MMP 2500
Operations and Administration Manual

Platform Release 1.2

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5150 El Camino Real
Suite E30
Los Altos, California 94022 U.S.A.

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Preface

Getting Started

This guide is intended for System Administrators/Network Operators installing and managing the OnMobile platform. The objective of this manual is to guide the operator through the provisioning and maintenance steps required to use the OnMobile system to its full potential, as well as provide mobile device users access to the OnMobile suite of applications. It is assumed the reader possesses a basic knowledge of telecommunications and network principles.

At this stage, the hardware installed and commissioned. The system has been powered on and is considered functioning from a hardware and basic operating system perspective. It is understood that OnMobile Field Services have pre-installed the servers' operating systems by following the procedures provided by their respective manufacturers. The Services server, Resources server, and Telephony servers have been installed with their respective software. The web application server, default Service treatments, and database components are installed and functioning on the Services server.

To perform the operations in this guide, a computer terminal with access to the network is essential. Additionally, an internet browser (Microsoft Internet Explorer 5.1 or higher is recommended) must be installed on the workstation for user access.

Terminology

The following list denotes the terminology used throughout this guide:

Node: logical label for a server running within the MMP2500. The Resources servers and Telephony servers are Nodes in the system.

OnMobile Management Console: web-based user interface used to perform administration and operation procedures. Accessed via the internet browser installed on the operator's workstation.

Recipients: operators or 3rd-party SNMP managers receiving alarm alerts through their mobile device or SNMP trap messages, respectively.

Service: system term for an OnMobile application.

Service Group: collection of logically grouped Services.

Subscriber: mobile device user; the individual subscribed to the carrier using the MMP2500.

Super-User: administrator with full access and privileges on the *OnMobile Management Console*.

Conventions

The following conventions are used throughout this guide:

Windows: bold and italicized labels are used for user interface windows and forms.

Links: bold represents links on the browser screen.

Attributes: italics represent non-selectable areas on the screen or menu options.

Fields: denotes fields for parameter entry by the operator.

Further Assistance

For questions or assistance regarding the OnMobile platform provisioning and operation, please contact OnMobile Customer Support via email support@onmobile.com.

Chapter 2 - MMP2500 Platform

Multimodality

Multimodality, the key feature of the MMP2500 platform, is the ability to transition seamlessly across different modes (SMS, Voice, and WAP) when interacting with Services. This includes multiple modes for soliciting Subscriber input, as well as delivering the resulting appropriate output.

The current MMP2500 platform supports Sequential Multimodality. End-users interact with Services using one mode at any point and are capable of transitioning to any other supported modes during this interaction. Currently, the following mode transitions are supported: SMS to Voice, Voice to SMS, WAP to Voice, and Voice to WAP.

System Overview

The MMP2500 platform is a combination of three servers: the Telephony server, the Resource server, and the Services server. These servers (or *Nodes*) run the multimodal applications used by mobile phone Subscribers.

The Resource server manages the state of its own components. It hosts the recognition, speaker verification, Text-to-Speech (TTS), and compilation server elements. A resource manager process balances the servers and components running on the Resource server.

The Telephony server regulates its processes, as well as related ports. It is responsible for providing the environment required to run voice Services. This Node hosts and manages the telephony hardware. Each Telephony server is configurable with a dedicated number of inbound and outbound ports.

Configuration of these Nodes and the processes running on them are performed through the ***OnMobile Management Console*** running on the Services server. This Node also hosts the database, as well as the 3rd party elements such as the Nuance resources and licenses servers.

Software and Processes

Several installed 3rd party software applications enhance the functionality of the OnMobile multimodal platform. Components and languages installed include SpeechObjects and VoiceXML. These are configurable by the operator to better assist in the personalization of Services for Subscribers.

SpeechObjects is a Java-based reusable software component encapsulating pieces of conversational dialog. Services developed by OnMobile use this component to create speech application mechanisms, such as audio prompts and recognition grammars. SpeechObjects are packaged into Java Archived (JAR) files on the platform for ease of downloading and installation from an internet browser.

VoiceXML represents the Voice Extensible Markup Language. This language is designed for creating audio dialogs that feature synthesized speech, digitalized audio, recognition of spoken Dual Tone Multi Frequency (DTMF) key input, recording of spoken input, among others. It holds the advantages of web-based development and content delivery to interactive voice response applications.

Management Console

The management console is a Graphical User Interface (GUI) accessed from a desktop using an internet browser (Figure 2-1).

Figure 2-1

The GUI is installed on the Services server; as such, only processes running on the other two Nodes are configured via the GUI. The management User Interface (UI) allows for the configuration of Nodes, Services, Service Groups, Subscribers, and Short Message Service Centers (SMSCs). As well, it allows for the administration of reports and billing functions. Maintenance and system health are monitored through the interface with alarms.

To access the ***OnMobile Management Console***, an internet browser is required. (Microsoft Internet Explorer 5.1 or higher is recommended.) The management UI functions as a web page, and responds to typical browser user behaviors. Images in this guide represent the management interface on a Microsoft Internet Explorer browser.

The main menu is located in the left frame of the UI. It remains present and visible after login. There is also a timeout feature for added security; upon one hour of console inactivity, the user is automatically logged out.

Operator Authorization

The ***OnMobile Management Console*** permits three levels of system access. A network administrator may possess *Super-User Access*, *Access to Reports Only*, or *Access to Subscriber Provisioning Only*. (Configuration of network operators and their levels is detailed in Chapter 3 - Accessing the Management Console.)

Super-User Access is the highest level of authorization provided. This level allows the administrator to access all areas of the interface, as well as create additional operators on the system. There are no restrictions to users authorized with *Super-User Access*.

Access to Reports Only and *Access to Subscriber Provisioning Only* are limited authorization levels. These permission levels are created by Super-Users. *Access to Reports Only* permits users to access the ***Reports*** interface from the main menu; these users are capable of generating system reports. *Access to Subscriber Provisioning* users are authorized only to configure Subscribers and their accounts through the ***Subscriber Manager*** window.

Chapter 3 - Accessing the Management Console

Initial Login

As previously discussed, the ***OnMobile Management Console*** operates on the Services server. The Resources server and the Telephony server functions are configured after the initial operator login.

Logging into the system requires a login name and password, provided by OnMobile. This login name provides *Super-User Access*; as such, all areas of the management console are available for view and modifications without restriction. Upon login, the Super-User is authorized to create more accounts with the same level of privileges or limited access rights. The initial login name is `onmobile` and the password is `onmobile`. It is strongly recommended, for security purposes, to create another Super-User (with a different username/password combination) and delete the OnMobile default Super-User account. Operator authorization levels are discussed in Chapter 2 - MMP2500 Platform.

Logging into the MMP2500

Configuring the MMP2500 system and maintaining it via the management interface requires security authorization via login name and password.

1. Enter the URL of the ***OnMobile Management Console***. The ***Console Login*** window will open (Figure 3-1).

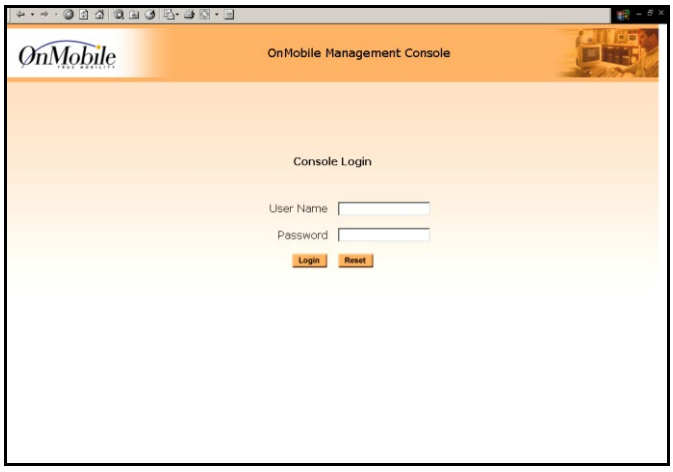

Figure 3-1

2. Enter the requested information. To clear all fields, select **Reset**.

   User Name: text field. Identification provided by OnMobile or network administrator.

   Password: case-sensitive text field. Password provided by OnMobile or network administrator.

3. Click **Login**. The *OnMobile Management Console Welcome* window displays to the screen with the main menu shown on the left frame. If the login fails, retry the login and password combination (note the password is case sensitive).

   N.B. When logging into the management console, a pop-up window may appear (Figure 3-2). This is a notice signaling the presence of active alarms in the system. Select **OK** to resume. For more information on alarms, refer to Chapter 9 - Alarms.

Figure 3-2

Logging Out of the MMP2500

After completion of configuration or maintenance tasks, it is advised to formally log out of the console rather than simply closing the browser window.

1. From the left menu of the *OnMobile Management Console*, select **Logout**. *The Console Login* screen will appear (Figure 3-3) with the following message: *You have been successfully logged out.*

Figure 3-3

Adding an Operator

After the first initial login by a Super-User, additional operators may be added to the system. Operators can have limited access (*Access to Reports Only* or *Access to Subscriber Provisioning Only*) or total system access (*Super-User Access*). Only Super-User operators may add, modify, and delete users from the system.

1. From the OnMobile console, select **User Manager** from the left menu. The ***User Manager*** window will open (Figure 3-4).

Figure 3-4

2. In the ***Add User*** form provided, enter the requested details for the new operator. To empty and reset fields at any time, click **Clear**.

   User ID: unique string identifying the operator.

   Password: case-sensitive character set for security login purposes.

   Re-type Password: same character set as listed above.

   Access Level: pull-down menu. Allows selection of the operator type (*Super-User Access*, *Access to Reports Only*, or *Access to Subscriber Provisioning Only*). If an option is not chosen, the default is *Super-User Access*.

3. Select **Add User**. The operator's information is stored in the system.

   N.B. If an error message (e.g. *User-ID cannot be empty* or *The entered passwords do not match*) appears on the screen, the user's information has not been entered in the system. Correct the error and repeat the above Step 3.

Modifying an Operator's Details

Once an administrator's profile has been entered in the system, it is possible to modify his or her user details. Modifiable user parameters include passwords and access levels. Only operators with *Super-User Access* are authorized to perform this operation.

1. From the OnMobile console, open the ***User Manager*** window by selecting **User Manager** from the left menu.
2. Click **Modify User** from the top menu. The ***Modify User*** form appears (Figure 3-5). Enter the operator *User ID* scheduled for modification. To reset the field, click **Clear**.

Figure 3-5

3. Select **Modify User**. The ***Modify User*** form will display the same information as the ***Add User*** form (Figure 3-4). Note the *User ID* is not a variable field (Figure 3-6).

Figure 3-6

4. Modify the fields as necessary. To reset all fields (except the *User ID*), select **Clear**.
5. Enter **Modify User**. The operator changes are updated in the system and take effect upon the operator's next login to the ***OnMobile Management Console***.

Deleting an Operator

An administrator may be removed completely from the system. This removes the operator's details and access privileges. For security purposes, the deletion of the OnMobile

assigned Super-User (upon the creation of an additional *Super-User* for internal use) is highly recommended.

