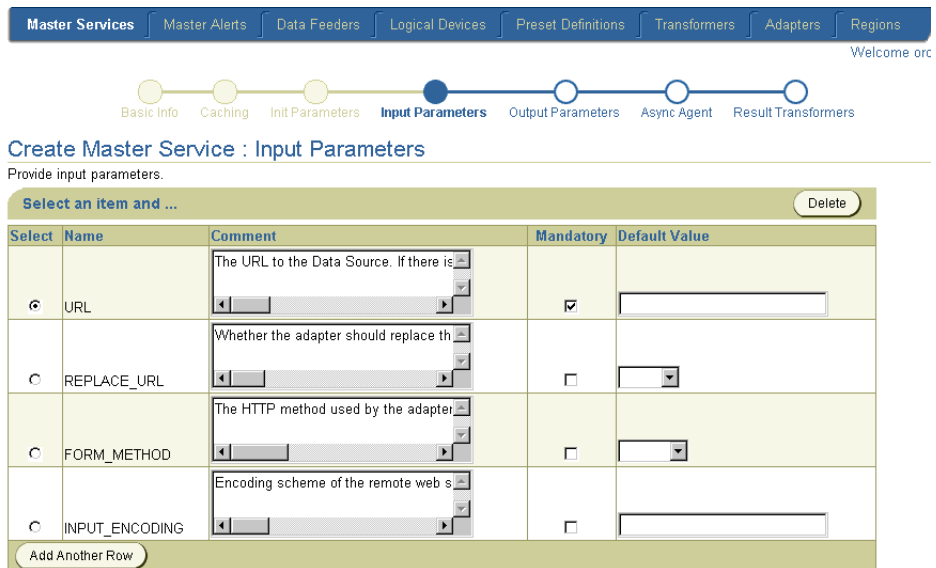
Setting the Input Parameters for the HTTP Adapter

The HTTP adapter retrieves remote content and delivers it as mobile XML.The input paramters for the HTTP adapter include:

Table 10–6   The Input Parameters for the HTTP Adapter

Parameter	Description
URL	The URL to the data source. If there is a query in the URL, then its characters and URL must be encoded properly. For example: "http://my.host.com:80/Hello.jsp?fn=First+Name&ln=Last+Name" This is a mandatory parameter.
REPLACE_URL	Whether the adapter should replace the relative URLs inside the result with absolute ones. You should set this parameter to "false" only if you are sure that there will be no relative URLs inside the result. The default value if "true".
FORM_METHOD	The HTTP method used by the adapter to get the content of the url. Supported methods are GET and POST. The default method is GET.
INPUT_ENCODING	Encoding scheme of the remote web server. Use IANA character set names (for example: ISO-8859-1, UTF-8).

10.3.3.5 Step 5: Selecting the Output Parameters for the Master Service

The Output Parameters screen enables you to select the output parameters for the adapter selected in Step 1, or optionally add output adapters for that adapter. The Master Service Creation Wizard queries the adapter definition to determine the parameters that appear in this screen.

Note: You do not need to define output parameters for master services using the HTTP adapter and the OC4J adapter.

The output parameters have the following attributes:

Table 10–7   Output Parameters for Adapters

Parameter	Value
Name	The name of the output parameter. The Master Service Creation Wizard sets the name of the output parameter by querying the adapter definition.
Caption	The caption is the label that Wireless uses for the parameter when prompting for user input.
Comment	In the case of master services based on the Web Integration adapter, Wireless automatically populates this field with the name of the WIDL service that uses the parameter.
	For services based on other adapters, you can use this column to document the parameter. The comment is only used internally.
User Customizable	Specifies whether the end user can set a value for this parameter. You can make most input parameters customizable by the user.

To select an output parameter, use the radio buttons to select the appropriate output parameter and then click Apply. To delete an output parameter, select the output parameter and click the Delete button.

Adding a New Output Parameter to the Adapter

Perform the following to add a new output parameter to the adapter selected in Step 1:

1. Enter a name for the output parameter in the Name field.

2. Enter a description that can be used as a label for the output parameter in the Caption field.

3. In the Comment field, enter a description for the output parameter that can be used internally. You can enter the same description for the Name, Caption, and Comment field.

4. Select the User Customizable check box to enable the end user to edit the output parameter.

After you have finished adding or deleting the output parameters for the adapter, click Next. The Confirmation screen appears if Wireless has not found a PASection in the master service you have created. Review the values listed on the Confirmation screen. If they are correct, click the Finish button. You have completed creating a master service.

If your master service contains a `PASection`, the Create Result Transformer screen appears.

10.3.3.6 Step 6: Creating an Async Agent Service -- Optional

By assigning Async Agent to a master service, you create a master service that can be accessed by protocols other than HTTP.

To set the values for an Async Agent service:

1. Select the Async Agent check box.

2. In the Async Command Line Syntax field, enter the text that is returned when a user issues an application help command to the Async Server.

3. Enter the delimiter parameters for the Async Agent service.

   Note: The space (" ") is the default delimiter.

4. Complete the Async Service Argument List section as follows:

   a. Click Add Another Row.

   b. In the Name field, enter a name for the argument.

   c. Enter a number to represent the sequence in which the argument appears on the command line.

   d. Enter a default value for the argument. Leaving this field blank creates a service that requests a value from the user.

5. Click Next.

10.3.3.7 Step 7: Selecting the Result Transformer -- Optional

After you have set the output parameters for the adapter, Wireless checks if the input parameters include `PASection`, the value used by the WIDL adapter to identify the service that is the entry point in the chained service sequence. If the Master Service Creation Wizard finds a `PASection` input adapter, it invokes the Result Transformer screen.

The transformer screen enables you to select a transformer for the adapter or add a new one by importing the XSLT stylesheet from your local file system.

> **Note:** You can skip this step if you selected an adapter that returns Mobile XML.

To select a transformer for the adapter you selected in Step 1, use the radio buttons and then click Apply. To delete a transformer from the adapter, select the transformer using the Select radio button and click Delete.

Importing an XSLT Style Sheet

1. Click the tab that represents the `PASection` you wish to edit. Each panel contains a text editor for entering the XSLT style sheet. You can also import an XSLT style sheet by clicking the import button.

2. Click Next after you have completed editing the XSLT style sheet. The Device Transformer Screen appears. Leave this screen blank if you do not wish to create a result transformer and click Next until you reach the Confirmation screen.

3. If the values appear correct, click Finish to complete the creation of the master service.

Adding a New Result Transformer

To add a new result transformer:

1. Enter a name for the transformer in the Name field.

2. Click the Import button to retrieve the XSLT stye sheet from your local file system. The style sheet then appears in the Content window.

3. Make any needed changes to the style sheet.

4. Click Add.

5. Click Finish to complete the creation of the master service.

You have created a master service. This master service is not visible to users until the Content Manager publishes a service based based upon it to user groups.

10.3.4 Editing a Master Service

The Edit button in the Browse Folder screen enables you to edit the basic configuration, init parameters, input parameters, output parameters, Async Agent functions, and result transformer of a master alert.

10.3.4.1 Editing the Basic Configuration Parameters of a Master Alert

To edit a the basic configuration parameters of a master service:

1. From the Browse Folder screen, select the master service you wish to edit.

2. Click the Edit button. The Edit Master Service screen appears and defaults to the Basic Info. screen. The Basic Info. screen is populated with the basic configuration values set for the selected master service.

3. Edit the values as needed. See Section 10.3.3.1 for information on the parameters of the Basic Info. screen.

4. Click Ok to save your changes. Clicking Cancel resets the values to their original state and returns you to the Browse Folders screen.

Figure 10–6   The Basic Info. Screen for Editing Master Services

10.3.4.2 Editing the Caching of a Master Service

To edit the caching information for a the selected master service:

1. Select Caching from the left menu.

2. The Edit Cache screen appears.

3. Edit the values as needed. See Section 10.3.3.2 for information on entering caching information.

4. Click OK to save your changes. Clicking Cancel resets the values to their original state and returns you to the Browse Folders screen.

Figure 10–7   The Edit Cache Screen
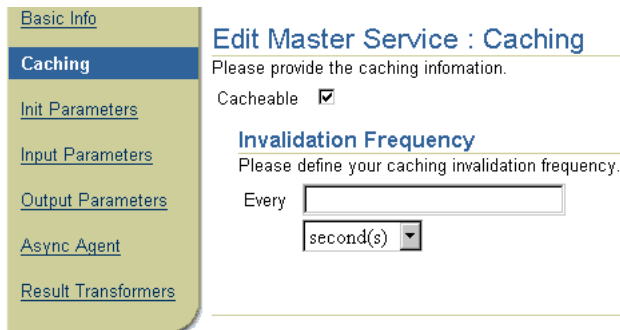
10.3.4.3 Editing the Init Parameters of a Master Service

To edit the init parameters of a master service:

1. Select Init Parameters from the left menu. The Edit Init Parameters screen appears, displaying the values set for the init parameters of the selected service.

2. Edit the values for the init parameters as needed. See Section 10.3.3.3 for more information on the parameters of the init parameters.

3. Click OK to save your changes and select. Clicking Cancel resets the values to their original state and returns you to the Browse Folders screen.

10.3.4.4 Editing the Input Parameters of a Master Service

To edit the input parameters of a master service:

1. From the Edit Master Service screen, select Input Parameters from the left menu. The Edit Input Parameters screen appears, displaying the values set for the input parameters of the selected service.

2. Edit the values for the input parameters as needed. See Section 10.3.3.4 for more information on the input parameters.

3. Click Ok to save your changes. Clicking Cancel resets the values to their original state and returns you to the Browse Folders screen.

10.3.4.5 Editing the Output Parameters of a Master Service

To edit the output parameters of a master service:

1. From the Edit Master Service screen, select Output Parameters from the left menu.

2. The Edit Output Parameters screen appears, displaying the values set for the output parameters of the adapter used by selected service.

3. Edit the values for the output parameters as needed. See Section 10.3.3.5 for more information on the output parameters.

4. Click OK to save your changes. Clicking Cancel resets all values to their original state and returns you to the Browse Folders screen.

10.3.4.6 Editing an Async Agent Service

To edit an Async Agent service:

1. Select Ask Service from the menu in the Edit Master Service screen. The Edit Ask Service screen appears, displaying the values set for the parameters of the selected master service.

2. Edit the values for the Async Agent parameters as needed. See Section 10.3.3.6 for more information on the Async Agent parameters.

3. Click OK to save your changes. Clicking Cancel sets all the values you have entered back to their original state and returns you to the Browse Folders screen.

10.3.4.7 Editing the Result Transformer for a Master Service

To edit the result transformer:

1. From the Edit Master Service screen, select Result Transformer from the left menu. The Edit Result Transformer screen appears, displaying the result transformer's XSLT style sheet for the adapter used by selected service.

2. Edit the entries as needed. See Section 10.3.3.7 for more information on setting the values for the result transformer and importing a XSLT stylesheet.

3. Click OK to save your changes. Clicking Cancel sets all the values to their original state and returns you to the Browse Folder screen.

10.3.5 Deleting a Master Service

To delete a master service:

1. From the Browse Folders screen, select the master service you wish to delete.

2. Click Delete.

10.3.6 Debugging Master Services

The Service Designer enables you to simultaneously view a master service on a phone simulator and in Wireless XML or device markup languages.

Transformers, in the form of XSLT stylesheets or Java classes, convert the content returned by Wireless adapters into the format best suited to a particular platform.

To test a service:

1. From the Browse Folders and Services screen, select a master service.

2. Click Debug. The Debug Service screen appears.

3. Select from among the following output formats:

   ■ Adapter XML Result

   Selecting this result type enables you to see Wireless source content in the AdapterResult format, the intermediary format between the source and the target output device. Source content in the AdapterResult format must be converted into SimpleResult format before it can be delivered to a target device. If no text displays in the The Result panel, then no AdapterResult has been produced.

   ■ Wireless XML Result

   Selecting Wireless XML Result displays the source content in Wireless' SimpleResult format of the output that is returned by an adapter.

   ■ Device Result

   The DeviceTransformer drop-down menu lists the logical devices in the repository. Selecting a logical device enables you to see the final markup language for that device.

4. Click Set Parameters.

5. Click Run Service. The service appears on a phone simulator. The selected result appears in the Service Result window.

Setting the Display Length of the Logging File

The System Log section enables you to set the number of lines from the end of the server's system log file that you want to see.

To set the number of lines from the server: displays from the end of the system log.

1. Enter the number of lines from the end of the system log that you want to review:

2. Click Refresh Log. The specified number of lines from the end of the system log appear.

3. Click Done.

10.3.7 Moving Folders and Master Services

The Service Designers Move function enables you to organize your master services and folders.

To move a master service:

1. From the Browse screen, select the folder or master service you wish to move. Click Move. The Move screen appears.

2. Select a new location for the folder or master service from the list in the Move screen.

3. Click Move Here.

10.4 Managing Master Alerts

The Alerts tab of the Service Designer enables you to create, edit and delete master alerts. When you select the Alerts tab, the Browse Alerts screen appears, displaying a list of the current master alerts. The Browse screen organizes the master alerts as follows:

Table 10–8   Element of the Browse Master Alerts Screen

Element	Description
Name	The name of the master alert.
Object ID	The id of the alert in the database.
Data Feeder	The data feeder, or content source, used for the master alert.

Element	Description
Time-Based Enabled	Denotes an alert that displays at predetermined times.

Figure 10–8   The Browse Master Alerts Screen
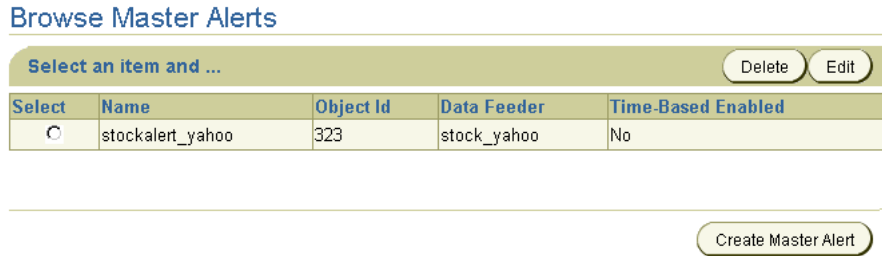
10.4.1 Creating a Master Alert

The Master Alert Creation Wizard steps you through the creation of a master alert. This wizard, invoked by clicking the Create Master Alert button in the Browse Master Alerts screen, provides a separate screen for each step of the process.

Once you have created a master alert, a user with the System role this master alert to an alert engine process. The master alert becomes active once the Sytstem manager starts the both alert engine process and the data feeder engine process.

10.4.1.1 Step 1: Entering the Basic Configuration Parameters for the Master Alert

You enter the basic configuration parameters for the master alert in the Basic Info. screen, the first in the master alert creation sequence.

Figure 10–9   The Basic Info Screen of the Master Alert Creation Wizard

The Basic Info. screen includes the following parameters:

Table 10–9   Basic Configuration Parameters for a Master Alert

Parameter	Value
Name	The name of the alert. This is a required parameter.
Description	A description of the alert.
Data Feeder	A drop-down list of available data feeders.
Subscriber Filtering Hook	A Java class name. This hook enables you to filter out some subscribers to the qualified alerts before these alerts are sent to the messaging server.
Data Feeder	A drop-down list of data feed sources. This is a required parameter.
Time-Enabled	Specifies whether this alert triggers at predetermined times. The frequency options are daily, week day, and weekend. The user profile provides the time zone information.

To enter the basic configuration parameters for the master alert:

1. Enter the name for the master alert in the Name field.

2. Enter a short description for the master alert in the Description field.

3. Using the drop-down list in the Data Feed field, select a data feed source for the master alert.

4. Select the Time-Enabled check box to designate the master alert as displaying at a predetermined time.

5. Click Next. The Trigger Conditions screen appears.

Figure 10–10 The Trigger Conditions Screen of the Master Alert Creation Wizard

10.4.1.2 Step 2: Setting the Trigger Conditions for the Master Alert

You use the Trigger Condition screen to enable end users to set the conditions that invoke an alert on end users' devices. For example, if you create an alert notifying users of a stock price, you can to set the alert conditions that allow an end user to request a notification when the stock has risen above, or fallen below, a certain price.

The Trigger Condition screen includes the following parameters:

Table 10–10 Trigger Conditions for Master Alerts

Parameter	Value
Condition Name	The name of the alert trigger for the master alert. The Trigger name must contain only alphanumeric characters and underscore and must be within 30 characters. In addition, the trigger name cannot start with a numeric character and cannot use SQL reserved words. End users seel this label when they subscribe to an alert service.

Parameter	Value
Trigger Parameter	The trigger parameter is an element in a data feeder that you define a trigger condition against. For example, if a data feeder for a stock alert service inlcudes an output parameter of *stock price*, you could select *stock price* as the trigger parameters for a condition name. For information on setting the output parameters of a data feeder, see Section 10.5.2.4.
Condition Type	The condition, in relation to the value set by the end user, which triggers the alert.
Default Value	The default value for the parameter. If you specify a default value, Wireless does not prompt the user for a value. Default values can be overridden by a value specified by a service created by the Content Manager or, if the parameter is visible to the user, by the user through Wireless Customization.

Selecting a Trigger Condition

To select a trigger condition:

1. From the list of trigger conditions, select the trigger condition.

2. Edit the Condition Type, Trigger Parameter, or Default Value fields as needed.

3. Click Apply.

Adding a New Trigger Condition

To add a new Trigger Condition

1. Enter the name for the trigger condition in the Condition field.

2. Enter text used for prompting input from end users in the Caption field.

3. Select a trigger parameter from the drop-down list in the Trigger Parameter field.

4. Select a Condition Type from the drop-down list in the Condition Type field. Condition types depend on the data type of the trigger parameter.

   If the data type is a number, then the conditions include:

   - Less Than
   - Greater Than
   - Equal
   - Less Than and Equal

- Greater Than and Equal
- Less Than Absolute Value
- Greater Than Absolute Value
- Equal Absolute Value
- Less Than and Equal Absolute Value
- Greater Than and Equal Absolute Value
- Value Change (The condition value for this type can only be 0 or 1, where 0 means no trigger and 1 means trigger when value changes. The default value is 0.)

If the data type is text, then the condition types include:

- Exact Match
- Not Match
- Contain
- Not Contain
- Begin With
- End With
- Value Change (The condition value for this type can only be '0' or '1', where 0 means no trigger and 1 means trigger when value changes. The default value is 0.)

5. Enter a default value for the trigger condition in the Default Value field.

6. Click Add.

7. Click Next. The Message Template screen appears.

10.4.1.3 Step 3: Creating the Message Template for the Master Alert

The Message Template screen allows you to either import a message template or provide a hook.

The data feeder output values are the dynamic values in the SimpleText stylesheet. The following stylesheet represents these values as &price and &change.

```
<SimpleText> Stock Alert for [&sym;]: Price: &price; Change:
&change;</SimpleText>
```

Figure 10–11   The Message Template Screen of the Master Alert Creation Wizard
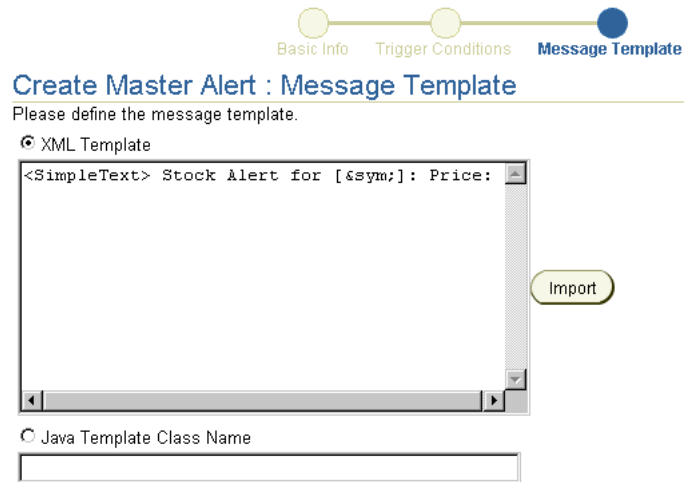
Importing a Message Template

To import a message template:

1.   Select the Message Template radio button.

2.   Click Import to retrieve a message template from your local file system.

3.   Click Next to complete the creation of the master alert.

> **Note:**   Wireless will not commit any of the values you have entered until you have completed the entire wizard.

Providing a Hook

To create a message template by providing a programming hook:

1.   Select Java Template Class Name.

2.   Enter the name of the hook.

3.   Click Next to complete the creation of the master alert.

10.4.2 Editing a Master Alert
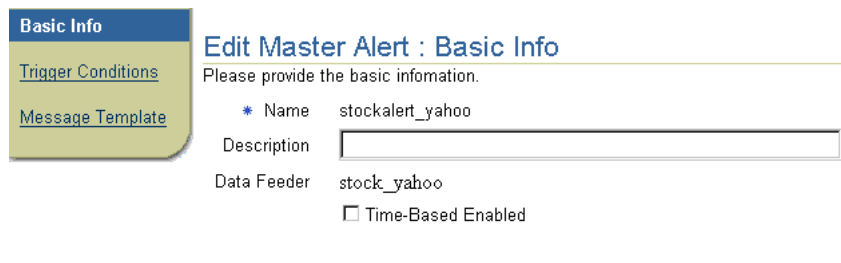
The Edit button in the Browse Master Alerts screen enables you to edit the basic configuration parameters, trigger conditions, and message template for a master alert.

10.4.2.1 Editing the Basic Configuration Parameters of a Master Alert

To edit the basic configuration parameters of a master alert:

1. From the Browse Master Alerts screen, select the master alert you wish to edit.

2. Click Edit. The Basic Info. screen for editing a master alert appears, with its fields populated by the values set for the selected master alert.

3. Edit the basic configuration values as needed. See Section 10.4.1.1 for more information on the basic configuration parameters of a master alert.

4. Click OK to save your changes. Click Cancel to set the values back to their original state and return to the Browse Master Alerts screen.

Figure 10–12   The Basic Info. Screen for Editing a Master Alert

10.4.2.2 Editing the Trigger Conditions of a Master Alert

To edit the trigger conditions of a master alert:

1. From the left menu, select Trigger Conditions. The Edit Trigger Conditions screen appears with its fields populated by the values set for the selected master alert.

2. Edit the values as needed. See Section 10.4.1.2 for information on the parameters for the trigger conditions.

3. Click OK to save your changes. Clicking Cancel sets all the values back to their original state and returns you to the Browse Folders screen.

10.4.2.3 Editing the Message Template of a Master Alert

To edit the message template of a master alert:

1. From the left menu, select Message Template. The Edit Message Template screen appears with the XML template, or the Java class name set for the selected master alert.

2. Perform any of the following operations:

   ■ Edit the XML template, or import a template.

   ■ Enter a Java template class name.

   See Section 10.4.1.3 for information on the message template for a master alert.

10.5 Managing Data Feeders

The Service Designer's Data Feeder tab enables you to create, edit, and delete data feeders, Wireless object that download data from an internal or external content source and converts that data into a common format for Wireless mobile alerts.

Figure 10–13   The Browse Data Feeders Screen
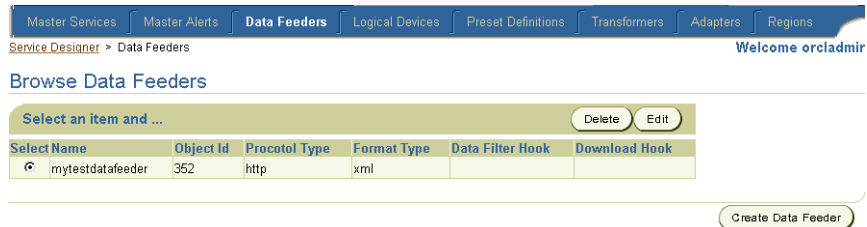
Clicking the Data Feeders tab displays the browse data feeders screen, which lists the current data feeders. The Browse Data Feeders screen displays the data feeders as follows:

Table 10–11   Elements of the Browse Data Feeders Screen

Element	Description
Name	The Name of the data feeder.
Object ID	The Object ID (OID) of the data feeder.

Element	Description
Protocol Type	The protocol used by the data feeder to access the content provider and retrieve data.
Format Type	The data format type for the retrieved content. Format include delimited text (such as comma-separated values), XML, and fixed-column text.
Data Filter Hook	The Java class name that implements the `DataFeedFilterHook`, which enables post-processing before storing the data.
Download Hook	A Java class name that implements the `FeedDownloadHook`. Implementing `this` Java interface implemented enables you to construct the download URL or POST page during download.

10.5.1 Creating a Data Feeder

You create data feeders with the Data Feeder Creation Wizard. This wizard, invoked by clicking the Create Data Feeder button in the Browse Data Feeders screen, steps you through the creation of a data feeder by providing a separate screen for each phase of the process.

Once you create a data feeder, you can assign it to a master alert. A data feeder (and consequently the alert that derives its content using the data feeder) cannot become active until a user with the System role assigns it to a configured data feeder process and then starts the process.

10.5.1.1 Step 1: Entering the Basic Information for the Data Feeder

The Basic Info screen of the Data Feeder Creation Wizard enables you enter the basic properties for the data feeder.

Figure 10–14   The Basic Info. Screen of the Data Feeder Creation Wizard

The Basic Info. screen of the Data Feeder Creation Wizard includes the following parameters.

Table 10–12   Parameters of the Basic Info. Screen of the Data Feeder Creation Wizard

Parameter	Value
The General Section of the Basic Info Screen includes the following parameters	
Name	The Name of the content provider. This is a required parameter.
Type	Select Regular if you use the built-in data retrieval framework to pull the data. Select Pass-Through for a push application using a Java class to retrieve the data. If you select Pass-Through, you must specify a Java class. This is a required parameter.

Parameter	Value
Protocol Type	The protocol used by the data feeder to access the content provider and retrieve data. The drop-down menu includes the following options: ■ sql -- SQL Database. Runs a sql query against the specified data feed and reads the output. ■ app -- Local Application. Runs an application as a subprocess and then reads the **.stdout** file. ■ http -- HTTP. Construct the URL, performs the GET/POST on the remote Web site and authenticates if necessary ■ ftp -- FTP. Connects to the remote Web server, and then authenticates and downloads files. Requires a username and password. ■ file -- Local File. Reads from an arbitrary file in the file system.
Format Type	The data format type for the retrieved content. The drop-down menu includes the following options: ■ delimited -- Parses delimited text. The default delimiter is the comma (,). ■ fixed -- Fixed Column Text. Parses text delimited by fixed column positions. ■ xml -- The preferred input format.
Data Filter Hook	A Java class name. This option enables you to customize a data feeder for additional logic, such as splitting a single column from a provider into two columns or filtering out content data before feeding the data to the content cache table.
Download Hook	A Java class name. This option enables you to customize a data feeder by generating a new URL to download data.
Null Value	A string used to mark non-applicable data, such as N/A. Different providers use different strings.
The Update Policy section includes the following parameters:	
Start Time	The time to start downloading data.
End Time	The time to stop downloading data.
Update Interval	The interval (in seconds) between downloads. Set this value to 0 if you want only one download interval per day.
Batch Size	The batch size for the download. If you set the size to one, Wireless downloads one parameter at a time; if you set the size to ten, Wireless downloads ten parameters at one time.

Parameter	Value
Update Days	The days designated for updating data.

Complete the Basic Info. screen as follows:

1. Enter the Name of the data feeder

2. Select from between the following types:

   ■ Regular (Select if you use the built in data retrieval framework.)

   ■ Pass-Through (Select if you use a push application to deliver data.) You must provide a Java class if you select this option.

3. Using the drop-down list, select one of the following protocol types:

   ■ http -- HTTP. The data feeder constructs the URL, performs the GET/POST on the remote Web site and authenticates if necessary

   ■ file -- Local File. The data feeder reads a file in the file system.

   ■ ftp -- FTP. The data feeder connects to the remote Web server, and then authenticates and downloads files. Requires a username and password.

   ■ sql -- SQL Database. The data feeder runs a SQL query against the specified data feed and reads the output.

   ■ app -- Local Application. The data feeder runs an application as a subprocess and then reads the **.stdout** file

4. From the drop-down list, select on of the following format types for the retrieved content:

   ■ delimited -- Parses delimited text. The default delimiter is the comma (,).

   ■ fixed -- Fixed Column Text. Parses text delimited by fixed column positions.

   ■ XML -- The preferred input format.

5. Enter a data filter. For example, enter a Java class name.

6. Enter a download hook. For example, enter a Java class name.

7. Enter a null value to represent inapplicable data. For example, enter n/a or N/A.

8. Using the drop-down menus, enter a start time for data update.

9. Using the drop-down menus, enter an end time for the data update.

10. Enter the number of seconds between downloads. Set this value to 0 If you want only one download interval per day.

11. Enter the batch size for the download. If you set the size to one, Wireless downloads one parameter at for each HTTP request; if you set the size to ten, Wireless downloads ten parameters for each HTTP request.

12. Select the day or days for the download.

13. Click Next. The Init Parameters screen appears, displaying init parameters for the protocol type you selected.

10.5.1.2 Step 2: Entering the Init Parameters for the Data Feeder

The Init Parameters screen displays the init parameters specific to the protocol and format type you selected in Section 10.5.1.1.

Table 10–13   Init Parameters for Data Feeder Protocols

Parameters	Description
The http protocol includes the following init parameters:	
HTTP URI	The full path for the HTTP address of the content source.
Username	The user name. Enter this value if you retrieve data from a protected site.
Password	The password. Enter this value if you retrieve data from a protected site.
HTTP Method	Select either the GET or POST methods.
The file protocol includes the following init parameters:	
File Path	A file path, such as c:\temp\file.txt
The FTP protocol includes the following init parameters:	
FTP URI	The path for the FTP request.
Username	The user name
Password	The password.
FTP Mode	Select either the Text or Binary mode.
The SQL protocol has the following init parameters:	
Connect String	The database connect string.

Parameters	Description
Query	The SQL query.

The File protocol has the following init parameters:

File Path	The file path of a content source.

10.5.1.3 Entering the Init Parameters for the HTTP Protocol

To enter the init parameters for a data feeder using the HTTP protocol and the XML format type:

1. Enter the HTTP URI of the content source.

2. Enter a user name.

3. Enter a password.

4. Select either the GET or POST HTTP methods.

5. If the feed ingests XML, then you must import an XSL stylesheet that converts the XML to standard feed XML format.

6. Click Next. The Input Parameters screen appears.

To Enter Init Parameters for a data feeder using the HTTP Protocol and the delimited format:

1. Enter the HTTP URI of the content source.

2. Enter a user name.

3. Enter a password.

4. Enter the delimiter for the format type. For example, enter a comma (,).

5. Enter a quote character for the format type you selected. For example, enter quotation marks (").

6. Click Next. The Input Parameters screen appears.

To Enter the Init Parameters for a data feeder using the HTTP protocol and the fixed column format:

1. Enter the HTTP URI of the content source.

2. Enter a user name.

3. Enter a password.

4. Select either the GET or POST HTTP methods.

5. Click Next. The Input Parameters screen appears.

10.5.1.4 Entering the Init Parameters for the File Protocol

To enter the init parameters for a data feeder using the file protocol and the XML format:

1. Enter the file path. For example, enter c:\temp\file.txt.

2. If the feed ingests XML, then you must import an XSL stylesheet that converts the XML to standard XML.

3. Click Next. The Input Parameters screen appears.

To enter the init parameters for a data feeder using the file protocol with the delimited format:

1. Enter the file path.

2. Enter the delimiter for the format type. For example, enter a comma (,).

3. Enter a quote character for the format type you selected. For example, enter quotation marks (").

4. Click Next. The Input Parameters screen appears.

To enter the init parameters for a data feeder using the file protocol and the fixed column format:

1. Enter the file path.

2. Click Next. The Input Parameters screen appears.

10.5.1.5 Entering the Init Parameters for the FTP Protocol

To enter the init parameters for a data feeder using the FTP protocol and the XML format:

1. Enter the FTP URI.

2. Enter the username.

3. Enter the password.

4. Select either the Text or Binary FTP mode.

5. If the feed ingests XML, then you must import an XSL stylesheet that converts the XML to standard XML.

6. Click Next. The Input Parameters screen appears.

To enter the init parameters for a data feeder using the FTP protocol and the delimited format:

1. Enter the FTP URI.

2. Enter the username.

3. Enter the password.

4. Select either the Text or Binary mode.

5. Enter the delimiter for the format type. For example, enter a comma (,).

6. Enter a quote character for the format type you selected. For example, enter quotation marks (").

7. Click Next. The Input Parameters screen appears.

To enter init parameters for a data feeder using the FTP protocol and the fixed column format:

1. Enter the FTP URI.

2. Enter the username.

3. Enter the password.

4. Select either the Text or Binary FTP mode.

5. Click Next. The Input Parameters screen appears.

10.5.1.6 Entering the Init Parameters for the SQL Protocol

To enter the init parameters for a data feeder using the SQL protocol and the XML format:

1. Enter the connect string.

2. Enter a SQL query.

3. If the feed ingests XML, then you must import an XSL stylesheet that converts the XML to standard XML.

4. Click Next. The Input Parameters screen appears.

To enter the init parameters for a data feeder using the SQL protocol and the delimited format:

1. Enter the connect string.

2. Enter a query.

3. Enter the delimiter for the format type. For example, enter a comma (,).

4. Enter a quote character for the format type you selected. For example, enter quotation marks (").

5. Click Next. The Input Parameters screen appears.

To enter the init parameters for a data feeder using the SQL protocol and the fixed column format:

1. Enter the connect string.

2. Enter a query.

3. Click Next. The Input Parameters screen appears.

10.5.1.7 Entering the Init Parameters for the Application Protocol

To enter the init parameters for a data feeder using the application protocol and the XML format:

1. Enter the command line.

2. If the feed ingests XML, then you must import an XSL stylesheet that converts the XML to standard XML.

3. Click Next. The Input Parameters screen appears.

To enter the init parameters for a data feeder using the application protocol and the delimited format:

1. Enter the command line.

2. Enter the delimiter for the format type. For example, enter a comma (,).

3. Enter a quote character for the format type you selected. For example, enter quotation marks (").

4. Click Next. The Input Parameters screen appears.

To enter init parameters for a data feeder using the application protocol with the fixed column format:

1. Enter the command line.

2. Click Next. The Input Parameters screen appears.

10.5.1.8 Step 3: Entering the Input Parameters for the Data Feeder

The Input Parameters enables you to enter the input parameters for the data feeder. The input parameters screen displays the input parameters specific to the format type you selected in Section 10.5.1.1.

