

Peregrine

Get-Services 4.1.2

Installation Guide

For Windows, AIX, Linux, and Solaris

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About this Guide

Get-Services is an application that provides a web-based interface to Peregrine ServiceCenter®. Get-Services enables users to report problems in their work environment by opening incident tickets in the appropriate back-end system.

This book provides step-by-step instructions for installing Get-Services. This guide enables you to:

- Install the Peregrine OAA Platform and Get-Services.
- Configure Get-Services for ServiceCenter.

Book audience

This guide is for Get-Services administrators who configure and maintain the application. To use this guide effectively, you need to have knowledge of the following:

- XML and ECMAScript (or JScript/JavaScript)
- Operating guides, reference manuals, and other documentation for your PC hardware and operating system
- ServiceCenter administration and functionality

Related documentation

Refer to the following documentation for additional information:

- *Get-Services Administration Guide* describes the Peregrine OAA platform and Get-Services administration.
- *Get-Services Release Notes* covers any late breaking documentation or known issues with Get-Services. These are constantly updated and posted to the Customer Support web site. See *Contacting customer support* on page 12 for details on accessing the Customer Support website.

Associated applications

This guide does not contain information about products that may be used with Get-Services, such as Peregrine OAA, ServiceCenter, or Password Management. Refer to the appropriate product documentation for information about installing, configuring, and using these associated applications.

Note: ServiceCenter must be installed and configured before you can install and configure Get-Services. Peregrine OAA installs with Get-Services, and only the installation of Peregrine OAA for Get-Services is included in this guide.

Terminology

The terminology used in this guide and in the Get-Services interface is based on ServiceCenter 4.x and 5.x.

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 . The names of buttons, menus, and menu options also appear in bold . |
| <i>Italics</i> | Variables and values that you must provide appear in <i>italics</i> . New terms also appear in <i>italics</i> . |
| Monospace | Code or script examples, output, and system messages appear in a monospace font. <pre>var msgTicket = new Message("Problem"); ... msgTicket.set("_event", "epmc");</pre> <p>An ellipsis (...) is used to indicate that portions of a script have been omitted because they are not needed for the current topic. Samples of code are not entire files, but they are representative of the information discussed in a particular section.</p> |
| Sans Serif | Filenames, such as login.asp , appear in a sans serif font. |

Special elements

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

| Element | Usage |
|-------------------|----------------------------------------------------------------|
| Important: | Information that is required to complete a task |
| Note: | Information that is of general interest |
| Tip: | Information that can make a task easier or faster |
| Warning: | Information that is needed when there is a risk of losing data |

Organization of the guide

The following table shows you where in this guide to find the information you need.

| This section | Provides information about |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <i>Chapter 1, Get-Services Installation Overview</i> | Installation requirements, types of installations, and back-end databases. |
| <i>Chapter 2, Installing on Windows</i> | Installing and configuring application servers and Web servers on a Windows operating system. |
| <i>Chapter 3, Installing on AIX, Linux, or Solaris</i> | Installing and configuring application servers and Web servers on a Unix operating system. |
| <i>Chapter 4, Load Balancing</i> | Creating and configuring multiple instances of servers. |
| <i>Chapter 5, ServiceCenter Administration</i> | Unloading files and configuring ServiceCenter to work with Get-Services. |
| <i>Chapter 6, Configuring the Adapters</i> | Configuring the Get-Services Admin module for ServiceCenter. |
| <i>Chapter 7, Troubleshooting</i> | Troubleshooting installation problems with Apache Web server, Tomcat, OAA, and ServiceCenter. |

Contacting customer support

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

Customer Support

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

To contact customer support:

- 1 In a browser, navigate to <http://support.peregrine.com>
- 2 Log in with your user name and password.
- 3 Follow the directions on the site to find the information you need.

The KnowledgeBase contains informational articles about all categories of Peregrine products. If the KnowledgeBase does not contain an article that addresses your concerns, you can search for information by product; search discussion forums; and search for product downloads.

Documentation web site

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

To view the document listing:

- 1 In a browser, navigate to <http://support.peregrine.com>.
- 2 Log in with your login user name and password.
- 3 Click either **Documentation** or **Release Notes** at the top of the page.
- 4 Click the Get-Services link.
- 5 Click a product version link to display a list of documents that are available for that version of Get-Services.
- 6 Documents may be available in multiple languages. Click the Download button to download the PDF file in the language you prefer.

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

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

Education Services web site

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

<http://www.peregrine.com/education>

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

1 Get-Services Installation Overview

CHAPTER

This chapter covers the following topics for Get-Services:

- *Installation requirements* on page 16
- *Types of installations* on page 16
- *Back-end systems* on page 17

Installation requirements

This section outlines the recommended minimum hardware requirements for proper installation and configuration of Get-Services. Before beginning installation, ensure that you have the following.

| Component | for Windows | for Unix |
|------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| System Processor | ■ Pentium, 400 MHz or faster | ■ Linux: Pentium, 400 MHz or faster ■ AIX: POWER 3, 375 MHz or faster ■ Solaris: Ultra SPARC II, 300 MHz or faster |
| RAM | ■ 512 MB or more | ■ 512 MB or more |
| Hard disk space | ■ 100 MB for Get-Services | ■ 100 MB for Get-Services |

For information about software compatibility with Get-Services, see the Peregrine Systems Customer Support site at <http://support.peregrine.com>. Click **Documentation**; click **Get-Services**; then click **Compatibility Matrices** and click the link to your version of Get-Services.

Types of installations

The Get-Services installer offers two basic types of installation:

- Typical installation
- Custom installation

A *typical installation* installs Tomcat as the Application server and Apache as the Web server with Get-Services, all on one server. Typical installations are intended to set up development environments (see below).

A *custom installation* allows you to choose the exact components installed on a given server. Custom installations are intended for users who will be using alternate application servers, web servers, or to set up a production environment.

The Get-Services custom installation can be optimized for two types of environments:

- Development environment
- Production environment

A *development environment* installation places all needed software and data on one server. It is intended for Get-Services implementers to review application functionality and test customizations before deploying to a production environment. By default, the Get-Services installer uses the development environment installation.

Tip: Install the same Web server and application server in the development environment that you plan to use in the production environment.

A *production environment* installation is optimized for performance and scalability. Each component, such as an application server and Web server, is installed on different servers. In addition, there may be multiple instances of any component. Given the amount of flexibility involved in such an installation, users must manually set up a production environment.

Deploying multiple Peregrine Portal applications

When multiple Peregrine Portal applications, including Get-Services, are deployed, *all* must be applications that use the same version of OAA. Multiple Peregrine Portal applications that use different versions of OAA are not supported.

Further, when you upgrade from a version prior to 4.1, you first upgrade all Peregrine Portal applications to version 4.1. Then you upgrade all Peregrine Portal applications to version 4.1.2.

Back-end systems

Important: In order to use Get-Services, you must have a properly configured back-end system.

Get-Services uses ServiceCenter as its back-end database. You can install Get-Services with ServiceCenter 4.x or ServiceCenter 5.x. Get-Services uses the back-end system to:

- Authenticate users and define access rights
- Process application workflows and store data
- Store personalization settings for the web application

Refer to *Installation requirements* on page 16 for a complete list of the versions compatible with Get-Services.

2 Installing on Windows

CHAPTER

This chapter describes the steps you take to install Get-Services. It covers the following topics:

- *Choosing an installation environment* on page 20
- *Migrating Get-Services from previous versions* on page 23
- *Configuring alternate application servers* on page 27
- *Typical installation option* on page 64
- *Custom installation option* on page 72
- *Uninstalling Get-Services* on page 82
- *Testing your installation* on page 84

Deploying multiple Peregrine Portal applications

When multiple Peregrine Portal applications, including Get-Services, are deployed, *all* must be applications that use the same version of OAA. Multiple Peregrine Portal applications that use different versions of OAA are not supported.

Further, when you upgrade from a version prior to 4.1, you first upgrade all Peregrine Portal applications to version 4.1. Then you upgrade all Peregrine Portal applications to version 4.1.2.

Previous version of Get-Services

You can upgrade to Get-Services version 4.1.2 *only* from one of the following previously installed versions of Get-Services: 4.1, 4.1.0.1, or 4.1.0.2.

If you are upgrading to Get-Services version 4.1.2 from Get-Services version 4.0.1, first run the version 4.1 installer, and then run the version 4.1.2 installer.

Important: Before you begin the installation process, make sure to close all anti-virus software programs.

Choosing an installation environment

You can install Get-Services in one of two environments:

- Development environment
- Production environment

Development environment

The Get-Services development environment is intended for you to evaluate product features and customize your installation prior to deployment in a production environment. In a development environment, you install all software required for Get-Services on one computer system.

You have two choices of development environment:

- Typical installation
 - Apache 2.0 Web server

- Get-Services deployed on Tomcat 4.1.29 application server
- Custom installation
 - Choice of Web server
 - Get-Services deployed on your choice of application server

Production environment

The Get-Services production environment is intended to maximize server performance and scalability, and to deploy any customizations you have made. In a production environment, you install the various components of Get-Services on different servers to maximize performance.

You have two choices of production environment:

- Typical installation
 - Apache 2.0 Web server
 - Get-Services deployed on multiple instances of Tomcat 4.1.29 application server
- Custom installation
 - Choice of Web server
 - Choice of application server where you deploy Get-Services

Development Environment

The following procedures describe how to install Get-Services in a development environment.

To install Get-Services in a typical development environment:

- Step 1** Acquire all necessary hardware and software.
- Step 2** Verify that the back-end database required for Get-Services is installed.
- Step 3** Run the Get-Services installer, follow any upgrade prompts, and then select the Typical installation option. See *Typical installation option* on page 64.
- Step 4** Configure the back-end databases and create Get-Services users.

To install Get-Services in a custom development environment:

- Step 1** Acquire all necessary hardware and software.
- Step 2** Verify that the back-end database required for Get-Services is installed.

- Step 3** Install alternate application and Web servers.
- Step 4** Configure the alternate application server for Get-Services.
- Step 5** Run the Get-Services installer, follow any upgrade prompts, and then select the Custom installation option. See *Custom installation option* on page 72.
- Step 6** Configure the back-end databases and create Get-Services users.

Production Environment

The following procedures describe how to install Get-Services in a production environment.

To install Get-Services in a typical production environment:

- Step 1** Acquire all necessary hardware and software.
- Step 2** Install the back-end database required for Get-Services on a separate server.
- Step 3** Run the Get-Services installer, follow any upgrade prompts, and then select the Typical installation option. See *Typical installation option* on page 64.
- Step 4** Configure multiple instances of Tomcat for load balancing on the Apache Web server.
- Step 5** Configure the back-end databases and create Get-Services users.

To install Get-Services in a custom production environment:

- Step 1** Acquire all necessary hardware and software.
- Step 2** Install the back-end database required for Get-Services.
- Step 3** Install the alternate application server and Web server on separate servers.
- Step 4** Configure the alternate application server for Get-Services.
- Step 5** Run the Get-Services installer, follow any upgrade prompts, and then select the Custom installation option. See *Custom installation option* on page 72.
- Step 6** Configure the Web servers and application servers for load balancing.
- Step 7** Configure the back-end databases and create Get-Services users.

Migrating Get-Services from previous versions

To migrate older versions of Get-It or Get-Services to Get-Services 4.1.2 requires both a manual data migration process and the recreation of any interface customizations you have made. The following steps describe the migration process.

Important: You should backup all Get-Services and back-end system data prior to performing any steps for migration.

To migrate previous versions to Get-Services 4.1.2:

- Step 1** Review the customizations of previous version and determine which customizations need to be recreated in Get-Services 4.1.2. See *Recreating customizations in Get-Services 4.1.2* on page 23.
- Step 2** Install Get-Services 4.1.2 on a new system. See *Choosing an installation environment* on page 20.
- Step 3** Apply any required configuration changes to the back-end database you want to migrate to Get-Services 4.1.2. See *ServiceCenter Administration* in this guide.

Recreating customizations in Get-Services 4.1.2

You cannot directly migrate customizations implemented before version 4.0.1 to Get-Services 4.1.2. Instead, you must recreate your changes using the new features and methods available in Get-Services 4.1.2.

The following sections describe how to recreate your customizations from previous versions.

No customizations

If you have made no customizations to Get-Services, you can simply install Get-Services 4.1.2 on a new system and migrate your data from your existing back-end database.

Note: Get-Services 4.1 requires ServiceCenter 4.0.x or higher.

Customized JSP files

In previous versions, customers had to directly modify JSP files in order to add or remove certain functionality. The following table describes how to recreate some of the more common JSP file modifications.

| JSP file modification | New method to use |
|----------------------------------------------------------|--------------------------------------------------------------------------------------|
| Remove the user self-registration option from login page | Enable or disable the user registration option from the Administration Settings page |
| Remove the change password option from the login page | Enable or disable the change password option from the Administration Settings page |

Personalized pages

Get-Services 4.1.2 offers many more pages that you can personalize directly from the Web interface. If you personalized pages in a previous version, you must recreate your personalized pages in Get-Services 4.1.2 using DocExplorer. Refer to the *Get-Services Administration Guide* for information on personalization.

You can use personalization to:

- Add or remove fields from a page
- Save a personalized search results or details on your portal page

Customized skins, stylesheets, and themes

Get-Services 4.1.2 has combined all interface images and stylesheets into themes. Users can no longer select separate skins and stylesheets. The new themes consist of skins (which themselves are composed of image files, frame definitions, and layer files), cascading stylesheet definitions, and XSL templates.

Although you may copy over older custom themes to Get-Services 4.1.2, you may experience rendering errors due to the new images, CSS definitions, frame definitions, and layers. It is recommended that you recreate any custom themes using the Get-Services 4.1.2 version of the classic theme as your template. Refer to the *Get-Services Administration Guide* for information on customizing.

Alternate login pages and authentication methods

If you used a custom login page or an alternate authentication method in a previous version, you can re-use or recreate these customizations using the updated instruction. You can find information about alternate security methods in the *Get-Services Administration Guide*.

Customizations made with a previous tailoring kit

Many customizations that required a tailoring kit in previous versions can now be done directly from the Get-Services Web interface. The following table describes how to recreate some of the more common tailoring kit changes.

| Tailoring kit modification | New method to use |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Added or removed fields from a form | Add or remove fields from Personalization |
| Added a new language or locale to the Get-Services interface | Create and edit language strings files directly. You may also purchase officially supported language packs from Peregrine Systems |
| Made changes to the common, portal, or Peregrine Studio packages | These packages are no longer available for tailoring, however most common interface settings can now be customized from the Administration Settings page. |
| Made changes to schemas or ECMA server-side scripts | Review new functionality and determine if you still need the customized scripts and schemas. If you do need the customizations, you must recreate them in the current version of the Get-Services tailoring kit. |

Installing Get-Services with an existing Get-Answers deployment

If you are installing Get-Services and have already installed Get-Answers, remove the following file:

```
<deployment_directory>\WEB-INF\apps\getanswers\jscrip\t\category.js
```

Note: This step is not required if you performed a *new* installation (not an upgrade) of Get-Answers version 4.1 or later.

Configuring an existing back-end database for Get-Services 4.1.2

The following table lists the options available for data migration.

Get-Services 2.3 to Get-Services 4.1.2

| Back-end version | Migration required |
|-------------------|------------------------------------------------------------------------|
| ServiceCenter 3.0 | Upgrade to ServiceCenter 4.x or 5.0.x. |
| ServiceCenter 4.x | Apply Get-Services 4.1.2 unload files to existing ServiceCenter 4.x. |
| Service 5.0.x | Apply Get-Services 4.1.2 unload files to existing ServiceCenter 5.0.x. |

Note: Note that the `<appsrv>\WEB-INF\web.xml` file has been renamed to `<appsrv>\WEB-INF\web.xml.xxx.bak`, where `<appsrv>` is the path to your application server, and `xxx` represents a unique sequence of characters generated by `File.createTempFile()`. This preserves any customizations that you might have (see *Preserving customized web.xml file settings*, next).

After upgrading Get-Services from 4.0.1 to 4.1, a new file called `web.xml.xxx.bak` is created in the `<appsrv>/WEB-INF` directory. You must reconcile the contents of this file with the contents of the new `web.xml` file. Any portion of `web.xml.xxx.bak` file that does not exist in the new `web.xml` file needs to be added to the `web.xml` file.

Preserving customized web.xml file settings

You can open the `web.xml.xxx.bak` file, copy its customized configuration settings into the new `web.xml` file, and save the new file to preserve your customizations.

Configuring alternate application servers

You must install a Java-enabled application server to support your Peregrine Web applications. Peregrine OAA supports the following alternate application servers:

- *Existing Tomcat and Apache servers*
- *Tomcat 4.1.29 connecting to IIS 5.0*
- *WebSphere Application Server 4.0.2*
- *WebSphere Application Server 5.0.2*
- *WebLogic 6.1 SP4*

The Get-Services typical installation option installs Tomcat 4.1.29 and connects it to an Apache 2.0 web server. You can also install Tomcat 4.1.29 using the custom installation option.

Important: If you want to use an application server other than Tomcat 4.1.29, then you must configure your application and Web servers *prior* to running the Get-Services installer.

Existing Tomcat and Apache servers

If you use the typical installation option, the Get-Services installer configures Tomcat to connect to a new instance of the Apache Web server. If you have existing instances of Tomcat or Apache Web Server installed, you can configure Get-Services to use these existing instances by copying the necessary files from a typical installation.

To configure an existing Tomcat server to connect to an Apache server:

- 1 Stop existing instances of both Tomcat and Apache.

- 2 Copy the following files from the installation CD \SupportFiles... directory to the directories indicated below.

| Copy this file | To the following location |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| ■ mod_jk.conf | The \conf directory of your existing Tomcat installation. The default source file path is: C:\Program Files\Apache Group\Tomcat 4.1\conf |
| ■ workers.properties | The \conf directory of your existing Tomcat installation. The default source file path is: C:\Program Files\Apache Group\Tomcat 4.1\conf |
| ■ mod_jk.dll | The \modules directory of your existing Apache installation. The default source file path is: C:\Program Files\Apache Group\Apache2\modules |

Note: The mod_jk.dll included with this release is compatible with Apache 2.0.43 and Tomcat 4.1.29. If you are using other versions, refer to the jakarta.apache.org/builds/jakarta-tomcat-connectors/jk/doc site to download the compatible version.

- 3 Using a text editor, open the files mod_jk.conf and workers.properties. These files are located in the \conf directory of your Tomcat installation.
 - a Find all instances where the path to Tomcat appears and edit these to reflect your current Tomcat 4.1 installation path.
 - b Find all instances where the path to JDK appears and edit these to reflect your current JDK installation path.
- 4 Using a text editor, open the httpd.conf file. This file is located in the \conf directory of your Apache installation.

- a Add the path to your existing Tomcat installation to the include statement in the Global Environment section:

```
### Section 1: Global Environment
...
include "<Tomcat_path>/conf/mod_jk.conf"
```

For <Tomcat_path>, enter the absolute path to your Tomcat installation.

- b Add login.jsp to the list of files in the DirectoryIndex section:

```
# DirectoryIndex: Name of the file or files to use as a pre-written
# HTML directory index. Separate multiple entries with spaces.
#
<IfModule mod_dir.c>
  DirectoryIndex index.html login.jsp
</IfModule>
```

- c Add the following line to the end of the file:

```
Alias <Tomcat>/webapps/oa
```

where <Tomcat> is the path to your Tomcat installation.

- 5 Install Get-Services using the **Custom** option. See *Custom installation option* on page 72.
- 6 Restart Tomcat and Apache.
- 7 Browse to the Get-Services login URL and verify that you can successfully connect.

Note: Depending on your Web server configuration, if you browse to `http://servername/oa`, the Web server may display a list of all the OAA files instead of the login page.

If your server displays this behavior, follow these steps to configure your Web server to display the OAA login page instead of a directory listing.

To configure Apache to display login.jsp by default:

- 1 Open Apache's `conf/httpd.conf` file in a text editor.
- 2 Find the existing line that reads `DirectoryIndex index.html`.
- 3 Add `login.jsp` to the end:
`DirectoryIndex index.html login.jsp`
- 4 Save `httpd.conf`.
- 5 Restart the Apache Web server.

Tomcat 4.1.29 connecting to IIS 5.0

You can use the Get-Services installer to install the Tomcat application server. If you use the typical installation option, the Get-Services installer configures Tomcat for the Apache Web server. In order to configure the Tomcat for the IIS Web server, you must perform a custom installation and configure IIS using the following instructions.

Note: These instructions are for setting up Tomcat to use a single Java Virtual Machine (JVM). See the chapter *Load-Balancing Application Servers* on page 201 for information about installing multiple JVMs.

To configure Tomcat to connect to an IIS 5.0 Web server:

- Step 1** Run the Get-Services installer. See *Running the installer* on page 30.
- Step 2** Configure the ISAPI Plug-in for IIS. See *Configuring the ISAPI Plugin for IIS* on page 30.
- Step 3** Configure IIS to use `isapi_redirector2.dll` as an ISAPI Filter. See *Configuring the isapi_redirector2.dll as an ISAPI filter* on page 31.
- Step 4** Create and configure a jakarta virtual directory in IIS. See *Configuring a jakarta virtual directory in IIS* on page 32.
- Step 5** Create and configure an oaa virtual directory in IIS. See *Configuring an oaa virtual directory in IIS* on page 32.
- Step 6** Edit the `server.xml` file to add performance settings and configure alternate communications ports (Optional). See *Editing the server.xml file for IIS* on page 34.
- Step 7** Install Tomcat as a service using `installservice.bat` (Optional). This file can be found in the `Tomcat\bin` directory. See *Installing Tomcat as a service* on page 36.

Running the installer

Run the Get-Services installer and select the Custom installation option. See *Custom installation option* on page 72.

Configuring the ISAPI Plugin for IIS

The ISAPI plugin for IIS establishes a connection between Tomcat and the IIS Web server. Before configuring IIS to use this connector, you must update the registry file entry for the connector to ensure that it has the proper paths listed for the Tomcat application server.

The Get-Services installer automatically places a copy of the ISAPI plug-in for IIS in the following folder:

```
c:\Program Files\Peregrine\Common\Tomcat4\bin
```

Use the following procedures to configure the plugin for your intranet environment.

To configure the ISAPI plugin for IIS:

- 1 Open the file `jk2.reg` in a text editor. The default file path is:
`C:\Program Files\Peregrine\Common\Tomcat4\conf`
 - 2 Verify that the “ServerRoot” and “workersFile” entries list the proper installation path to Tomcat. By default, these values are:

```
“ServerRoot”=“C:\Program Files\Peregrine\Common\Tomcat4”
“workersFile”=“C:\Program Files\Peregrine\Common\Tomcat4\conf\workers2.properties”
```
- Tip:** You do not need to make any changes if you installed this file to the default location.
- 3 Save and close the `jk2.reg` file.
 - 4 Double-click on the `jk2.reg` file from Windows Explorer.
 Windows adds the registry settings to the Windows registry.

Configuring the `isapi_redirector2.dll` as an ISAPI filter

To establish a connection between Tomcat and IIS, you will need to install `isapi_redirector2.dll` as an ISAPI filter.

To install `isapi_redirect2.dll` as an ISAPI filter:

- 1 From Windows Control Panel > Administrative Tools, open the Internet Services management console.
- 2 Right-click the **Default Web Site** node and then click **Properties**.
- 3 Click the **ISAPI Filters** tab.
- 4 Click **Add**.
- 5 Enter the following information:
 - a **Filter Name:** `jakarta`. The filter name must match the name you defined the `jk2.reg` registry file. By default, the filter name is `jakarta`.
 - b **Executable:** `isapi_redirector2.dll`. The default file path is:
`C:\Program Files\Peregrine\Common\Tomcat4\bin\isapi_redirector2.dll`
- 6 Click **OK**.

Note: You stop and re-start the IIS service for changes to take effect. You also restart Peregrine Tomcat.
- 7 From the Internet Services management console, right-click the **Default Web Site** node, then select **Properties** -> **Isapi Filters** again.

The ISAPI filter in IIS displays a green status arrow to indicate that it is running.

- 8 Close the Internet Services management console.

Configuring a jakarta virtual directory in IIS

The ISAPI plugin for IIS requires a specific virtual directory in order to run. Use the following guidelines to create the virtual directory on the Default Web Site. For specific instructions about configuring IIS, refer to your Windows Help.

To configure a jakarta virtual directory in IIS:

- 1 Use the following guidelines to create the virtual directory on the Default Web Site.

Requirements for a jakarta virtual directory

| Requirement | Setting |
|--------------------------|----------------------------|
| Create virtual directory | jakarta |
| Map to physical path | <Tomcat>\bin |
| Directory access rights | Read, Run scripts, Execute |

- 2 For <Tomcat>, enter the path to your Tomcat installation. The default file path is:

C:\Program Files\Peregrine\Common\Tomcat4

Configuring an oaa virtual directory in IIS

To run Get-Services from IIS, you need to create a virtual directory that maps to your Tomcat deployment folder. For specific instructions about configuring IIS, refer to your Windows Help.

To configure an oaa virtual directory in IIS:

- Use the following guidelines to create the virtual directory.

Requirements for an oaa virtual directory

| Requirement | Setting |
|--------------------------|------------------------|
| Create virtual directory | <oaa> |
| Map to physical path | <Tomcat>\webapps\<oaa> |
| Directory access rights | Read, Run scripts |

For <Tomcat>, enter the path to your Tomcat installation. The default file path is:

C:\Program Files\Peregrine\Common\Tomcat4

For <oaa>, enter the name of the virtual directory you want to use for Get-Services. The recommended virtual directory name is oaa. If you choose to use another virtual directory name, you must enter the new name in the following places:

- Rename the folder <Tomcat>\webapps\oaa to <Tomcat>\webapps\<new_name>
- Rename the [uri] mappings in workers2.properties from oaa to the new virtual directory name.
- Rename all the oaa context entries in mod_jk2.conf from oaa to the new virtual directory name.
- Rename the <Context> path and docBase attributes in server.xml from oaa to the new virtual directory name.

Important: The virtual directory name you choose becomes part of the URL that users enter to connect to Get-Services. For example:
http://server_name/<new_name>/login.jsp

Note: Depending on your Web server configuration, if you browse to `http://servername/oa`, the Web server may display a list of all the OAA files instead of the login page.

If your server displays this behavior, follow these steps to configure your Web server to display the OAA login page instead of a directory listing.

To configure IIS:

- 1 Open the Internet Services Manager.
- 2 Expand the Default Web Site.
- 3 Right-click on the OAA virtual directory and click **Properties**.
- 4 Click the **Documents** tab.
- 5 Verify that **Enable Default Document** is checked.
- 6 Click the **Add** button.
 - a Type `login.htm`.
 - b Click **OK**.
- 7 Highlight `login.htm` and using the up and down arrows, move `login.htm` to the top of the file list.
- 8 Click **OK** to accept the changes to the OAA directory properties.

Editing the `server.xml` file for IIS

A default Tomcat installation is sufficient for most Get-Services installations. However, if you are experiencing performance problems or communications port conflicts, you may need to edit the Tomcat `server.xml` file to correct these problems.

Performance settings

The Tomcat `server.xml` file allows you to determine how Tomcat processes Get-Services files. If you are experiencing performance problems, you can change the `<Context>` setting for Get-Services to disable page reloading.

Tip: Make a back up copy of the `server.xml` file before editing.

To edit the `server.xml` performance settings:

- 1 Open the file `server.xml` in any text editor. The default file path is:
`C:\Program Files\Peregrine\Common\Tomcat4\conf`

- 2 Create a `<Context>` element entry from Tomcat to the Get-Services deployment directory to establish a point of reference for `docBase`.
Add the entry just above the “examples” Context entry.

Example:

```
<Context path="/oaa"
docBase="<Tomcat>/webapps/oaa"
crossContext="false"
debug="0"
reloadable="false" >
</Context>
```

Setting the `reloadable` attribute to `false` results in faster JSP page processing. For the `docBase` attribute, set `<Tomcat>` to the absolute path of the first or master Tomcat instance.

Communications port settings

If your Get-Services server already uses communications ports 8005 and 8009, you will have a port conflict if you install Tomcat with the default settings. To avoid a port conflict, you must edit the `server.xml` file to change the communications ports used by Tomcat.

Important: You do not need to perform these optional steps if Tomcat’s default communication ports are available on your server.

Tip: Make a back up copy of the `server.xml` file before editing.

To edit the `server.xml` communications port settings:

- 1 Open the file `server.xml` in any text editor. The default file path is:
`C:\Program Files\Peregrine\Common\Tomcat4\conf`
- 2 Update the port number attribute of the `<Server>` element to a free communications port.

Note: By default, Tomcat uses port 8005 for shutdown requests.

Example:

```
<Server port="8005" shutdown="SHUTDOWN" debug="0">
```

- 3 Update the port attribute of the Coyote Connector `<Connector>` element to a free communications port.

Note: By default, Tomcat uses port 8009 for the Coyote connector.

Example:

```
<Connector className="org.apache.coyote.tomcat4.CoyoteConnector" port="8009"
minProcessors="5" maxProcessors="75" enableLookups="true" redirectPort="8443"
acceptCount="10" debug="0" connectionTimeout="20000"
useURValidationHack="false"
protocolHandlerClassName="org.apache.jk.server.JkCoyoteHandler" />
```

- 4 Save the `server.xml` file.
- 5 Restart Tomcat for your new settings to take effect.

Installing Tomcat as a service

After you have edited the Tomcat files, you can install Tomcat as Windows services using the `installservice.bat` file.

Note: The installer does not reset the `JAVA_HOME` environment variable when installing on systems where a previous instance of Tomcat is installed. Manually redefine the `JAVA_HOME` environment variable to point to the new Java Development Kit. The default path is:
 C:\Program Files\Peregrine\Common\jdk1.3.1_05

To install Tomcat as a service:

- 1 Open a DOS command prompt and change directories to your Tomcat bin directory.
- 2 Enter the following command to create each Tomcat instance:
`installservice <service_name> <tomcat_home> <jvm_dll_path>`

Where `<service_name>` is the name you wish to give the Tomcat service, `<tomcat_home>` is the Tomcat install directory of the instance for which you are creating the service, and `<jvm_dll_path>` is the Java SDK install directory.

The second and third parameters are optional if you have already set the `CATALINA_HOME` and `JAVA_HOME` environment variables.

Example:

```
installservice Tomcat8009 C:\Program Files\Peregrine\Common\Tomcat4
C:\Program Files\Peregrine\Common\jdk1.3.1_05
```

- 3 Repeat step 1 and step 2 for each Tomcat service you wish to create.

WebSphere Application Server 4.0.2

Use the following procedures to configure WebSphere 4.0.2 to run Get-Services on Windows.

Note: The Get-Services installer creates duplicate alias entries in the IBM HTTP Server when you install more than one Peregrine OAA Platform application on WebSphere.