1. From the OnMobile console, open the ***User Manager*** window by selecting **User Manager** from the left menu.

2. Choose the **Delete User** option from the top menu to open the ***Delete User*** form (Figure 3-7).

Figure 3-7

6. Enter the *User ID* of the operator scheduled for deletion. To reset the field, select **Clear**. Note that an error will occur if the inputted *User ID* is invalid (Figure 3-8).

Figure 3-8

3. Click **Delete User**. A confirmation message appears to acknowledge that the user and related stored information are completely removed from the system (Figure 3-9).

Figure 3-9

Chapter 4 - Server Management

Nodes

As discussed in Chapter 2 - MMP2500 Platform, the platform is a combination of three Nodes: the Resource server, the Telephony server, and the Services server. The Resources server and the Telephony server are accessible from the OnMobile GUI, via the *System Manager* interface.

Configuration of the Resource server entails managing the state of the processes running on it. Since it hosts the recognition, speaker verification, TTS, and compilation server components, it is responsible for determining which Node will process a system request.

The Telephony server allows users to regulate its processes, as well as the related ports. It is responsible for interfacing with the telephony hardware and provides the environment for voice applications. The Telephony server also queries the Resource server to determine the appropriate server component with which it must interface to perform a call-related function.

These Nodes are not enabled when the MMP2500 is powered on. The operator must configure them via the interface to bring them to a functioning and active state. The OnMobile system environment provides the classes required for these programs, however the associated processes require initiation by the operator.

Processes

The current processes available for operator configuration relate to the 3rd party Nuance speech recognition component. The process types are already installed on the respective Nodes; the operator adds processes by creating a new process, naming it, and choosing its type. The available process types for the Resource Node are: NLM, Resource-Manager, Compilation-Server, Recserver, and TTS-Server. For Telephony Nodes, the process type available is Recclient.

The NLM utility starts a Nuance license manager. This permits licenses to function over multiple machines. The server running the NLM process acts as the license server and monitors how many licenses are in use within the configuration.

The Resource-Manager process is an executable process. This is used to start each resource manager for the system. There are no required arguments for the Resource-Manager utility. This process is required before starting the Recclient or Recserver processes to which it is connected.

The Compilation-Server process is applied only to enable speaker-independent dynamic grammars. It is used to compile Grammar Specification Language (GSL) or text-phrase additions to a dynamic grammar at runtime. At least one Compilation-Server process type must be enabled to call any Services creating new dynamic grammars (containing GSL or text phrases). As well, at least one of these processes is required to add new text or GSL expressions to a dynamic grammar.

To start a recognition server, the Recserver process-type is employed. A recognition package may be specified when the process is configured. The Recserver process must start before commencing the Recclient process-type to which it is connected. Recserver process types possess a default of port 8200 when searching for incoming client connections.

The process type relating to prompts relates to the TTS-Server process. This text-to-speech process type uses a Resource-Manager process to manage its connections with internal applications, however it is configurable to connect directly with applications.

The Recclient process type is available for processes running on the Telephony Node. It is an executable program used to start one or more recognition clients for the system's applications. Both the Recserver and Resource-Manager types of processes must be configured and running before a process of type Recclient can launch.

For more information on Nuance processes and parameters, refer to Nuance's API Reference Documentation.

Calls

The platform provides information on the incoming and outgoing calls to a Node, assuming they are delivered by the underlying telephony protocol. The ANI is the calling

party's information. The DNIS is the called party's information. Their details are necessary for the invocation of several Services on the Node.

The platform supports the assignment of a directory number with each port on the system. In the event that a protocol does not deliver the DNIS number, the directory number is used for all processing performed by the platform.

Viewing all Nodes

Available Nodes for configuration and management are accessible from the ***System Manager*** interface. This window displays all installed Nodes, general Node properties, and serves as a verification process to determine which Nodes are successfully running.

1. Select the **System Manager** link from the left menu (Figure 4-1).

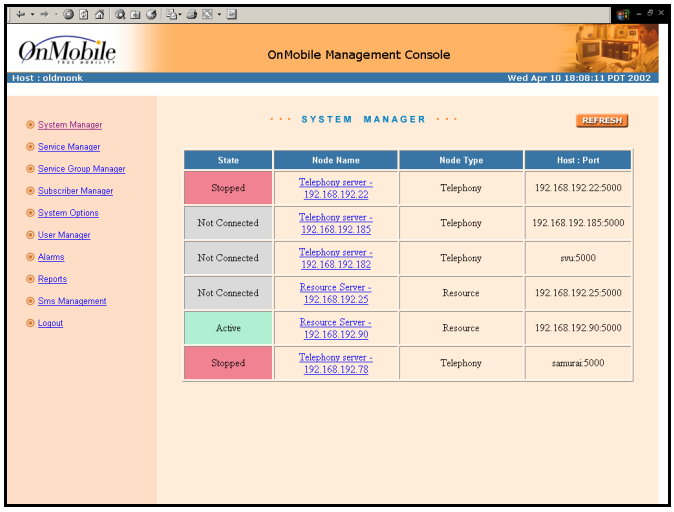

Figure 4-1

2. The list of Nodes in the system will appear on the console as well as related server information in the resulting ***System Manager*** window.

   State: the current condition of the Node. *Not Connected* implies the server has been configured, but is not physically connected. *Active* means the Node is fully functional and may cater to Subscriber's calls. *Starting Up* is a transient state between *Stopped* and *Active*; the Node is bringing itself to a fully operational state with its processes running on it. *Shutting Down* is also a transient state between *Active* and *Stopped*. *Stopped* implies the

Node (and its processes) are disabled. **Note all Nodes are in the *Stopped* state before they are configured**.

Node Name: a logical name for the Node.

Node Type: the server type (*Resource* or *Telephony*).

Host:Port: two-part label. *Host* is the IP address or machine name in which the Node is running. *Port* is the unique number identifying the port on the Node.

N.B. For current information, select the **Refresh** button.

Viewing a Node's Details

Processes residing on a specific Node are available for analysis. Telephony-type Nodes also permit viewing of the ports on the server. These are ports through which Subscribers' calls are made.

1. Select the **System Manager** user interface.
2. Under *Node Name*, select the Node in which detailed information is sought. This will open the ***Node Status*** window (Figure 4-2).

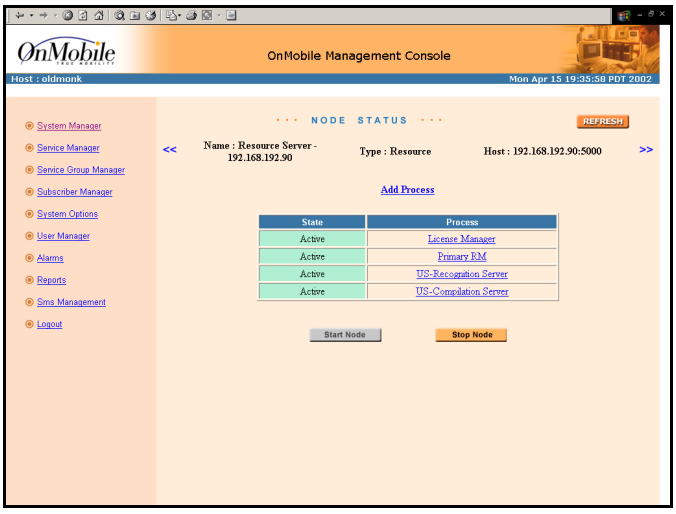

Figure 4-2

3. The current window displays the list of processes running on the selected Node, as well as their current states.

State: the current status of the process. *Active* means the process is running. *Disabled* denotes a stopped process.

Process: the name given to a particular process configured on the Node. Also serves as a link to view the details of the selected process.

4. If the selected Node is of type *Telephony*, an additional tab will be visible in the ***Node Status*** window; a **Ports** tab is available for selection (Figure 4-3).

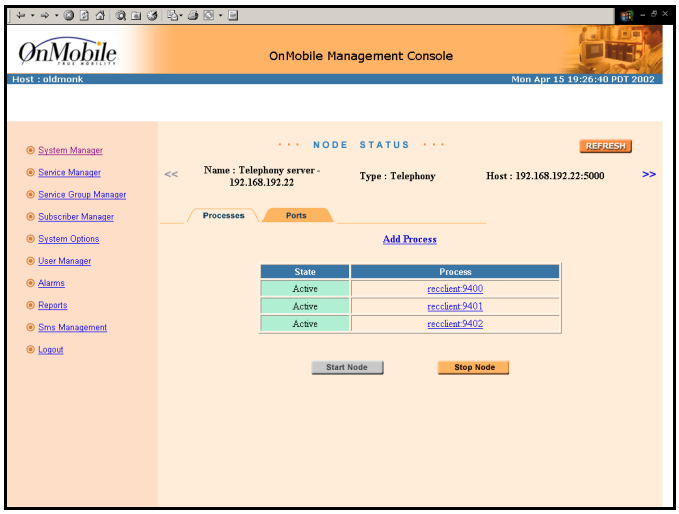

Figure 4-3

Selecting the **Ports** tab displays the port statistics for the Telephony-type Node (Figure 4-4).

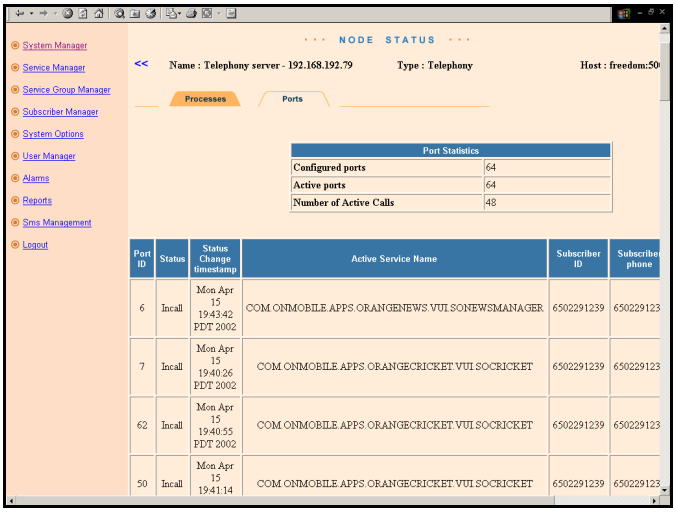

Figure 4-4

Port ID: assigned unique logical port identifier.

Status: denotes the status of the port. *Incall* means the port is currently in use by a Subscriber. *Idle* denotes a free port for Subscriber calls. *Offline* is a disabled port. *Activating* indicates the port is changing from *Offline* to *Idle* or *Incall*. *Deactivating* signifies a change from *Idle* or *Incall* to *Offline*.

Status Change timestamp: the date and time of the port's last change of status.

Active Service Name: displays the name of the Service (i.e. OnMobile application) currently active on the port.

Subscriber ID: unique identifier of the Subscriber, as defined during Subscriber configuration.

Subscriber phone: the telephone number used by the Subscriber to call into the application.

Called Party: DNIS number. The called number in which the Service is summoned.

Deactivate: link to bring port to *Offline* status.