The data feeder input parameters include the following:

Table 10–14 Data Feeder Input Parameters

Input Parameter	Description
Internal Name	The name used for this parameter internally for the column the caching table and also for setting conditions in the alert framework.
Data Type	A drop down list that includes the following:
	■ Number: For numeric input.
	■ TEXT_30: Text with a maximum of 30 characters.
	■ TEXT_80: Text with a maximum of 80 characters.
	■ TEXT_150: Text with a maximum of 150 characters.
	■ TEXT_800: Text with a maximum of 800 characters.
	■ TEXT_1200: Text with a maximum of 1200 characters.
External Name	A mapping to the external provider.
Column Number	The column number for a delimited value. This input parameter is specific to the delimited format.
Starting Position	The starting column for a value. This input parameter is specific to the fixed-column parameter.
Ending Position	The ending column for a value. This input parameter is specific to the fixed-column parameter.
Caption	A caption seen by end-users when they subscribe to alerts. For example, *Stock Symbol*.
Default Value	The default value for the parameter.

To enter the input parameters:

1. Click Add Another Row. A row appears.

2. Complete the row as follows:

   a. Enter the internal name.

    b. Enter the data type.

    c. Enter the external name.

    d. Enter the column number. This parameter is specific to the delimited format.

    e. Enter the starting position. This parameter is specific to the fixed-column format.

    f. Enter the ending position. This parameter is specific to the fixed-column format.

    g. Enter a caption.

    h. Enter a default value.

3. Click Next. The Output Parameters screen appears.

10.5.1.9 Step 4: Entering the Output Parameters for the Data Feeder

The Output Parameters screen enables you to enter the output parameters for the data feeder. The output parameters screen displays parameters specific to the format type you selected in Section 10.5.1.1.

The output parameters are the retrieved data from the content provider; you set alerts on the output parameters of a data feeder.

The data feeder output parameters include the following:

Table 10–15 Data Feeder Output Parameters

Output Parameter	Description
Internal Name	The name used for this parameter internally for the column in the caching table and also for setting conditions in the alert framework.
Data Type	A drop down list that includes the following:
	■ Number: For numeric input.
	■ TEXT_30: Text with a maximum of 30 characters.
	■ TEXT_80: Text with a maximum of 80 characters.
	■ TEXT_150: Text with a maximum of 150 characters.
	■ TEXT_800: Text with a maximum of 800 characters.
	■ TEXT_1200: Text with a maximum of 1200 characters.

Output Parameter	Description
External Name	A mapping to the external provider.
Column Number	The column number for a delimited value. This output parameter is specific to the delimited format.
Starting Position	The starting column for a value. This output parameter is specific to the fixed-column parameter.
Ending Position	The ending column for a value. This output parameter is specific to the fixed-column parameter.
Caption	The label that Wireless uses for the parameter. End users see this label when they subscribe to an alert service.

To enter the input parameters:

1. Click Add Another Row. A row appears.

2. Complete the row as follows:

   a. Enter the internal name.

   b. Select the data type.

   c. Enter the external name.

   d. Enter the column number. This parameter is specific to the delimited format.

   e. Enter the starting position. This parameter is specific to the fixed-column format.

   f. Enter the ending position. This parameter is specific to the fixed-column format.

   g. Enter a caption.

3. Click Finish to complete the data feeder. The Browse Data Feeder screen reappears, displaying the new data feeder.

10.5.2 Editing a Data Feeder

The Edit button in the Browse Data Feeder screen enables you to edit the basic configuration, init parameters, input parameters, and output parameters of a data feeder.

10.5.2.1 Editing the Basic Configuration of a Data Feeder

To edit the basic configuration of a data feeder:

1. From the Browse Data Feeders screen, select the data feeder that you wish to edit.

2. Click Edit.

3. The screen for editing the basic configuration of the data feeder appears, with its fields populated by the values set for the selected data feeder.

4. Edit the values as needed. See Section 10.5.1.1.for more information on the basic configuration parameters of a data feeder.

5. Click OK to save your changes. Clicking Cancel resets the basic configuration values back to their original state and returns you to the Browse Data Feeders screen.

10.5.2.2 Editing the Init Parameters of a Data Feeder

To edit the init parameters of a data feeder:

1. From the menu, select Init Parameters. The screen for editing init parameters appears, populated with the init parameters set for the selected data feeder.

2. Edit the init parameters as needed. See Section 10.5.1.2 for more information on the init parameters of a data feeder.

3. Click OK to save your changes. Clicking Cancel resets the values for the init parameters back to their original state and returns you to the Browse Data Feeders screen

10.5.2.3 Editing the Input Parameters of a Data Feeder

To edit the output parameters of a data feeder:

1. From the menu, select Input Parameters. The screen for editing the input parameters appears, populated with the values set for the selected data feeder.

2. Edit the values as needed. See Section 10.5.1.8 for more information on the input parameters of a data feeder.

3. Click OK to save your changes. Clicking Cancel sets the input parameters to their original state and returns you to the Browse Data Feeders screen.

10.5.2.4 Editing the Output Parameters of a Data Feeder

To edit the output parameters of a data feeder:

1. From the menu, select Output parameters. The screen for editing the output parameters appears, populated with the values set for the selected data feeder.

2. Edit the values as needed. See Section 10.5.1.9 for more information on the output parameters of a data feeder.

3. Click OK to save your changes. Clicking Cancel sets the output parameters back to their original state and returns you to the Browse Data Feeder screen.

10.6 Managing Logical Devices

A logical device is an object in the Wireless repository that represents either a physical device, such as a Nokia mobile phone, or an abstract device, such as email. Logical devices represent the interface between Wireless transformers and the target devices or applications.

Wireless determines the type of device that is requesting a service from the HTTP header. A device agent identifies the user's device address, such as an email address or telephone number and device type. This information enables Wireless to deliver notifications to the user.

You use the Logical Devices tab to create a logical device in the repository. When you click the Logical Device tab, the Browse Logical Devices screen appears, displaying a list of logical devices in the repository. Using the Browse Logical Device screen, you can search for, create, delete, and edit the user agents of a logical device.

Figure 10–15   The Browse Logical Devices Screen

10.6.1 Searching for a Logical Device

From the Browse screen, you can search for logical devices using the Keyword field. You can sort your search results by name, user agents, or transformers. .

To search for a logical device:

1.   Select, if needed, one of the following search result sorting options:

   ■   Name

   ■   Transformers

   ■   User Agents

2.   Enter the keyword for your search.

3.   Click Go. The Search Results screen appears. To return to the Browse screen, click OK.

Figure 10–16   The Search Results Screen (for Logical Devices)

10.6.2 Creating a Logical Device

You create a logical device using the logical device creation wizard. The logical device creation wizard guides you through each step of creating a logical device. When you complete a screen, you move to the next screen in the sequence by clicking the Next button. Clicking the Back button takes you to the preceding screen in the sequence, allowing you to perform edits.

10.6.2.1 Step 1: Entering the Basic Information for the Logical Device

1. From the Browse Logical Devices screen, click Create Logical Device. The Basic Info. screen appears displaying the following parameters:

Table 10–16   Parameters of the Logical Device Creation Wizard Basic Information Screen

Parameter	Value
Name	The name of the logical device.
Description	An optional description of the logical device
Encoding	The logical device's content encoding, which is used to transport the result of the device type.
Preferred MIME Type	The MIME-type of the logical device. At runtime, if Wireless cannot detect a user agent HTTP header, the Wireless fails over to another device in the database that has the same MIME type.

Parameter	Value
Device Class	A Drop-down list of device types. The menu includes the following: ■ VOICE ■ MICRO_BROWSER ■ PDA_BROWSER ■ PC_BROWSER ■ MICRO_MESSENGER ■ MESSENGER
Prolog	Specifies the format of the prolog required by the device. The prolog frequently includes processing instructions and meta tags.

2. Enter the name of the logical device into the Name field. This name must be unique. For example, enter Email.

3. Enter, if needed, a desciption of the device.

4. Enter the content encoding parameters for the logical device. For example, enter UTF-8.

5. Enter the MIME type in the MIME field. For example, enter text/html.

6. From the Device Class drop-down list, select the appropriate display size of the user's device.

7. Enter the prolog required by the device.

8. Click Next. The Transformers screen appears.

10.6.2.2 Step 2: Selecting the Appropriate Transformers

1. From the Transformer screen, select transformers appropriate to the MIME type of the logical device from Eligible Transformers to Selected Transformers using the Move functions (>>or >>). Use the Remove functions (<< or <<) to remove the transformers you do not wish to use from Selected Transformers.

2. Click Next.

10.6.2.3 Step 3: Adding User Agents

The User Agent screen enables you to assign a user agent to the logical device by selecting from a list of user agents, mechanisms that identify device type and address.

To add a user agent.

1. Enter the user agent name. For example, enter WIG Browser/1.1*

2. If needed, click Add Another Row to add another user agent.

3. Click Next. The Device Attributes screen appears, displaying the following parameters:

Table 10–17   Parameters of the Device Attributes Screen

Parameter	Value
Maximum Native Document Size	The maximum number of bytes that can be sent to the device. This is a guideline for caption lengths.
Display Properties	
Screen Width	Use this option to describe the width of the screen of the physical device in points.
Screen Height	Use this option to describe the height of the screen of the physical device in points.
Screen Columns	The screen size in characters. Use this option if you want to break text into pages.
Screen Rows	The screen size in characters. Use this option if you want to break text into pages.
Number of Softkeys	Allows users to map a hot link to a phone soft key.
Supports Cookie	
Color Capable	Select this check box to create a device that supports color.
Bits per Pixel	The number of bits of color or grayscale information per pixel.
Voice Capable	Select this check box to create a device that supports voice.
Image Capable	Select this check box for a device that supports images. Use the Move functions (> or >>) to select the preferred image formats from Available Formats. Use the Remove functions (< or <<) to remove the image formats you do not wish to use from Preferred Formats.

Parameter	Value
Video Capable	Select this check box for a device that supports video. Use the Move functions (> or >>) to select the preferred video formats from Available Formats. Use the Remove functions (< or <<) to remove the video formats you do not wish to use from Preferred Formats.
Streaming	Select this radio button for real-time video. You can only select this option if you have selected Video Capable.
Buffered	This option essentially acts as a time-delay, storing bits of incoming video data before playing them. Using this option ensures a smooth presentation, one in which users see all frames. You can only select this option if you have selected Video Capable.

10.6.2.4 Step 4: Setting the Device Attributes for the Logical Device

Complete the Device Attributes screen as follows:

1. Enter the Maximum Native Document Size.

2. Set the display properties as follows:

    a. Enter the points for the screen width.

    b. Enter the points for the screen height.

    c. Enter the number of screen columns.

    d. Enter the number of rows.

    e. Enter the number of softkeys that the end user can use to create short-cuts.

3. Select the Color Capable check box if the device supports color.

4. Enter the number of bits per pixel.

5. Select the Voice Capable check box if the device supports audio.

6. Select the Image Capable box if the device supports images.

7. Use the Move functions (> or >>) to select the preferred image formats from Available Formats. Use the Remove functions (< or <<) to remove the image formats you do not wish to use from Preferred Formats.

8. Select the Video Capable check box if the device supports video.

9. Select this check box for a device that supports video. Use the Move functions (>or >>) to select the preferred video formats from Available Formats. Use the

Remove functions (< or <<) to remove the video formats you do not wish to use from Preferred Formats.

10. Select the Streaming option for real-time video. You can only select this option if you have selected Video Capable.

11. Select the Buffered option for storing bits of incoming video data before playing them. Using this option ensures a smooth presentation, one in which users see all frames. You can only select this option if you have selected Video Capable.

12. Click Next. The User Agents screen appears.

10.6.2.5 Step 5: Creating the Login Page

The Login Page screen enables you to create the XSLT stylesheet that generates the login page on the device.

1. Provide a stylesheet using one of the following methods:

   a. Enter the XSLT stylesheet manually into the Login Page field.

   b. Copy the XSLT stylesheet from a text editor into the Login Page field.

   c. Import the XSLT stylesheet by clicking Import. In the Import screen, enter the name of the file in the Import File field and then click Import, or retrieve the file using the Browse function and the Upload window. After you select the file, Click Open. From the Import Screen, click Import.

2. Click Next. The Error Page screen appears.

10.6.2.6 Step 6: Creating the Error Page

The Error Page screen enables you to create an XSLT stylesheet that generates the error page for the device.

1. Provide a stylesheet using one of the following methods:

   a. Enter an XSLT stylesheet manually into the Login Page field.

   b. Copy an XSLT stylesheet from a text editor into the Login Page field.

   c. Import the XSLT stylesheet by clicking Import. In the Import screen, enter the name of the file in the Import File field and then click Import, or retrieve the file using the Browse function and the Upload window. After you select the file, Click Open. From the Import Screen, click Import.

2. Click Finish to complete the logical device.

10.6.3 Modifying a Logical Device

The Wireless Service Designer enables you to modify a logical device in the repository. To modify a logical device:

1. From the Browse Logical Device screen, select the logical device you wish to edit.

2. Click Edit. The Edit Logical Device screen appears. From the left menu, select the component of the logical device you wish to edit. For information on setting the values for the basic information of a logical device, see Section 10.6.2.1. See Section 10.6.2.2 for information on selecting transformers. See Section 10.6.2.4 for setting the device attributes. See Section 10.6.2.3 for selecting or adding user agents. For information on creating a login page, see Section 10.6.2.5. See Section 10.6.2.6 for information on creating the error page.

3. Click OK to commit your changes.

10.6.4 Deleting a Logical Device

To delete a logical device from the repository:

1. From the Browse Logical Device screen, select the logical device.

2. Click Delete.

10.7 Managing Preset Definitions

Preset definitions enable users to personalize services by entering their own input parameters to an application. When a user requests a service, a service loads the user-defined input parameters, (or presets). Typically, the service may list these presets for the user, who must select an item to execute the application.

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> **Note:** Preset definitions are accessible to all users in a user group.

Figure 10–17   The Browse Preset Definitions Screen
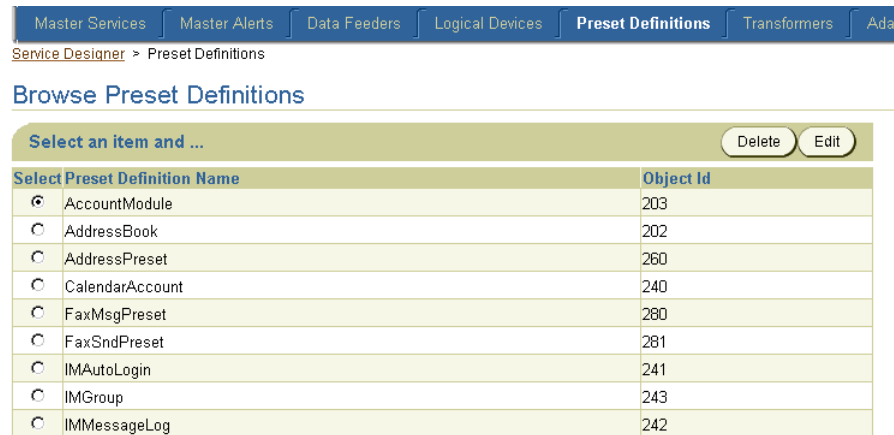
When selected, the Preset Definitions tab defaults to the Browse Preset Definitions Screen, which displays a list of the current preset definitions. From this screen, you can create, edit, and delete a preset definition.

The Browse Preset Definitions screen includes the following parameters.

Table 10–18   Parameters of the Browse Preset Definitions Screen

Parameter	Description
Preset Definition Name	The name of the Preset Definition.
Object ID	The Object ID stored in the database.

10.7.1 Creating a Preset Definition

The Service Designer enables you to create a preset definition, a template which enables users to add values to each pre-defined preset definition. When users invoke a service, they select a value from any of the preset definitions as an input parameter.

To create a new preset definition:

1. From the Browse Preset Definitions screen, click Create Preset Definition. The Create Preset Definition screen appears.

2. In the General section of the Create Preset Screen, enter a name for the preset definition in the Preset Definition Name field. This is a required field.

Note: The Preset Definition Name must be unique.

---

3. Click Finish. The Browse Preset Definitions screen reappears, displaying the new preset definition.

10.7.1.1 Adding Preset Attributes

Preset attributes enable you to define the relation of input parameters that an end user can enter and save on the Wireless server.

To add Preset Attributes to your preset definition:

1. In the Preset Attributes section of the Create Preset Definition screen, click Add Another Row. A blank row appears which includes the following parameters.

Table 10–19   Preset Description Parameters

Parameters	Value
Attribute Name	A Name for the preset attribute.
Description	An optional description of the preset attribute.
Value Format	For text, enter anything that meets the regular expression `org.apache.regexp.RE`. For example, enter `[:digit:]` for numeric values.
	For numbers, enter anything that meets the formats for `java.text.DecimalFormat`. For example, enter `#,##0.0` for currency.

Parameters	Value
Column Type	A drop down list that includes the following:
	■ Number: For numeric input.
	■ TEXT_30: Text with a maximum of 30 characters.
	■ TEXT_80: Text with a maximum of 80 characters.
	■ TEXT_150: Text with a maximum of 150 characters.
	■ TEXT_250: Text with a maximum of 250 characters.
	■ TEXT_500: Text with a maximum of 500 characters.
	■ TEXT_800: Text with a maximum of 800 characters.
	■ TEXT_1200: Text with a maximum of 1200 characters.
Input Field Type	Select from among the following preset types:
	■ Single Line -- Select for a single line entry, such as name.
	■ Multiline -- Select for a multiple line entry, such as a street address.
	■ Enum -- Select to assign conditions for an entry, such as show and hide.

2. Enter the name of the preset attribute.

3. Enter the value format.

4. Select a column type.

5. Select from among the following entry types:

   ■ SingleLine

   ■ MultiLine

   ■ Enum -- If you select this option, use must define the enumeration conditions. See Section 10.7.2.1. for information on enumeration options.

6. Click Finish. Clicking Cancel clears all values and returns you to the Browse Preset Definitions screen.

You can add several rows of preset attributes to define relationships, such as Name, Street Address, Phone Number.

Figure 10–18   The Create Preset Definition Screen

Create Preset Definition
Specify the attributes of the Preset Definition.

General
* Preset Definition Name   AccountModule

☑ Is system object

Preset Attributes
Define Preset Attributes.

| Select an item and ... | | | | | | Delete |

Select	Attribute Name	Description	Value Format	Data Type	Input Field Type	Enumeration Options
⊙	accdomain	Account Domain Name		TEXT_250 ▾	SingleLine ▾	

Add Another Row

10.7.2 Editing a Preset Definition

To edit a preset definition:

1. From the Browse Screen, select the preset definition that you wish to edit. Click Edit. The Edit Preset Definition screen appears.

2. Edit the preset definition as needed. See Section 10.7.1.1 for information on Preset Descriptors.

3. Click OK to commit your changes. The Browse Preset Definitions screen reappears.

10.7.2.1 Adding, Editing, and Deleting Preset Attribute Enumeration Options

You can edit, add, or delete a preset attribute enumeration option by using the Edit Preset Descriptor Enumeration Options screen.

To edit a preset descriptor enumeration option:

1. In the Preset Descriptors section of either the Create Preset Definitions screen or the Edit Preset Definitions screen, select Enum.

2. Click Edit. The Edit Preset Descriptor Enumeration Options screen appears.

3. In the Description Enumeration Options screen, perform the following operations as needed:

    ■   From the drop-down list, select the option you wish to edit or delete.

- Click add to add a new enumeration option.

4. Click Done. The Create Preset Definition screen or the Edit Preset Definition screen reappears.

10.7.3 Deleting a Preset Definition

To delete a preset definition:

1. From the Browse Preset Definitions screen, select the preset definition you wish to delete.

2. Click Delete.

10.8 Managing Transformers

You use the Browse Transformer screen of the Transformer tab to create, edit, and delete transformers in the repository.

Figure 10–19   The Browse Transformers Screen (Partial View)

Browse Transformers

Select an item and ...				Delete	Edit

Select	Name	Object Id	MIME Type	Simple Result DTD Version
⊙	ASYNC_JAVA	230	text/plain	1.0.0
○	CHTML	226	text/html	1.0.0
○	HDML	221	text/x-hdml	1.0.0

10.8.1 Creating a New Transformer

To create a new transformer:

1. From the Browse Transformer page, click Create Transformer. The Create Transformer screen appears and displays the following parameters:

Table 10–20   Transformer Parameters

Parameter	Value
Name	The transformer name. This must be a unique name.
MIME Type	The MIME type that the transformer supports.

Parameter	Value
SimpleResult DTD Version	The SimpleResult DTD version such as 1.0.0 (the default version).
Java Transformer	Specifies a Java class transformer implementation.
Class Name	The name of the class that implements the transformer.
XSL Transformer	Specifies an XSLT stylesheet transformer implementation.
XSL Stylesheet	The actual XSLT stylesheet that implements the transformer. You can cut and paste a transformer from another editing environment into this field.
Java Transformer	Specifies a Java class transformer implementation.
Java Class	The name of the class that implements the transformer.

2. Enter the name of the transformer in the Name field.

3. Select the MIME type that you want to use.

4. If you select an XSL transformer, you can do *one* of the following:

   a. Type the code for the XSL stylesheet in the field next to the Stylesheet parameter, then click Finish.

   b. Using a text editor, open an existing XSL stylesheet, copy and past the lines that you want to use and then click Finish.

   c. Click the Import button to import an existing XSL stylesheet. The Import Transformer XSL Stylesheet appears.

   Click Browse to find the XSL file that you want to use. Import the file by clicking Import. In the Import screen, enter the name of the file in the Import File field and then click Import, or retrieve the file using the Browse function and the Upload window. After you select the file, Click Open. From the Import Screen, click Import.

5. If you select Java Transformer, then enter the class name of the transformer, then click Finish.

Figure 10–20   The Create Transformer Screen

10.8.2 Editing a Transformer

To edit a transformer:

1.   From the Browse Transformer screen, select the transformer you wish to edit.

2.   Click Edit. The Edit Transformer Screen appears, displaying the values set for the selected Transformer. The Edit Transformer screen includes the following parameters:

3.   Edit the parameters as needed. See Section 10.8.1 for information on entering values and preparing style sheets.

4.   Click Done to commit your changes.

10.8.3 Deleting a Transformer

To delete a transformer:

1.   From the Browse Transformer screen, select the transformer you wish to delete.

2.   Click Delete.

10.9 Managing Adapters

Selecting the Adapters tab invokes the Browse Adapters screen. You use this screen to create, edit, delete adapters.

Figure 10–21   Partial View of the Browse Adapters Screen
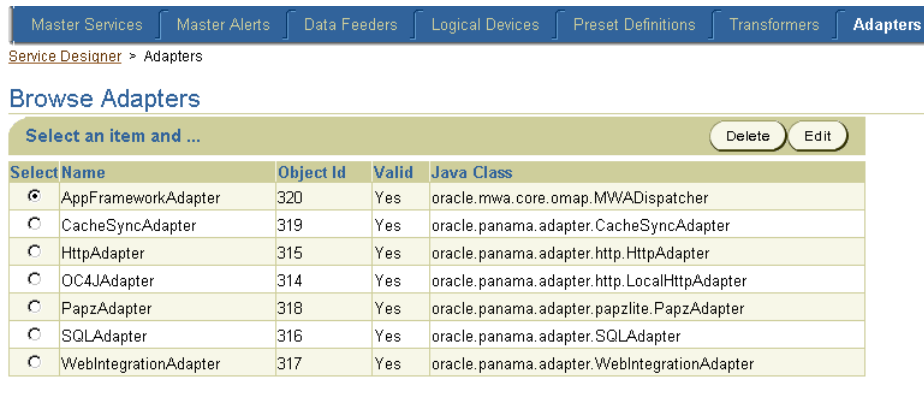
10.9.1 Creating an Adapter

To create an adapter:

1. From the Browse Adapters screen, click Create Adapter. The Create Adapter screen appears displaying the following parameters:

Table 10–21   Adapter Parameters

Parameter	Value
Name	The name of the adapter. The name should be unique.
Object ID	The OID of the adapter in the repository.
Valid	Specifies whether the adapter is available to services. If selected, the adapter is available to services. If an adapter is invalid, the adapter is unavailable, and all master services that use the adapter are invalid.
Java Class	The Java class that either implements the adapter or serves as the entry point for the classes that implement the adapter.

2. Enter a unique name for the adapter in the Name field.

3. Select the Valid check box to make the adapter available to services. Leaving the Valid check box clear makes the adapter unavailable and renders all services using it invalid.

4. Enter the name of the Java class, or click Import to browse and retrieve the archived class or classes that implement the adapter.

5. Click Create. The Browse Adapters screen reappears, displaying the new adapter. Clicking Cancel clears any values entered and returns you to the Browse Adapters screen.

10.9.2 Editing an Adapter

To edit an adapter:

1. From the Browse Adapters screen, select the adapter you wish to edit.

2. Click Edit. The Edit Adapters screen appears, displaying the values for the selected adapter.

   a. Edit the values for the selected adapter as needed. See Section 10.9.1 for information on the adapter parameters.

   b. Click Done to Commit your changes. The Browse Adapters screen reappears. Clicking Cancel clears any values entered and returns you to the Browse Adapters screen.

10.9.3 Deleting an Adapter

To delete an adapter:

1. From the Browse Adapters screen, select the adapter you want to delete.

2. Click Delete.

10.10 Setting Adapter Parameters

The following sections describe the uses and parameters of the Wireless adapters.

- Section 10.10.1, "Setting Init Parameters for Adapters"

- Section 10.10.2, "Setting the Input Parameters for Adapters"

10.10.1 Setting Init Parameters for Adapters

The Init Parameters screen of the Master Service Creation Wizard shows the initialization parameters for the selected adapter. These parameters vary depending on the adapter implementation. When Wireless first invokes the adapter, it passes the values you set in the Init Parameters screen to the adapter.

10.10.1.1 Setting Init Parameters for the SQL Adapter

The SQL adapter retrieves and adapts content from any JDBC-enabled data source for a master service based on the SQL adapter, the Init Parameters panel includes the following parameters:

Table 10–22   Init Parameters for the SQL Adapter

Parameter	Description
JDBC Connect String	The JDBC connect string for the database on which to query, as follows:
	jdbc:oracle:thin:@host_name:port:SID
	Note: Insert all colons (for example, `thin:@host`).
JDBC Driver	Java DriverClass name (for example, Oracle thin driver, `Oracle.jdbc.driver.oracle.driver`)
User Name	The name of the database user.
Password	The password of the database user
Type of Statement	The type of SQL statement used by the master service. Allowable values:
	QUERY: for a select statement. This type of statement returns a Simple Result document. You can use output filtering with QUERY statements. For information on filtering output, see the *Oracle9iAS Developer's Guide.*
	PLSQL: to use a PL/SQL procedure. This type of statement returns results to a database buffer.
	CALL: to run a stored procedure (SQL92 syntax only). This returns either a Simple Result or an Adapter Result element.

Parameter	Description
The Statement	The actual SQL statement that invokes the query, PL/SQL procedure, or stored procedure.
	Note: The SQL statement should be entered without a semicolon.
	You can use input variables in the SQL statement. You must indicate a variable in the statement by prefixing the variable with a colon. For example, you can specify an input variable in a PL/SQL statement as follows:
	`begin mypackage.foo(:expr); end;`
	Where `:expr` is the name of the variable. You must define the parameter manually in the input panel.
Minimum DB Connection Pool Size	The minimum number of database connections.
Maximum DB Connection Pool Size	The maximum number of database connections.
Increment Size for the Connection Pool	The increment by which the database connection pool increases.
Idle Timeout (In Minutes)	The time (in minutes) of inactivity that Wireless allows before automatically logging the user off the system.

10.10.1.2 Setting Init Parameters for the Web Integration Adapter

The Web Integration adapter retrieves and adapts Web content. The Web Integration adapter works with Web Interface Definition Language (WIDL) files to map source content to Wireless XML. Typically, the source format for the Web Integration adapter is HTML, but developers can also use the adapter to retrieve content in other formats, such as XML.

For a master service based on the Web Integration adapter, the Init Parameters panel appears as follows:

Table 10–23   Init Parameters of the Web Integration Adapter

Parameter	Value
WebIntegrationServer	The machine name and listening port of the Web Integration Server. If the Web Integration Server and the Wireless server reside on the same machine, use `localhost:`*port*.
	This field is required. The server you specify in this field must be running for the Service Designer to return the adapter parameters.
Interface	The WIDL interface name. This interface must be published to the Web Integration Server. You can publish the interface using the Web Integration Developer. You cannot currently use the WIDL_FILE parameter to identify a WIDL service.
WIDL_FILE	Do not enter a value for this parameter.

10.10.1.3 Setting Input Parameters for the Web Integration Adapter

The master service determines the parameters to display in the panel by querying the adapter. Every input parameter defined in the WIDL interface appears in the Inputs panel, including parameters for other WIDL services within the WIDL interface.

In addition to the custom input parameters that you create, Web Integration services provide these parameters:

- `OutputType`

- `PAsection`

- `InputEncoding`

The `OutputType` specifies the type of XML output that the adapter should return. You can specify `RawResult`, to return content in Adapter Result format, or `SimpleResult`, to return content in Simple Result format. If returning raw result format, you must create a result transformer that converts the result into Simple Result for the device transformer. The result transformer should have the same name as the value you use for the `PAsection` parameter; that is, it should have the same name as the WIDL service. You use `RawResult` for chained services.

`PAsection` is the name of the WIDL service that you want the master service to invoke. A WIDL interface can include more than one WIDL service. Wireless lists the WIDL service names in a selection list in the value field.

`InputEncoding` specifies the encoding used to encode the source document. The source document is the URL that was used to create the WIDL file for this service. The default value of this parameter is UTF-8. If the language of the source

document is an Asian language, you can change the default encoding to the appropriate multi-byte encoding according to the IANA standards for the particular Asian language that is used in the source document. The InputEncoding parameter enables you to specify or change the encoding. It is part of the multi-byte character support. The *Oracle9iAS Developer's Guide* provides more information about multi-byte character support.

10.10.2 Setting the Input Parameters for Adapters

The Input Parameters screen displays the input parameters for the adapter. The Content Developer Tool queries the adapter definition to determine the parameters that appear in this panel. The master service passes the input parameter values to the adapter's invoke method every time the adapter executes.

Some parameters rely on user input for values. The values for other parameters, such as name of the WIDL service in the WIDL interface (PAsection), are set by the master service or service. PAsection is an internal parameter, not exposed to the end user. In addition to PAsection, Wireless provides these input parameters:

Table 10–24   Input Parameters for a Master Service

Variable	Value
PAservicepath	The relative path to a Wireless service, /UsersFolders/joe/myChain, for example.
PAdebug	The debugging option. If true (set to 1), Wireless produces verbose output to the log files. In this case, in addition to notifications and warnings, Wireless writes the results of adapter invocations to the log file. This enables you to examine service content in its internal, XML format, which can help you to create result transformers and solve service and transformer problems.
PAsection	The WIDL adapter uses this value to identify the service that serves as the entry point in the chained service sequence.
PAuserid	The user name.
PApassword	The user password.
PAsid	The Wireless session identifier.

Wireless input parameters includes the following:

Table 10–25   Input Parameters Attributes

Parameter	Value
Name	The name of the input parameter. The Content Developer sets the name of the input parameter by querying the adapter definition.
Caption	The caption is the label that Wireless uses for the parameter when prompting for user input.
Comment	In the case of master services based on the Web Integration adapter, Wireless automatically populates this cell with the name of the WIDL service that uses the parameter.
	For services based on other adapters, you can use this column to document the parameter. The comment is only used internally.
User Customizable	Specifies whether the end user can set a value for this parameter using Wireless Customization. You can make most input parameters customizable by the user. In particular, you should set this option for parameters that may be difficult for a user to enter from a mobile device. This includes email addresses and personal identification numbers.
Format	This mask sets the expected data entry mode for the user device. For example, if you expect the user to enter numbers for the parameter, you use the format code N. This works only with WML 1.1-compliant devices.
	The default format is *M. Other formats include:
	■ A, for entry of uppercase letters or punctuation
	■ a, for entry of lowercase letters or punctuation
	■ N, for entry of numbers.
	■ X, for entry of uppercase letters.
	■ x, for entry of lowercase letters.
	For a complete list of formats, see the *Wireless Application Protocol Wireless Markup Language Specification, Version 1.1.*
Mandatory	Select this check box if this parameter must have a value. Remove the selection for optional parameters.

Parameter	Value
Default Value	For most parameters, this value represents the default value for the parameter. If you specify a default value, Wireless does not prompt the user for a value. Default values can be overridden by a value specified by a service created by the Content Manager or, if the parameter is visible to the user, by the user with the Wireless Customization.
	The PAsection parameter is used by the Web Integration adapter. For PAsection, this value is the name of the WIDL service that the Web service should use. You can select the names from a drop-down selection list. If you do not specify a value for PAsection, the Wireless service includes all WIDL services in the WIDL interface.

10.10.2.1 Adding a New Input Parameter to the Adapter

To add a new input parameter to the adapter.

1. From the Input Screen of the Master Service Creation Wizard, click Add Another Row.

2. In the blank row, enter a name for the input parameter in the Name field.

3. Enter a description for the input parameter in the Caption field.

4. Enter a description for the input parameter in the Comment field. This can be the same information as both the Name and Caption.

5. Enter the data entry mode for the user's device in the Format field. The default is *M.

6. Select the User Customizable check box to enable the end user to edit the input parameter.

7. Select the Mandatory check box if this input parameter requires a value.

8. Enter, if needed, a default value. If you do not enter a default value, then Wireless prompts the user for a value.

9. Click Next.

10.10.2.1.1 Setting Input Parameters for the AppsFramework Adapter The AppsFramework adapter allows for the development of enterprise applications on top of Wireless. It provides system-wide standard application look and feel, enhanced application widgets support and data binding to enterprise data.

The AppsFramework adapter includes the input parameter classname which must be the package and class of the implementation of the MobileApplicationHandler interface. Refer to the *Oracle9iAS Developer's Guide* , Section 12.5.6 MobileApplicationHandler Interface, for more information.