Duplicate entries can also occur if you reinstall Get-Services or install another Peregrine OAA Platform application on a system that formerly had Get-Services installed on it.

Remove any duplicate alias entries from the IBM HTTP Server `httpd.conf` file.

To configure WebSphere 4.02:

- Step 1** Install WebSphere 4.02. Your version of WebSphere 4.0.2 includes the IBM HTTP Server. See *Installing WebSphere 4.0.2* on page 37.
- Step 2** Deploy the Portal WAR file to WebSphere to create the necessary folder structure for Get-Services. See *Deploying the Portal WAR file to WebSphere* on page 38.
- Step 3** Set the JVM Java heap size for each WebSphere instance running Get-Services. See *Setting the Java heap size* on page 40.
- Step 4** Create the virtual directory you want to use for Get-Services in your Web server. See *Configuring a virtual directory for IBM HTTP Server* on page 42.
- Step 5** Run the Get-Services installer. See *Running the installer* on page 42.
- Step 6** Regenerate and configure. See *Regenerating the plug-in configuration* on page 42.

If you plan on setting up a WebSphere Portal Server or a WebSphere Translation Server, see *Installing WebSphere Portal Server* on page 46 or *Configuring WebSphere Translation Server for Get-Services* on page 55.

Installing WebSphere 4.0.2

Purchase and install IBM WebSphere 4.0.2. Your version of WebSphere 4.0.2 includes the IBM HTTP Server.

Verify that you install fix pack 2. To check this, go to the `default_server_stdout.log` file under `\Websphere\AppServer\logs`.

Deploying the Portal WAR file to WebSphere

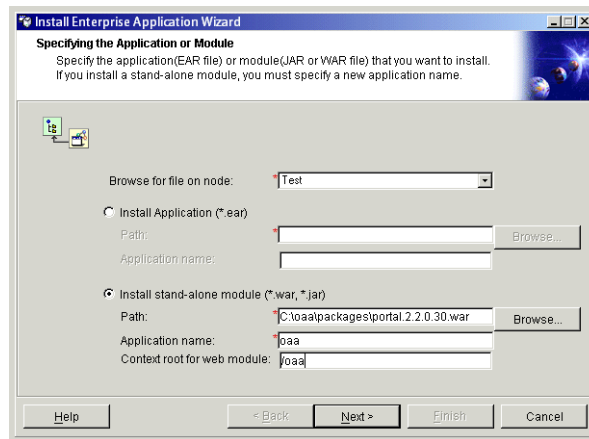
The Portal WAR file creates the folder structure necessary to deploy Get-Services in your application server. After you have deployed this file to WebSphere you will be ready to run the Get-Services installer.

To deploy the Portal WAR file to WebSphere:

- 1 Verify that the WebSphere Admin Server has been started.
- 2 Open the WebSphere Advanced Administrator's Console (**Start -> Programs -> IBM WebSphere -> Application Server -> Administrator's Console**).
- 3 On the menu at the left side of the console, right-click on **Enterprise Applications** and select **Install Enterprise Application**.
- 4 On the screen displayed, perform the following steps:
 - a Select **Install stand-alone module**.
 - b In the **Path** field, browse to the path to the `portal.<version_number>.war` file. The default file path is:
`<CDROM_Drive>:\portal.<version_number>.war`.
For `<version_number>`, select the most recent version available (4.0.0.44 or greater).
 - c In the **Application Name** field, type `oaa`.
 - d In the **Context Root** field, type the name of Get-Services virtual Web server directory you wish to use. Example: `/oaa`.

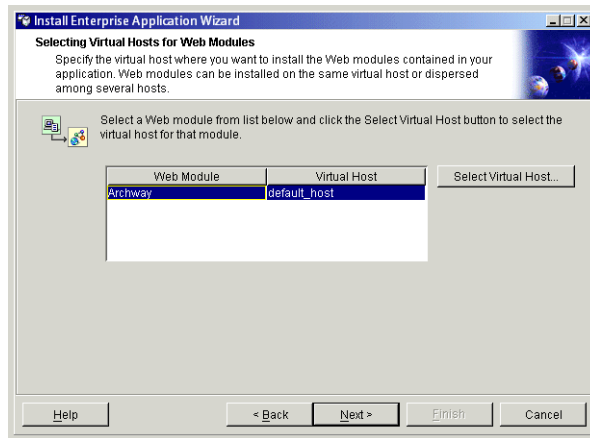
Important: You must create a Web server virtual directory matching the context root you enter here.

The following screen shows the completed form.

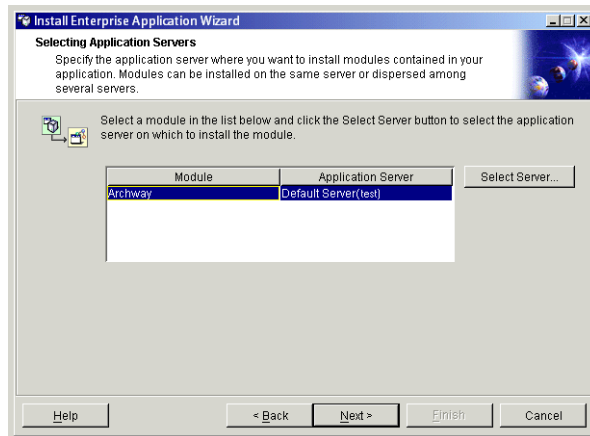


- 5 Click **Next**.
- 6 Click **Next** on the following dialog boxes. These screens will not be used.
 - Mapping Users to Roles
 - Mapping EJB Run As Roles to Users
 - Binding Enterprise Beans to JNDI Names
 - Mapping EJB References to Enterprise Beans
 - Mapping Resource References to Resources
 - Specifying the Default Datasource
 - Specifying Data Sources for Individual CMP Beans

- In the Selecting Virtual Hosts for Web Modules, select the WebSphere server instance you want to use. Click **Next**.



- In the Selecting Application Servers dialog box, select the WebSphere server instance you want to use, and then click **Next**.



- On the dialog box displayed, click **Finish**.

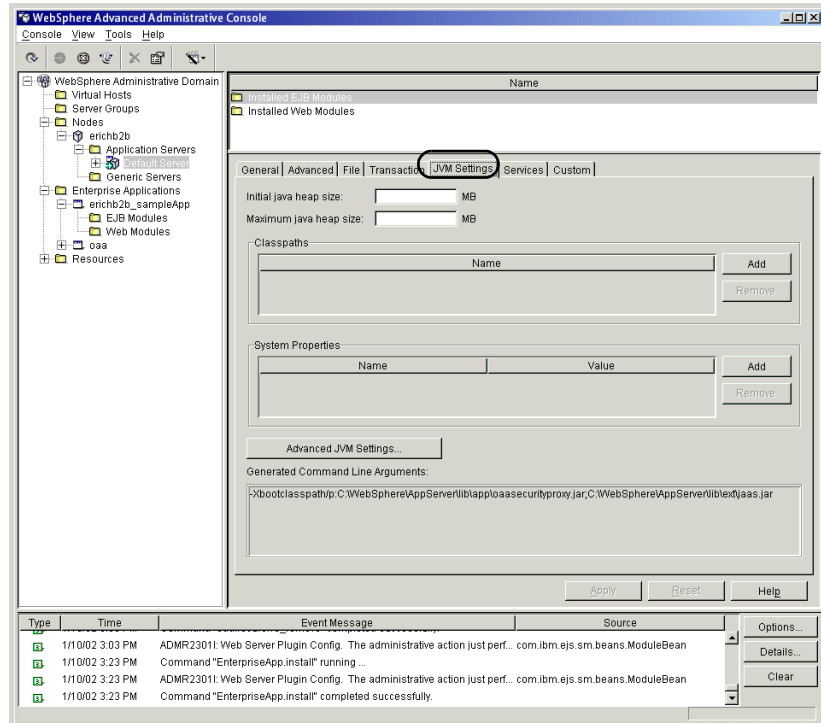
Setting the Java heap size

You can configure how much memory is available for your application server instances. The following instructions assume you are only using one WebSphere instance. You will need to adjust the heap size accordingly if you are load balancing across several WebSphere instances.

To set the Java heap size:

- 1 Verify that the WebSphere Admin Server has been started.
- 2 Open the WebSphere Advanced Administrator's Console (Start -> Programs -> IBM WebSphere -> Application Server -> Administrator's Console).
- 3 Click Nodes -> <System_name> -> Application Servers -> <Application_server_name>.

The server settings page opens.



- 4 Click the JVM Settings tab.
 - 5 Set the following JVM settings:
 - a Initial java heap size. Type 60.
 - b Maximum java heap size. Type the value you want for heap memory. This setting must be at least 256 MB, but 512 MB is recommended.
- Note:** Make sure that the setting for maximum heap size is less than the free RAM available to the application server(s). Exceeding the amount of available RAM causes the JVM processes to swap to disk, reducing overall performance.

Configuring a virtual directory for IBM HTTP Server

You must configure a virtual directory for Get-Services in your Web server. The following instructions assume that you are using WebSphere's built-in Web server – IBM HTTP Server. See your Web server documentation to determine how to create a virtual directory if you are using another Web server.

To configure a virtual directory for IBM HTTP Server:

- 1 Stop the IBM HTTP Server.
- 2 Open the file `httpd.conf` in any text editor. The default file path is:

`C:\IBM HTTP Server\conf`

- 3 Add the following line to the end of the file:

```
Alias /oaa/ "C:/WebSphere/AppServer/installedApps/oaa.ear/portal.  
<version>.war/"
```

For `<version>` enter the version number of the WAR file you installed.

Important: The name you define for the virtual directory here must match the context root you defined in WebSphere.

- 4 Save the file.

Running the installer

Run the Get-Services installer and select the Custom installation option. See *Custom installation option* on page 72.

Important: After you complete all the steps in the section "Custom installation procedures" on page 74, make sure to return to this section and complete all the remaining steps.

Regenerating the plug-in configuration

You must regenerate the plug-in configuration using the WebSphere Admin console after running the Get-Services installer.

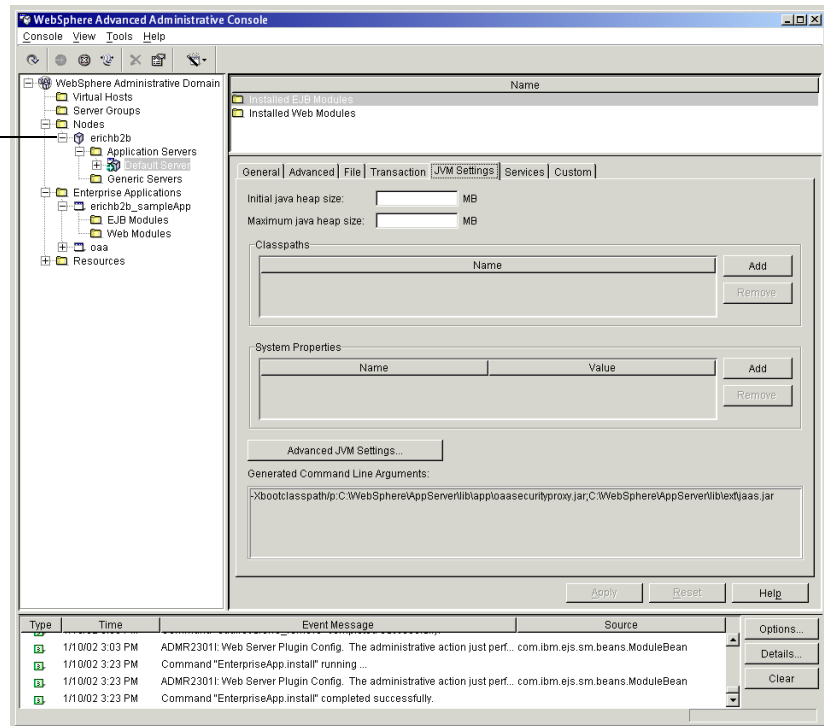
To regenerate the plug-in configuration:

- 1 Open the WebSphere Advanced Administrator's Console (**Start -> Programs -> IBM WebSphere -> Application Server -> Administrator's Console**).

- Click Nodes -> <System_name> -> Application Servers -> <Application_server_name>.

The server settings page opens.

Right-click on your system name and select Regen Webserver Plugin.



- Right-click on the <System_name>, then click Regen Webserver Plugin.
- Restart your application server.

WebSphere Application Server 5.0.2

Use the following procedures to configure WebSphere 5.0.2 to run Get-Services on Windows.

Note: The Get-Services installer creates duplicate alias entries in the IBM HTTP Server when you install more than one Peregrine OAA Platform application on WebSphere.

Duplicate entries can also occur if you reinstall Get-Services or install another Peregrine OAA Platform application on a system that formerly had Get-Services installed on it.

Remove any duplicate alias entries from the IBM HTTP Server `httpd.conf` file.

To configure Get-Services 4.1.2 to use the WebSphere Application Server 5.0.2:

- 1 Log on to the Administrative Console, using any login name.
- 2 Click **Applications** on the Administrative Console menu.
- 3 Click **Install New Application**.
- 4 Enter `portal.<version_number>.war` in the Local path field if the installation package resides on the local server machine; or in the Server path field if the installation package resides on a server machine. (The `portal.<version_number>.war` file is located on the installation CD.)
- 5 Specify the Context Root, a value such as `/oaa`.
- 6 Click **Next** twice.
- 7 Click **Use Binary Configuration**.
- 8 Specify a name, such as `oaa`, in the Application Name field. Keep all the other settings at their defaults.
- 9 Click **Next** three times.
- 10 Click **Finish**.
- 11 Click **Save to Master Configuration** to save the server configuration.
- 12 Click **Save**.
- 13 Log out of the Administrative Console.
- 14 Stop the WebSphere Administration server.
- 15 Perform the steps described in the section "Custom installation procedures" on page 74.

Important: After you complete all the steps in the section "Custom installation procedures" on page 74, make sure to return to this section and complete all the remaining steps.

- 16 Copy the files `js.jar` and `oaasecurityproxy.jar` from `...portal.<version_number>.war\WEB-INF\lib` to `C:\Program Files\WebSphere\AppServer\java\jre\lib\ext`.
 - 17 From the `IBMHttpServer\conf\httpd.conf` file:
 - a Verify that the following lines exist in the file; if not, add them.


```
LoadModule ibm_app_server_http_module
<AppServerPath>\bin\mod_ibm_app_server_http.so
WebSpherePluginConfig
<AppServerPath>\config\cells\plugin-cfg.xml
```
 - b Verify that the following line exists in the file; if not, add it. The alias should not contain any trailing slash marks (`\`); remove any trailing slash marks if any appear:


```
Alias /oaa opt\WebSphere\AppServer\installedApps\<hostname>
\oaa.ear\portal.<version_number>.war
```
- Note:** The preceding alias needs to match the context root specified in step 5.
- 18 Start WebSphere.
 - 19 Log in to the Admin console again.
 - a From Environment on the left side, click **Update Web Server Plugin**.
 - b Click **OK** to update the Web server plugin.
 - c Wait for confirmation that the plugin is updated. Log out of the WebSphere Admin console.
 - 20 Stop and restart the WebSphere application server.
 - 21 Restart the IBM HTTP Server.
 - 22 Log in to the Peregrine Portal using `admin.jsp` and continue configuring your system.

Installing WebSphere Portal Server

You can configure Get-Services to display in a WebSphere Portal Server in one of two configurations:

- All Get-Services and WebSphere components running on a single system. See *Recommended WebSphere Portal Server configuration* on page 46.
- Get-Services components running on one system and WebSphere components running on another. See *Alternate WebSphere Portal Server configuration* on page 47.

Important: In either configuration, you must first install WebSphere Portal Server. See your WebSphere Portal Server documentation for details.

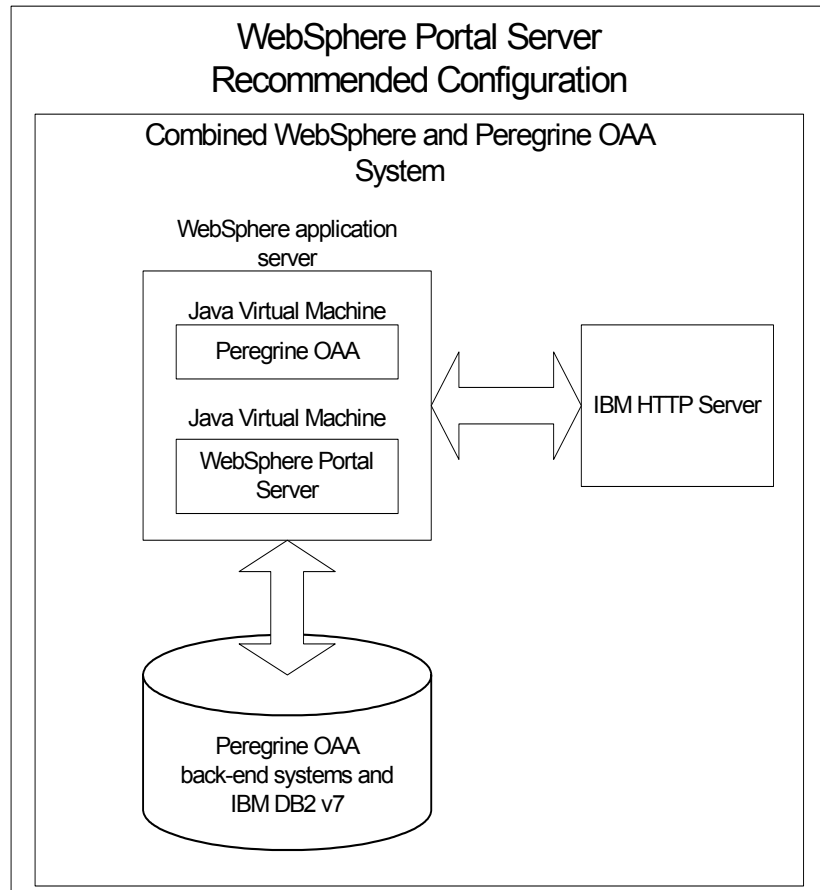
Recommended WebSphere Portal Server configuration

Use the following steps to configure Get-Services for the recommended WebSphere Portal Server configuration:

- Step 1** Review the WebSphere Portal Server installation requirements. See *WebSphere Portal Server installation requirements* on page 49.
- Step 2** Generate a Get-Services WAR file containing the portal components WebSphere Portal Server can display. See *Generating a Get-Services WAR file* on page 50.
- Step 3** Login to the Get-Services server and stop the WebSphere application server.
- Step 4** Modify the `local.xml` to change the HTTP authentication method used from Basic to Alternate. See *Modifying the local.xml file* on page 51.
- Step 5** Modify the `web.xml` to enable the AuthController servlet. See *Modifying the web.xml file* on page 51.
- Step 6** Modify the `ibm-web-ext.xmi` file to set the `fileServingEnabled` parameter. See *Modifying the ibm-web-ext.xmi file* on page 52.
- Step 7** Start the WebSphere application server. See *Starting the WebSphere application server* on page 52.
- Step 8** Deploy the Get-Services WAR file to WebSphere Portal Server. See *Deploying the Get-Services WAR file to WebSphere Portal Server* on page 53.

- Step 9** Create places and pages in WebSphere Portal Server to display Get-Services portlets. See *Configuring WebSphere Portal Server places and pages* on page 53.
- Step 10** Enable edit rights for Get-Services portlets. See *Enabling edit rights for Get-Services portlets* on page 54.

When complete, your installation will have the following configuration:



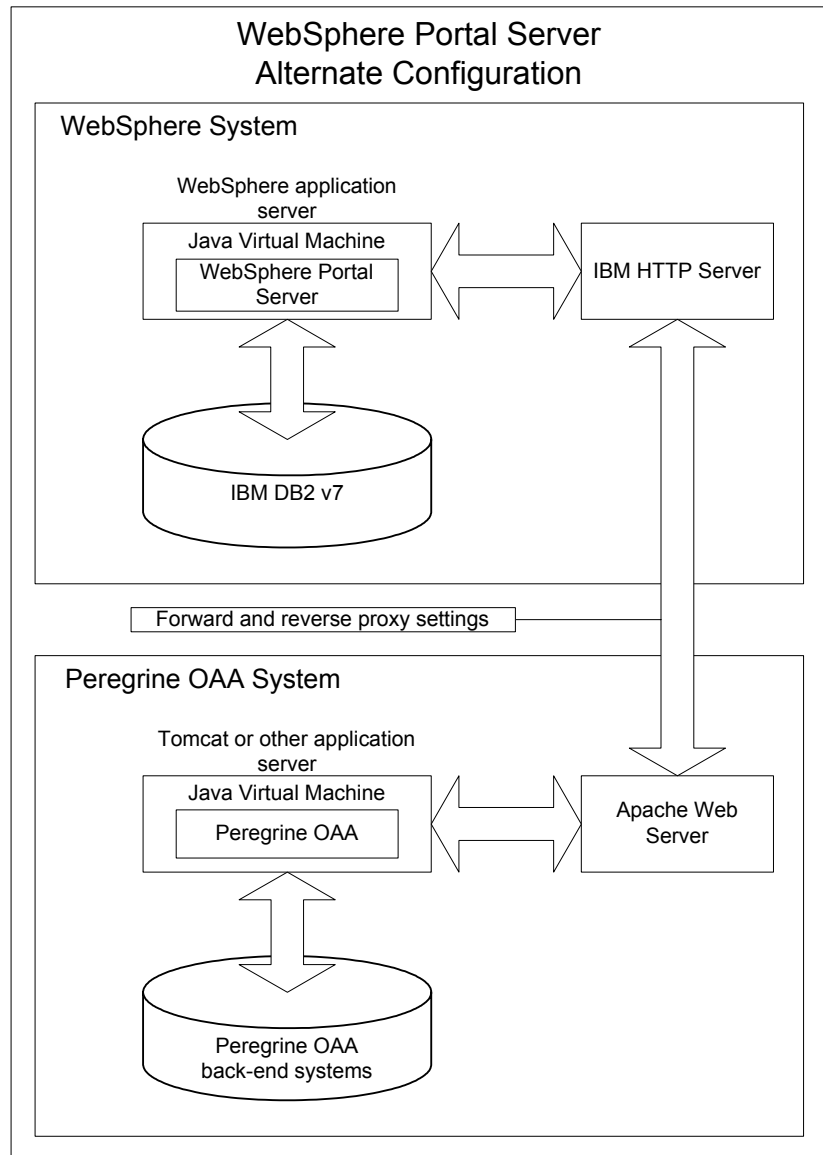
Alternate WebSphere Portal Server configuration

Use the following steps to configure Get-Services for the alternate WebSphere Portal Server configuration:

- Step 1** Review the WebSphere Portal Server installation requirements. See *WebSphere Portal Server installation requirements* on page 49.

- Step 2** Generate a Get-Services WAR file containing the portal components WebSphere Portal Server can display. See *Generating a Get-Services WAR file* on page 50.
- Step 3** Login to the Get-Services server and stop the WebSphere application server. See *Stopping the WebSphere application server* on page 51.
- Step 4** Modify `local.xml` to change the HTTP authentication method used from Basic to Alternate. See *Modifying the local.xml file* on page 51.
- Step 5** Modify `web.xml` to enable the AuthController servlet. See *Modifying the web.xml file* on page 51.
- Step 6** Modify the `ibm-web-ext.xmi` file to set the `fileServingEnabled` parameter. See *Modifying the ibm-web-ext.xmi file* on page 52.
- Step 7** Modify `setDomain.js` to call the `SetDomain` function. See *Modifying the setDomain.js file* on page 52.
- Step 8** Start the WebSphere application server. See *Starting the WebSphere application server* on page 52.
- Step 9** Deploy the Get-Services WAR file to WebSphere Portal Server. See *Deploying the Get-Services WAR file to WebSphere Portal Server* on page 53.
- Step 10** Create places and pages in WebSphere Portal Server to display Get-Services portlets. See *Configuring WebSphere Portal Server places and pages* on page 53.
- Step 11** Enable edit rights for Get-Services portlets. See *Enabling edit rights for Get-Services portlets* on page 54.
- Step 12** Modify IBM HTTP Server's `httpd.conf` file to add forward and reverse proxy URLs. See *Modifying httpd.conf for IBM HTTP Server* on page 54.

When complete, your installation will have the following configuration:



WebSphere Portal Server installation requirements

The recommended configuration of the WebSphere Portal Server requires the following items to be installed on the same server:

- WebSphere application server 4.0.2

- IBM HTTP Server 1.3.19
- IBM DB2 v7 database server
- WebSphere Portal Server
- A custom installation of Get-Services with WebSphere selected as the application server

The alternate configuration of the WebSphere Portal Server requires the following items be installed on a minimum of two servers:

- Server 1
 - WebSphere application server 4.0.2
 - IBM HTTP Server 1.3.19
 - IBM DB2 v7 database server
 - WebSphere Portal Server
- Server 2
 - Get-Services compatible application server
 - Web server
 - Back-end database for Get-Services
 - An installation of Get-Services

Generating a Get-Services WAR file

In order to display Get-Services in WebSphere Portal Server, you must first export the Get-Services portal components as a WAR file. You can then import this WAR file into WebSphere Portal Server, and choose the portal components you want to display as WebSphere Portal Server portlets.

To generate a Get-Services WAR file:

- 1 Login to the Get-Services administration page (`admin.jsp`).
- 2 Click **IBM WebSphere Portal Integration**.
- 3 Enter the following configuration information:
 - a **Source Path**. Enter the full path to the `WebSphere.war` in the Get-Services package folder. By default, this folder is:
`<WebSphere>/oaa/packages`
 - b **Destination Path**. Enter the full path and file name you want to use for the generated Get-Services WAR file.
 - c **Base URL**. Enter the full URL to the Get-Services deployment directory. By default, this URL is:

`http://<server>:<port>/oaa/servlet/basicauth`

4 Click Generate WAR file.

Get-Services generates a new WAR file with the name and path specified in the Destination Path of step 3.

Stopping the WebSphere application server

Login to the Get-Services server and stop the WebSphere application server before modifying the configuration.

Modifying the local.xml file

In order to login via WebSphere Portal Server, you configure Get-Services to use an alternate HTTP authentication method.

To modify the local.xml file:

1 Using a text editor, open the local.xml file located at:

```
<application_server>\oaa\WEB-INF\.
```

2 Add the following entry on a separate line anywhere between the <settings> and <\settings> tags:

```
<httpauthclass>HttpAlternateAuthenticationManager</httpauthclass>
```

3 Save the file.

Modifying the web.xml file

You will need to enable the AuthController servlet to establish a proxy for HTTP basic authentication.

To modify the web.xml file:

1 Using a text editor, open the web.xml file located at:

```
<application_server>\oaa\WEB-INF.
```

2 Add the following lines at the end of the last <servlet> definition:

```
<servlet>
  <servlet-name>AuthController</servlet-name>
  <display-name>AuthController</display-name>
  <description>A controller (decorator) servlet that can be used to
  enable configurable auth protection of any resource.</description>

  <servlet-class>com.peregrine.oaa.archway.AuthControllerServlet
</servlet-class>
  <load-on-startup>2</load-on-startup>
</servlet>

<servlet-mapping>
```

```

    <servlet-name>AuthController</servlet-name>
    <url-pattern>/servlet/basicauth/*</url-pattern>
  </servlet-mapping>
</servlet-mapping>
  <servlet-name>AuthController</servlet-name>
  <url-pattern>/servlet/auth/*</url-pattern>
</servlet-mapping>

```

- 3 Save the file.

Modifying the `ibm-web-ext.xmi` file

You need to set the `fileServingEnabled` parameter to `true` to handle static content.

To modify the `ibm-web-ext.xmi` file:

- 1 Using a text editor, open the `ibm-web-ext.xmi` file. The default file path is:
`c:\WebSphere\AppServer\installedApps\getit.ear\getit.war\WEB-INF`
- 2 Find the `fileServingEnabled` parameter and set it to `true`.
`fileServingEnabled="true"`
- 3 Save the file.

Modifying the `setDomain.js` file

To use the alternate configuration of WebSphere Portal Server, you must enable the `setDomain` function.

Note: If you are setting up WebSphere Portal Server in the recommended configuration, you may skip these instructions.

To modify the `setDomain.js` file:

- 1 Login to the Get-Services server.
- 2 Stop your application server.
- 3 Using a text editor, open the `setDomain.js` file located at:
`<application_server>\oaa\js.`
- 4 Add the following line to the end of the file:
`setDomain();`
- 5 Save the file.

Starting the WebSphere application server

Start the WebSphere application server for changes to take effect.

Deploying the Get-Services WAR file to WebSphere Portal Server

After you deploy the Get-Services WAR file to WebSphere Portal Server, you can then configure the portlets you want to display, the display settings, and the access rights to each portlet.

See your WebSphere Portal Server documentation for detailed instructions.

To deploy the Get-Services WAR file:

- 1 Login to the WebSphere Portal as `wpsadmin` or another user with administrative rights.
- 2 Select **Portal Administration** from the Places menu.
- 3 Click **Portlets -> Install Portlets**.
- 4 Click **Browse** and navigate to the Destination path you entered when you created the Get-Services WAR file.
- 5 Click **Next** to load the Get-Services WAR file.

WebSphere Portal Server displays a list of portlets to be installed.

- 6 Click **Install**.

WebSphere Portal Server installs the portlets and displays the message “Portlets successfully installed.”

Configuring WebSphere Portal Server places and pages

Note: Refer to your WebSphere Portal documentation for details on places and pages.

You can deploy Get-Services portlets in any place or page that meet the following requirements.

Places Your WebSphere Portal Server places must have the following characteristics:

- Supported markups must include HTML

Pages Your WebSphere Portal Server pages must have the following characteristics:

- Supported markups must include HTML
- The page must be set to “allow all portlets that a user can access.”
- All Get-Services portlets that you display in a page must grant “all authenticated users” the minimum edit permission.

Enabling edit rights for Get-Services portlets

WebSphere Portal Server users will need edit rights to the Get-Services portlets in order to add and customize them to their portal page.

To enable edit rights for Get-Services portlets:

- 1 Login to the WebSphere Portal as `wpsadmin` or another user with administrative rights.
- 2 Select **Portal Administration** from the Places menu.
- 3 Click **Security -> Access Control List**.
- 4 Select the **Special groups** option and select **All authenticated users** from the select box.
- 5 From the Select the objects for the permissions select box, select **portlet applications**.
- 6 Select the **Search on** option, and then enter **Peregrine** in the Name Contains field.
- 7 Click **Go**.

WebSphere Portal Server displays a list of portlets with Peregrine in the name.

- 8 In the Edit column, click **Select All** at the bottom of the table.
- 9 Click **Save**.

Users can now view and customize Get-Services portlets from the WebSphere Portal Server interface.