Activate: link to switch the port to *Idle* status.

5. To return to the ***System Manager*** main screen, select **System Manager** from the left menu.

Starting a Node

A Node is in an inactive state upon initial login, as well as after manually disabling it. Starting a Node changes its status to the active state.

1. From the ***System Manager*** window, select the Node to be started listed, under *Node Name*. This displays the ***Node Status*** window.
2. In the ***Node Status*** window, select **Start Node**. The Node will change to a starting up state and then to the active state.

   N.B. If the **Start Node** button is gray and does not accept the selection, then the Node is already in an active state.

Stopping a Node

Once a Node is in the active state, processes running on the Node are active as well. Subscribers' calls are regulated through the Node's ports. In the event that a Node must be removed for maintenance (or other reason), a graceful shutdown is required. A component must be turned off with traffic seamlessly redirected to its redundant component such that Subscriber calls are not affected. The following procedure stops the Node using a graceful shutdown.

1. From the ***System Manager*** window, select the Node to be stopped listed under *Node Name*. This displays the ***Node Status*** window. Ensure the correct Node is selected by verifying the Node's *Name* is listed in the top left corner (Figure 4-5).

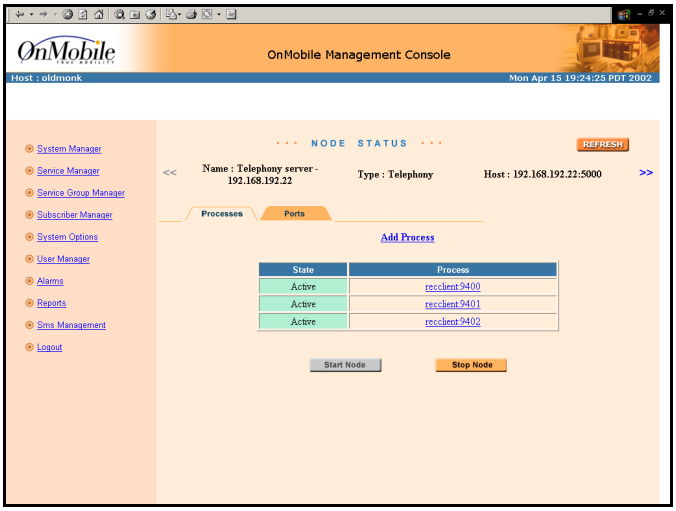

Figure 4-5

2. In the ***Node Status*** window, select **Stop Node**. The state will display a change from shutting down to a stopped state.

   N.B. If the **Stop Node** button is gray and does not accept the selection, then the Node is already in a disabled state.

Adding a Process to a Node

Further processes may be added to a specified Node. These processes are modifiable after they are configured within a Node.

1. From the ***System Manager*** interface, select the Node (under *Node Name*) in which a process is to be added.

2. In the resulting ***Node Status*** window, select **Add Process**. The ***Add Process*** form will appear in the ***Node Status*** window (Figure 4-6).

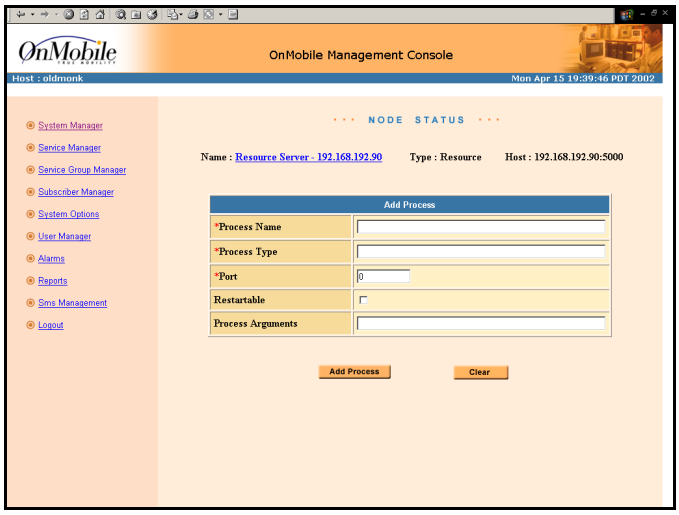

Figure 4-6

3. Enter the new process particulars in the form. Items denoted by '*****' are mandatory fields. At any moment, the **Clear** button may be chosen to reset the fields to null.

   Process Name: alphanumeric field representing the process' label.

   Process type: type of process running on the Node. Available options for Resource Nodes are: *NLM*, *Resource-Manager*, *Compilation-Server*, *Recserver*, and *TTS-Server*. For Telephony Nodes, the process type available is *Recclient*. Further information is found in the "Processes" section of this chapter.

   Port: the physical port location on the node through which the process will run.

   Restartable: selection box. When a Node is stopped, all processes running on the Node are stopped as well. Choosing this selection permits the process to automatically restart when the Node resumes functioning. An unselected checkbox signifies the process be restarted by the operator.

   Process Arguments: URL listing the path to the process' parameter fields.

4. Select **Add Process** to incorporate the new process in the Node. The process is now active and implemented in the system.

Viewing a Process' Details

Individual processes running on a Node are available for a detailed view. This view displays their configured parameters, as well as their status on the Node.

1. Follow the procedure "Viewing a Node's Details" for the Node on which the process is running. If the Node is a Telephony type, ensure the **Processes** tab is selected.
2. From the ***Node Status*** window, click the name of the process whose information is requested. A table (Figure 4-7) displaying process attributes will emerge.

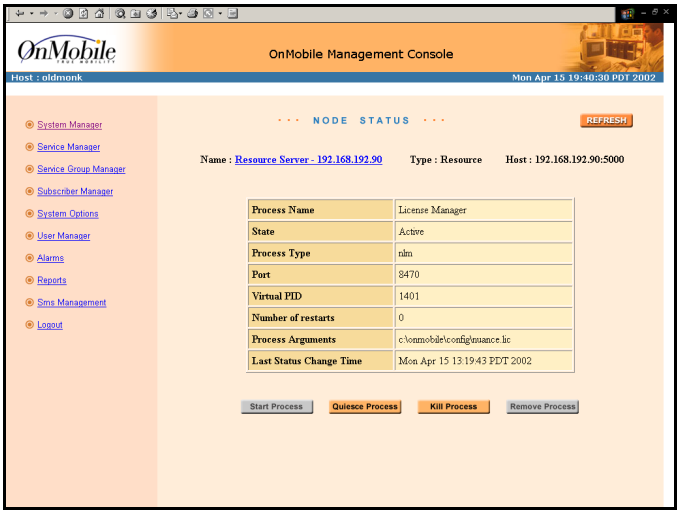

Figure 4-7

Process Name: the selected process for view.

State: the current state of the process with respect to its functions on the Node. *Active* denotes a running process. *Stopped* is a configured but non-operating process.

Process type: type of process running on the Node (as discussed at the beginning of this chapter). Available options for Resource Nodes are: *NLM*, *Resource-Manager*, *Compilation-Server*, *Recserver*, and *TTS-Server*. For Telephony Nodes, the process type available is *Recclient*.

Port: the port on the Node where the process is operating.

Virtual PID: generated by the system. Denotes a unique key for Nuance processes.

Number of Restarts: indicates the number of times a process has been restarted since its inception.

Process Arguments: text box for parameters required by the Nuance process for execution. Parameters may also be pre-entered via the original system software installation.

Last Status Change Time: date and time stamp of previous process state change.

Ending a Process Applying a Graceful Shutdown

A process' function on a node may be stopped without removing the process (and its configuration). A graceful shutdown involves stopping the process without disrupting information traffic.

1. Follow the procedure "Viewing a Process' Details" for the process scheduled to end.
2. Select **Quiesce Process**. The process will stop after servicing any methods currently in progress.

   N.B. If the link is not functional, the process is already disabled on the Node.

Ending a Process Immediately

In the previous process ("Ending a Process Applying a Graceful Shutdown"), the process ceases using a series of steps to ensure Node functionality is not compromised. If a process requires immediate shutdown, it must be "killed". This disables it immediately, regardless of consequences.

1. Follow the procedure "Viewing a Process' Details" for the process requiring termination.
2. Choose **Kill Process**. The process will stop immediately.

   N.B. If the link is not functional, the process is not active on the Node.

Starting a Process

A disabled process must be restarted to return its state to active on the Node. This returns its functionality to the system.

1. Follow the procedure "Viewing a Process' Details" for the process requiring a restart.

2. Click **Start Process**. On the displayed table, the state will list as active. As well, the *Number of Restarts* will increment and the last ping will change to indicate the modification.

   N.B. If the **Start Process** link is not functional, the process is already enabled on the Node.

Deleting a Process

Permanent removal of a process from a Node removes the process and its configuration from the system. As such, ending the process using a graceful shutdown is recommended if the process may be considered necessary at a later time. (Refer to the procedure "Ending a Process Applying a Graceful Shutdown".)

1. Follow the procedure "Viewing a Process' Details" (earlier in this chapter) for the process scheduled for deletion.
2. Click **Remove Process**.

Chapter 5 - Managing Services

OnMobile Applications

The platform hosts the OnMobile series of applications designed for multimodality. These particular applications are identified as Services. They are administered and maintained through the ***Service Manager*** interface on the OnMobile console. This interface permits their addition, modification, and deletion.

As discussed in Chapter 2 - MMP2500 Platform, Services are developed using either SpeechObjects or VoiceXML. SpeechObjects-based applications are packaged as JAR files; VoiceXML pages are fetched by the system.

Subscriber Usage

Subscribers do not directly access these Services. Instead, Services are placed in collections based on common features; these are called Service Groups. For example, Email and News Services may be placed in a Service Group. This Service Group may then be called "Basic Applications". News, Stocks, and Sports Services may be placed in another Service Group (labeled "Media Applications"). Subscribers may then subscribe to either the Basic Applications or Media Applications Service Groups, depending on their interests and Subscriber access type.

Service Provisioning

The basis on which each Service is invoked can be chosen. Options are either DNIS-based or port-based provisioning. DNIS-based provisioning requires configuring the called number(s) that will summon the Service. Port-based provisioning allows invocation of the Service when the call comes in on a specified port. Ports are labeled from 1 to the maximum number of lines installed on the system. On account of its simplicity, DNIS-based provisioning is recommended. If both methods are configured, port-based provisioning is the default.

Viewing all Services

After logging into the ***OnMobile Management Console***, the ***Service Manager*** window is accessible. This main screen lists all Services installed on the system.

1. Select **Service Manager** from the left menu.
2. The ***Service Manager*** window will open (Figure 5-1).

Figure 5-1

The resulting table displays all Services installed on the system, as well as additional details.

N.B. To access this view from other ***Service Manager*** windows, select the **List Services** link.

State: the current status of the application. *Enabled* denotes a Service currently functioning on the system. *Disabled* indicates the Service is provisioned but not active on the system.

Service Name: the title of the Service application.

Voice: indicates the Service is accessible by Voice functionality if ✔ is displayed.

WAP: indicates the Service is accessible by WAP functionality if ✔ is displayed.