10.10.2.2 Modifying the Style/Color/SDU Information for the Mobile Application Framework Adapter

The Mobile Application Framework adapter uses style and color mappings to provide a uniform look and feel that can be customized across all applications running on the server. In addition, carrier specific information can be specified to the Mobile Application Framework adapter to optimize the content delivered by the adapter. The StyleColorLoader command-line utility is used to modify the style, color, and SDU size information used by the Mobile Applications Framework adapter.

10.10.2.2.1 Downloading the Style/Color/SDU Repository. 1.Change directory to ${ORACLE_HOME}/wireless/sample

2. Type updateStyleColor.bat -D <filename>, where <filename> is the target file the xml repository should be downloaded into. Note that on a UNIX system, you should use updateStyleColor.sh -D <filename>.

10.10.2.2.2 Uploading the Style/Color/SDU Repository. 1.Change directory to ${ORACLE_HOME}/wireless/sample

2. Type updateStyleColor.bat -U <filename>, where <filename> is the file containing the Style/Color/SDU information in the specified XML format that should be uploaded into the database. Note that on a UNIX system, you should use updateStyleColor.sh -U <filename>.

10.10.2.2.3 Modifying the Style/Color/SDU XML Repository File. 1.Download the file

2. To modify this file, open it in any text editor of your choice. The XML file contains 3 top-level elements: <StyleSet>, <ColorSet>, <SDUSize>. Follow the guide in Section 10.10.2.2.4 to modify these elements correctly. Then upload the file back into the repository

10.10.2.2.4 Defining a StyleSet The <StyleSet> elements help the renderers for a given logical device render application styles into markup language, as described above. For example when a developer wants to create a prompt style "Prompt" and bind the style to the text of the prompt, he/she will create a "Prompt" style in the style repository.

Each <StyleSet> element contains a number of <Style> elements. Each <Style> element contains a name, a font face, font size, font style and font color. The property names are described below.

Table 10–26   Style Element Properties

Property Name	Required	Multiple	Description
Name	Y	N	The name of the Style.
FontFace	Y	N	The name of the font face of the given style.
FontSize	Y	N	The font size of the given style.
FontColor	Y	N	the name of the font color of the given style.
FontStyle	Y	N	The name of the font style of the given style, in other words, Bold, Italc, Plain.

In addition to the <Style> element, the StyleSet contains the following elements.

Table 10–27   StyleSet Element Properties

Property Name	Required	Multiple	Description
Name	Y	N	The name of the StyleSet. If a StyleSet isn't associated with the logical device, the StyleSet with the name "Default" gets assigned to the device.
Inherits	Y	N	What StyleSet it inherits from. Often the administrator simply wants to change a single style between two logical devices. In this case he would define a single style set which has all of the style definitions for the first logical device, and then would inherit this first style set in the second style set and only overwrite the styles that are different between the StyleSets.
Style	Y	N	This element defines a style.
Device	Y	N	Describes the type of logical device this style set is associated with. The two types of logical devices supported are "Phone" and "PDA".

By modifying application style definitions in a given <StyleSet>, the system administrator can control how the given application style is rendered on the logical

device to which the style set is bound, across the whole system. For example, if the logical device PDA is bound to the StyleSet "Default", then if the system administrator changes the prompt style in the default StyleSet so that it is bold rather than simply plain, all prompts will appear bold rather than plain when rendered on client devices in the PDA Logical Device grouping.

10.10.2.2.5   Defining a ColorSet The <ColorSet> element helps the renderers for a given logical device render application colors into markup language. For a given logical device this application color is mapped to a color code, which can be modified by the system administrator to produce the optimal rendering. For example, if the logical device PDA is bound to the ColorSet "Default", then if the system administrator changes the background color in the default ColorSet so that it is grey rather than simply white, the background color for all applications on client devices in the PDA Logical Device grouping will be grey instead of white.

A <ColorSet> element consists of multiple <Color> elements. Each <ColorSet> has the following properties:

Table 10–28   ColorSet Elements Properties

Property Name	Required	Multiple	Description
Name	Y	N	The name of the ColorSet.
Inherits	Y	N	What ColorSet it inherits from. Often the administrator simply wants to change a single application color between two logical devices. In this case he would define a single color set which has all of the color definitions for the first logical device, and then would inherit this first color set in the second color set and only overwrite the colors that are different between the ColorSets.
Color	Y	Y	This element defines a color.
Device	Y	N	Describes the type of logical device this style set is associated with. The two types of logical devices supported are "Phone" and "PDA".

A <ColorSet> element consists of multiple <Color> elements, each <Color> element has the following properties

Table 10–29   ColorSet Color Element Properties

Property Name	Required	Multiple	Description
Name	Y	N	The name of the Style.
ColorDesc	Y	N	The 24 bit color code of the given color, for example White = #FFFFFF.

10.10.2.2.6   Defining SDUSize Information for a Device   The <SDUSize> element helps the renderers for a given logical device render an optimized amount of information on pages. For a given logical device, the SDUSize is the upper limit on the amount of information (in bytes) that the network can carry to this device.

A <SDUSize> element consists of two child elements. They have the following properties:

Table 10–30   SDUSize Element Properties

Property Name	Required	Multiple	Description
Name	Y	N	The name of the type of device. The two types of logical devices supported are "Phone" and "PDA".
Value	Y	N	The 24 bit color code of the given color, for example White = #FFFFFF.

Table 10–31   SDUSize Element Properties

Property Name	Required	Multiple	Description
Name	Y	N	The name of the type of device. The two types of logical devices supported are "Phone" and "PDA".
Value	Y	N	The 24 bit color code of the given color, for example White = #FFFFFF.

10.10.2.3 Setting Input Parameters for the SQL Adapter

You can configure SQL input parameters just as you can Web service parameters. You specify input parameters in the SQL statement you use to implement the service.

10.11 Managing Regions

When you click the Regions tab in the Service Designer, the main display of the region modeling tool appears.

Figure 10–22 The Main Display of the Region Modeling Tool

The region modeling tool lets administrators of a wireless portal service create custom regions that can be associated with location-based services. When you create a service, if you specify that it is location dependent, you specify a region: either an Oracle-supplied system-defined region or a custom region previously created with the region modeling tool.

A region is simply a geographic entity, or location. A region can be small (such as a street address) or large (such as a country). A region can be represented by a point, as is often done for addresses and locations of interest (such as airports and museums), or by a polygon, as is usually done for states and countries. For detailed information about using the region modeling tool, click the Help button on

modeling tool in the chapter on Location Services in the *Oracle9iAS Developer's Guide.*

11

Managing Content

The Content Manager enables you to create and organize repository objects. Each section of this document presents a different topic. These sections include:

11.1 Overview of the Content Manager

The Content Manager enables you to publish the master services and master alerts to user groups created by the Service Designer by implementing them as services and alerts. To help you build these repository objects, the Content Manager provides you with screens and wizards that guide you through each step of creating a folder, service, bookmark, or alert. In addition, the Content Manager enables you to distribute these repository objects to user groups, organizing them in a business context appropriate to each user group.

Using the Content Manger Tool, you can create, edit, and distribute the following objects:

Folders

Folders enable you to organize such objects as services and bookmarks. When you assign a folder to a user group, you make its subfolders, services and bookmarks within it accessible to users.

Services

A service inherits a master service or a moduable master service, enabling you to distribute service access to multiple users or groups. Services also enable you to specialize master services, as you can set default parameter values that override values initially set for the master service in the Service Designer. This function provides such benefits as enabling you to localize services. For example, in order for a master service to deliver restaurant information for an entire city, its adapter takes a single parameter (a location), and returns a list of restaurants throughout the city. While the master service can specify a broad location, such as the city, you can create services based on a specific parameter, such as a district within that city. You can then distribute the services, as appropriate, to user groups that you assemble based on the users' locations.

Modules

Modules are reusable services that can be invoked as a normal service, or by another service to return a result to that service. Wireless provides several modules that are ready for deployment, including those for such Personal Information Management (PIM) tools as calendar, address book, fax, and mail.

Bookmarks

A bookmark gives the user quick access to an external resource, typically a Web page that delivers content in a format supported by the target device. End users can set bookmarks to external URLs at the Wireless Customization. The bookmark appears as a menu selection in the device-based customization tool. Wireless does not process the content of the URL target. The format of the target content must be supported by the user's device.

Alerts and Topics

An alert is a notification service delivered to users based on the trigger conditions they set when subscribing to an alert service. An alert inherits a master alert. Content managers create alerts from master alerts constructed using the Service Designer. Content Managers organize alerts by topics, containers that group alerts.

11.2 Logging Into the Content Manager

Before using the Content Manager, you must first log into the Webtool as follows:

1. Access the login page through the following URL:

    http://hostname:7777/webtool/login.uix

> **Note:** 7777 is the default port number for Oracle9*i*AS Wireless.
> The port number range is 7777 to 7877. To ensure that you are
> using the correct port number, check the port number for
> Oracle9*i*AS Wireless stored in [Oracle home]/install/portlist.ini.
> For more information on port usage, see Oracle9*i* Application
> Server Installation Guide and the Oracle9*i* Application Server
> Administrator's Guide.

2. Enter your user name and then enter your password. If you are an
   administrator, enter *orcladmin* as your user name. (The password is set during
   installation, but can be changed with the User Manager.)

> **Note:** You must be granted either the Administrator or Organizer
> roles to access the Content Manager.

11.3 Managing Services

The Services tab of the Content Manager enables you to manage services, async
services, modules, bookmarks and folders.

Clicking the Services tab displays the Service Browse screen. When you first access
the service tab after logging into the tool the Service Browse screen displays the
folder and services at the root level.

Using this screen, you can search for folders, services, modules, bookmarks, and
async services. The screen also enables you to create a service based on an existing
master service, as well as add folders and bookmarks. In addition, you use the
Service Browse screen to delete, debug, move, and edit these objects.

Figure 11–1   The Service Browse Screen
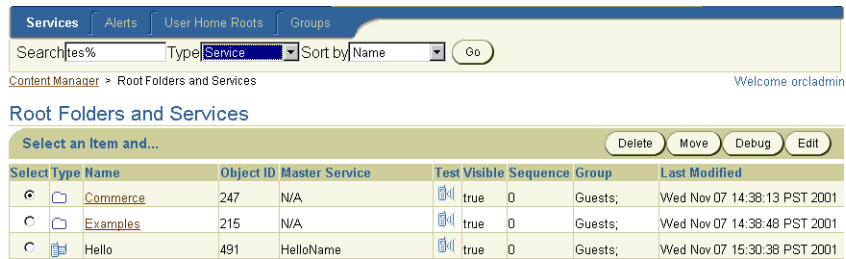
11.3.1 Searching for Repository Objects

The Service Browse screen's search function enables you to search for and display the following repository objects:

- Service
- Module
- Async Service
- Bookmark
- Folder

The search field, when used in conjunction with drop-down lists of search options, enables you to either narrow or broaden your searches. The results display as follows in the Search Result screen.

Table 11–1   Elements of the Search Result Section of the Services Screen

Element	Description
Name	The name of the folder or service. Clicking the name of a folder displays its subfolders.
Object ID	The Object ID stored in the database.
Full Path	The route to a repository object, with Services as the root. Each node on the route is displayed as a hyperlink. Clicking a hyperlink reveals a browse screen, showing the subfolders, services, and bookmarks organized under the folder. Using this browse screen, you can perform such functions as creating and deleting services, bookmarks, and folders.

Element	Description
Visible	If the column displays "true", the object is visible and therefore accessible to an end user. If "false", then the object is not visible.
Sequence	The order in which services and folders appear on output devices. By default, these appear in order by sequence number, then name. You can enter values in the sequence fields to rearrange the order in which the services and folder appear. By default, Wireless sorts services and folders in ascending order by sequence number, then by name.
Last Modified	The last time the folder or service was modified.

To find a repository object:

1. Enter the name of the object. Enter the full name of the object, or use a SQL `Like` clause pattern to return a partial match.

2. From the drop-down list box, select one of the following options to narrow or broaden your search:

   - Service

   - Module

   - Async Service

   - Bookmark

   - Folder

3. Select from among the following options to sort your search results by:

   - Name

   - Last Modified

4. Click Search. The Search Result screen appears, displaying the matches for your query.

Note: In the Search field, you can find an object by entering a SQL `LIKE` clause pattern matching test (* or %). For example, entering Per% in the Search field returns all objects beginning with 'per'.

Figure 11–2   The Search Result Screen of the Content Manager Tool

11.3.2 Creating a Folder

You can organize your repository objects into a hierarchy by creating subfolders. These subfolders, which can represent topic areas, can be nested into other subfolders. When you create a subfolder, the Content Manager displays it as a hyperlink in the screen, allowing you to "drill down" or traverse deeper into the hierarchy with each successive click. Wireless displays the structure of the hierarchy as a navigation path, enabling you to see the level you currently access and move to back to any parent folder in the hierarchy.

Figure 11–3   The Navigation Path

Creating a subfolder is a two-step process; you first define the basic parameters for a folder, such as its name, and then you assign the rendering options that dictate the display style for the folder and its contents.

11.3.2.1 Step 1: Defining the Basic Parameters for a Folder

1. From the Service Browse screen, click Add Folder. The General screen appears, displaying the basic parameters of the folder. These parameters include:

Table 11–2   Parameters of the Content Manager Create Folder Screen

Parameter	Value
Folder Name	The name of the folder. This is a required field.
Description	A description of the folder.

Parameter	Value
Sequence	The order in which services and folders appear on output devices. By default, these appear in order by sequence number, then name. You can enter values in the sequence fields to rearrange the order in which the services and folder appear. By default, Wireless sorts services and folders in ascending order by sequence number, then by name.
Language	A drop-down list of display languages for the folder. Any services or subfolders contained by this folder must have the same display language. Users will not be able to access these objects if their display language differs from that of the parent folder.
Renderer Type	A list of the renderer types for a folder. This is a required field. These include: ■ System: The default system object sorting styles. ■ Custom: The object display and sorting styles of another folder or service that dictates the display logic. ■ Inherited: The display style of an ancestor folder which has a custom renderer. If there is no ancestor folder or if the ancestor has a no custom rendering, then the default system sorting style is applied.
Title Icon URI	The URI of an image used as the icon that appears on top of the screen when this folder becomes the current folder. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.
Menu Icon URI	The URI of an image used as the icon that appears next to the folder in a menu listing. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.
Title Audio URI	The URI of the audio file (for example, a **.wav** file) read aloud by voice-reader software when users access a folder. You do not need to specify the format type in this URI, as Wireless selects the audio file format appropriate to the user's device.
Menu Audio URI	The URI of the audio file (for example, a **.wav** file) read aloud by voice-reader software along with a folder in a menu listing. You do not need to specify the format type in this URI, as Wireless selects the audio file format appropriate to the user's device.
Region Name	The area, such as a continent, country, or city, that is associated with the folder. If you assign a region to a folder, then users can only view that folder and its contents when they are in the assigned region.

Parameter	Value
Visible	Selecting this check box makes the folder visible to the end user. If you do not select this option, then the folder and it contents are neither visible nor accessible to the end user.
Personalizable	Selecting this option enables end users to customize their user views using the Wireless Customization or on the device by reordering, hiding, or showing this folder.

2. Complete the basic parameters as follows:

   a. Enter a name for the folder in the Name field. This is a required field.

   b. Enter a brief description of the folder in the Description field.

   c. Enter a sequence number for the folder.

   d. Select a display language for the folder. This is a required field.

   e. From the drop-down list, select a rendering type for the folder.

   f. Enter the URI of an image used as the icon that appears on top of the screen when this folder becomes the current folder.

   g. Enter the URI of an image used as the icon that appears next to the folder in a menu listing.

   h. Enter the URI of the audio file read aloud by voice-reader software when users access a folder.

   i. Enter the URI of the audio file read aloud by voice-reader software along with the folder name in the menu listing.

   j. Click the flashlight icon to search for and select a region for the folder.

   k. Select the Visible check box to make the subfolder visible on the end users' devices.

   l. Select the Personalizable check box to enable the end user to reorder, hide, or show this folder.

3. Click Continue. The Rendering screen appears.

Figure 11–4   The Create Folder Screen (General Parameters)

11.3.2.2 Step 2: Assigning the Rendering Options

The Rendering screen displays options specific to the rendering type you selected when setting the basic parameters for the folder.

Setting the System Default Rendering Options

To set the System Default rendering options:

1. Select a sorting option from the drop-down list. These options include ascending and descending sorting style for folders by:

    - ID

    - Name

    - Last Modified Date

    - Sequence Number

    - Access Count

    By default, folders appear by sequence number, then by name.

2. Click Finish.

Setting the Customized Rendering Options

To set the Custom rendering options:

1. From the Rendering screen, select a folder or service with the appropriate rendering style.

2. Click Finish.

Setting the Inherited Rendering Options

To set the Inherited rendering style:

1. Click Finish in the Rendering screen. If the folder is not a child of another folder (or if none of its ancestor folders have a customized renderer), then Wireless notes the inherited renderer as *N/A* until the folder is moved under a parent folder with a customized renderer.

2. Use the Move function to place the folder within a folder configured with the appropriate rendering style. See Section 11.3.12 for information on the Move option.

Figure 11–5   The Folder Rendering Screen
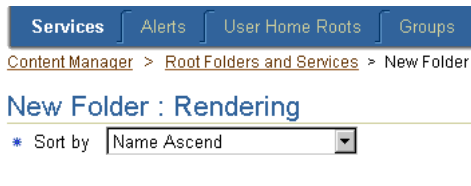
11.3.3 Editing A Folder

To edit a subfolder:

1. From the Service Browse screen, click the folder you wish to edit. The browse screen for the folder appears.

2. Click Edit. The Edit Folder screen appears displaying the values for the selected subfolder.

3. From the left menu, select the parameters you want to edit.

4. Edit the appropriate values and then click Apply to commit your changes. Clicking Cancel sets the parameters back to their original values and returns

you to the browse screen. See Section 11.3.2.1 for information on the basic folder parameters. See Section 11.3.2.2 for information on the folder rendering options.

11.3.4 Deleting a Folder

When you delete a folder, you also delete that folder's contents.

To delete a folder:

1. From the Service Browse screen, click the folder you wish to delete.

2. Click Delete.

> **Note:** You can also access functions to add, create, and delete folders by selecting a hyperlink in the Full Path column of the Search Result screen.

11.3.5 Creating a Service

The Content Manager enables you to create a service based on a master service using the Service Creation Wizard, which steps you through the creation of a service. To successfully create a service, you must complete all the required steps of the Service Creation Wizard. Clicking Cancel at any point in the sequence clears all the values you have entered.

To create a service,

1. From the Service Browse screen, click the Add Service button. The General screen of the Service Creation Wizard appears, displaying the following parameters:

Table 11–3   The General Parameters of the Service Creation Wizard

Parameter	Value
Service Name	The name of the service. This is a required field.
Description	A description of the service.

Parameter	Value
Sequence	The order in which services and services appear on output devices. By default, these appear in order by sequence number, then name. You can enter values in the sequence fields to rearrange the order in which the services appear and then set parent folder renderer type as System, and the parent folder sorting option as Sequence Number. By default, Wireless sorts services and services in ascending order by sequence number, then by name. See Section 11.3.2.2 for more information on setting the System folder rendering option.
Language	A drop-down list of display languages for the service. Users will not be able to access a services if their display language differs from that associated with this service.
Title Icon URI	The URI of an image used as the icon that appears on top of the screen when this service becomes the current service. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.
Menu Icon URI	The URI of an image used as the icon that appears next to the service in a menu listing. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.
Title Audio URI	The URI of the audio file (for example, a **.wav** file) read aloud by voice-reader software when users access a service. You do not need to specify the format type in this URI, as Wireless selects the audio file format appropriate to the user's device.
Menu Audio URI	The URI of the audio file (for example, a **.wav** file) read aloud by voice-reader software along with the service in a menu listing. You do not need to specify the format type in this URI, as Wireless selects the audio file format appropriate to the user's device.
Region Name	The area, such as a continent, country, or city, that is associated with the service. If you assign a region to a service, then users can only view that service and its contents when they are in the assigned region.
Visible	Selecting this check box makes the service visible to the end user. If you do not select this option, then then end users cannot see or access this service. You may want to set the services that are under construction as invisible to end users.
Personalizable	Selecting this option enables end users to customize their user views in the Wireless customization or on the device for reordering, hiding, or showing this service.

11.3.5.1 Step 1: Entering General Parameters for the Service

In the General screen, perform the following:

1. Enter the name of the service in the Service Name field. This is a required field.

2. Enter a description of the service that is meaningful to you in the Description field.

3. Enter the sequence number for the service's menu position within its parent folder on the user's device.

4. Enter the invocation cost to the user for accessing the service in the Cost field. If the service cost is not 0 (zero), then Wireless logs the service invocation in the **tx_panama.log** file.

5. Enter the URI of an image used as the icon that appears next to a service when this service becomes the current service.

6. Enter the URI of an image used as the icon that appears next to the service in a menu listing.

7. Enter the URI of the audio file read aloud by voice-reader software when users select the service from a menu.

8. Enter the URI of the audio file read aloud by voice-reader software along with the service in a menu listing.

9. Click the flashlight icon to search for and select a region for the service.

10. Click the Visible check box to make the service visible (and accessible) to the end user.

11. Click the Personlalizable check box if you want to make a service that users can customize.

12. Select Module if you want to create a service that can be deployed as module. Select Normal to create a service that is not a module.

13. Click Next. The Master Service screen appears. Clicking Cancel closes the Service Creation Wizard, clears all the values you have entered, and returns you to the Service Browse screen.

Figure 11–6   The New Service Screen of the Service Creation Wizard

11.3.5.2 Step 2: Basing the New Service on an Existing Master Service

You use the Master Service screen to select an existing master service or module service on which to base your service. In the Master Services screen, perform the following:

1. Select the master service or module on which you want to base your service. (Since the Master Service screen displays master services and folders at the root, you may have to expand folders to access the appropriate master services. You can also click on any link of the service path on top of the table to go back to any parent level.)

2. Click Next. The Input Parameters screen displays. If you wish to return to the General screen to change the data you entered, click the Back button.

Figure 11–7   The Master Service Screen of the Service Creation Wizard

11.3.5.2.1   Configuring the OMP URLs for Module Services

If you opted to create a modular service, you must enter the OMP URL address of the module service being called in the Master Service screen (Step 2 in the service creation sequence). All module services are identified by the OracleMobile protocol (OMP). You can also enter the URL for the configuration page of the module service.

11.3.5.3 Step 3: Entering New Input Parameters for the Service

You use the Input parameters to set the input parameters for your service. The input parameters for the service are those set for the master service on which you based your service. The Input parameters screen includes the following fields:

Table 11–4   The Input Parameters Screen of the Service Creation Wizard

Parameter	Value
Name	The name of the input parameter. The Service Creation Wizard sets the name of the input parameter by querying the Master Service definition. This field cannot be edited.
Caption	The caption is the label that Wireless uses for the parameter when prompting for user input.
Comment	For master services based on the Web Integration adapter, Wireless automatically populates this field with the name of the WIDL service that uses the parameter.
	For services based on other adapters, you can use this column to document the parameter. The comment is only used internally. This field cannot be edited.
Format	This mask sets the expected data entry mode for the user device. For example, if you expect the user to enter numbers for the parameter, you use the format code N. (This works only with WML 1.1-compliant devices.)
	The default format is *M. Other formats include:
	■ A, for entry of uppercase letters or punctuation.
	■ a, for entry of lowercase letters or punctuation.
	■ N, for entry of numbers.
	■ X, for entry of uppercase letters.
	■ x, for entry of lowercase letters.
	For a complete list of formats, see the *Wireless Application Protocol Wireless Markup Language Specification, Version 1.1*.
	This value cannot be edited.

Parameter	Value
Mandatory	If this check box has been selected, then the parameter must have a value. If the check box is clear, then parameters are optional. This field cannot be edited.
Customizable	Specifies whether the end user using the service can enter values from a mobile device. You can make most output parameters customizable by the user.
Value	The default value for the parameter set using the Service Designer. You can override these default values using the Content Manger. If you specify a default value, then Wireless does not prompt the user for a value.

1. Enter a new value, if needed, for the service in the Value field.

2. Click Next. The Async Agent screen appears.

Figure 11–8   The Input Parameters Screen of the Service Creation Wizard

11.3.5.4 Step 4: Assigning the Async Agent to the Service.

Perform the following if you selected a master service with Async Agent capability:

1. In the Short Name field, enter a short, easily referenced name for the service. This is a required field. End users use this name to invoke services through such means as email or SMS. Wireless checks to ensure that this name is unique.

2. Enter a text delimiter in the Delimiter field. This delimiter separates the input arguments that users enter when invoking async services using such means as email or SMS. The space (" ") is the default delimiter.

3. In the Help field, enter the command syntax or usage text. This text is returned to the user when the user issues an application help command to the Async Server.

4. In the Delivery Address List section, enter the service address to which users send the service invocation messages. Enter this address in the format appropriate to the following device types. For example, enter *stock@oraclemobile.com* as the service address for email. This is an optional parameter.

   - SMS

   - Email

5. In the Async Agent Argument List section, set the default value for each argument. Use the Move Up and Move Down to map the async agent arguments to the service input arguments.

6. Click Submit. The browse screen reappears, displaying the new service.

Figure 11–9   The Async Services Screen of the Service Creation Wizard

New Service

* Short Name	ST	
Delimiter		
Help Line	Get stock quote with the commar	

Server Address List

Delivery Type	Server Address
SMS	
Email	

Async Service Argument List

Select an Item and...   (Move Up) (Move Down)

Select	Argument Name	Value
⊙	CoSymbol	

11.3.6 Editing a Service

To edit a service:

1. From the Service Browse screen, select the service you wish to edit.

2. Click Edit. The Service Editing screen appears.

Figure 11–10   The Edit Services Screen
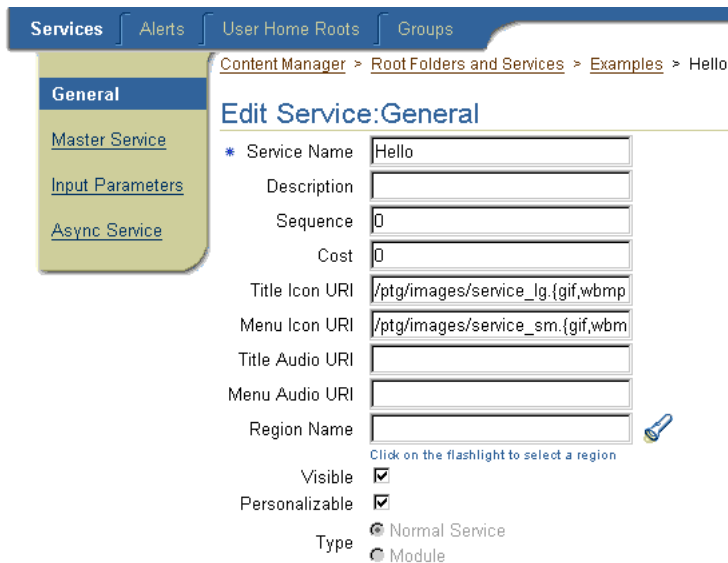
3. From the left menu, select the values that you wish to edit. For information on entering values for basic parameters of a service, see Section 11.3.5.1. For information on master services, see Section 11.3.5.2. See Section 11.3.5.3 for information on input parameters, and Section 11.3.5.4 for Async Services. See for information on configuring the

4. Click Apply to save your changes. Clicking cancel clears any changes and returns the values to their original state.

11.3.6.1 Configuring a Module Service

You can configure a module service by entering the URL of its configuration page in the Module Configure URL field of the Service Creation Wizard's Master Service screen (Step 2 in the service creation sequence). After you complete the creation of the service, you can access the configuration URL through the service editing screen.

To access a module service's configuration page:

1. Select the service.

2. Click Edit. The Service Editing screen appears.

3. From the left panel, select Master Service.

4. In the Master Service screen, click Configure. The configuration page appears.

11.3.6.2 Deleting a Service

To delete a service:

1. From the browse screen, select the service you wish to delete.

2. Click Delete.

> **Note:** You can access the functions for creating, editing, and deleting services by selecting a hyperlink in the Full Path column of the Search Result screen.

11.3.7 Testing a Service

The Content Manager enables you to test a service and display it on a phone simulator.

To test a service:

1. From the Service Browse screen, select the service you wish to test.

2. Click the telephone icon in the Run Services column that is located in the same row as the selected service. The phone simulator appears, displaying the service.

> **Note:** To test or debug an OC4J adapter service, you must copy the **.jsp** into the web-application/modules directory. For example, if the input parameter URL is *apps/myservice.jsp*, then **myservice.jsp** must be copied to
> .../wireless/j2ee/applications/webtool/webtool-web/modules/apps/

11.3.8 Debugging Services

The Content Manager enables you to simultaneously view a service on a phone simulator and in Wireless XML or device markup languages.

Transformers, in the form of XSLT stylesheets or Java classes, convert the content returned by Wireless adapters into the format best suited to a particular platform.

To test a service:

1. On the Browse Service screen, select a service.

2. Click Debug. The Debug Service screen appears.

3. Select from among the following output formats:

    ■ Adapter XML Result

      Selecting this result type enables you to see Wireless source content in the AdapterResult format, the intermediary format between the source and the target output device. Source content in the AdapterResult format must be converted into SimpleResult format before it can be delivered to a target device. If no text displays in the The Result panel, then no AdapterResult has been produced.

    ■ Wireless XML Result

      Selecting Wireless XML Result displays the source content in Wireless' SimpleResult format of the output that is returned by an adapter.

    ■ Device Result

      The DeviceTransformer drop-down menu lists the logical devices in the repository. Selecting a logical device enables you to see the final markup language for that device.

4. Click Set Parameters.

5. Click Run Service. The service appears on a phone simulator. The selected result appears in the Service Result window.

Setting the Display Length of the Logging File

The System Log section enables you to set the number of lines from the end of the server's system log file that you want to see.

To set the number of lines from the server: displays from the end of the system log.

1. Enter the number of lines from the end of the system log that you want to review:

2. Click Refresh Log. The specified number of lines from the end of the system log appear.

11.3.9   Creating User Bookmarks

Using the Content Manager, you can create a bookmark, a link which gives users quick access to a URL.

To create a bookmark:

1. The Service Browse screen, click Create Bookmark. The New Bookmark screen appears displaying the following parameters:

Table 11–5   The Bookmark Parameters

Parameter	Value
Service Name	The name of the bookmark. This is a required field.
Description	A description of the bookmark.
Sequence	The order, as specified by an integer, in which the bookmarks appear on output devices. By default, these appear in order by sequence number, then name.
URL	The URL for the bookmark. This is a required field.
Cost	The cost to the user for accessing the bookmark.
Language	A drop-down list of display languages for the bookmark. Users will not be able to access this bookmark if their display language differs from that associated with this bookmark.
MIME Type	The MIME type, such as text/html.
Region Name	The area, such as a continent, country, or city, that is associated with the bookmark. If you assign a region to a bookmark, then users can only view that bookmark and its contents when they are in the assigned region.
Visible	Selecting this check box makes the bookmark visible to the end user. Leaving this check box clear prevents end users from seeing or accessing the bookmark.
Personalizable	Selecting this option enables end users to customize their user views in the Wireless Customization or on the device by reordering or hiding and showing bookmarks.

2. In the New Bookmark screen, enter the name of the bookmark in the Bookmark Name field. This is a required field.

3. Enter a description of the bookmark which is meaningful to end users in the Description field.

4. Enter an integer to assign the bookmark's ranking in a display listing.

5. Enter the URL for the bookmark. This is a required field.

6. Enter the cost to the end users for bookmark access in the Cost field.

7. From the drop-down list, select a display language.

8. Enter the MIME type.

9. Click the flashlight icon to select a region for the bookmark.

10. Click the Personlalizable check box if you want to make a service that users can customize.

11. Click Finish to complete the bookmark. The browse screen reappears displaying the new bookmark. If you do not wish to complete the bookmark, click Cancel.

11.3.10 Editing a Bookmark

The Content Manager enables you to edit an existing bookmark. To edit a bookmark:

1. In the Service Browse screen, select the bookmark you wish to edit.

2. Click the Edit button. The Edit Bookmark screen appears.

3. Edit the desired fields. For information on entering information, see Section 11.3.9.

4. Click Finish to commit your changes. The browse screen reappears displaying the edited bookmark in the list of services. If you do not wish to continue editing a bookmark, click Cancel.

11.3.11 Deleting a Bookmark

To delete a bookmark:

1. From the Service Browse screen, select the bookmark you wish to delete.

2. Click Delete.

> **Note:** You can access the functions to create, edit, and delete a bookmark by selecting a hyperlink in the Full Path column of the Search Result screen.

11.3.12 Moving Folders, Services, and Bookmarks

You can organize services, folders, and bookmarks in a business context appropriate to a user group by using the Content Manager's Move function.

To move services, folders, or bookmarks:

1. From the Service Browse screen, select the folder, service, or bookmark you want to move.

2. Click Move.

3. Select the new folder for the object. If necessary, click the folder to drill down to the appropriate subfolder. Wireless tracks your position in the hierarchy through the navigation path. For more information on the navigation path, see Section 11.3.2.

4. Click Move Here. The Content Manager displays the selected object in its new folder.

11.4 Creating User Home Root Folders

The User Home Root tab enables you to group user home folders by user community or by provider. Users are assigned to these home roots in the User Manager. When a user is assigned to a user home root folder, that user's home folder becomes the child of the user home root folder by being placed within it. In addition, user home folders inherit the folder rendering style of their user home root folder.

Selecting the User Home Roots tab displays the current root folders by name, description, object ID in the database, and by the date the folder was last modified. From this screen you can create, edit, and delete user home root folders.