Modifying `httpd.conf` for IBM HTTP Server

In order to use the alternate configuration of WebSphere Portal Server, you will need to modify the `httpd.conf` file used by the IBM HTTP Server to add the forward and reverse proxy URLs to your remote instance of Get-Services.

Note: If you are setting up WebSphere Portal Server in the recommended configuration, you may skip these instructions.

To modify `httpd.conf` for IBM HTTP Server:

- 1 Login to the Get-Services server.
- 2 Stop your IBM HTTP Server.
- 3 Using a text editor, open the `httpd.conf` file located at:
`C:\IBM HTTP Server\conf`
- 4 Add the following lines to the end of the file:

```
ProxyPass /<oaa root>/ http://<server>:<port>/
<oaa root>/servlet/basicauth/
ProxyPassReverse /<oaa root>/ http://<server>:<port>/
<oaa root>/servlet/basicauth/
```

For `<oaa root>`, enter the name of the oaa virtual directory used by IBM HTTP Server. By default, this virtual directory is `oaa`.

For `<server>:<port>` enter the server name and communications port number where Get-Services is installed.

- 5 Save the file.

Configuring WebSphere Translation Server for Get-Services

You can configure Get-Services to use a WebSphere Translation Server to provide real-time translations of on-screen data.

Note: The OAA interface to the WebSphere Translation Server requires a mouse to use. The translation interface will be made 508 accessible in a future release.

To configure WebSphere Translation Server for Get-Services:

- Step 1** Copy the file `wts.jar` to the Get-Services deployment folder. See *Copying wts.jar to the Get-Services deployment folder* on page 55.
- Step 2** Configure Get-Services to use the WebSphere Translation Server. See *Configuring Get-Services to use the WebSphere Translation Server* on page 55.

Copying wts.jar to the Get-Services deployment folder

The following instructions describe where to find and copy the file `wts.jar`.

To copy wts.jar to the Get-Services deployment folder:

- 1 Stop your application server.
- 2 Browse to the location of your WebSphere Translation Server installation.
- 3 Copy the file `wts.jar` from this folder.
- 4 Paste the file `wts.jar` into the Get-Services deployment folder located at:
`<Application_server>\WEB-INF\lib`
- 5 Restart your application server.

Configuring Get-Services to use the WebSphere Translation Server

The following instructions describe how to configure Get-Services to use the WebSphere Translation Server.

To configure Get-Services to use the WebSphere Translation Server:

- 1 Login to the Get-Services admin page (admin.jsp).
- 2 Click **Settings** -> **Common** tab.

The Admin Settings page opens.

| Change Management | Common | E-mail | Logging | Portal | Portal DB | ServiceCenter | Service Desk | Themes | Web Application | SSL |
|-------------------------------------|--------|-------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------|--------------|--------|-----------------|-----|
| Maximum attached file size (in KB): | | 0 | | The size limit, in KB, 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: | | portalDB | | Adapter target name used to support common user operations. | | | | | | |
| List of target aliases: | | weblication;mail | | Specifies a list of semicolon delimited target aliases used by web applications in this package. | | | | | | |
| System Maintenance username: | | System | | The system maintenance username. This login provides access to administrative functionality. The system maintenance user is independent of any deployed adapter(s). Use this login to configure a newly installed system or to troubleshoot an existing install. | | | | | | |
| System Maintenance password: | | | | The system maintenance password. | | | | | | |
| Application path: | | WEB-INF/app/ | | Directory location of the Peregrine Portal Web Applications. | | | | | | |
| Event queue: | | portalDB | | Enter the name of the adapter that should be used by the Peregrine Portal event queue engine. For example: <ul style="list-style-type: none"> • To use ServiceCenter's repository, enter "sc" • To use AssetCenter's repository, enter "ac" | | | | | | |
| Language Translation | | | | | | | | | | |
| Translation Server Factory Class: | | com.peregrine.util.WTSLanguageTranslatorFactory | | The Java factory class which generates the proper class associated with the Translation Server. | | | | | | |
| Language from which to translate: | | English | | The language from which to translate or the base language in which all text is currently displayed as. | | | | | | |
| Translation Server IP Address: | | 10.3.128.181:1097 | | The IP address of the Translation Server. This address may or may not contain a port number depending on the Translation Server requirements. Click for default: {} | | | | | | |

- 3 Enter the following configuration settings:
 - a **Translation Server Factory Class:** Enter the Java factory class for the Translation server. The default Java factory class is:
`com.peregrine.util.WTSLanguageTranslatorFactory`
 - b **Language from which to translate:** Enter the source language that you want translated. The default value is English.
 - c **Translation Server IP Address:** Enter the IP address and communications port to the Translation Server. For example: 10.3.128.181:1097.
- 4 Click **Save**.
The Control Panel opens.
- 5 Click **Reset Server**.

Translating on-screen data with a Translation Server

If you plan to store Get-Services data in a mixture of languages, you can configure Get-Services to send data to a Translation Server for real time translation. This interface will only translate data retrieved from the back-end database or manually typed into form inputs. If you need a translated user interface, you can purchase a Get-Services language pack directly from Peregrine Systems.

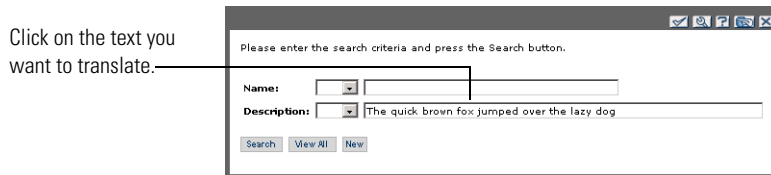
To translate on-screen data with a Translation Server:

- 1 Enable the translation server from the **Administration** -> **Settings** page as described in *Configuring Get-Services to use the WebSphere Translation Server* on page 55.

The translate button appears in the upper right tool bar.

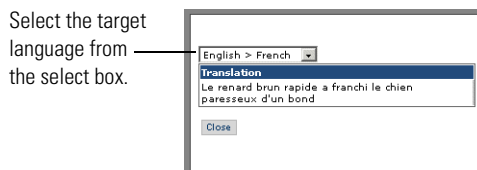


- 2 Click on the source data or form input you want to translate.



- 3 Click the translate button.

The Translation window opens.



- 4 Select the target language to which you want to translate from the drop down select box.

The translation of your selection displays in the Translation box.

WebLogic 6.1 SP4

The following procedures configure WebLogic to run Get-Services on Windows.

To configure WebLogic 6.3 SP4 with IIS:

- Step 1** Stop both WebLogic and your Web server. See *Stopping the servers* on page 58.
- Step 2** Edit the `startWebLogic.cmd` file to set the system password, memory settings, and start mode. See *Editing startWebLogic.cmd* on page 59.
- Step 3** Edit the `Server.Policy` file to set the debug to true. See *Editing the Server.Policy file* on page 60.
- Step 4** Run the Get-Services installer. See *Running the installer* on page 60.
- Step 5** Move `.jar` files to the Java development kit `ext` folder. See *Moving .jar files to the Java development kit ext folder* on page 60.
- Step 6** Configure IIS to use `iisforward.dll` as an ISAPI filter and create an extension. See *Configuring the iisforward.dll as an ISAPI filter and an extension* on page 61.
- Step 7** Configure IIS to use `iisproxy.dll` as an extension. See *Configuring the iisproxy.dll as an extension* on page 62.
- Step 8** Create a virtual directory for Get-Services in your Web server. See *Creating a virtual directory for Get-Services* on page 63.
- Step 9** Restart WebLogic and your Web server. See *Restarting the Servers* on page 63.

Stopping the servers

Before you begin configuring WebLogic, you must close your WebLogic server and Web server.

To begin configuring WebLogic:

- 1 Stop the WebLogic application server.
- 2 Stop the Web server.

Editing startWebLogic.cmd

To edit startWebLogic.cmd:

- 1 Open the file startWebLogic.cmd file in any text editor. The default file path is:

c:\bea\wlsrserver6.1\config*<mydomain>*\

- 2 Scroll to the following section of the script:

```
echo *****
echo * To start WebLogic Server, use the password      *
echo * assigned to the system user. The system        *
echo * username and password must also be used to    *
echo * access the WebLogic Server console from a web  *
echo * browser.                                       *
echo *****
@rem Set WLS_PW equal to your system password for no password prompt.
set WLS_PW=password
```

- 3 In the last line, change the word “password” to your WebLogic system password.
- 4 Search for the -ms parameter and make sure it is set to “256m” or greater.
- 5 Search for the -mx parameter setting in the file. This setting must be at least “256m” but “512m” is recommended.

Note: Make sure that the setting for maximum heap size is less than the free RAM available to the application server(s). Exceeding the amount of available RAM causes the JVM processes to swap to disk, reducing overall performance.

- 6 Set the STARTMODE variable to STARTMODE=false.

The first time you start WebLogic after the installation, you will need to start it in development mode for it to find the Web applications that have been deployed.

- 7 Add the following phrase to the entry that precedes the weblogic.Server entry. (Make sure to retain the quotation marks.)

```
“-Djava.security.auth.login.config==<Weblogic>\lib\server.policy”
```

Where *<Weblogic>* is the installation path for Weblogic. By default this is:

c:\bea\wlsrserver6.1

- 8 Save the file.

Editing the Server.Policy file

To edit Server.Policy:

- 1 Open the file Server.Policy file in any text editor. The default file path is:
c:\bea\wlserver6.1\lib\
- 2 Add the following lines to the end of the file:

```
ServerLoginModule
{
    weblogic.security.internal.ServerLoginModule required debug=true;
};
```

- 3 Save the file.

Running the installer

Run the Get-Services installer using the Custom install option. See *Custom installation procedures* on page 74.

Moving .jar files to the Java development kit ext folder

To move .jar files:

- 1 Verify that the following directory exists. If it does not exist, create it:
c:\bea\jdk131\jre\lib\ext
- 2 Go to the Peregrine OAA Platform lib folder (typically
bea\wlserver6.1\config*<my_domain>*\applications\oaa\WEB-INF\lib),
where *<my_domain>* is the WebLogic domain of the system on which
WebLogic is installed. Move the following file to the \bea\jdk131\jre\lib\ext
folder: log4j-1.2.6.jar

- 3 Go to the Peregrine OAA Platform external folder (typically `Peregrine\oaa\external`) and copy the following files to the `\bea\jdk131\jre\lib\ext` folder:

```

jaas.jar
jai_codec.jar
jai_core.jar
jce1_2_1.jar
jcert.jar
jnet.jar
jsse.jar
local_policy.jar
mllibwrapper_jai.jar
oaasecurityproxy.jar
sunjce_provider.jar
US_export_policy.jar
xalan.jar
xercesImpl.jar
xml-apis.jar

```

Configuring the `iisforward.dll` as an ISAPI filter and an extension

To establish a connection between WebLogic and IIS, you install the file `iisforward.dll` as an ISAPI filter.

To install `iisforward.dll` as an ISAPI filter and an extension:

- 1 Open the Internet Services management console.
- 2 Right-click the `<Machine_name>` and then click **Properties**.

Note: This is not a Web site; it is the parent node in the tree for the Web sites.

A dialog box opens.

- 3 Click **Edit** from the Master Properties pane.
- 4 Click the **ISAPI Filters** tab.
- 5 Click **Add**.
- 6 Enter the following information:
 - a **Filter Name:** `iisforward`.
 - b **Executable:** `iisforward.dll`. The default file path is:


```
c:\bea\wlserver6.1\bin\iisforward.dll
```

- 7 Click **OK**.
- 8 Click the **Home Directory** tab.
- 9 Click **Configuration**.
The Application Configuration page opens on the App Mappings tab.
- 10 Verify that there is a mapping for the `.wlforward` extension. If it does not exist, click **Add** to map the `.wlforward` extension.
- 11 Enter the following information:
 - a Executable: `issforward.dll`. The default file path is:
`c:\bea\wlserver6.1\bin\issforward.dll`
 - b Extension: `.wlforward`.
- 12 Close the Internet Services management console.

Configuring the `iisproxy.dll` as an extension

To establish a connection between WebLogic and IIS, you install the file `iisproxy.dll` as an extension.

To install `iisproxy.dll` as an extension:

- 1 Open Internet Services management console.
- 2 Right-click the **Default Web Site** node and then click **Properties**.
- 3 Click the **Home Directory** tab.
 - a Select the **Read** check box to enable it.
 - b From the **Execute Permissions** drop-down list, select **Scripts and Executables**.
- 4 Click **Configuration**.
The Application Configuration page opens on the App Mappings tab.
- 5 Verify that there is a mapping for the `.jsp` extension and that it is mapped to `c:\bea\wlserver6.1\bin\iisproxy.dll`.
 - a If the `.jsp` extension mapping is not there, do the following:
 - b Click **Add**.
 - c Enter the following information:
 - Executable: `iisproxy.dll`. The default file path is:
`c:\bea\wlserver6.1\bin\iisproxy.dll`
 - Extension: `.jsp`.

Note: Ensure that the `iisproxy.dll` is located in the same directory as the `iisforward.dll`.

- 6 Close the Internet Services management console.

Creating a virtual directory for Get-Services

To run Get-Services, you create a virtual directory in your Web server that maps to your WebLogic deployment folder. The typical installation creates a virtual directory called `oaa`, but you can specify a different virtual directory name.

To configure a virtual directory:

- 1 Use the following guidelines to create the virtual directory on the Default Web Site.

| Requirement | Setting |
|----------------------------|------------------------------------------------|
| Create virtual directory | <code><oaa></code> |
| Access Permissions | Read, Run scripts |
| Map to physical path | <code><Weblogic>\applications\oaa</code> |
| Set Execute Permissions to | Scripts and Executables |

- a For `<oaa>`, enter the name of the virtual directory you want to use for Get-Services. You use this name in your application server configuration.
- b For `<Weblogic>`, enter the path to your WebLogic installation. The default file path is:


```
c:\bea\wlserver6.1\config\<my_domain>\applications\oaa
```
- 2 Right-click the newly created virtual directory under Default Web Site.
 - a Select **Properties**.
 - b Verify that the permission is **Scripts and Executables**.
- 3 Click **Configuration** on the Home Directory tab.

The Application Configuration page opens on the App Mappings tab.
- 4 Verify that there is a mapping for the `.jsp` extension and that it is mapped to `c:\bea\wlserver6.1\bin\iisproxy.dll`.

Restarting the Servers

To activate the new WebLogic configurations, restart the servers.

To activate the WebLogic configurations:

- 1 Restart your Web server.
- 2 Restart the WebLogic server.
- 3 Start Get-Services.

Typical installation option

A typical installation of Get-Services installs the most commonly used components of the product and saves application files and data in default destination directories. Most users choose Typical installation.

Typical installation components

Following is a brief description of the components that are automatically installed with a Typical installation of Get-Services:

Applications and File Locations

| Get-Services Component | Default Installation Directory |
|-------------------------------|-----------------------------------------------|
| Apache Web Server | C:\Program Files\Peregrine\Common\Apache2 |
| Tomcat Application Server | C:\Program Files\Peregrine\Common\Tomcat4 |
| Java Development Kit | C:\Program Files\Peregrine\Common\jdk1.3.1_05 |
| OAA Platform and Get-Services | C:\Program Files\Peregrine\oaa |

For complete information about specific software components that can be installed and configured with Get-Services, see the Get-Services Compatibility Matrix. Go to support.peregrine.com and click **Documentation -> Get-Services -> Compatibility Matrices -> Get-Services 4.1.2.**

Important: Make sure to check the entire Get-Services compatibility matrix *before* starting the installation process.

Services

The installation program will also create and start the following services on your Windows server:

- Apache Web Service
- Peregrine Tomcat Service

Important: If you are already running another Web or application server on the target Windows system, stop the service(s) for the application(s) before beginning the Get-Services setup program. If you do not stop these services before beginning the install process, the setup program will complete successfully; however, it may not create the Apache and Peregrine Tomcat services needed to run Get-Services.

Communications ports

Get-Services uses the following communications ports in a typical installation. After installation, you can configure Get-Services to use one or more of the alternate communications ports if your local network already uses these communications ports.

| Default port | Component used by | Alternate port |
|--------------|----------------------------------------------------------------------|----------------|
| 80 | Apache Web Server | 8081 |
| 8005 | Tomcat application server administration | 8015 |
| 8009 | Tomcat application server worker file | 8019 |
| 8011 | Tomcat application server worker file for load balancing (optional). | 8021 |
| 8013 | Tomcat application server worker file for load balancing (optional). | 8023 |
| 8015 | Tomcat application server worker file for load balancing (optional). | 8025 |

Note: To change settings for these components or to use or install different components, use the Custom installation option for Get-Services.

Typical installation procedures

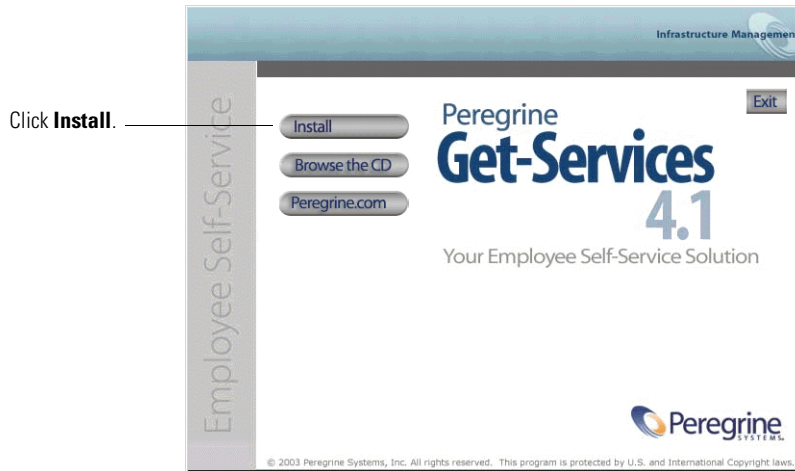
This section explains how to install Get-Services with a Tomcat application server and an Apache web server on a Windows operating system.

To perform a typical installation of Get-Services on Windows:

- 1 Insert the Get-Services installation CD into your computer's CD ROM drive. Your computer should automatically launch the installer.

If the installer does not automatically start, click **Start -> Run**; browse to the CD ROM drive; and double-click **Setup.exe** to run the installer.

- 2 In the installer introduction screen, click **Install**.

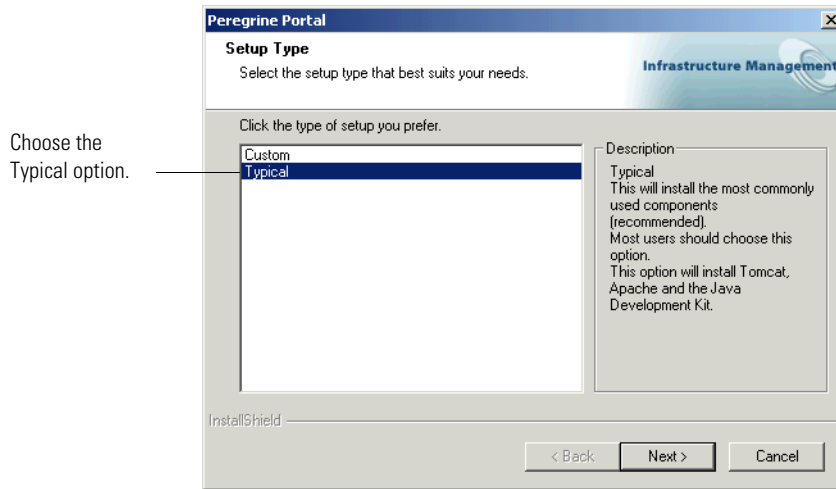


Status messages indicate that the Setup program is preparing the InstallShield Wizard.

Note: Setup stops Apache and Peregrine Tomcat services. Follow the prompts to continue.

- 3 In the Setup Type screen, choose **Typical** and then click **Next**.

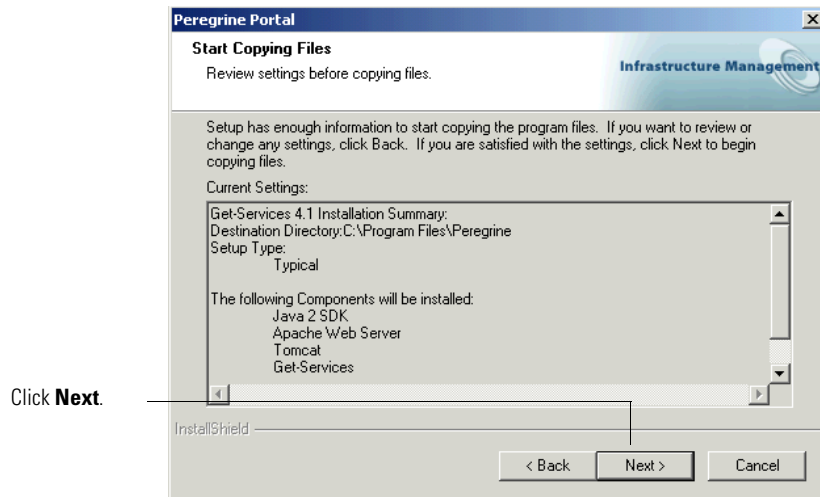
Note: This screen is not displayed during a maintenance or upgrade installation.



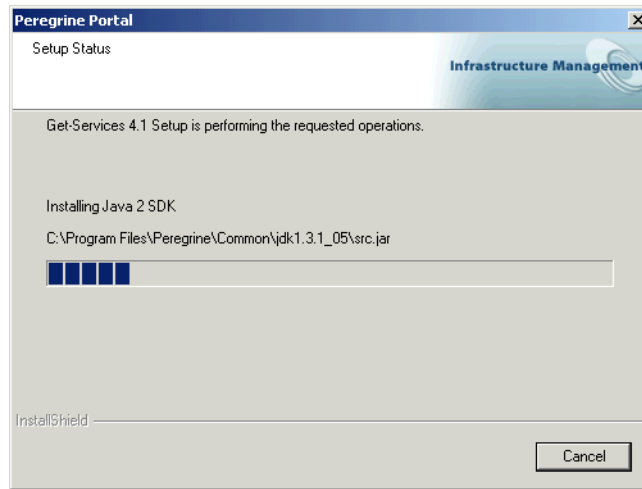
The installer displays status messages to validate the location of the Host system name.

- 4 In the Start Copying Files screen click **Next**.

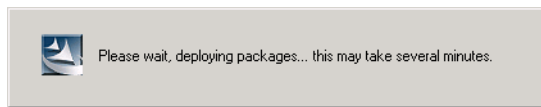
Note: This screen is not displayed during a maintenance or upgrade installation.



The Setup Status screen shows that Get-Services is installing the files to your system.



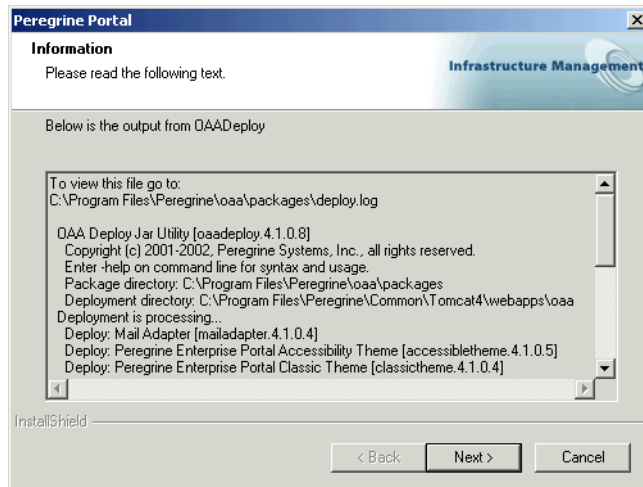
A status message indicates that the Get-Services packages are being deployed to your server. This phase can take several minutes.



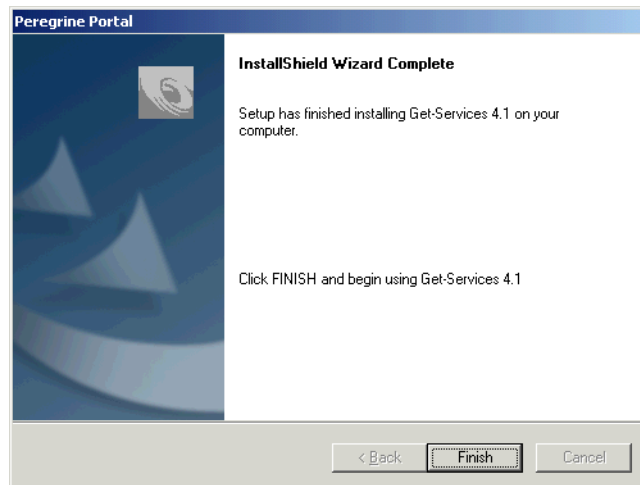
At this time, the setup program is performing the following:

- Copying the documents
- Creating and starting the Apache and Peregrine Tomcat services

- 5 Verify the output from the OAAdeploy process and click Next.

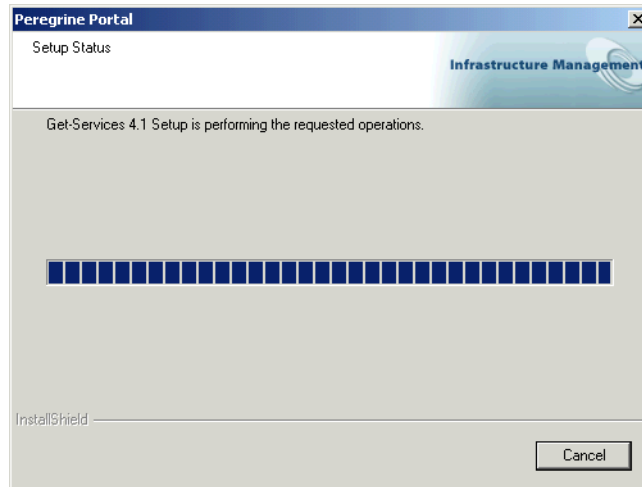


- 6 In the InstallShield Wizard Complete screen click Finish.



Note: The dialog box displays “Maintenance Complete” during a maintenance or upgrade installation.

The setup program completes the final steps of the installation.



- 7 After the InstallShield Wizard screen closes, access Windows Services to verify that the Apache and Peregrine Tomcat services were created. Status for these services should display **Started**.

If these services did not start up, refer to the *Troubleshooting* chapter for possible installer problems.

This completes the procedures required for a Typical installation of Get-Services on a Windows operating system server.

Custom installation option

The following section describes how to perform a custom installation of Get-Services on a Windows operating system server.

Custom installation components

For complete information about the requisite software that must be installed and configured before you install Get-Services, see the Get-Services Compatibility Matrix. Go to support.peregrine.com and click **Documentation -> Get-Services -> Compatibility Matrices -> Get-Services 4.1.2**.

Important: Make sure to check the entire Get-Services compatibility matrix *before* starting the installation process.

Communications ports

The communications ports that a Get-Services custom installation uses depends on the application components that you select. Refer to your Web and application server documentation to determine what communications ports they require. After installation, you can configure Get-Services to use alternate communications ports if your local network already uses particular communications ports.

| Default port | Component used by | Alternate port |
|--------------|------------------------------------------|----------------|
| 8005 | Tomcat application server administration | 8015 |
| 8009 | Tomcat application server worker file | 8019 |
| 80 | IIS Web server | 8081 |

Port conflicts

If you are using Tomcat as your application server and running Oracle version 9.2.0.1, by default there is a port conflict over port 8009. To resolve a port conflict, you can do one of the following:

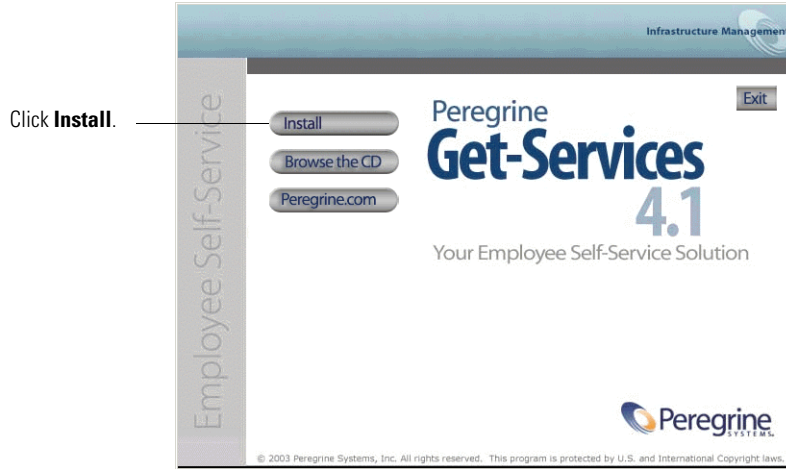
- Install Oracle 9.2.0.1 on a separate server (recommended).
- Configure Oracle 9.2.0.1 to use a port other than 8009.
- Configure the primary instance of Tomcat (and all other instances) to use a port other than 8009. For more information about setting Tomcat ports, see the *Load balancing* chapter.

For more information about checking for port conflicts, see *Check for Tomcat port conflicts* in the *Troubleshooting* chapter.

Custom installation procedures

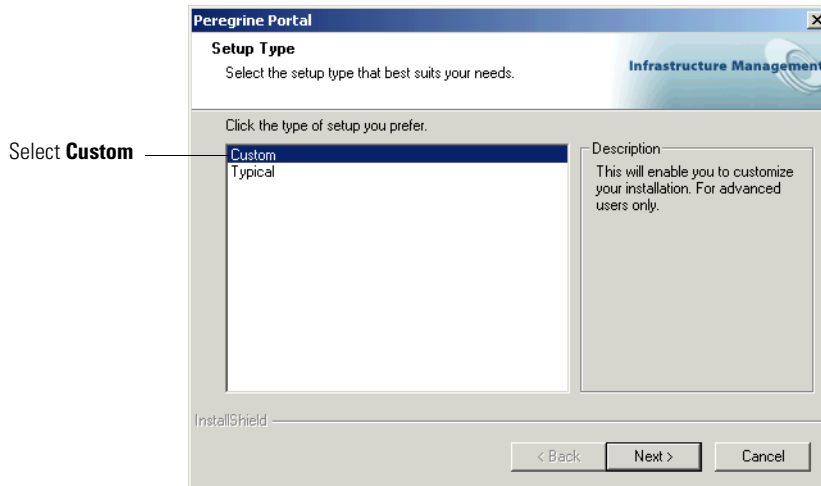
To perform a custom installation of Get-Services on Windows:

- 1 Insert the Get-Services installation CD into your computer's CD ROM drive. Your computer should automatically launch the installation program.
If the installation program does not automatically start, using the Windows **Start > Run** command, browse to the CD ROM drive and open **Setup.exe**.
- 2 In the main installation program screen, click **Install**.

