Peregrine

Notification Services 4.1.2

Quick Start Guide

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Peregrine SYSTEMS®

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About this Guide

Notification Services works with other Peregrine applications to enable users to send and receive notifications to one- and two-way communication devices. For two-way devices, it allows tracking of a yes/no reply when a confirmation question is asked in the notification.

This Quick Start Guide explains concepts, provides step-by-step instructions, and describes tasks that you can complete in Notification Services. It also provides the information that administrators need to configure and administer Notification Services.

By reading the Quick Start Guide, users will be able to:

- Check the Notification Services inbox.
- Check the Notification Services outbox.
- Send notifications.
- Set up a work schedule.
- Specify device preferences for each configured device, by time period and notification priority.
- Designate a backup user who will receive notifications when escalation takes place.
- Indicate that they are unavailable for receiving notifications.
- Indicate that they are out of the office for an extended period.

By reading the Quick Start Guide, administrators will be able to:

- Gather the information needed before configuring Notification Services.
- Login as an administrator.
- Set up the back-end database (the OAA Repository).
- Configure E-mail settings.
- Configure the Notification Adapter settings.
- Configure Common settings.
- Configure Web Application settings.
- Configure the Notification Services settings.
- Set up device records in the OAA Repository.

Book Audience

The Quick Start Guide is intended for users and administrators of 4.1.2. It provides step-by step procedures for user tasks. It also includes post-installation configuration instructions for Notification Services administrators.

This manual is printed and shipped with the product. You can view, search, and print this manual by accessing the .pdf from the table of contents in the online help. To do so, click **Help** in the left pane, and then click the last item in the table of contents.

Knowledge Requirements

Users need only a general knowledge of the Peregrine application from which they want to send and receive notifications. Users need to understand the use of notifications for work requests within the context of these applications.

Administrators need the same general knowledge as users. In addition, they need familiarity with configuring the database in the OAA Repository.

Related Documentation

As you use Notification Services, you can refer to the following related documentation:

- 4.1.2 online help, which gives step-by-step instructions for performing user and administration tasks and is available from the Notification Services graphical user interface. To access the online help, click **Help** in the left pane. You can also click the **Help topics for the Peregrine Portal** icon (which looks like a question mark) in the top right of any window in Notification Services to display help specifically for that window.
- 4.1.2 Release Notes, a document that provides information about features, known issues, sources of further assistance, and any information that surfaced too late to be included in the Quick Start Guide. This document is printed and shipped with the product. If the Release Notes are updated after the product ships, you can find the updated version on the Customer Support Web site.

Associated Applications

This guide does not contain information about products that can be used with Notification Services. Refer to the appropriate product documentation for information about installing, configuring, and using associated applications. These applications must be installed and configured before you configure and use Notification Services.

Typographical Conventions

This guide uses typeface conventions to indicate special terms and actions. These conventions and their meanings are:

Convention	Meaning
Bold	Information that you must type exactly as shown appears in bold.
Italics	New terms appear in *italics* when they are first introduced. Variables and values that you must provide appear in *italics*. The exception to this is in Appendix A, *API Methods*, written for software developers, where variables are enclosed in angle brackets.
Monospace	Code examples, output, and system messages appear in a monospace font.

Special Elements

This book uses special elements to help you locate and interpret information. These special elements and their uses are shown in the following table:

Element	Usage
Important:	Information that is required to complete a task
Note:	Information that is of general interest

Appendix A, *Making API Calls on page 81*, presents a set of principal methods developers can use to create and manage notifications using Notification Services. It includes the following topics:

- Making an API Call.
- Determining the Notification Services URL.
- API Methods.
- Schemas (including a description of each field).

Glossary on page 95. This glossary defines terminology and explains concepts used in conjunction with Notification Services.

Contacting Customer Support

For help with this release, you can contact customer support, download documentation or schedule training.

Customer Support

For further information and assistance with Notification Services in general, contact Peregrine Systems' Customer Support at the Peregrine CenterPoint web site.

To contact customer support:

1. In a browser, navigate to http://support.peregrine.com
2. Log in with your user name and password.

3 Follow the directions on the site to find your answer. The first place to search is the KnowledgeBase, which contains informational articles about all categories of Peregrine products.

4 If the KnowledgeBase does not contain an article that addresses your concerns, you can search for information by product; search discussion forums; and search for product downloads.

Documentation web site

For a complete listing of current Notification Services documentation, see the Documentation pages of the Peregrine Customer Support web site.

To view the document listing:

1 In a browser, navigate to http://support.peregrine.com.

2 Log in with your login user name and password.

3 Click either **Documentation** or **Release Notes** at the top of the page.

4 Click the Notification Services link.

5 Click a product version link to display a list of documents that are available for that version of Notification Services.

6 Documents may be available in multiple languages. Click the Download button to download the PDF file in the language you prefer.

You can view PDF files using Acrobat Reader, which is available on the Customer Support Web site and through Adobe at http://www.adobe.com.

Important: Release Notes for this product are continually updated after each release of the product. Ensure that you have the most current version of the Release Notes.

Education Services web site

Peregrine Systems offers classroom training anywhere in the world, as well as "at your desk" training via the Internet. For a complete listing of Peregrine's training courses, refer to the following web site:

http://www.peregrine.com/education

You can also call Peregrine Education Services at +1 858.794.5009.

CHAPTER 1

Introduction

Product Overview

Notification Services is a centralized service for sending and receiving notifications through multiple communication devices and for tracking the status of these notifications. This service operates within the Peregrine Open Application Architecture (OAA), there is an open API for application integrations. The user interface is the Peregrine Portal. It uses the OAA Repository as its back-end database.

Notification Services supports voice notifications through third-party messaging products. For two-way devices, it enables users to reply to notification with yes/no responses. With Notification Services, users can check the delivery status of their notifications as well as recipients' responses. Notification Services supports attachments and pasting text or HTML from other applications into notifications. It also supports Web browsers and eight device types for transmitting notifications.

Supported Devices for Delivering Notifications

Notification Services formats notifications appropriately for delivery to the following devices:

- E-mail
- Fax
- Home phone

- Numeric pager
- Portable phone
- SMS device
- Two-way text pager
- Work phone

If you want to use fax or voice notification with phones or numeric pagers, you need a service contract with a third-party service provider for messaging. The supported providers are EnvoyWorldWide for the EnvoyXpress product and Vytek Wireless for the TelAlert product.

Device Preferences

With Notification Services, notification delivery is optimized based on recipients' preferences for the devices that should receive notifications. Device preference can vary by the time of day, according to a schedule associated with the preference. The device preference can also vary by the priority for the notification—low, normal, or high. Users set up their own preferences for the devices that are configured for them to receive notifications from Notification Services.

Delivery Methods

Notification Services uses three delivery methods to ensure that notifications are delivered:

- Cascading of notifications to subsequent device preferences
- Retry
- Escalation of notifications to the recipient's backup user

This section explains the concepts of cascading, retry, escalation, and backup users. It also explains how the delivery methods work in Notification Services.

Cascading to Device Preferences

Cascading refers to sending a notification to each of a recipient's devices in the order of preference. If the notification is not deliverable to the recipient's preferred device, Notification Services sends it to an alternate device, based on the recipient's device preferences.

When Does Cascading Occur?

Cascading occurs only for notifications sent using **Default** as the device. It is triggered after the initial delivery attempt if the notification does not reach the preferred device within the time interval established by the Notification Services administrator for the particular notification priority.

For example, if Notification Services attempts to deliver a phone message to a phone that is busy, the notification does not successfully reach the phone. If the notification is not delivered and the time interval elapses, Notification Services cascades it to the next device. The inclusion or lack of a confirmation question in a notification does not affect cascading.

When Does It End?

Cascading ends successfully when Notification Services receives a **Completed** status from a device within the delivery interval. It ends unsuccessfully when the list of preferred devices is exhausted and no **Completed** status is received.

Cascading Configuration

An administrator can configure the time interval for cascading.

Retry Delivery Method

Using the retry settings that your administrator configures, Notification Services continues to attempt to deliver the notification to the intended recipient. This can include cascading the notification again to the recipient's preferred devices.

Notification Services invokes the retry method regardless of the notification device and regardless of whether or not the notification contains a confirmation question.

When Does It Occur?

If Notification Services was not able to successfully deliver the notification to any of the recipient's preferred devices using the cascading method, the retry delivery functionality is invoked.

When Does It End?

The retry method continues at specified intervals until one of the following occurs:

- A successful response is received.
- The message expires.

- The retry period elapses.
- The maximum number of retries is met.

If the retry method is still unsuccessful, Notification Services follows it up by escalating the notification to a backup user.

Retry Configuration

An administrator can configure the retry intervals, expiration period, and maximum number of retries. Unlike the cascading settings, these settings do not differ based on the notification priority.

Escalation to a Backup User

Backup users are individuals who users choose to receive their notifications when they are unable to respond themselves. Designating a backup user is optional. However, specifying a backup user is required for escalation to occur.

When Does Escalation Occur?

Escalation occurs when a confirmation question is included in a notification and no reply is received in a certain time interval. Escalation also occurs when a recipient is specified as unavailable for notifications. In this case, Notification Services sends the notification to the backup user without cascading or using the retry method.

Before escalation occurs, a notification is cascaded to all of the initial recipient's preferred devices and the retry method is applied. The exception to this is when the recipient is specified as unavailable for notification. In contrast with cascading, which occurs only if the notification is sent using the default device, escalation to a backup user occurs regardless of the device used to send the notification. In other words, escalation occurs even if the sender selects a specific device for sending the notification rather than selecting **Default**.

When Does Escalation End?

Escalation ends when one of the following occurs:

- A response is received for the confirmation question.
- Notification Services cannot escalate the notification any further because no backup user is specified. For example, the backup user for the recipient is not available and the backup user does not have a backup user specified.

If no response is received following escalation, Notification Services assigns a Terminated status to the notification and notifies the sender.

Escalation Configuration

The time interval is established by the Notification Services administrator for each notification priority. The time before a notification is escalated to a backup user typically varies for low, normal, and high priority notifications. In other words, high priority notifications would typically be escalated more quickly than low priority notifications. It is also possible for the Notification Services administrator to specify that notifications of certain priorities not be escalated even though the initial recipient has specified a backup user.

Delivery Scenarios

This section lists several notification scenarios and describes how Notification Services will handle the notification delivery in each scenario.

Scenario 1: Unavailable User

The notification recipient is specified as unavailable for notifications. This is a preference setting that each user can set. Notification Services immediately escalates the notification to the recipient's backup user, if one exists.

Scenario 2: Notification is Not Deliverable to the Preferred Device

A user specifies her primary e-mail address as her preferred device for notifications sent during work hours. She specifies her work phone as a second preference.

Notification Services sends a notification to the user, but the user's e-mail server is down. At the end of the specified interval, Notification Services cascades the notification to the recipient's work phone. The user receives the notification by phone.

Scenario 3: Backup User Does Not Respond

A notification is sent to a user who has selected a backup user. The notification includes a confirmation question, and the question remains unanswered for the interval specified for cascading and escalation. At this point, the notification is cascaded to the recipient's subsequent device preferences, one-by-one, each time that the interval elapses after a transmission.

The question remains unanswered after the notification is sent to the last device. Notification Services invokes the retry delivery method, resending the notification at a specified interval until the maximum number of retries is met.

Escalation to the backup is triggered and the notification is sent to the device preferred by the backup user. If the question remains unanswered after the interval elapses, the notification is cascaded to each device preference specified for the backup user, one-by-one, after each interval, until an answer is received. If no answer is received from the backup, the notification is escalated to the backup user's designated backup. If that backup has a backup user, the process continues.

Conditions for Cascading

Use the following table to determine the conditions that result in cascading to recipients' other device preferences. The table also indicates the conditions when the retry delivery method is used.

The following information is assumed:

- The interval established by the Notification Services administrator for cascading and escalation has elapsed.
- A Completed status was not returned for the notification.

Conditions			Result	
Was the Default method used to send the notification?	**Does the notification contain a confirmation question?**	**Did the original recipient reply to the confirmation question within the specified interval for the notification's priority?**	**Does cascading take place under these conditions?**	**Does retry process occur?**
yes	yes	yes	yes	no
yes	yes	no	yes	yes
yes	no	N/A (no question)	yes	yes
no	no	N/A (no question)	no	yes
no	yes	no	no	yes
no	yes	yes	no	no

Conditions for Escalation

Use this table to determine when Notification Services uses escalation to a backup user.

The following information is assumed:

- The interval established by the Notification Services administrator for cascading and escalation has elapsed.
- Cascading and retry delivery already took place and no response was received.
- A backup user is defined.

Conditions			Result
Was the Default method used to send the notification?	**Does the notification contain a confirmation question?**	**Did the original recipient reply to the confirmation question within the specified interval for the notification's priority?**	**Does escalation take place under these conditions?**
yes	yes	yes	no
yes	yes	no	yes
yes	no	N/A (no question)	no
no	no	N/A (no question)	no
no	yes	no	yes
no	yes	yes	no

Features for Users

Using this application, users can:

- Check their Notification Services inbox, read incoming notifications (including any attachments), and reply to the notifications.
- Check their Notification Services outbox.
- Check the delivery status for notifications they sent and see recipients' replies to these notifications.

- Delete notifications from the outbox.Send notifications that can include one or more attachments.
- Paste text or HTML from other applications into notifications sent using Notification Services.
- Set up their work schedule and their preferences for the devices that are used to deliver notifications. The schedule and device preferences are used to determine which device should receive a notification, based on both the time of day and the priority for the notification (low, normal, or high).
- Designate a backup user who will receive notifications that are escalated when the initial recipient does not respond within a specified interval after the notification was cascaded to all of the recipient's device preferences.
- Indicate that they will be out of the office for an extended period, such as for vacation. In this case, notifications are sent to the devices that the recipient prefers for extended out periods.
- Make themselves temporarily unavailable for receiving notifications. In this case notifications are sent directly to the designated backup user, if a backup has been designated.

System Requirements

System requirements for Notification Services are the same as for the Peregrine OAA Platform. See the installation guide for your Peregrine Web application for details.

2 Installation

CHAPTER

Installing Notification Services

Notification Services is delivered as a module within a Peregrine OAA application. For example, Notification Services is a module within Get-Answers. It is installed when the application is installed. See the Installation Guide for your application for installation instructions.

System requirements and supported platforms for Notification Services are the same as those specified in the Installation Guide.

Instructions for configuring Notification Services are provided in Chapter 4, *Notification Services Administration*, in this Quick Start Guide. Most of the configuration is performed in the **Admin Settings** page of the Peregrine Portal.