To create a user home root folder:

11.4.1 Step 1: Setting the Basic Parameters

1. From the User Home Roots screen, click Create. The General screen appears, displaying the following parameters:

Table 11–6   Parameters of the Content Manager Create Folder Screen

Parameter	Value
User Home Root Name	The name of the user home root folder. This is a required field.
Description	A description of the folder.
Renderer Type	A list of the renderer types for a folder. This is a required field. These include:
	■ System: The default system object sorting styles.
	■ Custom: The object display and sorting styles of another folder or service that dictates the display logic.
	■ Inherited: The display style of an ancestor folder which has a custom renderer. If there is no ancestor folder or if the ancestor has a no custom rendering, then the default system sorting style is applied.
Title Icon URI	The URI of an image used as the icon that appears on top of the screen when this folder becomes the current folder. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.
Menu Icon URI	The URI of an image used as the icon that appears next to the folder in a menu listing. You do not need to specify the format type in this URI, as Wireless selects the image format appropriate to the user's device.
Title Audio URI	The URI of the audio file (for example, a **.wav** file) read aloud by voice-reader software when users access a service. You do not need to specify the format type in this URI, as Wireless selects the audio file format appropriate to the user's device.
Menu Audio URI	The URI of the audio file (for example, a **.wav** file) read aloud by voice-reader software along with the service in a menu listing. You do not need to specify the format type in this URI, as Wireless selects the audio file format appropriate to the user's device.

2. Enter the User Home Root Name the Create New User Home Root section. This is a required field.

3. Enter a description.

4. From the drop-down list, select a rendering type for the folder.

5. Enter the URI of an image used as the icon that appears on top of the screen when this folder becomes the current folder.

6. Enter the URI of an image used as the icon that appears next to the folder in a menu listing.

7. Enter the URI of the audio file read aloud by voice-reader software when users access a folder.

8. Enter the URI of the audio file read aloud by voice-reader software along with the folder name in the menu listing.

9. Click Continue. The Rendering screen appears.

11.4.2 Step 2: Assigning the Rendering Options

The Rendering screen displays options specific to the rendering type you selected when setting the basic parameters for the folder. Because user home folders are the children of the user home root folders, each user home folder inherits the rendering style of its parent, the user home root folder.

Setting the System Default Rendering Options

To set the System Default rendering options:

1. Select a sorting option from the drop-down list. These options include ascending and descending sorting style for folders by:

   - ID
   - Name
   - Last Modified Date
   - Sequence Number
   - Access Count

   By default, folders appear by sequence number, then by name.

2. Click Finish.

Setting the Customized Rendering Options

To set the Custom rendering options:

1. From the Rendering screen, select a folder or service with the appropriate rendering style.

2. Click Finish.

Setting the Inherited Rendering Options

To set the Inherited rendering style:

Click Finish in the Rendering screen. The inherited rendering for a user home root folder is the system default rendering.

11.4.3 Editing a User Home Root Folder

To edit a user home root:

1. From the User Home Root screen, select a user home root folder.

2. Click Edit. The Edit Folder screen appears displaying the values for the selected subfolder.

3. From the left menu, select the parameters you want to edit.

4. Edit the appropriate values and then click Apply to commit your changes. Clicking Cancel sets the parameters back to their original values and returns you to the browse screen. For information on the basic values of a user home root folder, see Section 11.4.1. For information on the rendering options, see Section 11.4.2.

11.4.4 Deleting a User Home Root Folder

To delete a user home root:

1. From the User Home Root screen, select a user home root.

2. Select a user home root.

3. Click Delete.

11.5 Managing Alerts

Selecting the Alerts tab of the Content Manager displays the topics and alerts browsing screen. This screen enables you to search for, create, edit, move, delete,

and share alerts, services that notify users of important information or events. In addition you can add topics, which group topics and alerts.

11.5.1 Searching for Topics and Alerts

Using the topics and alerts browsing screen, you can search for a topic or an alert using a search field in conjunction with drop-down lists of search options, which enable you to either narrow or broaden your searches. The search results appear as a list on the Root Topics and Services screen.

Figure 11–11   The Topics and Alerts Browsing Screen

The topics and alerts browsing screen displays search results as follows:

Table 11–7   Elements of the Topics and Alerts Browsing Screen

Element	Description
Type	The object type. The object can be an alert, or a topic.
Name	The name of an alert or topic. Topics appears as hyperlinks; clicking a topic displays alerts and subtopics.
Object ID	The Object ID stored in the database.
Master Alert	The master alert, created by the Service Designer, on which this alert is based.
Last Modified	The last time the topic or the alert were modified.

To find a topic or an alert:

1. Perform one or more of the following:

   a. Enter the name of the alert or topic.

   b. From the drop-down list box, select the type of object:

   ■ Alert

   ■ Topic

2. Select from among the following options for to sorting options for your search results:

   ■ Name (Sorts search results by name.)

   ■ Last Modified (Sorts search results by the last time the alert, or the topic, was modified.)

3. Click Search. The Search Result screen appears.

Figure 11–12   The Search Result Screen
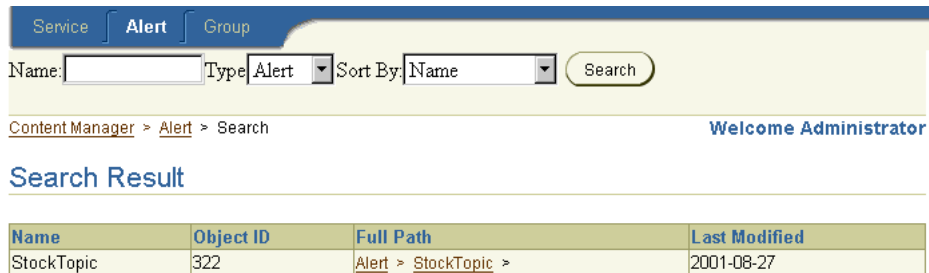
The Search Result screen includes the following columns.

Table 11–8   Elements of the Search Result Screen

Element	Description
Name	The name of the alert or topic.
Object ID	The Object ID stored in the database.

Element	Description
Full Path	The route to a alert or topic. Each topic on the route is displayed as a hyperlink. Clicking a hyperlink reveals a browse screen showing the alerts organized under the topic. You use this browse screen for such functions as creating and deleting alerts and alert topics.
Last Modified	The time the alert or topic was created, or the last time the alert or topic was edited.

11.5.2 Creating an Alert

To create an Alert:

11.5.2.1 Step 1: Entering General Alert Information

1. From the topics and alerts browsing screen, click the Add Alert button. The General screen of the Create Alert wizard appears. The screen includes the following fields:

Table 11–9 Fields of the General Screen of the Create Alert Wizard

Field	Description
Alert Name	The name of the alert.
Description	A description of the alert.

2. Enter the name of the Alert in the Name field.

3. Enter a description of the alert in the description field.

4. Click Next. The Master Alert screen of the Alert Creation Wizard appears, where you create an alert based on a master alert created by a service designer.

11.5.2.2 Step 2: Basing the Alert on an Existing Master Alert

In the Master Alert screen of the Alert Creation Wizard, you select a master alert as the base object for your alert. To select a master alert:

1. Use the radio buttons to select the master alert.

2. Click Next. The Input Parameter screen appears.

11.5.2.3 Step 3: Entering Alert Input Parameters

The Input Parameters screen displays the input parameters for the master alert selected in Step 2.

The screen contains the following master alert input parameters:

Table 11–10   The Master Alert Input Parameters

Input Parameter	Description
Name	The name of the alert. This field cannot be edited.
Caption	The caption is the label that Wireless uses for the parameter when prompting input from users while they subscribe to alerts.
Data Type	The table column data type format for the input parameter. For each master alert, the system generates a table in the database. The system generates a column within this table for each input or output parameter. The data type of an input or output parameter is used as the column data type when the system generates the table in the database. This field cannot be edited.
Value	For most parameters, this value represents the default value for the parameter set using the Service Designer. If you specify a default value using the Content Manager, then this new default value replaces the default value set in the master alert by the service designer. If a default value exists, then a user does not have to enter any information in this field when subscribing to an alert.

If needed, complete the Input Screen as follows:

1. Enter the caption for the alert in the Caption field.

2. Enter the default value for the parameter in the Value field. Leaving this field blank instructs Wireless to prompt the user to enter a value.

3. Click Next. The Trigger Condition screen appears displaying the conditions set to trigger the alert as specified in the selected master alert.

11.5.2.4 Step 4: Setting the Trigger Conditions for the Alert

You use the Trigger Condition screen to enable the end user to set the conditions that invoke an alert on the Wireless Customization. For example, if you create an alert notifying users of a stock price, you can set the alert conditions that allow an

end user to request a notification when the stock has risen above, or fallen below a certain price. The Trigger Condition contains the following fields:

Table 11–11   Parameters of the Trigger Condition Screen

Field	Description
Name	The name of the alert trigger for the master alert. This field cannot be edited.
Caption	The caption is the label that Wireless uses for the parameter when prompting user input.
Comment	For master alerts, you can use this column to document the parameter. The comment is only used internally. This field cannot be edited.
Trigger Parameter	The output parameter for the alert trigger.
Condition Type	The condition, in relation to the value set by you or the end user, which triggers the alert. This field cannot be edited.
Value	The default value for the parameter set using the Service Designer. You can override this value using the Content Manager. If you specify a default value, then the user does not have to enter any information for this trigger value when subscribing to an alert.

To set the trigger conditions for an alert:

1. Enter a caption describing the trigger in the Caption field.

2. Enter a value that relates to the predetermined condition type in the Value field.

3. Click Submit to complete the alert. Click Back to return to edit data entered in Steps 1 - 4. Clicking Cancel at any point terminates the wizard and clears all entries.

11.5.3 Editing an Alert

The Content Manager enables you to edit an alert.

To edit an alert:

1. In the Topic-Alert browsing screen, locate the topic containing the alert you wish to edit.

2. Select the alert.

3. Click Edit. The Edit Alert screen appears.

4. From the left menu, select from among the following alert components that you wish to edit.

5. Edit the alert as needed. See Section 11.5.2.1 for information on entering the basic information for an Alert. See Section 11.5.2.2 for selecting a master alert. For information on the input parameters, see Section 11.5.2.3. See Section 11.5.2.4 for information on trigger conditions for an alert.

6. Click Apply to commit your changes.

11.5.4 Deleting Topics and Alerts

To delete a topic or an alert:

1. From the Topic-Alert browsing screen, select the topic or alert.

2. Click Delete.

11.5.5 Moving Alerts

The Content Manager enables you to move alerts and topics, allowing you to organize the wireless portal in a business context.

To move alerts:

1. From the Top-Alert browsing screen, select the alert you wish to move.

2. In the Move Alerts screen, drill down to a destination topic for the alert.

3. Click Move Here.

4. The Alert-Topic browse screen reappears, showing the new destination topic as the current context topic. The alert displays in the table. Clicking the destination topic reveals the alert in its new location. Clicking Cancel while you are in the Move Alerts screen terminates the operation and returns you to the Topic-Alert browsing screen.

11.5.6 Creating a Topic

You can further organize your alerts by creating Topics.

To create a subtopic:

1. From the Topic-Alert browsing screen, click Add Subtopic. The New Subtopic screen appears.

2. Enter a topic name.

3. Select the Visible to make the subtopic visible (and accessible) to the end user.

4. Click Add.

11.5.7 Editing a Topic

To edit a Topic:

1. From the Topic-Alert browsing screen, select a subtopic.

2. Click Edit. The Edit Subtopic screen appears.

3. Edit the subtopic as needed. See Section 11.5.6 for information on subtopic parameters.

4. Click Apply.

11.5.8 Assigning Folders, Services, Bookmarks, and Alerts to User Groups

The Group tab enables you to assign folders, services, and bookmarks to user groups.

To make an object available to a group:

1. From the Groups screen, select the group to which you want to assign the object.

2. Click Assign Services. The Service Content screen appears.

3. From the Available Services section, select the objects that you want to assign.

4. Click Add To Group.

11.5.9 Removing Folders, Services, and Bookmarks from User Groups

The Content Manager enables you to remove services and folders from user groups.

To remove an object from a user group:

1. From the Group Accessible Service section of the Service Content screen, select the object that you want to remove.

2. Click Remove From Group.

11.5.10 Assigning Alerts and Topics to a User Group

The Group tab enables you to assign alerts and topics to user groups, making them available to several users.

To make an alert or topic available to a group:

1. From the Groups screen, select the group to which you want to assign the object.

2. Click Assign Alerts.

3.   From the Available Alerts section, select the objects that you want to assign.

4. Click AddToGroup.

11.5.11 Removing Alerts and Topics from User Groups

The Content Manager enables you to remove alerts and topics from user groups.

To remove an alert or topic from a user group:

1. From the Group Accessible Alerts section, select the object that you want to remove.

2. Click RemoveFromGroup.

12

Managing Users

This document describes how you can create and modify Oracle9*i*AS Wireless users and user groups using the User Manager. Each section of this document presents a different topic. These sections include:

12.1 Overview of the User Manager

The User Manager is accessible to users granted the Administrator or Helpdesk roles. This tool enables you to perform such Helpdesk functions as creating and modifying users and groups and assigning services to users and groups.

User groups help you manage service access for multiple users. You can create user groups based on such considerations as subscription level, geographic location, or interests. Each user object represents a Oracle9*i*AS Wireless end user.

The name for the user object must be unique within Wireless. Users have an external identifier attribute. Using this ID, Wireless associates the user with an external provisioning system account. The value of the external ID, for example, may be a telephone number or user account number with an ID to an external repository.

12.1.1 Assigning User Roles

Wireless users can be assigned the following roles:

Table 12–1   Wireless User Roles

User Role	Description	Available Tools
Designers	Users assigned the Designer role perform the following functions: ■ Create, modify, and delete and test master services and adapters. ■ Create, modify, delete, and test data feeders and master alerts. ■ Create, modify, and delete transformers for logical devices. ■ Develop location-based services. ■ Develop preset definitions.	Service Designer
Organizers	Users assigned the Organizer role perform the following functions: ■ Manage service folders. ■ Create services based on master services. ■ Create alerts based on master alerts. ■ Deploy applications to users and user groups. ■ Assign regions to location-based services.	Content Manager
System	Users assigned the System role manage the system using the System Management Tool.	Wireless system management functions (through the OEM console)
Helpdesk	Users assigned the Help Desk role perform the following functions: ■ Manage users and groups. ■ Check user profiles and services. ■ Create new groups and users. ■ Manage user access privileges. ■ Assign different roles to a user. ■ View the services, alert, and async logs.	User Manager

User Role	Description	Available Tools
End User	Users assigned the end user role are the consumers of Wireless services. End-users create their own accounts when they register with Wireless using the Wireless Customization. End users can also customize their own services either from a desktop or from a device. Customization for end-users includes: ■ Subscribe to alerts. ■ Create presets. ■ Manage user profiles. Every Wireless user is granted the Mobile Customer Role by default. This role is implicit to all users.	Wireless Customization

Wireless also allows anonymous users, those who do not register with Wireless but would like to try out the services as a guest. You can create an anonymous user account for each group. All unregistered users share the guest account to invoke services owned by the group. A guest user cannot personalize services.

12.1.1.1 Enabling Users to Access the Wireless Webtools

You must assign roles to users with the User Manager rather than with other general-purpose user management tools, such as DAS. Users created using DAS or other OID tools are provisioned in Wireless only when the created user accesses the Wireless portal, device portal, or any of the PC-based tools for the first time. These provisioned users do not have the assigned roles needed to access the Wireless webtools. For example, a user must have the *Designer* role to access the Service Designer. If a user with no assigned roles tries to log into a Wireless webtool, then Wireless displays the following Single Sign-On error:

Your session has timed out. Please log on again.

The user can successfully log into the Wireless webtool (or other components) only after you assign the user a role. See Section 12.3.4 for information on creating a user and assigning user roles.

12.2 Logging into the User Manager

Before using the User Manager, you must first log in as follows:

1. Access the login page through the following URL:

    http://hostname:7777/webtool/login.uix

    Note: 7777 is the default port number for Oracle9*i*AS Wireless.
    The port number range is 7777 to 7877. To ensure that you are
    using the correct port number, check the port number for
    Oracle9*i*AS Wireless stored in [Oracle home]/install/portlist.ini.
    For more information on port usage, see Oracle9*i* Application
    Server Installation Guide and the Oracle9*i* Application Server
    Administrator's Guide.

    ---

2. Enter your user name and then enter your password. If you are an
    administrator, enter *orcladmin* as your user name. (The password is set during
    installation, but can be changed with the User Manager.)

12.3 Using the User Manager

After you have successfully logged into the User Manager, the tool defaults to the
User tab, displaying the Users screen.

Figure 12–1   The Search User Result Screen

The Search User Result screen enables you to search for users and as well as create
and edit user profiles, and delete users.

12.3.1 Searching for Users

The Users subtab contains User Name, Display Name, and Group fields that enable you to find current Wireless users. The Search User Result's screen displays search results as follows:

Table 12–2   Elements Search User Result Screen

Label	Definition
User Name	The name of the user.
Display Name	The display name of the user.
Group Name	The group to which the user has been assigned.
Role Name	The role (or roles) assigned to the user. For information on user roles, see Section 12.1.1.

To find users:

1. Enter the user's name in the User Name field.

2. Enter the user's display name, if known, in the Display field.

3. From the drop-down list, select the group to which the user belongs.

4. Click the Search button. The list of users corresponding to the search criteria appear. To find all users belonging to a specific group, select the name of the group in the Group field and the click Search.

12.3.1.1 Refining Searches

You can narrow your searches by adding the display name of the user in the Display Name field and then by clicking Go.

You can broaden your search to display all current users by entering a wildcard (* or %) in the User Name field and then by clicking Go.

You can insert wildcards in place of characters. Wildcards can replace all of the characters from the current position to the end of the string. Use the question mark (?) to replace a single character.

The user administrator can display all users belonging to a group by selecting the group name.

12.3.2 Viewing User Information

The View Services button enables you to view and test the services belonging to a selected user. Using this button, you can browse the services, bookmarks, folders, and alerts created by a single user.

Selecting a user and then clicking the View Services button displays the following:

Table 12–3 User Information

Element	Description
Type	The type of objects created by the selected user.
Name	The display name of the folder, service, or bookmark.
Object ID	The Object ID (OID) of the service or module in the database.
Master Service	The master service on which the invoked the user's services are based.
Test	Clicking the phone icon enables you to view the service on a phone simulator.
Visible	If the column displays "true", the object is visible and therefore accessible to an end user. If "false", then the object is not visible.
Sequence	The customized order in which services and folders appear on output devices. By default, these appear in order by name.
Last Modified	The last time an object was modified.

12.3.3 Viewing Activity Logs

The User Manager enables you to view a user's activity within a specific time frame through activity logs that display the accessed async services, alerts, and services. In addition, these activity logs tell you if Wireless dispatched services successfully.

Figure 12–2 The Activity Log Buttons

To view an activity log:

1. Select a user.

2. Select an activity log.

3. Click Go. The activity statistics display.

The User Manager displays the following for async service statistics for a selected user:

Table 12–4   Async Log

Element	Description
Short Name	The name of the async service (for example, *ST* for a stock quote service).
ID	The OID of the async agent service in the database.
Device Address	The address of the user's device receiving the alert.
Server Address	The address of the async service.
Delivery Type	The delivery type for the async service (for example, SMS).
Receiving Time	The time the async agent engine received the request.
Error Description	A message describing how Wireless failed to respond to the async service.

The User Manager displays the following for alert statistics for a selected user:

Table 12–5   Alert Log Statistics

Element	Description
Alert Name	The name of the alert.
Alert ID	The OID of the alert in the database.
Device Address	The address of the user device receiving the alert.
Device Type	The type of logical device receiving the alert (for example, WAP-Push, SMS, or Email).
Dispatch Time	The time Wireless sent the message.
Message Status	Whether Wireless successfully sent the message. 0 indicates that Wireless successfully sent the message; 1 indicates that Wireless failed to send the message.

The User Manager displays the following for service statistics for a selected user:

Table 12–6   Service Log Statistics

Element	Description
Service Name	The name of the service
Service ID	The OID of the service in the database.
Service Type	The type of object (folder, bookmark, service, or local module) accessed by the user..
Invocation Time	The time the user accessed the service.
Invocation Status	Whether Wireless successfully executed the service. 0 indicates that Wireless successfully launched the service; 1 indicates that Wireless failed to launch the service.

12.3.3.1 Selecting a Time Frame

You can view the activity log for a specific period using the *From Date* and *To Date* fields. You can set starting and ending dates either by entering them in the fields in the *mm/dd/ yyyy* format, or by picking them from the calendars. Click Go after you have completed entering the date range.

> **Note:**   . The default *From* date is midnight of the previous day. Both the *From* and *To* dates assume midnight of the selected day.

12.3.3.2 Printing an Activity Log

You can print an activity log by clicking Printable Page. This printed page contains text and has no headers or footers. Use the browser's Back button to navigate from the printed page.

12.3.4 Creating Users

The New User screen contains a set of parameters that administrators set to create and configure new users.

> **Note:**   Most end users create their own user accounts through the self-registration in Wireless Customization.

The New User screen contains the following parameters.

Table 12–7   Parameters for the New User Screen

Parameter	Value
User Name	The name of the user. Note: this is case-sensitive.
Display Name	The display name of the user.
New Password	The user's password. Note: the password is case-sensitive.
Password Confirmation	The user's password entered again.
Password Hint	A prompt for the user's password, such as "Mother's maiden name".
Password Answer	The response to the password hint, such as "Smith". Correctly answering the Password Hint logs users into the system.
Account Number	A user-provided account number. A user can enter this number for login rather than enter a user name.
PIN	The user's personal identification number requested when the user logs in using an account number.
PIN Confirmation	The confirmation for the user's personal identification number.
Mobile Station ID	The user's mobile phone number, or the MSISDN (mobile subscriber ISDN) for GSM services. Wireless uses this ID to track the position of the user.
External Repository ID	A mapping of a user from the the Oracle9*i*AS Wireless schema to a unique ID of that user in another user database.
Virtual User Device ID	An ID generated for unregistered users who access a Wireless site. When an unregistered user accesses a Wireless site, Wireless detects the user and creates a virtual user account for that user. Wireless traces this user by phone number or by another identification number sent from the user's device. This number is the Virtual Device ID number. You cannot create a virtual user; Wireless creates virtual users dynamically. This parameter does not apply to registered users.

Parameter	Value
User Type	Select "Registered" for registered Wireless users. Select "Anonymous" when creating an anonymous user, an entity that Wireless automatically assigns to an unknown user. An unknown user is a user whose device does not send any identifiable numbers through the HTTP header when accessing a Wireless site. Creating an anonymous user enables unknown users to access public applications and explore the site before registering.
Gender	The user's gender (select either male or female).
Date of Birth	The user's date of birth. You can select this from the calendar or enter it in the field using the *mm/dd/yyyy* format.
Enabled	Selecting this check box enables users to log in. Leaving this check box clear prevents a user from logging in.
Language	A drop-down list of display languages. This is a required field. See Section 12.3.5.1 for configuring Netscape 4.7 (and lower versions) to display UTF-8 pages in a localized language.
Time Zone	A drop-down of time zones for the user's locale. Wireless generates and delivers alerts to the time zone selected by the user rather than by the time zone of the Wireless server itself. This is a required field.
User Home Root	A drop-down list of root folders, which can represent user communities or providers. The Content Manager creates these folders, which provision user home folders. This is a required field.
Default Profile	A drop-down list of the user view profiles. You can choose a default profile created by users from the Wireless Customization portal. There are no view profiles for newly-created users.
Default Device Address	A drop-down list of the user's device addresses. You can choose a default device address from the device addresses created by users in the Wireless Customization. There are no device addresses available for newly-created users.
Default Alert Address	A drop-down list of the user's alert addresses. This pertains to the deprecated alerts of the Wireless Edition, version 1.1.
Default Location Mark	A drop-down list of the user's location marks. (You can choose a default location mark from the alert addresses created by users in the Wireless Customization.) There are no location marks available for newly-created users.

Parameter	Value
Location	Select from among options for location-based content:
	■ Location Mark: Wireless sends location-based content particular to the location mark selected from the Default Location Mark drop-down list.
	■ Auto-Detect: Wireless ascertains the user's current location using the signal from the user's mobile device and sends the user content specific to the current location.
	■ Auto-Detect and Remember: Wireless ascertains the user's current location using the signal from the user's mobile device, and then caches the user's current location. Wireless sends the user content specific to the current location. Caching the location can improve server performance.
Disclose Identity to External Application.	This check box enables the user identity to be disclosed to a third-party application.
Disclose Location to External Application.	This check box enables the user's location be reported to a third-party application.
Group	The groups to which you can assign the user. Using the arrow keys, you can select (> or >>) or remove (< or <<) a user from a group.
Roles	The roles to which you can assign a user. Using the arrow keys, you can select (> or >>) or remove (< or <<) a user from a role. If you do not select a role, then the user has end-user privileges and cannot access any Wireless tool. A Helpdesk user can only create other Helpdesk users or end users.

To create a user:

1. From the User screen, select Create. The Create a New User screen appears.

2. Define basic information for the user as follows:

    a. Enter the user name in the User Name field. This is a required field.

    b. Enter the display name for the user in the Display Name field.

    c. Enter a password for the user in the Password field. This is a required field.

    d. Enter the password again in the Password Confirmation field. This is a required field.

    e. Enter a password hint to prompt the user to remember the password.

    f. Enter an answer to the password hint.

g. Enter the user's account number.

h. Enter the users PIN (Personal Identification Number).

i. Enter the PIN again in the PIN Confirmation field.

j. In order for Wireless to trace the position of a user, enter the user's mobile phone number, or the MSISDN (mobile subscriber ISDN) for GSM services in the Mobile Station ID field.

k. Enter the external repository ID.

l. From the drop-down list, select from the following user types:

   – Registered User

   – Anonymous User (Select to create a user entity for users whose device does not send numbers through the HTTP header.)

m. From the drop-down list, select the user's gender.

n. Enter the user's date of birth

o. Select the Enabled check box to allow the end user to log into Wireless Customization and the device portal.

3. Complete the User Preference section as follows:

a. Select a display language from the Language list box. This is a required field.

Note: Users can view the Wireless Webtool in 11 languages and the Wireless Customization in 29 languages. (The languages available for Wireless Customization include the 11 languages available to the Wireless Webtool in addition to 17 more.)

---

b. From the drop-down list, select the time zone in which the user sends or receives content. This is a required field.

c. Select a user home root from the list box. This is a required field.

d. Select a default device address. This option does not apply to newly-created users.

e. Select a default alert address. This option does not apply to newly-created users.

    f. Select a default location mark. This option does not apply to newly-created users.

    g. From the Location drop-down list, select from among the following:

       – Default Location Mark (Select for Wireless to send content specific to the location mark selected in the previous step.)

       – Auto Detect (Select for Wireless to ascertain the user's location and send content specific to that location.)

       – Auto Detect and Remember (Select for Wireless to ascertain and store the user's current location to improve server performance.)

    h. Select Disclose Identity to External Application to allow the user to be recognized by a third-party application.

    i. Select Disclose Location to External Application to allow the user to be recognized by a third-party server.

4. Enter the group, and role information for the user as follows:

    a. From the Group list box, select the user's group membership by using the arrow keys to select (> or >>) or remove (< or <<) a group (or groups) . See Section 12.3.6 for information on groups.

    b. Using the arrow keys, select (> or >>) or remove (< or <<) user roles. If you do not assign a user role, then the user has end-user privileges. The user roles include:

       – System

       – Administrator

       – Help Desk

       – Designer

       – Organizer

Note: Help Desk users can only assign the Help Desk role.

---

5. Click Finish to complete the creation of the user. The new user appears in the user list in the Browse User screen.

Figure 12–3   The Create Users Screen (Partial View)

12.3.5 Editing User Profiles

To edit a user's profile:

1. From the Users screen, select the user whose profile you wish to change.

2. Click Edit. The edit screen appears, displaying the current user profile information for the selected user.

3. Edit the values as needed. See Section 12.3.4 for information on creating a user profile.

4. Click Edit. The Users browse screen appears, displaying any changes pertinent to the labels in the Users screen (for example, the user name) visible.

12.3.5.1 Viewing UTF-8 Pages in Localized Languages with Netscape 4.7 or Lower

Some languages may not display properly if you use Netscape 4.7 or a lower version. In some cases, characters may display as boxes. To fix this problem, configure the Netscape preferences as follows:

1. From the Netscape tool bar, select Edit.

2. Select Prefences from the drop-down menu. The Prefences dialog appears.

3. From the Category tree, select Fonts to display the Fonts dialog.

4. In the Fonts dialog, select Unicode from the *For the Encoding* drop-down list.

5. From the *Variable Width Font* and *Fixed Width Font* drop-down lists, select the font that supports the preferred language. For example, if you select Chinese as your preferred language, you can select MS Song to view the page in Chinese.

12.3.6 Managing Groups

The User Manager enables you to create user groups that organize the user community. Once created, the Content Manager assigns services appropriate to these user groups. Groups (and the users who belong to them) do not own the objects assigned to them; they view them.

Selecting the Group tab displays the Group screen, which you use to create , edit and delete Wireless user groups. You can assign these groups to users. See Section 12.3.4 for more information on assigning users to groups.

12.3.6.1 Creating a Group

To create a new user group:

1. In the Create New Group section, enter the name of the group you want to create in the Group Name field.

2. Enter, if needed, a description of the group.

3. Click Create. The new group appears in the Group Name section.

12.3.6.2 Editing a Group Name

To edit a group name:

1. In the Create New Group section, select the group whose name or description you want to change.

2. Edit the group name or description as needed.

3. Click Apply.

12.3.6.3 Deleting a Group

To delete a group:

1. Select the radio box next to the group that you want to remove from the Wireless repository.

2. Click Delete.

13

Customizing Services

This document describes how users customize their portals from a browser using Wireless Customization. Each section of this document presents a different topic. These sections include:

13.1 Overview of Oracle9*i*AS Wireless Customization

You use Oracle9*i*AS Wireless Customization to both customize the Wireless portal and access Wireless mobile services. Using Wireless Customization, you can create such Wireless objects as users, folders, presets and quicklinks. In addition, the tool enables you to view and create user views, subscribe to alerts and services, and create bookmarks.

13.2 Logging into Wireless Customization

Before using Wireless Customization, you must first log in as follows:

1. Access the login page through the following URL:

    http://hostname:7777/customization/Login.jsp

    Note: 7777 is the default port number for Oracle9*i*AS Wireless.
    The port number range is 7777 to 7877. To ensure that you are
    using the correct port number, check the port number for
    Oracle9*i*AS Wireless stored in [Oracle home]/install/portlist.ini.
    For more information on port usage, see Oracle9*i* Application
    Server Installation Guide and the Oracle9*i* Application Server
    Administrator's Guide.

    After you enter the URL, the login page for Wireless Customization
    appears. This page includes the following buttons:

Table 13–1   Login Screen Buttons

Button	Description
Login	Clicking this button logs you in after you have entered the correct user name and password.
Help	Clicking this button displays a list of help topics.
Page Help	Clicking this button displays help topics specific to this screen.

2. Enter your user name and then enter your password. If you are an
    administrator, enter *orcladmin* as your user name. (The password is set during
    installation, but can be changed with the User Manager.)

3. Click Login.

You cannot log in if you enter an incorrect user name or password. If you forget
your password, Wireless Customization prompts you with a hint that you provide
when registering.

Figure 13–1   Buttons of the Login Screen

After you successfully log in, Wireless Customization defaults to the Service tab. The Service tab displays the Service Subscription screen, which enables you to select a service and perform such functions as editing a service, and creating a quicklink, bookmark, or folder.

Table 13–2   Wireless Customization Tabs

Element	Contents
Services	Displays the Service Subscription screen. You can create a quicklink of a service, edit, create, or delete an object.
Alerts	Displays the Alerts screen. You can edit the properties of a selected alert, such as enabling an alert and setting the frequency of an alert.
Presets	The current preset definitions available to the user group. Users can add, delete, or edit preset values, the user-defined inputs for a service.
View Profile	Displays the View Profile screen. Using this screen, you can create different views of the service trees that are suited to the display capabilities of a device or to a connection profile.
Devices	Displays the Wireless Device screen. You can add or disable alerts sent to wireless devices. In addition, you can validate, send test pages, set the WAP provisioning profile, and set the maximum number of alerts sent per day.
Location Mark	Displays the LocationMark List screen. You can create, delete, edit, or change the default status of a LocationMark on this page.
User Profile	A screen where users set up or edit their basic user information.

After users log into Wireless Customization, they have access to the following buttons:

Table 13–3   Wireless Customization Buttons

Button	Description
Logout	Clicking this button logs out of Wireless Customization.
Help	Clicking this button displays a list of help topics.
Page Help	Clicking this button displays help topics specific to this screen.

In addition to these buttons, a user with the Administrator or help desk roles can access the Switch User button, which enables administrators to view or edit a selected user's settings. See Section 13.11 for more information.

13.2.1 Registering with Wireless Customization

End users, who have not set up accounts, can do so by clicking Click Here to Register in the login page. A registration form appears with the following fields:

Table 13–4   The Registration Form

Parameter	Value
User Name	The name of the user. Note: this is case-sensitive.
Display Name	The display name of the user.
New Password	The user's password. Note: the password is case-sensitive.
Password Confirmation	The user's password entered again.
Password Hint	A prompt for the user's password, such as "Mother's maiden name".
Account Number	A user-provided account number. When accessing the portal from a device such as a phone, user can enter this number for login rather than enter a user name.
PIN	The user's personal identification number requested when the user logs in using an account number.
PIN Confirmation	The confirmation for the user's personal identification number.
Mobile Station ID	The user's mobile phone number, or the MSISDN (mobile subscriber ISDN) for GSM services. Wireless uses this ID to track the position of the user.
Gender	The user's gender (select either male or female).
Date of Birth	The user's date of birth. You can select this from the calendar or enter it in the field using the *mm/dd/yyyy* format.

Parameter	Value
Language	A drop-down list of display languages. This is a required field.
Time Zone	A drop-down of time zones for the user's locale. Wireless generates and delivers alerts to the time zone selected by the user rather than by the time zone of the Wireless server itself. This is a required field.
Location	Select from among options for location-based content: ■ Location Mark: Wireless sends location-based content particular to the location mark selected from the Default Location Mark drop-down list. ■ Auto-Detect: Wireless ascertains the user's current location using the signal from the user's mobile device and sends the user content specific to the current location. ■ Auto-Detect and Remember: Wireless ascertains the user's current location using the signal from the user's mobile device, and then caches the user's current location. Wireless sends the user content specific to the current location. Caching the location can improve server performance.
Disclose Identity to External Application.	This check box enables the user identity to be disclosed to a third-party application.
Disclose Location to External Application.	This check box enables the user's location be reported to a third-party application.