Start Date: date and timestamp indicating when the Service started running (or scheduled to run).

End Date: date and timestamp when Service is scheduled to end (or ended).

Adding a Service

After the OnMobile platform is installed, it is possible to add more Services to the system.

1. In the ***Service Manager*** window, select **Add Service**. The ***Add Service*** form will open (Figure 5-2).

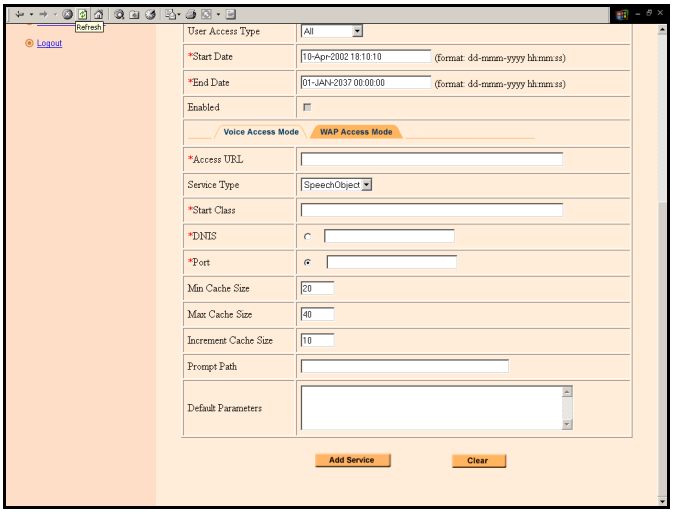

Figure 5-2

2. Fill in the form with the requested parameters. Fields marked with "*****" are mandatory. At any point during this process, selecting the **Clear** button will reset all fields.

   Service Name: label for the new Service. Alphanumeric string characters are permitted, as well as "_", "-", and ".".

   Service Description: text field to provide details regarding the Service.

   User Access Type: pull-down menu. *All* denotes end-users of any access privilege may use this Service (default level). *Known* is the level for Subscribers whose calling number is available. *Provisioned* are for Subscribers whose profiles are configured and stored in the database.

   Start Date: date, in *dd-mmm-yyyy hh:mm:ss* format, in which the Service is to be made available and running on the system. The default is the current date.

   dd: two-digit number representing the day.

mmm: three-character string representing the first three characters of the month.

yyyy: four-digit number representing the year.

End Date: date, in *dd-mmm-yyyy hh:mm:ss* format, in which the Service is to stop running on the system. The default is 01-Jan-2037 00:00:00. Parameters are the same as the *Start Date*. The *End Date* must occur after the *Start Date*.

Enabled: checkbox. When selected, the Service is active and available for use by Subscribers. Initially disabled; only available for selection after Service has been formally added to the system.

Voice Access Mode: default tab link. Displays the form to configure Voice Access Mode parameters. The following parameters are configured within this tab:

Access URL: location of the Service's jar file or VoiceXML page. (Example: http://192.168.103.12/apps/email.jar .)

Service Type: pull-down menu. Services are developed via *SpeechObjects* or *VoiceXML*.

Start Class: represents the main application java class in the jar file or the starting VoiceXML page.

DNIS: alternative selection to *Port*. Denotes the called number in which the Service is invoked.

Port: alternative selection to *DNIS*. The port(s) on which the Service is invoked.

Min Cache Size: the minimum number of the Service application instances kept in memory for faster loading.

Max Cache Size: the maximum number of the Service application instances kept in memory for faster loading.

Increment Cache Size: is the amount of Service application instances to load in memory when all the caches have been exhausted.

Prompt Path: path to location in which prompts related to the Service are stored.

Default Parameters: text box. Used to display the Service's default parameters.

WAP Access Mode: selection tab. Displays the form to configure WAP Access Mode parameters (Figure 5-3).

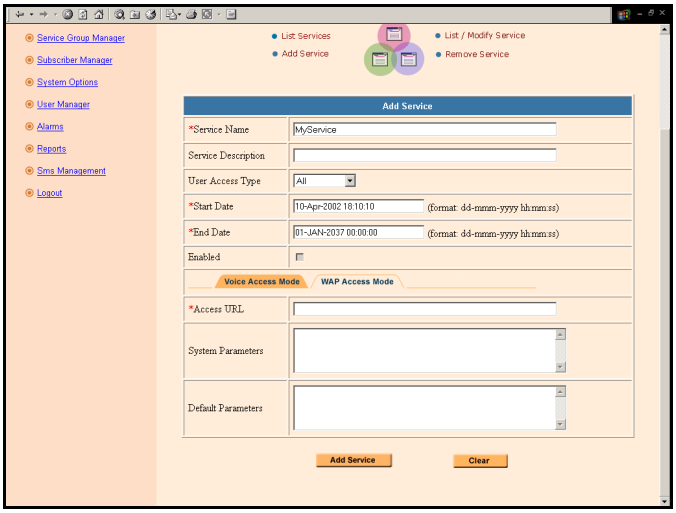

Figure 5-3

The following parameters are configured within this tab:

Access URL: location of the Service's jar file. (Example: http://192.168.103.12/apps/email.jar .)

System Parameters: field parameter for future product releases (currently not applicable).

Default Parameters: field parameter for future product releases (currently not applicable).

3. Click on **Add Service**. To abort without adding a Service, return to the Services list by selecting **List Services** from the top left menu.

Viewing a Service

After a Service has been added to the OnMobile system, it is possible to view its associated parameters.

1. From the ***Service Manager*** window, select **List/Modify Service**. The ***List Service Details*** frame will appear (Figure 5-4).

Figure 5-4

2. The pull-down menu lists all Services available for viewing on the System. Choose the intended Service and click **List Details**. The ***Modify Service*** window opens to display Service details (Figure 5-5).

Figure 5-5

N.B. For parameter descriptions, refer to the "Adding a Service" procedure in this chapter.

3. To exit and return to the main ***Services List*** window, select **List Services**.

Modifying a Service's Details

After adding and configuring a Service, it is possible to modify its information and parameters.

1. Following the procedure "Viewing a Service" to open the ***Modify Service*** window for the Service to be modified.
2. Edit Service parameters as necessary. Note that the *Service Name*, *Access URL*, and *Start Class* are not modifiable fields. (For parameter descriptions, refer to the "Adding a Service" procedure in this chapter.) To clear all fields, click **Clear**.
3. Select **Modify Service** to update the system with the new Service parameters.
4. To exit and return to the main ***Services List*** window, choose the **List Services** link.

Disabling a Service

After adding a Service, it may be required to temporarily remove its ability to function in the system. Disabling a Service permits the system to store the application's configuration without removing the Service itself.

1. Following the procedure "Viewing a Service" to open the ***Modify Service*** window for the Service to be modified.
2. Uncheck the box marked *Enabled*.
3. Select **Modify Service** to disable the specified Service. Parameters and configuration will remain within the system.
4. To exit and return to the main ***Services List*** window, choose the **List Services** link.

Enabling a Service

A Service may be disabled during its initial configuration or during a modification procedure. Enabling a Service restores it as operative and runs it on the system. All configured parameters remain unless modified.

1. Following the procedure "Viewing a Service" to open the ***Modify Service*** window for the Service to be modified.
2. Check the box marked *Enabled.*
3. Select **Modify Service** to enable the specified Service. The Service is now available and running on the system.
4. To exit and return to the main ***Services List*** window, choose the **List Services** link.

Removing a Service

Services that are installed on the OnMobile MMP2500 may be removed. This deletes the associated files from the system. The system performs a check for active instances of the Service; if an attempt at deleting an active application is performed, the console will display an error message. Thus, the system will not permit the deletion of an application currently in use. Services must be disabled before permanent removal to ensure quality of service is not disrupted. (To disable a Service, follow the "Disabling a Service" section in this chapter.)

1. From the ***Service Manager*** window, select **Remove Service**. The ***Remove Service*** frame will appear (Figure 5-6).

Figure 5-6

2. Using the pull-down menu, choose the Service for deletion.

3. Click **Remove Service**. The Service and its configuration are now removed from the system.

Chapter 6 - Controlling Service Groups

Implementing Service Functionality

As discussed in Chapter 5 - Managing Services, applications available to Subscribers are called Services. They are placed together in groups (Service Groups) based on their features and functions. Subscribers are then assigned to one Service Group, providing simple configuration of several applications within one collection. Subscribers can access registered Services via Service Groups only.

Similar to individual Services, Service Groups are configurable. A network operator creates a Service Group and configures which Services are contained within. Modifying a Service Group affects its Subscribers.

Creating a Service Group

When several Services hold common features, they may be grouped together as a Service Group for Subscriber access. Initial configuration of a Service Group is required before it can contain any Services.

1. From the ***Service Group Manager*** interface, select **Create a Service Group**. A new form will appear (Figure 6-1).

Figure 6-1

2. Fill in the ***Create Service Group*** form with the requested details. Fields marked with '*****' are mandatory. To clear all fields and restart at any time, select **Clear**.

   Service Group Name: a meaningful alphanumeric label for the new Service Group.

   Description: a brief explanation stating the function of the Service group.

   Start Date: date, in *dd-mmm-yyyy hh:mm:ss* format, in which Service Group is enabled on the system.

   dd: two-digit number representing the day.

   mmm: three-character string representing the first three characters of the month.

   yyyy: four-digit number representing the year.

   hh: two-digit number representing the hour, in 24-hour format.

   mm: two-digit number representing the minutes.

   ss: two-digit number representing the seconds.

   End Date: date, in *dd-mmm-yyyy hh:mm:ss* format, in which the Service Group is disabled on the system. Parameters are the same as the *Start Date*. Subscriber access to Services within the Service Group ceases on the *End Date*.

3. Choose **Create Service Group**. The Service Group now exists on the system and is ready for the addition of Services.

Viewing All Service Groups

Current Service Groups residing on the system are available for view. This enables the operator to view existing Service Groups before creating new ones to ensure surplus groups containing the same Services are not generated.

1. Choose the **Service Group Manager** link from the left menu on the OnMobile console display. ***The Service Group Manager*** user interface appears (Figure 6-2).

Figure 6-2

2. The displayed table displays the following details:

   Name: the label given to the Service Group.

   Start Date: date in which the Service Group's functions are enabled on the system.

   End Date: date in which the Service Group is disabled on the system.

Adding a Service to a Service Group

Upon creation, a Service Group is vacant. Services must be added to the group.

1. From the ***Service Group Manager*** user interface, choose **Add & Remove a Service from a Service Group** to open a new form (Figure 6-3).

Figure 6-3

2. Fill in the given fields to add a specific Service to a Service Group. To abort or clear fields at any time, select **Clear**.

   Service Group Name: pull-down menu listing the available Service Groups on the system. Choose the group in which the Service will be added.

   Service Name*:* label of the Service application to add to the Service Group chosen above.

3. Press **Add Service**. The Service is now composed within the Service Group.

Removing a Service from a Service Group

After a Service is added to a Service Group, it may be necessary to remove it. For example, it may not be appropriate for a Service Group consisting of primarily news-related applications to contain a Horoscope Service. As such, the administrator may opt to remove it from the Service Group.