CHAPTER 3

Notification Services Configuration

Configuration Overview

After installation, the administrator configures Notification Services. To capitalize on all of Notification Services's functionality, every step in this chapter must be completed. Only when you decide not to use certain functions may you skip steps. For example, if you decide not to set up Notification Services to deliver faxes, you do not have to complete the steps for faxes.

Notification Services Administration involves building database tables, configuring tabs in the **Admin Settings** window of the Peregrine Portal, and configuring devices for users of Notification Services. See *Configuration Overview* on page 24 for details.

Data Source Overview

All notifications that are transmitted by Notification Services are stored in a back-end database. The back-end database is used to:

- Retrieve contact information: the contact ID (user or people record) and the devices that are set up for that contact.
- Store Notification Services data, including user preferences.

The back-end database is the OAA Repository.

Configuration Overview

Configuration for Notification Services is performed in the Peregrine Portal in the Admin module. Here is a list of the configuration tasks. Perform all of them:

- ☐ Collect the information necessary to configure Notification Services
- ☐ Configure the settings on the email tab
- ☐ Configure the settings on the notification adapter tab
- ☐ Configure the settings on the common tab
- ☐ Configure the settings on the web application tab
- ☐ Configure the settings on the rome tab
- ☐ Configure the settings on the notification services tab
- ☐ Assigning login capabilities to users, as described in *Assigning Capabilities to Users* on page 36.
- ☐ Importing the default Notification Services data, as described in *Importing Notification Services Data* on page 38.
- ☐ Setting the default work hours, as described in *Setting the Default Work Hours* on page 38.

Use this tab	To
E-mail	Configure the inbound and outbound e-mail servers.
Notification Database	Set the alias for the back-end database and assign capabilities that should automatically default for all Notification Services users.

Use this tab	To
Common	■ Specify the default path for attachment files in the **Attached files' path** box. ■ Enable script polling in the **Enable script pollers** box. ■ Specify the URL for the Peregrine Portal server in the **Server URL** box. ■ Enable Notification Services logging. The domain name(s) used is *notificationservices*
Notification Services	■ Configure the general Notification Services settings and settings used to cascade and escalate notifications. ■ Configure the Notification Services delivery options, including the expiration time and retry intervals. ■ If you want to use fax or voice notification with phones or numeric pagers, you also use this tab to configure settings for third-party service providers.

Important: Each time you change a setting on one of the tabs in the **Admin Settings** window, you need to click **Save** and then reset the Peregrine Portal server from the **Control Panel** for the changes to take effect.

Configuration Tasks

The following procedures provide step-by-step instructions for configuring Notification Services.

Collect the information necessary to configure Notification Services

Follow this procedure to gather information about your inbound and outbound e-mail servers. If you plan to use voice and fax notifications, use this procedure to gather information about your third-party service provider. You need this information to configure Notification Services.

1 Gather the following information about your inbound e-mail server:

- The host name of your inbound e-mail server.
- The login and password for the Notification Services inbound e-mail account.

- The mail protocol used for your inbound mail server (either IMAP or POP3).

Note: You need to set up an e-mail account to be used solely for Notification Services. This account on the inbound e-mail server is used to receive recipients' responses to notifications.

2 Gather this information about your outbound e-mail server:

- The host name of your outbound e-mail server.
- The login and password the outbound e-mail server.

Important: If your enterprise has a firewall, you must use an outbound server that can reach beyond the firewall in order for Notification Services to send notifications using SMS devices or text pagers.

3 If you want to use fax or voice notification with phones or numeric pagers, an account needs to be set up with at least one of the following service providers: Vytek Wireless or EnvoyWorldWide. In addition, you need the following information from the service provider.

For the EnvoyWorldWide EnvoyXpress product:

- Envoy URL.
- Envoy user name and password.
- Envoy EOM user name and password.
- Envoy domain.

For the Vytek Wireless TelAlert product, gather the following information, including vendor recommendations for the settings listed here:

- TelAlert host names.
- TelAlert response configuration name used to prompt for replies.
- TelAlert connect attempts - the number of attempts to connect to the TelAlert server before giving up.
- TelAlert connect timer - the number of seconds to wait for the connection to take place.
- TelAlert connect pause - the number of seconds for the TelAlert server to wait before attempting to connect again.
- TelAlert connect wait time - the number of seconds to wait for a response after the connection is made.

- TelAlert acknowledgment wait time - the amount and unit of time to wait for acknowledgement replies in seconds, minutes, or hours.
- TelAlert user and password used to connect to the TelAlert server.
- TelAlert voice configuration name for voice alerts.
- TelAlert interactive voice configuration name for interactive voice alerts.
- TelAlert Fax configuration name for fax alerts.

Displaying the Admin Settings Window

You can perform most of the configuration tasks from the **Admin Settings** window.

To display the Admin Settings window:

1. Log into the Peregrine Portal as an administrator.
2. From My Home Page, click **Admin**.
3. Under the **Admin** menu in the left pane, click **Settings**.

   The **Admin Settings** window appears.

Configuring E-mail Settings

To configure the settings on the E-mail tab:

1. In the **Admin Settings** window, click the **E-mail** tab.
2. In the **Inbound mail host** box, type the full name or IP address of the machine host for the inbound e-mail server.

   This is the server that receives responses to Notifications.
3. In the **Inbound mail protocol** list, select the protocol used by the inbound e-mail server: either **imap** or **pop3**.
4. In the **Inbound mail user ID** box, type the user name for accessing the inbound e-mail server.

   This is an administrative e-mail account that Notification Services uses to receive replies to notifications from e-mail clients.
5. In the **Inbound mail password** box, type the user password for accessing the inbound mail server.
6. In the **Mail sender address** box, type the address for the Notification Services e-mail account.

This is an administrative e-mail account that Notification Services uses to send notifications from e-mail clients.

7 In the **Legal domains** box, type a semicolon-separated list of mail domains that the OAA Repository corresponds with. Only users with an e-mail address in these domains can complete online self-registration in the Peregrine Portal.

8 In the **Anonymous user** box, type the user name to be used when an unknown user attempts to communicate with the mail adapter.

9 In the **Anonymous password** box, type the user password for the anonymous user name for accessing the mail adapter.

10 In the **Outbound mail host** box, type the full name or IP address of the machine host for the inbound e-mail server.

This is the server used by Notification Services to send notifications.

11 In the **Outbound mail user ID** box, type the user ID used to access the outbound mail server.

12 In the **Outbound mail password** box, type the user password used to access the outbound mail server.

13 In the **Adapter** box, type the full class path for the mail adapter associated with this target.

14 Click **Save.**

The **Control Panel** window appears, displaying the following message:

> The settings have been saved. To ensure all changes take effect, you must reset the Peregrine Portal server.

15 Click **Reset Server**.

The following message appears:

> The Archway servlet and its Adapter connections have been reset successfully.

You have set up the inbound and outbound e-mail servers for Notification Services.

Configuring the Notification Database Settings

To configure the settings on the Notification Adapter tab:

1 In the **Admin Settings** window, click the **Notification Database** tab.

2 In the **Alias for** box, type rome.

3 In **Default Capabilities**, type the capabilities that every user should have. An example of an acceptable entry shown below:

- rome(oaa.ns.gui;oaa.ns.preferences)

For a list of the capability words and the access each capability gives, see *Assigning Capabilities to Users* on page 36.

4 Click **Save.**

The Control Panel appears, informing you that you have to reset the server for your changes to take effect.

5 Click **Reset Server**.

The following message appears:

The Archway servlet and its Adapter connections have been reset successfully.

You have configured the settings on the **Notification Database** tab of the **Admin Settings** window.

Configuring the Common Settings

On the **Common** tab, you can specify the URL for the Peregrine Portal server and enable debug logging for Notification Services. For information about other settings on the **Common** tab, refer to your Peregrine application's administration documentation.

To specify the URL for the Peregrine Portal server or enable debug logging for Notification Services:

1 In the **Admin Settings** window, click the **Common** tab.

2 Scroll down to the **Server URL** box, and then type the URL for the Peregrine Portal server, in the following format:

http://*server_name*/oaa/login.jsp?*_bookmark=*

Where:

server_name is the server name, *oaa* is the virtual directory, and *?_bookmark=* is a placeholder for parameters to be used at the end of the URL.

This must be set up in order for the Notification Services hypertext link in each e-mail notification generated by Notification Services to work. Users can click this link to open the **Incoming Notification Details** window and see the details for the current notification.

3 Click **Save.**

4 In the Admin Settings page click the **Logging** tab. To incorporate workflow with notifications services, add oaaworkflow to the Log domains field. To enable debug logging for Notification Services, add notificationservices to the Log domains field.

Be sure to separate multiple Log domain field entries with semi-colons.

Important: Peregrine recommends that you do not enable debug logging unless directed to do so by Peregrine Customer Support.

5 Click **Save.**

The **Control Panel** window appears, displaying the following message:

The settings have been saved. To ensure all changes take effect, you must reset the Peregrine Portal server.

6 Click **Reset Server**.

The following message confirms that the settings have been configured successfully:

The Archway servlet and its Adapter connections have been reset successfully.

Configuring the Notification Services Settings

The **Notification Services** tab of the **Admin Settings** window has general settings followed by sections for **Escalation/Cascading**, **EnvoyXpress**, and **TelAlert** settings.

Configuring General Settings

1 In the **Admin Settings** page, click the **Notification Services** tab.

2 In the **Type Filter** box, specify a list of the notification types that you do not want to appear in the Notification Services Inbox and Outbox. Separate each type with a semi-colon.

A list of the Notification Types can be found in the Notification Services Administration module on the Notification Types activity and the Plug-In Registry activity.

3 In the **Targets** box, leave the default unchanged. This is a semicolon-delimited list of target aliases used by this package.

Configuring Delivery Options

1 In the Expiration box, under Delivery Options, specify the number of days to wait before notifications expire and are removed from the database. The default value, -1, indicates that notifications never expire.

Note: Considering that notifications cannot be deleted from users' Notification Services inboxes, you might want to change this default value so that notifications do expire.

2 In the **Default callback phone number** box, type the phone number to use if the sender's phone number cannot be found in the database.

3 In the **Do retry at** box, specify a series of retry intervals at which you want Notification Services to retry the delivery of notifications that were not delivered successfully on the first attempt. Separate the intervals as integers, representing minutes, separated by semicolons.

4 In the **Third party product** list, select one of the following:

- The appropriate third-party product (**TelAlert** or **EnvoyXpress**) if you plan to deliver voice, numeric pager, and fax notifications.
- **None** if you do not plan to use voice, numeric pager, or fax for delivering notifications.

5 Continue to the next procedure.

Configuring Escalation/Cascading Settings

1 In the **Low time interval** box, type the number of minutes to wait for a reply from recipients before cascading notifications with low priority from device to device. This interval is also used when notifications containing a confirmation question are escalated to a backup user (assuming that cascading already took place, if cascading was triggered).

2 In the **Normal time interval** box, type the number of minutes to wait for a reply from recipients before cascading notifications with normal priority from device to device. This interval is also used when a notification containing a confirmation question is escalated to a backup user (assuming that cascading already took place, if cascading was triggered).

3 In the **High time interval** box, type the number of minutes to wait for a reply from recipients before cascading notifications with high priority from device to device. This interval is also used when notifications containing a confirmation question are escalated to a backup user (assuming that cascading already took place, if cascading was triggered).

4 In the **Low escalation** box, do one of the following:

- Click **Yes** to escalate notifications with low priority to a backup user.
- Click **No** to prevent escalating low priority notifications to a backup user.

5 In the **Normal escalation** box, do one of the following:

- Click **Yes** to escalate notifications with normal priority to a backup user.

- Click **No** to prevent escalating normal priority notifications to a backup user.

6 In the **High escalation** box, do one of the following:

- Click **Yes** to escalate notifications with high priority to a backup user.
- Click **No** to prevent escalating high priority notifications to a backup user.

Your escalation and cascading settings are set up.

7 Use this table to determine your next step:

Are you going to use voice messaging, text pagers, or fax?	Then
Yes	Scroll down to the section that corresponds with your service provider (either **EnvoyXpress** or **TelAlert**).
No	Scroll to the bottom of this window, and click **Save**. Your settings are saved, and the **Control Panel** window appears. Click **Reset Server** to reset the Peregrine Portal server and all of its connections. Skip the next two procedures (*Configuring EnvoyXpress Settings* on page 32 and *Configuring TelAlert Settings* on page 33). Go to the procedure for *Configuring Notification Devices* on page 34.

Configuring EnvoyXpress Settings

1 In the **URL** box, type the URL for the EnvoyExpress web service.

2 In the **User ID** box, type the user name used to connect to the EnvoyXpress web service.

3 In the **User password** box, type the user password used to connect to the EnvoyXpress web service.

4 In the **OEM user ID** box, type the OEM user name used to connect to the EnvoyXpress web service.

5 In the **OEM user password** box, type the OEM user password used to connect to the EnvoyXpress web service.

6 In the **Domain** box, type the domain used to connect to the EnvoyXpress web service.

7 Scroll to the bottom of this window, and click **Save**.

Your EnvoyXpress settings are saved, and the **Control Panel** window appears.

8 Click **Reset Server** to reset the Peregrine Portal server and all of its connections.

You have completed the settings on the **Notification Services** tab of the **Admin Settings** window.

9 Skip the next procedure (*Configuring TelAlert Settings*), and go to the subsequent procedure (*Configuring Notification Devices*).

Configuring TelAlert Settings

1 In the **Hosts** box, type the TelAlert host names, separated by semicolons.

2 In the **Response configuration** box, type the response configuration name used to prompt for replies.

3 In the **Connect attempts** box, type the number of attempts to connect to the Telalert server before giving up.

4 In the **Connect timer** box, type the number of seconds to wait for the connection to be made.

5 In the **Connect pause** box, type the number of seconds for the TelAlert server to wait before attempting to connect again.

6 In the **Connect wait time** box, type the number of seconds to wait for a response after the connection is made.

7 In the **Acknowledgement wait time** box, type the amount of time and unit of time to wait for acknowledgement reply. Time units are `s` for seconds, `m` for minutes, or `h` for hours. For example, `59s` indicates 59 seconds.

Note: If this value is set too high, errors may occur because the message could clear before the **Acknowledgement wait time** elapses.

8 In the **User** box, type the user name used to connect to the TelAlert server.

9 In the **Password** box, type the user password used to connect to the TelAlert server.

10 In the **Voice configuration** box, type the user password used to connect to the TelAlert server.

11 In the **Interactive voice configuration** box, type the configuration name for interactive voice alerts.

12 In the **Fax configuration** box, type the configuration name for fax alerts.

13 Press **Save.**

The **Control Panel** window appears.