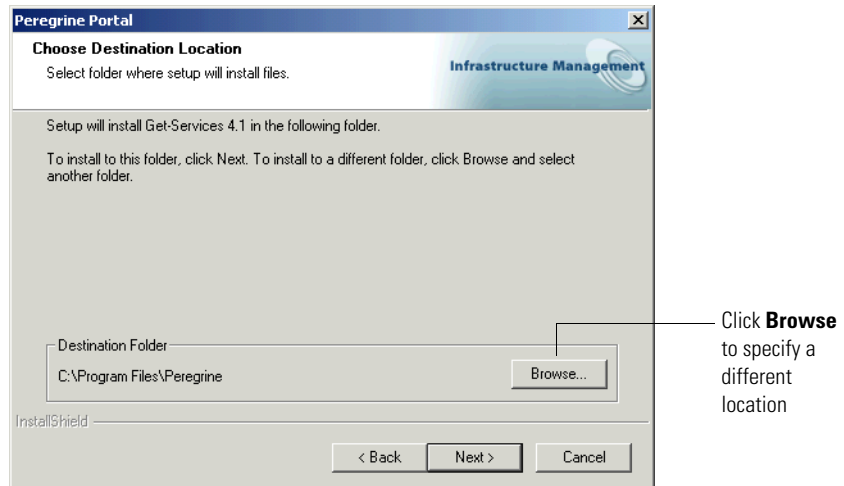


Status messages indicate that the Setup program is preparing the InstallShield Wizard.

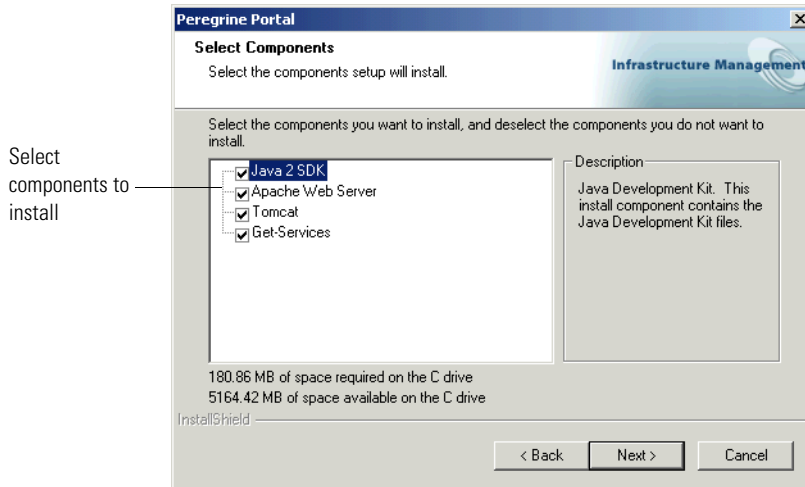
- 3 In the Setup Type screen, select **Custom**, and then click **Next**.



- 4 In the Choose Destination Location screen, either browse to the location where you want Get-Services installed, or accept the default location, C:\Program Files\Peregrine. Click **Next** to continue.



- In the Select Components screen, choose the components that you want installed on this machine and click **Next**.



Important: Clear the check box next to each component that you do *not* want to install.

For a development environment, select or clear the components that you will install manually or for which you have alternate software. For example, clear the Apache Web Server option to use an alternate Web server.

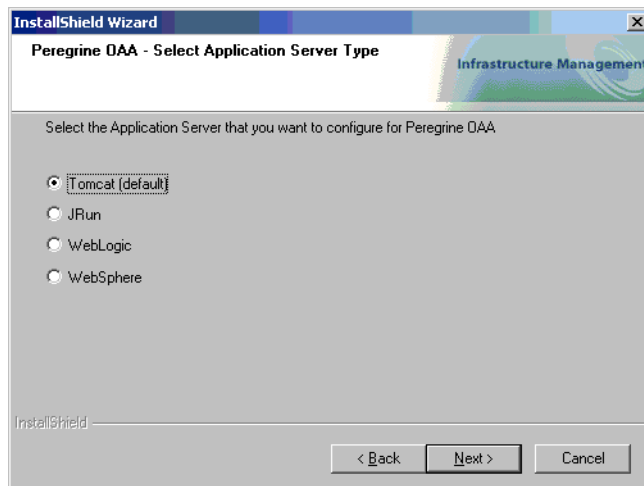
For a production environment, select the components you want to run from this machine.

- **Get-Services.** Installs the program files necessary for Get-Services. You must install the Get-Services files on the same machine as the primary application server.
- **Apache Web Server.** Get-Services requires a Web server, a software component that handles Web pages. Clear the check box in this option so that the installation procedure does not install the Apache Web server.
- **Java Development Kit.** Installs the Sun Microsystems Java Development Kit (Java 2 SDK). You must install this component on every machine running an application server.

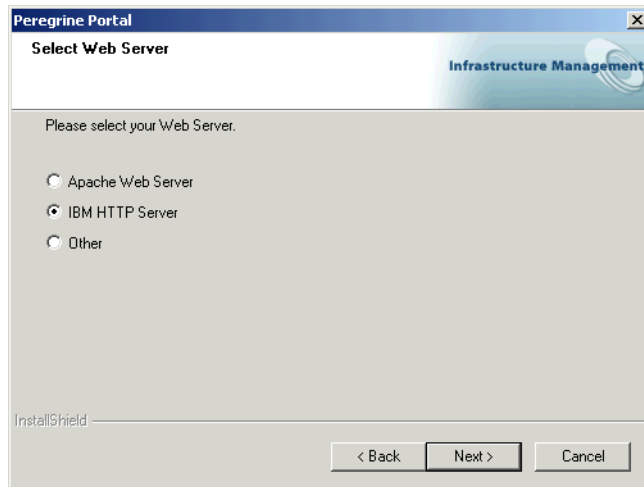
- Tomcat. Installs the Tomcat application server. Get-Services requires at least one application server to process Java applications. You can install multiple instances of your application server for load balancing. You must install this component on the same machine as the Get-Services files.

Status messages indicate the validation and location of the Host system name.

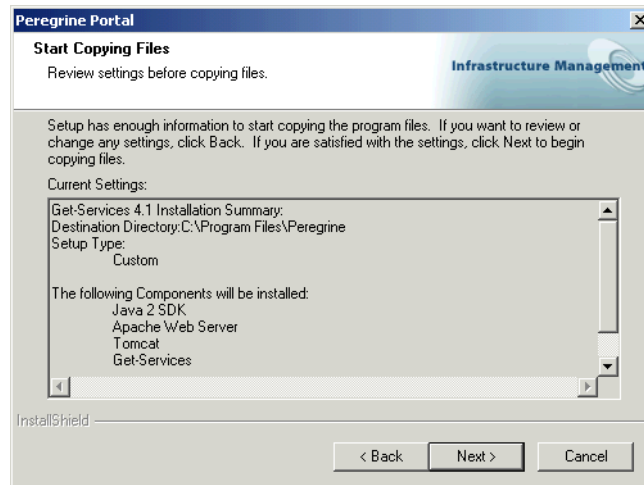
- 6 If you do not choose Tomcat as the application server, select the application server you want Get-Services to configure from the Select Application Servers Type dialog box. Click Next.



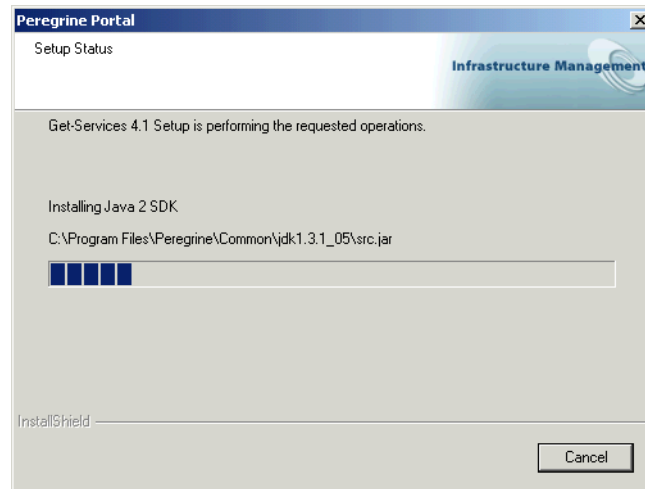
- 7 If you do not choose the Apache Web Server option, select the Web server you want to install from the Select Web Server dialog box.



- 8 The installer prompts you to choose the type of database you will use for the Reporting Data Store (RDS). Click **Next**.
- 9 In the Start Copying Files screen, verify the Custom installation components. To review or change settings, click **Back**. To continue with the installation, click **Next**.

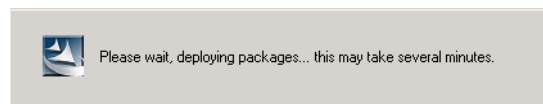


The Setup Status screen displays the status of the installer.



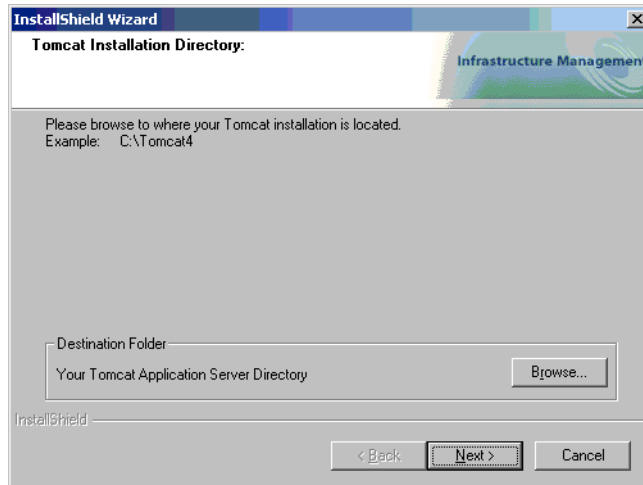
- 10** If you chose the Tomcat application server, the Setting CATALINA_OPTS screen asks you whether you want to configure this parameter for Tomcat memory settings. Click **Yes** or **No** and click **Next**.

A status message indicates that the Get-Services packages are being deployed to your server.



This phase may take several minutes.

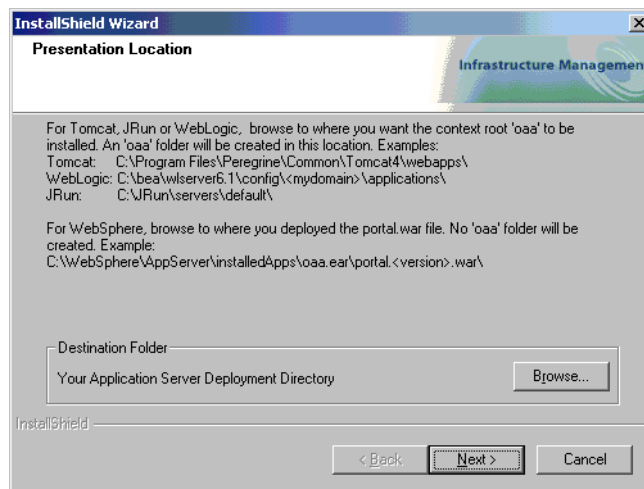
If you are using Tomcat, the Tomcat Installation Directory screen is displayed.



- 11 Choose your installation directory, and click **Next**.

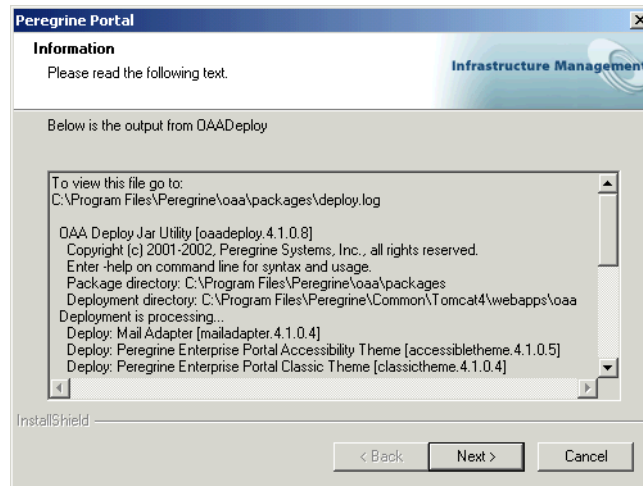
Note: If you are not using Tomcat, you will not see this window. Go to step 12.

- 12 In the Presentation Location dialog box, choose a location from which to run Get-Services. Click **Next**.

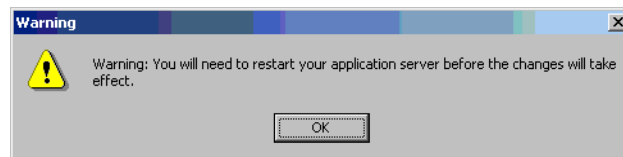


The setup program deploys the packages.

- 13 Verify the output from the OAAdeploy process and click Next.

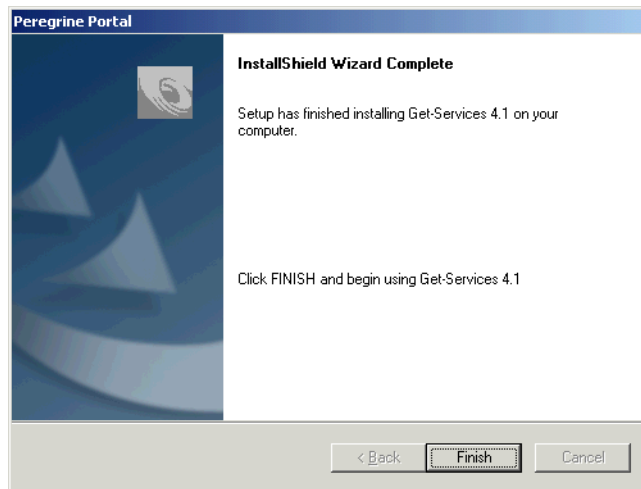


- A Setup Status dialog box opens as the installation is completed.
The following warning message appears:



- 14 Click OK.

- 15 In the InstallShield Wizard Complete screen click **Finish** to end the Get-Services installation program.



- 16 After the InstallShield Wizard screen closes, access Windows Services to verify startup of your Web server and application server services.
If one or both of these services did not startup, refer to the *Troubleshooting* chapter for solutions.

This completes the procedures required for a Custom installation of Get-Services on a Windows operating system server.

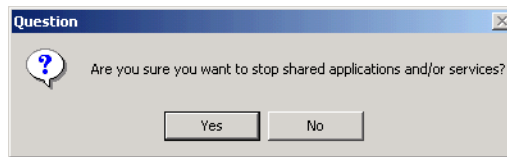
Uninstalling Get-Services

Follow these procedures to uninstall Get-Services from your Windows system.

Warning: These procedures remove all the components that you selected to install. If you chose the Typical installation option, uninstall removes Get-Services, Peregrine Tomcat, Apache, and JDK. If you chose the Custom installation option, then only those components that you selected for installation are removed.

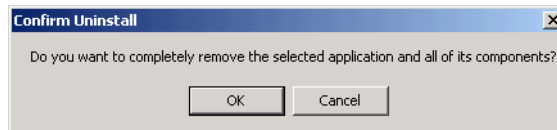
To uninstall Get-Services:

- 1 Click **Start -> Settings ->** and **Control Panel**. Then click **Add or Remove Programs**.
- 2 Select **Peregrine Portal 4.1.2** and click **Change/Remove**.
A status message indicates that the setup program is preparing the InstallShield wizard to guide you through the process.
- 3 The **Close Programs** screen is displayed if any Get-Services services or applications are running. Click **Next** to continue.
- 4 The verification message box opens. Click **Yes** to continue.



Status messages indicate the termination of the services for Apache and Tomcat.

- 5 The **Confirm Uninstall** dialog box opens. Click **OK** to remove Get-Services.



Important: Back up any data you want to save before continuing.

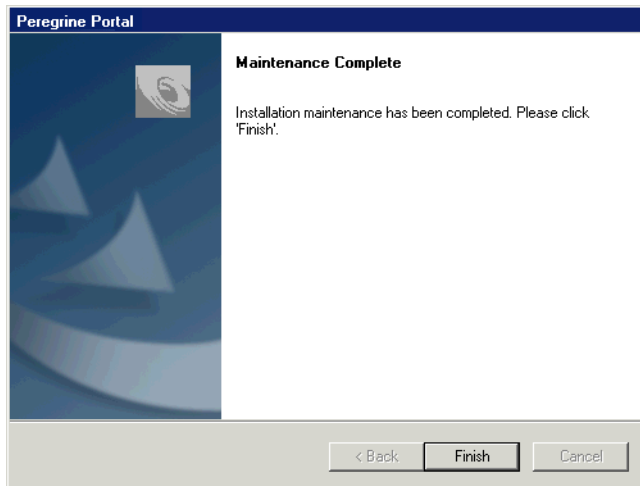
- 6 The **Shared Files** screen opens if there are any shared files to be removed during setup.

If WebSphere is installed on this computer, you are prompted to confirm the removal of six JAR files. Click **No** or **No to All** to retain these JAR files.

Warning: Do not remove the shared JAR files. The WebSphere Advanced Administrative Console requires these files.

If there are no shared files to remove, then a status message indicates that the uninstall program is removing files from your computer.

- The Maintenance Complete screen is displayed. Click **Finish** to uninstall Get-Services.



Testing your installation

Use the following steps to confirm that you have properly installed Get-Services on Windows.

To test your Get-Services installation:

- Verify that your application and Web servers are started.
- Open a Web browser and type the following in the Address field:

`http://<server_name>:<port>/oaa/admin.jsp`

For `<server_name>`, enter the server name where the Get-Services Web server resides.

For `<port>`, enter one of the following communications port numbers:

| Application Server used | Port Number |
|-------------------------|-----------------------------|
| WebSphere | 9080 |
| WebLogic | 7001 |
| Tomcat | 80, can be omitted from URL |

If everything is configured properly, the Administrator login page opens.

If the Get-Services administration login page does not open, see the *Troubleshooting* chapter for solutions.

3 Installing on AIX, Linux, or Solaris

CHAPTER

This chapter covers the following topics:

- *Choosing an installation environment* on page 88
- *Deploying multiple Peregrine Portal applications* on page 90
- *Migrating Get-Services from previous versions* on page 92
- *Previous version of Get-Services* on page 91
- *Installing Get-Services with an existing Get-Answers deployment* on page 95
- *Configuring alternate application servers* on page 95
- *Typical Installation Option* on page 125
- *Custom Installation Option* on page 134
- *Specify the ServiceCenter version* on page 147
- *Uninstall—AIX, Linux, or Solaris* on page 147
- *Testing your installation* on page 148

Choosing an installation environment

You can install Get-Services in one of two installation environments:

- Development environment
- Production environment

The Get-Services development environment is intended for you to evaluate product features and customize your installation prior to deployment in a production environment. In a development environment, you install all software required for Get-Services on one computer system.

You have two choices of development environment:

- Typical installation
 - Apache 2.0 Web server
 - Get-Services deployed on Tomcat 4.1.29 application server
- Custom installation
 - Choice of Web server
 - Choice of application server where you deploy Get-Services

The Get-Services production environment is intended to maximize server performance and scalability, and to deploy any customizations you have made. In a production environment, you install the various components of Get-Services on different servers to maximize performance.

You have two choices of production environment:

- Typical installation
 - Apache 2.0 Web server
 - Get-Services deployed on multiple instances of Tomcat 4.1.29 application server
- Custom installation
 - Choice of Web server
 - Choice of application server where you deploy Get-Services

Important: Before you begin the installation process, make sure to close all anti-virus software programs.

Development Environment

The following procedures describe how to install Get-Services in a development environment.

To install Get-Services in a typical development environment:

- Step 1** Acquire all necessary hardware and software.
- Step 2** Install the back-end database required for Get-Services.
- Step 3** Run the Get-Services installer and select the Typical installation option. See *Typical Installation Option* on page 125.
- Step 4** Configure the back-end databases and create Get-Services users.

To install Get-Services in a custom development environment:

- Step 1** Acquire all necessary hardware and software.
- Step 2** Install the back-end database required for Get-Services.
- Step 3** Install alternate application and Web servers.
- Step 4** Configure the alternate application server for Get-Services. See *Configuring alternate application servers* on page 95.
- Step 5** Run the Get-Services installer and select the Custom installation option. See *Custom Installation Option* on page 134.
- Step 6** Configure the back-end databases and create Get-Services users. See the *ServiceCenter and Administration* chapter of this guide.

Production Environment

The following procedures describe how to install Get-Services in a production environment.

To install Get-Services in a typical production environment:

- Step 1** Acquire all necessary hardware and software.
- Step 2** Install the back-end database required for Get-Services on a separate server.
- Step 3** Run the Get-Services installer and select the Typical installation option. See *Typical Installation Option* on page 125.
- Step 4** Configure multiple instances of Tomcat for load balancing on the Apache Web server. See the *Load Balancing* chapter of this guide.
- Step 5** Configure the back-end databases and create Get-Services users.

To install Get-Services in a custom production environment:

- Step 1** Acquire all necessary hardware and software.
- Step 2** Install the back-end database required for Get-Services.
- Step 3** Install the alternate application server and Web server on separate servers.
- Step 4** Configure the alternate application server for Get-Services. See *Configuring alternate application servers* on page 95.
- Step 5** Run the Get-Services installer and select the Custom installation option. See *Custom Installation Option* on page 134.
- Step 6** Configure the Web servers and application servers for load balancing. See the *Load Balancing* chapter of this guide.
- Step 7** Configure the back-end databases and create Get-Services users.

Deploying multiple Peregrine Portal applications

When multiple Peregrine Portal applications, including Get-Services, are deployed, *all* must use the same version of OAA. Multiple Peregrine Portal applications that use different versions of OAA are not supported.

Further, when you upgrade from a version prior to 4.1, you first upgrade all Peregrine Portal applications to version 4.1. Then you upgrade all Peregrine Portal applications to version 4.1.2.

Previous version of Get-Services

You can upgrade to Get-Services version 4.1.2 *only* from one of the following previously installed versions of Get-Services: 4.1, 4.1.0.1, or 4.1.0.2.

If you are upgrading to Get-Services version 4.1.2 from Get-Services version 4.0.1, first run the version 4.1 installer, and then run the version 4.1.2 installer.

Preserving customized web.xml file settings

You can open the `web.xml.xxx.bak` file, copy its customized configuration settings into the new `web.xml` file, and save the new file to preserve your customizations.

Note: The `<appsrv>/WEB-INF/web.xml` file has been renamed to `<appsrv>/WEB-INF/web.xml.xxx.bak`, where `<appsrv>` is the path to your application server, and `xxx` represents a unique sequence of characters generated by `File.createTempFile()`. This will preserve any customizations that you might have. (See *Preserving customized web.xml file settings*, next).

After upgrading Get-Services from 4.0.1 to 4.1, a new file called `web.xml.xxx.bak` is created in the `<appsrv>/WEB-INF` directory. You must reconcile the contents of this file with the contents of the new `web.xml` file. Any portion of `web.xml.xxx.bak` file that does not exist in the new `web.xml` file needs to be added to the `web.xml` file.

Migrating Get-Services from previous versions

To migrate older versions of Get-It or Get-Services to Get-Services 4.1.2 requires both a manual data migration process and the recreation of any interface customizations you have made. The following steps describe the migration process.

To migrate previous versions to Get-Services 4.1.2:

- Step 1** Review the customizations of previous version and determine which customizations need to be recreated in Get-Services 4.1.2. See *Recreating customizations in Get-Services 4.1.2* on page 92.
- Step 2** Install Get-Services 4.1.2 on a new system. See *Choosing an installation environment* on page 88.
- Step 3** Apply any required configuration changes to the back-end database you want to migrate to Get-Services 4.1.2. See *Configuring an existing back-end database for Get-Services 4.1.2* on page 95.

Recreating customizations in Get-Services 4.1.2

You cannot directly migrate customizations implemented before version 4.0.1 to Get-Services 4.1.2. Instead, you re-create your changes using the new features and methods available in Get-Services 4.1.2.

The following sections describe how to re-create customizations from previous versions.

No customizations

If you have made no customizations to Get-Services, you can simply install Get-Services 4.1.2 on a new system and migrate your data from your existing back-end database.

Customized JSP files

In previous versions, customers had to directly modify JSP files in order to add or remove certain functionality. The following table describes how to recreate some of the more common JSP file modifications.

| JSP file modification | New method to use |
|----------------------------------------------------------|--------------------------------------------------------------------------------------|
| Remove the user self-registration option from login page | Enable or disable the user registration option from the Administration Settings page |
| Remove the change password option from the login page | Enable or disable the change password option from the Administration Settings page |

Personalized pages

Get-Services 4.1.2 offers many more pages that you can personalize directly from the Web interface. If you personalized pages in a previous version, you re-create your personalized pages in Get-Services 4.1.2 using DocExplorer.

You can use personalization to:

- Add or remove fields from a page
- Save a personalized search results or details on your portal page

Customized skins, stylesheets, and themes

Get-Services 4.1.2 has combined all interface images and stylesheets into themes. Users can no longer select separate skins and stylesheets. The new themes consist of skins (which themselves are composed of image files, frame definitions, and layer files), cascading stylesheet definitions, and XSL templates.

Although you may copy over older custom themes to Get-Services 4.1.2, you may experience rendering errors due to the new images, CSS definitions, frame definitions, and layers. It is recommended that you re-create any custom themes using the Get-Services 4.1.2 version of the classic theme as your template.

Alternate login pages and authentication methods

If you used a custom login page or an alternate authentication method in a previous version, you can re-use or re-create these customizations. For more information about alternate security methods see the *Get-Services Administration Guide*.

Customizations made with a previous tailoring kit

Many customizations that required a tailoring kit in previous versions can now be done directly from the Get-Services Web interface. The following table describes how to re-create some of the more common tailoring kit changes.

| Tailoring kit modification | New method to use |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Added or removed fields from a form | Add or remove fields from Personalization |
| Added a new language or locale to the Get-Services interface | Create and edit language strings files directly. You may also purchase officially supported language packs from Peregrine Systems |
| Made changes to the common, portal, or Peregrine Studio packages | These packages are no longer available for tailoring. However, most common interface settings can now be customized from the Administration Settings page. |
| Made changes to schemas or ECMA server-side scripts | Review new functionality and determine if you still need the customized scripts and schemas. If you do need the customizations, you re-create them in the current version of the Get-Services tailoring kit. |

Configuring an existing back-end database for Get-Services 4.1.2

The following table lists the options available for data migration.

Get-Services 2.3 to Get-Services 4.1.2

| Back-end version | Migration required |
|---------------------|-----------------------------------------------------------------------|
| ServiceCenter 3.0 | Upgrade to ServiceCenter 4.x or 5.0.x |
| ServiceCenter 4.x | Apply Get-Services 4.1.2 unload files to existing ServiceCenter 4.x |
| ServiceCenter 5.0.x | Apply Get-Services 4.1.2 unload files to existing ServiceCenter 5.0.x |

Installing Get-Services with an existing Get-Answers deployment

If you are installing Get-Services and have already installed Get-Answers, remove the following file:

```
<deployment_directory>/WEB-INF/apps/getanswers/jscript/category.js
```

Note: This step is not required if you performed a *new* installation (not an upgrade) of Get-Answers version 4.1 or later.

Configuring alternate application servers

You install a Java-enabled application server to support your Peregrine Web applications. Peregrine OAA supports the following alternate application servers:

- *Existing Tomcat and Apache servers*
- *WebSphere Application Server 4.0.2*
- *WebSphere Application Server 5.0.2*
- *WebLogic 6.1 SP4*

The Get-Services Typical installation option installs Tomcat 4.1.29 and connects it to an Apache 2.0 Web server. You can also install Tomcat 4.1.29 using the Custom installation option.

Important: If you want to use an application server other than Tomcat 4.1.29, configure your application and Web servers *prior* to running the Get-Services installer.

See the following sections for instructions configuring alternate application servers for Get-Services.

Existing Tomcat and Apache servers

If you use the Typical installation option, the Get-Services installer configures Tomcat to connect to a new instance of the Apache Web server. If you have existing instances of Tomcat or Apache Web Server installed, you can configure Get-Services to use these existing instances by copying the necessary files from a typical installation.

To configure an existing Tomcat server to connect to an Apache server:

- 1 Copy the following files from the installation CD /SupportFiles... directory to the directories indicated below.

| Copy this file | To the following location |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ■ <code>mod_jk.conf</code> | The /conf directory of your existing Tomcat installation. The default source file path is: <code>/usr/local/peregrine/common/Tomcat 4/conf</code> |
| ■ <code>workers.properties</code> | The /conf directory of your existing Tomcat installation. The default source file path is: <code>/usr/local/peregrine/common/Tomcat 4/conf</code> |
| ■ <code>mod_jk.dll</code> | The /modules directory of your existing Apache installation. The default source file path is: <code>/usr/local/peregrine/oa/CdFiles/SupportFiles /Apache/modules</code> |

Note: The `mod_jk.dll` included with this release is compatible with Apache 2.0.43 and Tomcat 4.1.29. If you are using other versions, refer to the jakarta.apache.org/builds/jakarta-tomcat-connectors/jk/doc site to download the compatible version.

- 2 Using a text editor, open the files `mod_jk.conf` and `workers.properties`. These files are located in the /conf directory of your Tomcat installation.
 - a Find all instances where the path to Tomcat appears and edit these to reflect your current Tomcat 4.1 installation path.
 - b Find all instances where the path to JDK appears and edit these to reflect your current JDK installation path.
- 3 Using a text editor, open the `httpd.conf` file. This file is located in the /conf directory of your Apache installation.
 - a Add the path to your existing Tomcat installation to the include statement in the Global Environment section:

```
#### Section 1: Global Environment
...
```

```
include "<Tomcat_path>/conf/mod_jk.conf"
```

For `<Tomcat_path>` enter the absolute path to your Tomcat installation.

b Add `login.jsp` to the list of files in the `DirectoryIndex` section:

```
# DirectoryIndex: Name of the file or files to use as a pre-written
# HTML directory index. Separate multiple entries with spaces.
#
<IfModule mod_dir.c>
  DirectoryIndex index.html login.jsp
</IfModule>
```

c Add the following line to the end of the file:

```
Alias <Tomcat>/webapps/oa
```

where `<Tomcat>` is the path to your Tomcat installation.

- 4 Install Get-Services using the Custom option. See *Custom Installation Option* on page 134.
- 5 Restart Tomcat and Apache.
- 6 Browse to the Get-Services login URL and verify that you can successfully connect.

Note: Depending on your Web server configuration, if you browse to `http://server_name/oa`, the Web server may display a list of all the OAA files instead of the login page.

If your server displays this behavior, follow these steps to configure your Web server to display the OAA login page instead of a directory listing.

To configure Apache to display login.jsp by default:

- 1 Open Apache's `conf/httpd.conf` file in a text editor.
- 2 Find the existing line that reads `DirectoryIndex index.html`.
- 3 Add `login.jsp` to the end:


```
DirectoryIndex index.html login.jsp
```
- 4 Save `httpd.conf`.
- 5 Restart the Apache Web server.