1. From the ***Service Group Manager*** user interface, choose **Add & Remove a Service from a Service Group**.

2. In the displayed form, fill in the given fields:

   Service Group Name: pull-down menu listing the available Service Groups on the system. Choose the group from which the Service will be removed.

Service Name: label of the Service application to be removed from the Service Group chosen above.

3. Press **Remove Service**. The Service is now removed from the Service Group, however it may be re-added again if needed.

Viewing a Service Group's Details

After a Service Group's creation, its configured parameters are available for analysis and review.

1. Click **Service Group Manager** from the left OnMobile console menu.
2. From the resulting form displaying existing Service Groups, choose the *Name* for which a more detailed view is required. The ***Service Group Details*** form will open (Figure 6-4).

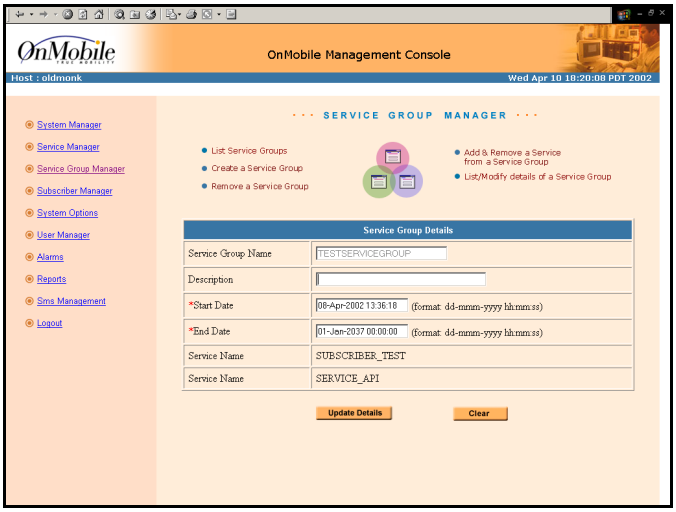

Figure 6-4

The following information is presented:

Service Group Name: label for the Service Group.

Description: a brief explanation stating the function of the Service group.

Start Date: date, in *dd-mmm-yyyy hh:mm:ss* format, in which the Service Group is enabled on the system.

dd: two-digit number representing the day.

mmm: three-character string representing the first three characters of the month.

yyyy: four-digit number representing the year.

hh: two-digit number representing the hour, in 24-hour format.

mm: two-digit number representing the minutes.

ss: two-digit number representing the seconds.

End Date: date, in *dd-mmm-yyyy hh:mm:ss* format, in which the Service Group is disabled on the system. Parameters are the same as the *Start Date*. Subscriber access to Services within the Service Group ceases on the *End Date*.

Service Name: lists all Services contained in the group. If none exist within this collection, field will read: *No Services Present*.

3. To return to the main menu, click **List Service Groups**.

Modifying a Service Group's Details

Details added during the initial configuration are available for later modifications. Changing a Service Group affects all Subscribers linked to that Service cluster of applications.

1. Follow the procedure "Viewing a Service Group's Details" to open the ***Service Group Details*** form.
2. Modify the fields requiring change. Field parameters are detailed in the procedure "Viewing a Service Group's Details". Shaded fields are not amendable. To clear all modifiable fields, choose **Clear**.
3. Choose **Update Details**. The page will refresh with the new details appearing on the console.

Deleting a Service Group

It may be that a Service Group is no longer necessary or in use, such as a Service Group containing a combination of Services not applicable to any Subscribers. As such, it is deemed unnecessary and the operator can choose to remove it.

However, if the removal is a temporary solution (i.e. the Service Group is currently unused but will be functional later), an alternative to deletion is the change of the start and end dates. This action stores the Service Group's configuration, avoiding re-provisioning later. To change the start and end dates, refer to "Modifying a Service Group's Details".

A Service Group cannot be deleted if there exists at least one Subscriber accessing it for Services.

1. From the ***Service Group Manager*** user interface, choose **Remove a Service Group**.
2. In the resulting frame (Figure 6-5), choose the Service Group from the list of available groups using the pull down menu. The list will be empty if no Service Groups have been configured.

Figure 6-5

3. Click **Remove Service Group**. The selected Service Group is deleted from the system.

   N.B. The screen will display an error denoting an internal error if there is a Subscriber still subscribed to the Service Group. Refer to Chapter 7 - Managing Subscribers for information on Subscriber access to Service Groups.

Chapter 7 - Managing Subscribers

Subscribers and Services

A Subscriber is the end-user: the individual using the mobile phone/device and associated applications (i.e. Services). It is necessary to perform Subscriber management operations, such as configuring access to Services and general user administration.

Subscribers are capable of adding their basic information to the system via the carrier's web site. This includes basic details such as email addresses and favorite Service features. Self-provisioning by the Subscriber enters his or her primitive details in the system, however Service Groups and system information cannot be viewed or modified from the carrier's web site.

Automatic Provisioning

The system can also be set up for quick auto-provisioning of subscribers. This is useful for deployments in which the operator would like to make the system and Services available to all Subscribers and would not like to explicitly provision each end user. Auto-provisioning is performed from the ***System Options*** interface (Chapter 8 - Multimodality Administration).

Tools for Subscriber Administration

The ***Subscriber Manager*** interface is they key tool for caller administration. This OnMobile console feature is accessible to the following operator privilege levels: *Super-User Access* or *Access to Subscriber Provisioning Only*.

Content relating to Subscribers and their Services are pushed through the WAP gateway of the platform. It pushes WML content to end-users. The system automatically generates a WAP identification number to further personalize the system for the Subscriber.

The network delivers Subscriber identification data to the platform. This identification is important at the beginning of an interaction in any mode; this is necessary for multimodality. When this information is not available, the platform provides a

configurable means of requesting this information. This is then mapped to the appropriate Subscriber ID and made available to Services.

Manually Configuring a Subscriber

Adding a Subscriber requires filling in a form with individual information and preferences. This step is performed for end users that have not self-provisioned their basic information via the carrier website.

1. Choose ***Subscriber Manager*** from the left OnMobile console menu. The ***Add Subscriber*** form will appear (Figure 7-1). Alternatively, from any other ***Subscriber Manager*** interface, selecting **Add Subscriber** from the top menu will also open the *Add Subscriber* form.

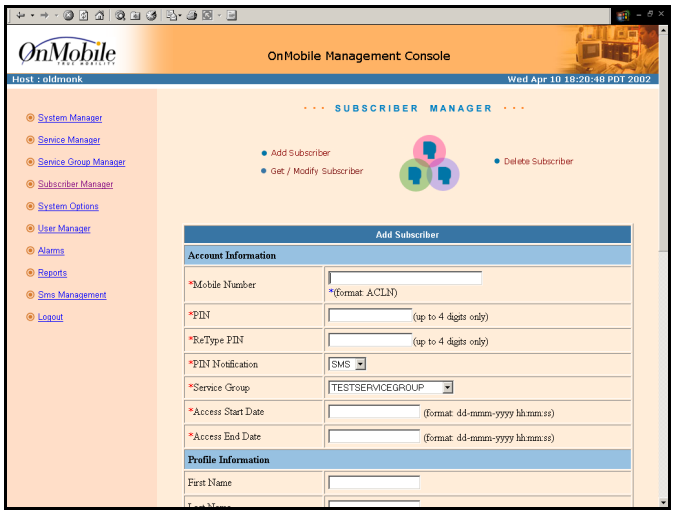

Figure 7-1

2. Fill in the form with the appropriate Subscriber attributes. Fields marked with '*****' are mandatory. To clear all field entries at any time, choose **Clear**.

   Mobile Number: the mobile number in ACLN format. This is both the area code and the local number.

   PIN: Subscriber's personal four-digit number for authentication.

   ReType PIN: same as *PIN*, above.

   PIN Notification: method in which to send PIN to Subscriber during instances in which Subscriber requests PIN details. Options are via *SMS* (default) or *Email*.

Service Group: the group containing the Services that will be made available to the Subscriber.

Access Start Date: date in which Subscriber access to the specified Service Group commences. Format is *dd-mmm-yyyy hh-mm-ss*:

dd: two-digit number representing the day.

mmm: three-character string indicating the first three characters of the month.

yyyy: four-digit number representing the year.

hh: two-digit number denoting the hour, in 24-hour format.

mm: two-digit number signifying the minutes.

ss: two-digit number representing the seconds.

Access End Date: date in which Subscriber access to Services ceases. The account remains in the system after the *Access End Date*, however Subscriber access is discontinued. Format is the same as *Access Start Date*.

First Name: Subscriber's given name.

Last Name: Subscriber's family name.

Nickname: optional alternative name to reference Subscriber.

Email ID: Subscriber's email address.

Gender: drop-down menu with gender options (*Male* or *Female*). The default option is *Unknown*.

Date of Birth: Subscriber's birthday in *dd-mmm-yyyy* format. Example: 10-Jan-1970.

Marital Status: pull-down menu indicating whether the Subscriber is *Married* or *Single*. The default status is *Unknown*.

Work phone number: Subscriber's telephone number during common business hours.

Home phone number: Subscriber's residence land line telephone number.

Address Line 1: field for Subscriber's billing address.

Address Line 2: field for Subscriber's billing address.

Language: Subscriber's preferred choice of language correspondence. Default is *Unknown*.

Blocked: selection box. When checked, indicates the Subscriber is not permitted to access provisioned Services.

WAP ID: Subscriber ID generated automatically by the WAP gateway.

Preferred Delivery Mode: pull-down menu indicating Subscriber's preferred method of receiving Services (*WAP*, *Voice*, or *SMS* options).

Block Personal Info: selection box. When checked, prevents Subscriber access of personal information during use of voice applications.

Device Type: drop-down menu displaying Subscriber's device operating OnMobile's Services. Options are *Mobile Phone* or *Land line Phone*. The default is *Unknown*.

WAP Browser Type: Subscriber's browser category on the WAP phone (*Openwave*, *Nokia*, or *Other*). Default browser is *Unknown*.

Time Zone: pull-down menu indicating the Subscriber's current and default time zone. The default is *Greenwich Mean Time*.

PIN Hint Question: pull down menu for Subscriber authentication questions. When a Subscriber contacts Customer Support, the Operator should validate the caller by asking the preferred hint question. Options are: *Your mother's maiden name* (default), *Your city of birth*, and *Your pet's name*.

PIN Hint Answer: text box for Subscriber's answer to *PIN Hint Question*.

3. Click **Add Subscriber**. The Subscriber's profile is now stored in the system.

Viewing a Subscriber's Profile

If a Subscriber is correctly provisioned, his or her account information is available for retrieval later.

1. Choose **Get/Modify Subscriber** from the ***Subscriber Manager*** user interface. The ***Modify Subscriber*** form will appear (Figure 7-2).

Figure 7-2

2. Enter the *Subscriber Mobile Number* for the Subscriber's whose information is requested. To clear the field and restart, select **Clear**.

3. Choose **Get Subscriber**. The **Modify Subscriber** form will appear with the selected Subscriber's stored details. For field information, refer to the "Manually Configuring a Subscriber" procedure in this chapter.