14 Click **Reset Server** to reset the Peregrine Portal server and all of its connections.

You have completed the settings on the **Notification Services** tab of the **Admin Settings** window.

Configuring Notification Devices

As an administrator, you need to configure the devices used to transmit notifications for each user. After you set up devices for a user, these devices are displayed as preference options on the following windows in Notification Services: **Work Hours Preferences**, **Off Hours Preferences**, and **Extended Out Preferences**.

Adding a primary email or phone

An administrator who has personalization capability, or generally available personalization capability for the site, manually adds primary phone and email information to the details screen. Each user must have a primary e-mail address and a primary work phone.

To add a primary email and phone:

1 An administrator logs in to the Peregrine Portal.

2 Click **View All**.

3 From the list of people click a last name. In the Document Details section are displayed sections for Emails and Phones.

4 In the Emails section click **Add**.

5 Choose **Primary** from the Email Type pull-down.

6 Enter an email address in the Email field.

7 In the Phones section click **Add**.

8 Choose **Work Phone** from the Phone Type pull-down.

9 Type a primary work phone number in the Phone field.

10 Click **OK**.

Now you are ready to configure notification devices.

To configure notification devices in the Peregrine OAA Repository:

1 Log in to the Peregrine Portal as an administrator.

2 Click **People**.

The **Person Search** window appears.

Note: The **oaa.people.manage** security role is required for an administrator to have access to the **People** module in the Peregrine OAA Portal.

3 Use the search fields to locate the user whose devices you want to configure, and then click **Search**.

The P**erson Search Results** window appears.

4 Click the user's record in the search results.

The **Person Details** window appears.

5 Under **Phones**, click **Add.**

The **Add New Person Phone** window appears.

6 In the **Phone Type** list, choose the phone type for the first device you want to set up for this user. Use the following table to see the device mappings between OAA and Notification Services so you will know which phone type to use for each device you want to set up.

Device in Notification Services	Phone type in OAA
Fax	WorkFax
Work Phone	WorkPhone
Home Phone	HomePhone
Portable Phone	CellPhone
Numeric Pager	NumericPager
	Pager Pin: PIN
	Pager Type: Type

Note: If you select **NumericPager** from the **Phone Type** list, you need to use the **Pager Pin** and **Pager Type** boxes below the **Phone Type** box to type in the PIN and Type. Refer to the third-party product documentation for TelAlert for valid pager types.

7 After typing the information for the first phone type, click **Add Item**.

The **Person Details** window appears.

8 Repeat step 5 through step 7 for each phone device for this user.

Note: By default, the pager pin and pager type boxes are not available on the **Add New Person Phone** window. To make these fields visible, use the **Personalize this page** icon.

9 Under **Emails**, click **Add**.

The **Add New Person Email** window appears.

10 In the **Email Type** box, select the e-mail type.

11 Use the following table to see the mappings between Email Types in OAA and devices in Notification Services so you will know which Email Types to set up here.

Device in Notification Services	Email Type in OAA
E-mail	Primary
SMS Device	SMS
Text Pager	TextPager

12 In the **Email** box, type the corresponding e-mail address, and then click **Add Item**.

13 Repeat steps 9 through 11 for each e-mail device.

14 When you are finished adding e-mail devices for this user, click **Submit.**

All the device information (phone and e-mail) you entered is saved for this user.

15 Repeat this procedure to set up devices and e-mail for each user.

You have configured devices for transmitting notifications in Notification Services.

If you have completed all of the procedures in this chapter, you have completed the Notification Services configuration.

Assigning Capabilities to Users

Capabilities are like security rights. They indicate which functions individual users can perform. For example, before a user can send notifications, he or she must be assigned the appropriate capability for sending notifications.

The available capabilities for Notification Services are listed in the following table.

Capability and Capability word	Allows the user to...
Notification Services Administrator oaa.ns.admin	perform administrative functions (this capability is not available to assign in the wizard).
Notification Services GUI oaa.ns.gui	access Notification Services.
Send Notifications oaa.ns.send	view the Send Notifications option. The user must also have the Notification Services GUI capability.
Update Preferences oaa.ns.preferences	view and update their work schedule and device preferences. The user must also have the Notification Services GUI capability.
View Notifications oaa.ns.view	view the Notification Services inbox and outbox. The user must also have the Notification Services GUI capability.

There are three ways in which you can assign capabilities:

- Assign capabilities to individual users.
- Assign capabilities to lists of users.
- Assign capabilities to roles.

Assigning Capabilities to Individual Users

You can assign capabilities to an individual user from the People tab in the Peregrine Portal. For more information, see your Web application documentation.

Assigning Capabilities to Functional Roles

Under the People administration module in the Peregrine Portal, you can define a functional role and assign security capabilities to that role. Then, any users you assign to that role automatically have the associated capabilities. For more information, refer to your Web application documentation.

Importing Notification Services Data

Whether you have a previous version of Notification Services, or you are using Notification Services for the first time, you must import the default Notification Services templates and plug-ins into your database before you begin using Notification Services. Notification Services includes a tool for you to use when importing data. This section describes how to use the tool.

To import data, follow these steps after you complete the configuration tasks described in this chapter:

1. In the **Navigation Menu** that appears in the **Welcome** window, click **Notification Services Administration**.
2. Under **Notification Services Administration** in the left pane, click **Import Data**.
3. In the **Import Data Wizard** window, click **Next** to start the Data Import wizard.
4. In the **Import Files** window, select check boxes next to the files you want to import. To enable notification services, import the notification_services_en.xml file. To enable workflow, import the workflowplugin_en.xml file.
5. Click **Finish**.

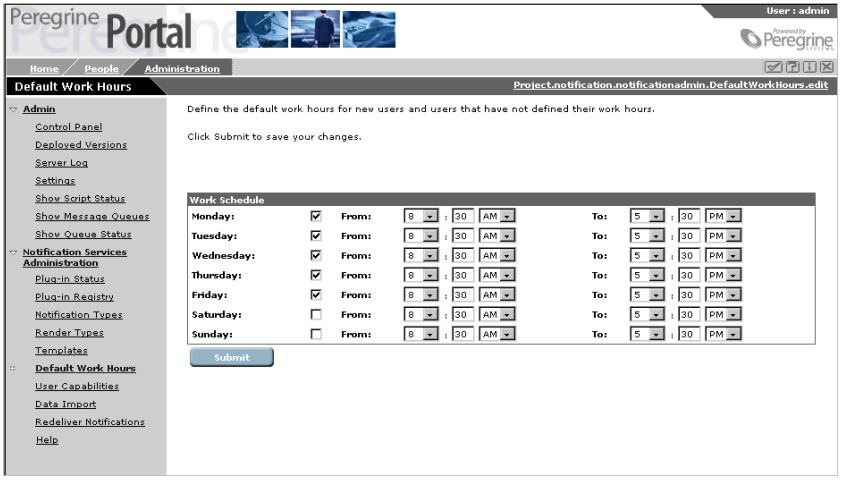
Setting the Default Work Hours

As described in *Setting Preferences* on page 72, each user can specify his or her own work schedule. As an administrator, you can specify the default work hours that appear in the schedule.

Note: The work hours are based on the time zone on the Notification Services server machine.

To set the default work hours:

1 In the **Notification Services Administration** menu, click **Default Work Hours**.



2 In the **Default Work Hours** window, select or clear the check boxes next to the days of the week to include or exclude them from the default work schedule.

3 Specify the work start time for each day by selecting or typing the hour, minutes, and AM or PM in the next set of columns.

4 Specify the work end time for each day by selecting or typing the hour, minutes, and AM or PM in the final set of columns.

5 Click **Submit**.

Other Administration Tasks

In addition to the required configuration tasks previously mentioned, the administrator is responsible for the following:

- Importing the default Notification Services data, as described in *Redelivering Terminated Notifications* on page 40.

Redelivering Terminated Notifications

If Notification Services cannot deliver a notification message after cascading through the recipient's preferred devices, using the retry method, and escalating the notification to a backup user, it assigns the message a Terminated status and notifies the sender. For more information, see *Delivery Methods* on page 14.

As a Notification Services administrator, you can manually invoke the redelivery of notifications.

To redeliver terminated notifications:

1. In the **Notification Services Administration** menu, click **Redeliver Notifications**.
2. Do one of the following:
   - Select the notifications you want Notification Services to redeliver, then click **Redeliver Selection.**
   - Click on a notification to view its detail in the **Redeliverable Notification Details** window, then click **Redeliver Notification**.

Note: If a notification was not delivered because of an incorrect phone number, e-mail address, or other information, you may need to edit it to correct the information before you attempt to redeliver it.

CHAPTER 4

Notification Services Administration

Administration Overview

After installation and configuration, the Notification Services administrator may have to perform administrative functions from time to time. This chapter contains these procedures. As you administer the product, you will find the Notification Services Configuration chapter helpful as well.

Note: *Importing Notification Services Data* on page 38 presents the Data Import activity and *Setting the Default Work Hours* on page 38 presents the Default Work Hours activity. The remainder of the Notification Services Administration module is presented in this chapter.

Overview of Templates

Notification Services uses templates to deliver predefined notifications. The text of a notification is based on the content of its template and the notification type.

Notification Services comes with default templates already defined. As an administrator, you can modify these templates or create new ones. Other Peregrine applications that use Notification Services also provide templates for use with their application.

Notification Types

Notification Services uses the applicable notification type, along with the content of the template, to render notification messages. The following table lists the default notification types.

Notification Type	Description
notificationquestiondefault	For notifications that include a question.
notificationerror	For notifications that include an invalid notification type.
notificationdefault	For notifications that do not include a question.

Notification Services uses the **notificationquestiondefault** and **notificationdefault** notification types when users send notifications from within Notification Services. It also uses these notification types for notifications from plug-ins when a notification type is not specified. Normally, when a notification originates from a Peregrine application with a plug-in module, Notification Services uses the applicable notification types for the templates supplied by the plug-in.

Notification Services uses the **notificationerror** notification type whenever there is an error.

You can modify the descriptions of the notification types. For more information, see *Maintaining Notification Types* on page 47.

Render Types

For each notification type, a template can render the following types of messages:

- HTML e-mail
- Plain text
- Short Message Service (SMS) messages for text pagers and other SMS devices
- Phone, for all voice notifications

You can modify the descriptions of the render types. For more information about render types, see *Maintaining Render Types* on page 46.

Render Text

The *render text* in a template specifies the content of notifications that Notification Services creates from that template. Templates can contain replacement variables, which specify data that Notification Services needs to insert before delivering the message.

For more information about render text, see *Using Replacement Variables in Render Text* on page 49.

Overview of Plug-ins

Notification Services uses a *plug-in* architecture. This means that each Peregrine product that uses Notification Services has its own plug-in, or software module, that adds the Notification Services features to that application.

Before a Notification Services plug-in will work, it must be registered and have an active status.

Displaying the List of Templates

To display the list of templates:

1. Log in to your web application as an administrator.
2. Click **Notification Services Administration**.
3. Click **Templates**.
4. In the **Template Search** window, click **View All** to display the list of templates.

Adding a New Template

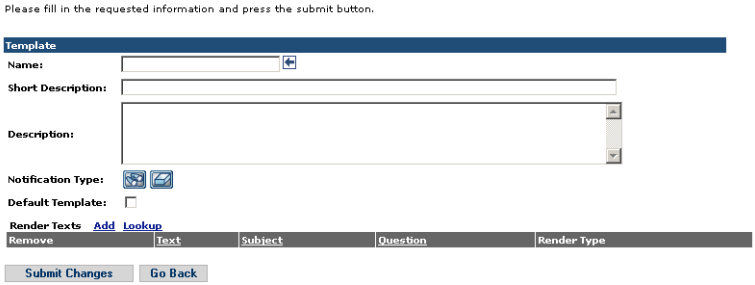
The only time it is necessary to add new templates is when you add a new plug-in.

To add a new template:

1. In the **Template Search** window, click **New**.

   To display the **Template Search** window, see *Displaying the List of Templates* on page 43.

The **Create New Template** window appears.



2 Fill in the template information as described in the following table.

For this field...	Do this...
Name	Type a name for the template. This field is required.
Short Description	Type a short description of the template.
Description	Type a more complete description of the template.
Notification Type	Click the look-up button (looks like a magnifying glass) to select from the list of notification types.
Default Template	Select this check box if you want to make this template the default template for the specified notification type. **Note:** You can have multiple default templates for each notification type. This is not recommended, however, since Notification Services searches for the first default template in the database.
Render Texts	Select the check box next to one of the existing render texts, or click Add to add a new render text. See *Adding Render Text* on page 48 for more information.

3 Click **Submit Changes**.

Modifying a Template

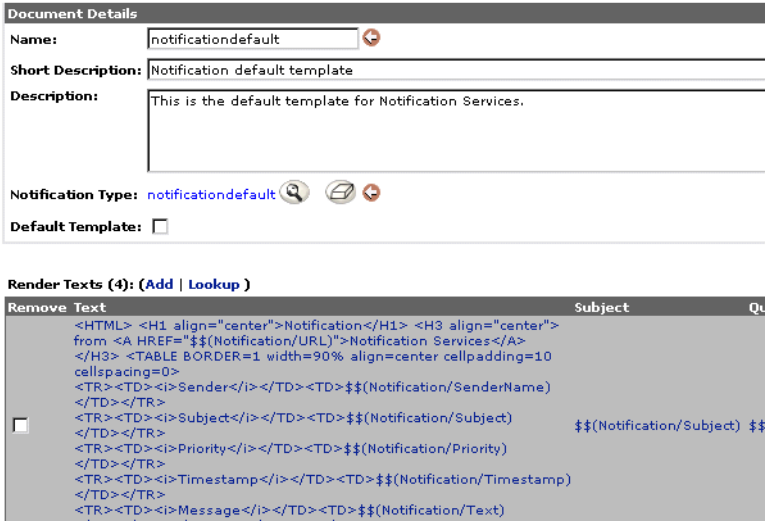
You can modify one of the default templates to change the content or look of the resulting notifications.

To modify a template:

1 From the list of templates, select the template to modify.

To display the list of templates, see *Displaying the List of Templates* on page 43.

The **Template Details** window appears.



2 Modify the template information as described in the following table.

For this field...	Do this...
Name	Peregrine does not recommend that you modify this field.
Short Description	Type a short description of the template.
Description	Type a more complete description of the template.
Notification Type	Click the look-up button (looks like a magnifying glass) to select from the list of notification types.
Default Template	Select this check box if you want to make this template the default template for the specified notification type. **Note:** You can have multiple default templates for each notification type. This is not recommended, however, since Notification Services searches for the first default template in the database.
Render Texts	Select the check box next to one of the existing render texts, or click Add to add a new render text. See *Adding Render Text* on page 48 for more information about adding render text.