To register:

1. Enter the user name in the User Name field. This is a required field.

    a. Enter the display name for the user in the Display Name field.

    b. Enter a password for the user in the Password field. This is a required field.

    c. Enter the password again in the Password Confirmation field. This is a required field.

    d. Enter a password hint to prompt the user to remember the password.

    e. Enter the user's account number.

    f. Enter the users PIN (Personal Identification Number).

    g. Enter the PIN again in the PIN Confirmation field.

      h. In order for Wireless to trace the position of a user, enter the user's mobile phone number, or the MSISDN (mobile subscriber ISDN) for GSM services in the Mobile Station ID field.

      i. From the drop-down list, select the user's gender.

      j. Enter the user's date of birth

2. Select a display language from the Language list box. This is a required field.

3. From the drop-down list, select the time zone in which the user sends or receives content. This is a required field.

4. From the Location drop-down list, select from among the following:

    – Default Location Mark (Select for Wireless to send content specific to the location mark selected in the previous step.)

    – Auto Detect (Select for Wireless to ascertain the user's location and send content specific to that location.)

    – Auto Detect and Remember (Select for Wireless to ascertain and store the user's current location to improve server performance.)

5. Select Disclose Identity to External Application to allow the user to be recognized by a third-party application.

6. Select Disclose Location to External Application to allow the user to be recognized by a third-party server.

7. Click Register. The Service Subscription screen appears.

Users (and administrators) can edit user account information in the User Info. tab. See Section 13.9 for more information.

13.2.2 Accessing Wireless Customization as a New User

A newly created user has an empty home folder bearing the user name. All new users are assigned to a default group, Users, and have end-user privileges.

Using Wireless Customization, users can customize their services through such functions as creating quicklinks, creating folders, and organizing services. In addition, users can schedule the delivery of alerts, and create or edit a wireless device.

13.3 Accessing Folders and Services

After you log into Wireless Customization, the tool defaults to the Service tab and displays the Service Subscription screen. This page, which appears whenever you click the Service tab, displays the services and folders assigned to your user group by the Content Manager.

The default view of the screen displays the top-level folders, which are displayed as follows:

Table 13–5   Elements of the Service Screen of Wireless Customization

Element	Description
Focus	Selecting this option enables you to display a selected folder as a root folder. If you have several folders at multiple levels, this option helps you to isolate your view to a single folder.
Name	The name of the folder.
Type	The object type. In addition to folders, objects in Wireless Customization include bookmarks and quicklinks.
Test	Selecting this option enables you to view a service or bookmark on a phone simulator.
Visible	Select this check box to make the folder visible for a selected view profile.

By default, the top-level folders are collapsed. To view the contents of the folders, click Expand All. To collapse the folders to the top-level view, select Collapse All.

While an Administrator can alter any service in Wireless Customization, non-administrator level users, such as end users, can only alter the services that they own. Users own services belonging to the user groups to which they have membership. The Content Manager assigns service access to user groups.

By default, Wireless has the following user groups: Administrator, Guest, and Users. You use the `ProvisioningHook` to configure these user groups. A new user is automatically assigned to the Users group and has default privileges to all the services that the Content Manager has assigned to the Users group. The Service Subscription page does not reveal group membership to users, nor does it display other users belonging to the user's group.

Figure 13–2   The Service Subscription Page
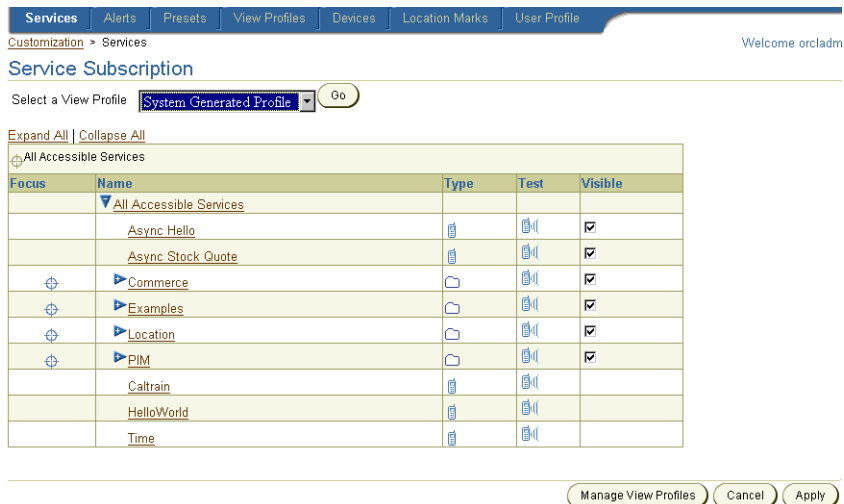
13.3.1 Managing Folders

Wireless Customization enables you to create, edit, and delete subfolders. Unless users have the administrator role, they can only edit or delete the folders that they have created.

13.3.1.1 Creating a Subfolder

You can organize the folders in the Service Subscription screen by creating subfolders.

To create a subfolder:

1. From the Service Subscription screen, select the folder for which you wish to create a subfolder.

2. Click the folder.

3. From the left menu of the Edit Folder screen, select Create Subfolder. The Create Subfolder screen appears.

4. Enter a name for the subfolder. This is a required field.

5. Select the Visible check box to make the folder visible. Leaving the check box clear prevents the folder from being viewed in certain user views.

6. Select the location for the folder from the drop-down list in the Move to Folder field. (The location is either the user's home folder, or a subfolder of the user's home folder.)

7. Click Create. The Service Subscription screen reappears, displaying the folder in the appropriate location of the current. Clicking Cancel clears all the values you have entered and returns you to the Services Subscription screen.

13.3.1.2 Editing a Folder

You can modify the order in which subfolders, services, and bookmarks appear in the Service Subscription screen using the Edit Folder screen. You can also use the Edit Folder screen to change the name of a folder or to delete a subfolder, service, or bookmark.

You can also use the Edit Folder screen to change the name of a folder or to delete a subfolder, service, or bookmark.

To edit a folder:

1. Click the folder whose contents you want to reorder. The Create Subfolder screen appears.

2. From the left menu, select Edit Folder. The Edit Folder screen appears, displaying the contents of the selected folder.

3. Perform any of the following actions as needed:

   - Enter a new name for the folder.

   - Select, or clear the Visible check box.

   - Select from among the following options to sort the folder's contents by:

   - Name (ascending)

   - Name (descending)

   - Last Updated Date (ascending)

   - Last Updated Date (descending)

   - Last Accessed Date (ascending)

   - Last Accessed Date (descending)

   - Access Count (ascending)

   - Access Count (descending)

- Sequence No. (ascending)

- Sequence No. (descending)

4. Click Apply to commit your changes. Clicking Cancel sets the folder's contents back to their original order.

Note: For the Sequence No. options, you select a subfolder, service, or bookmark to change the sequence number and then click Apply. See Section 13.3.1.3 for more information.

Figure 13–3   The Editing Folder Screen
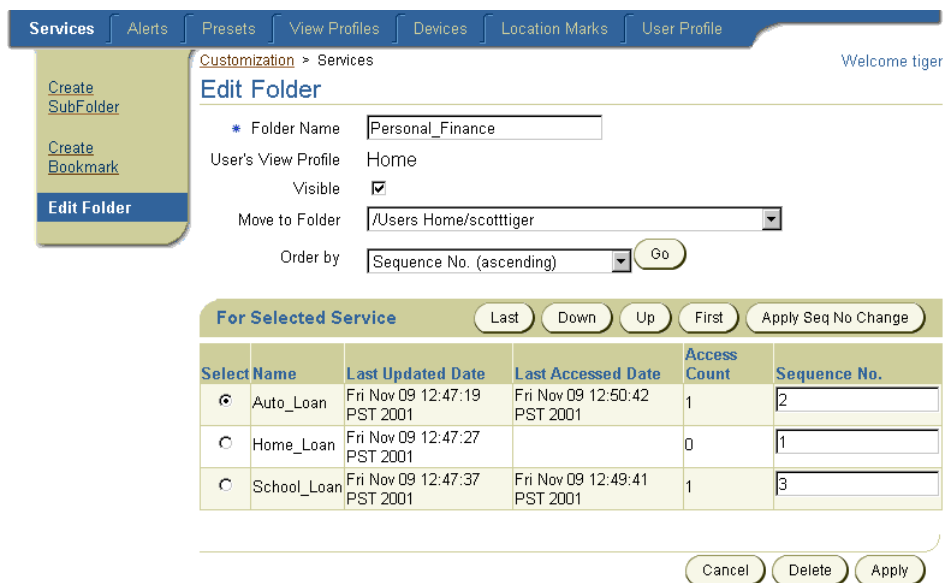
13.3.1.3 Reordering the Display Sequence for Subfolders

To reorder the display sequence of the subfolders:

1. Select the Sequence No. (ascending) or Sequence No. (descending) options.

2. Enter (or change) the sequence numbers for the folders, or reposition the folders using the Last, Up, Down, First buttons.

3. Click Apply Seq. No. Change.

4. Click Apply. The Service Subscription screen reappears. (The new order for the folders displays on the device, not in the Service Subscription screen.)

13.3.1.4 Deleting a Folder

To delete a folder:

1. Click the folder whose contents you want to reorder. The Create Subfolder screen appears.

2. From the left menu, select Edit Folder. The Edit Folder screen appears, displaying the contents of the selected folder.

3. Click Delete.

13.3.2 Managing Bookmarks

Wireless Customization enables you to create, edit, and delete bookmarks, links to a URL that enable you to quickly visit a site.

13.3.2.1 Creating a Bookmark

To create a bookmark:

1. Click the Service tab. The Service Subscription screen appears.

2. Click a folder. The Create Subfolder screen appears.

3. From the left menu, select Create Bookmark. The Create Bookmark screen appears.

4. Complete the Create Bookmark screen as follows:

   a. Enter the bookmark name.

   b. In the URL text box, enter the URL of the new bookmark (for example, `www.oracle.com`).

   c. Select the Visible check box to make the book mark visible.

   d. Use the drop-down list box in the Move to Folder field to assign the location of the new bookmark. The location is either the user home folder or a subfolder of the user home folder.

5. Click Create. The Service Subscription screen reappears, displaying the new bookmark under the appropriate folder. Clicking Cancel clears all values and returns you to the Service Subscription screen.

13.3.2.2 Editing a Bookmark

You can change a bookmark by selecting a different URL, by renaming it, changing its visibility status (show or hide), or by placing it in another folder.

To edit a bookmark:

1. From the Service Subscription screen, click the bookmark (or select a folder and drill down to the bookmark) that you want to edit. The Edit Bookmark screen appears with its fields populated with the values of the selected bookmark.

2. Modify the bookmark's values as needed. For more information, see Section 13.3.2.1.

3. Click Apply to commit your changes.

13.3.2.3 Deleting a Bookmark

To delete a bookmark:

1. From the Service Subscription screen, click the bookmark (or select a folder and drill down to the bookmark) that you want to delete.

2. Click Delete.

> **Note:**   The folders, bookmarks, and quicklinks you create are only visible from within the selected view profile. For example, a folder created in a *Home* view profile would not also appear in a *Work* view profile. See Section 13.7.1 for more information on view profiles.

13.3.3 Managing Quicklinks

To access a service, Wireless Customization enables a user to create a quicklink, an alias to the service. Users can create, edit, and delete quicklinks.

13.3.3.1 Creating Quicklinks

To create a quicklink:

1. Click a service. The Create Quicklink screen appears.

2. If needed, edit the text in the Name field to customize the name of the quicklink. By default, the name of the quicklink is the name of the service preceded by an asterisk (*).

3. Select the Visible check box to make the quicklink visible.

4. Use the drop-down list box in the Move to Folder field to assign the location of the new bookmark.

5. Click the Create button to create the quicklink. The new service appears under your user name. All quicklinks are preceded by an asterisk (*).

Figure 13–4   The Create Quicklinks Screen

13.3.3.2 Editing a Quicklink

You can edit a quicklink by renaming it and changing its visibility status, or location.

To edit a quicklink:

1. In the Service Subscription screen, click the quicklink that you want to edit. The Edit Quicklink screen appears, with its fields populated with the values for the selected quicklink.

2. Edit the values as needed. For more information, see Section 13.3.3.1.

3. Click Apply to commit your changes.

13.3.3.3 Deleting a Quicklink

To edit a quicklink:

1. In the Service Subscription screen, click the quicklink that you want to delete. The Edit Quicklink screen appears.

2. Click Delete.

Figure 13–5   The Edit Quicklink Screen
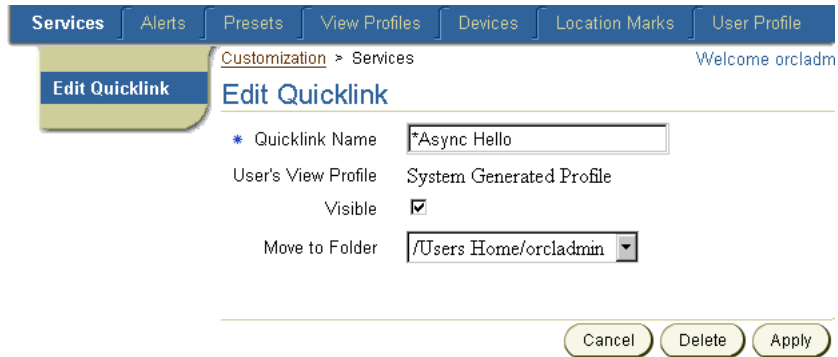
13.4 Managing Alerts

Clicking the Alerts tab displays the Alert Subscription screen, which lists the alerts available to your user group. In order to create an alert subscription, you must have at least one validated device. If you do not have a validated device, then Wireless displays the Devices screen.

The Alerts tab enables you access functions to edit your alert subscriptions by clicking an alert service. You can also edit a device from this screen by clicking the Managing Devices button. See Section 13.6.1 for more information on devices.

Figure 13–6   The Alert Subscription Screen
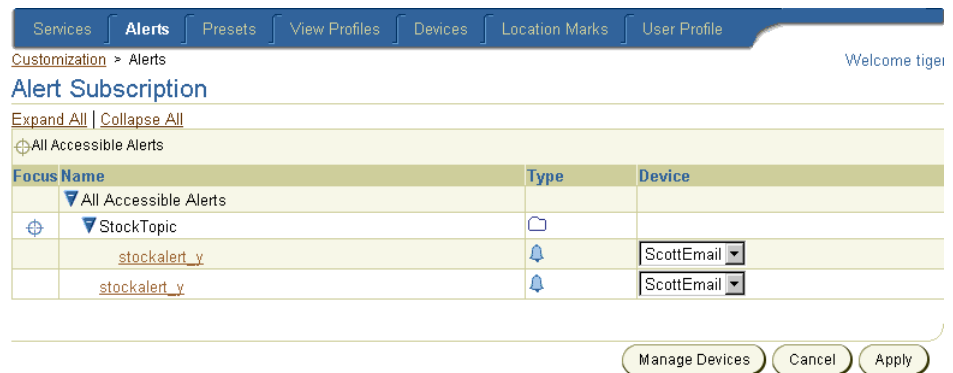
13.4.1 Editing Alert Subscriptions

The Alert subscription screen enables you to edit an alert subscription by changing the trigger conditions of a selected alert service or by adding a new set of trigger conditions.

To edit an alert subscription:

1.   Select the Alert.

2.   Select a device from the drop-down menu. This is a required field.

3.   Click Apply.

4.   In the trigger conditions section of the screen, edit the alert service's trigger conditions and then click Apply.

13.4.2 Adding a New Set of Trigger Conditions

To add a set of trigger conditions to your alert subscription.

1.   In the New Subscription section, enter a subscription name. This is a required field.

2.   Complete the fields as needed.

3.   Click Create. The new set of trigger conditions appears.

13.4.3 Deleting Trigger Conditions

To delete a trigger condition:

4. Select the trigger conditions that you want to delete from your alert subscription.

5. Click Delete.

Figure 13–7   Editing an Alert Subscription

13.4.4 Changing the Device for an Alert

To change the device for an alert:

1. From the Alert Subscription screen, select a device from the drop-down list.

2. Click Apply.

13.5 Managing Presets

Presets enable users to customize services by defining their own input parameters for an application. When a user requests a service, an adapter loads the user-defined parameters, or presets. The executed application then uses the presets as the input parameters. While the preset definitions are available to the user group, the presets themselves belong to the user and cannot be seen by other users.

Selecting the Presets tab displays the preset definitions available to the group. Using this screen, you can add, edit, or delete presets values.

13.5.1 Adding a Preset

To add a preset:

1. In the Create a New Preset section, enter the name of the preset. This is a required field.

2. Enter values for the preset's parameters as needed.

3. Click Create.

13.5.2 Editing a Preset

To edit a preset:

1. From the drop-down list, select a preset definition. This is a required field. The presets for the selected definition appear.

2. Select the preset that you want to edit.

3. Edit the preset's values as needed.

4. Click Apply.

13.5.3 Deleting a Preset

To delete a preset from a preset definition:

1. Select the preset that you want to delete.

2. Click Delete.

13.6 Managing Devices

The Device screen, invoked by clicking the Devices tab, enables you to create, edit and delete a device. You must have one device registered with Wireless Customization for alert subscriptions.

Wireless to deliver content appropriate to the display capacities of the device.

13.6.1 Creating a New Device

To create a new device:

1. Click the Device tab. The Device screen appears.

2. Complete the Create a New Device section of the screen as follows:

   a. Enter the name of the device. For example, enter myemail.

   b. Enter the address for the device. For example, enter an email address if the alert should be sent to an email account. If the alert is to be sent to an SMS service, such as a WAP enabled phone, the service provider supplies the address (for example, 1-555-555-5555@phone.company.com).

   c. From the drop-down list in the Device Type field, select from among the following devices:

      – WAP Push

      – SMS

      – Voice

      – Email

      – Fax

      – Two-Way Pager

      – One-Way Pager

   d. Enter the name of the service provider for the device in the Carrier field.

   e. Enter the model name of the device.

   f. Enter the maximum number of alerts that you wish to receive per day.

   g. Select Default to make this your default device.

3. Click Create. The new device displays in the Device List.

13.6.2 Editing a Device

You can change a the name of a selected device and the number of alerts it receives per day.

To edit a device:

1. From the Device List Section, select the device that you want to edit.

2. Edit the name, address or type of the device, If needed, change the number of alerts the device receives per day.

3. Click Apply.

13.6.3 Disabling the Alerts Sent to a Device

To prevent a device from receiving alerts:

1. From the Device List Section, select the device.

2. Click Disable All Alerts.

13.6.4 Deleting a Device

To delete a device:

1. From the Device List Section, select the device that you want to delete.

2. Click Delete.

13.6.5 Validating a Device

For most devices, Wireless Customization sends you a control number after you create a device or change a device type or address. You use this control number to validate the device.

To validate a device:

1. From the Device List on the Devices screen, select the device you want to validate.

2. Click Validate. The Validate screen appears.

3. Enter the control number.

4. Click Validate. The Device screen reappears. In the Device list, "true" displays in the Validated column.

Figure 13–8   The Device Screen

13.6.6 Configuring WAP Provisioning

If you create an SMS device, you can configure the WAP Provisioning for the WAP gateway.

To create WAP Provisioning for an SMS device:

1. Select the WAP profile from the drop-down menu.

2. Enter the WAP Gateway Proxy. This is the address of the WAP proxy server, such as an IP address, or a service phone number.

3. Enter the port number. The default port numbers are:

    ■ 9200 (connection-less)

    ■ 9201 (connection-oriented)

    ■ 9202 (secure and connection-less)

    ■ 9203 (secure and connection-oriented)

4. Select the Secure WAP Session check box if you want to enable WTLS (Wireless Transport Layer Security). Selecting this option overrides port numbers 9200 and 9201.

5. Enter your ISP login name.

6. Enter Your ISP password.

7. Enter home page URL of the service provider that you point to.

8. Click Send. Wireless sends the validation to a WAP-enabled device.

13.7 Managing View Profiles

Wireless Customization enables you to create a personalized view of folders, quicklinks, and bookmarks.

The User's View Profile screen, invoked by selecting the View Profiles tab, enables you to create different view profiles, such as separate views for home and office use. These views hold the selected settings, including the visibility status and ordering of folders. You can also create views for different devices, depending on their display capabilities.

13.7.1 Creating View Profiles

To create a view profile:

1. From the User's View Profile screen, enter a profile name. This is a required field.

2. Select Default to make this your default view.

3. Click Create. The new view profile appears in the View Profile List.

13.7.1.1 Accessing a View Profile

To access a View Profile:

1. From the Service Subscription screen, choose a view profile from the the Select a View Profile drop-down list.

2. Click Go. The Service Subscription Screen reflects the selected view by noting the visibility status of the objects. To see how the selected view displays, you must log into the device portal.

13.7.1.2 Changing the Default Status of a View Profile

To edit a user view profile:

1. From the View Profile List, select the profile you wish set as the default view profile.

2. Click Set Default. The Default status displays "True".

3. Click Apply to commit the change.

> **Note:** Wireless automatically generates a default profile, the System Generated Profile, for all users.

13.7.1.3 Deleting a View Profile

To delete a view profile:

1. From the View Profile List, select the profile you wish to delete.

2. Click Delete.

> **Note:** You cannot delete a default view profile.

13.7.1.4 Modifying a Folder's Contents for a Particular View

You tailor the display of a folder's contents to a view. For example, if you access services from different types of devices, you can create different user views for the display capabilities of a device and connection profile. For example, using the visibility flags, you can create a small view for SMS connection from Web phone, a medium size view for GPRS connection from a smart phone, a large view for Wireless LAN connection from a PDA, and full view for VPN connection from a laptop. For each view, you can specify the static or dynamic arrangement of the services in the service trees. See Section 13.3.1.2 for more information.

13.7.1.5 Assigning Folders, Quicklinks, and Bookmarks to a View Profile

You assign objects to a view profile by making them visible to a particular profile. To assign objects to a view profile:

1. In the Service Subscription screen, select a view profile from the drop-down menu.

2. Select Visible for the folders, services, or bookmarks that you want to include in the selected profile.

3. Click Apply.

13.8 Managing Locationmarks

The form factor of some mobile devices limits the entry and display of such spatial information as street address and location coordinates. To solve this problem, Wireless stores spatial information as a locationmark, a name of a location that is meaningful to you. For example, the locationmark *My Home* identifies "123 Main Street, Somewhere City, CA 12345.

> **Note:** Location marks must be identified as a point for this release of Oracle9*i*AS Wireless.

Using locationmarks, you do not have to enter lengthy alphanumeric strings on your mobile devices. Instead, you enter and manage the underlying spatial information for the locationmarks using Wireless Customization. You can access this information by selecting the locationmark on your mobile device. The locationmarks are stored in the Wireless repository.

> **Note:** The locationmark feature does not function unless the server has access to geocoded data from a vendor.

13.8.1 Creating Locationmarks

To create a locationmark:

1. Select the LocationMark tab. The Create LocationMark screen appears.

2. Complete the form on the LocationMark tab as follows:

    a. Enter a name that is meaningful to you in the LocationMark Name field. This is a required field.

    b. Enter a description for the locationmark that is meaningful to you (for example, *Work* or *Home*).

    c. Enter a label for the locationmark.

    d. Enter the name of the company in the Company Name field.

    e. Enter the address information in Address Line 1. For example, enter 123.

    f. Enter the street name in Address Line 2. For example, enter Main Street.

g. Enter the county and state information (if applicable) in the County and State fields.

h. Enter the postal code in the Postal Code field. This can be a five-digit United States zip code or other postal code.

i. Enter the postal code extension (if applicable) in the Postal Code Ext. field.

j. Enter the country name in the Country name field.

k. Select Default to designate this locationmark as your default address.

3. Select Validate this locationmark for Wireless to check the address data against the vendor's data.

4. Click Create. The new locationmark appears in the LocationMark List screen.

Note: Wireless saves the values you enter for a location mark to their closest match.

13.8.2 Editing a LocationMark

To edit a locationmark:

1. From the LocationMark List screen, select the desired locationmark and then click the Edit button. The Edit LocationMark page appears. This page contains the same fields as Create Location Mark page, complete with the data used to create the selected locationmark.

2. Edit the desired fields. See Section 13.8 for information on entering locationmark values.

3. Click the Apply button to save the changes to the locationmark and return to the Location Mark List page. Clicking Cancel clears all the changes and returns you to the LocationMark List screen.

13.8.2.1 Changing the Default Status of a LocationMark

To change the default status of a locationmark:

1. From the LocationMark List screen, select the new default locationmark.

2. Click SetDefault. The status in the Default column of the LocationMark List changes to true. Only one LocationMark can be the default. Selecting SetDefault triggers address validation against the vendor's data if the new default

locationmark has not been validated. If the validation fails, then the user has the choice of setting the selected locationmark as the default, or aborting the action.

13.8.3 Deleting a LocationMark

To delete a locationmark:

1. From the LocationMark List screen, select the locationmark you wish to delete.

2. Click Delete.

13.9 Managing User Information

Wireless Customization enables you to edit a user profile.

To edit a profile:

1. Select the User Profile tab.

2. The User Profile screen appears and displays your user configuration information. The User Profile page contains the following parameters:

Table 13–6   Parameters for the User Profile Screen

Parameter	Description
User Name	The name of the user. Note: this is case-sensitive.
Display Name	The display name of the user. Wireless uses the user name as the display name if the user does not enter a display name.
Old Password	The user's previous password. Note: the password is case-sensitive.
New Password	The user's password. Note: the password is case-sensitive.
Password Confirmation	The user's password.
Password Hint	A prompt for the user's password.
Account Number	A user-provided account number. When accessing the portal from a phone, a user can enter this number for login rather than enter a user name.
PIN	The user's personal identification number requested when the user logs in using an account number.
PIN Confirmation	The confirmation for the user's personal identification number.

Parameter	Description
Mobile Station ID	The user's mobile phone number, or the MSISDN (mobile subscriber ISDN) for GSM services. Wireless uses this ID to track the position of the user.
Gender	The user's gender (select either male or female).
Date of Birth	The user's date of birth. You can select this from the calendar or enter it in the field using the *mm/dd/yyyy* format.
Language	A drop-down list of display languages. This is a required field. This is a required field. See Section 13.10 for configuring Netscape 4.7 (and lower versions) to display UTF-8 pages in a localized language.
Time Zone	A drop-down of time zones for the user's locale. Wireless generates and delivers alerts to the time zone selected by the user rather than by the time zone of the Wireless server itself. This is a required field.
Location	Select from among options for location-based content: ■ Location Mark: Wireless sends location-based content particular to the location mark selected from the Default Location Mark drop-down list. ■ Auto-Detect: Wireless ascertains the user's current location using the signal from the user's mobile device and sends the user content specific to the current location. ■ Auto-Detect and Remember: Wireless ascertains the user's current location using the signal from the user's mobile device, and then caches the user's current location. Wireless sends the user content specific to the current location. Caching the location can improve server performance.
Disclose Identity to External Application.	This check box enables the user identity to be disclosed to a third-party application.
Disclose Location to External Application.	This check box enables the user's location be reported to a third-party application.

3. Change the user configuration parameters as needed:

    a. Enter the user name in the User Name field. This is a required field.

    b. Enter the display name for the user in the Display Name field.

    c. Enter a password for the user in the Password field. This is a required field.

    d. Enter the password again in the Password Confirmation field. This is a required field.

    e. Enter a password hint to prompt the user to remember the password.

    f. Enter the user's account number.

    g. Enter the users PIN (Personal Identification Number).

    h. Enter the PIN again in the PIN Confirmation field.

    i. In order for Wireless to trace the position of a user, enter the user's mobile phone number, or the MSISDN (mobile subscriber ISDN) for GSM services in the Mobile Station ID field.

    j. From the drop-down list, select the user's gender.

    k. Enter the user's date of birth

4. Complete the User Preferences Section as follows:

    a. Select a display language from the Language list box. This is a required field.

    b. From the drop-down list, select the time zone in which the user sends or receives content. This is a required field.

    c. From the Location drop-down list, select from among the following:

        – Default Location Mark (Select for Wireless to send content specific to the location mark selected in the previous step.)

        – Auto Detect (Select for Wireless to ascertain the user's location and send content specific to that location.)

        – Auto Detect and Remember (Select for Wireless to ascertain and store the user's current location to improve server performance.)

    d. Select Disclose Identity to External Application to allow the user to be recognized by a third-party application.

    e. Select Disclose Location to External Application to allow the user to be recognized by a third-party application.

5. Click Apply.

13.10 Viewing UTF-8 Pages in Localized Languages with Netscape 4.7 or Lower

Some languages may not display properly if you use Netscape 4.7 or a lower version. In some cases, characters may display as boxes. To fix this problem, configure the Netscape preferences as follows:

1. From the Netscape tool bar, select Edit.

2. Select Preferences from the drop-down menu. The Preferences dialog appears.

3. From the Category tree, select Fonts to display the Fonts dialog.

4. In the Fonts dialog, select Unicode from the *For the Encoding* drop-down list.

5. From the *Variable Width Font* and *Fixed Width Font* drop-down lists, select the font that supports the preferred language. For example, if you select Chinese as your preferred language, you can select MS Song to view the page in Chinese.

13.11 Trouble-Shooting for Administrators or Help Desk Personnel

After a user with the Administrator or Help Desk roles logs into Wireless Customization, the global button, Switch User, becomes available. The Switch User button enables administrators or Help Desk personnel to view and access the services of any user. In addition, this function enables administrators or Help Desk personnel to use Wireless Customization as the selected user. For example, by switching to another user, an administrator could not only view the services of the selected user, but assist the user by editing the user's settings as well.

To switch to a user's account:

1. Click the Switch User button.

2. Enter the name of the user whose settings or services you would like to access.

3. Click Switch. The Service Subscription screen for the selected user appears. Until you switch to another user (or back to your own customization), you can check or modify the user's personalization settings or help that user with customization problems.

14

Customizing Services from a Device

This document describes customization from a device interface for customizing and assigning Wireless mobile services. Each section of this document presents a different topic. These sections include:

14.1 Overview of Device-Based Customization

Wireless enables you customize your portal from a wireless device. The device-based provides a subset of the current browser-based functionality that you use to perform such user administration functions as creating quicklinks, presets, alerts, and devices.

> **Note:** The user's group must have access to the Customization and UserAdmin adapters, or their equivalent, in order to utilize the capabilities.

14.2 Accessing the Device-Based Customization Tool

You can access the device-based customization tool using a phone number or URL provided by your administrator.

14.2.1 Logging into the Device-Based Customization Tool

Before using the Device-Based Customization Tool, you must first log in as follows:

1. Access the login page through the following URL:

    http://hostname:7777/ptg/rm

    > **Note:** 7777 is the default port number for Oracle9*i*AS Wireless. The port number range is 7777 to 7877. To ensure that you are using the correct port number, check the port number for Oracle9*i*AS Wireless stored in [Oracle home]/install/portlist.ini. For more information on port usage, see Oracle9*i* Application Server Installation Guide and the Oracle9*i* Application Server Administrator's Guide.

2. Enter your user name and then enter your password. If you are an administrator, enter *orcladmin* as your user name. (The password is set during installation, but can be changed with the User Manager.)

The tool displays services available to both registered and guest users, those who have not yet registered with the Wireless service.

14.3 Registering with the Device-Based Customization Tool

If you have already registered with the portal, then complete the login page by entering your user name and password. If have not registered, then you can do so by clicking Register in the Welcome Page.

To register with the device-based customization tool:

1. Enter your user name.

2. Enter your password.

3. Confirm your password by entering it once more.

> **Note:** Your user name and password are case-sensitive; incorrect capitalization can prevent you from logging in.

4. Enter a hint that prompts you to remember your password.

5. Enter a display name. This name appears on your home page. If you do not enter a display name, then your user name appears on your home page.

6. Click Submit.

After you complete your registration, the Welcome page reappears. You can login by selecting Login from the Setup options. You log in by entering your user name and password.

14.3.1 Accessing Services from a Device

After you submit your user information, your device displays the home page of your account. Your home page, which bears your user name or display name, displays a set of default services and folders. From your home page, you can customize your services by using the following options from the setup menu:

Table 14–1   Customization Options

Option	Description
User Profile	This option enables you to change your user information and add or delete devices.
Presets	The current preset categories available to the user group. Users can add, delete, or edit preset values, the user-defined inputs for a service.

Option	Description
User View	Using this option, you can create different views of folders and services for different purposes. You can create a view of folders and services that you use at work and another view of folder and services that you use at home. The View Profile option enables you to switch between different views.
Services	This option enables you to create, edit, reorder, or delete folders, bookmarks and quicklinks.

14.3.2 Navigation and Data Entry

You use the device's up-arrow keys and down-arrow keys to scroll through the lists. The current selection is indicated with the '>>' symbol, or by using the number key which appears next to the item you wish to select. Navigation keys vary from device to device. This document refers to the OK key for the select function. Selecting functions may be represented as a single key, or one of two keys which correspond to an "OK" and "Home" text that displays in your device's screen.

14.4 Managing Folders

Folders enable you to organize your account. You can only add a folder under a folder you own.

14.4.1 Creating a Folder

You cannot add subfolders to folders created by your administrator.

To create a folder:

1. Select Services.

2. Click Go.

3. Click a current folder. For example, select *MyFolder[.]*. The Edit screen appears.

4. Click Add Folder.

5. Enter a name for the folder.

6. Click Submit. The new folder appears in your current folder.

> **Note:** Wireless returns a error if you select a folder from your
> home page that has no contents.

The portal designates a folder by using braces (for example, *[Stockquotes_Folder]*).
The portal also designates the current folder by displaying *[.]* before the folder
name (*[.]Stockquotes_Folder*).

By selecting a current folder, you the Edit screen, which includes functions to
manage objects you create, such as folders, quicklinks, and bookmarks.

Figure 14–1   The Edit Screen
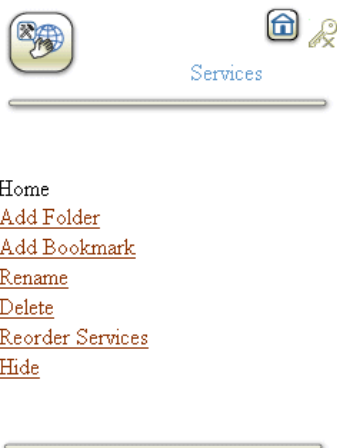
14.4.2 Editing a Folder

You can modify a folder by renaming it, adding a subfolder or a bookmark to it, or
by changing its visibility status (show or hide). You can only modify the folders that
you create or the folders that are nested under a folder you own.