WebSphere Application Server 4.0.2

Use the following procedures to configure WebSphere to run Get-Services on AIX, Linux, and Solaris.

Note: The Get-Services installer creates duplicate alias entries in the IBM HTTP Server when you install more than one Peregrine OAA Platform application on WebSphere.

Duplicate entries can also occur if you reinstall Get-Services or install another Peregrine OAA Platform application on a system that formerly had Get-Services installed on it.

Remove any duplicate alias entries from the IBM HTTP Server `httpd.conf` file.

To configure WebSphere Application Server 4.0.2:

- Step 1** Install WebSphere 4.0.2. Your version of WebSphere 4.0.2 includes the IBM HTTP Server. See *Installing WebSphere 4.0.2* on page 99.
- Step 2** Deploy the Portal WAR file to WebSphere to create the necessary folder structure for Get-Services. See *Deploying the Portal WAR file to WebSphere* on page 100.
- Step 3** Set the JVM Java heap size for each WebSphere instance running Get-Services. See *Setting the Java heap size* on page 102.
- Step 4** Create the virtual directory you want to use for Get-Services in your Web server. See *Configuring a virtual directory for IBM HTTP Server* on page 104.
- Step 5** Run the Get-Services installer. See *Running the Get-Services installer* on page 104.
- Step 6** Regenerate and configure. See *Regenerating the plug-in configuration* on page 105.

If you plan on setting up a WebSphere Portal Server or a WebSphere Translation Server, see *Installing WebSphere Portal Server* on page 109 or *Configuring WebSphere Translation Server for Get-Services* on page 119.

Installing WebSphere 4.0.2

Purchase and install IBM WebSphere 4.0.2. Your version of WebSphere 4.0.2 includes the IBM HTTP Server.

Verify that you install fix pack 2. To check this, go to the `default_server_Stdout.log` file under `/WebSphere/AppServer/logs`.

Deploying the Portal WAR file to WebSphere

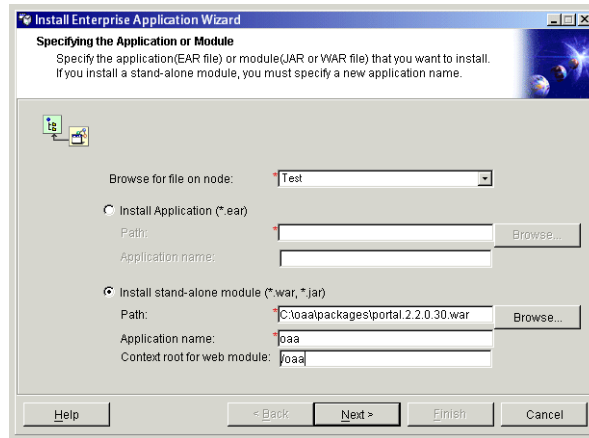
The Portal WAR file creates the folder structure necessary to deploy Get-Services in your application server. After deploying this file to WebSphere, you are ready to run the Get-Services installer.

To deploy the Portal WAR file to WebSphere:

- 1 Verify that the WebSphere Admin Server has been started.
- 2 Open the WebSphere Advanced Administrator's Console (`/WebSphere/AppServer/bin/adminclient.sh`).
- 3 On the menu at the left side of the console, right-click on **Enterprise Applications** and select **Install Enterprise Application**.
- 4 On the screen displayed, do the following:
 - a Select **Install stand-alone module**.
 - b In the **Path** field, browse to the path to the `portal<version_number>.war` file. The default is `<CDRom_Drive>/portal<version_number>.war`.
For `<version_number>`, select the most recent version available (4.0.0.44 or greater).
 - c In the **Application Name** field, type `oaa`.
 - d In the **Context Root** field, type the name of Get-Services virtual Web server directory you wish to use. Example: `/oaa`.

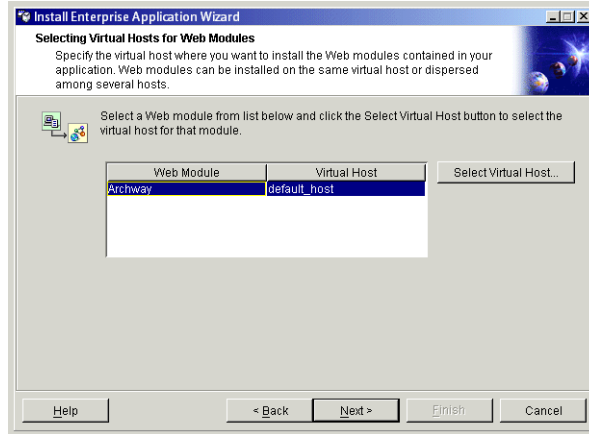
Important: You later create a Web server virtual directory that matches the context root you enter here.

The following screen shows the completed form.

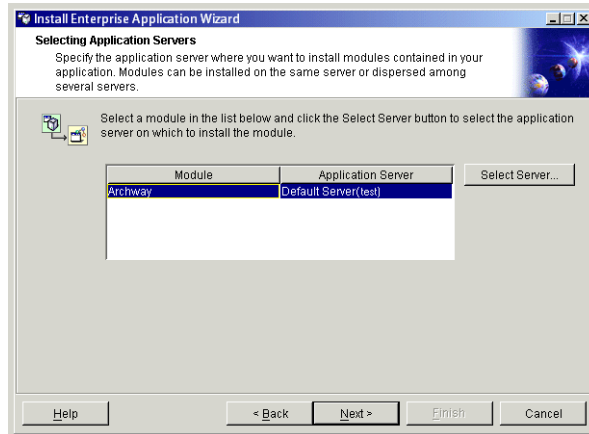


- 5 Click Next.
- 6 Click Next in the following dialog boxes. (They are not used.)
 - Mapping Users to Roles
 - Mapping EJB Run As Roles to Users
 - Binding Enterprise Beans to JNDI Names
 - Mapping EJB References to Enterprise Beans
 - Mapping Resource References to Resources
 - Specifying the Default Datasource
 - Specifying Data Sources for Individual CMP Beans

- In the Selecting Virtual Hosts for Web Modules dialog box, select the WebSphere Web module you want to use. Click Next.



- In the Selecting Application Servers dialog box, select the WebSphere server instance you want to use. Click Next.



- In the next dialog box click **Finish**.

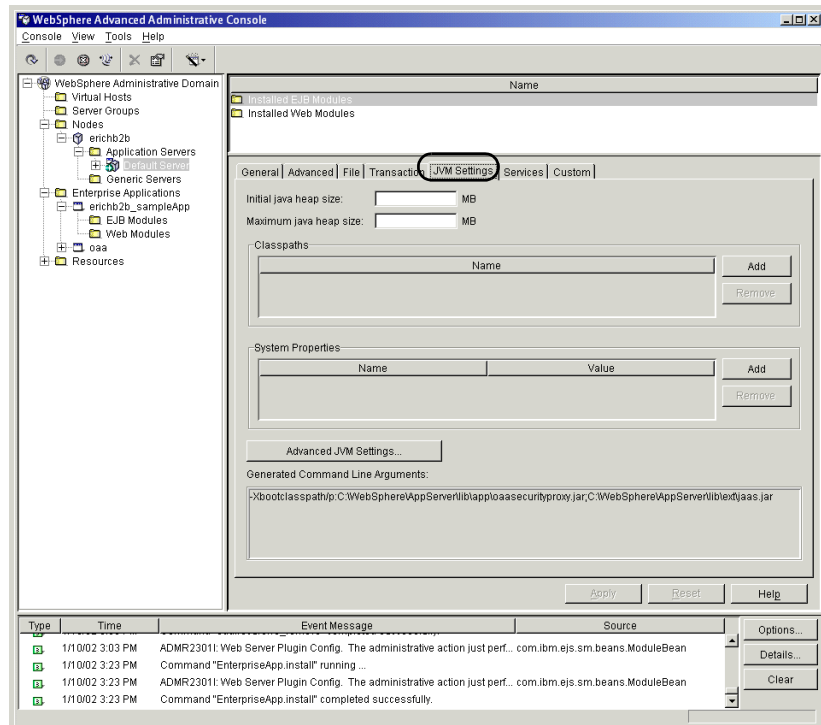
Setting the Java heap size

You can configure the amount of memory that is made available for application server instances. The following instructions assume you are only using one WebSphere instance. Adjust the heap size accordingly if you are load balancing across several WebSphere instances.

To set the Java heap size:

- 1 Verify that the WebSphere Admin Server has been started.
- 2 Click **Start -> Programs -> IBM WebSphere -> Application Server -> Administrator's Console** to open the WebSphere Advanced Administrator's Console.
- 3 Click **Nodes -> <System_Name> -> Application Servers -> <Application_Server_Name>**.

The server settings page opens.



- 4 Click the **JVM Settings** tab.
- 5 Set the following JVM settings:
 - a **Initial java heap size.** Type 60.
 - b **Maximum java heap size.** Type the value you want for heap memory. This setting must be at least 256 MB, but 512 MB is recommended.

Note: Make sure that the setting for maximum heap size is less than the free RAM available to the application server(s). Exceeding the amount of available RAM causes the JVM processes to swap to disk, reducing overall performance.

Configuring a virtual directory for IBM HTTP Server

You must configure a virtual directory for Get-Services in your Web server. The following instructions assume that you are using WebSphere's built-in Web server – IBM HTTP Server. See your Web server documentation to determine how to create a virtual directory if you are using another Web server.

To configure IBM HTTP Server for Get-Services:

- 1 Stop the IBM HTTP Server.
- 2 Open the file `httpd.conf` in any text editor. By default this file is located at:
`<root>/usr/HTTPServer/conf`
- 3 Add the following line to the end of the file:

```
Alias /oaa/ "<root>/WebSphere/AppServer/installedApps/oaa.ear/portal.<version>.war/"
```

For `<root>`, enter the root directory of the system.

For `<version>`, enter the version number of the WAR file you installed.

Note: The name you define for the virtual directory here must match the context root you defined in WebSphere.

- 4 Save the file.
- 5 Start the IBM HTTP Server.

Running the Get-Services installer

Run the Get-Services installer and select the Custom installation option. See *Custom Installation Option* on page 134.

Important: After you complete the steps in *Custom Installation Option* on page 134., make sure to perform the steps in the section *Configuring the WebSphere 4.0.2 startupServer.sh file* on page 144. Then complete the steps in the section *Regenerating the plug-in configuration*.

If you plan on setting up a WebSphere Portal Server or a WebSphere Translation Server, see *Installing WebSphere Portal Server* on page 109 or *Configuring WebSphere Translation Server for Get-Services* on page 119.

Regenerating the plug-in configuration

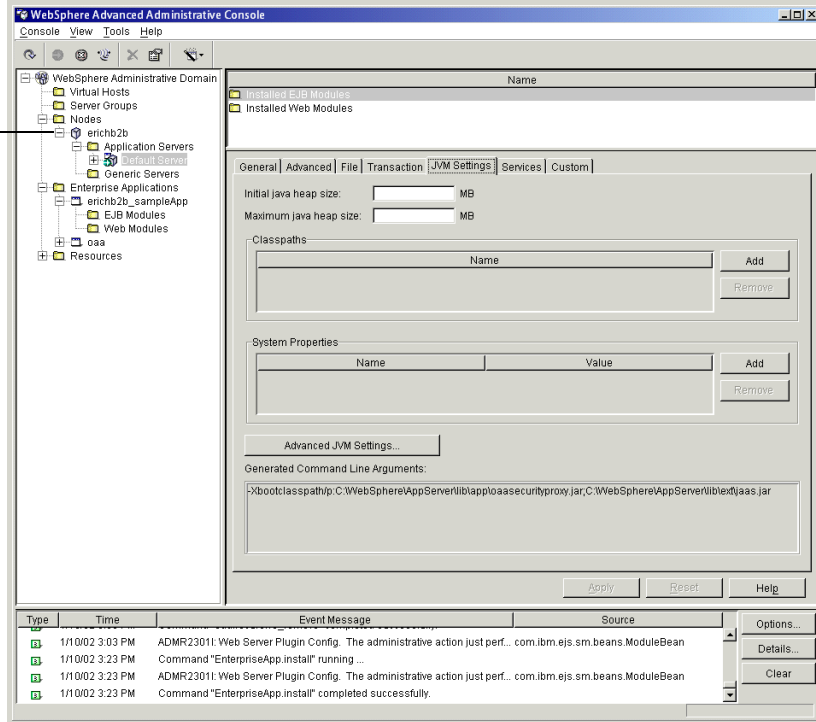
You must regenerate the plug-in configuration using the WebSphere Admin console after running the Get-Services installer.

To regenerate the plug-in configuration:

- 1 Click Start -> Programs -> IBM WebSphere -> Application Server -> Administrator's Console to open the WebSphere Advanced Administrator's Console.

- Click **Nodes** -> <System_Name> -> **Application Servers** -> <Application_Server_Name> to open the server settings page.

Right-click on your system name and select Regen Webserver Plugin.



- Right-click on the <System_Name> and select **Regen Webserver Plugin**.
- Copy the following lines from the <settings> section of <DeploymentDir>/WEB-INF/default/archway.xml to the <settings> section in your <DeploymentDir>/WEB-INF/local.xml file, where <DeploymentDir> is the path to your Get-Services application deployment:

```
<SSLProvider>com.ibm.jsse.JSSEProvider</SSLProvider>
<HTTPSHandlerPkg>com.ibm.net.ssl.internal.www.protocol</HTTPSHandlerPkg>
<CryptoProvider>com.ibm.crypto.provider.IBMJCE</CryptoProvider>
```

If a local.xml file does not exist, create a new local.xml file in the folder specified above, insert the following lines into it, and save the file:

```
<?xml version="1.0" encoding="UTF-8"?>
<settings>
  <SSLProvider>com.ibm.jsse.JSSEProvider</SSLProvider>
  <HTTPSHandlerPkg>com.ibm.net.ssl.internal.www.protocol</HTTPSHandlerPkg>
```

```
<CryptoProvider>com.ibm.crypto.provider.IBMJCE</CryptoProvider>
</settings>
```

- 5 Restart your application server.

WebSphere Application Server 5.0.2

Use the following procedures to configure WebSphere 5.0.2 to run Get-Services on UNIX.

Note: The Get-Services installer creates duplicate alias entries in the IBM HTTP Server when you install more than one Peregrine OAA Platform application on WebSphere.

Duplicate entries can also occur if you reinstall Get-Services or install another Peregrine OAA Platform application on a system that formerly had Get-Services installed on it.

Remove any duplicate alias entries from the IBM HTTP Server httpd.conf file.

To run Get-Services 4.1.2 on WebSphere Application Server 5.0.2:

- 1 With WebSphere running, log in to the Admin console and create a new Enterprise Application using `portal.<version_number>.war` from the packages directory on the Get-Services 4.1.2 CD.

Note: The important option to specify is the context root, typically `/oaa` or `/getit`.

- a Specify the context root. Click **Next**.
 - b Accept the default settings on this page. Click **Next**.
 - c Click **Use Binary Configuration**. Click **Next**.
 - d Continue to accept the default values and to click **Next**.
 - e When prompted, click **Finish**.
 - f Click **Save to Master Configuration**.
- 2 Click **Save**.
 - 3 Log out of the WebSphere Admin Console.
 - 4 Stop the WebSphere Administrative server.

- 5 Perform the steps described in the section *Custom Installation Procedures* on page 135.

Important: After you complete the steps in *Custom Installation Procedures* on page 135, make sure to perform the steps in the section *Configuring the WebSphere 5.0.2 startServer.sh file* on page 145. Then complete the remaining steps in this section.

- 6 From the `IBMHttpServer/conf/httpd.conf` file:

- a Verify that the following lines exist in the file; if not, add them.

```
LoadModule ibm_app_server_http_module
<AppServerPath>/bin/mod_ibm_app_server_http.so
WebSpherePluginConfig
<AppServerPath>/config/cells/plugin-cfg.xml
```

- b Verify that the following line exists in the file; if not, add it. The alias should not contain any trailing slash marks (/); remove any trailing slash marks if any appear:

```
Alias /oaa opt/WebSphere/AppServer/installedApps/[hostname]
/oaa.ear/portal.<version_number>.war
```

Note: The preceding alias needs to match the context root specified in step 1.

- 7 Copy the following lines from the `<settings>` section of `<DeploymentDir>/WEB-INF/default/archway.xml` to the `<settings>` section in your `<DeploymentDir>/WEB-INF/local.xml` file, where `<DeploymentDir>` is the path to your Get-Services application deployment.

```
<SSLProvider>com.ibm.jsse.JSSEProvider</SSLProvider>
<HTTPSHandlerPkg>com.ibm.net.ssl.internal.www.protocol</HTTPSHandlerPkg>
<CryptoProvider>com.ibm.crypto.provider.IBMJCE</CryptoProvider>
```

If a `local.xml` file does not exist, create a new `local.xml` file in the folder specified above, insert the following lines into it, and save the file:

```
<?xml version="1.0" encoding="UTF-8"?>
<settings>
  <SSLProvider>com.ibm.jsse.JSSEProvider</SSLProvider>
  <HTTPSHandlerPkg>com.ibm.net.ssl.internal.www.protocol</HTTPSHandlerPkg>
  <CryptoProvider>com.ibm.crypto.provider.IBMJCE</CryptoProvider>
```

</settings>

- 8 Copy `js.jar` from `<DeploymentDir>/WEB-INF/lib` to `/opt/WebSphere/AppServer/java/jre/lib/ext`, where `<DeploymentDir>` is the path to your Get-Services application deployment.
- 9 Start WebSphere.
- 10 Log in to the WebSphere Admin console again.
 - a From Environment on the left side, click **Update Web Server Plugin**.
 - b Click **OK** to update the Web server plugin.
 - c Wait for confirmation that the plugin is updated. Log out of the WebSphere Admin console.
- 11 Stop and restart the WebSphere application server.
- 12 Start the IBM HTTP Server.
- 13 Log in to the Peregrine Portal using `admin.jsp` and continue configuring your system.

Installing WebSphere Portal Server

You can configure Get-Services to display in a WebSphere Portal Server in one of two configurations:

- All Get-Services and WebSphere components running on a single system. See *Recommended WebSphere Portal Server configuration* on page 110.
- Get-Services components running on one system and WebSphere components running on another. See *Alternate WebSphere Portal Server configuration* on page 111.

Important: In either configuration, you must first install WebSphere Portal Server. See your WebSphere Portal Server documentation for details.

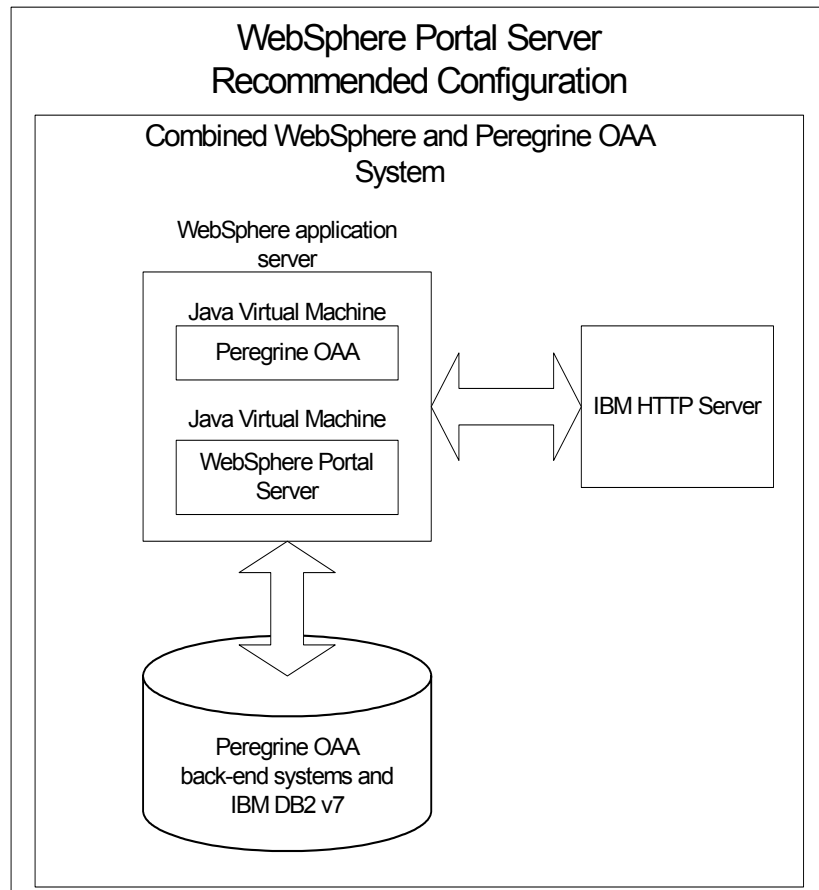
Note: The OAA interface to the WebSphere Translation Server requires a mouse to use. The translation interface will be made 508 accessible in a future release.

Recommended WebSphere Portal Server configuration

Use the following steps to configure Get-Services for the recommended WebSphere Portal Server configuration:

- Step 1** Review the WebSphere Portal Server installation requirements. See *WebSphere Portal Server installation requirements* on page 113.
- Step 2** Generate a Get-Services WAR file containing the portal components WebSphere Portal Server can display. See *Generating a Get-Services WAR file* on page 114.
- Step 3** Login to the Get-Services server and stop the WebSphere application server. See *Stopping the WebSphere application server* on page 115.
- Step 4** Modify the `local.xml` file to change the HTTP authentication method used from Basic to Alternate. See *Modifying the local.xml file* on page 115.
- Step 5** Modify the `web.xml` file to enable the AuthController servlet. See *Modifying the web.xml file* on page 115.
- Step 6** Modify the `ibm-web-ext.xmi` file to set the `fileServingEnabled` parameter. See *Modifying the ibm-web-ext.xmi file* on page 116.
- Step 7** Start the WebSphere application server. See *Starting the WebSphere application server* on page 117.
- Step 8** Deploy the Get-Services WAR file to WebSphere Portal Server. See *Deploying the Get-Services WAR file to WebSphere Portal Server* on page 117.
- Step 9** Create places and pages in WebSphere Portal Server to display Get-Services portlets. See *Configuring WebSphere Portal Server places and pages* on page 117.
- Step 10** Enable edit rights for Get-Services portlets. See *Enabling edit rights for Get-Services portlets* on page 118.

When complete, your installation will have the following configuration:



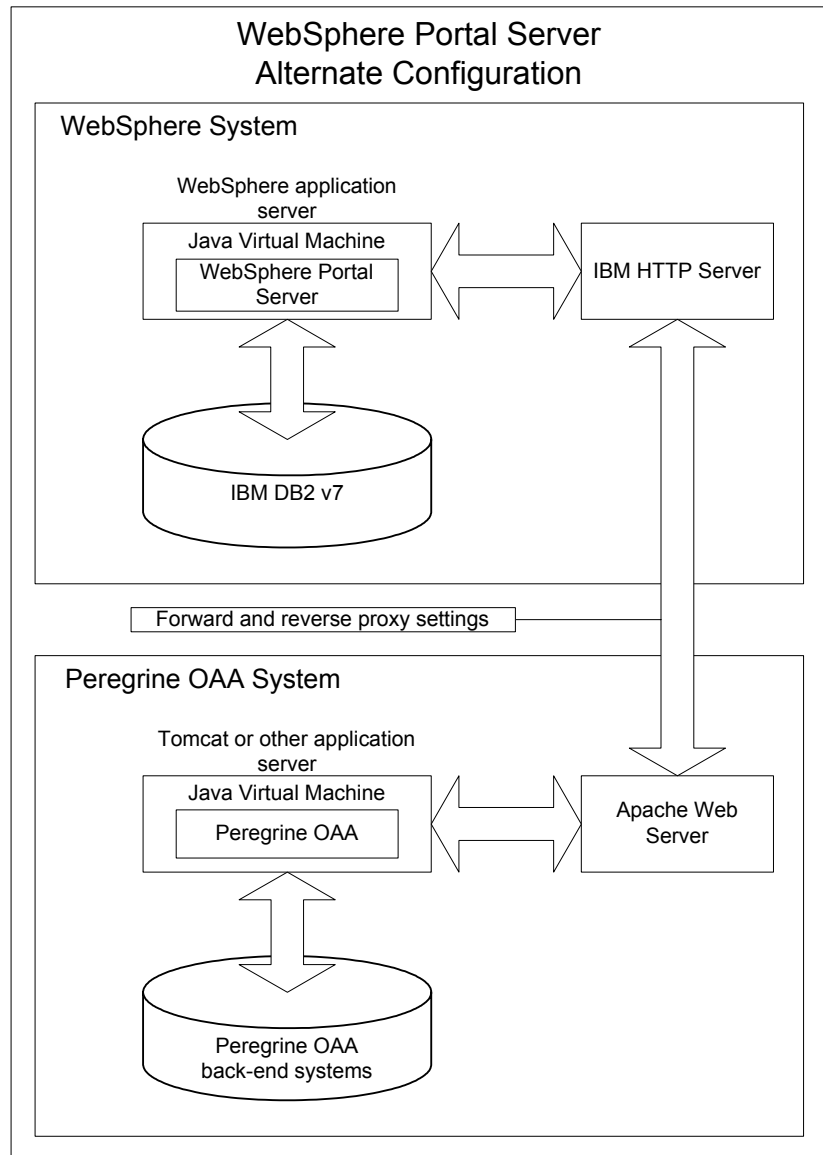
Alternate WebSphere Portal Server configuration

Use the following steps to configure Get-Services for the alternate WebSphere Portal Server configuration:

- Step 1** Review the WebSphere Portal Server installation requirements. See *WebSphere Portal Server installation requirements* on page 113.
- Step 2** Generate a Get-Services WAR file containing the portal components WebSphere Portal Server can display. See *Generating a Get-Services WAR file* on page 114.
- Step 3** Login to the Get-Services server and stop the WebSphere application server. See *Stopping the WebSphere application server* on page 115.

- Step 4** Modify the `local.xml` file to change the HTTP authentication method used from Basic to Alternate. See *Modifying the local.xml file* on page 115.
- Step 5** Modify the `web.xml` file to enable the AuthController servlet. See *Modifying the web.xml file* on page 115.
- Step 6** Modify the `ibm-web-ext.xmi` file to set the `fileServingEnabled` parameter. See *Modifying the ibm-web-ext.xmi file* on page 116.
- Step 7** Modify the `setDomain.js` file to call the `SetDomain` function. See *Modifying the setDomain.js file* on page 116.
- Step 8** Start the WebSphere application server. See *Starting the WebSphere application server* on page 117.
- Step 9** Deploy the Get-Services WAR file to WebSphere Portal Server. See *Deploying the Get-Services WAR file to WebSphere Portal Server* on page 117.
- Step 10** Create places and pages in WebSphere Portal Server to display Get-Services portlets. See *Configuring WebSphere Portal Server places and pages* on page 117.
- Step 11** Enable edit rights for Get-Services portlets. See *Enabling edit rights for Get-Services portlets* on page 118.
- Step 12** Modify IBM HTTP Server's `httpd.conf` file to add forward and reverse proxy URLs. See *Modifying httpd.conf for IBM HTTP Server* on page 119.

When complete, your installation will have the following configuration:



WebSphere Portal Server installation requirements

The recommended configuration of the WebSphere Portal Server requires the following items to be installed on the same server:

- WebSphere application server 4.0.2

- IBM HTTP Server 1.3.19
- IBM DB2 v7 database server
- WebSphere Portal Server
- A custom installation of Get-Services with WebSphere selected as the application server

The alternate configuration of the WebSphere Portal Server requires the following items be installed on a minimum of two servers:

- Server 1
 - WebSphere application server 4.0.2
 - IBM HTTP Server 1.3.19
 - IBM DB2 v7 database server
 - WebSphere Portal Server
- Server 2
 - Get-Services compatible application server
 - Web server
 - Back-end database for Get-Services
 - An installation of Get-Services

Generating a Get-Services WAR file

In order to display Get-Services in WebSphere Portal Server, you must first export the Get-Services portal components as a WAR file. You can then import this WAR file into WebSphere Portal Server, and choose the portal components you want to display as WebSphere Portal Server portlets.

To generate a Get-Services WAR file:

- 1 Log in to the Get-Services administration page (`admin.jsp`).
- 2 Click **IBM WebSphere Portal Integration**.
- 3 Enter the following configuration information:
 - a **Source Path**. Enter the full path to the `WebSphere.war` in the Get-Services package folder. By default this folder is:
`<WebSphere>/oaa/packages`
 - b **Destination Path**. Enter the full path and file name you want to use for the generated Get-Services WAR file.
 - c **Base URL**. Enter the full URL to the Get-Services deployment directory. By default this URL is:

`http://<server>:<port>/oaa/servlet/basicauth`

4 Click Generate WAR file.

Get-Services generates a new WAR file with the name and path specified in the Destination Path of step 3.

Stopping the WebSphere application server

To continue configuring, you must log in to the Get-Services server and stop the WebSphere application server.

To stop the WebSphere application server:

- 1 Login to the Get-Services server.
- 2 Stop your WebSphere application server.

Modifying the local.xml file

In order to login via WebSphere Portal Server, you configure Get-Services to use an alternate HTTP authentication method.

To modify the local.xml file:

- 1 Using a text editor, open the local.xml file located at:
`<application_server>/oaa/WEB-INF/.`
- 2 Add the following on a separate line anywhere between `<settings>` and `<\settings>`:
`<httpauthclass>HttpAlternateAuthenticationManager</httpauthclass>`
- 3 Save the file.

Modifying the web.xml file

You will need to enable the AuthController servlet to establish a proxy for HTTP basic authentication.

To modify the web.xml file:

- 1 Using a text editor, open the web.xml file located at:
`<application_server>/oaa/WEB-INF.`
- 2 Search for the line containing:
`<!-- Uncomment to add support for http basic authentication proxy`
- 3 Move the ending comment tag `-->` from the end of the servlet definition to the comment at the beginning of the servlet definition.

The new servlet definition should appear as follows:

```
<!-- Uncomment to add support for http basic authentication proxy-->
<servlet>
  <servlet-name>AuthController</servlet-name>
  <display-name>AuthController</display-name>
  <description>A controller (decorator) servlet that can be used to
enable configurable auth protection of any resource.</description>

<servlet-class>com.peregrine.oaa.archway.AuthControllerServlet</servl
et-class>
  <load-on-startup>2</load-on-startup>
</servlet>

<servlet-mapping>
  <servlet-name>AuthController</servlet-name>
  <url-pattern>/servlet/basicauth/*</url-pattern>
</servlet-mapping>
<servlet-mapping>
  <servlet-name>AuthController</servlet-name>
  <url-pattern>/servlet/auth/*</url-pattern>
</servlet-mapping>
```

4 Save the file.

Modifying the `ibm-web-ext.xmi` file

You need to set the `fileServingEnabled` parameter to true to handle static content.