3 Click **Submit Changes**.

Maintaining Render Types

The render type associated with a template indicates the format of the notification.

The default formats are:

- HTML
- Plain text
- SMS
- Phone

Adding Render Types

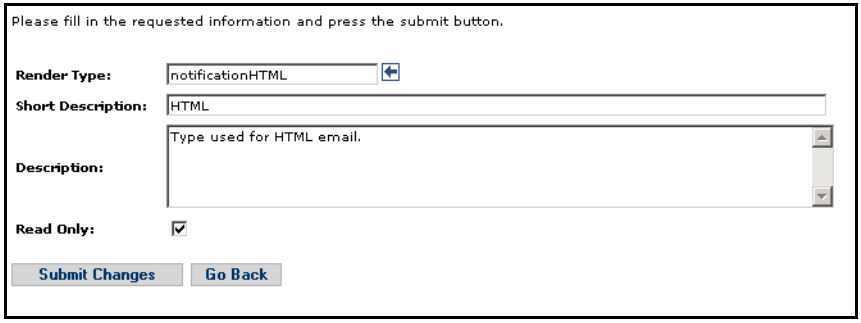
You can add render types, however the render types you add must be recognized by your application's plug-in module.

Modifying Render Types

You can modify the descriptions short and long descriptions for a render type. You should not, however, modify the name of the render type.

To modify the render type descriptions:

1. In the **Render Type Search** window, click **View All** to display the list of notification types.
2. In the **Render Type Search Results** window, click the render type you want to modify.
3. In the **Render Type Details** window, modify the descriptions of the render type.



4. Click **Submit Changes**.

Deleting Render Types

You can delete a render type, as long as it was not set as Read Only.

To delete a render type:

1. In the **Render Type Search** window, click **View All** to display the list of render types.
2. In the **Render Type Search Results** window, click the render type you want to delete.
3. In the **Render Type Details** window, select the render type to delete, then click **Delete**.

   A confirmation message appears.
4. Click **Yes** to continue with the deletion.

   If the render type you are trying to delete is set to **Read Only**, a deletion failed message appears. Otherwise, the render type is deleted.

Maintaining Notification Types

The notification type determines which template is used for the notification.

For a list of the default notification types, see *Notification Types* on page 42.

Adding Notification Types

You can add notification types, however the notification types you add must be recognized by your application's plug-in module.

Modifying Notification Types

You can modify the short and long descriptions for a notification type. You should not, however, modify the name of the notification type.

To modify the notification type descriptions:

1. In the **Notification Type Search** window, click **View All** to display the list of notification types.
2. In the **Notification Type Search Results** window, click the notification type you want to modify.
3. In the **Notification Type Details** window, modify the descriptions of the notification type.

4 Click **Submit Changes**.

Deleting Notification Types

You can delete a notification type, as long as it was not set as Read Only.

To delete a notification type:

1 In the **Notification Type Search** window, click **View All** to display the list of notification types.

2 In the **Notification Type Search Results** window, click the notification type you want to delete.

3 In the **Notification Type Details** window, select the notification type to delete, then click **Delete**.

A confirmation message appears.

4 Click **Yes** to continue with the deletion.

If the notification type you are trying to delete is set to **Read Only**, a deletion failed message appears. Otherwise, the notification type is deleted.

Adding Render Text

The render text associated with a template specifies the content of the resulting notification message. Render text can include XPath replacement variables to represent data from Notification Services or from the back-end database (OAA Repository).

For more information about XPath, see *Glossary* on page 95.

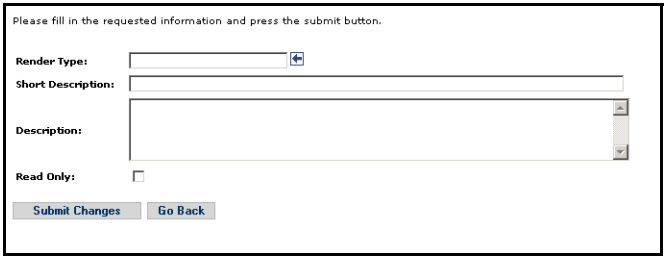
You can specify render text in one of these formats:

- Plain text, for notifications sent to devices that support plain text.
- HTML, for HTML e-mail notifications.
- Short Message Service (SMS) messages for text pagers and other SMS devices.
- Phone messages.

To add render text to a template:

1 In the **Template Details** window, next to **Render Texts**, click **Add**.

The **Add New Render Text** window appears.



2. Click the lookup button next to **Render Type** to specify the render type associated with the render text.
3. In the **Subject** box, type the subject message that should appear in all notifications that use the associated template and render type.
4. In the **Question** box, type a yes/no question to which the notification recipient should respond when using a two-way notification device.

   Note: Specifying a question is optional. However, Notification Services does not cascade a notification to the recipient's preferred devices if the notification does not contain a question.

5. In the **Text** box, type the render text.

   To use replacement variables to represent data, see *Using Replacement Variables in Render Text* on page 49.

   Note: For HTML render types, you must specify the HTML code in the **Text** box.

6. Click **OK**.
7. In the **Template Details** window, click **Submit Changes**.

Using Replacement Variables in Render Text

If render text includes replacement variables, Notification Services attempts to locate and use the corresponding data when rendering the notification message from the template.

Replacement variables can represent data from the Notification Services or from the back-end system.

The formats for specifying replacement variables in render text are described in the following sections. In general, the format is as follows:

$$(*XPath*)

where XPath is the full, not relative, path notation for the information you want to include in the notification.

For more information about XPath, see *Glossary* on page 95.

Variables Representing Data from Notification Services

Use this general format to represent data from Notification Services, where *schema* represents a specific schema in Notification Services and *attribute* represents an attribute in that schema:

$$(*schema/attribute*)

For example:

$$(Notification/SenderName)

In this example, Notification Services inserts the name of the person or application that initiated the notification.

Note: Because $$ is a special sequence, if you want to include $$ as part of the notification message, you must indicate it as follows so that Notification Services will not interpret it as being part of a replacement variable:

\\$\\$

Variables Representing Data from a Backend System

Use this format to represent data from a back-end system, such as the OAA Repository, where *back-end* represents the back-end system, such as rome for the OAA Repository, *schema* represents a specific schema in that back-end system, and *attribute* represents an attribute in that schema:

$$(*backend:schema/attribute*)

Variables Representing Collections of Data

Use this format to represent a collection of data in the notification:

$$collection(*backend:schema/collectionname*)
$$(*backend:schema/collectionname/attribute*)
$$endCollection()

Note: You must end a collection with:

```
$$endCollection()
```

You can also nest collection variables, as follows:

```
$$collection(backend:schema/collection1name)
$$(backend:schema/collection1name/attribute)
  $$collection(backend:schema/collection2name)
      &&(schema/collection2name/attribute)
  $$endCollection()
$$endCollection()
```

Maintaining Plug-Ins

A plug-in normally registers itself with Notification Services when it is installed. The registry information includes the plug-in name, class name, descriptions, and associated notification types. This information is stored in the Notification Services PluginRegistry table.

The Notification Services interface provides a method for registering a plug-in. For more information, see *Registering a Plug-in*.

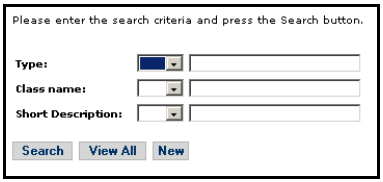
A plug-in can have an active or inactive status. Before you can use a plug-in that has an inactive status, you must initialize, or *reload*, the plug-in. To check the status of your plug-ins or reload them, see the following sections.

Registering a Plug-in

To register a plug-in:

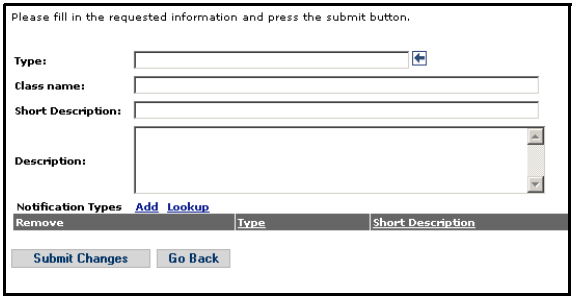
1. Log into Notification Services as an administrator.
2. In the **Navigation Menu**, click **Notification Services Administration**.
3. Under **Notification Services Administration** in the left pane, click **Plug-in Registry**.

The **Plug-in Search** window appears.



4 In the **Plug-in Search** window, click **New.**

The **Create New Plug-in** window appears.



5 In the **Create New Plug-in** window, specify the information in the following table.

In this field...	Do this...
Type	Specify the plug-in name
Class name	Specify the class name for the plug-in
Short Description	Type a short description of the plug-in
Description	Type a longer description of the plug-in
Notification Types	Click the Lookup button to find and select the appropriate notification types, or click Add to add a new notification type.

6 Click **Submit Changes**.

Displaying and Reloading Plug-Ins

To display the list of plug-ins and then reload them:

1 Under **Notification Services Administration** in the left pane, click **Plug-in Status.**

The list of installed plug-ins appears in the **Plug-in Status** window.

The status of a plug-in can be one of the following:

Status	Description
Active	The plug-in is ready to process notifications.
Inactive	The plug-in is not ready to process notifications.

2 Click **Reload Plug-ins**.

Redelivering Terminated Notifications

If Notification Services cannot deliver a notification message after cascading through the recipient's preferred devices, using the retry method, and escalating the notification to a backup user, it assigns the message a Terminated status and notifies the sender. For more information, see *Delivery Methods* on page 14.

To redeliver terminated notifications:

1 In the **Notification Services Administration** menu, click **Redeliver Notifications**.

2 Do one of the following:

- Select the notifications you want Notification Services to redeliver, then click **Redeliver Selection.**
- Click on a notification to view its detail in the **Redeliverable Notification Details** window, then click **Redeliver Notification**.

Note: If a notification was not delivered because of an incorrect phone number, e-mail address, or other information, you may need to edit it to correct the information before you attempt to redeliver it.

5 Using Notification Services

CHAPTER

Introduction

This chapter explains how to use Notification Services. It provides step-by-step procedures for the following tasks:

- **Logging in to Notification Services.**
- **Using the Notification Services inbox.**
  - Checking your Notification Services inbox.
  - Viewing the detail for a notification in your inbox.
  - Viewing attachments in the Notification Services inbox.
  - Replying to a notification in the Notification Services inbox.
- **Replying Outside the Notification Services inbox.**
  - One-way and two-way devices.
  - Replying to a notification using e-mail.
  - Replying to a notification using two-way text pagers or cell phones with TelAlert or EnvoyXpress.
- **Sending notifications.**
- **Using the outbox.**
  - Checking your Notification Services outbox.
  - Checking the status of a notification you sent.

- Viewing the detail for a notification you sent.
- Deleting a notification.

- **Setting Preferences.**
  - Creating your work schedule.
  - Before you begin setting your notification device preferences.
  - Setting your notification device preferences for work hours.
  - Setting your notification device preferences for off hours.
  - Setting your notification device preferences for extended out periods.
  - Indicating that you are out for an extended period.
  - Indicating that you are unavailable for notifications.

Logging in to Notification Services

To log in to Notification Services, you begin by logging in to the Peregrine Portal.

To log in:

1. In the **Peregrine Portal Welcome** window, in the **User Name** box, type your user name.

   Your user name here must match your contact name in the OAA Repository, depending on which of these sources is used for People records in Notification Services.
2. In the **Password** box, type your password (which is case sensitive), and then click **Login**.

   The **Navigation Menu** appears.
3. Click **Notification Services**.

   The **Check Incoming Notifications** window appears. If there are notifications in your Notification Services inbox, information appears for each one. Otherwise, the inbox is empty.

Using the Notification Services Inbox

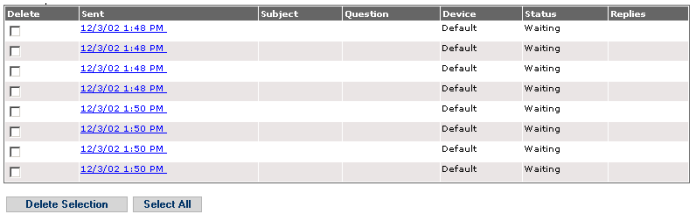
Use the procedures in this section to perform tasks using the Notification Services inbox.

Checking Your Notification Services Inbox

To check your Notification Services inbox:

1 Log in to the Peregrine Portal and Notification Services. (See *Logging in to Notification Services* on page 56.)

The **Check Incoming Notifications** window appears, and information is displayed for each incoming notification you have received.



2 Review the incoming notifications.

Refer to the following descriptions if you need help interpreting the information for each incoming notification:

- **Delete** - To delete a notification, select the check box for the notification to delete and click **Delete Selection**.
- **Sent** - The date and time when the notification was sent.
- **Subject** - The subject line of the notification.
- **Question** - A question from the sender, phrased so that it can be answered either yes or no without any additional text. An unanswered question is what causes a notification to be escalated.
- **Device** - The device or communication method used to send the notification. A value of **Default** means that the notification was delivered as defined in your Preferences.
- **Status** - The status for the notification. The status is one of the following:
  - **Waiting** - In the queue waiting to be sent.
  - **Sending** - In the process of being sent.
  - **Sent** - Already sent.
  - **Awaiting Response** - Sent and waiting for a reply.
  - **Various** - The recipients have various statuses.
  - **Failed** - Not sent because the notification was undeliverable to one or more recipients.

- **Terminated** - All deliveries and retries failed and there is no backup user. Applies only to notifications that contain a question.
- **Completed** - The notification has been delivered successfully to all recipients. If a confirmation question was asked, the status is **Completed** only when all recipients have replied.
- **Various Final** - Recipients have various statuses and the notification process is complete.
- **Escalated** - The notification was escalated to a backup user.

Replies - The number of replies received to the confirmation question asked in the notification, expressed as a fraction of the number of replies expected from all recipients. For example, 0/1 indicates that no replies have been received and that one reply is expected.

