

Peregrine

Notification Services 2.2.3

Quick Start Guide

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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.

The 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 Notification Services. 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 access this .pdf of the *Notification Services Quick Start Guide*, 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:

- Notification Services 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.
- Notification Services 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.
<i>Italics</i>	New terms appear in <i>italics</i> when they are first introduced. Variables and values that you must provide appear in <i>italics</i> . The exception to this is in Appendix A, <i>API Methods</i> , 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

Organization of the Guide

The Quick Start Guide contains the following chapters and appendixes:

Chapter 1, *Introduction on page 15*, provides a product overview and explanations of key concepts such as cascading notifications to devices and escalation of notifications to backup users. It also explains the concept of device preferences for notification delivery. This chapter lists system features.

Chapter 2, *Installation on page 23*, refers readers to the source of installation information. It also refers readers to the source of information for configuring Notification Services in this Quick Start Guide: (Chapter 4, *Notification Services Administration*).

Chapter 3, *Using Notification Services on page 25*, explains concepts, provides step-by-step instructions, and describes tasks that you can complete in Notification Services.

Chapter 4, *Notification Services Administration on page 51*, provides the information that administrators need to configure and administer Notification Services.

Chapter 5, *Maintaining Notification Templates and Plug-ins on page 81*, describes how to modify the default notification templates and how to register and initialize the Notification Services plug-ins for your Peregrine application.

Appendix A, *Making API Calls* on page 97, 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 111. This glossary defines terminology and explains concepts used in conjunction with Notification Services.

Contacting Customer Support

Support for Notification Services and other Peregrine products is available through Peregrine Systems Customer Support. Information about local support offices is available through the following contacts:

Peregrine's CenterPoint Web Site

Current details of local support offices are available through the following main contacts or through Peregrine's CenterPoint Web site at:

<http://support.peregrine.com>

After logging in with your login and password, from **Contents** on the left side of the page, click **Whom Do I Call?** to display the **Peregrine Worldwide Contact Information**.

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For support contact information for your country and product, see Peregrine's CenterPoint Web site at:

<http://support.peregrine.com>

You can also contact the Corporate Headquarters using the previous information.

Documentation Web site

For a complete listing of the current documentation, see the Product Documentation pages on the Peregrine Systems, Inc. Customer Support Web site at:

<http://support.peregrine.com>

You need the current user name and password to access this Web page.

For copies of manuals, you can download .pdf files of the documentation using the Adobe Acrobat Reader (also available on the Web site). Additionally, you can order printed copies of the documentation through your Peregrine Systems sales representative.

1 Introduction

CHAPTER

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) and includes a Get-It user interface and an open API for application integrations. It uses the OAA Repository as its back-end database.

Notification Services supports voice notifications through the services of third-party messaging products. For two-way devices, it enables users to send yes/no responses to questions asked in notifications. With Notification Services, users can check the delivery status of their notifications as well as recipients' responses. Notification Services supports sending 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 Vytex 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 installed with the Peregrine OAA platform. See the Installation Guide for your integrating application for installation instructions.

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

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** window of the Peregrine Portal.

3 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 26.)

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

Delete	Sent	Subject	Question	Device	Status	Replies
<input type="checkbox"/>	4/14/02 9:25 PM	test message	Did you receive the test message?	Default	Completed	1/1
<input type="checkbox"/>	4/15/02 10:01 AM	Approval needed Request #90435	Do you approve?	Default	Terminated	0/1
<input type="checkbox"/>	4/15/02 1:36 PM	Information needed		Default	Terminated	
<input type="checkbox"/>	4/15/02 3:12 PM	Need your advice	Do you want me to start working on the new project?	Default	Awaiting Response	0/1

- 2 Review the incoming notifications.

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

From - The sender.

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

Subject - The subject line of the notification.

Question - A confirmation 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 by the devices 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.

The screenshot shows the 'Incoming Notification Details' window in the Peregrine Portal. The window title is 'Project.notificationsservices.notificationsservices.Inbox.detailNotice'. The user is identified as 'lcwolse'. The notification details are as follows:

All time values displayed in **Eastern Standard (Indiana)** time zone. [Click to change time zone.](#)

Header

Sender Name: Leigh Ammons
Priority: Normal
Device: Default
Status: Completed
Sent: 4/16/02 10:21 AM
Subject: Package for you

Content

There is a package addressed to you in the mail room.

Question: Can you pick it up?
Reply:

Attachments:

Recipients

Name	Current Device	Status	Answer	Error
Lea Wolseley	Work Phone	Completed	Yes	Email: sendEmail(): Unexpected error - Insufficient data to send email

Buttons: Forward, Go Back, Delete

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](#)

respond 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, type Reply: Comments= followed by your comments. Do not change the subject line. Delete the original text from the sender, and send the e-mail.

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

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 Vytex 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.

Last	First
Admin	System
Kellem	Marc
Wolsley	Lea
Jacobs	John
Brown	Robert
Ammons	Leigh
Mason	Scott
Test	Jack
user	test

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: <ul style="list-style-type: none"> ■ 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 .
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.

The screenshot shows the 'Send Results' window in the Peregrine Portal. The window title is 'Project:notificationsservices.notificationsservices.SendNotice.resultForm'. The user is identified as 'iammons'. The notification details are as follows:

- Header:**
 - Sender Name: Leigh Ammons
 - Priority: Normal
 - Device: Default
 - Status: Waiting
 - Sent: 4/15/02 3:12 PM
 - Subject: Need your advice
- Content:** 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?
- Attachments:** One attachment is visible.
- Recipients:**

Name	Current Device	Status	Answer	Error
Lea Wolsley		Waiting		

At the bottom of the window, there are two buttons: 'Go Back' and 'Home'.

- 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.