To modify the `ibm-web-ext.xmi` file:

- 1 Using a text editor, open the `ibm-web-ext.xmi` file. The default file path is:
`<root>/WebSphere/AppServer/installedApps/getit.ear/getit.war/WEB-INF`
- 2 Find the `fileServingEnabled` parameter and set it to **true**.
`fileServingEnabled="true"`

3 Save the file.

Modifying the `setDomain.js` file

To use the alternate configuration of WebSphere Portal Server, you must enable the `setDomain` function.

Note: If you are setting up WebSphere Portal Server in the recommended configuration, you may skip these instructions.

To modify the `setDomain.js` file:

- 1 Login to the Get-Services server.
- 2 Stop your application server.
- 3 Using a text editor, open the `setDomain.js` file located at:
`<application_server>//oaa/js.`
- 4 Add the following line to the end of the file:
`setDomain();`
- 5 Save the file.

Starting the WebSphere application server

To continue configuring, you must restart the WebSphere application server.

Deploying the Get-Services WAR file to WebSphere Portal Server

After you deploy the Get-Services WAR file to WebSphere Portal Server, you can then configure the portlets you want to display, the display settings, and the access rights to each portlet.

See your WebSphere Portal Server documentation for detailed instructions.

To deploy the Get-Services WAR file:

- 1 Login to the WebSphere Portal as “wpsadmin” or another user with administrative rights.
- 2 Select **Portal Administration** from the Places menu.
- 3 Click **Portlets > Install Portlets**.
- 4 Click **Browse** and navigate to the Destination path you entered when you created the Get-Services WAR file.
- 5 Click **Next** to load the Get-Services WAR file.
WebSphere Portal Server displays a list of portlets to be installed.
- 6 Click **Install**.

WebSphere Portal Server installs the portlets and displays the message “Portlets successfully installed.”

Configuring WebSphere Portal Server places and pages

Note: Refer to your WebSphere Portal documentation for details on the following.

You can deploy Get-Services portlets in any place or page that meet the following requirements.

Places Your WebSphere Portal Server places must have the following characteristics:

- Supported markups must include HTML

Pages Your WebSphere Portal Server pages must have the following characteristics:

- Supported markups must include HTML
- The page must be set to “allow all portlets that a user can access”
- All Get-Services portlets that you display in a page must grant “all authenticated users” the minimum edit permission.

Enabling edit rights for Get-Services portlets

WebSphere Portal Server users will need edit rights to the Get-Services portlets in order to add and customize them to their portal page.

To enable edit rights for Get-Services portlets:

- 1 Login to the WebSphere Portal as `wpsadmin` or another user with administrative rights.
- 2 Select **Portal Administration** from the Places menu.
- 3 Click **Security -> Access Control List**.
- 4 Select the **Special groups** option and select **All authenticated users** from the select box.
- 5 From the Select the objects for the permissions select box, select **portlet applications**.
- 6 Select the Search on option, and then enter **Peregrine** in the Name contains field.
- 7 Click **Go**.
WebSphere Portal Server displays a list of portlets with Peregrine in the name.
- 8 In the Edit column, click **Select All** at the bottom of the table.
- 9 Click **Save**.

Users can now view and customize Get-Services portlets from the WebSphere Portal Server interface.

Modifying httpd.conf for IBM HTTP Server

In order to use the alternate configuration of WebSphere Portal Server, you will need to modify the httpd.conf file used by the IBM HTTP Server to add the forward and reverse proxy URLs to your remote instance of Get-Services.

Note: If you are setting up WebSphere Portal Server in the recommended configuration, skip these steps.

To modify httpd.conf for IBM HTTP Server:

- 1 Login to the Get-Services server.
- 2 Stop your IBM HTTP Server.
- 3 Using a text editor, open the httpd.conf file located at:


```
<root>/usr/HTTPServer/conf
```
- 4 Add the following lines to the end of the file:


```
ProxyPass /<oaa_root>/ http://<server>:<port>/
  <oaa_root>/servlet/basicauth/
ProxyPassReverse /<oaa_root>/ http://<server>:<port>/
  <oaa_root>/servlet/basicauth/
```

For `<oaa_root>`, enter the name of the oaa virtual directory used by IBM HTTP Server. By default, this virtual directory is oaa.

For `<server>:<port>`, enter the server name where Get-Services is installed and the number of the communications port that Get-Services uses.

- 5 Save the file.

Configuring WebSphere Translation Server for Get-Services

You can configure Get-Services to use a WebSphere Translation Server to provide real-time translations of on-screen data.

To configure WebSphere Translation Server for Get-Services:

- Step 1** Copy the file `wts.jar` to the Get-Services deployment folder. See *Copying wts.jar to the Get-Services deployment folder* on page 119.
- Step 2** Configure Get-Services to use the WebSphere Translation Server. See *Configuring WebSphere Translation Server for Get-Services* on page 119.

Copying wts.jar to the Get-Services deployment folder

The following instructions describe where to find and copy the file `wts.jar`.

To copy wts.jar to the Get-Services deployment folder:

- 1 Stop your application server.
- 2 Browse to the location of your WebSphere Translation Server installation.
- 3 Copy the file wts.jar from this folder.
- 4 Paste the file wts.jar into the Get-Services deployment folder located at:
<Application_Server_Install>/WEB-INF/lib
- 5 Restart your application server.

Configuring Get-Services to use the WebSphere Translation Server

The following instructions describe how to configure Get-Services to use the WebSphere Translation Server.

To configure Get-Services to use the WebSphere Translation Server:

- 1 Login to the Get-Services admin page (admin.jsp).
- 2 Click **Settings** -> **Common** tab to open the Admin Settings page.

| Change Management | Common | E-mail | Logging | Portal | Portal DB | ServiceCenter | Service Desk | Themes | Web Application | SSL |
|-------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|-----------|---------------|--------------|--------|-----------------|-----|
| Maximum attached file size (in KB): | | The size limit, in KB, 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. | | | | | | | | |
| portalDB | | | | | | | | | | |
| List of target aliases: | | Specifies a list of semicolon delimited target aliases used by web applications in this package. | | | | | | | | |
| weblication;mail | | | | | | | | | | |
| System Maintenance username: | | The system maintenance username. This login provides access to administrative functionality. The system maintenance user is independent of any deployed adapter(s). Use this login to configure a newly installed system or to troubleshoot an existing install. | | | | | | | | |
| System | | | | | | | | | | |
| System Maintenance password: | | The system maintenance password. | | | | | | | | |
| | | | | | | | | | | |
| Application path: | | Directory location of the Peregrine Portal Web Applications. | | | | | | | | |
| WEB-INF/apps/ | | | | | | | | | | |
| Event queue: | | Enter the name of the adapter that should be used by the Peregrine Portal event queue engine. For example: | | | | | | | | |
| portalDB | | <ul style="list-style-type: none"> • To use ServiceCenter's repository, enter "sc" • To use AssetCenter's repository, enter "ac" | | | | | | | | |
| Language Translation | | | | | | | | | | |
| Translation Server Factory Class: | | The Java factory class which generates the proper class associated with the Translation Server. | | | | | | | | |
| com.peregrine.util.WTSLanguageTranslatorFactory | | | | | | | | | | |
| Language from which to translate: | | The language from which to translate or the base language in which all text is currently displayed as. | | | | | | | | |
| English | | | | | | | | | | |
| Translation Server IP Address: | | The IP address of the Translation Server. This address may or may not contain a port number depending on the Translation Server requirements. Click for default: [] | | | | | | | | |
| 10.3.128.181:1097 | | | | | | | | | | |

- 3 Enter the following configuration settings:
 - a **Translation Server Factory Class:** Enter the Java factory class for the Translation server. The default Java factory class is:
`com.peregrine.util.WTSLanguageTranslatorFactory`
 - b **Language from which to translate:** Enter the source language that you want translated. The default value is English.

- c **Translation Server IP Address:** Enter the IP address and communications port to the Translation Server. For example: 10.3.128.181:1097.
- 4 Click **Save**.
The Control Panel opens.
- 5 Click **Reset Server**.

Translating on-screen data with a Translation Server

If you plan to store Get-Services data in a mixture of languages, you can configure Get-Services to send data to a Translation Server for real time translation. This interface will only translate data retrieved from the back-end database or manually typed into form inputs. If you need a translated user interface, you can purchase a Get-Services language pack directly from Peregrine Systems.

To translate on-screen data with a Translation Server:

- 1 Enable the translation server from the **Administration** -> **Settings** page as described in *Configuring WebSphere Translation Server for Get-Services* on page 119.

The translate button appears in the upper right tool bar.

The Translation button.



- 2 Click on the source data or form input you want to translate.

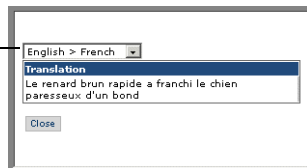
Click on the text you want to translate.

 A screenshot of a search form. The form has a title "Please enter the search criteria and press the Search button." Below the title, there are two rows of input fields. The first row is labeled "Name:" and has a dropdown menu and a text input field. The second row is labeled "Description:" and has a dropdown menu and a text input field containing the sentence "The quick brown fox jumped over the lazy dog". At the bottom of the form, there are three buttons: "Search", "View All", and "New". A line points from the text "Click on the text you want to translate." to the text input field in the "Description:" row.

- 3 Click the translate button.

The Translation window opens.

Select the target language from the select box.



- 4 Select the target language to which you want to translate from the drop-down.

The translation of your selection displays in the Translation box.

WebLogic 6.1 SP4

The following procedures configure WebLogic to run Get-Services on UNIX.

To configure WebLogic 6.1 SP4:

- Step 1** Stop both WebLogic and your Web server. See *Stopping WebLogic* on page 122.
- Step 2** Edit the `startWebLogic.sh` file to set the system password, memory settings, and start mode. See *Editing startWebLogic.sh* on page 122.
- Step 3** Run the Get-Services installer. See *Custom Installation Option* on page 134
- Step 4** Create a virtual directory for Get-Services in your Web server. See *Creating a virtual directory for Get-Services* on page 124.
- Step 5** Restart WebLogic and your Web server. See *Restarting the servers* on page 125.

Stopping WebLogic

Before you begin to configure WebLogic, you must stop both Weblogic and your Web server.

Editing startWebLogic.sh

To edit startWebLogic.sh:

- 1 Open the file `startWebLogic.sh` file in any text editor. By default the file is located at:

```
/bea/wlserver6.1/config/<my_domain>/
```

2 Scroll to the following section of the script:

```

echo *****
echo * To start WebLogic Server, use the password      *
echo * assigned to the system user. The system        *
echo * username and password must also be used to    *
echo * access the WebLogic Server console from a web  *
echo * browser.                                       *
echo *****
@rem Set WLS_PW equal to your system password for no password prompt
set WLS_PW=password

```

- 3 In the last line, change the word “password” to your WebLogic system password.
- 4 Search for the -ms parameter and make sure it is set to “256m” or greater.
- 5 Search for the -mx parameter setting in the file. This setting must be at least 256 MB, but 512 MB is recommended.

Note: Make sure that the setting for maximum heap size is less than the free RAM available to the application server(s). Exceeding the amount of available RAM causes the JVM processes to swap to disk, reducing overall performance.

- 6 Set the STARTMODE variable to STARTMODE=false.

The first time you start WebLogic after the installation, you will need to start it in development mode for it to find the Web applications that have been deployed.

- 7 Add the following phrase to the entry that precedes the `weblogic.Server` entry. (Make sure to retain the quotation marks.)

```
“-Djava.security.auth.login.config==<Weblogic>/lib/server.policy”
```

Where `<Weblogic>` is the installation path for Weblogic. By default this is:

```
<root>/bea/wlserver6.1
```

- 8 Save the file.

Editing the Server.Policy file

To edit Server.Policy:

- 1 Open the file `Server.Policy` file in any text editor. The default file path is:
`<root>/bea/wlserver6.1/lib`

- 2 Add the following lines to the end of the file:

```
ServerLoginModule
{
    weblogic.security.internal.ServerLoginModule required debug=true;
};
```

- 3 Save the file.

Running the Get-Services installer

Run the Get-Services installer and select the Custom installation option. See *Custom Installation Option* on page 134.

Creating a virtual directory for Get-Services

- 1 Create a virtual directory in your Web server that maps to your WebLogic deployment folder. The typical installation creates a virtual directory called `oaa`, but you may specify a different virtual directory name. The following are requirements for the Get-Services virtual directory:

| Requirement | Setting |
|--------------------------|-----------------------------|
| Create virtual directory | <oaa> |
| Map to physical path | <WebLogic>/applications/oaa |
| Directory access rights | Read, Run scripts, Execute |

Where <oaa> is the name of the virtual directory you want to use for Get-Services. Whatever name you enter here you will need to replicate in your application server configuration.

For <WebLogic>, enter the path to your WebLogic installation. The default file path is: `/bea/wlserver6.1/config/<my_domain>`

- 2 Go to the Peregrine OAA Platform lib folder (typically `bea/wlserver6.1/config/<my_domain>/applications/oaa/WEB-INF/lib`), where <my_domain> is the WebLogic domain of the system on which WebLogic is installed. Move the following file to the `/bea/jdk131/jre/lib/ext` folder: `log4j-1.2.6.jar`

- 3 Go to the Peregrine OAA Platform external folder (typically `Peregrine/oaas/external`) and copy the following files to the `/bea/jdk131/jre/lib/ext` folder:

```
jaas.jar
jai_codec.jar
jai_core.jar
jce1_2_1.jar
jcert.jar
jnet.jar
jsse.jar
local_policy.jar
mllibwrapper_jai.jar
oaasecurityproxy.jar
sunjce_provider.jar
US_export_policy.jar
xalan.jar
xercesImpl.jar
xml-apis.jar
```

Restarting the servers

Restart WebLogic and your Web server for your new settings to take effect.

Typical Installation Option

A Typical installation of Get-Services installs the most commonly used components of the product, and saves application files and data in default destination directories. Most users choose the Typical installation.

Typical Installation Components

Following is a brief description of the components that are automatically installed with a Typical installation of Get-Services:

Applications and File Locations

| Get-Services Component | Default Installation Directory |
|-------------------------------|--------------------------------------|
| Apache Web Server | /usr/local/peregrine/common/apache2 |
| Tomcat Application Server | /usr/local/peregrine/common/tomcat4 |
| Java Development Kit | /usr/local/peregrine/common/jdk1.3.1 |
| OAA Platform and Get-Services | /usr/local/peregrine/oa |

Communications Ports

Get-Services uses the following communications ports in a typical installation. After installation, you can configure Get-Services to use one or more of the alternate communications ports if your local network already uses these communications ports.

| Default Port | Component used by | Alternate Port |
|--------------|---------------------------------------------------------------------|----------------|
| 80 | Apache Web Server | 8081 |
| 8005 | Tomcat application server administration | 8015 |
| 8009 | Tomcat application server worker file | 8019 |
| 8011 | Tomcat application server worker file for load balancing (optional) | 8021 |
| 8013 | Tomcat application server worker file for load balancing (optional) | 8023 |
| 8015 | Tomcat application server worker file for load balancing (optional) | 8025 |

Note: To change settings for these components or to use or install different components, use the Custom installation option for Get-Services.

Typical Installation Procedures

This section explains how to install Get-Services with a Tomcat application server and an Apache web server on an AIX, Linux, or Solaris operating system.

Note: If you cancel the installation before completing all the steps, you must run Uninstall to remove all the files.

To perform a typical installation of Get-Services on UNIX:

- 1 Log into your server with an account that has root privileges.
- 2 Insert the Get-Services installation CD into your computer's CD ROM drive. Your computer should automatically launch the installation program. Exit the automatic launch and mount your CD ROM drive, using a command such as the following:

```
mount /cdrom
```

Change directories to your CD ROM, using a command such as the following:

```
cd /cdrom
```

Enter the installer script specific for your operating system:

| Operating system | Shell script to run |
|----------------------|-----------------------------|
| AIX 5.1 | <code>./setupaix</code> |
| Red Hat Linux 7.3 | <code>./setuplinux</code> |
| Solaris 2.6, 7, 8, 9 | <code>./setupsolaris</code> |

Important: Verify that your temporary directory has a minimum of 300 MB of available space. The Solaris default temporary directory is `/var/tmp`, and the AIX and Linux default temporary directory is `/tmp`. To run the installer using a temporary directory that you specify, use the appropriate UNIX command as follows:

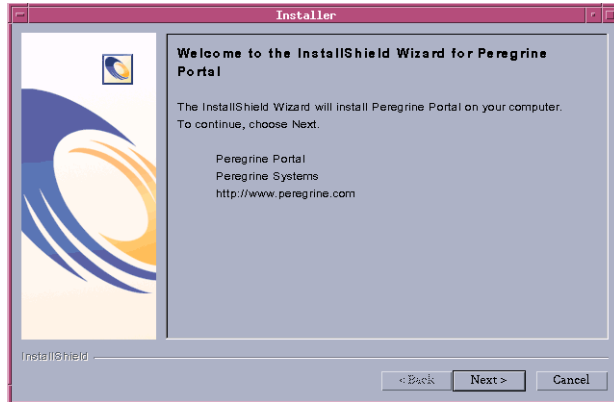
```
./setupaix -is:tempdir /MyTempDirectory (on AIX)
```

```
./setuplinux -is:tempdir /MyTempDirectory (on Linux)
```

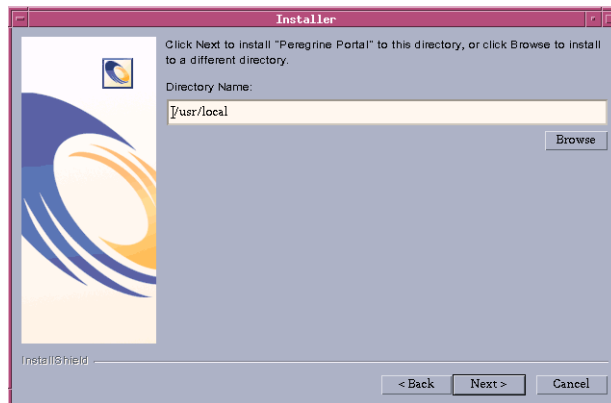
```
./setupsolaris -is:tempdir /MyTempDirectory (on Solaris)
```

Where *MyTempDirectory* is the temporary directory you want to use.

The installer welcome page opens.

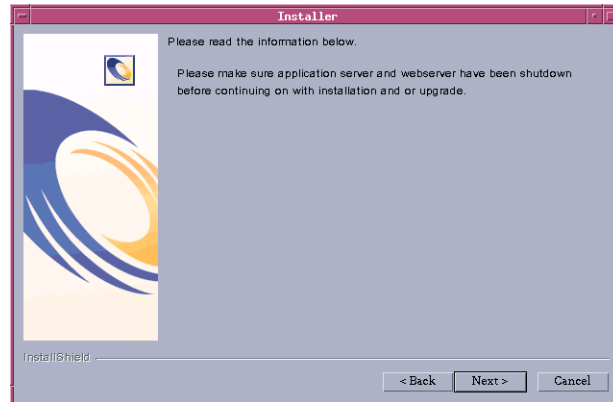


- 3 Click **Next** to continue to the next page of the wizard.
The installation location page opens.

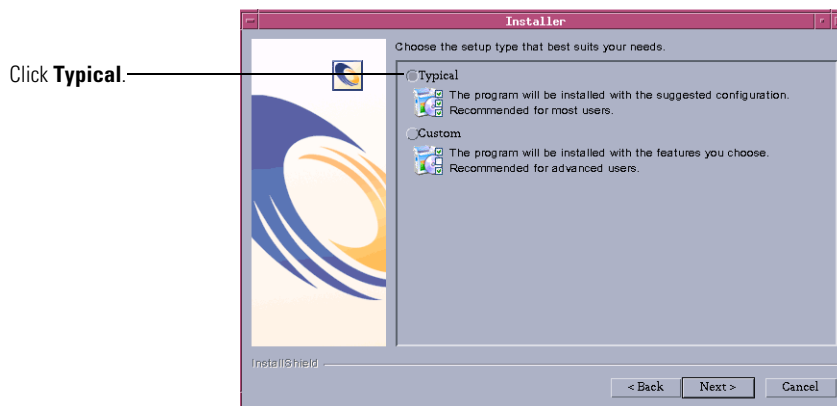


- 4 Click **Browse** to change the default installation location of /usr/local.

- 5 Click **Next** to open the next page of the wizard that instructs you to stop your application server and Web server.

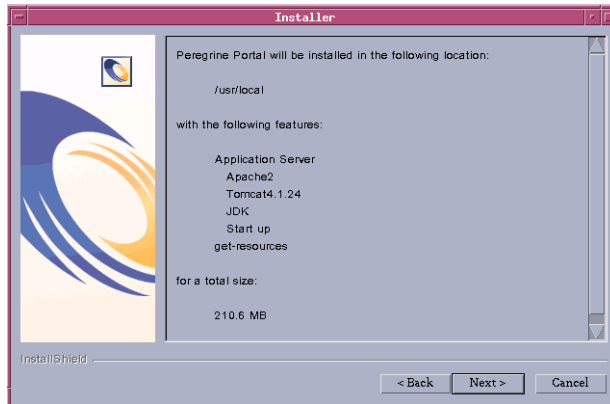


- 6 Click **Next** to continue to the next page of the wizard. The setup type page opens.



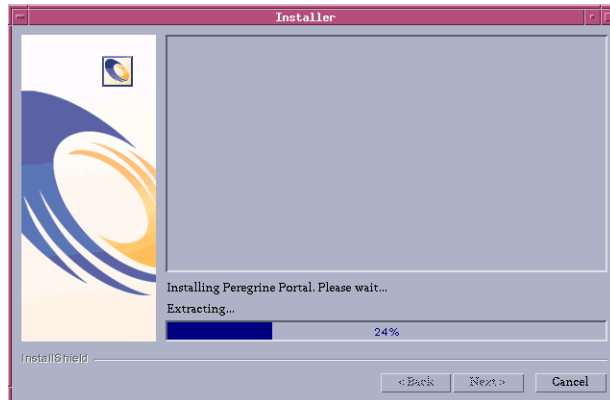
- 7 Select **Typical**. Click **Next**.

- 8 The installer displays a list of components that will be installed.

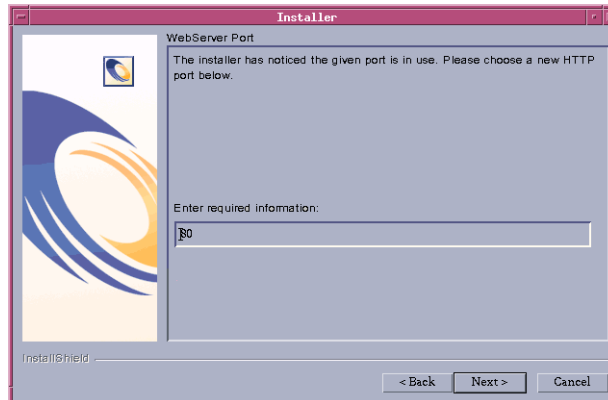


Note: The list depends on the application that you install.

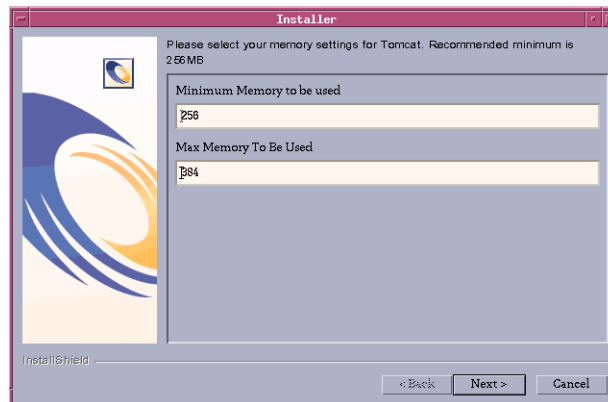
- 9 Click **Next** to continue installing Get-Services components. The installation progress page opens.



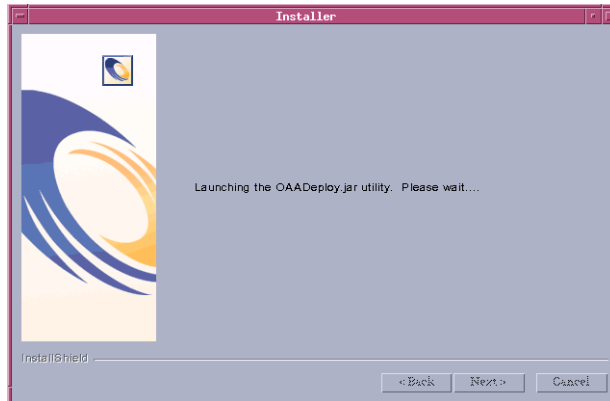
The installer verifies the availability of port 80 for the Apache Web server. If the installer finds a port conflict on port 80, the WebServer Port page opens.



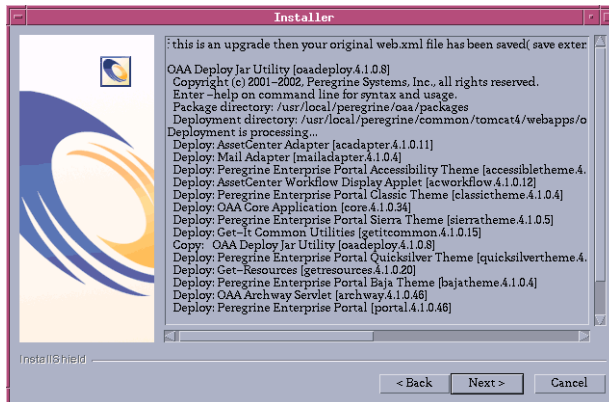
- 10 If required, enter the new Web server communications port. Click Next.
- 11 Change the Tomcat memory settings as needed and click Next.



- 12 A deployment utility page displays the status of deployment of Get-Services components.



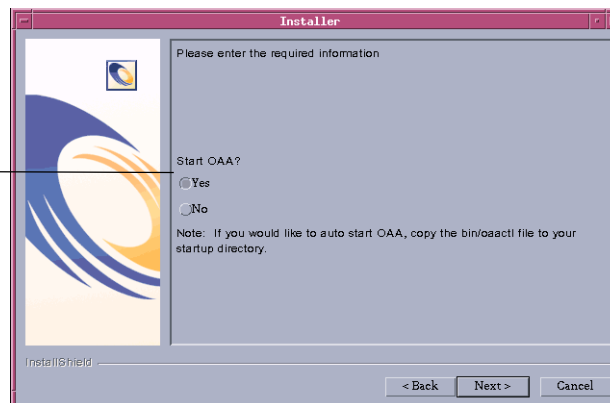
- 13 The installer displays a list of all deployed packages. Click Next to continue.



Note: The list of deployed packages depends on the application that you install.

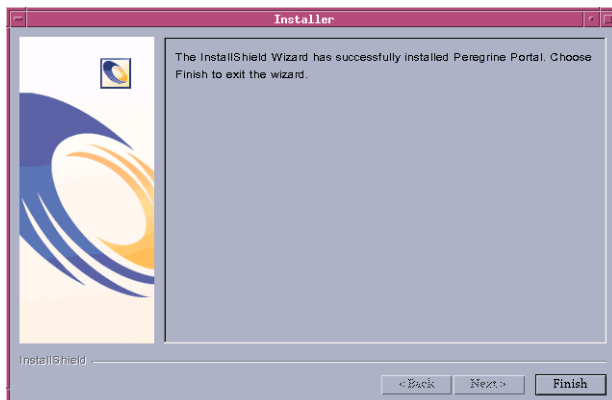
The start OAA page opens. Click **Yes** to start Get-Services immediately or select **No** to manually start Get-Services after installation is complete.

Select **Yes**
to start
Get-Services
immediately.



If you want Get-Services to start every time the server is started, then copy the file `oaactl` from `/usr/local/peregrine/bin/` directory into your startup directory.

- 14 Click **Finish** to complete the Get-Services installation.



If you have not already done so, configure your system to connect to the back-end database you are using. This is done on the Settings page of the Admin module.

Custom Installation Option

The following section describes how to perform a custom installation of Get-Services on a UNIX operating system server, including overview steps for a Development and Production environment.

Custom Installation Components

Following is a brief description of the components that are available for a Custom installation of Get-Services:

Application options

For complete information about specific software components that can be installed and configured with Get-Services, see the Get-Services Compatibility Matrix. Go to support.peregrine.com and click Documentation -> Get-Services -> Compatibility Matrices -> Get-Services 4.1.2.

Important: Make sure to check the entire Get-Services compatibility matrix *before* starting the installation process.

Communications Ports

The communications ports used by a custom installation of Get-Services depend upon the application components that you select. Refer to your Web and application server documentation to determine what communications port they require. After installation, you can configure Get-Services to use alternate communications ports if your local network already uses particular communications ports.

Get-Services on servers running Oracle 9.2.0.1

If you are running Get-Services on a server using Oracle 9.2.0.1 you may experience a port conflict over communications ports 8009 and 8080. Consult your Web and application server documentation to see if they use either of these two ports.

If you are using the Oracle 9.2.0.1 database and the Tomcat application server, there will be a port conflict over port 8009. It is recommended that you change Tomcat to use a different communications port on servers running Oracle 9.2.0.1.

Custom Installation Procedures

Note: If you cancel the installation before completing all the steps, you must run Uninstall to remove all the files.

To perform a custom installation of Get-Services on UNIX:

- 1 Log into your server.

Important: Verify that your temporary directory has a minimum of 300 MB of available space. On Solaris, for example, the system-wide temp directory is `/tmp`.

- 2 Insert the Get-Services installation CD into your computer's CD ROM drive. Your computer should automatically launch the installation program.

If the installation program does not automatically start, mount your CD ROM drive, using a command such as the following:

```
mount /cdrom
```

Change directories to your CD ROM, using a command such as the following:

```
cd /cdrom
```

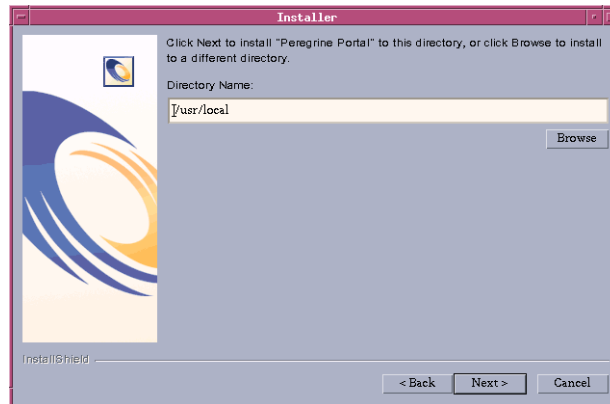
Enter the installer script specific for your operating system:

| Operating system | Shell script to run |
|-------------------|-----------------------------|
| AIX 5.1 | <code>./setupaix</code> |
| Red Hat Linux 7.3 | <code>./setuplinux</code> |
| Solaris 2.7 | <code>./setupsolaris</code> |
| Solaris 2.8 | <code>./setupsolaris</code> |

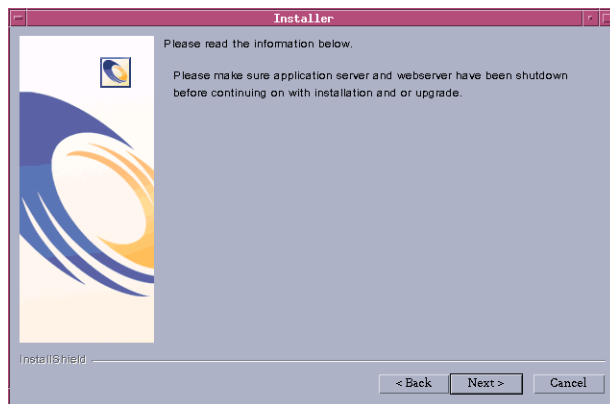
- 3 The installer welcome page opens. Click **Next** to continue to the next page of the wizard.