4. To exit and return to the main interface, select **Subscriber Manager** from the left menu.

Modifying a Subscriber

If a Subscriber is already provisioned correctly, it is possible to change or modify their existing profile. Note that changing Subscriber details overwrites previously stored profile and account information for the user.

1. Follow the procedure "Viewing a Subscriber's Profile" to view the information stored for a specific Subscriber.

2. Modify parameters as necessary. Note the *Mobile Number* is an unchangeable field. To completely clear all fields (except *Mobile Number*) and re-enter Subscriber information, click **Clear**.

3. When finished updating account or profile information, select **Modify Subscriber**. The changes are now stored in the system.

Removing a Subscriber

If a Subscriber is no longer required or an official end-user, he or she may be removed from the system. This deletes their profile completely, thus the execution of this procedure is recommended only if it is certain that the user will no longer be needed in the database.

1. Select **Delete Subscriber** from the ***Subscriber Manager*** interface to open the ***Delete Subscriber*** form (Figure 7-3).

Figure 7-3

2. In the field provided, enter the *Subscriber Mobile Number* linked to the Subscriber whose profile is to be deleted.

3. Click **Delete Subscriber**. A confirmation message displays to indicate the deletion was successful. The Subscriber and all related information are removed from the system.

Chapter 8 - Multimodality Administration

System Parameters

Up to this point, management using the OnMobile web interface has involved the hardware (Node) configuration, as well as the Service and Subscriber information residing on it.

The system itself requires general configuration using the ***System Options*** UI. This enables full multimodal functionality. In addition, system parameters affecting all areas of the OnMobile platform are performed through this interface (such as file management, Subscriber defaults, number pools, and alarms/SNMP Recipients).

The ***System Options*** interface also permits the setup for quick auto-provisioning of subscribers. This is useful for deployments in which the operator would like to make the system and Services available to all Subscribers and would not like to explicitly provision each end user.

Number Pool

The platform manages a pool of numbers dedicated for the SMS to Voice or WAP to Voice transitions.

Subscribers may receive emails, messages, and other stored components; these files are collected on the platform until Subscriber retrieval. To uniquely identify each of these files, a value is temporarily assigned to it. Once the Subscriber has retrieved the file (email, etc), the value is place back in a "pool" of other number values for reuse. Numbers are reused with the last used number being used first. Thus, a unique value is drawn from the Number Pool, assigned to a component, then place back in the pool when finished.

The system logs a warning when the number of requests for a Subscriber in a single day exceeds the size of the Number Pool. The warning message indicates that the size of the Number Pool should be increased.

The platform permits two sets of Number Pools to be maintained. One is maintained for single SMS messages (i.e. one SMS message is sent at a time, such as in the

event of sending SMS alarm alerts). Another pool is maintained for bulk SMS messaging; when multiple SMS messages are sent in a given moment, this is the pool from which the system pulls and assigns a number.

Configuring or Modifying General System Attributes

System configuration entails the administration of four areas: General, Accounting, Subscribers, and Nuance Parameters.

1. Choose the **System Options** button from the left OnMobile console menu. This opens the ***Edit Configuration*** form (Figure 8-1). Alternatively, this form appears when selecting **Edit Configuration** on the top ***System Options*** menu.

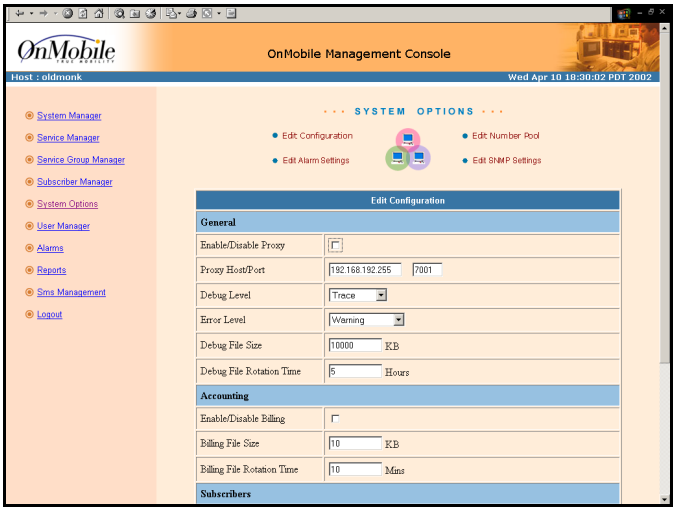

Figure 8-1

2. Enter or modify form parameters as necessary. Fields may be cleared at any time by clicking **Clear**.

   Enable/Disable Proxy: selection box. Selecting this box enables the proxy and allows communication to remote sites. (The change takes effect on the next http connection after the form is officially submitted.)

   Proxy Host/Port: two-parameter field. *Proxy Host* represents the IP address of the Proxy. *Proxy Port* denotes the port number to use on the host.

Debug Level: pull-down menu denoting the level at which the debug/trace log file should detail. All information equal or lower than the specified *Debug Level* is logged. Options are: *Status*, *Information, Detail, Trace* (default), *None*.

Error Level: pull-down menu denoting the level at which the error log file should detail. All information equal or lower than the specified *Debug Level* is logged. Options (from lowest to highest in severity) are: *None*, *Status*, *Warning* (default), *Non-fatal errors*, and *Fatal errors*.

Debug File Size: file size in kilobytes. The log file will rotate when it reaches this value.

Debug File Rotation Time: time, in hours. The log file will rotate when the time reaches this value.

Enable/Disable Billing: selection box. Selecting this field enables billing Services to function on the system.

Billing File Size: size, in kilobytes. The billing file will rotate when it reaches this value.

Enable/Disable Auto-provisioning: selection box. When checked, Subscriber auto-provisioning is enabled.

Default Service Group: pull-down menu displaying available Service Groups on the system. Selection will automatically be a new Subscriber's Service Group unless configured otherwise (in the ***Subscriber Manager*** window).

Default Language: pull-down menu to select the default language set for new Subscribers (as configured in the ***Subscriber Manager*** window). If no option is selected, *English* is chosen.

Enable/Disable Call Log: selection box. When checked, logging of calls is enabled on the system.

3. Select **Update**. The revised parameters have been stored in the system.

Viewing or Modifying Alarm Recipient List

Alarms range in severity from *Minor*, *Major*, to *Critical*. It is possible to configure the system such that an alert is sent to an email or a mobile phone. This alert notifies the

recipient of a new alarm immediately, permitting Recipients to take appropriate measures as necessary. For more information on Alarms, refer to Chapter 9 - Alarms.

1. From the ***System Options*** window, choose **Edit Alarm Settings**. The ***Alarms Recipient List*** form appears (Figure 8-2).

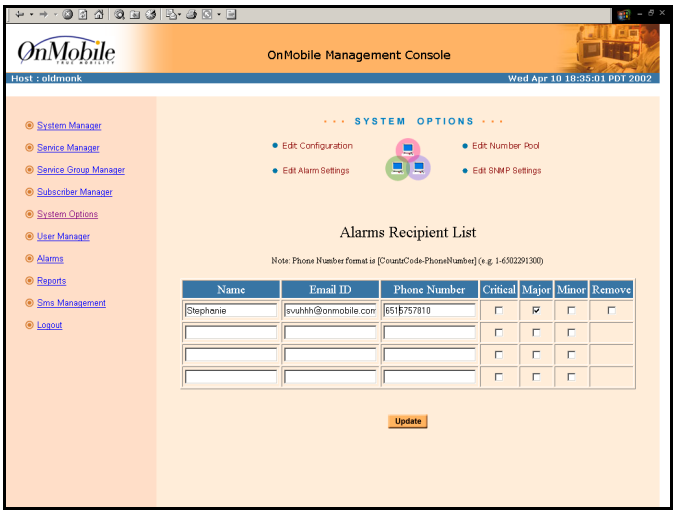

Figure 8-2

2. Enter or modify Recipients using the form provided.

   Name: character set indicating the operator or administrator receiving the alarm notification.

   Email ID: Recipient's email address in which to send the alarm notification by SMS.

   Phone Number: telephone number in which to send the alarm announcement.

   Critical, **Major**, **Minor**: selection boxes. When checked, only alarms raised with the selected level of severity are sent to the Recipient.

   Remove: selection box. When selected, the Recipient(s) will be deleted when **Update** is clicked.

3. Click **Update** to store the Recipient list modifications.

Adding a Number to the Number Pool

The platform manages a pool of numbers dedicated for the SMS to Voice or WAP to Voice transitions. The values within the pool are entered through the console. For a

single push, each is taken one at a time by the system when assigning it to an SMS message. For bulk pushes, the value is assigned to multiple recipients at the same time.

1. Choose **Edit Number Pool** from the ***System Options*** window to add a value to the single push Number Pool list. Select **Edit Number Pool (For Bulk Push)** to add numbers to the bulk push Number Pool. A new form emerges (Figure 8-3).

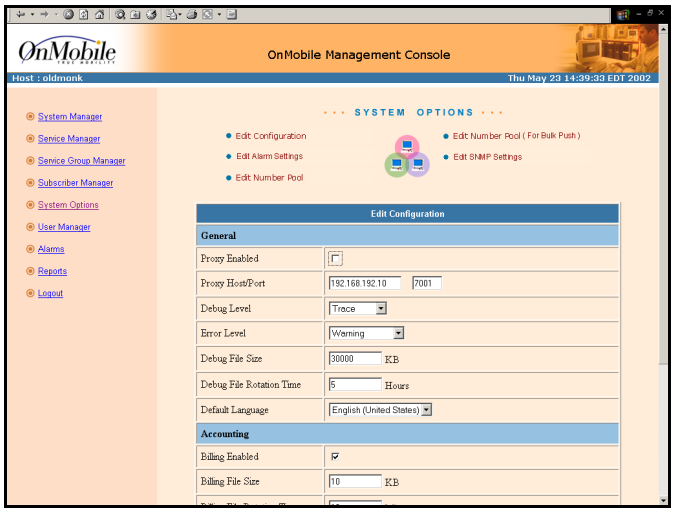

Figure 8-3

2. Enter the number slated for insertion in the pool. (The Number Pool is a finite list of values determined by the Carrier hosting the OnMobile Platform.)

3. Click **Add Number**. The value is now stored in the Number Pool for use by the system. Note that if the parameter field is left blank, a window will appear (Figure 8-4) indicating a value must be entered.

Figure 8-4

Removing a Number from the Number Pool

The operator can remove a number once it has been added to the Number Pool (for both single and bulk pushes). For example, if a different number set is required for the pool, then the original set of values must be removed via this method.

1. For the removal of numbers reserved for single push, choose **Edit Number Pool**. If the removal of a value must be reflected in all bulk pushes, choose **Edit Number Pool (For Bulk Push)** from the *System Options* window.
2. From the pull down menu available on the displayed table, choose the number scheduled for deletion.
3. Click **Remove**. The number is permanently deleted from the selected Number Pool and is not available to the system when assigning a value from the pool.