The screenshot shows the 'Check Outgoing Notifications' window in the Peregrine Portal. The window title is 'Project.notificationservices.notificationservices_Outbox.checkStatus'. The left pane contains a navigation menu with options like 'Home', 'My Home Page', 'Add or remove content', 'Change layout', 'Change theme', 'Change time zone', 'Notification Services', 'Check Inbox', 'Check Outbox', 'Send Notification', 'Preferences', and 'Help'. The main area displays a table of notifications:

Delete	Sent	Subject	Question	Device	Status	Replies
<input type="checkbox"/>	4/14/02 9:05 PM	Test message	Did you receive this test message?	Default	Waiting	0/1
<input type="checkbox"/>	4/16/02 10:41 AM	Service Request	Can you take this request?	Email	Terminated	0/1

Below the table are two buttons: 'Delete Selection' and 'Select All'.

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.

The screenshot shows the 'Outgoing Notification Details' window in the Peregrine Portal. The window title is 'Project.notificationservices.notificationservices.Outbox.detailNotice'. The user is identified as 'User: lammons'. The notification details are as follows:

Header	
Sender Name:	Leigh Ammons
Priority:	Normal
Device:	Default
Status:	Completed
Sent:	4/16/02 10:21 AM
Subject:	Package for you

The content of the notification is: 'There is a package addressed to you in the mail room.'

Question: Can you pick it up?

Attachments: [Dropdown menu]

Recipients:

Name	Current Device	Status	Answer	Error
Lea Wolzeley	Work Phone	Completed	Yes	Email: sendEmail(): Unexpected error - Insufficient data to send email

Buttons: Remove Notification, Go Back

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 40.

Project.notification.services.notification.services.Outbox_detailNotice

All time values displayed in **Eastern Standard (Indiana)** time zone. [Click to change time zone.](#)

Header

Sender Name: Leigh Ammons
Priority: Normal
Device: Default
Status: Terminated
Sent: 4/15/02 1:36 PM
Subject: Information needed

Content

More information is needed before I can process request #87905. Please contact me to provide the information.

Question:

Attachments:

Recipients

Name	Current Device	Status	Answer Error
Lea Wolzelay	Email	Terminated	Email: sendEmail(): Unexpected error - Insufficient data to send email

Remove Notification Redeliver Notification Go Back

- 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 40.

The screenshot shows the 'Incoming Notification Details' page in the Peregrine Portal. The page is titled 'Project.notificationservices.notificationservices.Inbox.detailNotice'. It displays the following information:

- Header:**
 - Sender Name: Robert Brown
 - Priority: Normal
 - Device: Default
 - Status: Terminated
 - Sent: 4/15/02 10:01 AM
 - Subject: Approval needed Request #90435
- Content:** Need your approval to purchase scanning equipment for \$750.
- Question:** Do you approve?
- Reply:** [Dropdown menu]
- Attachments:** [Dropdown menu]
- Recipients:**

Name	Current Device	Status	Answer Error
Lea Wolseley	Email	Terminated	Email: sendEmail(): Unexpected error - Insufficient data to send email

At the bottom of the page, there are five buttons: Submit, Forward, Go Back, Delete, and Redeliver Notification.

- 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.

The screenshot shows the 'Schedule' window in the Peregrine Portal. The window has a header with 'Peregrine Portal' and 'User: fczwolzel'. Below the header is a navigation bar with 'Home' and 'Project.notificationsservices.notificationsservices.Preferences.Schedule'. The main content area is titled 'Schedule' and contains a 'Work Schedule' table. The table has columns for days of the week, checkboxes, 'From' time, and 'To' time. The 'From' and 'To' times are set to 8:30 AM and 5:30 PM respectively for Monday through Saturday. Below the table are checkboxes for 'Extended out' and 'Unavailable for notifications', a 'Time zone' dropdown menu set to '(GMT-05:00) Eastern Standard (Indiana)', a 'Backup User' field with a magnifying glass icon, and a 'Save' button.

Day	Check Box	From	To
Monday:	<input checked="" type="checkbox"/>	8 : 30 AM	5 : 30 PM
Tuesday:	<input checked="" type="checkbox"/>	8 : 30 AM	5 : 30 PM
Wednesday:	<input checked="" type="checkbox"/>	8 : 30 AM	5 : 30 PM
Thursday:	<input checked="" type="checkbox"/>	8 : 30 AM	5 : 30 PM
Friday:	<input checked="" type="checkbox"/>	8 : 30 AM	5 : 30 PM
Saturday:	<input checked="" type="checkbox"/>	8 : 30 AM	5 : 30 PM
Sunday:	<input type="checkbox"/>	8 : 30 AM	5 : 30 PM

Extended out
 Unavailable for notifications
 Time zone: (GMT-05:00) Eastern Standard (Indiana)
 Backup User:
 Save

- 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 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.

The screenshot shows the 'Work Hours Preferences' window in the Peregrine Portal. The window title is 'Project.notification.services.notification.services.Preferences.WorkHours'. The user is identified as 'User : lcowse1'. The window contains a table for configuring notification preferences for different devices during work hours. The table has columns for Device, Low, Normal, and High priority. The 'Email' device is currently set to Preference 1 for Low, Preference 1 for Normal, and Preference 2 for High. 'Home Phone' is set to Never Use for all three. 'Work Phone' is set to Preference 2 for Low and Normal, and Preference 1 for High. A 'Save' button is located below the table.

Device	Low	Normal	High
Email	Preference 1	Preference 1	Preference 2
Home Phone	Never Use	Never Use	Never Use
Work Phone	Preference 2	Preference 2	Preference 1

Save

- 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 3 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.

The screenshot shows the 'Off Hours Preferences' page in the Peregrine Portal. The page has a navigation menu on the left and a main content area with tabs for 'Schedule', 'Work Hours', 'Off Hours', and 'Extended Out'. The 'Off Hours' tab is selected, and a table allows users to set notification preferences for 'Email', 'Home Phone', and 'Work Phone' across three categories: 'Low', 'Normal', and 'High'. A 'Save' button is located below the table.

Device	Low	Normal	High
Email	Preference 1	Preference 1	Preference 2
Home Phone	Preference 2	Preference 2	Preference 1
Work Phone	Never Use	Never Use	Never Use

Save

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.