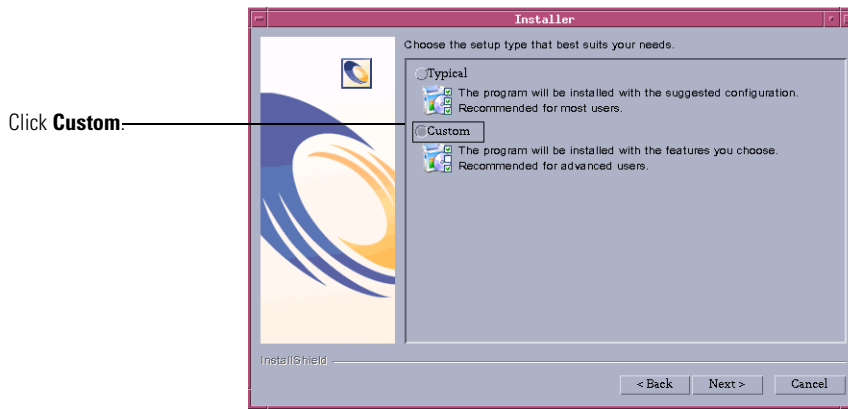
- 4 The installation location page is displayed. Click **Browse** to change the default installation location of `/usr/local`. Click **Next**.



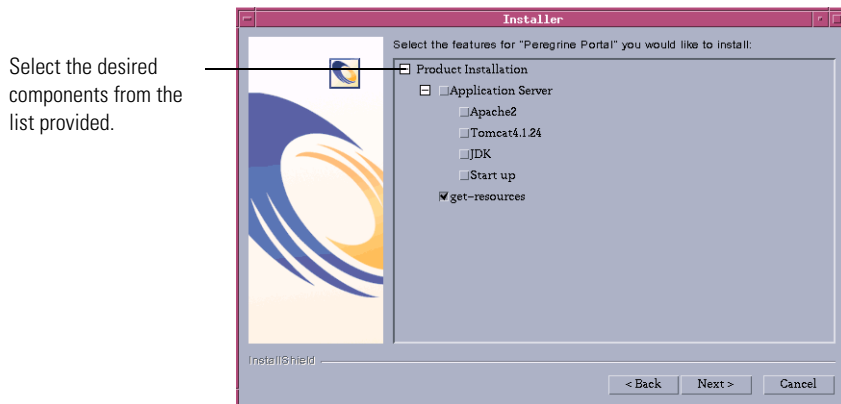
- 5 The installer prompts you to close the servers before continuing with the installation. After you close the servers, click **Next**.



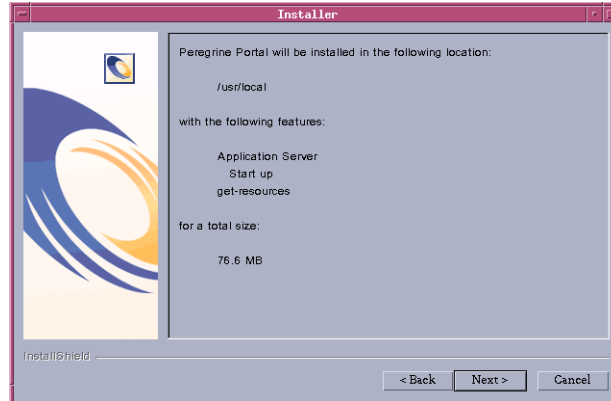
6 Select Custom and click Next.



7 Select the Peregrine Portal features that you want to install. Click Next.

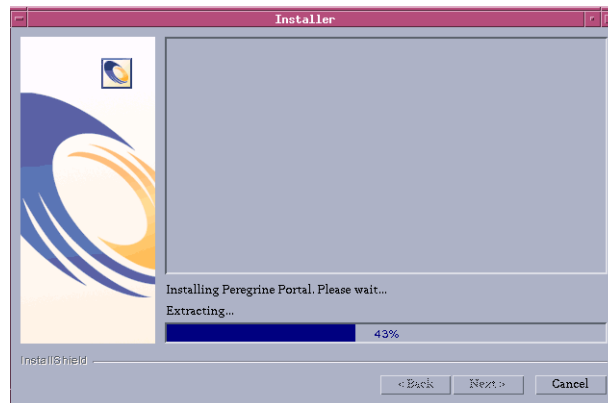


- 8 The installer displays a page where you can review components that it will install. Click **Next** to start installing Get-Services components.

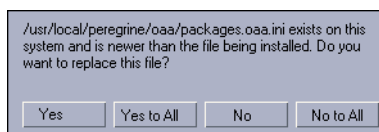


Note: The list of features on this page depends on the components that you have actually installed.

The installer displays its progress.

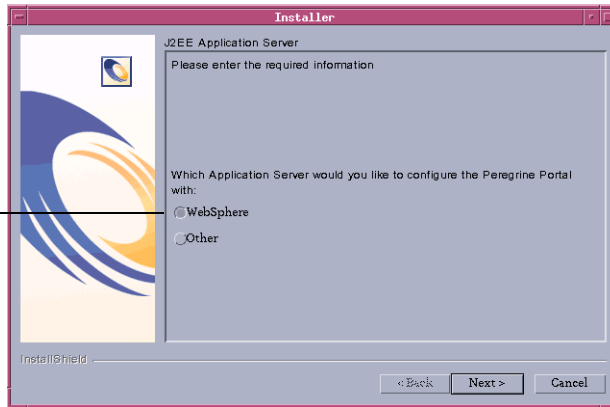


Note: If you are installing multiple applications, you see the following message. Click **Yes to All**.



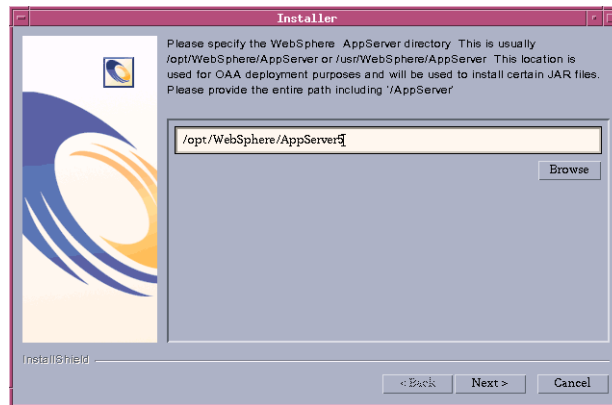
- 9 Select the Application Server you want to configure. Click **WebSphere** to configure a WebSphere application server, or click **Other** to configure another application server. Click **Next** to continue to the next page of the wizard.

Select your application server from the list provided.



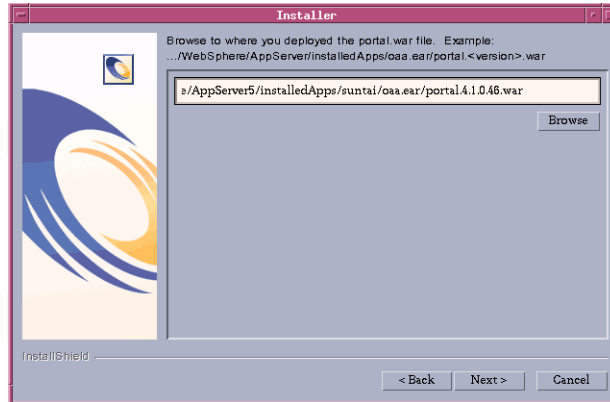
If you have chosen to configure a WebSphere application server, you will see the screens in step a through step f.

- a The WebSphere AppServer installation location page opens. Click **Browse** and locate the directory where you installed the WebSphere application server. Click **Next** to continue.

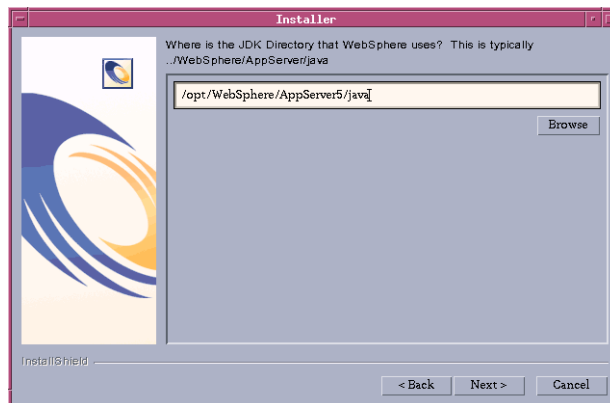


- b Click **Browse** and locate the directory where you deployed the portal.<version_number>.war file. Click **Next** to continue.

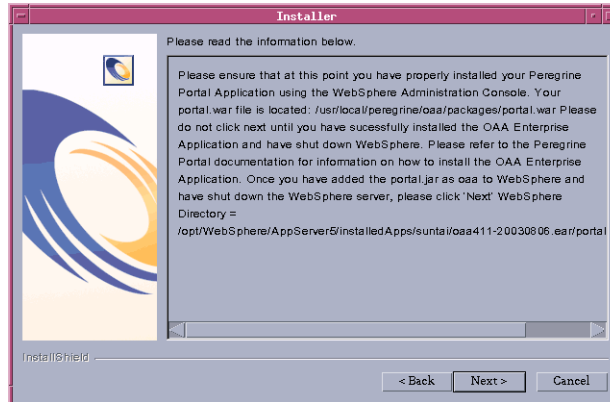
WebSphere automatically created this directory when you deployed the Get-Services portal.<version_number>.war as an enterprise application. See *WebSphere Application Server 4.0.2* on page 99 or *WebSphere Application Server 5.0.2* on page 107 for more information on deploying a WAR file.



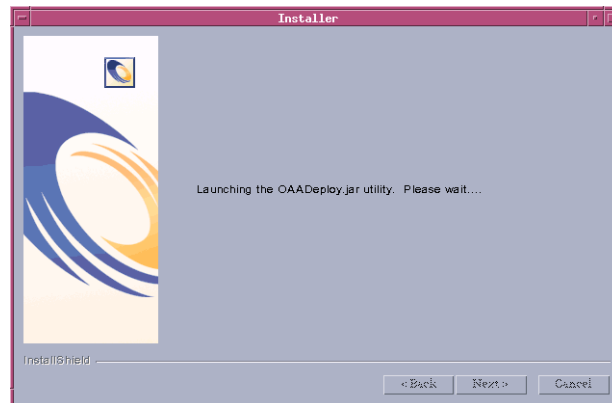
- c The WebSphere JDK installation location page opens. Click **Browse** and locate the directory where you installed the Java development kit used by WebSphere. Click **Next**.



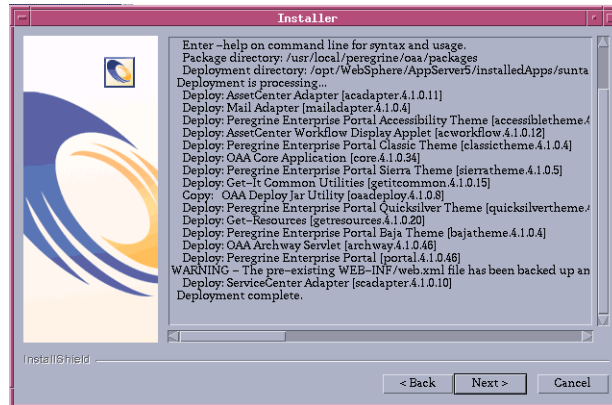
- d Read the information about your installation locations and make sure that all the requirements have been met. Click **Next** to continue.



The Get-Services deployment utility page opens.

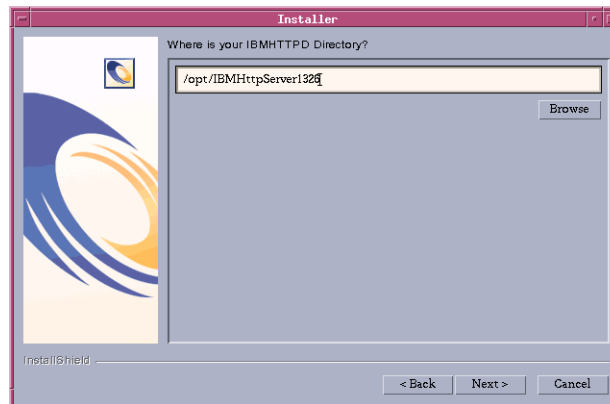


- e The installer displays a list of all deployed packages. Click Next.



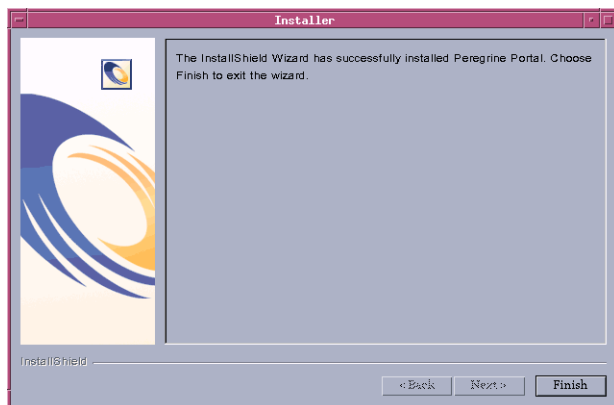
Note: The list of deployed packages depends on the components that you have actually installed.

- f Click **Browse** and locate the directory where you installed the IBM HTTP Server. Click Next to continue.



The Get-Services installer automatically configures a Web server virtual directory called `oaas`. If you want to define a different Web server virtual directory, see *WebSphere Application Server 4.0.2* on page 99 or *WebSphere Application Server 5.0.2* on page 107 for a list of requirements.

- Click **Finish** to close the installer.



Configuring WebSphere for AIX, Linux, and Solaris

The following sections show how you configure WebSphere versions 4.0.2 and 5.0.2 for AIX, Linux, and Solaris.

Configuring the WebSphere 4.0.2 startupServer.sh file

If you are running on an AIX, Linux, or Solaris server, you must configure your WebSphere 4.0.2 environment by editing the `startupServer.sh` script.

To configure the WebSphere 4.0.2 environment:

- Open `startupServer.sh` in any text editor.
- At the top of the file add a single entry for `LIBPATH` (AIX) or `LD_LIBRARY_PATH` (Solaris and Linux) and set it to a colon-delimited concatenation of the following example paths:

```
/usr/lib

/WebSphere/AppServer/installedApps/oa.ear/portal.4.1.2.29.war/
WEB-INF/lib

/WebSphere/AppServer/installedApps/oa.ear/portal.4.1.2.29.war/
WEB-INF/lib/<"AIX" or "SunOS" or "Linux">
```

```
(If you are running version 4 of ServiceCenter:)
/WebSphere/AppServer/installedApps/oa.ear/portal.4.1.2.29.war/
WEB-INF/lib/<"AIX" or "SunOS" or "Linux">/ServiceCenter4
```

-OR-

```
(If you are running version 5 of ServiceCenter:)
```



```
/WebSphere/AppServer/installedApps/oa.a.ear/portal.4.1.2.29.war/
WEB-INF/lib/<“AIX” or “SunOS” or “Linux”>/ServiceCenter5
```

- 3 Export the completed variable entry using one of the following commands:
export LIBPATH (AIX) or export LD_LIBRARY_PATH (Solaris or Linux).

A typical completed entry for AIX looks like:

```
LIBPATH=/usr/lib:/WebSphere/AppServer/installedApps/oa.a.ear/portal.4.
1.2.29.war/WEB-INF/lib:/WebSphere/AppServer/installedApps/oa.a.ear
/portal.4.1.2.29.war/WEB-INF/lib/AIX:/WebSphere/AppServer/installe
dApps/oa.a.ear/portal.4.1.2.29.war/WEB-INF/lib/AIX/ServiceCenter5

export LIBPATH
```

A typical completed entry for Solaris looks like:

```
LD_LIBRARY_PATH=/usr/lib:/WebSphere/AppServer/installedApps/oa.a.ear/
portal.4.1.2.29.war/WEB-INF/lib:/WebSphere/AppServer/
installedApps/oa.a.ear/portal.4.1.2.29.war/WEB-INF/lib/SunOS
:/WebSphere/AppServer/installedApps/oa.a.ear/
portal.4.1.2.29.war/WEB-INF/lib/SunOS/ServiceCenter5

export LD_LIBRARY_PATH
```

A typical completed entry for Linux looks like:

```
LD_LIBRARY_PATH=/usr/lib:/WebSphere/AppServer/installedApps/oa.a.ear/
portal.4.1.2.29.war/WEB-INF/lib:/WebSphere/AppServer/
installedApps/oa.a.ear/portal.4.1.2.29.war/WEB-INF/lib/Linux
:/WebSphere/AppServer/installedApps/oa.a.ear/
portal.4.1.2.29.war/WEB-INF/lib/Linux/ServiceCenter5

export LD_LIBRARY_PATH
```

- 4 Save the file.
- 5 Return to the section *Regenerating the plug-in configuration* on page 105.

Configuring the WebSphere 5.0.2 startServer.sh file

If you are running on an AIX, Linux, or Solaris server, you must configure your WebSphere 5.0.2 environment by editing the startServer.sh script.

To configure the WebSphere 5.0.2 environment:

- 1 Open startServer.sh in any text editor.
- 2 At the top of the file add a single entry for LIBPATH (AIX) or LD_LIBRARY_PATH (Solaris and Linux) and set it to a colon-delimited concatenation of the following example paths:

```
/usr/lib
```

```
/WebSphere/AppServer/installedApps/oa.a.ear/portal.4.1.2.29.war/
WEB-INF/lib
```

```
/WebSphere/AppServer/installedApps/oa.a.ear/portal.4.1.2.29.war/
WEB-INF/lib/<“AIX” or “SunOS” or “Linux”>
```

```
(If you are running version 4 of ServiceCenter:)
/WebSphere/AppServer/installedApps/oa.a.ear/portal.4.1.2.29.war/
WEB-INF/lib/<“AIX” or “SunOS” or “Linux”>/ServiceCenter4
```

-OR-

```
(If you are running version 5 of ServiceCenter:)
/WebSphere/AppServer/installedApps/oa.a.ear/portal.4.1.2.29.war/
WEB-INF/lib/<“AIX” or “SunOS” or “Linux”>/ServiceCenter5
```

3 Export the completed variable entry using one of the following commands:

`export LIBPATH (AIX)` or `export LD_LIBRARY_PATH (Solaris or Linux)`.

A typical completed entry for AIX looks like:

```
LIBPATH=/usr/lib:/WebSphere/AppServer/installedApps/oa.a.ear/
portal.4.1.2.29.war/WEB-INF/lib:/WebSphere/AppServer/
installedApps/oa.a.ear/portal.4.1.2.29.war/WEB-INF/lib/AIX
:/WebSphere/AppServer/installedApps/oa.a.ear/
portal.4.1.2.29.war/WEB-INF/lib/AIX/ServiceCenter5
```

```
export LIBPATH
```

A typical completed entry for Solaris looks like:

```
LD_LIBRARY_PATH=/usr/lib:/WebSphere/AppServer/installedApps/oa.a.ear/
portal.4.1.2.29.war/WEB-INF/lib:/WebSphere/AppServer/
installedApps/oa.a.ear/portal.4.1.2.29.war/WEB-INF/lib/SunOS
:/WebSphere/AppServer/installedApps/oa.a.ear/
portal.4.1.2.29.war/WEB-INF/lib/SunOS/ServiceCenter5
```

```
export LD_LIBRARY_PATH
```

A typical completed entry for Linux looks like:

```
LD_LIBRARY_PATH=/usr/lib:/WebSphere/AppServer/installedApps/oa.a.ear/
portal.4.1.2.29.war/WEB-INF/lib:/WebSphere/AppServer/
installedApps/oa.a.ear/portal.4.1.2.29.war/WEB-INF/lib/Linux
:/WebSphere/AppServer/installedApps/oa.a.ear/
portal.4.1.2.29.war/WEB-INF/lib/Linux/ServiceCenter5
```

```
export LD_LIBRARY_PATH
```

4 Save the file.

- Return to step 6 on page 108, in the section *WebSphere Application Server 5.0.2*, and complete all the remaining steps.

Specify the ServiceCenter version

If you are using the Tomcat application server, you may need to specify a different library path to use a version of ServiceCenter other than 4.x (the default version). To do this, you change the library path entry in the `oaactl` control file, which starts and stops Tomcat.

To specify the version of ServiceCenter that Get-Services uses:

- Open the file `../peregrine/bin/oaactl`.
For Solaris and Linux installations the default library path entry in the `oaactl` file is:

```
LD_LIBRARY_PATH=$JAVA_HOME/lib/i386:$OAA_INF/lib:$OAA_INF/lib
/$OS_NAME:$OAA_INF/lib/$OS_NAME
/ServiceCenter4:$LD_LIBRARY_PATH
```

For AIX installations the default library path entry in the `oaactl` file is:

```
LIBPATH=$JAVA_HOME/lib/i386:$OAA_INF/lib:$OAA_INF/lib
/$OS_NAME:$OAA_INF/lib/$OS_NAME/ServiceCenter4:$LIBPATH
```
- To use ServiceCenter 4.x, no change is required. To use ServiceCenter 5.x, change `ServiceCenter4` to `ServiceCenter5`.
- Save the `oaactl` file.

Uninstall—AIX, Linux, or Solaris

Use the following instructions to uninstall Get-Services.

Warning: These procedures remove all the components that you selected to install. If you chose the Typical installation option, uninstall removes Get-Services, Peregrine Tomcat, Apache, and JDK. If you chose the Custom installation option, then only those components that you selected to install are removed.

To uninstall Get-Services from AIX, Linux, or Solaris:

- Open a command prompt.

- 2 Change directories to:
`<root>/usr/peregrine/_uninst`
- 3 Enter the following command to uninstall Get-Services:
`./uninstall.bin`

Note: Stop the servers before proceeding. Type the command: `./ooactl stop`.

- 4 Follow the on-screen instructions to complete the uninstall.

Testing your installation

Use the following steps to confirm that you have properly installed Get-Services on AIX, Linux, or Solaris.

To test your Get-Services installation:

- 1 Verify that your application and Web servers are started.
- 2 Open a Web browser and type the following in the Address field:

`http://<server_name>:<port>/oaa/admin.jsp`

For `<server_name>`, enter the server name where the Get-Services Web server resides.

For `<port>`, enter one of the following communications port numbers:

| Application Server used | Port Number |
|-------------------------|-----------------------------|
| WebSphere | 80, can be omitted from URL |
| WebLogic | 7001 |
| JRun | 80, can be omitted from URL |
| Tomcat | 80, can be omitted from URL |

If everything is configured properly, the Administrator login page opens.

If the Get-Services administration login page does not open, see the *Troubleshooting* chapter for more information.

4 Load Balancing

CHAPTER

This chapter covers the following topics:

- *Load balancing application servers* on page 150
- *Creating multiple instances of Tomcat for Apache* on page 152
- *Creating multiple instances of Tomcat for IIS* on page 163

Load balancing application servers

A server running a Web application such as Peregrine's Get-Services or Get-Resources consumes approximately 256 MB of memory per application server instance. You should not set the maximum heap size of the JVM in excess of the free RAM available to the application server(s). Exceeding the amount of available RAM causes the JVM processes to swap to disk, reducing overall performance.

Unlike other Adapters, the AssetCenter and ServiceCenter Adapters each create a single connection to the back end. Therefore, the memory consumed on the AssetCenter database server is the same as that consumed by a single client connection. The memory consumed on the ServiceCenter server is also the same as that of a single ServiceCenter client process.

Note that memory usage does not increase significantly per session, because the architecture is based on the sharing of a set of resources and database connections among all sessions handled by the same application server instance. The small amount of memory consumed for session-specific information is released as the users log off or as their sessions expire. Note that server sessions do not expire unless the browser is closed or the user navigates to a different domain.

Because ServiceCenter and AssetCenter adapters maintain a single connection to the back end, adding extra application server instances brings the added benefit of concurrent access to the back-end data store.

The need for extra application server instances and therefore JVMs is directly related to three variables:

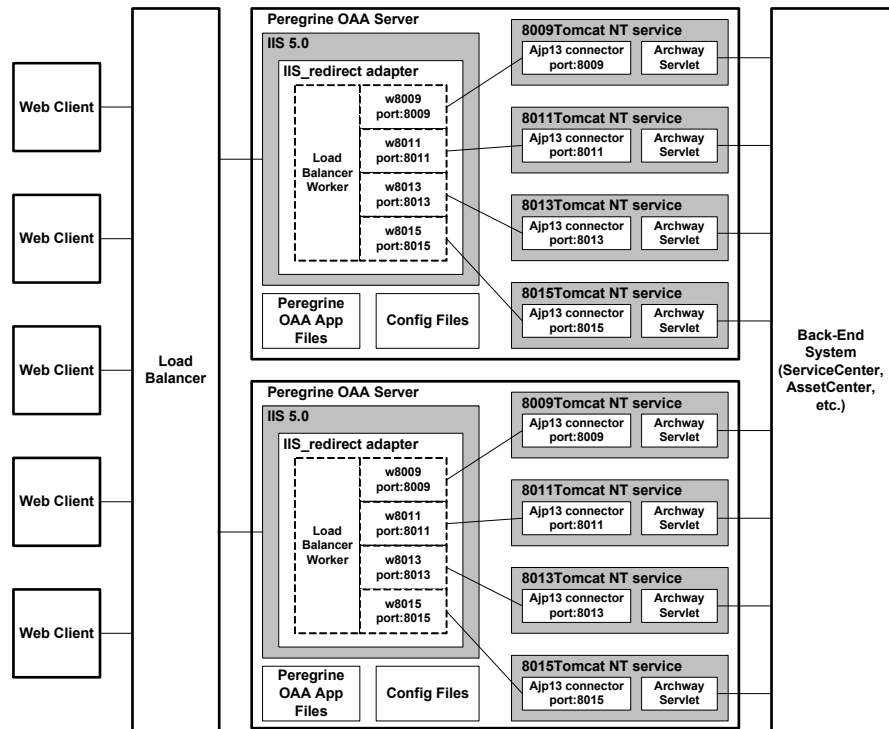
- The number of concurrent users.
- The processing power of the machine hosting the Get-Services Web server.
- The number of processors on the machine.

Each deployment may make different demands of the software and hardware, but, in any case, optimal back-end throughput for ServiceCenter and AssetCenter is achieved with the maximum number of application server instances that the server can handle without degraded performance due to lack of CPU headroom, file system swapping, and context switching.

Cache synchronization with Symmetric MultiProcessing (SMP) servers can, in most cases, be ignored as a performance tuning factor except in the case of the extremely large-scale systems.

To serve as a control guideline, low-end processors, such as a Pentium 450, should be capable of producing acceptable load handling for around 100 concurrent sessions on a single application server process. A dual Pentium 1000 with 2 gigabytes of RAM (a common data center configuration) should be capable of handling 400+ concurrent sessions using multiple application server instances. When using adapters capable of pooling, for example, the JDBCAdapter or BizDocAdapter, performance beyond the 400-concurrent-user benchmark can be achieved.

The following diagram illustrates the architecture of multiple JVMs:



Note: A white paper on Peregrine OAA architecture and optimization is available on the Customer Support Web site at <http://support.peregrine.com>. In the Search Knowledge Base question field type optimize and click Go. Click Get-It: Guide for planning and implementing OAA-based applications in the search results list and download the document.

Creating multiple instances of Tomcat for Apache

You can create multiple instance of Tomcat to load balance requests to Get-Services. You can configure each instance of Tomcat as a service. Although this is not required, it improves performance, makes the instances easier to manage, and provides extra functionality. For example, you can restart the service if it fails or if the machine on which the instances are installed needs to be restarted.

Note: The following procedures assume that you have already installed Get-Services. Refer to either the Windows or UNIX installation chapter for more information on installing Get-Services.

For systems using IIS, see *Creating multiple instances of Tomcat for IIS* on page 163.

To create multiple Tomcat instance for Apache:

- Step 1** Log in to the Get-Services administration page and disable the script pollers setting. See *Disabling script pollers on the primary Tomcat instance* on page 153.
- Step 2** Create copies of the Tomcat directory, then delete the `\webapps\oaa` directory from the newly copied instances of Tomcat. See *Copying the Tomcat directory* on page 153.
- Step 3** Edit the `workers.properties` file of the first or primary Tomcat instance to set the values for each additional Tomcat instance. See *Editing the workers.properties file* on page 154.
- Step 4** Edit the `mod_jk.conf` file of the first or primary Tomcat instance to establish a connection between Tomcat and Apache. See *Editing the mod_jk.conf file* on page 156.
- Step 5** Edit the `httpd.conf` file to define the Tomcat workers available for Apache. See *Editing the httpd.conf file* on page 157.
- Step 6** Edit the `server.xml` files for each Tomcat instance. See *Editing the server.xml files for Apache* on page 157.
- Step 7** Edit the `jk2.properties` files for each Tomcat instance. See *Editing the jk2.properties files for Apache* on page 159.

- Step 8** Install multiple instances of Tomcat as a service using `installservice.bat`. This file can be found in the `Tomcat\bin` directory. See *Installing Tomcat instances as services for Apache* on page 160.
- Step 9** Log in to the Get-Services administration page for the primary Tomcat instance and enable the script pollers setting. See *Enabling script pollers on the primary Tomcat instance* on page 161.
- Step 10** Testing the configuration. See *Testing load balancing on Apache* on page 161.

Disabling script pollers on the primary Tomcat instance

You only need one Tomcat instance running script pollers. Before you copy your primary Tomcat instance, you should login to the Get-Services administration page and turn off script polling. This will disable script polling on all of the Tomcat instances you create by copying the primary Tomcat instance.