Configuring or Modifying SNMP Recipient List

A high degree of service reliability is provided using SNMP alarms. Third-party SNMP management tools are used to monitor SNMP trap messages. Two message types are dispatched to the SNMP manager: one when an alarm is raised, another when an alarm is cleared. For more information on Alarms, refer to Chapter 9 - Alarms.

The SNMP manager is the Recipient of the SNMP trap messages and its location must be configured on the console.

1. Select *System Options* from the *OnMobile Management Console*.
2. Choose **Edit SNMP Settings** to open the *SNMP Recipient List* window (Figure 8-5).

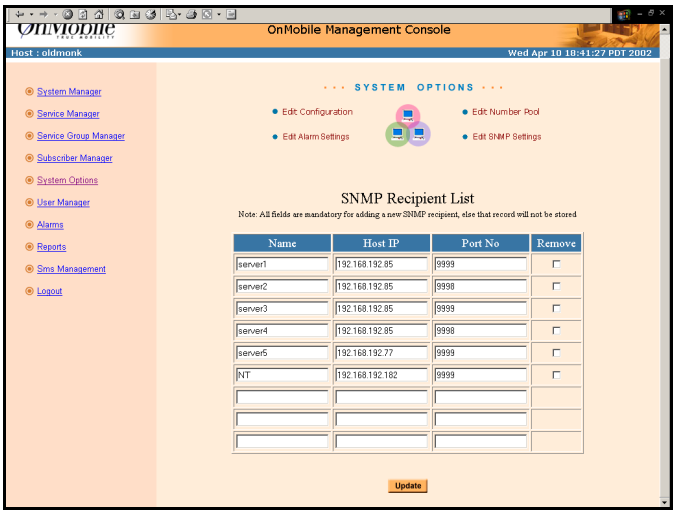

Figure 8-5

3. Enter the fields in the displayed table to configure or modify SNMP Recipients.

   Name: alphanumeric label for the SNMP manager.

   Host IP: IP address of the SNMP manager on the network.

   Port No: integer indicating the port through which the Recipient will receive the trap message.

   Remove: checkbox. Displayed for previously configured SNMP Recipients. When selected, the SNMP manager will not receive (upon updating the current table) SNMP trap messages regarding OnMobile system alarms.

4. Select **Update** to update the Recipient list. The appropriate SNMP managers will receive *Raised* and *Cleared* alarm messages.

Chapter 9 - Alarms

System Health

Alarms are flags or events raised by the system for operator attention. They are occurrences in the system, labeled by severity, sent to the *OnMobile Management Console* for viewing. As well, alarm notifications are configurable to be sent to operators via email and SMS messages.

Alarms are logged by the system. As such, an Alarm Report is available for view. (Refer to Chapter 10 - Reports for information on generating reports.)

Alarm Severity Levels

Alarms are organized by one of three severity levels: Critical, Error, or Warning. Critical notifies that a system component is down or inaccessible. Error alarms indicate the system recovered from a fatal error (such as a process termination or resource unavailability). Warning alarms are advisements; the system may require preventative messages to avoid Error or Critical alerts.

Console Alarm Notification

When logging into the management console, a pop-up window may appear (Figure 9-1). This is a notice signaling presence of currently active alarms in the system. Select Okay to resume.

Figure 9-1

In addition, when logged into the console, the following window may appear indicating a new alarm has occurred:

Figure 9-2

Viewing Current Alarms

An alarm summary displaying all currently active alarms and alarms resolved within the past 24 hours is available for view. Alarms are active when they have been labeled by severity but no action has been taken (by the system or the operator) to change its status. (To view previously active alarms for a time period, refer to Chapter 10 - Reports.)

1. From the ***OnMobile Management Console***, select **Alarms**. The ***Alarms*** window will appear (Figure 9-3).

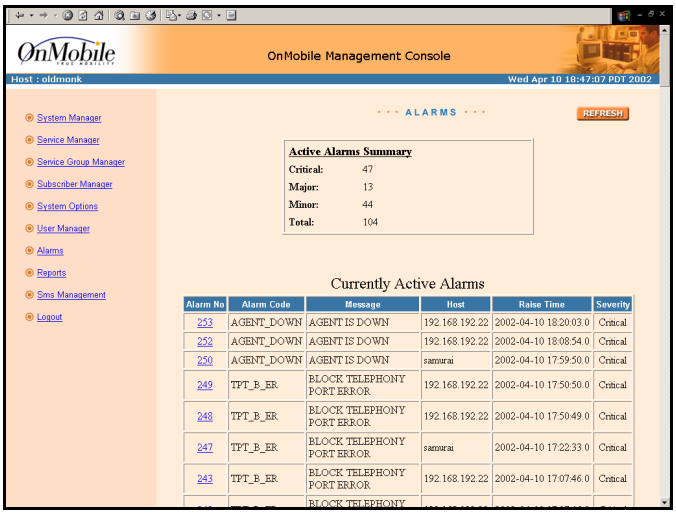

Figure 9-3

2. The *Active Alarms Summary* table provides a tabulation of the total number of alarms currently active. It categorizes the number of alarms with each severity level (*Critical*, *Major*, or *Minor*).

   The *Currently Active Alarms* table displays a summary for each alarm raised in the system.

   Alarm No: number generated by the system to uniquely identify the alarm.

   Alarm Code: predefined message. Generated internally, indicates the alarm name.

Message: text message indicating the cause of the alarm. Predefined message generated internally.

Host: IP address or machine name of the component issuing the alarm.

Raise Time: date and timed in which the alarm was produced.

Severity: category of the alarm (*Critical*, *Major*, or *Minor*).

The *Alarms Resolved in Last 24 Hours* index shows the alarms addressed (by the system or an operator) in the last 24 hours to the current time. Fields displayed are the same as *Currently Active Alarms*.

Viewing a Specific Alarm's Details

Alarms available for a detailed view include current alarms, as well as those resolved within the last 24 hours.

1. Follow the procedure "Viewing Current Alarms" to display the list of available alarms for view.
2. Scroll through the list of available alarms. After locating the desired alarm, click on the number representing its *Alarm No*.
3. The resulting window (Figure 9-4) displays additional information for the selected alarm.

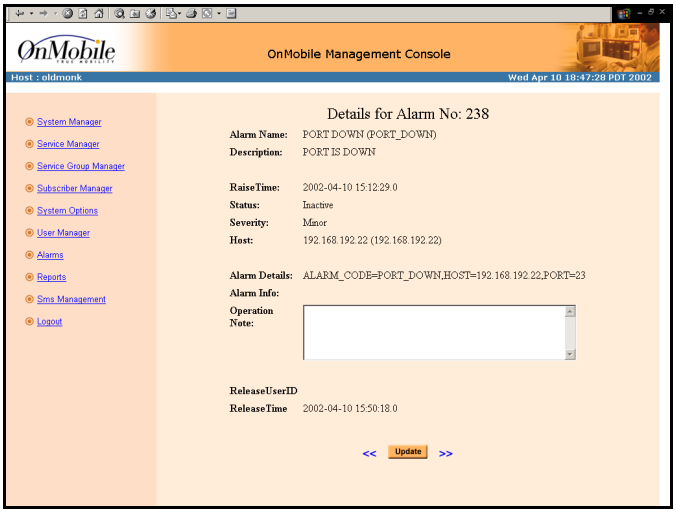

Figure 9-4

Alarm Name: predefined message. Generated internally, indicates the alarm name. Same as *Alarm Code* from the *Currently Active Alarms* table.

Description: message text indicating the cause of the alarm. Same as *Message* from the *Currently Active Alarms* table.

Raise Time: date and time in which the alarm was produced.

Status: state of the alarm. *Active* indicates the alarm is current. *Inactive* denotes the alarm is resolved.

Severity: category of the alarm. Options (from highest to lowest in severity): *Critical*, *Major*, and *Minor*.

Host: machine name and IP address of component issuing the alarm.

Alarm Details: text message. Generated by the system automatically to display additional alarm information.

Alarm Info: Additional alarm information, if available, is displayed on this line.

Operation Note: text box for operator details. Displays messages entered by an operator.

Release Alarm: selection box. When checked, resolves the alarm's status.

Adding a Note to an Alarm

A note regarding a raised alarm may be added in the details portion of it. This message is viewable by other operators logging into the system for maintenance purposes.

1. Follow the procedure "Viewing a Specific Alarm's Details" for the alarm in which a note is to be added.
2. Enter the text message in the field marked *Operation Note*.
3. Click **Update**. The note is stored with the alarm in the system.

Clearing an Alarm

While the system is capable of maintaining itself, it may be necessary to clear an alarm manually (regardless of whether the alarm has been resolved or not).

1. Follow the procedure "Viewing a Specific Alarm's Details" for the alarm scheduled for clearing.
2. Check the box marked *Release Alarm*.
3. As an optional step, annotations concerning the alarm and its release may be made in the text box labeled *Operation Note*.
4. Select **Update**. The alarm is now cleared and no longer currently active in the system (Figure 9-5).

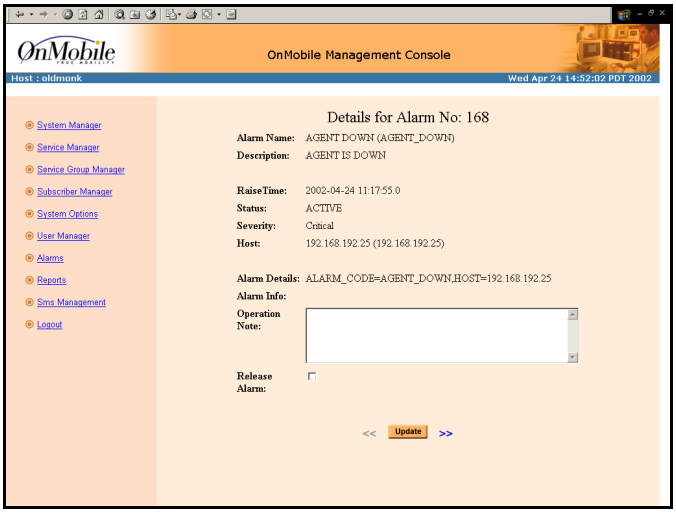

Figure 9-5

N.B. The alarm is still viewable for the following 24 hours under the *Alarms Resolved in Last 24 Hours* table from the main ***Alarms*** window.

Viewing or Modifying Alarm Recipient List

Alarm alerts are capable of being sent to an email or a mobile phone. This alert notifies the Recipient of a new alarm immediately, permitting Recipients to take appropriate measures as necessary. When sending alarm notifications via SMS, the system uses values

from the single push Number Pool (for more information, refer to Chapter 8 - Multimodality Administration).

1. Choose **System Options** from the left OnMobile interface menu.
2. From the ***System Options*** window, choose **Edit Alarm Settings**. The ***Alarms Recipient List*** form appears (Figure 9-6).