The screenshot shows the 'Extended Out Preferences' page in the Peregrine Portal. The page has a navigation menu on the left with 'Preferences' selected. The main content area has tabs for 'Schedule', 'Work Hours', 'Off Hours', and 'Extended Out'. The 'Extended Out' tab is active, displaying a table with columns for 'Device', 'Low', 'Normal', and 'High'. The 'Home Phone' row has 'Never Use' selected in the 'High' column. A 'Save' button is located below the table.

Device	Low	Normal	High
Email	Preference 1	Preference 1	Preference 1
Home Phone	Never Use	Never Use	Never Use
Work Phone	Never Use	Never Use	Never Use

Save

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.

4

CHAPTER

Notification Services Administration

Administration Overview

The administrator is responsible for configuring Notification Services after it is installed.

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 55 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.

As a Notification Services administrator, you need to configure Notification Services to store its data in the OAA Repository. The steps for accomplishing this are covered in the following topics: *Configuring the Notification Adapter Settings* on page 63 and *Configuring the Web Application Settings* on page 65.

You also need to build database tables in the OAA Repository. See *Building Database Tables in OAA* on page 52.

Building Database Tables

This section provides instructions for building database tables in the back-end database. As a Notification Services administrator, you need to build the database tables *before* you begin to configure Notification Services.

Building Database Tables in OAA

Use the procedures in this section to prepare for building database tables and to build them.

Before You Build Database Tables in the OAA Repository

The OAA Repository is a database interface that runs on top of standard DBMSs such as Oracle. Before you build database tables in the OAA Repository, you need to add a system variable and the related variable value to your OAA server. You also need to use the **rome** tab of the **Admin Settings** window to set up the user name, password, and URL for your Oracle database.

Adding the JAVA_HOME System Variable

To add a required system variable and value to your OAA server:

- 1 Verify that the system-level environment variable `JAVA_HOME` is set to the root of your JDK directory. For example:

```
c:\jdk1.3.1_01
```

This is the default directory where the JDK is installed.

- 2 Go to the next procedure to specify the URL and other information for using Oracle.

Specifying Oracle Database Information

To specify the URL, user name, and password needed to use Oracle with the OAA Repository:

- 1 In the **Welcome** window in the Peregrine Portal, click **Admin**.

The Control Panel window appears.

Project.common.admin.control.start

Here is a list of the adapters currently registered in this server. If necessary, you may also reset the server and all its connections.

Target	Adapter	Status
rome	com.peregrine.oaa.adapter.bizdoc.BizDocAdapter	connected
replication	com.peregrine.oaa.adapter.bizdoc.BizDocAdapter	connected
mail	com.peregrine.oaa.adapter.mail.MailAdapter	connected
portalDB	com.peregrine.oaa.adapter.bizdoc.BizDocAdapter	connected
notificationDB	com.peregrine.oaa.adapter.bizdoc.BizDocAdapter	connected

Reset Server

2 In the left pane, click **Settings**.

The **Admin Settings** window appears.

3 Click the **rome** tab.

Note: If the **rome** tab does not appear, you must specify **rome** in the **Alias** for box on one of these three tabs, then save your changes and reset the server:

- **Notification Adapter** tab
- **Web Application** tab
- **Portal DB** tab

To reset the server, click **Control Panel** under the **Admin** menu in the left pane, then click **Reset Server**.

4 Scroll down to the **Database URL** box, and then type the URL to your Oracle database.

Use the following syntax for the URL:

```
jdbc:oracle:oc8i:@oracleServiceName
```

where *oracleServiceName* is the name of the service you selected when you configured Oracle on the OAA server.

5 In the **Database User Name** box, type the user name for accessing the Oracle database.

- 6 In the **Database User Password** box, type the password for the database user name.
- 7 Click **Save**, then reset the server.
You have specified the URL, user name, and password that are needed to use Oracle with the OAA Repository.

Procedure for Building Database Tables in the OAA Repository

During the installation of your integrating application, table definitions were copied onto your system. These definitions must be deployed to build the database tables for Notification Services. This process also loads enumerated data values, creates an administrative user, and loads initial currency conversion values.

The table definitions are deployed to your Oracle database using a batch file called `tblcreate`.

To build Notification Services tables in the OAA Repository:

- 1 Open a DOS command prompt window.
You may want to configure your DOS window to buffer the maximum number of lines so that you can scroll back up to see the script output.
- 2 Change directories to:
`Applicationserver \webapps\oaa\WEB-INF\etc`
where *Applicationserver* is the location where your application server is installed. For example, if you are using Tomcat as your application server:
`C:\jakarta-tomcat-3.2.4`
This is the directory in which the `tblcreate` files are located.
- 3 Type `tblcreate`, and then press **Enter**.
The `tblcreate` script builds the database tables automatically.
After running the `tblcreate` script the first time, go to the following procedure for troubleshooting (*Troubleshooting the tblcreate Build*). After running `tblcreate` successfully with no error messages, you are ready to begin configuring Notification Services.

Note: If you are using the `tblcreate` script for the first time, you need to edit the `tblcreate.properties` file to set the values for your presentation directory. The file is located in the directory specified in step 2. See the table below for the values to enter.

Variable	Default Value	Set this to...
<code>getit.presentation=</code>	<code>g:</code>	The OAA deployment path. For example: <code>c:/...../webapps/oa</code>
<code>oracle.lib=</code>	<code>o:/jdbc/lib</code>	The full local path to your Oracle lib directory. For example: <code>C:/Oracle/Ora81/jdbc/lib</code>

Troubleshooting the `tblcreate` Build

When the build process is complete, review the output and verify that SQL statements exist. If there are error messages indicating that deployment of the `tblcreate` files was not successful, verify that your database connection strings are correct, and then rerun `tblcreate`.

Configuration Overview

Configuration for Notification Services is performed in the Peregrine Portal. Your responsibility as a Notification Services administrator involves configuring the administration settings in the **Admin Settings** window of the Peregrine Portal. The **Admin Settings** window includes the following tabs which you use to configure Notification Services.

Use this tab	To
E-mail	Configure the inbound and outbound e-mail servers.
Notification Adapter	Set the alias for the back-end database.
Common	<ul style="list-style-type: none"> ■ 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.