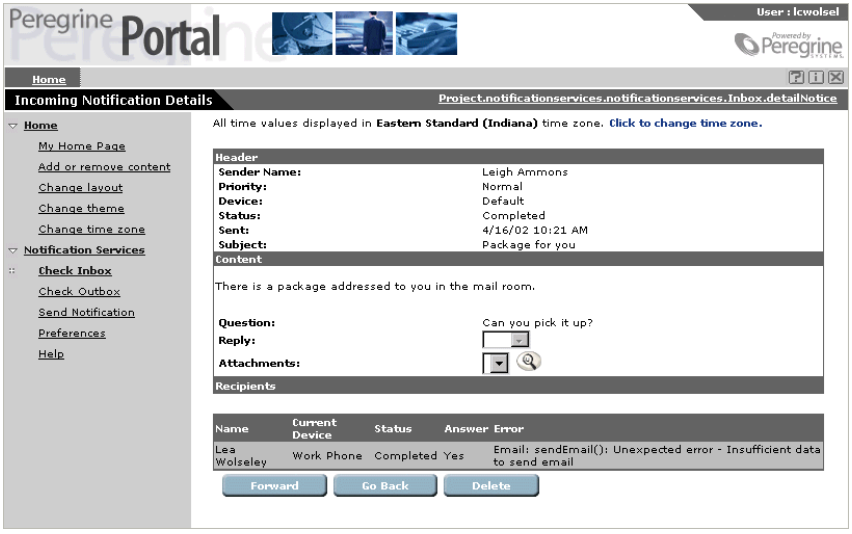
Notes - Informational messages or error messages related to the transmission of the notification.

Viewing the Detail for a Notification in Your Inbox

To view the detail for a notification in your Notification Services inbox:

1 In the **Check Incoming Notifications** window, click any text in the notification.

The **Incoming Notification Details** window appears.



2 Review the notification details.

Use the following descriptions if you need help interpreting the information displayed in this window:

In the **Header** area:

Sender Name - The sender's name.

Priority - The priority that the sender assigned to this notification. The options are low, medium, and high.

Device - The device or communication method used to deliver the notification. The options are e-mail, fax, home phone, numeric pager, portable phone, SMS device, two-way text pager, and work phone.

Status - The status for the notification. The status is one of the following:

- **Waiting** - In the queue waiting to be sent.
- **Sending** - In the process of being sent.
- **Sent** - Already sent.
- **Awaiting Response** - Sent and waiting for a reply.
- **Various** - The recipients have various statuses.
- **Failed** - Not sent because the notification was undeliverable to one or more recipients.
- **Terminated** - All deliveries and retries fail and there is no backup user. Applies only to notifications that contain a question.
- **Completed** - The notification has been delivered successfully to all recipients. If a confirmation question was asked, the status is **Completed** only when all recipients have replied.
- **Various Final** - Recipients have various statuses and the notification process is complete.
- **Escalated** - The notification was escalated to a backup user.

Sent - The date and time when the message was sent.

Errors - Any error messages that pertain to the delivery of this notification.

Subject - The subject line of the notification.

In the **Content** area:

The message text appears here.

Question - An optional confirmation question from the sender, phrased so that it can be answered yes or no without additional text.

Reply - A reply of yes, no, or blank. This defaults to blank until the recipient answers the confirmation question. Recipients can leave this blank if they choose not to answer the question.

Attachments - If the notification contains attachments, this list shows the attachment file names.

In the **Recipients** area:

Name - The recipient's name.

Current Device - The device currently being used to send this notification.

Status - The status of this message related to this recipient.

Answer - The recipient's answer to the yes/no confirmation question in the notification.

Error - Any errors that occurred during delivery of the notification to this recipient.

Viewing Attachments in the Notification Services Inbox

If a notification in your inbox contains one or more attachments, the file names for the attachments appear in the **Attachment** list that is used to select an attachment for viewing. You can also view attachments in your e-mail inbox.

To view an attachment in your Notification Services inbox:

1. In the **Incoming Notification Details** window, in the **Attachments** list, click the attachment you want to see.
2. Press the **View file attachment** button (which looks like a magnifying glass).

   The attachment appears.

Replying to a Notification in the Notification Services Inbox

The Notification Services inbox enables you to reply to notifications that contain confirmation questions. In this case, your reply can be yes, no, or blank. This inbox does not support sending additional text or adding attachments to your reply. To convey more than a yes/no response, use another communication device to reply.

To reply to a notification in your Notification Services inbox:

1. In the **Check Incoming Notifications** window, click anywhere in the notification.

   The **Incoming Notification Details** window appears, showing the text of the notification. If the sender asked you a confirmation question, the question appears. If the notification includes an attachment, you can view the attachment by pressing the **View file attachment** button (which looks like a magnifying glass).

2. If there is a confirmation question and you want to reply to it, use the **Response** box to select **Y** or **N**. Otherwise, leave this blank.

3. Click **Submit**.

   Your reply to the notification is sent, and the **Check Incoming Notifications** window appears.

   Note: If the device for delivering the notification to you was e-mail, you will receive a duplicate message in your e-mail inbox in addition to the notification in your Notification Services inbox.

Replying Outside the Notification Services Inbox

Whenever a notification is sent to you, in addition to receiving it in your Notification Services inbox, you will always be notified on another device (unless you have designated yourself as unavailable for notifications). The device that is used depends on the preferences you set up for work hours, off hours, and extended out periods for notifications of low, normal, and high priority.

The device that is used also depends on the sender's selection in the **Device** list in the **Send Notification** window. The sender can only send to a device that is configured for you because only the recipient's configured devices are displayed in the **Device** list. If the sender selects **Default** in the **Device** list, your preferences are exercised. Otherwise, you may receive the notification on a device that is configured for you but is not your preferred device for that time period and notification priority.

One-way and Two-way Devices

Some devices support two-way communication, enabling you to reply to a notification on the same device used to receive it. Other devices support only one-way communication, transmitting the notification to you, but not enabling you to reply using the same device.

The following devices support two-way communication:

- E-mail.
- Home phone.
- Two-way text pager.
- Work phone.
- Portable phone with voice messaging from a supported service provider.

The following devices support one-way communication:

- SMS device (cell phone with Short Message Service, a protocol used in cell phone text messaging).
- Numeric pager.
- Fax.

Replying to a Notification Using E-mail

If the device used to deliver a notification to you was e-mail, you will receive a duplicate message in your e-mail inbox in addition to the notification in your Notification Services inbox. You can reply from your Notification Services inbox or from the e-mail application.

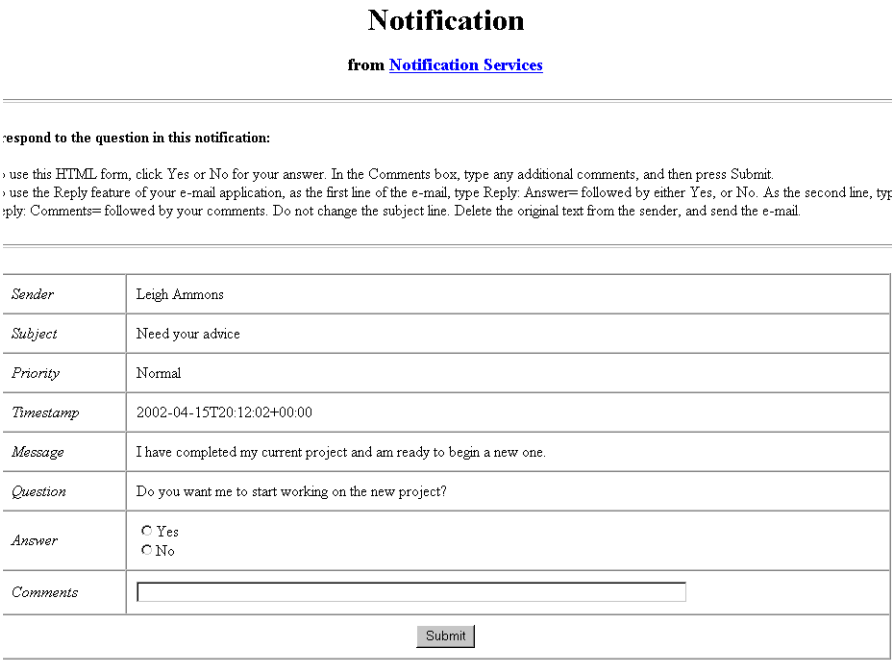
The advantage of replying using e-mail is that your reply can include text. When you reply from the Notification Services inbox, you can only answer the confirmation question. You cannot type additional text in your reply.

To reply to a notification using e-mail:

1 In your e-mail application, go into your e-mail inbox.

If your e-mail application supports HTML formatting for messages, you can reply using the HTML form that Notification Services provides. If your e-mail application does not support HTML formatting for messages, the notification will be formatted like any other e-mail message in your e-mail application.

The default HTML form looks like this:



Notification

from Notification Services

espond to the question in this notification:

use this HTML form, click Yes or No for your answer. In the Comments box, type any additional comments, and then press Submit.
use the Reply feature of your e-mail application, as the first line of the e-mail, type Reply: Answer= followed by either Yes, or No. As the second line, typ
ply: Comments= followed by your comments. Do not change the subject line. Delete the original text from the sender, and send the e-mail.

Sender	Leigh Ammons
Subject	Need your advice
Priority	Normal
Timestamp	2002-04-15T20:12:02+00:00
Message	I have completed my current project and am ready to begin a new one.
Question	Do you want me to start working on the new project?
Answer	○ Yes ○ No
Comments	
	Submit

Note: The link at the top of this form is a URL. You can click it to open the **Incoming Notification Details** window and see the details for the current notification.

2 Use this table to determine your next step:

To use	Then
The HTML form	Fill in the information in the HTML form.
E-mail without the HTML form	In the first line of the text, type **Reply**: before typing the content of your reply.

For notifications sent by e-mail, it does not matter whether you reply to them from your Notification Services inbox or your e-mail application (with or without the HTML form). Notification Services tracks your first reply either way. The advantage of e-mail is that you can type or paste text comments into your reply. Do not add e-mail attachments because they will not be received as part of your reply.

Replying to a Notification Using Two-way Text Pagers or Portable Phones

To reply to a notification using two-way text pagers or portable phones with voice messaging from a supported service provider, follow the instructions provided by the product vendors for using these devices. These vendors are Vytek Wireless for the TelAlert product and EnvoyWorldWide for the EnvoyXpress product.

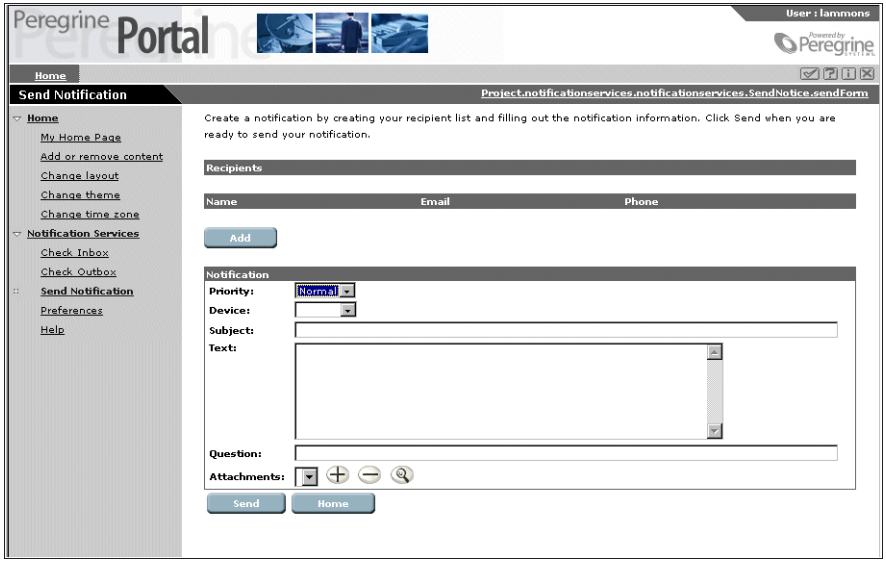
Sending Notifications

The **Send Notification** window is used to create and send notifications.

To create and send a notification:

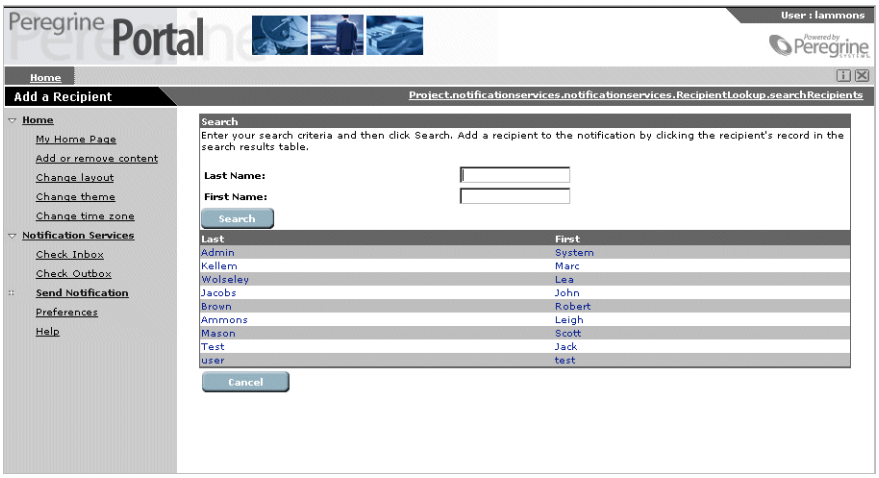
1 In the left pane click **Send Notification**.

The **Send Notification** window appears.



2 Click **Add**.

The **Add a Recipient** window appears.



3 Use this table to determine your next step:

If you want to	Then
Select a name that is already displayed in the list of recipients	Click the recipient's name.
Search for a name that is not displayed	In the **Last Name** box, type the last name of a recipient, then do one of the following: ■ To search using only the last name, click Search, and then click anywhere in the row for the appropriate recipient's name. ■ To add a first name to this search, in the **First Name** box, type the first name and click **Search**. Click anywhere in the search results showing the appropriate recipient's name.

The **Send Notification** window appears.

4 In the **Priority** list, select **Low**, **Normal**, or **High**.

This priority is used to determine the device that will be used to send the notification when you specify the default device for delivery. In this case, your priority is matched with recipients' device preferences for that priority, for work hours, off hours, and extended out periods.

5 In the **Device** list, select the device that will be used to send this notification.

If there is only one recipient, the **Device** list shows options for **Default** and all of the devices that are configured for that recipient.

If there are multiple recipients, the **Device** list shows options for **Default** and any devices that are configured for *all* recipients.

If you select a device other than the default, the device you select is used instead of the device that the recipient prefers. For this reason, you should typically use **Default** as the device unless there is some reason to override the recipient's preferences.

Important: If you select a device other than the default, the device you select is used instead of the device that the recipient prefers and your notification will not cascade to the recipient's preferred devices. For this reason, you should use **Default** as the device unless there is an important reason to override the recipient's preference.