14.4.2.1 Renaming a Folder

To rename a folder:

1. Select Services. Click Go.

2. Select the folder you want to edit.

3. Select the current folder. For example, select *MyFolder[.].* The Edit screen appears.

4. Select Rename. Enter the new name for the folder.

5. Click Submit.

14.4.2.2 Adding a Subfolder

To add a subfolder:

1. Select Services.

2. Click Go.

3. Select the folder you to which you want to add a subfolder.

4. Select the current folder. For example, select *MyFolder[.].* The Edit screen appears.

5. Select Add Folder.

6. Enter the name of the subfolder.

7. Click Submit.

14.4.2.3 Showing or Hiding a Folder

You use the hide or show option when you create a user view profile. Using these options, you can hide a folder in one user view profile, but display it in another. You can only hide or show the folders you create.

To show or hide a folder:

1. Select Services.

2. Click Go.

3. Select the folder you want to hide or show (or a folder that contains objects you want to hide or show).

4. Select the current folder. For example, select *MyFolder[.].* The Edit screen appears.

Figure 14–2   Designating Hide or Show Status to Folders from a Device
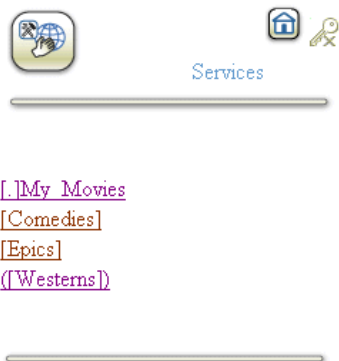
5. Drill down to the current folder that you want to hide or show.

6. From the Edit screen, click Hide or Show.

7. Click Home. When you hide a folder, the Show option appears in the Edit screen. When you show a folder, the Hide option replaces the Show option.

Figure 14–3   Hiding a Folder
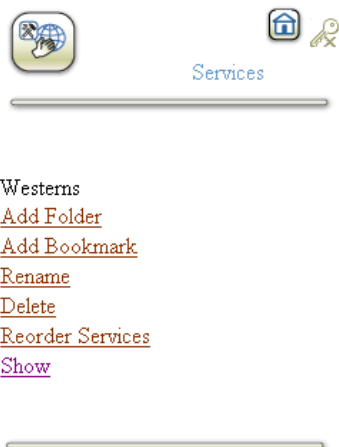
Portal denotes all hidden folders, bookmarks, and quicklinks by enclosing with parenthesis. For example, a hidden folder called *[Addresses]* displays as *([Addresses])*.

14.4.3 Reordering Folders, Quicklinks, and Bookmarks

In addition to hiding or showing objects, you can customize your user view profiles by changing the order of folders, quicklinks, and bookmarks that you create.

To reorder services:

1. Select Services.

2. Click Go.

3. Select the folder containing the objects you want to reorder.

4. Click the current folder. For example, select *MyFolder[.]*. The Edit screen appears.

5. Select Reorder Services

6. Move the folder, service, or bookmark by clicking it. You move objects one level up with each click.

14.5 Managing Bookmarks

A bookmark gives you quick access to a URL. You can create a bookmark for any URL that you access frequently.

14.5.1 Creating a Bookmark

To create a bookmark:

1. Select Services.

2. Click Go.

3. Click the appropriate folder for the bookmark.

4. Click the current folder. For example, select *MyFolder[.]*. The Edit screen appears.

5. Click Add Bookmark.

6. Enter the name for the bookmark.

7. Enter the URL for the bookmark, such as http://www.oracle.com.

8. Click Submit.

Note: The device-based customization tool uses the @ symbol to designate a bookmark.

14.5.2 Editing a Bookmark

You can change a bookmark by selecting a different URL, by renaming it, or changing its visibility status (show or hide).

14.5.2.1 Changing the URL for a Bookmark

To change the URL for the bookmark:

1. Select Services.

2. Click Go.

3. Select the folder containing the bookmark with the URL you want to change.

4. Select the bookmark.

5. Select Change URL.

6. Enter the new URL.

7. Click Submit.

14.5.2.2 Renaming a bookmark

To rename a bookmark:

1. Select Services.

2. Click Go. The Edit screen appears.

3. Select the folder containing the bookmark with the URL you want to change.

4. Select the bookmark.

5. Select Rename.

6. Enter a new name for the bookmark.

7. Click Submit.

14.5.2.3 Showing or Hiding a Bookmark

You can display a bookmark on your device, or you can hide it. You can only hide or show bookmarks you create.

1. Select Services.

2. Click Go. The Edit screen appears.

3. Select the folder containing the bookmark with the URL you want to change.

4. Select the bookmark.

5. Select Hide. The Hide option changes to Show, designating the selected bookmark as hidden in the current display. In the editing screen, Portal notes hidden bookmarks with parentheses, such as (@bookmark).

6. Click Cancel to return to your home menu.

14.6 Managing Quicklinks

Quicklinks enable you to access a service from your account.

14.6.1 Creating a Quicklink

To create a quicklink:

1. From the home menu, select a service.

2. Click Services.

3. Click Go. The Edit screen appears.

4. Select a service. The Edit screen for that service appears.

Figure 14–4   The Editing Screen for a Service

MyTestServ
Create Quicklink
Hide
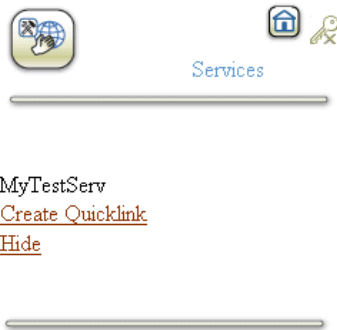
5. Select Create Quicklink.

6. If needed, enter a new name for the quicklink.

7. From the folder list, select an appropriate folder. This is an optional step.

8. Click Submit. The quicklink of the service appears. By default, a quicklink has the same name as the service, but is preceded by an asterisk (*).

Figure 14–5   Creating a Quicklink
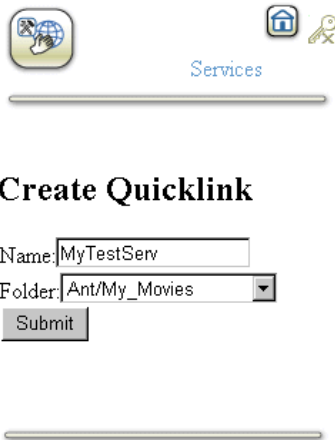
14.6.2 Editing a Quicklink

You can change a quicklink by changing its name or its visibility status (hide or show).

To rename a quicklink:

1. From the home menu, select a service.
2. Click Services.
3. Click Go. The Edit screen appears.
4. Select the quicklink you want to rename.
5. Select Rename. The Rename screen appears.
6. Enter the new name.
7. Click Submit.

14.6.2.1 Showing or Hiding a Quicklink

You can display a quicklink on your device, or you can hide it.

1. Select Services.
2. Click Go. The Edit screen appears.

3. Select the quicklink. The Edit screen for the quicklink appears.

4. Select Hide. The Hide option changes to Show, designating the selected quicklink as hidden in the current display.

5. Click Cancel to return to your home menu.

14.6.3 Deleting a Quicklink

To delete a quicklink:

1. From MyHome, select Setup.

2. From the Setup screen, select Services.

3. Click Edit. The Edit Services screen appears.

4. Select the quicklink you want to delete. The edit screen for that quicklink appears.

5. Select delete.

14.7 Managing Presets

Presets enable users to customize services by defining their own input parameters for an application. The executed application then uses the presets as the input parameters.

14.7.1 Adding Presets

To add a preset:

1. Select Presets.

2. Click Go. The Presets Definition screen appears.

3. Select a preset definition.

4. Click Add.

5. Enter values for the preset definitions.

6. Click Submit. The new preset appears.

> **Note:** The presets you create are organized under the preset definition.

14.7.2 Editing a Preset

To change the values for a preset:

1. Select Presets.

2. Click Go. The Presets Definition screen appears.

3. Select a preset definition. The presets created from that definition appear.

4. Select the preset that you want to modify.

5. Click Edit.

6. Edit the values as needed.

7. Click Submit.

14.7.3 Deleting a Preset

To delete a preset:

1. Select Presets.

2. Click Go. The Presets Definition screen appears.

3. Select a preset definition. The presets created from that definition appear.

4. Select the preset that you want to delete.

5. Click Delete.

6. Click the message confirming the deletion. Clicking Cancel returns you to your home folder and leaves the preset intact.

14.8 Managing Devices

You can create a new device, allowing Wireless to deliver content appropriate to the display capacities of the device.

14.8.1 Adding Devices

To add a device:

1. Select User Info.

2. Click Go. The User Info screen appears.

3. Click Devices. The Devices screen appears.

4. Click Add.

5. Complete the form as follows:

    a. Enter a name for the device, such as MyEmail or MyPager.

    b. Enter the address for the device as appropriate to the device type. For example, enter an email address for email accounts, or the provider-supplied number for WAP-enabled phones.

    c. From the Select Delivery Type drop-down menu, select from among the following device types:

      ■ WAP Push

      ■ SMS

      ■ Voice

      ■ Email

      ■ Fax

      ■ Two-Way Pager

      ■ One-Way Pager

6. Click Submit

7. Select Done. When you create a device, you must validate it using a code sent by Wireless. For information on validating your device, see Section 14.8.2.

14.8.2 Validating Devices

To validate a device:

1. Select User Info.

2. Click Go. The User Info screen appears.

3. Click Devices. The Devices screen appears.

4. Select a device.

5. Select Validate.

6. Enter the control number.

7. Click Submit.

14.8.3 Sending a Test Page

After you receive the validation number, you send a test page.

To send a test page:

1. Select User Info.

2. Click Go. The User Info screen appears.

3. Click Devices. The Devices screen appears.

4. Select a device.

5. Select Send Test Page.

6. Enter a short test message in the Test Message field.

7. Click Submit.

14.8.4 Setting a Default Device

To designate a device as the default:

1. Select User Info.

2. Click Go. The User Info screen appears.

3. Click Devices. The Devices screen appears.

4. Select a device.

5. Select Set Default. The Devices screen reappears, denoting the default device with an asterisk (*).

14.9 Managing User Views

From the device-based customization tool, you can customize views of folders, quicklinks, and bookmarks for different uses, such as a view containing the services you access from work and a view of services you access from home. You can also create views for your different devices, depending on their display capabilities.

Switching views enables you to quickly access the services appropriate to your current locale, situation, area of interest, or device.

Note: Folders, quicklinks, and bookmarks created in one user view are not automatically visible to another user view. For example, the objects you create in a *Work* user view cannot be seen from the *Home* user view.

14.9.1 Creating a User View

To create a user view:

1. Select User Profile.

2. Click Go. The User View Profiles screen appears.

3. Click Add.

4. Enter a name for the profile.

5. Click Submit.

14.9.2 Organizing Services for a User View

You organize folders, services, and bookmarks for a view by first designating a default view and then by hiding or showing the folders, services, and bookmarks appropriate to that view.

14.9.2.1 Selecting a Default User View

To select a default user view:

1. From the Home page, select User Profiles.

2. Select User Profiles.

3. Click Go. The User View Profiles screen appears.

4. Select the view profile that you want to set as the default.

5. Click Set Default. When you return to the home page, only the services selected for that view profile appear.

14.9.2.2 Organizing Folders and Services for a User View

To organize folders and services for a user view:

1. From the Home page, select Services.

2. Click Go. The Edit screen appears, displaying all the services, bookmarks, and folders in your account.

3. Rename, reorder, hide or show the services, folder, or bookmarks appropriate to this user view. See Section 14.4.3 for information on reordering objects. See both Section 14.6.2.1 and Section 14.5.2.3 for information on showing or hiding quicklinks and bookmarks.

14.10 Changing User Preferences

You can change your user preferences.

1. From the Home menu, select User Info.

2. Click Go. The User Info screen appears.

3. Select Change Password.

4. Complete the form as follows:

    a. Enter your old password.

    b. Enter your new password.

    c. Enter your new password once more to confirm it.

    d. Enter, if needed, a password hint.

5. Click Submit.

14.10.0.3 Changing Your User Name and Display Name:

1. From the Home menu, select User Info.

2. Click Go. The User Info screen appears.

3. Select Change Name.

4. Enter a new user name.

5. If needed, enter a new display name.

6. Click Submit. Your new display name appears when you return to Home.

14.10.0.4 Changing Your Privacy Options

Using the Change Privacy screen, you can switch on or off the Show Identity, Show Location, and Detect Location options you set when you registered with the portal.

To change your privacy options:

1. From the Home menu, select User Info.

2. Click Go. The User Info screen appears.

3. Select Change Privacy. The Change Privacy screen appears.

4. Turn on, or off any of the following privacy options:

   ■ Show Identity: This option enables your identity to be reported to a third-party. Some services may not work if you do not select this option.

   ■ Show Location: This option enables your current location to be reported to a third party application. Some services may not work if you do not select this option.

   ■ Detect Location: This option enables you receive content specific to your current location using the signal from your mobile device.

5. Click Cancel.

> **Note:**   See Section 14.3 for more information on the *Show Identity, Show Location,* and *Detect Location* options.

A

Advanced Walkthrough

A.1 Creating Oracle9*i*AS Wireless Applications

These walkthroughs acquaint you with the Wireless Server by showing you how to build a Wireless service, and make it async-enabled. Also, this walkthrough guides you through creating and receiving an alert. You can apply these walkthroughs to your own projects which deploy mobile applications and alert services using Oracle9*i*AS Wireless services.

A.1.1 Creating the HttpAdapter Master Service, HelloMS

This walkthrough gives you an overview of theWireless Webtool, Wireless Customization, and the Wireless Web Server by creating a wireless application, HelloMS. In creating this application, you create a master service using the HttpAdapter, set the the HttpAdapter URL prefix and then test HelloMS. In addition, you use the User Manager to create a group and a user and then publish HelloMS to a user group as a service (Hello Service).

This walkthrough also guides you through configuring and starting a Wireless Web Server process, emulating the user experience by invoking the service from a device and view the both the system log and the service performance data.

A.1.1.1 Before You Begin

Before you access the Webtool, you must create the HelloMS and the HelloReplyMS JavaServer Pages.

A.1.1.2 Creating the HelloMS JavaServer Page Application

Using any editor, enter **HelloMS.jsp** as follows:

```
<?xml version = "1.0" encoding = "ISO-8859-1"?>
```

```
<%@ page contentType="text/vnd.oracle.mobilexml; charset=ISO-8859-1" %>
<SimpleResult>
   <SimpleContainer>
      <SimpleForm title="NameForm" target="reply/HelloReplyMS.jsp"
method="POST">
   <SimpleFormItem name="UserName" title="Name:" />
      </SimpleForm>
   </SimpleContainer>
</SimpleResult>
```

A.1.1.3 Creating the HelloReplyMS JavaServer Page

Enter the **HelloReplyMS.jsp** as follows:

```
<?xml version = "1.0" encoding = "ISO-8859-1"?>
<%@ page contentType="text/vnd.oracle.mobilexml; charset=ISO-8859-1" %>
<%
   String name = request.getParameter("UserName");
%>
<SimpleResult>
   <SimpleContainer>
      <SimpleText>
         <SimpleTextItem>Oracle9iAS Wireless says hello
<%=name%></SimpleTextItem>
      </SimpleText>
   </SimpleContainer>
</SimpleResult>
```

A.1.1.4 Folders for HelloMS and HelloReplyMS

After you create the **.jsps**, you then place them in folders. Under a running Web servlet container file, create a files for the **.jsps** as follows:

1. Create a subfolder entitled *app* under $ORACLE_HOME/j2ee/OC4J_ wireless/applications/examples/examples_web.

2. Copy **HelloMS.jsp** to the *app* folder.

3. Create a subfolder under the *app* folder entitled *reply.*

4. Copy **HelloReplyMS.jsp** to the *reply* folder.

> **Note:** These **.jsps** must be accessed from a Web browser. For
> example, the *app* folder is created under an OC4J application,
> *examples*, which runs at localhost port 7777 and in a browser. You
> access the **.jsps** by entering the following URLs:
>
> - http://localhost:7777/examples/app/HelloMS.jsp
> - http://localhost:7777/examples/app/reply/HelloReplyMS.jsp

Each section of this walkthrough describes a step. These sections include:

- Section A.1.2, "Step 1: Creating the Master Service with the Service Designer"
- Section A.1.3, "Step 2: Using OEM to Set the HttpAdapter URL Prefix"
- Section A.1.4, "Step 3: Using the Webtool Simulator to Test and Debug HelloMS"
- Section A.1.5, "Step 4: Creating a User and User Group"
- Section A.1.6, "Step 5: Publishing HelloMS to TestGroup as a Service"
- Section A.1.7, "Step 6: Configuring and Starting the Wireless Web ServerProcess"
- Section A.1.8, "Step 7: Configuring and Starting the Performance Monitor"
- Section A.1.9, "Step 8: Customizing Hello Service Using Wireless Customization"
- Section A.1.10, "Step 9: Running HelloService in the Wireless Web Server"
- Section A.1.11, "Step 10: Viewing sys_panama.log and Service Performance Data"
- Section A.1.12, "Step 11: Viewing the User Service Log"

A.1.2 Step 1: Creating the Master Service with the Service Designer

This step leads you through creating an HttpAdapter service and its attribute
settings. To create this service, you must access Wireless Webtool as follows:

1. Log into the Wireless Webtool using *orcladmin* as your user name and then
   enter your password.

2. From the Wireless Webtool, select the Service Designer tab. The Browse Folders
   screen of the Service Designer appears.

A.1.2.1 Creating a Folder for the Master Service

You can use folders to organize your master services.

To create a folder:

1. Click Add Subfolder. The Create Folder screen appears.

2. Complete the Create Folder screen as follows:

   a. Enter *TestMSFolder* in the Folder Name field. This is a required field.

   b. Select Valid so that this folder can be published to user groups by the Content Manager.

3. Click Create. The folder, TestMSFolder appears in the Browse Folder screen.

A.1.2.2 Creating a Master Service

Next, you add a master service to TestMSFolder.

To create a master service:

1. From the Browse Folders screen, click TestMsFolder.

2. Click Create Master Service. The Master Service Creation Wizard appears, displaying the Basic Info. screen, the first screen of the master service creation sequence.

3. Complete the Basic Info. screen as follows:

   a. Enter *HelloMS* in the Name field. This is a required field.

   b. In the Description field, enter *Testing Master Service*.

   c. From the drop-down list of adapters, select HttpAdapter. This is a required field.

   d. Select Valid so that the Content Manager can publish this master service to user groups (and edit its values, if needed).

   > **Note:**   Leave the Modulable and Location-Dependent check boxes clear. Also, you do not have to enter any values for the Menu Icon URI, Title Icon URI, Menu Audio URI, or Title Audio URI fields for this walkthrough.

4. Click Next. The Caching screen appears.

A.1.2.3 Setting the Caching for the Master Service

The Caching screen enables you to cache the master service pages in the Web Cache Server.

To set the caching options:

1. Select the Cacheable check box if you would like to cache the master service with the Web Cache Server. Leave the check box clear if you do not want to cache this master service.

2. If you want to cache the master service, set the frequency of the invalidation.

3. Click Next. The Init Parameters screen appears.

> **Note:** Cacheable is an optional field, one that can be left unselected.

A.1.2.4 Setting the Init Parameters

Do not enter any values into the HttpAdapterInvokerListener field.

If you want to plug a listener in for such purposes as debugging, specify the listener class in the HttpAdapterInvokeListener field. These listener methods are called at the following times:

- When the HttpAdapter invocation starts.

- Before the connection to a remote **.jsp**

- After the connection to the remote **.jsp**

- At the end of the HttpAdapter invocation

- When errors occur.

> **Note:** The HttpAdapterInvokeListener field is optional. You can leave it clear. If you specify a listener, you must specify the classpath in the @ORACLE_HOME/j2ee/OC4J_ wireless/config/application.xml file or you must copy the **.jar** file to $ORACLE_HOME/j2ee/OC4J_wireless/lib.

A.1.2.5 Entering the Input Parameters

Click Next. The Input Parameters screen appears.

1. Complete the input parameters screen as follows:

   a. In the URL field, enter *examples/app/HelloMS.jsp*.

   b. In the REPACE_URL field, set *True* to enable the server to replace the relative URL in the **.jsp** with the entire URL. For example, the server replaces **reply/HelloReplyMS.jsp** as http://hostname:7777/examples/app/reply/HelloReplyMS.jsp. See Section A.1.3 for information on setting the HttpAdapter URL prefix.If you set the REPLACE_URL field to False as the the default setting, then Wireless does not replace the relative URLs. The default value is True.

   c. In the FORM_METHOD field, enter *POST* as the form method used between the Wireless Web server and the remote **.jsp**.

   d. Leave the INPUT_ENCODING field clear. If you specify an encoding, then the encoding you choose is used between the Wireless server and the **.jsp**.

2. Click Next. The Async Agent screen appears. Do not select the Async-Enabled check box.

3. Click Next. The Result Transformer screen appears. For this walkthrough, you do not have to specify a result transformer.

To complete the master service, click Finish. The master service, HelloMS appears in the Browse Folders screen under TestMSFolder.

> **Note:**   See for more information on using the Service Designer. See the *Oracle9iAS Developer's Guide* for more information on master service attribute definitions and the HTTPAdapter.

A.1.3 Step 2: Using OEM to Set the HttpAdapter URL Prefix

This step shows you how to specify the HttpAdapter URL prefix. This HttpAdapter uses this prefix to concatenate with the relative URL value defined for the URL input parameter of each HttpAdapter service.

To set the HttpAdapter URL prefix:

1. Login to the Oracle Enterprise Manager (OEM) using *orcladmin* as your user name and *welcome* as your password.

2. From the OEM console, drill down to Wireless . The Wireless Server tab appears.

3. Click the Site tab. The Site overview screen appears.

4. In the Administration section, select URL Configuration. The URL configuration screen appears.

5. For HttpAdapter URL Prefix, enter *http://hostname:7777/.*

6. Click OK. The Site Overview screen reappears.

> **Note:** Ensure the the OC4J example application is running.

A.1.4 Step 3: Using the Webtool Simulator to Test and Debug HelloMS

The Webtool simulator enables you to simultaneously view a master service on a phone simulator and its immediate XML results. In this step, you use the Webtool's Service Designer to search for HelloMS, view and debug HelloMS.

A.1.4.1 Logging into the Webtool

To test HelloMS on the Webtool simulator:

1. Log into the Webtool using *orcladmin* as your user name and *welcome* as your password. The Webtool appears.

2. Select the Service Designer tab. The Browse Folder screen appears.

A.1.4.2 Searching for HelloMS

To find HelloMS:

1. Enter *Hel** in the Name field.

2. From the drop-down menu, select Any Master Service.

3. Click Go.

4. The Search Results screen appears, displaying HelloMS. In the Full Path column, select the link TestMSFolder, which represents the folder containing HelloMS. The Browse Folder screen displays TestMSFolder as the current folder.

A.1.4.3 Viewing HelloMS on a Phone Simulator

To view HelloMS on a phone simulator:

1. Click the PhoneTest icon in the Test column. The phone simulator appears, displaying the page generated by **HelloMS.jsp**.

2. Enter your name (for example, Scott) in the Name field.

3. Click Submit. The next page, generated by **HelloReplyMS.jsp**, appears, displaying "Oracle9*i*AS Wireless says hello Scott."

A.1.4.4 Debugging HelloMS

In this step, you use the debugging tool to view the Wireless XML result of HelloMS.

To view the Wireless XML result of HelloMS:

1. Select HelloMS in the Browse Folder screen.

2. Click Debug.

3. In the Debug screen, do the following:

    a. Select View Wireless XML Result.

    b. Click Set Parameters

    c. Click Run Service. The phone simulator appears, displaying the first page of HelloMS, which is generated by **HelloMS.jsp**. The Service Result section of the screen displays the intermediate result in Wireless XML, enabling you to see if this is the result that you want to generate.

    d. On the phone simulator, enter your name and then click Submit. The Service Result section of the screen displays the Wireless XML for the second page, which is generated by **HelloReplyMS.jsp**.

A.1.4.5 Viewing Another Device Result of HelloMS

If you want to see a device result other than Wireless XML for HelloMS:

1. In the Debug Parameter section, select View Device Result.

2. From the drop-down list, select a device result type, such as WML11. Click Set Parameters.

3. To view the device results for HelloMS, follow the steps 3c and 3d in Section A.1.4.4.

A.1.4.6 Viewing the System Log File

The System Log section enables you to view the number of lines from the end of the system log file (**sys_panama.log**)

To view a selected number of lines from the logging file:

1. Enter the number of lines you want to display in the System Log section. For example, enter *100*.

2. Click Refresh Log. The designated number of lines of the logging file display.

> **Note:** See Chapter 10, "Developing Services" for more information on testing and debugging a master service.

A.1.5 Step 4: Creating a User and User Group

In this section, you create a user account and then assign the user to a user group. Log into the Webtool using *orcladmin* as your user name and *welcome* as your password. The Webtool appears.

A.1.5.1 Creating a User Group

You first create a user group:

1. Select the User Manager tab.

2. Select the Groups tab. The Groups screen appears, displaying the current user groups.

3. In the Create New Group section, enter *TestGroup* in the Group Name field.

4. Click Create. TestGroup appears in the Group Name section.

A.1.5.2 Creating a User

Next, you create a user for TestGroup.

To create a user:

1. Click the User tab. The User screen appears, displaying the current users.

2. In the Users screen, click Create. The Create a New User screen appears.

3. Complete the basic information for the new user by entering the following values:

    a. In the User Name field, enter *TestUser*

    b. Enter *Test User* in the Display Name field.

    c. In the Password field, enter *1234*.

    d. Enter *1234* once more in the Password Confirmation field.

    e. Enter *My Birthday* in the Password Hint field.

    f. Enter *01/01/1960* in the Password Answer field.

    g. Enter *12345* in the Account Number field. Having an account number enables Test User to access services from a hand-held device more easily than by entering an name.

    h. Enter *1234* as the PIN for the account number.

    i. Enter *1234* again in the PIN Confirmation field.

    j. Select male as the gender of the user.

    k. From the drop-down list, select Registered User.

    l. In the Date of Birth field, enter *01/01/1960*.

    m. Select Enabled so that Test User can log in.

4. Complete the User Preference section as follows:

    a. From the Language drop-down list, select English.

    b. Select Pacific Standard Time from the Time Zone drop-down list.

    c. Select User Home from the User Home Root drop-down list.

    d. Select Disclose Identity to External Application to disclose your identity to a third-party application.

    e. Select Disclose Location to an external application to disclose your current location to third-party application.

5. Complete the Group and Role sections as follows:

    a. From the Group list, select Test Group and then use the Select arrow (>).

    b. Do not assign any roles.

6. Click Finish. The User screen reappears, displaying Test User.

A.1.6 Step 5: Publishing HelloMS to TestGroup as a Service

You publish a master service to a user group by creating a service. A service is based on a master service and inherits its values. Services enable you to specialize a master service by modifying its values.

In this section, you use the Content Manager to create a folder and then a service. You then publish the folder and the service to the user group, TestGroup.

To access the Content Manager, you must log into the Webtool using *orcladmin* as your user name and *welcome* as your password. The Webtool appears.

A.1.6.1 Creating a Folder

1. Select the Content Manager tab. The service browse screen appears.

2. Click Add Folder. The General page of the New Folder screen appears.

3. Complete the general parameters of the folder as follows:

    a. Enter *TestFolder* in the Name field.

    b. In the Description field, enter *TestFolder*.

    c. Enter zero (0) in the Sequence field.

    d. Select System from the Renderer Type drop-down list. The System option sorts folders by sequence number, then by name.

    e. Select Personalizable so that you can reorder, hide, or show this folder.

4. Click Continue. The Rendering screen appears. From the drop-down list, select Name Ascend.

5. Click Finish the Service Browse screen reappears, displaying TestFolder. click Test Folder. Service Browse screen for Test Folder appears. Because Test Folder is new, the Browse Service screen for Test Folder displays no services.

A.1.6.2 Creating a Service

In this step, you use the Content Manager's Service Creation Wizard to create a service based on the master service, HelloMS. Because you create this service in the browse service screen of Test Folder, this service will reside in Test Folder.

A.1.6.3 Entering the General Information for a Service

To create a service:

1. From the Browse Service screen of Test Folder, click Add Service. The General screen of the Service Creation Wizard appears.

2. Complete the General screen as follows. You need only to complete the fields noted here.

   a. Enter HelloService in the Service Name field.

   b. Enter Test Hello Service in the Description field.

   c. Enter zero (0) in the Sequence field.

   d. Enter zero (0) in the Cost field.

   e. Select the Visible check box to make this service visible to Test User.

   f. Select the Personalizable check box to enable you to reorder, or hide or show this service.

   g. Select Normal Service.

3. Select Next. The Master Service screen appears.

A.1.6.4 Basing Hello Service on a Master Service (HelloMS)

1. Click TestMSFolder.

2. Select HelloMS using the radio button.

3. Click Next. The Input Parameters screen appears.

A.1.6.5 Setting the Input Parameters for HelloService

The Input parameters screen displays the input parameters that you set for Hello MS using the Service Designer. You do not have to change the input parameters. Click Next. The Async Services screen screen appears.

A.1.6.6 Setting the Async Services Parameters

The Async Services screen enables you to set the parameters for an async service. Since the master services, HelloMS is not async-enabled, you do not have to enter any values in this screen. Click Submit to complete Hello Service.

The Browse Service screen for TestFolder reappears, displaying HelloService.

A.1.6.7 Assigning Hello Service to a Group

In this section, you use the Content Manager to assign HelloService to a user group, TestGroup, which you created with the User Manager.

1. Click the Groups Tab. The Groups List screen appears.

2. Use the radio box to select TestGroup.

3. Click Assign Services. The Service Content screen for TestFolder appears. The screen includes two tables: services accessible to the Test Group and the Available Services table, which lists services that currently exist in the repository.

4. Using the Select check box, select TestFolder from the Available Services table.

5. Click Add to Group. Test Folder appears in the available services for Test Group.

6. Click Finish. The Group List screen reappears.

A.1.7 Step 6: Configuring and Starting the Wireless Web ServerProcess

In this section, you use the Wireless system management functions (accessed through the OEM console) to configure the connection pool, log directory, URL prefix, and HttpAdapter, and then start the Wireless Web server.

A.1.7.1 Configuring the Connection Pool

To configure the connection pool.

1. After you log into OEM and drill down from the Wireless system component, click the Site tab. The Site screen appears.

2. From the Administration section of the screen, select Connection Pool. The JDBC Connection Pool screen appears.

3. Complete the JDBC Connection Pool screen as follows:

    a. Enter the minimum number of connections for the connection pool. The default is 4.

    b. Enter the maximum number of connections for the connection pool. The default is 100.

    c. Enter the incremental allocation of new connections to the connection pool. The default is 1.

4. Click OK. The Site screen reappears.

> **Note:** The values you enter in the JDBC Connection Pool screen in the Site tab are used as the default connection values for the Wireless Web Server and Async Server applications, as well as the Wireless Webtool and the Wireless Customization.

A.1.7.2 Configuring the System Logging

Next, you configure the system logging.

1. From the Administration section of the Site screen, select Logging. The System Logging screen appears.

2. Complete the System Logging screen as follows:

   a. Enter the name of a log file. The default is **sys_panama.log**.

   b. Enter the maximum number of bytes in the Maximum Log File Size field. The default value is 10000.

   c. Select the logging level from the log level list. The default is Warning and Error.

3. Click Finish. The Site screen reappears.

> **Note:** The values you enter in the System Logging screen of the Site tab are used as the default values for the Wireless Web Server and Async Server applications, as well as the Wireless Webtool and the Wireless Customization. Unless these values are overridden, the server processes of the Alert Engine, Data Feeder, Messaging Server, and Performance Monitor also use them as the default system logging configuration.

A.1.7.3 Configuring the Site URLs for the Wireless Web Server

To configure the Site URLs:

1. From the Administration section of the Site tab, select URL Configuration. The URL Configuration screen appears.

2. Complete the screen as follows:

    a. Enter the Wireless Web Server HTTP URL. The default setting is
       http://hostname:7777/ptg/rm.

    b. Enter the Wireless Server HTTPS URL. The default setting is
       http://hostname:7777/ptg/rm.

3. Click OK. The Site screen reappears.

A.1.7.4 Configuring the Logging Directory for the Wireless Web Server

To configure the logging directory:

1. Select the Server tab. The Server screen appears.

2. From the Configuration section, select Logging Directory.

3. In the System Logging screen, specify the logging directory. For example, enter
/tmp. All of the servlet container processes and standalone processes log error,
warning and notification to this directory. The runtime data, such as service
invocation and user session are also logged to this directory.

A.1.7.5 Starting the Wireless Server

After you have logged into the OEM console, you can start the

To start the Wireless Server as follows:

1. Click the Enterprise Manager link. The home page of the Enterprise Manager
appears.

2. Drill down to the OC4J Component screen.

3. Start the Wireless Server product group. Starting this product group also starts
the Wireless Web Server and the Async Server.

A.1.8 Step 7: Configuring and Starting the Performance Monitor

To complete this section, you must first access Wireless from the Oracle Enterprise
Manager.

A.1.8.1 Configuring the Performance Monitor Schema

1. Drill down to the Wireless Server and then click the Site tab.

2. Select Performance Monitor from the Processes table. The Performance Monitor
Configuration screen appears.

3. Accept the settings in the Basic Configuration section. The default settings are as follows:

   - The delimiter for the logged name/value pairs is #%=%#.

   - The delimiter for logged records is ~#$.

   - The default wakeup frequency is one (1) minute.

   - The default close frequency is 300 seconds.

   - The batch size for the database logging is 15.

4. If needed, modify the wakeup and frequency values.

5. Click OK.

Note: You do not need to specify the values for the JDBC Driver section. If you do not enter a username, password, host name, or SID, then Wireless logs the runtime data to the same schema as the Wireless schema. You can also specify the JDBC driver values to log the runtime data to a separate schema. See Chapter 7, "Server Performance Monitoring" for viewing runtime data. The default port number for the JDBC driver is 1521.