Use this tab	To
Web Application	Set the alias for the back-end database.
rome	Set up the user name, password, and URL for your Oracle database if you are using the OAA Repository as your back-end database.
Notification Services	<ul style="list-style-type: none"> ■ 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.

Your responsibility for configuring Notification Services also involves setting up users (contact IDs) and devices for them in the OAA Repository. The devices are used to deliver notifications to the users. Instructions for setting up devices are included in this chapter. For information on setting up contact IDs, refer to your Peregrine Portal documentation.

This chapter explains the items of information that you need before you begin configuring Notification Services. It also provides procedures for all of the configuration tasks.

Configuration Tasks

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

Before You Begin Configuring 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: Vytex 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 Vytex 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.

Logging in as an Administrator

For instructions on logging in to the Peregrine Portal, refer to the documentation for your integrating application.

Resetting the Server

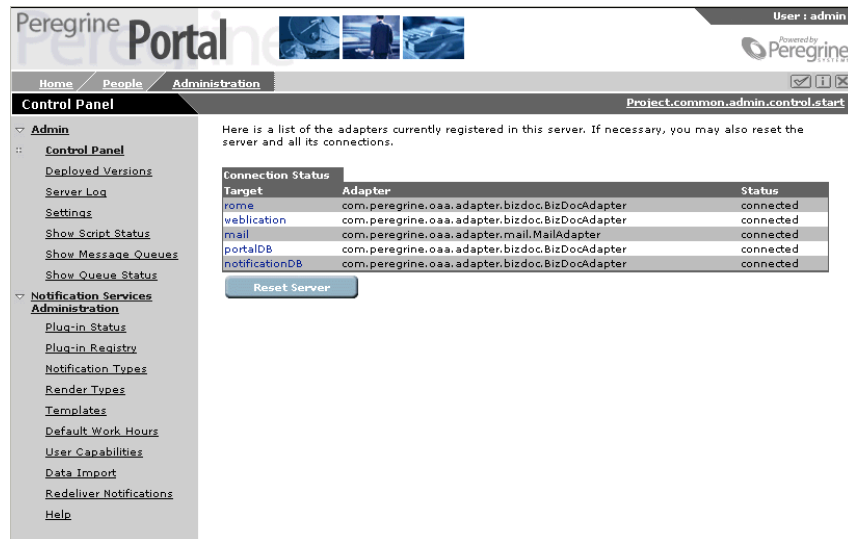
Reset the Notification Services server after saving your configuration changes so your changes will take effect.

To reset the server:

- 1 In the Welcome window, click the Admin button.



The Control Panel window appears.



- 2 Click Reset Server.

The following message appears:

The Archway servlet and its Adapter connections have been reset successfully. You have configured the settings for the **E-Mail Services** tab of the **Admin Settings** window.

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 Under the Navigation Menu, click **Admin**.
- 3 Under the **Admin** menu in the left pane, click **Settings**.

The Admin Settings window appears.

The screenshot shows the Peregrine Portal Admin Settings window. The user is logged in as 'admin'. The navigation menu on the left shows 'Admin' expanded to 'Settings'. The main content area shows the 'Common' settings tab with the following fields and descriptions:

Field	Description
Attached files' path:	The path to the directory where file attachments are saved prior to being entered in the data store.
Maximum attached file size:	Limits the size of files that may be submitted as attachments. A value of 0 indicates that no limit is set. This setting is a default that can be overridden by individual attachment fields.
Common Backend:	Adapter target name used to support common user operations.
Currencies:	Semicolon separated list of ISO-4217 currency codes that define which currencies will be used in a given installation. The first code defines the default currency to use when a currency type is not specified. For example, 'USD;EUR' defines US Dollars and European Euros as supported currencies.
Application path:	Directory location of the Peregrine Portal Web Applications.
Script timeout:	This feature is intended to provide protection against runaway tasks by limiting the number of seconds that a script can execute. The default is 0, meaning this feature is disabled. This feature should be enabled with extreme caution. It is recommended that no setting less than 120 be used. Setting too low a value will cause foreground or background processes which...

Configuring E-mail Settings

To configure the settings on the E-mail tab:

- 1 In the Admin Settings window, click the E-mail tab.

The screenshot shows the 'Admin Settings' window in the Peregrine Portal. The 'E-mail' tab is selected, displaying a configuration form for the inbound mail server. The form includes the following fields and descriptions:

Field Name	Description
Inbound mail host:	The full name or IP address of the machine hosting the inbound mail server. If this field is empty, then the status of the mail adapter will indicate the status of the outbound mail server connection. Click for default: [mailhost]
Inbound mail protocol:	The protocol used by the inbound mail server, which is either imap or pop3. Click for default: [imap]
Inbound mail user ID:	The user ID used to access the inbound mail server. Click for default: []
Inbound mail password:	The user password used to access the inbound mail server. Click for default: [******]
Mail sender address:	This address is used as the default sender address in outbound email messages. Click for default: []
Legal domains:	Enter a semicolon-separated list of mail domains that the Peregrine Portal may correspond with. Only users with an email address in these domains are allowed to complete online self-registration.
Anonymous user:	Anonymous user name used when an unknown user attempts to communicate with the mail adapter
Anonymous password:	Anonymous user password for the mail adapter
Outbound mail host:	The full name or IP address of the machine hosting the outbound mail server. Click for default: [mailhost]
Outbound mail user ID:	The user ID used to access the outbound mail server.
Outbound mail password:	The user password used to access the outbound mail server.
Adapter:	Full class path for adapter associated with this format

- 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 used by Notification Services to receive recipients' 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**.