6 In the **Subject** box, type the subject for your notification.

7 In the **Text** box, type the notification. You can also paste text or HTML here from other applications.

8 In the **Question** box, type a confirmation question that can be answered either yes, no, or left blank.

This confirmation question allows the recipient to reply to the notification using the keys on a two-way device. Avoid specifying a one-way device when you send a notification that includes a confirmation question. (These devices are cell phone with Short Message Service, numeric pager, and fax.) If you specify a one-way device, the recipient cannot reply on the same device used to receive the notification. In this case, for Notification Services to track the reply, the recipient has to reply using the Notification Services inbox.

9 Use this table to determine your next step:

If you want to	Then
Send the notification without adding an attachment	Click **Send**.

If you want to	Then
Add one or more attachment	Click the **Add a new file attachment** (+) button. In the **Select a File** list that appears, browse for a file. Click the file name, then click **Open**, and then click **OK**. Repeat this step until you have selected all the attachments for this notification. Click **Send.**
Delete an attachment before sending the notification	In the **Attachments** list, select the file that you want to delete. **Press the Remove file attachment** (-) button. Click **OK**. Click **Send**.

The **Send Results** window appears, showing the same status information as the **Outgoing Notification Detail** window, and your notification is submitted for delivery.

10 If you want to send this notification to another recipient or modify it and send it to other recipients, click **Go Back**.

Note: Clicking **Go Back** does not enable you to change the notification that you sent when you clicked **Send** in the **Send Notifications** window.

Using the Outbox

Use these procedures to perform tasks using the Notification Services outbox.

Checking Your Notification Services Outbox

To check your Notification Services outbox:

In the left pane, click **Check Outbox**.
The **Check Outgoing Notifications** window appears, showing information for all of the current notifications.

Note: The current notifications are all the ones that you have not deleted and that have not reached the expiration date. This interval is established by the Notification Services System administrator for all notifications on your system. By default, notifications are set not to expire. You cannot override this expiration date when you send a notification.

Checking the Status of a Notification You Sent

To check the status of a notification you sent:

In the **Check Outgoing Notifications** window, look below the far right column heading, **Status**. The status for a sent notification is one of the following:

- **Waiting** - In the queue to be sent.
- **Sending** - In the process of being sent.

- **Sent** - Already sent.
- **Awaiting Response** - Sent. Waiting for a reply.
- **Various** - The recipients have various statuses.
- **Failed** - Not sent because the notification was undeliverable to one or more recipients.
- **Terminated** - All deliveries and retries failed, and there is no backup user. This status only applies to notifications that contain a question.
- **Completed** - The notification has been delivered successfully to all recipients. If a confirmation question was asked, the status is **Completed** only when all recipients have replied.
- **Various Final** - The recipients have various statuses and the notification process is complete.
- **Escalated** - The notification was escalated to a backup user.

Viewing the Detail for a Notification You Sent

To view the detail for a notification in your Notification Services outbox:

Click any text in the notification.

The **Outgoing Notification Details** window appears.

This window shows the message text and details about the notification. The notifications displayed here are ones that you have not deleted and that have not reached the expiration date set by your Notification Services administrator.

Deleting a Notification

Important: Exercise caution when deleting notifications. When you delete a notification from your outbox, the notification is automatically deleted from the inboxes of all the recipients for that notification, regardless of the notification's status. Deleting the notification also stops cascading and escalation.

Notifications can be deleted from the outbox, but not from the Notification Services inbox.

To delete a notification:

1. In the **Check Outgoing Notifications** window, select the check box in the **Delete** column for a notification you want to delete. If there are additional notifications you want to delete, select the other check boxes.
2. Click **Delete Selection**.

   The notifications are deleted.

   Note: If you want to delete all the notifications in your outbox, click **Select All**, and then click **Delete Selection**. You can also delete a notification from the **Outgoing Notifications Details** window by clicking the **Remove Notification** button.

Redelivering Terminated Notifications

If a notification you sent appears in your outbox with a Terminated status, Notification Services was not able to deliver the notification to the intended recipient. If a notification sent to you appears in your inbox with a Terminated status, Notification Services was not able to deliver the notification that was sent to you.

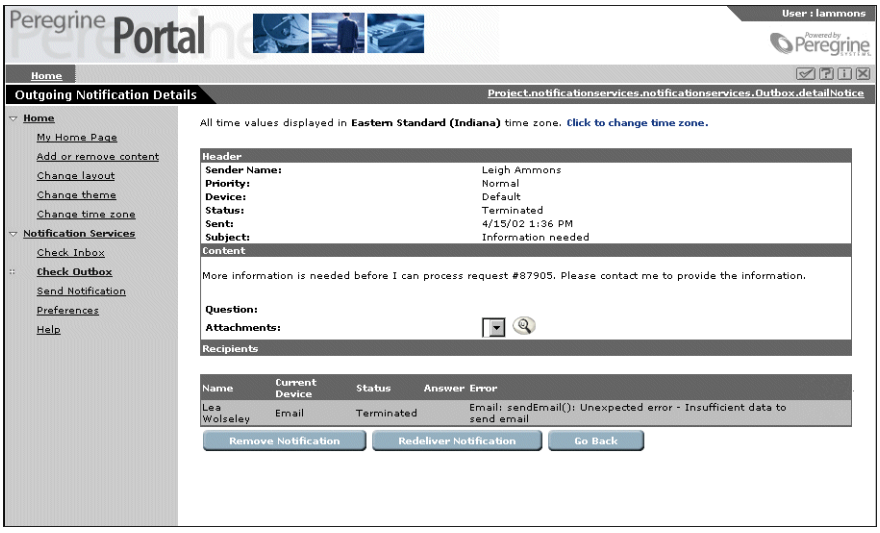
In both cases, you can have Notification Services redeliver the notification.

Redelivering an Outgoing Notification

You can have Notification Services redeliver a terminated notification that you sent.

To redeliver a terminated notification that appears in your outbox:

1 View the detail for the notification. See *Viewing the Detail for a Notification You Sent* on page 69.



2 Under **Error**, view the reason for the termination and determine whether any action is needed. For example, if the notification was undeliverable because the recipient's e-mail address is invalid, you may need to contact your administrator to modify the e-mail address before resending.

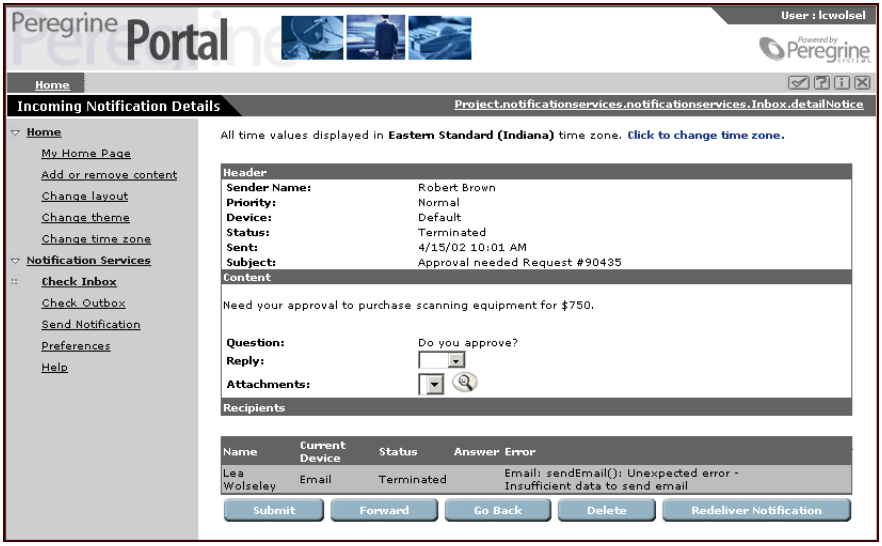
3 Click **Redeliver Notification** when you are ready to redeliver the notification.

Redelivering an Incoming Notification

You can have Notification Services redeliver a terminated notification that was sent to you. Even though the notification was undeliverable to your specified devices, it still appears in your Notification Services inbox.

To redeliver a terminated notification that appears in your inbox:

1 View the detail for the notification. See *Viewing the Detail for a Notification You Sent* on page 69.



2 Under **Error**, view the reason for the termination and determine whether any action is needed. For example, if the notification was undeliverable because your e-mail address is invalid, you should contact your administrator to correct the e-mail address before resending.

3 Click **Redeliver Notification** when you are ready to redeliver the notification.

Setting Preferences

This section explains how to:

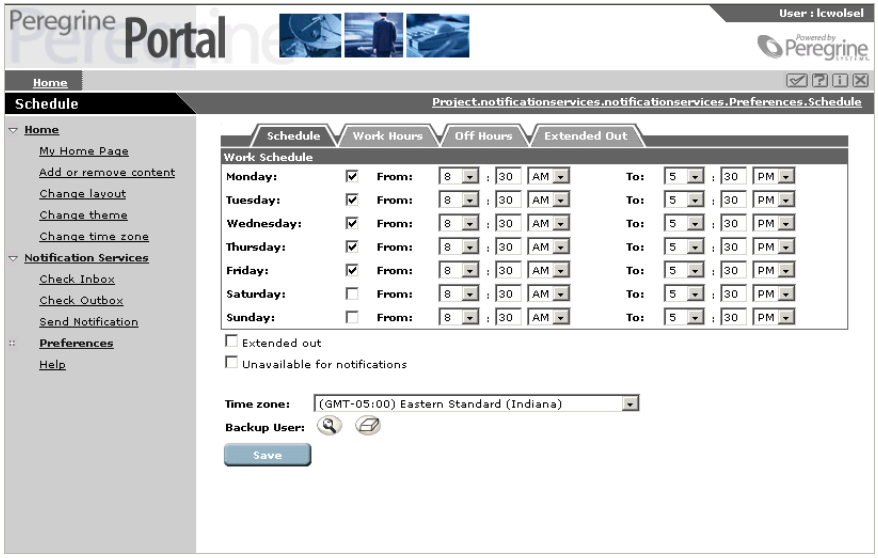
- Set up your typical work schedule.
- Specify your time zone.
- Designate a backup user for escalation purposes.
- Specify your device preferences for notification delivery during work hours, off hours, and times when you will be out of the office for extended periods. You can specify these device preferences for three levels of notification priority (low, normal, and high).
- Indicate when you are out of the office for an extended period.
- Indicate when you are unavailable for receiving notifications.

Creating Your Work Schedule

To create your work schedule:

1 In the left pane, click **Preferences**.

The **Schedule** window appears.



2 In the **Schedule** window, select the check box for each day of your typical work week.

3 In the **From** and **To** lists for each work day, select the time when your work day begins and ends. Be sure to select **AM** or **PM** for each time.

4 Skip the check boxes for **Extended out** and **Unavailable for notifications**. These are used later when you need to indicate that you are out of the office for an extended period or you are unavailable for notifications.

5 In the **Time zone** list, select your time zone, and then click **Save**.

Note: The time zone defaults to the time zone on the Notification Services server machine. Your schedule is based on this time zone unless you change it.

6 Next to **Backup User**, click the **Employee Lookup** icon. (This looks like a magnifying glass.)

The **Employee Lookup** window appears.

Note: Designating a backup user is optional. The backup user receives the notification sent to you if a notification is escalated. Escalation occurs when a confirmation question is included in a notification and no reply is received in a certain time interval. This time interval is established by your Notification Services administrator for each notification priority. When the sender chooses the default device, notifications are cascaded to all of the initial recipient's preferred devices before being escalated to the backup user.

7 In the **Employee Lookup** window, click a name or type a first or last name and click **New Search**.

Note: Be sure to click **New Search**, rather than pressing Enter.

8 In the search results, click the name of the person you want to choose as your your backup user.

Note: The lookup is not case sensitive when the OAA Repository is used as the back-end database.

The **Schedule** window appears, with the **Backup User** box showing the name you selected.

9 Click **Save**.

Your work schedule is now set up and you are ready to indicate your preferences for the devices you want to use to receive notifications for work hours, off hours, and extended out hours.

Before You Begin Setting Your Notification Device Preferences

You can specify your device preferences for notification delivery during work hours, off hours, and times when you will be out of the office for extended periods.

You can select as many as eight device preferences, if that many devices are configured for you. You can also select **Never use**, and that device will never be used in the context where you made that selection.

One-way and Two-way Communication

When you are determining your preferences for devices, be aware that some devices support two-way communication and others support only one-way communication. With two-way communication, you can reply to the notification on the same device where you receive it. These devices are:

- E-mail.
- Home phone.
- Two-way text pager.
- Work phone.
- Portable phone with voice messaging from a supported service provider.

If only one-way communication is supported on the device, you can receive the notification on the device, but you will have to reply to it using the Notification Services inbox in order for Notification Services to track your reply.

The one-way devices are:

- SMS device (cell phone with SMS).
- Numeric pager.
- Fax.

Setting Your Notification Device Preferences for Work Hours

The **Work Hours** window shows all of the devices that are set up for you to receive notifications from Notification Services. Next to each device, you can specify your preference for receiving notifications using that device for notifications of low, normal, and high priority. To add a device that does not appear here, contact your Notification Services administrator.

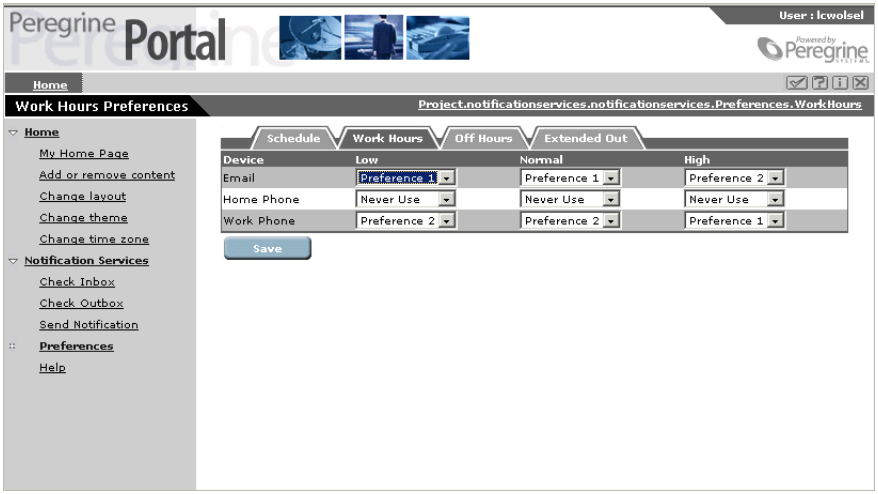
To set your notification device preferences for work hours:

1. In the left pane, click **Preferences**.

   The **Schedule** window appears.