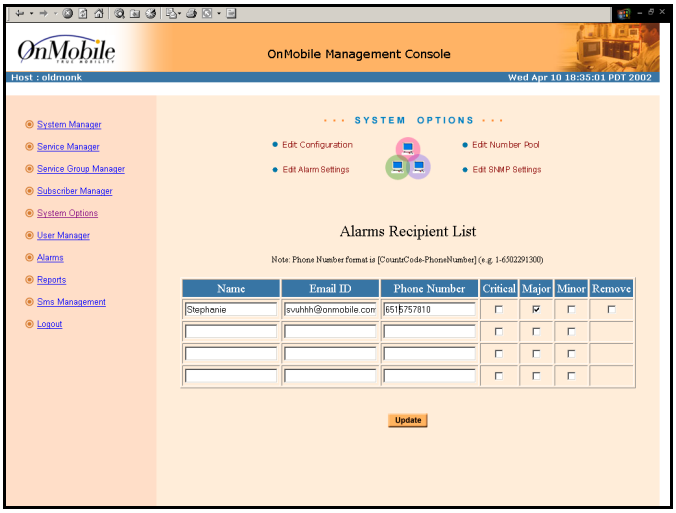

Figure 9-6

3. Enter or modify Recipients using the form provided.

   Name: character set indicating the operator or administrator receiving the alarm notification.

   Email ID: Recipient's email address in which to send the alarm notification.

   Phone Number: telephone number in which to send the alarm SMS announcement.

   Critical, **Major**, **Minor**: selection boxes. When checked, only alarms raised with the selected level of severity are sent to the Recipient.

   Remove: selection box. When selected, the Recipient(s) will be deleted when **Update** is clicked.

4. Click **Update** to store the Recipient list modifications (if any).

Chapter 10 - Reports

Report Types

The system provides several standard reports to assist in its management. Information displayed in these reports stem from operational measurements and statistics, call logs, and subscriber billing records. These reports are valuable to study call usage and other Subscriber patterns. The following reports are supported on the system: Alarms Report, Call Summary Report, Call Traffic Distribution Report, Service Load Distribution Report, Service Usage Report, Service Usage Distribution Report.

The Alarms Report contains details of the alarms raised in the system and their severity levels. The Call Summary Report displays the overall view of system usage and performance. Statistical information on the distribution of traffic flow is presented in the Call Traffic Distribution Report. This allows for the analysis of the demand and the peak hours of usage. The Service Load Distribution Report presents the statistical trend of Subscriber use of a Service, distributed over a specific time period. Subscriber response and usage of Services are viewable in the Service Usage Report. As well, it displays the performance of every Service in the system. The final report, Service Usage Distribution Report, shows the Subscriber trend for a Service. This assists in determining the quantity of Subscribers using particular Services.

Operator Access to Reports

The management GUI permits the configuration of the time period for these report views. Report views require specific operator access levels. These privileges are *Super-User Access* and *Access to Reports Only*. For more information on operator access levels, refer to Chapter 2 - MMP2500 Platform of this guide.

Generating a Report

Report views are configurable, allowing the creation of reports matching a subset of criteria.

1. From the OnMobile management interface, choose **Reports**. The ***Report Generation*** frame appears (Figure 10-1).

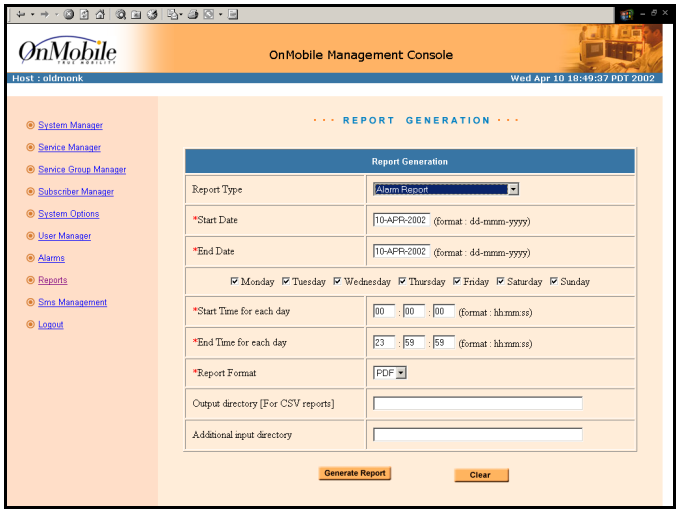

Figure 10-1

2. Enter the parameters for a specified report. Press **Clear** to reset fields at any moment during field entry. Fields marked with "*****" are mandatory.

Report Type: pull down menu displaying the list of reports available for viewing. Available options are *Alarm Report* (default), *CallSummary Report*, *CallTraffic Distribution Report*, *ServiceLoad Distribution Report*, *ServiceUsage Report*, and *ServiceUsage Distribution Report*. Refer to the beginning of this chapter for more detailed information regarding each type.

Start Date: date in *dd-mmm-yyyy* format. Report details commence from this day. Example: 12-JAN-2002.

dd: two-digit number representing the day.

mmm: three-letter string denoting the first three characters of the month.

yyyy: four-digit number denoting the year.

End Date: date, in *dd-mmm-yyyy* format. Display details from the *Start Date* to this specified date. Refer to *Start Date* for parameter description.

Monday – **Friday**: selection boxes indicating the days of the week report information should display. For example, selecting Monday and Wednesday will generate reports for Mondays and Wednesdays between the *Start/End Dates*.

Start Time for each day: time, in *hh:mm:ss* format. Report details commence at this time on the *Start Day*.

hh: two-digit number representing the hour, in 24-hour format.

mm: two-digit number symbolizing the minutes.

ss: two-digits to designate the seconds.

End Time for each day: time, in *hh:mm:ss* format. Display details from the *Start Date* to this specified time on the *End Date*. Refer to *Start Time for each day* for parameter description.

Report Format: pull down menu. Denotes the report's file format. Options are *PDF* (default), *CSV*, or *Both*.

Output Directory (For CSV reports): location to store report if *Report Format* selected is *CSV*. Input format is a UNIX directory file path. If no output directory is listed, an error window will appear (Figure 10-2).

Figure 10-2

Additional input directory: location to search for billing records for *Report Type*, if different than original configuration file location. This overrides the configuration file path. Input format is a UNIX directory file structure.

3. Choose **Generate Report**. The browser will display the report in a new internet browser window (Figure 10-3) for PDF format reports. CSV reports are generated in their specified directory, with a confirmation displayed to the console.

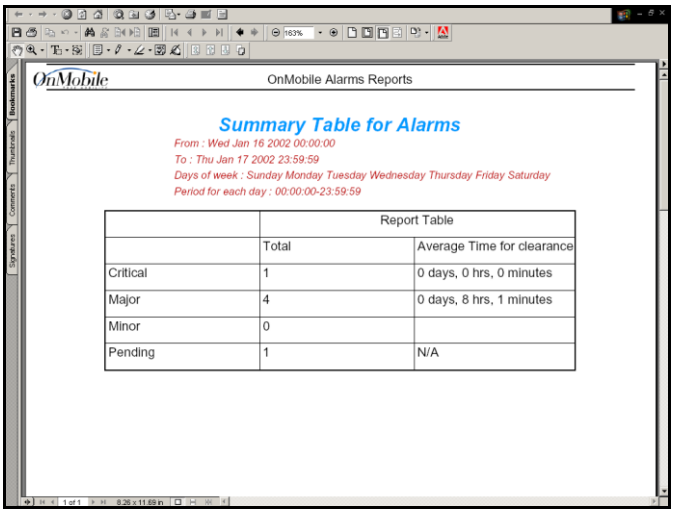

Figure 10-3

N.B. To view a report in PDF format, an appropriate PDF reader must be installed.

Chapter 11 - SMS Management

SMS Overview

Short Message Service (SMS) is the transfer of short text messages via mobile devices and IP addresses. Its increase in popularity among mobile phone users indicates SMS management must be observed since providing this service is a complex task. This involves managing SMS message submission parameters, as well the Short Message Service Center (SMSC)'s server information.

Viewing SMSC Details

The ***SMS Management*** window displays the information for the corresponding SMSCs. These message centers receives a given SMS message and transmits it to the appropriate mobile device. To view SMSC connections:

1. From the OnMobile management interface, choose **SMS Management**. The ***SMS Management*** frame appears (Figure 11-1).

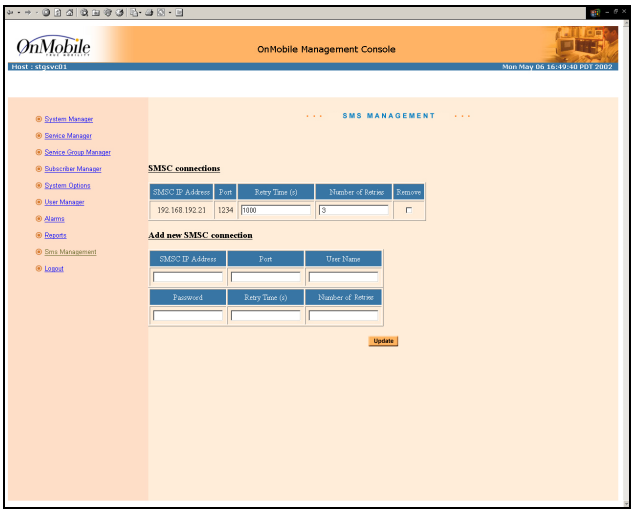

Figure 11-1

2. The following information is displayed in the resulting window, under the ***Update SMSC connections*** header:

   SMS IP Address: displays the IP address of the SMSC performing an SMS message transmission.

Port: location on server in which the SMSC resides.

Retry Time(s): the number of times the system will retry to send an SMS message before discarding a submitted message.

Number of Retry: the maximum amount of time the system must retry to send a submitted message. If no value is entered, the default is 3 retries.

Remove: selection box. When selected, choosing the **Update** button will remove the SMSC from the displayed list.

Adding an SMSC

Additional SMSCs may be added to the current list. This increases the number of centers through which the system will communicate. To add another SMSC, perform the following steps:

1. From the OnMobile management interface, choose **SMS Management**. The ***SMS Management*** frame displays.
2. In the ***Add new SMSC connections*** table, enter the following information:

   SMS IP Address: the IP address of the SMSC performing an SMS message transmission.

   Port: location on server in which the SMSC resides.

   User Name: the username of the SMS center on the system.

   Password: the password related to the *User Name*, above.

   Retry Time(s): the number of times the system will retry to send an SMS message before discarding a submitted message.

   Number of Retry: the maximum amount of time the system must retry to send a submitted message. The default is 3.
3. Choose **Update**. The window will refresh and display the following message: *Update Successful* (Figure 11-2).

Figure 11-2

Future Documentation

On occasion, it may be necessary to upgrade internal software code or entire software elements. These new components are designed to repair known errors and bugs.

A patch is a software element designed for installation on an existing software build. A set of patches is referred to as a service pack. Patches and service packs are packaged with their own documentation supplementing the current set of publications provided by OnMobile.

Maintenance/major releases are new software builds on the system; new functionality requires the software to be replaced completely. These releases will include a new set of documentation instructing operators on the complete use of the upgraded system.

Applications and their upgrades will be provided by OnMobile with supplemental documentation regarding the individual processes required to install and configure their files.