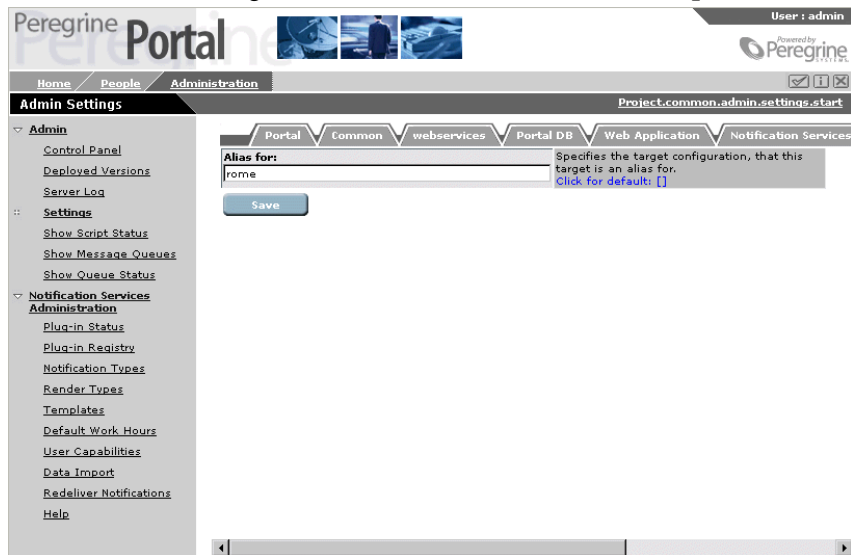
The following message appears:

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 Adapter Settings

To configure the settings on the Notification Adapter tab:

- 1 In the Admin Settings window, click the Notification Adapter tab.



- 2 In the Alias for box, type rome.

This is the target configuration for which this target is as an alias.

- 3 Click Save.

The Control Panel appears, displaying the following message:

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

- 4 Click Reset Server.

The following message appears:

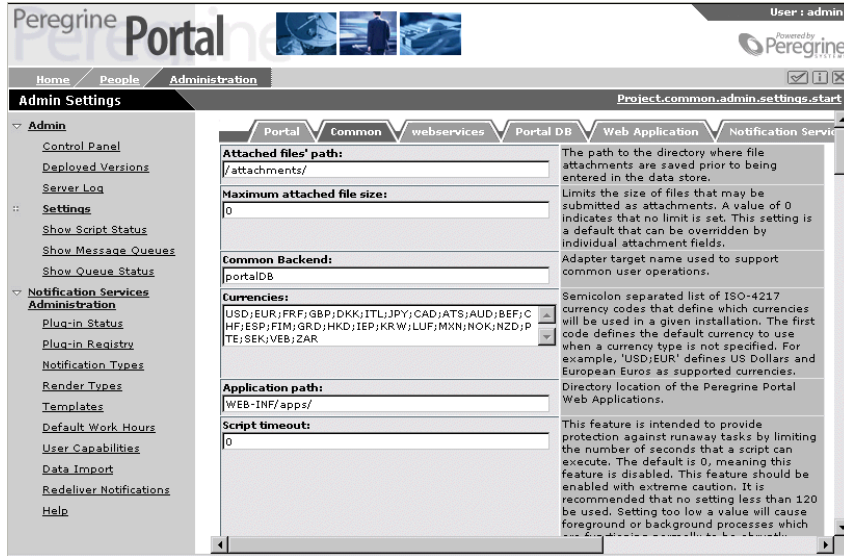
The Archway servlet and its Adapter connections have been reset successfully. You have configured the settings on the **Notification Adapter** tab of the Admin Settings window.

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.

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 Scroll down to **Log domains** under the **Logging** section. If you want to enable debug logging for Notification Services, then append the following domain name to the current list of domain names in that box:

notificationservices

Be sure to separate the domain names with a semi-colon.

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

- 4 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.

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 **Common** tab of the **Admin Settings** window.

Configuring the Web Application Settings

To configure the Web Application settings:

1 In the Admin Settings window, click the Web Application tab.



2 In the Alias for box, type rome.

3 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.

4 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 **Web Application** tab of the **Admin Settings** window.

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 window, click the Notification Services tab.

The screenshot shows the 'Admin Settings' window for 'Peregrine Portal'. The 'Notification Services Administration' tab is selected. The settings are as follows:

Field	Description
Type Filter:	A semicolon delimited list of notification types. Notification's that mat
Targets:	notificationDB;mail Specifies a semicolon delimited list of target aliases used by this pac
Delivery Options	
Expiration:	-1 Expire notifications and thus remove them from database after the s;
Default callback phone number:	0 This phone number will be used if the sender phone number can not
Max. number of retries:	2 The maximal number of retries to deliver a notification to a recipient b Click for default: [0]
Do retry at (minutes):	1;2;4;8;16;32;64;96;128;160;192;224;256;3 Enter a series of increasingly ordered integers, separated by semicol Click for default:
Third party product:	TelAlert A third party product to deliver voice, numeric pager, and fax notific Click for default: [None]
Escalation / Cascading	
Low time interval:	8 Enter a number of minutes to cascade notifications with low priority fr
Normal time interval:	4 Enter a number of minutes to cascade notifications with normal priorit
High time interval:	2 Enter a number of minutes to cascade notifications with high priority f
Low escalation:	<input checked="" type="radio"/> Yes <input type="radio"/> No Select "Yes" to escalate notifications with low priority to a backup use
Normal escalation:	<input type="radio"/> Yes <input checked="" type="radio"/> No Select "Yes" to escalate notifications with normal priority to a backu

Note: This tab is located at the top right of the Admin Settings window. You may need to scroll to the right to see the 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.
- 3 In the Targets box, leave the default unchanged. This is a semicolon-delimited list of target aliases used by this package.

Your general Notification Services settings on the Notification Services tab are complete. Continue with the next step.

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	<p>Scroll to the bottom of this window, and click Save. Your settings are saved, and the Control Panel window appears.</p> <p>Click Reset Server to reset the Peregrine Portal server and all of its connections.</p> <p>Skip the next two procedures (<i>Configuring EnvoyXpress Settings</i> on page 68 and <i>Configuring TelAlert Settings</i> on page 69). Go to the procedure for <i>Configuring Notification Devices</i> on page 70.</p>

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 the devices for a user, the user sees these devices displayed as preference options on the following windows in Notification Services: **Work Hours Preferences**, **Off Hours Preferences**, and **Extended Out Preferences**.

Note: Each user must have a primary e-mail address and work phone.

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 **Person 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 steps 5 through 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.