A.1.8.2 Configuring the Performance MonitorThread Pool

To configure the thread pool:

1. Click the Wireless Server tab.

2. From the Processes table, select Performance Monitor. The Performance Monitor Processes screen appears.

3. Click a performance monitoring process. The detail screen for that process appears.

4. From the Configuration screen, select Thread Pool Configuration. The Thread Pool Configuration screen appears.

5. If needed, increase the number of threads to increase the speed of the logging processes.

6. Click OK. The detail screen for the performance monitor process reappears.

7. If the performance monitor process is stopped, then start it by clicking the Start button. This process moves the runtime data logged in the logging directory file to the specified logging database schema. The data in the database schema is retrieved and displayed as performance data table or chart.

A.1.9 Step 8: Customizing Hello Service Using Wireless Customization

In this step, you use Wireless Customization to tailor HelloService to different user view profiles.

A.1.9.1 Logging into Wireless Customization

To access the Wireless Customization tool from a Web browser, enter a URL. For example:

```
http://hostname:7777/customization/Login.jsp
```

In the login page, enter *TestUser* as the username and *1234* as the password. The Service subscription screen appears, displaying the service tree. The user profile displays the system generated default profile.

A.1.9.2 Managing the View Profile

To manage the view profile.

1. Click View Profiles. The View Profiles screen appears.

2. In the View Profile Name field, enter Work.

3. Click Create. The new view profile, Work, appears in the View Profile List.

4. Create another view profile, Home, using these steps.

A.1.9.3 Customizing a Hello Service for the Work View Profile

In this step, you make Hello Service visible in the Work view profile.

To select Work as the view profile:

1. Click the Services tab. The Service Subscription screen appears.

2. From the Select a View Profile drop-down, select Work.

3. Click Go.

4. Click HelloService. (You may have to expand the folders of the service tree to access Hello Service). The Edit service page appears.

5. In the Edit Service screen, select the Visible check box to make Hello Service visible in the work view profile. The Visible check box is clear in the default setting.

6. Click Apply. The Service Subscription screen reappears.

A.1.9.4 Hiding Hello Service in the Home View Profile

In this step, you differentiate the Home view profile from the Work view profile by hiding Hello Service in the Home view profile.

To hide HelloService in the Home view profile:

1. Click the Services tab. The Service Subscription screen appears.

2. From the Select a View Profile drop-down, select Home.

3. Click Go.

4. Click HelloService. The Edit Service screen appears.

5. Clear the Visible check box.

6. Click Apply. The Service Subscription screen reappears.

7. Click the View Profiles tab.

8. From the View Profile list, select Work.

9. Click the SetDefault button.

For more information on user profiles see Chapter 13, "Customizing Services".

A.1.10 Step 9: Running HelloService in the Wireless Web Server

Running Hello Service from Wireless Web Server enables you to see the device-level view of the service.

1. In the login page for Wireless Web server, enter *TestUser* and then *1234* as your password. Your home page appears, displaying the settings for the Work user profile (both TestFolder and HelloService are visible).

2. Click Test Folder. Hello Service appears.

3. Click Hello Service.

4. Enter your name and then click Submit. The phone simulator displays "Oracle9*i*AS Wireless says hello (your name)".

A.1.10.1 Changing Your Default User View Profile

To change your user profile from Work to Home.

1. Return to your home page.

2. Select the User Profile from the set up menu.

3. Click Go. The User Profile page appears, displaying the current user view profiles, Work, Home, and System Generated Profile. Wireless places an asterisk (*) in front of the default profile, Work.

4. Select Home.

5. Click Set Default. An asterisk (*) appears before Home, designating it as the current default view profile.

6. Return to your home page.

7. Click TestFolder. This time, HelloService does not appear, since you hid this service from the Home profile inWireless Customization in Section A.1.9.4.

A.1.11 Step 10: Viewing sys_panama.log and Service Performance Data

For this walkthrough, you access Wireless through the OEM to view the system log file and also view the service performance on a per-user basis.

1. From the Wireless Server tab, click the Wireless Web Server. The Wireless Server screen appears.

2. From the Runtime section, click System Log Files. The System Log Files screen appears, displaying all of the files in the log directory.

3. Find **sys_panama.log**.

4. Click the eyeglass icon in the same row. A viewing screen appears for sys-panama.log. The log file appears in the text pane.

5. Click Printable Page. The log file appears in full-screen view, which enables you to easily print the log file.

6. To exit the Printable Page, click your browser's back button.

7. Click the Wireless Server tab. The Wireless Server screen appears.

8. Click the process name in the table.

9. In the Process table, click the Wireless Web Server process. The Wireless Web Server processes screen appears.

10. In the Performance Section, select User Service. The User Service screen appears. This screen displays the number of invoked services on a per-user basis.

11. From the Performance Data Sample Time Period drop-down list, select Last 1 day.

12. Click Go. The table displays the number of invoked services for each user in the last day. If needed, view other types of performance data in the Performance Section, such as Session Service or Session Duration.

A.1.12 Step 11: Viewing the User Service Log

The User Manager enables you to view the service activity log for a given user. To view an activity log:

1. From the Webtool, select the User Manager tab. The User screen appears, displaying a list of current users.

2. From the list of users, select TestUser.

Click the View Service Log button. The User Manager displays the user service data screen, which lists all of the services invoked by TestUser over the previous day as follows:

Table A–1   Service Log Statistics

Element	Description
Service Name	The name of the service
Service ID	The OID of the service in the database.
Service Type	The type of object (folder, bookmark, link, or local module) accessed by the user..
Invocation Time	The time the user accessed the service.
Invocation Status	Whether Wireless successfully executed the service. 0 indicates that Wireless successfully launched the service; 1 indicates that Wireless failed to launch the service.

You can view the activity log for a specific period using the *From Date* and *To Date* fields. You can set starting and ending dates either by entering them in the fields in the *yyyy-mm-dd* format, or by picking them from the calendars. Click Go after you have completed entering the date range.

A.2 Creating an Async-Enabled Service

In this walkthrough, you make HelloMS an async-enabled master service. You will also configure and start the messaging server and async server processes so that you can invoke an async-enabled service through email.

To create this service, you must access Wireless Webtool as follows:

1. Log into the Wireless Webtool using *orcladmin* as your user name and then enter your password.

2. From the Wireless Webtool, select the Service Designer tab. The Browse Folders screen of the Service Designer appears.

Each section in this walkthrough describes a step for creating an async-enabled services. These steps include:

- Section A.2.1, "Step 1: Enabling HelloMS as an Async Service"

- Section A.2.2, "Step 2: Setting the Async Parameters for HelloService"

- Section A.2.3, "Step 3: Configuring the Messaging Server with the Email Driver"

- Section A.2.4, "Step 4: Configuring the Driver Instance Configuration"

- Section A.2.5, "Step 5: Starting the Messaging Server"Chapter A.2.6, "Step 6: Configuring the Async Server"

- Section A.2.7, "Step 7: Starting the Async Server"

- Section A.2.8, "Step 8: Invoking an Async-Enabled Service"

- Section A.2.9, "Step 9: Viewing sys_panama.log and Performance Data from the Enterprise Manager"

- Section A.2.10, "Step 10: Viewing the User Async Log"

A.2.1 Step 1: Enabling HelloMS as an Async Service

To make HelloMS into an async service:

1. From the Browse Folder screen, click TestMSFolder to drill down to the browse screen for TestMSFolder.

2. Using the radio buttons, select HelloMS.

3. Click Edit. The Basic Info. screen of the Edit Master Service tool appears.

4. From the left menu, select Async Agent. The Async Agent screen appears.

5. Select Async-Agent Enabled.

6. In the Async Command Line Syntax field, enter *Please invoke Hello Service by sending a message saying 'Hello <your name>.'* This help text is sent to the user if the user issues an application help message (a *'help'* command) to the Async Server.

7. Enter a semi-colon (;) as in the Delimiter field. Users use this delimiter to separate the input parameters in the messages they send.

8. Click Apply. The Browse screen for HelloMS reappears.

Note: See Section 10.3.3.6 in Chapter 10, "Developing Services" for information on creating async services.

A.2.2 Step 2: Setting the Async Parameters for HelloService

After you make an master async service with the Service Designer, you then use the Content Manager to set async parameters for the service based on the master async-enabled service.

To set the async parameters for a service:

1. Log into the Content Manager. The browse service screen appears for the services and folders at the root level.

2. Click TestFolder to drill-down to the service-browsing page for TestFolder.

3. From the service-browsing page for TestFolder, use the radio buttons to select HelloService.

4. Click Edit. The Edit service tool appears and defaults to the General screen.

5. From the left menu, click Async Service. The Async Service screen appears. The Delimiter, Async Command Line Syntax, and input fields are populated with the values set for HelloMS in the Service Designer. You do not have to edit these fields for this walkthrough.

6. Complete the Async Service screen as follows.

   a. Enter *Hello* in in the Short Name field. This is short command for invoking the service from the message sent by users.

   b. You do not have to enter a service-specific address. If you enter a service-specific address for each device, then the user does not need to enter

the short name when invoking this async service from the device. For example, if you specify *hello@oracle.com* as the email address for HelloService, then the user can invoke this service by sending an email to *hello@oracle.com* without entering Hello as the short name in this query email. If the service-specific address is not specified, then the site-wide address is used instead. For the site-wide address, the user invokes HelloService by sending an email to the site-wide address (for example, *demo@oracle.com*) with Hello in the subject or body.

A.2.3 Step 3: Configuring the Messaging Server with the Email Driver

You use the Wireless part of the Oracle Enterprise Manger (OEM) to configure the messaging server with the email driver.

To configure the messaging server:

1. Click the Site tab.

2. Click messaging server in the process table. The Messaging server screen appears.

3. In the Configuration section, click Messaging Server Drivers. The Messaging Server Drivers screen appears.

4. Click Add Driver. The Add Driver screen appears. Enter only the values noted here; you do not have to enter values for fields not noted in these instructions.

5. Complete the Add Driver screen as follows:

    a. In the Driver Name field, enter *TestEmailDriver.*

    b. Select Email from Delivery Category.

    c. From the Speed Level drop-down list, select 3.

    d. From the Cost Level drop-down list, select 1.

    e. From the Capability drop-down list, select BOTH.

    f. Enter 1 in the Number of Message Queues field.

6. In the Driver Class Name field, enter oracle.panama.messaging. transport.driver.email.EmailDriver.

7. Click Add Another Row to add a row for each of the following parameters:

    ▪ server.incoming.protocol

    ▪ server.incoming.host

- server.incoming.receiverfolder

- server.incoming.usernames

- server.incoming.passwords

- server.incoming.emails

- server.incoming.checkmailfreq

- server.incoming.autodelete

- server.incoming.deletefreq

- server.outgoing.host

- default.outgoing.from.address

8. Click Create.

A.2.4 Step 4: Configuring the Driver Instance Configuration

To configure the Messaging Server:

1. Click the Wireless Server Tab. The Server screen appears.

2. Click Messaging Server in the process table.

3. The Messaging Server Processes screen appears.

4. Enter *TestEmailServer.*

5. Click the Add button. TestEmailServer is added into the Messaging Server process table.

6. Click TestEmailServer (or select it and click View Details). The overview screen for the process appears.

7. In the Configuration section, click Driver Instance Configuration. The Driver Instance Configuration screen appears.

8. Click Add Driver Instance. The Add Driver Instance screen appears.

9. Complete the Add Driver Instance screen as follows:

   a. Enter TestEmailDriverInstance in the Driver Instance Name field.

   b. From the Driver Name drop-down list, select TestEmailDriver.

   c. Click Go.

   d. In the Number of Sending Threads field, enter 2.

e. In the Number of Receiving Threads field, enter 2.

f. In the Driver Specific Parameter fields, enter the following values:

Table A–2   Values for Driver Specific Parameters

For This Parameter Name...	Enter this Value
server.incoming.protocol	IMAP
server.incoming.host	gmmailt.oraclecorp.com (Replace this with your incoming mail server.)
server. incoming.receivefolder	INBOX
server.incoming.usernames	demo
	This is a list of all the email accounts you use for Site-Wide Addresses and Service-Specific Server Addresses. Use a comma (,) to separate the email accounts in this list. For this example, you specify *demo@oracle.com* as the Site-Wide Address.
server.incoming.passwords	demopass, (A list of the passwords for each email account listed in the server.incoming.usernames field with the same sequence.)
server.incoming.emails	demo@oracle.com, hello@oracle.com (list all of the site-level server address and server-level server addresses.)
server.incoming.checkmailfreq	5
server.incoming.autodelete	true (This enables the email driver to delete all of the processed messages in the inbox.)
server.incoming.delete.freq	600
server.outgoing.host	gmsmtp01.oracelcorp.com (Replace this with your outgoing mail server).
default.outgoing.from.address	demo@oracle.com. (This is the email account that the driver uses as the default *from* address.)

10. Click Create.

> **Note:** You must re-start the messaging server each time you change the driver-specific attributes.

A.2.5 Step 5: Starting the Messaging Server

To start the messaging server:

1. Log into the Wireless part of the Oracle Enterprise Manager as *orcladmin*.

2. Select the Wireless Server tab.

3. Select Messaging Server from the process table. The Messaging Server Processes screen appears.

4. Using the radio buttons, select TestEmail Server.

5. Click Start.

A.2.6 Step 6: Configuring the Async Server

To configure the async server:

1. Log into the Wireless part of the Oracle Enterprise Manager as *orcladmin*.

2. Select the Site tab.

3. In the Process table, click Async Server. The Async Server screen appears.

4. In the Configuration section, click Async Server Configuration. The Async Server Configuration screen appears.

5. Use the default values fo the Async commands in the Command Format Section of the Async Configuration screen. The default values are as follows:

   - Help Command: The command in a message from the user that invokes a general help menu.

   - Application Help Command: If a user sends in a message as 'help hello', then the Async Server returns the help line for HelloServer, which is *Please invoke Hello Service by sending a message saying,'Hello <your name>'*.

   - Escape Command: Enables users to abort the current service and start a new one by entering the short name of the new service and parameter after the escape command.

- ■ Stop Command: Indicates the end of the current command input. The async server ignores all text after the stop command. (A blank line also indicates the end of the current command input).

- ■ Login Command: Enables users to login to their accounts.

- ■ Logoff Command: Enables users to logoff of their accounts.

- ■ Command Line Delimiter: Separates commands when multiple commands are entered onto one line.

6. In the Site-Wide Address section, enter *demo@oracle.com* (replace this with a valid email account on your email server). This address is included in the server.incoming.emails list of the EmailDriverInstance. See Section A.2.4 for more information. You do not need to enter a value in the SMS Address field.

For this walkthrough, you do not have to enter a value in the Default Service field. If needed, you can enter the name of the default service invoked if the message sent by the user does not specify a short name for a service.

7. Click OK.

A.2.7 Step 7: Starting the Async Server

To start the async server:

1. Log into the Wireless part of the Oracle Enterprise Manager as *orcladmin*.

2. Drill down to OC4J page.

3. Start the Wireless Server product group.

A.2.8 Step 8: Invoking an Async-Enabled Service

To invoke an async-enabled service:

- ■ Send an email to demo@oracle.com (or to the value you entered as the site-wide server address). In the Subject line, enter Hello. After you send this message, you receive a message asking you to enter a user name. Reply to this email and enter your name in the body of the email. You then receive another email saying, "Oracle9*i*AS Wireless says hello <your name>."

A.2.9 Step 9: Viewing sys_panama.log and Performance Data from the Enterprise Manager

To view the **sys_panama.log**:

1. From the Wireless part of the Oracle Enterprise Manager, click the Wireless Server tab. The Wireless Server screen appears.

2. From the Runtime section, click System Log Files. The System Log Files screen appears, displaying all of the files in the log directory.

3. Find **sys_panama.log**.

4. Click the eyeglass icon in the same row. A viewing screen appears for **sys-panama.log**. The log file appears in the text pane.

5. Click Printable Page. The log file appears in full-screen view, which enables you to easily print the log file.

6. To exit the Printable Page screen, click your browser's back button.

7. Click the Wireless Server tab. The Wireless Server screen appears.

8. In the Process table, click the Async Server process. The Async Server processes screen appears.

9. Click the Async Server process. The overview screen for that process appears.

10. In the Performance section, click Service Access Count Today. The Service Access Count Today screen appears. The table displays the number of async-enabled services for the day. Clicking other links, such as Average Message Queue Time Today, enables you to view other performance metrics for the async server.

A.2.10 Step 10: Viewing the User Async Log

The User Manager enables you to view the async service activity log for a given user. To view an activity log:

1. From the Webtool, select the User Manager tab. The User screen appears, displaying a list of current users.

2. From the list of users, select TestUser.

3. Click the View Async Log button. The User Manager displays the user async service data screen, which lists all of the async services accessed by TestUser over the previous day as follows:

Table A–3   The Async Log

Element	Description
Short Name	The name of the async service (for example, *ST* for a stock quote service).
ID	The OID of the async agent service in the database.
Device Address	The address of the user's device receiving the alert.
Server Address	The address of the async service.
Delivery Type	The delivery type for the async service (for example, SMS).
Receiving Time	The time the async agent engine received the request.
Error Description	A message describing how Wireless failed to respond to the async service.

You can view the activity log for a specific period using the *From Date* and *To Date* fields. You can set the starting and ending dates, either by entering them in the *yyyy-mm-dd* format, or by selecting the appropriate days from the calendars. Click Go after you enter the date range.

A.3 Creating and Receiving an Alert

This walkthrough illustrates the creation of an alert service that sends stock quotes. Using this walkthrough, you will learn how to configure and start a data feeder process and the alert engine. This walkthrough also guides you through the user experience of registering a device and subscribing to an alert.

Each section of this walkthrough describes a step for creating or receiving an alert. These sections include:

- Section A.3.1, "Step 1: Creating a Data Feeder from a Static File"

- Section A.3.2, "Step 2: Creating a Master Alert"

- Section A.3.3, "Step 3: Publishing the Master Alert as an Alert"

- Section A.3.4, "Step 4: Configuring the Messaging Server with the Email Driver"

- Section A.3.5, "Step 5: Configuring the Driver Instance Configuration."

- Section A.3.6, "Step 6: Starting the Messaging Server"

- Section A.3.7, "Step 7: Configuring and Starting the Data Feeder Process"

- Section A.3.8, "Step 8: Configuring and Starting an Alert Engine Process"

A.3.1 Step 1: Creating a Data Feeder from a Static File

Copy $ORACLE_HOME/wireless/sample/stock.csv to /tmp/stock.csv. This file has a table of stock quotes as follows:

Table A–4 $ORACLE_HOME/wireless/sample/stock.csv

Stock Symbol	Current Price	% Change	Closing Price	High Price	Low Price	Volume
MOT	14.26	-0.02	14.51	14.6	14.1	4605100
CSCO	19.73	0.88	19.08	19.81	19.01	52400100
IFMX	5.13	0.09	5.1	5.18	4.92	2644600
SEBL	46.8	0.92	47.51	47.51	45.11	8816800
A	33.5	-0.47	34	34.19	33.3	1579000
B	21.93	0.68	21.24	21.93	21.24	14700
C	52.28	0.48	52.15	52.3	51.2	10872700
ETYS	0	0	0	0	0	0
ARBA	5.85	-0.02	6.05	6.1	5.76	3005600
TIBX	13.93	0.35	13.675	14.59	13.64	2351400
IBM	9.21	0.05	9.26	9.43	9.13	470900
METG	2.65	-0.07	2.7	2.75	2.65	249400
ERICY	6.22	0.02	6.235	6.36	6.19	6081900
EXDS	7.9	-0.09	8.16	8.17	7.81	3263700
LBRT	7.92	-0.55	8.565	8.6	7.92	398800
NUAN	15.65	-0.85	16.455	16.96	15.57	675000
YHOO	20.78	0.32	20.46	20.5	19.53	12081700
T	21.26	-0.23	21.6	21.75	21.08	7660000

Table A–4   *$ORACLE_HOME/wireless/sample/stock.csv*

Stock Symbol	Current Price	% Change	Closing Price	High Price	Low Price	Volume
SQST	1.54	-0.07	1.61	1.62	1.5	76300
ASFD	0.3	0.02	0.305	0.31	0.29	50200
TTWO	20.55	-0.35	20.955	21.12	20.1	795900
LUMT	0.58	-0.07	0.61	0.62	0.58	170400
ILUM	32.34	-0.22	32.5	32.66	32.01	325500
BBSW	1.93	-0.13	2.06	2.09	1.92	368300
CMRC	6.64	-0.06	6.83	6.9	6.55	2092300
NEOF	0.86	-0.01	0.875	0.93	0.86	653200
SUNW	16.08	-0.55	16.781	17	16.04	24525600
PALM	6.25	0.06	6.34	6.49	6.2	14666500
KANA	1.98	-0.08	2.05	2.09	1.93	849500
USIT	0	0	0	0	0	0
BVSN	6.5	0.09	6.67	6.74	6.45	3327800
LU	8	0.01	8.06	8.07	7.76	11512000
FLPSX	26.72	0.24	0	0	0	0
RHAT	5.26	-0.08	5.48	5.5	5.21	671700
SDLI	0	0	0	0	0	0
DJIND	0	0	0	0	0	0
WBVN	0.17	0.02	0.18	0.19	0.16	6160900
TRRA	0	0	0	0	0	0
ORCL	28.06	0.2	16.53	16.54	15.93	34347900
MSFT	70.78	0.44	70.55	71.028	69.8	21534300
NVGP	0	0	0	0	0	0
RIMM	35.4	-0.29	36.21	36.78	34.85	1881400
CORL	2.51	-0.01	2.555	2.59	2.45	528800
WB	68	-0.26	68.36	68.47	67.61	1196700

Table A–4 $ORACLE_HOME/wireless/sample/stock.csv

Stock Symbol	Current Price	% Change	Closing Price	High Price	Low Price	Volume
FQYXD	0	0	0	0	0	0
FNSR	15.93	-0.88	17.05	17.14	15.85	1988900
MSQJJ	0	0	0	0	0	0
DL	14.35	0.31	13.95	14.5	13.95	136800
PCS	22.61	0.9	21.72	22.8	21.5	4583200
COMS	5.55	-0.18	5.71	5.88	5.53	1852100
CLGY	6.48	-0.02	6.1	6.48	6	15300

A.3.1.1 Creating the Data Feeder

In this step, you use the Data Feeder Creation Wizard in the Service Designer to create a data feeder that retrieves the stock information from the **stock.csv** file and feeds it to a master alert.

Entering the Basic Information for the Data Feeder

To create the data feeder:

1. Log into the Webtool as *orcladmin*.

2. Select the Service Designer tab.

3. Select the Data Feeder subtab. The data feeder browsing screen appears.

4. Click Create Data Feeder. The Basic Info. screen, the first screen of the Data Feeder Creation Wizard appears.

5. Complete the Basic Info. screen as follows:

    a. Enter StockDF in the Name field.

    b. Select Regular. (You select the Regular option since this data feeder uses the built-in data retrieval frame work to collect data and push it to an alert engine. You select Pass-Through if you specify an external application that pushes data to an alert engine.)

    c. From the Protocol Type drop-down list, select File since this data feeder retrieves its content for the alert from **stock.csv** file.

   d. From the Format Type drop-down list, select Delimited since **stock.csv** is a comma-separated file.

   e. You do not have to enter a value into the Data Filter Hook field. You use this field to specify a filter hook for additional customization of the data filter, such as filtering out content data before feeding the data to the content cache table.

   f. You do not have to enter a value into the Download Hook field. You use this field to customize the data feeder to download data from a special URL.

   g. You do not have to enter a value into the Null Value field. You use this field to mark inapplicable data using such conventions as N/A.

   h. Select 6:00 am as the start time.

   i. Select 1:00 pm (1300) as the end time.

   j. Select 60 seconds as the update interval. This is the interval in which the data feeder fetches data from the data source, **stock.csv**.

   k. In the Batch Size field, enter 30. This instructs StockDF to download 30 rows of data from **stock.csv** during each interval.

   l. Select Workdays as the days designated for updating the data.

6. Click Next. The Init Parameters screen appears.

Entering the Init Parameters for the Data Feeder

Enter the init parameters for StockDF as follows:

1. In the File Path field, enter */tmp/stock.csv*

2. Enter a comma (,) in the Delimiter field.

3. You do not have to enter a value into the Quote Char field. You use this field to specify a special character that represents a quote in the data source.

4. Click Next. The Input Parameters screen appears.

Entering the Input Parameters for the Data Feeder

Enter the input parameters for the data feeder as follows:

1. Click Add Another Row.

2. Complete the fields as follows:

a. Enter *symbol* in the Internal Name field. This name is used within the Wireless server both by the master alert and the alert.

b. From the Data Type drop-down list, select TEXT_80. This is the data type for the table column when creating a subscription table.

c. You do not have to enter a value in the External Name because this parameter does not apply to a data feeder using the File protocol.

d. Enter *1* in the Return Content Column Number field. (The stock ticker symbol is in the first column of the **stock.csv** file.)

e. Enter *Ticker* in the Caption field. End users see this caption when they subscribe to the alert.

f. You do not have to enter a value into the Default Value field. Values entered into this field are the default value if an end user does not supply a value.

3. Click Next. The Output screen appears.

Entering the Output Values for the Data Feeder

To enter the output values for the data feeder:

1. Click Add Another Row.

2. Complete the fields as follows:

a. Enter Price in the Internal Name field. This name is used within the Wireless Server by both the master alert and the alert.

b. From the Data Type drop-down list. select NUMBER. This is the data type for the table column when creating the subscription table.

c. Enter 2 in the Column Number field. (The stock prices are in the second column of the **stock.csv** file.)

d. Enter Price in the Caption field. End users see this label when they subscribe to the alert service.

3. Click Add Another Row and complete the fields as follows:

a. Enter Change in the Internal Name field.

b. From the Data Type drop-down list, select NUMBER.

c. Enter 3 in the Column Number field. (The change in stock prices is in the third column of the **stock.csv** file).

    d. Enter Change in the Caption field.

4. Click Finish. The data feeder browsing screen reappears, displaying StockDF in the table.

> **Note:** See Section 10.5 in Chapter 10, "Developing Services" for information on data feeders. For information on data feeder semantics, see *Oracle9iAS Developer's Guide*.

A.3.2 Step 2: Creating a Master Alert

After creating the StockDF data feeder, you can create a master alert.

1. Log into the Webtool as *orcladmin*.

2. Select the Service Designer tab.

3. Select the Master Alert subtab. The browsing screen for master alerts appears.

4. Click Create Master Alert. The Basic Info screen of the Master Alert Creation Wizard appears.

Entering the Basic Information for a Master Alert

To enter the basic information of the master alert:

1. Enter *StockMA* in the Name field.

2. In the Description Field, enter *Stock Master Alert*.

3. From the Data Feeder drop-down list, select *StockDF* (the data feeder you created in Step 1).

4. You do not have to enter a value into the Subscriber Filtering Hook. This hook enables you to filter out some subscribers for the qualified alerts before these alerts are sent to the messaging server.

5. Select the Time-Based Enabled check box. This option enables the end user to specify the time for the alert to be sent.

6. Click Next. The Trigger Conditions screen appears.

Setting the Trigger Conditions for the Master Alert

To enter the trigger conditions for the master alert:

1. Click Add Another Row.

2. Complete the fields as follows:

    a. Enter *PriceMax* in the Condition Name field. End users see this label when the subscribe to an alert service.

    b. Select *price* in the Trigger Parameter field. This condition is set for the output parameter price.

    c. From the Condition Type drop-down list, select *Greater Than.* By selecting this condition type, you create a master alert that is triggered when the stock price rises above the subscription value entered by users.

    d. You do not need to enter a value in the Default Value field. This field specifies the default value of PriceMax if users do not enter a value.

3. Click Add Another Row and complete the fields as follows:

    a. Enter *PriceMin* the in the Condition Name field.

    b. Select *price* in the Trigger Parameter field.

    c. From the Condition Type drop-down list, select *Less Than.* Selecting this option creates a master alert that is triggered when the stock price falls below the subscription value entered by users.

4. Click Add Another Row and complete the fields as follows:

    a. Enter *Change* in the Condition Name field.

    b. Select *change* in the Trigger Parameter field.

    c. Select Greater than Absolute Value from the Condition Type drop-down list. By selecting this condition type, you create a master alert that is triggered when the absolute value of the percentage of the change in the stock price is greater than the subscription value entered by users.

    d. You do not have to enter a value in the Default Value field.

5. Click Next. The Message Template screen appears.

Creating the Message Template for the Master Alert

Complete the Message Template screen as follows:

1. Select XML Template.

2. Enter the following template for formatting the alert message that Wireless sends the end user:

```
<SimpleText>
 Stock Alert for &symbol;
 Price: &price;
 Change: &change;
</SimpleText>
```

3. Click Submit. The browsing screen for master alerts reappears, displaying StockMA in the master alert table.

> **Note:** See Section 10.4 in Chapter 10, "Developing Services" for information on creating master alerts.

A.3.3 Step 3: Publishing the Master Alert as an Alert

In this step you use the Content Manager to publish the master alert, Stock MA, to user groups as an alert.

1. Log into the Webtool as orcladmin.

2. Select the Content Manager tab.

3. Select the Alert subtab. The browsing screen for topics and alerts appears.

4. Click Add SubTopic. The New Topic screen appears.

5. In the Topic Name field, enter TestTopic. Click Finish. The browsing screen reappears, displaying TestTopic.

6. Click TestTopic. The browsing screen for TestTopic appears.

7. Click Add Alert. The General screen of the Alert Creation Wizard Appears.

Entering the General Information of an Alert

To enter the general parameters of an alert:

1. Enter *StockAlert* in the Alert Name field.

2. In the Description field, enter *Alert for Stock Price.*

3. Click Next. The Master Alert screen appears.

Selecting a Master Alert

To select a master alert:

1. Using the radio buttons, select *StockMA*.

2. Click Next. The Input Parameters screen appears.

Setting the Input Parameter for the Alert

There is a one input parameter defined by the data feeder, *symbol*. To set this input parameter:

1. In the Caption field, enter *StockTicker*.

2. You do not have to enter a value in the Value field. Leaving this field blank instructs the user to enter a value.

3. Click Next. The Trigger Condition Screen appears.

Setting the Trigger Conditions for the Alert

To set the trigger conditions for the alert, enter the following captions for the three trigger conditions, *Change*, *PriceMax*, and *PriceMin*. You do not have to enter any values in the Value fields for these trigger conditions.

1. Enter *Change* in the Caption field for Change.

2. Enter *PriceMax* in the Caption field for PriceMax.

3. Enter *PriceMin* in the Change field for PriceMin.

4. Click Submit to complete the alert. The browsing screen for TestTopic reappears, displaying StockAlert.

Publishing the Alert to a User Group

To publish StockAlert to a user group:

1. Click the Groups tab. The Groups screen appears.

2. Select *TestGroup* using the Select radio button.

3. Click Assign Alert. The Alert Content of TestGroup appears. The top table lists the topics and alerts that TestGroup can currently access. The bottom table list the all of the existing alerts and topics in the repository.

4. Select *TestTopic* using the check box in the Select column.

5. Click Add to Group. TestTopic appears in the top table, as it can now be accessed by TestGroup.

6. Click Finish button. The Groups screen reappears.

> **Note:** See Section 11.5 in Chapter 11, "Managing Content" for information on creating alerts.

A.3.4 Step 4: Configuring the Messaging Server with the Email Driver

See Section A.2.3 for information on configuring the messaging server with the email driver.

A.3.5 Step 5: Configuring the Driver Instance Configuration.

See for Section A.2.4 for information on configuring the driver instance.

A.3.6 Step 6: Starting the Messaging Server

See Section A.2.5 for information on starting the messaging server.

A.3.7 Step 7: Configuring and Starting the Data Feeder Process

To configure a data feeder process:

1. Log into the Wireless part of the Oracle Enterprise Manager as *orcladmin*.

2. Select the Wireless Server tab. The Server screen appears.

3. From the processes table, click the Data Feeder hyperlink. The Data Feeder Processes table appears.

4. In the Process Name field, enter *StockDataFeeder*.

5. Click Add. StockDataFeeder appears in the process table.

6. Click *StockData Feeder*. The overview screen for StockDataFeeder appears.

7. From the Data Feeder Name drop-down list, select *StockDF*.

8. Click Add. StockDF appears in the Data Feeders table.

9. In the General section, click the Start button.

> **Note:** See Section 3.2.2 in Chapter 3, "Server Administration" for information on configuring and starting a data feeder process.

A.3.8 Step 8: Configuring and Starting an Alert Engine Process

To configure and start an alert engine process:

1. Log into Wireless part of the Oracle Enterprise Manager as *orcladmin*. Select the Wireless Server subtab.

2. From the process table, click the Alert Engine hyperlink. The Alert Engine processes screen appears.

3. Enter StockAlertEngine in the Process Name Field.

4. Click Add. StockAlertEngine appears in the alert processes table.

5. Click StockAlertEngine. The overview page for StockAlertEngine appears.

6. From the Master Alert Name drop-down menu, select StockMA.

7. Click Add. StockMA appears in the Alert Engine table.

8. In the General section, click Start.

Note: See Section 3.2.1 in Chapter 3, "Server Administration" for more information on starting and stopping an alert engine process.

A.3.9 Step 9: Registering a Device and Subscribing to StockAlert

To register a device:

1. Log into the Wireless Customization as *TestUser*.

2. Enter *1234* as the password.

3. Select the Devices tab. The Device screen appears.

4. Create a new device by completing the screen as follows:

   a. Enter *MyEmail* in the Device Name field.

   b. Enter *myaccount@messaging.sprintpcs.com* in the Address field. (You can replace this value with your email address.)

   c. From the drop-down list in the Device Type field, select Email.

   d. Enter *SpintPCS* in the Carrier field. (You can replace this value with your email carrier.)

e. Enter *Timeport* in the Model field. This is the name of the model. (You can replace this value with your phone model.)

f. Enter 10 in the Maximum Alerts to Send per Day field. Wireless sends a maximum number of ten alerts per day to this device. You will not receive any alerts from this device if you enter 0 (zero) in this field, or if you leave this field blank.

g. Select the Default check box to make this the default device.

5. Click Create. MyEmail appears in the device list. This device is not yet validated, so Wireless notes its validation status as false.