2. Click the **Work Hours** tab.

The **Work Hours Preferences** window appears, showing the devices that have been configured for you to receive notifications in Notification Services.



3 In the **Low** column for the first device, designate your preference for receiving notifications of low priority on this device during work hours.

4 In the **Normal** column for the first device, designate your preference for receiving notifications of normal priority on this device during work hours.

5 In the **High** column for the first device, designate your preference for receiving notifications of high priority on this device during work hours.

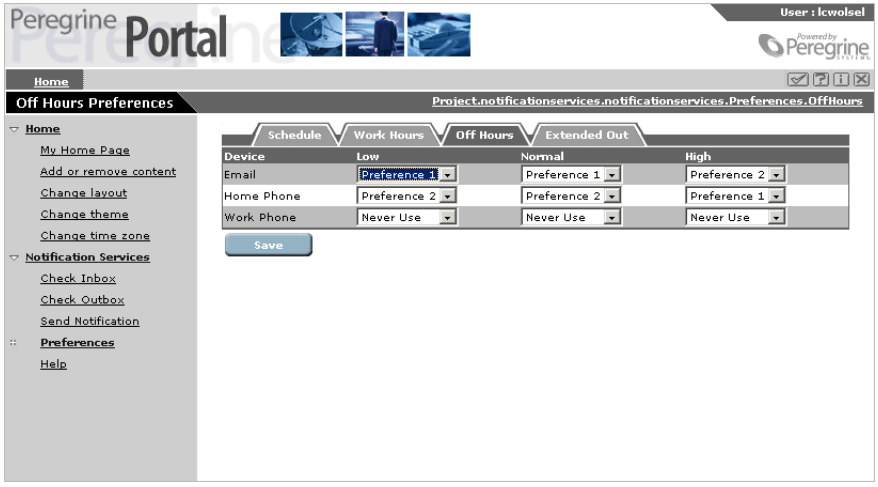
6 Repeat steps step 3 on page 76step 3 on page 763 through 5 for each device.

7 Click **Save**.

Your device preferences are set up for work hours for notifications of each priority.

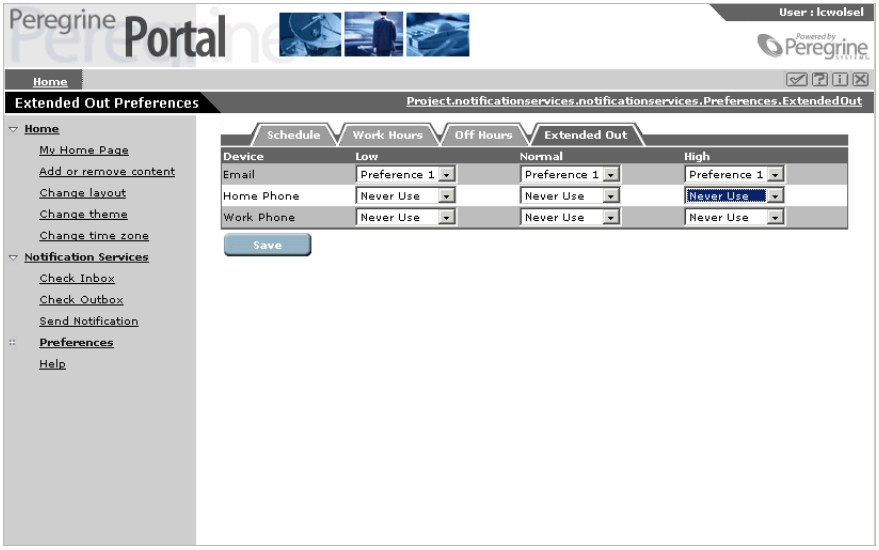
Setting Your Notification Device Preferences for Off Hours

Click the **Off Hours** tab and follow the steps for Setting Your Notification Device Preferences for Work Hours, only this time make your selections for the devices you prefer during the hours when you are *not* at work.



Setting Your Notification Device Preferences for Extended Out Periods

Click the **Extended Out** tab and follow the steps for Setting Your Notification Device Preferences for Work Hours, only this time make your selections for the devices you prefer when you are out of the office for extended periods.



Indicating That You Are Out for an Extended Period

To indicate that you are out of the office for an extended period:

1 In the left pane, click **Preferences**.

The **Schedule** window appears.

2 In the **Schedule** window, select the check box for **Extended out**, and then click **Save**.

Notifications are sent to the devices you specified in your extended out preferences. If you want to verify that your preferences for extended out are still current, click the **Extended Out** tab and review the devices you specified.

When you return to the office after your extended out period, clear this check box.

Indicating That You Are Unavailable for Notifications

There may be times when you want to have all your notifications routed immediately to your backup user. To do this, you can make yourself unavailable for notifications.

Note: Notification Services only sends notifications to your backup user when the device specified in the notification is **Default**.

Important: It is important to consider designating a backup user if you are going to make yourself unavailable for notifications. When you make yourself unavailable and you have a backup user, notifications are sent to your backup and you will receive a copy of the notification in your inbox. When you make yourself unavailable and you have *not* designated a backup, you will only receive a copy of the notification in your inbox.

Using this feature without a designated backup is typically appropriate only if the notifications you receive are not critical or highly time-sensitive.

To indicate that you are unavailable for notifications:

1 In the left pane, click **Preferences**.

The **Schedule** window appears.

2 In the **Schedule** window, select the **Unavailable for notifications** check box, and then click **Save**.

Notifications are sent to your backup user immediately, not to your preferred devices. However, you do receive a copy of these notifications in your Notification Services inbox. You will be able to identify which messages in your inbox were sent to your backup user because the text in the **Status** column for those messages will say **escalated**.

When you are ready to begin receiving notifications again, clear this check box.

APPENDIX A

Making API Calls

This appendix presents a set of principal methods developers can use to create and manage notifications using Notification Services.

Notification Services provides a simple API for sending, deleting, and retrieving notifications. An API call is invoked by creating an XML document describing the API call, which is then sent to the Notification Services server via an HTTP POST request. An XML document is returned that includes the requested information.

This appendix includes sections for the following topics:

- Making an API Call.
- Determining the Notification Services URL.
- API Methods.
- Schemas (including a description of each field).

Making an API Call

In order to invoke an API method, your application needs to send a Request XML document to the Notification Services URL using an HTTP POST request. The HTTP POST request should include a basic authentication field in the request header. A valid Peregrine Portal user name and password should be used in the authentication field. For more information on the basic authentication scheme, refer to the W3C HTTP specification for HTTP user authentication, RFC 2617:HTTP Authentication: Basic and Digest Access Authentication.

Example of a Request XML Document

The following Request document would return the Notification document where the ID equals 12345.

```
<?xml version="1.0" encoding="UTF-8"?>
   <Request>
         <Operation>getNotification</Operation>
         <Notification>
           <Id>12345</Id>
         </Notification>
   </Request>
```

To produce the required URL for sending HTTP POST requests, see *Determining the Notification Services URL*. For a description of the Request document and other XML documents used in requests, see *Schemas* on page 86.

The **Operation** field specifies which API method will be invoked on the server. Currently, Notification Services supports the following methods:

- **sendNotification**
- **deleteNotification**
- **getNotification**

For a detailed description of each method, see *API Methods* on page 83.

Along with the **Operation** field, a Notification document should be included in the request with the required fields. For descriptions of the required for each method, see *API Methods* on page 83.

Determining the Notification Services URL

A URL is required for sending the HTTP POST to Notification Services.

To determine the Notification Services URL:

- Examine the URL used to access the Peregrine Portal and replace login.jsp with archway?sendHttpRequest.

Example:

The URL for the Peregrine Portal is http://localhost/oaa/login.jsp. Replace login.jsp with archway?notification.sendHttpRequest.

The Notification Services URL is

http://localhost/oaa/archway?notification.sendHttpRequest.

This is the URL used to invoke API calls in Notification Services.

API Methods

This section describes each of the currently supported notification methods and their required fields.

sendNotification

Submit a notification for delivery. If valid, the notification is placed in the delivery queue.

Required Fields/Documents

SenderId, Subject, Text, Priority, Recipients

Returns

An updated version of the Notification document is returned. The **Status** and **Error** fields can be used to determine whether the notification was valid. If the notification was valid, the value in the **Status** field is **Waiting**. If the notification was invalid, the value in the **Status** field is **Failed**, and the cause for failure is explained in the **Error** field.

Notification State	Field Values
Successful	Status= Waiting
Failed	Status=Failed Error=<Cause of failure>

Notes

Use the <EmailAddress> tag of the Recipient document to send a notification to a user whose contact record is not in the back-end database.

Example

Send a notification from mkellem to jspires and xxue.

Request Document

```
<?xml version="1.0"?>
<Request>
   <Operation>sendNotification</Operation>
        <Notification>
            <SenderId>mkellem</SenderId>
            <Subject>Test Notification</Subject>
            <Text>This notification was sent using the sendNotification API
call</Text>
            <Priority>normal</Priority>
            <Recipients>
                <Recipient>
                    <RecipientId>jspires</RecipientId>
                </Recipient>
                <Recipient>
                    <RecipientId>xxue</RedipientId>
                </Recipient>
            </Recipients>
        </Notification>
```

```
</Request>
```

Return Document

```
<?xml version="1.0"?>
<Notification>
  <Id>12345</Id>
  <SenderId>mkellem</SenderId>
  <Subject>Test Notification</Subject>
  <Text> This notification was sent using the sendNotification API call</Text>
  <Priority>normal</Priority>
  <Recipients>
      <!-- Removed. Recipient information will be expanded. -- >
  </Recipients>
  <Status>Waiting</Status>
  <! --  See the schema definition for a complete list of returned fields. -- >
</Notification>
```

getNotification

Retrieve the contents of an existing notification.

Required Fields

Id

Returns

A full notification document.

Example

Retrieve Notification 12345.

Request Document

```
<?xml version="1.0"?>
<Request>
  <Operation>getNotification</Operation>
      <Notification>
          <Id>12345</Id>
      </Notification>
</Request>
```

deleteNotification

Remove a notification from the back-end database. After the notification is removed, all processing of the notification stop.s

Required Fields

Id

Returns

The full contents of the notification.

Example

Remove notification 12345 from the back-end database.

Request Document

```
<?xml version="1.0"?>
<Request>
  <Operation>deleteNotification</Operation>
      <Notification>
          <Id>12345</Id>
      </Notification>
</Request>
```

Schemas

This section defines each schema referenced in this appendix.

Request

```
<Request>
  <Operation/>
  <Notification/>
</Request>
```

Element	Description
Operation	The operation being performed. Valid operations are sendNotification, getNotification, and deleteNotification.
Notification	A notification document. For required fields see *API Methods* on page 83.

Notification

```
<Notification>
    <Id/>
    < NotificationType/>
    <BaseId/>
    <SenderId/>
    <SenderName/>
    <SenderAddress/>
    <Subject/>
    <Text/>
    <URL/>
    <Status/>
    <TimeStamp/>
    <Method/>
    <Question/>
    <Priority/>
    <ReplyTo/>
    <ExpirationDate/>
    <Origin/>
    <OriginId/>
    <RecipientCount/>
    <RecipientAnswerCount/>
    <Error/>
    <Attachments/>
    <Recipients>
        <Recipient >
            <RecipientId/>
        </Recipient>
    </Recipients>
    <BusinessObjects/>
    <RenderTexts/>
    <Groups>
        <GroupId/>
        <GroupId/>
        …
    </Group>
</Notification>
```

Field Descriptions

Use the following table to see elements and field descriptions. The Field Type column indicates G for generated fields, U for user input fields, and B for fields that are both generated and user input.

Element	Field Type	Description
Id	G	Unique ID
BaseId	G	If the notification is forwarded, this is the original notification ID.
SenderID	U	The unique ID of the sender in the back-end database.
SenderName	U	The full name of the sender.
SenderAddress	U	The sender's address. This field is the e-mail address for all e-mail notifications. It is the sender's Work Phone number for numeric pager notifications.
Subject	U	The subject of the notification. The template will overwrite this field when the notification is delivered, but this field can still be referenced inside of a template using the $$(Notification/Subject) token.
Text	U	The main body of the notification. The template will overwrite this field when the notification is delivered, but this field can still be referenced inside of a template using the $$(Notification/Text) token.
URL	B	A URL to embed into the notification. This is the URL for the Notification Services inbox.
Status	G	The current status of the notification.
TimeStamp	G	Date and time when the notification was created.
Method	U	Delivery method. For recipients whose ids are set to unknown, the method is ignored because the e-mail method is always used. For a list of methods, see *Valid Methods* on page 90 in this section.
Question	U	Confirmation question for the recipients. The template will overwrite this field when the notification is delivered, but this field can still be referenced inside of a template using the $$(Notification/Question) token.
NotificationType	U	The type of notification. The plug-in associated with the given notification type will process the notification.
Priority	B	Priority of the notification. Valid settings are low, normal, and high. **Normal** is the default value.

Element	Field Type	Description
ReplyTo	B	The address the sender should reply to. Unless specified by the sender, the default is the setting in the administration page.
Error	G	Any errors that occurred while the notification was being processed.
Attachments	G	The file names of all attachments sent with the notification.
Recipients	U	A collection of recipient documents. For details, see *Recipient* on page 91. With the OAA Repository as the back-end database, you should specify the unique ID of the recipient <Recipients> <Recipient> <RecipientId> </Recipient> … </Recipients>
Groups	U	A collection ofgroup. This is not currently supported when using the OAA Repository as the backend database. When supported, the assignment, ocmgroups, and cm3groups tables will be queried, and each matching group will be expanded into a collection of recipients
ExpirationDate	B	The number of days until the notification is deleted. If set to -1 (the default),the notification never expires. If the integrating applications does not provide a value, the value specified in Admin Settings is used.
Origin	U	The application that created this notification.
OriginId	U	The unique ID of the request given by the origin application.
RecipientCount	G	Number of recipients.
RecipientAnswerCount	G	Number of recipients to answer.This value is -1 for notifications without a confirmation question.

Element	Field Type	Description
BusinessObjects	U	A collection of rNotificationBusinessObjects. This is a collection of references to application objects. A plug-in uses the references in this collection to retrieve data from the plug-in's integrating application. See the rNotificationBusinessObjects schema for a detailed description of each field. The collection will look similar to the following: <BusinessObjects> <rNotificationBusinessObjects> <Id/> <Backend/> <ObjectName/> <ObjectId/> </ rNotificationBusinessObjects> ... </BusinessObjects>
RenderTexts	G	The collection of rendered templates generated by the template engine.