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

- 11 In the **Email** box, type the corresponding e-mail address, and then click **Add Item**.
- 12 Repeat steps 9 through 11 for each e-mail device.
- 13 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.
- 14 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.

Other Administration Tasks

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

- Assigning capabilities to users, as described in *Assigning Capabilities to Users* on page 73.
- Maintaining templates, as described in *Maintaining Notification Templates and Plug-ins* on page 81.
- Registering and reloading Notification Services plug-ins for various Peregrine applications, as described in *Maintaining Notification Templates and Plug-ins* on page 81.
- Importing the default Notification Services data, as described in *Importing Notification Services Data* on page 76.
- Setting the default work hours, as described in *Setting the Default Work Hours* on page 79.

- Redelivering terminated notifications, as described in *Redelivering Terminated Notifications* on page 77.

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	Allows the user to...
Notification Services Administration	perform administrative functions (this capability is not available to assign in the wizard).
Notification Services GUI	access Notification Services.
Send Notifications	view the Send Notifications option. The user must also have the Notification Services GUI capability.
Update Preferences	view and update their work schedule and device preferences. The user must also have the Notification Services GUI capability.
View Notifications	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.

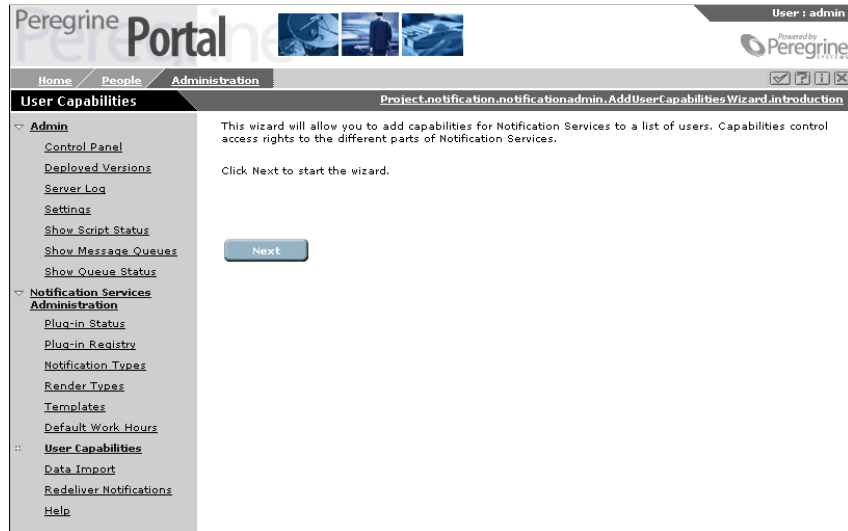
Assigning Capabilities to Lists of Users

Notification Services includes a wizard to help you assign capabilities to a list of users that you select.

To use the wizard to assign capabilities to a list of users:

- 1 In the Admin Settings window, click **Add User Capabilities** under **Notification Services Administration** in the left pane.

The User Capabilities window appears.



- 2 Click Next.

- In the Select Users window, select the check box next to each user you want to include in the group to which you will assign capabilities.

Select	Login Name	Full Name
<input type="checkbox"/>	Admin	Admin, System
<input type="checkbox"/>	mkellem	Kellem, Marc
<input checked="" type="checkbox"/>	lcwolsel	Wolsley, Lea
<input checked="" type="checkbox"/>	jjacobs	Jacobs, John
<input checked="" type="checkbox"/>	rbrown	Brown, Robert
<input checked="" type="checkbox"/>	lammons	Ammons, Leigh
<input type="checkbox"/>	smason	Mason, Scott
<input type="checkbox"/>	jtest	Test, Jack
<input type="checkbox"/>	test	user, test

- Click Next.
- In the Select Capabilities window, select the check box next to each capability right you want to assign to the group of users.

Select	Capability	Title
<input checked="" type="checkbox"/>	oaa.notificationservices.notificationgui	Notification Services GUI
<input checked="" type="checkbox"/>	oaa.notificationservices.sendnotifications	Send Notifications
<input checked="" type="checkbox"/>	oaa.notificationservices.updatepreferences	Update Preferences
<input checked="" type="checkbox"/>	oaa.notificationservices.viewnotifications	View Notifications

Note: You cannot use the wizard to remove a capability from a user. For example, if you use the wizard to assign the View Notifications capability to a user who already has the View Notifications and the Send Notifications capabilities, the wizard will not remove the Send Notifications capability from that user. To remove a capability from a user, see *Assigning Capabilities to Individual Users* on page 73.

- Click Finish.

- 7 The following message appears:
You have completed this wizard.

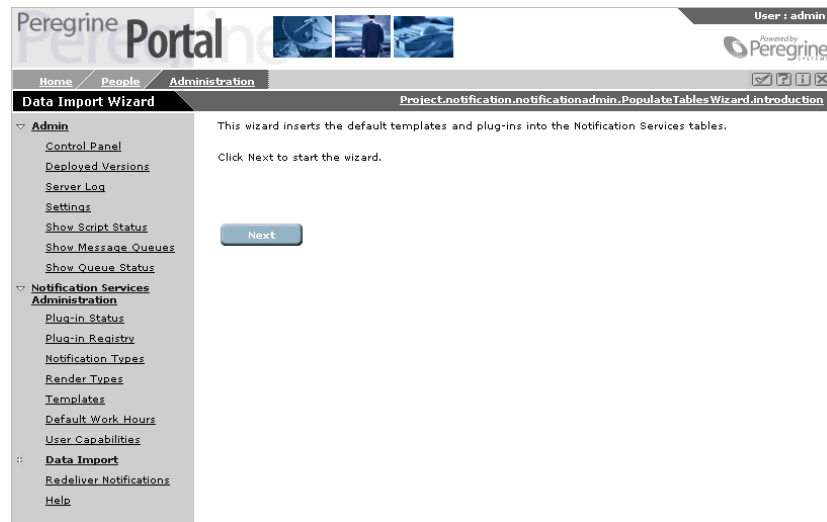
Importing Notification Services Data

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.