After you complete a device, Wireless Customization sends an eamil with the subject line, *Validation Number* to the address entered in Step 3b (myaccount@messagingsprintpcs.com). The message reads, *<number> is the validiation number for MyEmail. To receive alerts, you must validate this device using the validation number that you received in this email message.*

Validating MyEmail

To validate MyEmail:

1. From the Device list, select MyEmail.

2. Click Validate. The Validate screen appears.

3. Enter the validation number noted in the email sent from Wireless Customization in the Validation Number field. The Device screen reappears. The Validation column in the device list displays "true" for MyEmail. MyEmail is now validated and can receive alerts.

Subscribing to an Alert Service

To subscribe to an alert service:

1. Select the Alert tab. The Alert Subscription screen appears.

2. Expand AlertTest. StockAlert appears under AlertTest.

3. Click StockAlert. The Alert Subscription screen for StockAlert appears.

4. Complete the New Subscription section for the Alert Subscription screen as follows:

a. Enter *MySubscription* in the Alert Subscription Name field.

b. Enter *ORCL* inthe StockTicker field.

    c.   Enter *1* in the Change field.

    d.   Enter *26* in the PriceMax field. This condition should be satisfied, since the price of ORCL is 33.06 in the **stock.csv** file).

    e.   Enter *20* in the PriceMin field.

    f.   Enter 03/31/02 in the Expiration Date field. (After March 31, 2002, this alert subscription becomes invalid.)

    g.   In the Frequency field, enter Weekday, so that this subscription is processed only on weekdays.

    h.   Enter 9 in the Hour field, so that this alert is processed only at 9:00 am in your time zone.

    i.   You do not have to enter a value in the Minutes field. Leaving this filed blank enables the alert to be processed at 9:00 am, sharp.

5. Click Create. MySubscription appears in the Trigger Conditions table. With this subscription information completed, Wireless will send an alert to myaccount@messaging.sprintpcs.com at 9:00 am of the next workday

A.3.10 Step 10: Viewing sys_panama.log and Performance Data from the Enterprise Manager

See Section A.2.9 for more information.

A.3.10.1 Viewing the Performance Metrics for a Data Feeder Process

To view the performance metrics of a data feeder process:

1. Select the Wireless Server tab.

2. In the process table, select Data Feeder. The Data Feeder Processes screen appears.

3. Click StockDataFeeder. The overview screen for that process appears.

4. In the Performance section of the screen, click Data Downloaded Rows. The Data Downloaded Row screen appears, displaying the number of data feeder downloads today for each data feeder for this process.

A.3.10.2 Viewing the Performance Metrics for an Alert Engine Process

To view the performance metrics of an alert engine process.

1. Select the Wireless Server tab.

2. In the process table, select Alert Engine. The Alert Engine Processes screen appears.

3. Click StockAlertEngine. The overview screen for that process appears.

4. In the Performance section of the screen, click Number of Alerts Sent Today. The Alert Performance Today screen appears, displaying the total number of alerts sent per alert service for today. You can also view such other performance statistics as Number of Alerts Sent Last Hour and Number of Subscribers Notified today by clicking the links in the Performance section.

A.3.11 Step 11: Viewing the User Alert Log from the User Manager

The User Manager enables you to view the service activity log for a given user. To view an activity log:

1. From the Webtool, select the User Manger tab. The User screen appears, displaying a list of current users.

2. From the list of users, select Test User.

3. Click the View Alert Log button. The User Manager displays the View User Alert Log screen, which lists all of the alerts sent to TestUser over the previous day as follows:

Table A–5   Alert Log Statistics

Element	Description
Alert Name	The name of the alert.
Alert ID	The OID of the alert in the database.
Device Address	The address of the user device receiving the alert.
Device Type	The type of logical device receiving the alert (for example, WAP-Push, SMS, or Email).
Dispatch Time	The time Wireless sent the message.
Message Status	Whether Wireless successfully sent the message. 0 indicates that Wireless successfully sent the message; 1 indicates that Wireless failed to send the message.

You can view the activity log for a specific period using the *From Date* and *To Date* fields. You can set starting and ending dates either by entering them in the fields in

the *yyyy-mm-dd* format, or by picking them from the calendars. Click Go after you have completed entering the date range.

B

Frequently Asked Questions

This document addresses the following frequently asked questions (FAQs) and includes the following sections:

- Section B.1, "Wireless Server -- General"

- Section B.2, "The Wireless Web Server (the Device-Based Customization Tool)"

- Section B.3, "The Webtool and Wireless Customization"

- Section B.4, "The Messaging Server"

- Section B.5, "The Async Server"

- Section B.6, "Interaction with Other iAS Components"

B.1 Wireless Server -- General

This section includes the following:

- Section B.1.1, "How can I view sys_panama.log?"

- Section B.1.2, "How can I stop a process?"

- Section B.1.3, "I modified the Wireless Server configuration through OEM, why did it not take effect?"

- Section B.1.4, "How do I change the context path for an OC4J application?"

- Section B.1.5, "What are the differences between SimpleResult XML, Mobile XML, and Oracle9iAS Wireless XML?"

B.1.1 How can I view sys_panama.log?

You can view **sys_panama.log** from the following two places:

- From the Webtool's Service Designer or Content Manager:

    1. Select a master service or a service.

    2. Click on Debug button. The Debug Service screen appears, displaying the sys_panama.log in the System Log text pane. You can specify the number of lines to be displayed from the end of the log, and then click Refresh Log button.

- From OEM:

    1. Drill down to the Wireless Server. In the Runtime section of the Wireless Server tab, click System Log File. The System Log Files screen appears.

    2. Locate the sys_panama.log, click on View Log File icon. The sys_panama.log displays in the text area. Select the line number option from the drop-down list, and click the View button.

B.1.2 How can I stop a process?

To stop a non-servlet process:

1. Login into OEM and drill down to the Wireless Server.

2. From the Wireless Server tab, click process type in the Processes section. The processes screen appears.

3. Select the process row and click the Stop button.

To stop a servlet process:

1. Login into OEM, drill down to OC4J page.

2. Select the product group row and then click the Stop button.

B.1.3 I modified the Wireless Server configuration through OEM, why did it not take effect?

You must re-start the process for the new configuration values to take effect.

B.1.4 How do I change the context path for an OC4J application?

To change the context path, perform the following:

1. Change the mounting point in $ORACLE_HOME/j2ee/Apache/Apache/conf/mod_oc4j.conf.

    For example, change

Oc4jMount /customization OC4J_portal

Oc4jMount /customization/* OC4J_portal

to

Oc4jMount /personalization OC4J_portal

Oc4jMount /personalization/* OC4J_portal

2. Change the SSO-protected URL in $ORACLE_
   HOME/j2ee/Apache/Apache/conf/wireless_sso.conf

   For example, change

   /customization/Login.jsp

   to

   /personalization/Login.jsp

3. Change the application name in $ORACLE_HOME/j2ee/OC4J_
   portal/config/server.xml and default-web-site.xml.

   For example, in **server.xml**, change

   <application name="customization" path="$ORACLE_HOME/j2ee/OC4J_
   portal/applications/customization.ear" auto-start="true" />

   to

   <application name="personalization" path="$ORACLE_
   HOME/j2ee/OC4J_portal/applications/customization.ear"
   auto-start="true" />

4. In **default-web-site.xml**, change

   <web-app application="customization" name="portal-web"
   root="/customization" />

   to

   <web-app application="personalization" name="portal-web"
   root="/personalization" />

B.1.5 What are the differences between SimpleResult XML, Mobile XML, and Oracle9iAS Wireless XML?

They are synonymous and refer to the same XML content format used in the
Wireless server

B.2 The Wireless Web Server (the Device-Based Customization Tool)

This section includes the following:

- Section B.2.1, "How do I add a hook class or a listener class?"

- Section B.2.2, "Can I specify a relative .jsp URL for an HttpAdapter service?"

B.2.1 How do I add a hook class or a listener class?

Enter the full name of the hook class or listener class, including the package name. If the hook class or listener class is plugged into a servlet process, then add the classpath in the corresponding **config.xml** and **application.xml** with the `<library>` tag. If the hook class or listener class is plugged into a non-servlet process, then add the classpath to $ORACLE_HOME/wireless/sample/set_ classpath.sh(set_classpath.bat).

B.2.2 Can I specify a relative .jsp URL for an HttpAdapter service?

You can specify a relative **.jsp** URL. To do so, you must configure the site-level URL in OEM as follows:

1. Log in to OEM and drill down to Wireless Server.

2. Select the Site tab.

3. In the Configuration section, click URL Configuration.

4. Enter the HTTP Adapter URL Prefix field with the server name, port number and servlet path where your **.jsp** is located. The HttpAdapter concatenates this HTTP Adapter URL Prefix with the relative **.jsp** url, specified as the URL input parameter of the HttpAdapter Service. If an absolute URL is specified for the URL input parameter, (that is, the URL starts with 'http://') then the HttpAdapter ignores the HTTP Adapter URL Prefix value.

B.3 The Webtool and Wireless Customization

This section includes the following:

- Section B.3.1, "Why are some images (such as buttons and tabs), not generated correctly on the UNIX platform?"

- Section B.3.2, "How can I See the Wireless XML result (or any device result) for a service?"

- Section B.3.3, "Why are the images broken when I test a master service or a service with the Web-based Wireless PDA simulator?"

- Section B.3.4, "Why am I unable to subscribe to an alert with a device that I created in Wireless Customization?"

- Section B.3.5, "How can I view an end-user's services or alerts for troubleshooting purposes?"

- Section B.3.6, "After the user locale is changed, some Images In the Webtool or Wireless Customization are not generated in the correct language and display as Squares. How do I fix this?"

- Section B.3.7, "My Netscape version is 4.7 or lower, when I tried to view Webtool or Wireless Customization with certain user-preferred locale, the labels display as squares. Should I change my browser setting?"

- Section B.3.8, "How do I ensure that the Wireless gateway URL registered with Portal is current if I load-balance multiple instances of wireless with a load-balancer in front of these instances?"

B.3.1 Why are some images (such as buttons and tabs), not generated correctly on the UNIX platform?

On the UNIX platform, the X server is used for the dynamically generated images. Therefore, you must set the DISPLAY environment variable before you start the wireless server processes.

If the X server is running on the same machine, then you need to log into the console of this UNIX machine and then enter 'xhost + ' to allow the accesses to the X server. You next set the DISPLAY environment variable by either of the following methods:

- Modify $ORACLE_HOME/opmn/conf/opmn.xml. In the body of the `<OC4J>` element, add `<prop home = "DISPLAY" value = "0.0"/>`.

- Before starting the ompn process, enter *setenv DISPLAY 0.0* in the same shell.

If the X server is running on a remote machine, you must log into the console to the remote machine. Enter 'xhost + ' to allow the accesses to the X server. Then set the DISPLAY environment variable using either of the following methods:

- Modify $ORACLE_HOME/opmn/conf/opmn.xml. In the body of the `<OC4J>` element, add `<prop home = "DISPLAY" value = "remotemachine:0.0"/>`.

■ Before starting opmn processes, enter *setenv DISPLAY remotemachine:0.0* in the same shell.

B.3.2 How can I See the Wireless XML result (or any device result) for a service?

You can view the Wireless XML result or a device result using the Debug function of the Webtool's Service Designer or Content Manager.

To view Wireless XML or device result:

1. Select a master service in the browse screen the Service Designer or a service from the browse screen of the Content Manager.

2. Click Debug. The Debug Service screen appears.

3. In the Debug Service screen, select a Result Type, and then click Set Parameters. Click on Run Service button. The requested result displays in the Service Result pane.

B.3.3 Why are the images broken when I test a master service or a service with the Web-based Wireless PDA simulator?

Because the The image_src is a relative URL path under Wireless Web Server, the Wireless Web Server must be running in order to retrieve these device images. You can start the Wireless Web Server from the OC4J page of OEM.

B.3.4 Why am I unable to subscribe to an alert with a device that I created in Wireless Customization?

Be sure that you have validated the device; you cannot subscribe to an alert service until you have validated your device. After you create the device, the Wireless server sends a message to the device with a validation number.

To validate the device:

1. In the Wireless Customization Devices screen, select the newly created device and click the Validate button. The Validate screen appears.

2. Enter the validation number. When the device is validated, you can use it to subscribe alerts.

B.3.5 How can I view an end-user's services or alerts for troubleshooting purposes?

To view an end user's services or alerts:

1. Log into Customization as a user with either the Administrator or Help Desk roles.

2. Click the Switch User button.

3. Enter the name of the user whose services or alerts you need to view.

4. Click the Switch User button. The Service Subscription screen for the selected user appears.

B.3.6 After the user locale is changed, some Images In the Webtool or Wireless Customization are not generated in the correct language and display as Squares. How do I fix this?

Check your jdk/jre/lib/fonts/ directory to see whether the following five files exist.

- ALBANWTJ.TTF

- ALBANWTK.TTF

- ALBANWTS.TTF

- ALBANWTS.TTF

- ALBANWTT.TTF

- ALBANYWT.TTF.

The default jdk installed by IAS should include these files.

B.3.7 My Netscape version is 4.7 or lower, when I tried to view Webtool or Wireless Customization with certain user-preferred locale, the labels display as squares. Should I change my browser setting?

Yes. This problem only happens with Netscape 4.7 or lower version. Internet Explorer handles it gracefully.

1. From the Netscape tool bar, select Edit.

2. Select Preferences from the drop-down menu. The Preferences dialog appears.

3. From the Category tree, select Fonts to display the Fonts dialog.

4. In the Fonts dialog, select Unicode from the *For the Encoding* drop-down list.

5. From the *Variable Width Font* and *Fixed Width Font* drop-down lists, select the font that supports the preferred language. For example, if the preferred locale is zh_CN, you may select MS Song for viewing the page in Chinese.

B.3.8 How do I ensure that the Wireless gateway URL registered with Portal is current if I load-balance multiple instances of wireless with a load-balancer in front of these instances?

Run the script $ORACLE_HOME/wireless/sample/portalRegistrar.sh (or portalRegistrar.bat) with the arguments `<admin_user>` and `<url_to_the_load_balancer>` to re-register the wireless gateway URL. `<admin_user>` is the administrative user, usually orcladmin `<url_to_load_balancer>` is of the form http://loadbalancer.mydomain.com:8000.

B.4 The Messaging Server

This section includes the following:

- Section B.4.1, "How do I configure a transport driver?"
- Section B.4.2, "Why am I unable to send messages even through the Webtool says that the transport Is up?"

B.4.1 How do I configure a transport driver?

There are two major steps in configuring a transport driver:

1. Configuring the Driver Metadata.
2. Configuring the Driver Instance.

Step 1: Configuring the Driver Metadata

To configure the driver metadata:

1. Using Webtool, select the Site tab of Wireless system management (accessed through the OEM console).
2. Click Messaging Server. The detail screen for the site-level Messaging Server processes appears.
3. In the Configuration section, click Messaging Server Drivers to invoke the Messaging Server Drivers screen.
4. Click Add Driver.

5. In the Add Driver screen, specify the following values:

   ■ Driver Name

   ■ Delivery Category

   ■ Capability

   ■ Driver Class

   ■ Driver Class Parameters.

6. Click Create.

> **Note:** The driver class must be in the classpath when you start the messaging server process. The Webtool does not check this at this point and only discovers an incorrect driver class at runtime. To find out which attributes the driver expects, you must consult with an administrator or driver developer. You must provide enough information so that the driver runs properly.

Step 2: Configuring a Driver Instance

You configure the driver instance after you configure the driver metadata.

To configure a driver instance:

1. Select the Wireless Server tab.

2. Click Messaging Server in the Processes section. The Messaging Server Processes screen appears.

3. Click the messaging server process to which you want to add a driver instance.

4. The detail screen for the selected messaging server process appears. In the Configuration section, click Driver Instance Configuration. The Driver Instances screen appears.

5. Click Add Driver Instance to invoke the Add Driver Instance screen.

6. Enter a driver instance name.

7. Select the driver name you just created at the Site level from the drop-down list.

8. Click Go. The attributes for the selected driver appear.

9. Enter the appropriate values.

10. Click OK to complete the new driver instance.

B.4.2 Why am I unable to send messages even through the Webtool says that the transport Is up?

There can be several reasons why you cannot send a message, even though the status of the transport appears to be up.

Make sure your transport server is really up. If you can not find a process such as "runpanamaserver MESSAGING_SERVER_INSTANCE", where MESSAGING_ SERVER_INSTANCE is your instance name, then your server is not up. Bring the sever up by clicking Start.

If your server is up, check the **sys_panama.log** file for any fatal exception thrown by a related driver. If the **sys_panama.log** contains such a fatal exception, then a problem occurred that caused the driver to become disabled. Resolve that problem and then re-start your messaging server.

If the **sys_panama.log** file did not contain a fatal exception thrown by a related driver, then make sure that the driver is not a newly added driver. If it is a newly added driver, then re-start both the transport server and your client.

If you still can not send messages, then check with your service provider (for SMS, contact your SMSC). In addition, check your mail server and voice gateway to see if they are functioning properly. If the mail server and voice gateway are functioning properly, but you are still unable to send messages, contact Oracle9*i*AS Wireless support.

B.5 The Async Server

This section includes the following:

- Section B.5.1, "What is ASK (Async Server Kernel)?"

- Section B.5.2, "What is an ASK site-wide address and the service short name?"

- Section B.5.3, "What Is the ASK service-specific address?"

- Section B.5.4, "What are the preliminary requirements for the ASK?"

- Section B.5.5, "How do I add the ASK site-wide address?"

- Section B.5.6, "How do I create an ASK-enabled service?"

- Section B.5.7, "How do I invoke an ASK-enabled service through an asynchronous device?"

- Section B.5.8, "Does ASK support user sessions?"

- Section B.5.9, "Why do I get a username and password form challenge from the ASK?"

- Section B.5.10, "What do I check if no response was received after a request message was issued to the site-wide address of the Async Server?"

B.5.1 What is ASK (Async Server Kernel)?

The Async Server Kernel (ASK) enables customers to access wireless services using asynchronous messaging like SMS, Email or 2-way pagers. This means that your applications can be used by the vast majority of mobile devices that are capable to send SMS messages but are not internet-enabled. You ask for the service by sending a short message. You then receive a message in reply. You can now interactively run the same applications through asynchronous devices that you ran from synchronous devices (such as WAP phones, PDAs, or browsers).

B.5.2 What is an ASK site-wide address and the service short name?

The site-wide address is the entry point to the ASK. This address can be either an an e-mail address or a SMS phone number. The ASK receives and processes messages delivered to these addresses.

The service short name is a site-wide unique name that identifies an ASK service. End users send a message to the site-wide address with service short name in the message body to invoke the corresponding service.

> **Note:** The service short name is case-sensitive for this release; it will not be case-sensitive in subsequent releases.

B.5.3 What Is the ASK service-specific address?

For each ASK-enabled (Async-enabled) service, users can optionally define a service-specific address to identify a service. The service-specific address is another way to locate a service from the async server.

> **Note:** The service-specific address cannot be the same as the site-wide address and must be unique among services.

To invoke a service through the service-specific address, users send a message to the service-specific address. Users enter all of the parameter values for the service in the body of this message. For example, when users invoke a stock service, they send a message to a service-specific address, *stock@oraclemobile.com*, with a stock symbol (for example, *ORCL*), in the message body.

B.5.4 What are the preliminary requirements for the ASK?

The ASK does not deal directly with different communication networks. It instead relies upon the messaging server to handle the network protocol detail and perform both the message sending and receiving. Assigning the ASK site-wide and service-specific addresses registers the addresses to the messaging server so that the message will be routed to the ASK whenever the messaging server receives messages addressed to the ASK. Therefore, you must add ASK site-wide and service-specific addresses to the corresponding driver instance configuration of messaging server. For example, you add the email account addresses into the Email driver instance to enable the email driver to constantly poll the messages from the mail server. See Section 4.1.7.4 in Chapter 4, "Server Configuration" for information on configuring the messaging server drivers.

B.5.5 How do I add the ASK site-wide address?

You use the Wireless system management (accessed through the OEM console) to add the ASK site-wide address.

To add the ASK site-wide address:

1. Select the Site tab. The Site screen appears.

2. In the Processes section, click Async Server. The Async Server screen appears.

3. Click the Async Server Configuration link in the Administration section.

4. In the Site-Wide Addresses section of the Async Server Configuration screen, you assign the site-wide address to both the SMS and Email delivery networks. You must re-start the async server for the changes to take effect. See Section 4.2.3.2 in Chapter 4, "Server Configuration" for information on the Async Server Configuration screen.

B.5.6 How do I create an ASK-enabled service?

You use the Master Service Creation Wizard of the Service Designer and the Service Creation Wizard of the Content Manager to create an Ask-enabled service.

Using the Master Service Creation Wizard

When you reach Step 6 of the Master Service Creation Wizard, Creating an Async-Agent Service, check the Async-Agent Enabled check box. To ensure that the ASK can properly map the parameter names to their appropriate values, you must add the parameters which require user input in the same order that they appear on the command line.

Using the Service Creation Wizard

Using the Content Manager, you create a service based on the Async enabled master service by selecting an async-enabled master service in Step 2 of the Service Creation Wizard. When you reach Step 4, Assigning the Async Agent to the Service, you assign a site-wide unique short name to the service. This name enables end users to identify the ASK service. To invoke this service, end users send a message to the site-wide address to the service short name with the parameter values in the subject line or message body. For example, to access a stock service, an end user sends a message to the site-wide address, *ask@oraclemobile.com*, and includes the service short name, *stk*, and the parameter value, *orcl*, in either the subject line or the body of the message.

In addition, you can optionally assign a service-specific address to the service so that the user can invoke the service by sending a message to the service-specific address instead of site-wide address. Because the service-specific address identifies a service, users do not need to include the service short name in the message. For example, if you create a stock service that has a service-specific address, such as *stock@oraclemobile.com*, then users need only include a parameter (the ticker symbol *ORCL*, for example) in the subject line or body of their message.

B.5.7 How do I invoke an ASK-enabled service through an asynchronous device?

To invoke an ASK-enabled service through an asynchronous device, send a message to the ASK site-wide address with the subject line or message body containing the short name and the required parameter values. For example, to invoke a traffic service that provides traffic information about a particular segment of a highway, send a message with *tr sfo 101n* in either the subject line or message body. This service (*tr*) expects the first parameter to be the city (*sfo*) and the second

parameter to be the highway (*101n*). Each of these parameters is separated by a blank space.

B.5.8 Does ASK support user sessions?

The ASK supports user sessions. The Ask creates a user session upon receipt of the first user request and binds the subsequent request from the same device to the same session unless the session expires. The session life time, which can be configured, has the default value of 600 seconds, the same as the default value for Wireless runtime session expiration.

The ASK also supports MobileXML tags. These tags, such as `SimpleMenu` and `SimpleForm`, enable complex applications which require conversational interaction, which the ASK enables by storing all of the menu and form states in the backend user session. Each menu message received by the user has a number prefix for each menu item. Users select these menu items by replying with the menu number in the message body.

The form message requests user-supplied input for each parameter. Users reply with a message containing the parameter values separated by delimiter, such as default delimiter, a blank space (" "). If a user decides to invoke another service rather than respond to the form message, then the user must issue an escape form command (default value is !e) before issuing any other commands. The escape form command prevents the ASK from interpreting the service short name as a parameter value for the form.

B.5.9 Why do I get a username and password form challenge from the ASK?

The Ask challenges the username and password for several reasons, including:

- A non-registered user is attempting to request a service which is not a public service and therefore cannot be accessed by the Guest group. Anonymous users can only access public services.

- A registered user who issues the request to a non-public service from a device which is not yet added to the user profile. The user an reply a message with the Wireless user name and password to access those authorized services.

- The application issues a form challenge. In this case, the user responds to the challenge by providing the username and password for that particular application.

> **Note:** Users must issue an escape from command (default value is
> *!e*) if they want to invoke another service rather than respond to the
> form challenge. Because the escape from command clears the form
> state, the ASK does not interpret user commands for another
> service as parameter values for the form.

B.5.10 What do I check if no response was received after a request message was issued to the site-wide address of the Async Server?

The async server and messaging server are the main Wireless components involved
with message delivery and service invocation. Do the following if no response was
ever received after a request message was issued to the site-wide address of the
Async Server:

1. Verify that the message destination address is the same as the Async site-wide
   address. You can find out the site-wide async server address by clicking the
   Async Server Configuration hyperlink in the Site screen.

2. Verify that the Async site-wide address has been properly configured in the
   corresponding driver instance of the messaging server. Check the **sys_
   panama.log** to see if there is any exception thrown from the corresponding
   driver, either during the startup phase or during the sending and receiving
   phases. Often, when a message has not been delivered from the messaging
   server to the Async Server, the log line *fail to enqueue a received message* appears
   in **sys_panama log**. Typically, the failure to deliver a message from the
   messaging server to the async server is caused by one of the following:

   - The async server has not been re-started after the site-wide address was
     added or modified.

   - The async site-wide address given in the async server configuration is
     different from the one configured in the messaging server driver instance.

   - The async server is not up.

3. Check if there are any inactive messaging server driver instances configured for
   the network (Email or SMS) to which the message is sent. There could be more
   than one driver instance that supports the network type that you are currently
   testing. Having more than one driver instance supporting the same network
   type is for load balancing. The issue is introduced if the message is routed to an
   inactive driver instance. For example, the outgoing emails can be routed to

either a PushDriver or an EmailDriver driver instance based on the criteria set in each driver. Even though the PushDriver and the EmailDriver support the Email network type, the PushDriver may not be configured to point to a valid URL, preventing the outgoing mails sent to that driver instance from being delivered.

To check this, do the following:

a. From the Site tab, click Messaging Server.

b. From the Messaging Server process table, click each process link to locate the driver instance supported by the messaging server process. Check if there are more than one driver which support the network type that you are currently testing. Make sure that all of the drivers are configured and started properly to deliver messages. Remove the unused drivers. To verify the driver configuration:

– From the Wireless Server tab, click Messaging Server in the Processes section.

– Click a message server process. The detail screen for that process appears.

– In the Configuration section of the screen, click Driver Configuration Instances.

B.6 Interaction with Other *i*AS Components

This section includes the following:

- Section B.6.1, "What should I configure if the hostname or port number of my Apache server has changed?"

- Section B.6.2, "How do I ensure that the Wireless gateway URL registered with Portal is current if I load-balance multiple instances of Wireless with a load-balancer in front of these instances?"

- Section B.6.3, "How do I ensure that the Wireless gateway URL registered with Portal is current if it has been re-assigned to a different machine or port?"

B.6.1 What should I configure if the hostname or port number of my Apache server has changed?

1. Modify **opmn.xml** to point to the hostname and port number where the OC4J instance is running.

2. Reconfigure WebCache Server. For more information, refer to the WebCache Server configuration documentation.

3. Reconfigure Oracle Portal. For more information, refer to the Oracle Portal Server configuration documentation.

4. Reconfigure OEM. For more information, refer to the OEM configuration document.

5. Rerun the script $ORACLE_HOME/wireless/sample/portalRegistrar.sh (or portalRegistrar.bat) to re-register the Wireless Web Server URL.

6. Register the Webtool provider and the Customization provider with Oracle Portal.

7. Login into OEM, drill down to Wireless Server.

8. Select the Site tab and then click the URL Configuration in the Configuration section.

9. Enter the URL values for each filed and then click OK.

10. Click Register Oracle Portal Provider for Wireless Webtool.

11. Enter the appropriate values and click OK.

12. Click Register Oracle Portal Provider for Wireless Customization.

13. Enter the appropriate values and then click OK.

> **Note:** You should always install Apache with Oracle Universal Installer, so that both the OPMN and SSO are installed automatically.

B.6.2 How do I ensure that the Wireless gateway URL registered with Portal is current if I load-balance multiple instances of Wireless with a load-balancer in front of these instances?

Run the script $ORACLE_HOME/wireless/sample/portalRegistrar.sh (or portalRegistrar.bat) with the arguments `<admin_user>` and `<url_to_the_load_balancer>` to re-register the Wireless gateway URL. `<admin_user>` is the administrative user; usually orcladmin `<url_to_load_balancer>` is the form http://loadbalancer.mydomain.com:8000.

B.6.3 How do I ensure that the Wireless gateway URL registered with Portal is current if it has been re-assigned to a different machine or port?

Run the script $ORACLE_HOME/wireless/sample/portalRegistrar.sh (or portalRegistrar.bat) to re-register the Wireless gateway URL.

Glossary

adapter

A dynamically loaded Java class that acquires content from an external source, such as a Web site or a database, and converts the content into Mobile XML. Pre-built adapters include the Web Integration adapter, SQL adapter, and Strip adapter.

Adapter Result format

A general, user interface-independent content format. Content in Adapter Result format requires conversion to Simple Result format before it can be converted to the final target format.

bookmark

A link from a service to an external, device-compatible data source that does not require Wireless processing.

core

The Wireless component that manages the Wireless repository and service requests.

daemon

A background process that performs a specified operation in response to certain events or at specified times.

device portal

The interface where mobile device users access their Wireless services.

device transformer

A transformer that converts content from Simple Result format into the target format.

DOM Interface

Document Object Model. The interface that allows programs and scripts to access and transform processed XML documents.

DTD

Document Type Definition. A file in an XML document that defines how the application presenting the document should interpret the XML document.

end user

A person who accesses a Wireless service from a client device.

filtering

The process of transforming content by replacing existing markup tags with tags that represent another format.

HDML

Handheld Device Markup Language. A reduced version of HTML designed to enable wireless pagers, cellular phones, and other handheld devices to access Web page content.

IMAP

Interactive Mail Access Protocol. A hierarchical mail storage and retrieval structure.

HTML

HyperText Markup Language. The document format that defines the page layout, fonts, and graphic elements, as well as the hypertext links to other documents on the Web.

JNDI

Java Naming and Directory Inerface. A set of APIs that provide directory and naming functionality to Java applications.

JSP

JavaServer Pages. A technology based on Java servlets which separates the functions of Web page layout and content generation. JavaServer Pages technology enables the creation of server-generated Web pages incorporating dynamic content.

LDAP

Lightweight Directory Access Protocol. Protocols for accessing directories. The LDAP protocols support TCP/IP.

logical device

An object that describes either a physical device, such as a cellular phone, or an application, such as email. There is a default device transformer for each logical device.

master service

The core implementation of a service. The master service object invokes a specific adapter, and identifies the transformer used to convert content for the target device.

MIME

Multipurpose Internet Mail Extensions. A mail type that defines the message structure for different 8-bit character sets and multi-part messages.

Mobile XML

A set of DTDs and XML document conventions used by the Wireless to define content and internal objects.

Personalization Portal

A Web-based interface that end users access to select services and configure their device portal. Users access the Personalization Portal from their desktop computers.

private service tree

A service tree that is owned by a specific end user.

provisioning adapter

The adapter used to create, modify, and delete user objects in the Wireless repository.

public service tree

A service tree that is owned by the Wireless system, and can be accessed by any end-user.

repository

An Oracle8*i* database which stores all of the Wireless objects, such as users, groups, adapters, and services.

request

A query to initiate a desired Wireless service. Requests are submitted on behalf of end-users to the Wireless server.

request manager

The Wireless component that processes requests for services. The request manager authenticates the user, submits the request to the Wireless core, and retrieves the device type and any presentation settings. The request manager also forwards converted content from the transformer to the user.

request object

An XML document representing a request for service.

result transformer

A transformer that converts content from Adapter Result format into Simple Result format.

RMI

Remote Method Invocation. A standard for creating and calling remote objects. RMI allows Java components stored in a network to be run remotely.

sample repository

The initial Wireless repository, which includes pre-built objects such as transformers, adapters, and logical devices.

service

A core object used in a Wireless server to represent a unit of information requested by, and delivered to, a Wireless client. An end user typically sees a service as a menu item on a device or as a link on a Web page.

service alias

A pointer to a master service. When a service alias is placed in a service tree, the corresponding service becomes available to the owner or owners of the service tree.

service designer

The visual interface for creating and managing Wireless users, user groups, adapters, transformers, and services.

service tree

A tree data structure containing one or more services. Service trees make services available to end users.

Simple Result format

A content format that contains abstract user interface elements such as text items, menus, forms, and tables.

source format

The original format of content retrieved from an external data source by a Wireless adapter. For example, the source format of Web page content is HTML.

Strip adapter

An adapter that retrieves and adapts Web content dynamically.

strip level

The class used by the strip adapter to process markup tags in source content.

SQL adapter

An adapter that retrieves and adapts content from any JDBC-enabled data source.

stylesheet

An XSLT (eXtensible Stylesheet Language Transformations) instance that implements content presentation for XML documents. Wireless transformers can be either XSLT stylesheets or Java programs.

target format

The format required to deliver data to a specific type of client device.

Thin HTML

A minimal version of HTML implemented by a transformer in the starter Wireless repository. Thin HTML does not include support for frames, JavaScript, or other advanced features.

transformer

A Wireless object that converts content returned by the Wireless adapters. Result transformers convert Adapter Result documents into Simple Result documents. Device transformers convert Simple Result documents into the target format.

TTML

Tagged Text Mark-up Language. A lightweight version of HTML suitable for most PDAs.

user agent

An object that associates an end user with a device type.

user group

A Wireless object that represents a set of users that are grouped together based on common criteria such as interests, subscription level, or geographic location.

VoxML

A markup language that enables the use of voice to interface with applications.

WAP

Wireless Application Protocol. A wireless standard from Motorola, Ericsson, and Nokia for providing cellular phones with access to email and text-based Web pages. WAP uses Wireless Markup Language (WML).

Web Integration adapter

An adapter that retrieves and adapts Web content using WIDL files to map the source content to Wireless XML.

WIDL

Web Interface Definition Language. A meta-data language that defines interfaces to Web-based data and services. WIDL enables automatic and structured Web access by compatible applications.

WIDL file

A file written in Web Interface Definition Language that associates input and output parameters with the source content that you want to make available in a Wireless service.

WML

Wireless Markup Language. A markup language optimized for the delivery of content to wireless devices.

XML

eXtensible Markup Language. A flexible markup language that allows tags to be defined by the content developer. Tags for virtually any data item can be created and used in specific applications, allowing Web pages to function like database records.

XSLT

Extensible Stylesheet Language Transformations. A language for transforming one XML DTD into another XML DTD.

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