Valid Methods

Use the following table to see the methods (devices) for sending notifications. These are the valid values for the **Method** field. For recipients whose ids are set to unknown, the method is ignored because the **e-mail** method is always used.

Value	Description
default	Send notifications to each recipient's preferred device. This method should be used unless you need to always send to a specific device, such as e-mail.
email	E-mail
workphone	Work phone
mobilephone	Mobile phone
homephone	Home phone
textpager	Alphanumeric pager
numericpager	Numeric pager

Value	Description
fax	Fax
smsdevice	SMS device

Recipient

```
<Recipient>
    <Id/>
    <RecipientId/>
    <NotificationId/>
    <EmailAddress>
    <Status/>
    <Answer/>
    <CurrentMethod/>
    <PreviousMethods/>
    <Error/>
</Recipient>
```

Field Descriptions

Field	Description
Id	Unique ID.
RecipientId	Recipient's user ID. Set this to "_unknown" when you are using the **EmailAddress** field.
NotificationId	Notification that created this recipient object.
Status	Current status of the recipient object.
Answer	Recipient's answer to the question in the notification.
CurrentMethod	Current method being used.
PreviousMethods	Methods that have already been tried.
EmailAddress	E-mail address of a contact not in the back-end database. Use this field to send a notification to any e-mail address. The **RecipientId** field should be set to "_unknown" when you use this field. For a more detailed description, see *Sending a Notification to any E-mail Address* in this section.

Sending a Notification to any E-mail Address

The **EmailAddress** field enables you to send a notification to any e-mail address. You should use this field when using the **sendNotification** method. Here is an example of a Recipientthat will send the notification to john.doe@company.com

```
<Recipient>
    <RecipientId>_unknown</RecipientId>
    <EmailAddress>john.doe@company.com</EmailAddress>
</Recipient>
```

rNotificationBusinessObjects

<rNotificationBusinessObjects>

```
    <Id/>
    <Backend/>
    <Name/>
    <ObjectId/>
</rNotificationBusinessObjects>
```

Field Descriptions

Element	Field Type	Description
Name	U	Name of the object. For OAA applications, this will be the schema name.
ObjectId	U	Unique ID for the object.
Backend	U	Optional field that specifies the back-end that will be queried to retrieve the object.

Glossary

This glossary defines terms and explains concepts used in conjunction with Notification Services.

activity—A task performed using a Peregrine application.

Admin Settings window—The window in the Peregrine Portal that is used by the Notification Services administrator to configure and maintain applications, including Notification Services.

attachments—File attachments that can be viewed for incoming notifications or notifications you have sent.

back-end database—All notifications that are transmitted by Notification Services are stored in the back-end database (the OAA Repository). The back-end database is also used to retrieve contact information and the devices that are set up for that contact and to store user preferences.

backup user—The backup user receives a notification sent to you if a notification that includes a confirmation question is cascaded (sent) to all of your preferred devices and no reply is received by the sender within the specified time interval. This time interval is established by the Notification Services administrator for each notification priority. When there are no more preferred devices for cascading, escalation occurs, and the notification is sent to your backup user. Escalation to a backup user occurs only for notifications that include a confirmation question. In contrast with cascading, which occurs only if the notification is sent using the default device, escalation to a backup user occurs regardless of the device used to send the notification. In other words, escalation occurs even if the sender selects a specific device for sending the notification rather than selecting default. When a notification is sent to your backup user, you receive a copy of it in your inbox, with the status indicated as **escalated**.

bizdoc adapter—The mail adapter that is used in Notification Services when the OAA Repository is used as the back-end database.

cascading —Cascading refers to sending a notification to each preferred device for a recipient in the order of preference. Cascading occurs only for notifications sent using **Default** as the device. The inclusion or lack of a confirmation question does not affect cascading. Cascading is triggered when Notification Services is not able to deliver a notification to the recipient's preferred device within the specified time interval established by the Notification Services administrator for the associated notification priority. For example, when Notification Services attempts to deliver a phone message to a phone that is busy, Notification Services cannot deliver the notification to the phone. If this continues for the specified interval, the notification is cascaded to the recipient's next device preference.

Cascading is followed by the retry delivery method and escalation in certain situations. If a notification that includes a confirmation question is cascaded to all the recipient's preferred devices and no reply is received by the sender within the specified time interval, Notification Services uses the retry delivery method before escalating the notification to a backup user.

Check Incoming Notifications window—The window used to see a list of incoming notifications, including summary and status information.

Check Outgoing Notifications window—The window used to see summary information and status for an outgoing notification.

Common tab —A tab on the **Admin Settings** window of the Peregrine Portal. It is used by the Notification Services administrator to enable script polling, to specify the URL for the Peregrine Portal server, and to specify the path for attachment files.

Control Panel —The window in the Admin Settings options that shows the status for connections between targets and mail adapters for adapters registered in the server. The Notification Services administrator uses this window to check connection status and to reset the Peregrine Portal server.

confirmation question —A question from the sender of a notification, phrased so that the recipient can answer yes or no. The reply must be either yes, no, or left blank. When you are sending a notification, including a confirmation question is important because an unanswered question is what causes a notification to be escalated to a backup user if no reply is received after the notification has been cascaded to all of the intended recipient's preferred devices. Always include a confirmation question if you want a notification to be escalated to a backup when a reply is not received from the initial recipient.

connection status—On the Notification Services **Control Panel**, this indicates whether each target and its associated adapter is connected.

current notifications—All the notifications that have not been deleted and that have not reached the expiration date. The expiration interval is established by the Notification Services administrator for all notifications on your system. By default, notifications are set not to expire. You cannot override this expiration date when you send a notification.

default device—When you are sending a notification, you can specify any of the devices that are configured for a recipient, or for all of the members of a group or you can select **Default** as the device. When you select **Default**, the notification is sent to the recipient's preferred device (as defined in user preferences) for the time period and notification priority. Selecting **Default** as the device increases the chances that the recipient will receive and respond to the notification quickly. Another reason for using **Default** is that cascading to a recipient's device preferences occurs only when the notification is sent using **Default** as the device.

device—The instrument used to receive a notification from Notification Services. The following devices are supported: e-mail, fax, home phone, numeric pager, portable phone, SMS device, text pager, and work phone. See also *default device*.

device preferences —See Preferences.

E-mail tab — A tab on the Admin Settings window of the Peregrine Portal. It is used by the Notification Services administrator to configure the inbound and outbound e-mail servers.

Employee Lookup window — A window that is accessible from the Schedule window. The **Employee Lookup** window enables browsing to choose a backup user.

escalation —Escalation occurs when a confirmation question is included in a notification and no reply is received in a certain time interval. This time interval is established by your Notification Services administrator for each notification priority. It also occurs when the recipient is specified as unavailable for notifications, as long as a backup user is designated.

The time before a notification is escalated to your backup user typically varies for low, normal, and high priority notifications. Before escalation occurs, a notification is normally cascaded to all of the initial recipient's preferred devices and Notification Services tries resending the notification. In contrast with cascading, which occurs only if the notification is sent using the **Default** device option, escalation to a backup user occurs regardless of the device used to send the notification. In other words, escalation occurs even if the sender selects a specific device for sending the notification rather than selecting **Default**.

EnvoyWorldWide —The third-party vendor for the EnvoyXpress message service product which can be used to deliver a Notification Services notification to phones, cell phones, pagers, and fax machines.

EnvoyXpress —A message service used to deliver a Notification Services notification to phones, cell phones, pagers, and fax machines. The third-party vendor for this product is Envoy WorldWide.

expiration —The interval between the time when a notification is sent and the time when it is automatically deleted from the recipient's Notification Services inbox and from the sender's Notification Services outbox. This interval is determined by the Notification Services administrator. The default is set to never expire.

extended out —A user preference in Notification Services that users turn on when they are out of the office for an extended period. Users can specify device preferences for notification delivery during extended out periods, using the **Extended Out Preferences** window. These preferences can vary by notification priority (low, normal, and high). Users need to clear this check box when they return after being out of the office for an extended period.

HTML form—A form that is used for e-mail notifications delivered by Notification Services when the recipient's e-mail application supports HTML formatting for messages. The form includes a link to a URL that users can click to open the **Incoming Notification Details** window, showing the details for the current notification.

IMAP —A mail protocol that OAA supports. OAA can support communicating with inbound e-mail servers that use the IMAP protocol or the POP3 protocol.

inbox —See Notification Services inbox.

Incoming Notification Details window—The window used to read a notification and see related details. If the sender asked a confirmation question, the question appears here. If the notification includes an attachment, it can be viewed from this window.

interactive voice alert—Notifications sent by voice over the phone that enable the recipient to reply to a confirmation question using the same phone. After the notification is delivered verbally, the recipient uses a menu to respond.

mail adapter —A component of Notification Services used to deliver e-mail notifications. When the OAA Repository is used as the back-end database, this is the bizdoc adapter.

notification —An informational notice or message from a sender to a recipient, multiple individual recipients, or a group of recipients. A notification may or may not contain a confirmation question, requesting a yes/no reply from the recipient.

Notification Adapter tab —A tab on the **Admin Settings** window of the Peregrine Portal. It is used by the Notification Services administrator to specify the alias for the back-end database used in Notification Services.

notification priority—The priority for a notification that is determined by the sender (either low, normal, or high). The priority is one of the factors that determines the device used to send a notification, based on the recipient's preferences. Users can specify devices by notification priority.

Notification Services inbox—The inbox where users can check for incoming notifications and view summary status information about these notifications. A copy of each notification is always sent to the recipient's inbox in addition to being sent to the preferred device.

Notification Services outbox—The outbox where users can see the status of outgoing notifications and view summary information about these notifications. The outbox can also be used to delete outgoing notifications.

Notification Services tab—A tab on the Admin Settings window of the Peregrine Portal. It is used by the Notification Services administrator to configure the general Notification Services settings, escalation/cascading settings, and settings for third-party message service providers.

OAA—See Peregrine Open Application Architecture.

OAA Repository—A database interface that runs on top of standard DBMSs, for example, Oracle. Notification Services uses the OAA Repository as the back-end database for Notification Services. All notifications that are transmitted by Notification Services are stored in the back-end database. The back-end database is also used to retrieve contact information and the devices that are set up for that contact and to store user preferences.

off hours—A period indicated by Notification Services users when they are out of the office on a scheduled work day. Users can specify device preferences for notification delivery during off hours, using the Off Hours Preferences window. These preferences can vary by notification priority (low, normal, and high).

Outgoing Notification Details window—The window used to see detailed information and status for an outgoing notification. If you asked a confirmation question, the question appears here. If the notification includes attachments, they can be viewed from this window. Outgoing notifications can be deleted from this window.

Peregrine OAA—See Peregrine Open Application Architecture

Peregrine Open Application Architecture—The Peregrine application development and integration platform. This architecture was formerly known as Get-It Base.

Peregrine Portal —The screen within the Peregrine Open Application Architecture used to access individual Peregrine applications.

polling—See Script polling.

POP3 —A mail protocol that OAA supports. OAA can support communicating with inbound e-mail servers that use the POP3 protocol or the IMAP protocol.

preferences — user-defined preferences that specify which devices should be used within Notification Services to deliver notifications to them, based on a work schedule they create. This work schedule designates work days and includes check boxes that users select to indicate that they are out of the office for an extended period. It also includes a check box that users can select to indicate that they are unavailable for notifications. After setting up their work schedules, users set up their device preferences for work hours, off hours, and extended out periods.

Device preferences can be specified for three levels of notification priority (low, normal, and high). Users can designate preferences only for the devices that have been configured for them, up to a maximum of eight devices. They can also specify that a certain device never be used to send notifications for a given time period or notification priority. When the sender uses **Default** as the device to send a notification, the recipient's device preferences are implemented. If a user specifies preferences, skipping preference numbers, the preferred devices are still used in sequence. For example, if a user sets preferences 1 and 3 but not preference 2, preference 1 is used first, then preference 3. This prevents problems when users remove devices from their preferences without renumbering the remaining devices.

priority —See Notification priority.

question —See Confirmation question.

recipient—The intended receiver of a notification. The recipient can be an individual, multiple individuals, or a group.

replies—In the Notification Services inbox, this is the number of replies received to confirmation questions you asked, expressed as a fraction of the number of replies expected from all recipients for a given notification. For example, 0/1 indicates that no replies have been received and that one reply is expected.

rome—In the Administration Settings, **rome** is the alias for the OAA Repository. This alias corresponds to the bizdoc adapter. On the **Admin Settings** window, **rome** is a tab that Notification Services administrators use to set up the user name, password, and URL for the Oracle database when the OAA Repository is used as the back-end database for Notification Services.

script polling—Script polling is required for notifications to be delivered. It runs the delivery engine every minute, delivering new notifications and updating the status of existing notifications. Script polling is enabled by the Notification Services administrator on the **Common** tab of the **Admin Settings** window.

Send Notification window—The window used to create, address, and send a notification. This window also enables attaching documents to a notification and viewing the attachments.

Short Message Service—(SMS) A protocol used in cell phone text messaging. Notification Services uses this SMS protocol for notifications sent through third-party message service providers.

SMS—See Short Message Service.

TelAlert—A message service used to deliver a Notification Services notification to phones, cell phones, pagers, and fax machines. The third-party vendor for this product is Telamon.

time zone—The time zone specified by users for their work schedules.

unavailable for notifications—Users can indicate that they are unavailable for receiving notifications. In this case, the user receives a copy of notifications in the Notification Services inbox and notifications are sent immediately to the backup user, if one is specified.

voice alert—A voice alert sends a text message by voice over the phone. Unlike interactive voice alerts, these alerts do not enable the recipient to reply using the phone that delivered the message.

Vytek Wireless—The third-party vendor for the TelAlert product which can be used to deliver a Notification Services notification to phones, cell phones, pagers, and fax machines.

Web Application tab—A tab on the **Admin Settings** window of the Peregrine Portal. It is used by the Notification Services administrator to specify the alias for the back-end database.

Welcome window—The window in the Peregrine Portal that appears after you log in.

work hours—A period indicated by Notification Services users when they are working on scheduled work days. Users can specify device preferences for notification delivery during work hours, using the **Work Hours Preferences** window. These preferences can vary by notification priority (low, normal, and high).

work schedule—A schedule that users specify, indicating their work hours and off hours. There is a check box on the Schedule window that users select to indicate that they are out of the office for an extended period and a check box to indicate that they are unavailable to receive notifications. Notification Services uses the work schedule in conjunction with a user's device preferences to determine the device to use when a sender specifies the default device in a notification.

XPath—A language for addressing parts of an XML document. In Notification Services, you can specify an XPath replacement variable to indicate data from one of the supported back-end systems.

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