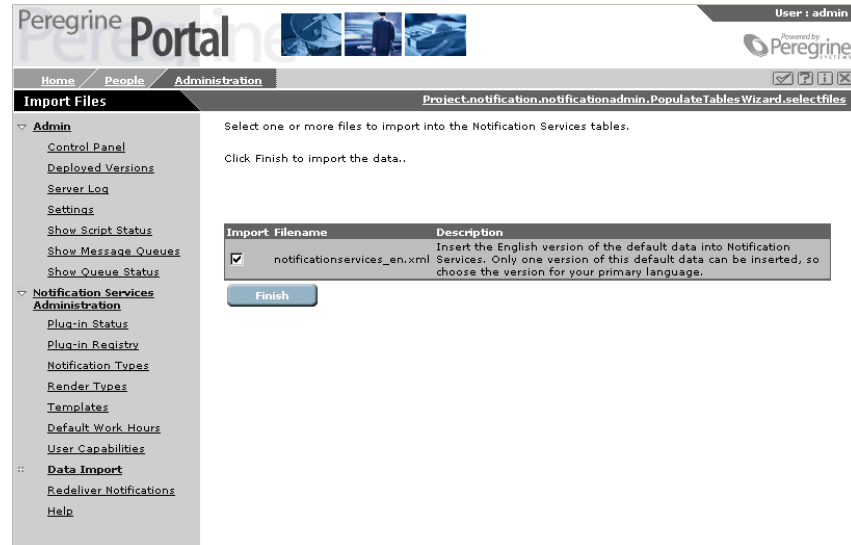
To import data, follow these steps after you complete the configuration tasks described in this chapter:

- 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 the check box next to the files you want to import.

The file you need to import is `notification_services_en.xml`.



5 Click Finish.

Redelivering Terminated Notifications

If Notification Services cannot deliver a notification message after cascading to 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 16.

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.

The screenshot shows the 'Redeliverable Notifications' page in the Peregrine Portal. The page title is 'Redeliverable Notifications' and the breadcrumb is 'Project.notification.notificationadmin.RedeliverNotifications.Candidates'. The page content includes a table of notifications and two buttons: 'Redeliver Selection' and 'Select All'.

Redeliver	Sent	Subject	Question	Device	Status	Replies
<input checked="" type="checkbox"/>	4/15/02 10:01 AM	Approval needed Request #90435	Do you approve?	Default	Terminated	0/1
<input checked="" type="checkbox"/>	4/15/02 10:10 AM	Lea Wolseley: Unreachable		Email	Terminated	
<input checked="" type="checkbox"/>	4/15/02 10:14 AM	Scott Mason: Unreachable		Email	Terminated	
<input type="checkbox"/>	4/15/02 1:14 PM	Lea Wolseley: Unreachable		Email	Terminated	
<input checked="" type="checkbox"/>	4/15/02 1:36 PM	Information needed		Default	Terminated	
<input type="checkbox"/>	4/15/02 1:41 PM	Lea Wolseley: Unreachable		Email	Terminated	

- Click on a notification to view its detail in the Redeliverable Notification Details window, then click Redeliver Notification.

The screenshot shows the 'Redeliverable Notification Details' page in the Peregrine Portal. The page title is 'Redeliverable Notification Details' and the breadcrumb is 'Project.notification.notificationadmin.RedeliverNotifications.DetailCandidate'. The page content includes a header section, a content section, a question section, an attachments section, a recipients section, and a table of recipients.

Header:

Sender Name: Robert Brown
 Priority: Normal
 Device: Default
 Status: Terminated
 Sent: 4/15/02 10:01 AM
 Subject: Approval needed Request #90435

Content:

Need your approval to purchase scanning equipment for \$750.

Question: Do you approve?

Attachments: [Attachment icon]

Recipients:

Name	Current Device	Status	Answer	Error
Lea Wolseley		Terminated	Email: sendEmail(): Unexpected error - Insufficient data to send email	

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.

Setting the Default Work Hours

As described in *Setting Preferences* on page 43, 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**.

Define the default work hours for new users and users that have not defined their work hours.

Click Submit to save your changes.

Work Schedule			
Monday:	<input checked="" type="checkbox"/>	From: 8 : 30 AM	To: 5 : 30 PM
Tuesday:	<input checked="" type="checkbox"/>	From: 8 : 30 AM	To: 5 : 30 PM
Wednesday:	<input checked="" type="checkbox"/>	From: 8 : 30 AM	To: 5 : 30 PM
Thursday:	<input checked="" type="checkbox"/>	From: 8 : 30 AM	To: 5 : 30 PM
Friday:	<input checked="" type="checkbox"/>	From: 8 : 30 AM	To: 5 : 30 PM
Saturday:	<input type="checkbox"/>	From: 8 : 30 AM	To: 5 : 30 PM
Sunday:	<input type="checkbox"/>	From: 8 : 30 AM	To: 5 : 30 PM

Submit

- 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**.

5 | Maintaining Notification Templates and Plug-ins

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 88.

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 86.

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 91.

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 Notification Services as an administrator.
For more information, see *Logging in as an Administrator* on page 58.
- 2 In the Navigation Menu, click **Notification Services Administration**.
- 3 Under **Notification Services Administration** in the left pane, click **Templates**.
- 4 In the **Template Search** window, click **View All** to display the list of templates.

The screenshot shows the Peregrine Portal interface. The top navigation bar includes 'Home', 'People', and 'Administration'. The left sidebar is expanded to show 'Notification Services Administration' with 'Templates' selected. The main content area displays 'Template Search Results' for the project 'notification.notificationadmin.NSTemplate.list'. A table lists the templates with columns for Name, Short Description, Description, Default Template, and Type.

Name	Short Description	Description	Default Template	Type
notificationdefault	Notification default template	This is the default template for Notification Services.	true	notificationdefault
notificationquestiondefault	Notification question template	This will be used when the notification includes a question.	true	notificationquestiondefault
notificationerror	Used when an invalid notification type is specified in the notification.	Notification Error	false	notificationerror

Buttons for 'New Search' and 'New' are located below the table.

Adding a New Template

Unless you are adding a new plug-in, you will not need to add new templates.

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 83.

The **Create New Template** window appears.

The screenshot shows the 'Create New Template' window in the Peregrine Portal. The window has a title bar with 'Peregrine Portal' and 'User: admin'. Below the title bar is a navigation menu with 'Home', 'People', and 'Administration'. The main content area is titled 'Create New Template' and contains a form for 'New Document Details'. The form has the following fields and options:

- Name:** A text input field with a required field indicator (a red circle with a plus sign).
- Short Description:** A text input field.
- Description:** A larger text area for a more detailed description.
- Notification Type:** A dropdown menu with a magnifying glass icon for a look-up function.
- Default Template:** A checkbox.
- Render Texts:** A button labeled '(Add | Lookup)'.
- Submit Changes:** A blue button at the bottom of the form.

- 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.

For this field...	Do this...
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 89 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 83.

The **Template Details** window appears.

The screenshot shows the Peregrine Portal Administration interface. The user is logged in as 'admin'. The navigation menu includes Home, People, and Administration. The current page is 'Template Details' for 'Project.notification.notificationadmin.NSTemplate.detail'. The left sidebar shows a tree view with 'Admin' expanded, containing links for Control Panel, Deployed Versions, Server Log, Settings, Show Script Status, Show Message Queues, Show Queue Status, Notification Services Administration, Plug-in Status, Plug-in Registry, Notification Types, Render Types, Templates, Default Work Hours, User Capabilities, Data Import, Redeliver Notifications, and Help. The main content area is titled 'Document Details' and contains the following information:

- Name:** notificationdefault
- Short Description:** Notification default template
- Description:** This is the default template for Notification Services.
- Notification Type:** notificationdefault
- Default Template:**

Below this is a section for 'Render Texts (4): (Add | Lookup)'. It contains a table with columns 'Remove', 'Text', and 'Subject'. The 'Text' column contains HTML code for the notification template, including placeholders for Notification/URL, Notification/Subject, Notification/Priority, Notification/Timestamp, and Notification/Text.

- 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 89 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.

Peregrine Portal User : admin

Home People Administration Peregrine

Render Type Search Results Project.notification.notificationadmin.RenderTypes.list

Admin

- Control Panel
- Deployed Versions
- Server Log
- Settings
- Show Script Status
- Show Message Queues
- Show Queue Status

Notification Services Administration

- Plug-in Status
- Plug-in Registry
- Notification Types

Render Types

- Templates
- Default Work Hours
- User Capabilities
- Data Import
- Redeliver Notifications
- Help

Please click on any item to view it in detail.

Render Type	Short Description	Description
notificationHtml	Html	Type used for HTML e-mail.
notificationPlainText	Plain Text	Type used by devices that support Plain Text.
notificationSMS	SMS	Notification type for SMS devices. This includes text pager and SMS device.
notificationPhone	Phone	Notification type for all phone devices.

New Search New

- 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.

Peregrine Portal User : admin

Home People Administration Peregrine

Render Type Details Project.notification.notificationadmin.RenderTypes.detail

Admin

- Control Panel
- Deployed Versions
- Server Log
- Settings
- Show Script Status
- Show Message Queues
- Show Queue Status

Notification Services Administration

- Plug-in Status
- Plug-in Registry
- Notification Types

Render Types

- Templates
- Default Work Hours
- User Capabilities
- Data Import
- Redeliver Notifications
- Help

Document Details

Render Type: notificationHtml

Short Description:

Description:

Read Only:

Submit Changes Delete New Return To List

- 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 81.

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 111.

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.

The screenshot shows the 'Add New Render Text' window in the Peregrine Portal. The window title is 'Add New Render Text' and the URL is 'Project.notification.notificationadmin.NSTemplate.subdocumentCreate'. The interface includes a navigation menu on the left with categories like Admin, Notification Services Administration, and Templates. The main area contains a form with fields for 'Render Types' (with a lookup button), 'Subject', 'Question', and 'Text'. There are 'OK' and 'Go Back' buttons at the bottom.

- 2 Click the lookup button next to **Render Type** to specify the render type associated with the render text.

Note: This is a required field.
- 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 91.

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 111.

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.

The screenshot shows the 'Peregrine Portal' interface. The user is logged in as 'admin'. The navigation menu on the left is expanded to 'Notification Services Administration', and 'Plug-in Registry' is selected. The main content area displays the 'Plug-in Search' window. The window title is 'Project.notification.notificationadmin.PlugInRegistry.search'. The search form includes the following elements:

- A header: "Please enter the search criteria and press the Search button."
- Input fields for "Type:", "Class name:", and "Short Description:".
- Buttons for "Search", "View All", and "New".

- 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**.

A Making API Calls

APPENDIX

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 102.

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 99.

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

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/oa/login.jsp`. Replace `login.jsp` with `archway?notification.sendHttpRequest`.

The Notification Services URL is

`http://localhost/oa/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 <i>API Methods</i> on page 99.

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 <i>Valid Methods</i> on page 106 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.
ReplyTo	B	The address the sender should reply to. Unless specified by the sender, the default is the setting in the administration page.

Element	Field Type	Description
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	<p>A collection of recipient documents. For details, see <i>Recipient</i> on page 107. With the OAA Repository as the back-end database, you should specify the unique ID of the recipient. The collection of Recipients will look similar to the following:</p> <pre> <Recipients> <Recipient> <RecipientId/> </Recipient> <Recipient> <RecipientId/> </Recipient> ... </Recipients> </pre>
Groups	U	<p>A collection of group IDs that will receive the notification. 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. The collection of Groups will look similar to the following:</p> <pre> <Groups> <GroupId/> <GroupId/> <GroupId/> ... </Groups> </pre>
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	<p>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:</p> <pre> <BusinessObjects> <rNotificationBusinessObjects> <Id/> <Backend/> <ObjectName/> <ObjectId/> </ rNotificationBusinessObjects> ... </BusinessObjects> </pre>
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
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, separated by commas(.). This field is updated with the old value of CurrentMethod each time a notification is cascaded to a recipient's next device.
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 collection of **Recipients** document that will send the notification to john.doe@company.com and jane.doe@company.com.

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

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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