To disable script pollers on the primary Tomcat instance:

- 1** Log in to the Get-Services administration page. The default URL is:
`http://<server_name>/oaa/admin.jsp`
- 2** Click **Settings**.
Get-Services displays the common settings page.
- 3** Scroll down to the Server-Side Scripts section, and select **No** for the Enable script pollers option.
- 4** Scroll down to the bottom of the form and click **Save**.
Get-Services displays the Control Panel page.
- 5** Click **Reset Server** to commit your changes.
- 6** Log out of the Get-Services administration page.
- 7** Stop the Peregrine Tomcat service to temporarily disable Get-Services.

Copying the Tomcat directory

You must create a separate folder for each instance of Tomcat you want to use for load balancing.

To copy the Tomcat directory:

- 1 Open Windows Explorer and copy the Tomcat install folder. The default file path is:
C:\Program Files\Peregrine\Common\Tomcat4
- 2 Paste a copy into the same root path. The default file path is:
C:\Program Files\Peregrine\Common
- 3 Rename the new folder to a unique name.
Tip: Include the port number to be used by the Tomcat instance in the folder name. For example, if you are going to use 4 instances of Tomcat listening on ports 8009, 8011, 8013, and 8015, then you can create 3 copies of the Tomcat folder called \Tomcat4_8011, \Tomcat4_8013, and \Tomcat4_8015. The primary instance uses port 8009.

Warning: If you are using more than four Tomcat instances, change the port numbers to avoid conflicts.

- 4 Delete the \webapps\oaa subdirectory from the newly copied instance of Tomcat.
The additional instances will use the same document root as the first or primary Tomcat instance.
- 5 Repeat step 1 through step 4 for each instance of Tomcat you want to use.

Editing the workers.properties file

For each server on which Tomcat instances are installed, there is only one `workers.properties` file. Tomcat installs the `workers.properties` file in the `conf` directory of your primary Tomcat instance. This file will be shared by all other Tomcat instances on that particular server.

The `workers.properties` file specifies the worker threads that the Web server connector will create in order to communicate with the Tomcat instances. Each Tomcat instance must communicate on a different port. The host should be set to the name of the server running the Tomcat instances or `localhost` if they are running on the same server as Apache.

Cache size is the maximum number of user sessions that Apache should direct to the Tomcat instance at one time.

Lbfactor is a number greater than or equal to 1 that Apache uses to load balance the workers. If all the workers are running on servers that have equal performance strengths, the *lbfactor* numbers should be equal. Workers with a lower *lbfactor* will be assigned fewer user sessions by the load balancer worker in Apache.

To edit the `workers.properties` file:

- 1 Open the `workers.properties` file in any text editor.

This file is located in the `conf` directory of your Tomcat installation.

- 2 Edit the following lines as shown. The paths for `workers.tomcat_home` and `workers.java.home` are the locations of your Tomcat installation and Java SDK installations.

Example:

```
workers.tomcat_home="c:\Program Files\Peregrine\common\Tomcat4"
workers.java.home="c:\Program Files\Peregrine\common\jdk1.3.1_05"
ps=\
worker.list=loadbalancer, ajp13, w8011, w8013, w8015
```

Find the `worker.loadbalancer.type=lb` code and make changes to the line that follows as shown below.

```
worker.loadbalancer.type=lb
worker.loadbalancer.balanced_workers=ajp13, w8011, w8013, w8015
```

Note: You can define the worker names any way you want as long as you continue the same naming convention throughout the procedure.

- 3 Add the following lines for each Tomcat instance you have installed, incrementing the port number for the values shown in step 2:

```
worker.w8011.port=8011
worker.w8011.host=localhost
worker.w8011.type=ajp13
worker.w8011.cachesize=40
worker.w8011.lbfactor=10
```

Note: All Tomcat instances share this `workers.properties` file; therefore, all additional lines must be in the file for the primary Tomcat instance.

- 4 Update the last two lines in the Default ajp13 Worker Definition section.

The first three lines are already in the file.

```
worker.ajp13.port=8009
worker.ajp13.host=localhost
worker.ajp13.type=ajp13
.
.
.
worker.ajp13.lbfactor=10
worker.ajp13.cachesize=40
```

Find the `worker.ajp13.lbfactor=10` code and make changes as shown below

Change `lbfactor` from =1 to =10
Change `cachesize` from =10 to =40

- 5 Save the file.

Editing the `mod_jk.conf` file

The `mod_jk.conf` file defines where the `worker` files are available in Apache. This file is shared by all Tomcat instances on the server. Edit `mod_jk.conf` only after successful deployment of necessary Get-Services files; otherwise the Get-Services mount points, file locations, and directories are not included in the `mod_jk.conf` file, and have to be manually added.

To edit the `mod_jk.conf` file:

- 1 Make a copy of the `mod_jk.conf` file and rename the copy to `mod_jk.conf-local`.

The `mod_jk.conf` file is located in the Tomcat `conf` directory.

Note: This is done only on the primary Tomcat instance.

- 2 Open the `mod_jk.conf-local` file in any text editor.
- 3 Change `JkWorkersFile` to point to the `worker.properties` file of the primary Tomcat instance. For example:

```
JkWorkersFile "C:\Program Files\Peregrine\Common\Tomcat4
\conf\worker.properties"
```

- 4 Change all `JkMount` entries to use “loadbalancer” instead of “default worker ajp13.” The format is: `JkMount<file(s)_or_directory> <worker_name>`

For example:

```
JkMount/oa/servlet/* loadbalancer
JkMount/oa/*.jsp loadbalancer
```

- 5 Save the file.

Editing the httpd.conf file

The httpd.conf file must include mod_jk.conf-local.

To edit the httpd.conf file:

- 1 Open the httpd.conf file in any text editor.

The default location is:

C:\Program Files\Peregrine\Common\Apache2\conf.

- 2 Update the following line to include -local:

```
include "<Tomcat>/conf/mod_jk.conf-local"
```

For *<Tomcat>* enter the path to your Tomcat installation. The default file path is: C:\Program Files\Peregrine\Common\Tomcat4

- 3 Save the file.

Editing the server.xml files for Apache

You modify the server.xml file for each Tomcat instance. The server.xml file contains information Tomcat needs to connect to the Web server and to find Peregrine OAA Platform Web application files.

Tip: Make a back up copy of the server.xml file before editing it.

To edit the server.xml files:

- 1 Each Tomcat instance has a server.xml file located in the conf directory. Open this file in any text editor.
- 2 Verify that the port number attribute of the <Server> element is a unique value that does not conflict with other port numbers used by Tomcat. It is recommended that the port numbers 8005-8008 be used for the shutdown port when configuring four Tomcat instances. For example:

```
<Server port="8005" shutdown="SHUTDOWN" debug="0">
```

Note: This is not the worker communications port number. The worker port number is defined in step 4 on page 158.

Warning: If you are using more than four Tomcat instances, change the port numbers to avoid conflicts.

- 3 Comment out a `<Connector>` tag with the `className="org.apache.coyote.tomcat4.CoyoteConnector"` using port 8080. Tomcat uses this port to communicate with a browser for direct HTTP requests. Since Apache will be serving the static data, Tomcat does not need to listen on this connector. It will also prevent a user from directly accessing Tomcat instances.

Example:

```
<!-- Define a non-SSL Coyote HTTP/1.1 Connector on port 8080 -->
<!--
<Connector className="org.apache.coyote.tomcat4.CoyoteConnector"
port="8080" minProcessors="5" maxProcessors="75"
enableLookups="true" redirectPort="8443" acceptCount="10" debug="0"
connectionTimeout="20000" useURIValidationHack="false" />
-->
```

- 4 Update the port number used by the Coyote Connector to a unique, non-conflicting value. If you are configuring four Tomcat instances, the values 8009 (as the primary port), 8011, 8013, and 8015 are recommended.

Example:

```
<!-- Define a Coyote/JK2 AJP 1.3 Connector on port 8009 -->
<Connector className="org.apache.coyote.tomcat4.CoyoteConnector"
port="8009" minProcessors="5" maxProcessors="75"
enableLookups="true" redirectPort="8443" acceptCount="10" debug="0"
connectionTimeout="20000" useURIValidationHack="false"
protocolHandlerClassName="org.apache.jk.server.JkCoyoteHandler" />
```

- 5 Update the `jvmRoute` attribute of the `<Engine>` element with the name of the `ajp13` worker defined in `workers.properties`.

Example:

```
<!-- Define the top level container in our container hierarchy -->
<Engine jvmRoute="w8009" name="Standalone" defaultHost="localhost"
debug="0">
```

The port number should follow the convention used elsewhere in the configuration (8009, 8011, and so on). These entries must be the same as the Tomcat ID entries you added to the `workers.properties` file in the primary Tomcat instance.

- 6 Update the `appBase` attribute of the `<Host>` element with the absolute path to the `webapps` directory of the primary Tomcat instance.

Example:

```
<!-- Define the default virtual host -->
<Host name="localhost" debug="0"
appBase="C:\Program Files\Peregrine\Common\Tomcat4\webapps"
unpackWARs="true" autoDeploy="true">
```

- 7 Create a `<Context>` element entry in the first or primary Tomcat instance and copy it to the other Tomcat instances, changing the OAA context so that it is not reloadable.

This prevents Tomcat from reloading the servlet without restarting the service. It improves performance and helps synchronize the JSP code that the Tomcat instances are serving during an update.

Add the entry just above the “examples” Context entry. For example:

```
<Context path="/oaa"
docBase="<First_Tomcat_install>/webapps/oaa"
crossContext="false"
debug="0"
reloadable="false" >
</Context>
```

For the `docBase` attribute, set `<First_Tomcat_install>` to the absolute path of the first or primary Tomcat instance.

- 8 Save the file.
- 9 Repeat step 1 through step 8 for the `server.xml` file in each Tomcat instance.

Editing the `jk2.properties` files for Apache

You will need to modify the `jk2.properties` file for each Tomcat instance. This file sets the `jk2` communication port.

To edit the `jk2.properties` files:

- 1 Open the `jk2.properties` file for a Tomcat instance in a text editor. This file is located in the Tomcat conf directory.
- 2 Insert a line for the `channelSocket` port. The port number must match the port number defined in `workers.properties` file for this Tomcat instance.

Example:

```
channelSocket.port=8009
```

- 3 Save the file.
- 4 Repeat step 1 through step 3 for each Tomcat instance.

Installing Tomcat instances as services for Apache

After you have edited the Tomcat files, you can install each instance of Tomcat as Windows services using `installservice.bat`.

To install Tomcat instances as services on Apache:

- 1 Open a DOS command prompt and change directories to your Tomcat bin directory.
- 2 Enter the following command to create each Tomcat instance:

```
installservice <service_name> <tomcat_home> <jvm_dll_path>
```

Where `<service_name>` is the name you assign to the Tomcat service, `<tomcat_home>` is the Tomcat install directory of the instance for which you are creating the service, and `<jvm_dll_path>` is the Java SDK install directory.

Note: The `<service_name>` cannot contain spaces.

The second and third parameters are optional if you have already set the `CATALINA_HOME` and `JAVA_HOME` environment variables.

Warning: The command to create Tomcat instances cannot accept spaces in the file path.

For example:

```
installservice Tomcat8009 C:\Progra~1\Peregrine\Common\Tomcat4_8009
C:\Progra~1\Peregrine\Common\jdk1.3.1_05\jre\bin\server\jvm.dll
```

Note: Use the Windows naming convention to avoid problems of spaces in the file path name. For example, replace `Program Files` with `Progra~1`.

- 3 Repeat step 1 and step 2 for each Tomcat service you wish to create.
- Tip:** You can easily remove a service. From the DOS command prompt, change directories to your Tomcat bin directory. Then enter the following command: `Tomcat -uninstall <service_name>`. The command is case-sensitive.
- 4 Start each Tomcat service that you install.

Enabling script pollers on the primary Tomcat instance

You need only one Tomcat instance running script pollers. Before you test your load balancing configuration, log in to the Get-Services administration page of the primary Tomcat instance and enable script polling.

To enable script pollers on the primary Tomcat instance:

- 1 Log in to the Get-Services administration page of the Tomcat instance. The default URL is:
`http://<server_name>:<port_number>/oaa/admin.jsp`
For `<port_number>` enter the port number defined for your primary Tomcat instance, typically port 8009.
- 2 Click **Settings**. Get-Services displays the common settings page.
- 3 Scroll down to the Server-Side Scripts section, and select **Yes** for the Enable script pollers option.
- 4 Scroll down to the bottom of the form and click **Save**. Get-Services displays the Control Panel page.
- 5 Click **Reset Server** to commit your changes.
- 6 Log out of the Get-Services administration page.

Testing load balancing on Apache

After you create additional Tomcat instances, you can test if load balancing is occurring using the following steps.

To test load balancing:

- 1 Start all Tomcat instance services.
If you installed Tomcat as a service, open the Windows Control Panel and start each instance from the Services dialog box.
- 2 Open a browser and log in to Get-Services.
- 3 Perform an action in Get-Services, such as a search.
- 4 Log out of Get-Services.
- 5 Close your browser to clear the connection cache.
- 6 Repeat step 1 through step 5 once for each Tomcat instance installed. For example, if you have 4 Tomcat instances, you log in, perform an action, and log out 4 times.

The load balancing mechanism uses a round-robin algorithm. If load balancing is working correctly, each login uses a different Tomcat instance.

- 7 Download the `archway.log` file from the Administration -> Server Log page.
- 8 Open the `archway.log` file in a text editor.
- 9 Verify that connection details list a different Tomcat instance for each connection.

If each connection uses a different Tomcat instance, then the system is load balancing properly. If each connection uses the same Tomcat instance, the system is not load balancing and needs troubleshooting.

Creating multiple instances of Tomcat for IIS

Multiple instances of Tomcat are installed as services. Although this is not required, it improves performance, makes the instances easier to manage, and provides extra functionality. For example, you can restart the service if it fails or if the machine on which the instances are installed needs to be restarted.

To create multiple Tomcat instance for IIS:

- Step 1** Log in to the Get-Services administration page and disable the script pollers setting. See *Disabling script pollers on the primary Tomcat instance* on page 164.
- Step 2** Create copies of the Tomcat directory, then delete the `\webapps\oaa` directory from the newly copied instances of Tomcat. See *Copying the Tomcat directory* on page 164.
- Step 3** Configure the ISAPI Plugin for IIS. See *Configuring the ISAPI Plugin for IIS* on page 165.
- Step 4** Create and configure a jakarta virtual directory in IIS. See *Creating and configuring a jakarta virtual directory in IIS* on page 166.
- Step 5** Configure IIS to use `isapi_redirector2.dll` as an ISAPI Filter. See *Configuring the isapi_redirector2.dll as an ISAPI filter* on page 166.
- Step 6** Create and configure an oaa virtual directory in IIS. See *Creating and configuring an oaa virtual directory in IIS* on page 167.
- Step 7** Edit the `workers2.properties` file of the first or master Tomcat instance to set the values for each additional Tomcat instance. See *Editing the workers2.properties file for IIS* on page 168.
- Step 8** Edit the `server.xml` files for each Tomcat instance. See *Editing the server.xml files for IIS* on page 169.
- Step 9** Edit the `jk2.properties` files for each Tomcat instance. See *Editing the jk2.properties files for IIS* on page 171.
- Step 10** Install multiple instances of Tomcat as a service using `installservice.bat`. This file is in the `Tomcat\bin` directory. See *Installing Tomcat instances as services for IIS* on page 171.

- Step 11** Log in to the Get-Services administration page for the primary Tomcat instance and enable the script pollers setting. See *Enabling script pollers on the primary Tomcat instance* on page 172.
- Step 12** Testing the configuration. See *Testing load balancing on IIS* on page 172.

Disabling script pollers on the primary Tomcat instance

You need only one Tomcat instance running script pollers. Before you copy your primary Tomcat instance, log in to the Get-Services administration page and turn off script polling. This ensures that script polling is disabled on all the Tomcat instances that you will create by copying the primary Tomcat instance.

To disable script pollers on the primary Tomcat instance:

- 1 Log in to the Get-Services administration page. The default URL is:
`http://<server_name>/oaa/admin.jsp`
- 2 Click **Settings**. Get-Services displays the common settings page.
- 3 Scroll down to the Server-Side Scripts section, and select **No** for the Enable script pollers option.
- 4 Scroll down to the bottom of the form and click **Save**. Get-Services displays the Control Panel page.
- 5 Click **Reset Server** to commit your changes.
- 6 Log out of the Get-Services administration page.
- 7 Stop the Peregrine Tomcat service to disable Get-Services temporarily.

Copying the Tomcat directory

You create a separate folder for each instance of Tomcat you want to use for load balancing.

To copy the Tomcat directory:

- 1 Open Windows Explorer and copy the Tomcat install folder. The default file path is: `C:\Program Files\Peregrine\Common\Tomcat4`
- 2 Paste the folder into the same root path. The default path is:
`C:\Program Files\Peregrine\Common`
- 3 Rename the new folder to a unique name.

Tip: Include the port number to be used by the Tomcat instance in the folder name. For example, if you want four instances of Tomcat listening on ports 8009, 8011, 8013, and 8015, create four copies of the Tomcat folder and name them `\Tomcat4_8009`, `\Tomcat4_8011`, `\Tomcat4_8013`, and `\Tomcat4_8015`.

Warning: If you are using more than four Tomcat instances, change the port numbers to avoid conflicts.

- 4 Delete the `\webapps\oaa` subdirectory from the newly copied instance of Tomcat. Additional instances will use the same document root as the first or primary Tomcat instance.
- 5 Repeat step 1 through step 4 for each instance of Tomcat you want to use.

Configuring the ISAPI Plugin for IIS

The Get-Services installer automatically places a copy of the ISAPI plugin for IIS in the following folder:

`c:\Program Files\Peregrine\Common\Tomcat4\bin`

Use the following procedures to configure the plugin for your intranet environment.

To configure the ISAPI plugin for IIS:

- 1 Open the file `jk2.reg` in a text editor. The default file path is:
`C:\Program Files\Peregrine\Common\Tomcat4\conf`
- 2 Verify that the “ServerRoot” and “workersFile” values list the proper installation path to Tomcat. By default, these values are:

```
“ServerRoot”=“C:\\Program Files\\Peregrine\\Common\\Tomcat4”
“workersFile”=“C:\\Program Files\\Peregrine\\Common\\Tomcat4\\conf
  \\workers2.properties”
```
- 3 Save and close the `jk2.reg` file.
- 4 Double-click the `jk2.reg` file in Windows Explorer. Windows adds the registry settings to the Windows registry.

Creating and configuring a jakarta virtual directory in IIS

The ISAPI plugin for IIS requires a specific IIS virtual directory in order to run. Use the following guidelines to create the IIS virtual directory. For specific instructions about IIS, refer to Windows Help.

Requirements for jakarta virtual directory

| Requirement | Setting |
|--------------------------|----------------------------|
| Create virtual directory | jakarta |
| Map to physical path | <Tomcat>\bin |
| Directory access rights | Read, Run scripts, Execute |

For <Tomcat>, enter the path to your Tomcat installation. The default file path is: C:\Program Files\Peregrine\Common\Tomcat4\bin. This path must contain the `isapi_redirector2.dll` file.

Configuring the `isapi_redirector2.dll` as an ISAPI filter

To establish a connection between Tomcat and IIS, you will need to install the file `isapi_redirector2.dll` as an ISAPI filter.

To install `isapi_redirect2.dll` as an ISAPI filter:

- 1 Make sure that IIS is running as a service.
- 2 Click **Start -> Settings -> Control Panel -> Administrative Tools** and open the Internet Information Services management console.
- 3 Right-click the **Default Web Site** node and then click **Properties**.
- 4 Click the **ISAPI Filters** tab.
- 5 Click **Add**.
- 6 Enter the following information:
 - a Filter Name: jakarta. The filter name must match the name you defined the `jk2.reg` registry file. By default, the filter name is jakarta.
 - b Executable: `isapi_redirector2.dll`. The default file path is:
C:\Program Files\Peregrine\Common\Tomcat4\bin\isapi_redirector2.dll
- 7 Click **OK**.

- 8 From the Internet Services management console, right-click the **Default Web Site** node, then click **Properties -> Isapi Filters** again.

The ISAPI filter in IIS displays a green status arrow to indicate that it is running.

- 9 Close the Internet Information Services management console.

Note: Stop and restart the IIS service for changes to take effect. Restart Tomcat as well.

Creating and configuring an oaa virtual directory in IIS

To run Get-Services from IIS, you need to create a virtual directory that maps to your Tomcat deployment folder.

Requirements for oaa virtual directory

| Requirement | Setting |
|--------------------------|----------------------|
| Create virtual directory | <ooa> |
| Map to physical path | <Tomcat>\webapps\ooa |
| Directory access rights | Read, Run scripts |

For <ooa>, enter the name of the virtual directory you want to use for Get-Services. The recommended virtual directory name is “ooa.” If you choose to use another virtual directory name, enter the new name in the following places:

- Rename the folder <Tomcat>\webapps\ooa to <Tomcat>\webapps\<new_name>
- Rename the [uri] mappings in workers2.properties from ooa to the new virtual directory name.
- Rename all the ooa context entries in mod_jk2.conf from ooa to the new virtual directory name.
- Rename the <Context> path and docBase attributes in server.xml from ooa to the new virtual directory name.

Important: The virtual directory name you choose will become part of the URL users enter to connect to Get-Services. For example:
http://server_name/<new_name>/login.jsp

For `<Tomcat>`, enter the path to your Tomcat installation. The default file path is: `C:\Program Files\Peregrine\Common\Tomcat4`

Editing the `workers2.properties` file for IIS

For each server on which Tomcat instances are installed, there is only one `workers2.properties` file. Tomcat installs the `workers.properties` file in the `conf` directory of your primary Tomcat instance. This file is shared by all other Tomcat instances on that particular server.

The `workers2.properties` file specifies the worker threads that the Web server connector creates in order to communicate with the Tomcat instances. Each Tomcat instance must communicate on a different port. The host should be set to the name of the server running the Tomcat instances or `localhost` if they are running on the same server.

To edit the `worker2.properties` file:

- 1 Open the `workers2.properties` file, located in the `conf` directory of your primary Tomcat installation, in any text editor.
- 2 Create a `channel.socket` entry for each Tomcat instance. (A channel socket is also known as a *worker*.)

Example:

```
[channel.socket:<server>:<port>]
info=Description of Tomcat instance
debug=0
tomcatId=<server>:<port>
lb_factor=1
disabled=0
```

For `<server>` enter the server name where the Tomcat instance is located.

For `<port>` enter the communications port on which the Tomcat instance is listening.

The `lb_factor` is a number greater than or equal to 1 that IIS uses to load balance the workers. If all the workers are running on servers that have equal performance strengths, you should set the `lb_factor` numbers to equal values (typically 1). If you want to assign fewer user sessions to a given worker, then assign it a lower `lb_factor` number relative to the other workers.

- 3 Verify that the `uri` settings lists the proper IIS virtual directory. The virtual directory is “`oaa`” by default. If you defined a different virtual directory other than `oaa` to run `Get-Services`, change the `uri` values. For example:

```
uri:/oaa/servlet/*]
info=Prefix mapping

[uri:/oaa/*.jsp]
info=Extension mapping
```

- 4 Save the file.

Editing the `server.xml` files for IIS

A separate `server.xml` file is required for each Tomcat instance running concurrently. The `server.xml` file contains the information that Tomcat needs to connect to the Web server and to find Peregrine OAA Platform Web application files.

Tip: Make a back-up copy of the `server.xml` file before editing it.

To edit the `server.xml` files:

- 1 Each Tomcat instance has a `server.xml` file located in the `conf` directory. Open `server.xml` in any text editor.
- 2 Update the port number attribute of the `<Server>` element to a unique value that does not conflict with other port numbers used by Tomcat. Peregrine Systems recommends that you use the port numbers 8005-8008 when configuring four Tomcat instances.

Warning: If you are using more than four Tomcat instances, change the port numbers to avoid conflicts.

For example:

```
<Server port="8005" shutdown="SHUTDOWN" debug="0">
```

- 3 Update the port number attribute of the Coyote Connector `<Connector>` element to a unique value that will not conflict with other port numbers used by Tomcat. Peregrine Systems recommends that you use port numbers 8009, 8011, 8013, and 8015 when configuring the Coyote Connector.

Example:

```
<Connector className="org.apache.coyote.tomcat4.CoyoteConnector"
port="8009" minProcessors="5" maxProcessors="75" enableLookups="true"
redirectPort="8443" acceptCount="10" debug="0"
connectionTimeout="20000" useURIValidationHack="false"
protocolHandlerClassName="org.apache.jk.server.JkCoyoteHandler" />
```

- 4 Create a `<Context>` element entry from the first or primary Tomcat instance and copy it to the other Tomcat instances.

Add the entry just above the “examples” Context entry.

Example:

```
<Context path="/oaa"
docBase="<First_Tomcat_install>/webapps/oaa"
crossContext="false"
debug="0"
reloadable="false" >
</Context>
```

For the `docBase` attribute, set `<First_Tomcat_install>` to the absolute path of the first or primary Tomcat instance.

- 5 Update the `jvmRoute` attribute of the `<Engine>` element with the server name and communications port used by each Tomcat instance. For example:

```
<Engine jvmRoute="localhost:8009" name="Standalone"
defaultHost="localhost" debug="0">
```

- 6 Update the `<Host>` element with the `webapps` directory used by the first or primary Tomcat instance. List the server information in the `appBase` attribute. For example:

```
<Host name="localhost" debug="0"
appBase="<First_Tomcat_install>/webapps" unpackWARs="true"
autoDeploy="true">
```

For the `appBase` attribute, set `<First_Tomcat_install>` to the absolute path of the first or master Tomcat instance.

- 7 Comment out port 8080 in the non-SSL Coyote HTTP... statement. For example:

```
<!-- Define a non-SSL Coyote HTTP/1.1 Connector on port 8080 -->
<Connector className="org.apache.coyote.tomcat4.CoyoteConnector"
port="8080" minProcessors="5" maxProcessors="75"
acceptCount="10" debug="0" connectionTimeout="20000"
useURIValidationHack="false" />
-->
```

- 8 Save the `server.xml` file.
- 9 Repeat step 2 through step 8 for each copy of the `server.xml` file you created.

Editing the `jk2.properties` files for IIS

You modify the `jk2.properties` file for each Tomcat instance. The `jk2.properties` file sets the `jk2` communication port.

To edit the `jk2.properties` files:

- 1 Open the `jk2.properties` file for a Tomcat instance in a text editor. This file is located in the Tomcat `conf` directory.
- 2 Insert a line for the `channelSocket` port. The port number must match the port number defined in `workers2.properties` file for this Tomcat instance. For example:

```
channelSocket.port=8009
```
- 3 Save the `jk2.properties` file.
- 4 Repeat step 1 through step 3 for each Tomcat instance.

Installing Tomcat instances as services for IIS

After you have edited the Tomcat files, you can install each instance of Tomcat as Windows services using `installservice.bat`.

To install Tomcat instances as services on IIS:

- 1 Open a DOS command prompt and change directories to the `bin` directory of your Tomcat instance.
- 2 Enter the following command to create each Tomcat instance:

```
installservice <service_name> <tomcat_home> <jvm_dll_path>
```

Where `<service_name>` is the name you assign to the Tomcat service, `<tomcat_home>` is the Tomcat install directory of the instance for which you are creating the service, and `<jvm_dll_path>` is the Java SDK install directory.

Note: The `<service_name>` cannot contain spaces.

The second and third parameters are optional if you have already set the `CATALINA_HOME` and `JAVA_HOME` environment variables.

Note: The command to create Tomcat instances cannot accept spaces in the file path. The following example avoids spaces in the file path name by replacing Program Files with Progra~!.

```
installservice Tomcat8009 C:\Progra~!\Peregrine\Common\Tomcat4
C:\Progra~!\Peregrine\Common\jdk1.3.1_05\jre\bin\server\jvm.dll
```

- 3 Repeat step 1 and step 2 for each Tomcat service you wish to create.

Tip: You can easily remove a service. From the DOS command prompt, change directories to the bin directory of your Tomcat instance, then enter the following command: Tomcat -Uninstall <service name>.
- 4 Start each Tomcat instance that you install.

Enabling script pollers on the primary Tomcat instance

You only need one Tomcat instance running script pollers. Before you test your load balancing configuration, log in to the Get-Services administration page of the primary Tomcat instance and enable script polling.

To enable script pollers on the primary Tomcat instance:

- 1 Log in to the Get-Services administration page of the Tomcat instance. The default URL is:


```
http://<server_name>:<port_number>/oaa/admin.jsp
```

 For <port_number> enter the port number you have defined for your primary Tomcat instance, typically port 8009.
- 2 Click **Settings**. Get-Services displays the common settings page.
- 3 Scroll down to the Server-Side Scripts section, and select **Yes** for the Enable script pollers option.
- 4 Scroll down to the bottom of the form and click **Save**. Get-Services displays the Control Panel page.
- 5 Click **Reset Server** to commit your changes.
- 6 Log out of the Get-Services administration page.

Testing load balancing on IIS

After you have created additional Tomcat instances, test load balancing.

To test load balancing:

- 1 Start all Tomcat instance services. If you installed Tomcat as a service, you open the Windows Control Panel and start Tomcat in the Services dialog box.
- 2 Open a browser and log in to Get-Services.
- 3 Perform an action in Get-Services. For example, perform a search.
- 4 Logout of Get-Services.
- 5 Close your browser to clear the connection cache.
- 6 Repeat step 1 through step 5 one time for each Tomcat instance installed. For example, if you have four Tomcat instances, log in, perform an action, and log out four times.

The load balancing mechanism uses a round-robin algorithm. If load balancing is working properly, each login attempt should use a different Tomcat instance.

- 7 Download the archway.log file from the **Administration > Server Log** page.
- 8 Open the archway.log file in a text editor.
- 9 Verify that connection details list a different Tomcat instance for each connection.

If each connection uses a different Tomcat instance, then the system is load balancing properly.

If each connection uses the same Tomcat instance, the system is not load balancing and needs troubleshooting.

5 ServiceCenter Administration

CHAPTER

Get-Services uses ServiceCenter as its back-end database. ServiceCenter authenticates user access rights and stores personalization changes.

- With ServiceCenter as the back-end, Get-Services accesses ServiceCenter Incident Management. Using the Get-Services Admin module, you can add the Service Management component as well.
- Get-Services Change Management Module integrates with ServiceCenter Change Management. It is only available with ServiceCenter 5.x.

Important: To continue the installation for Get-Services, an administrator must perform the procedures in this chapter within the back-end system. For detailed information on how to perform any of the steps listed in the following sections, refer to the *ServiceCenter System Administrator's Guide* .

This chapter includes the following sections:

- *Configuring ServiceCenter for Get-Services on page 176*
- *Updating ServiceCenter on page 176*
- *Applying the unload files to ServiceCenter on page 178*

Configuring ServiceCenter for Get-Services

Get-Services accesses the ServiceCenter 4.x and ServiceCenter 5.x Incident Management and Service Management modules. In addition, Get-Services can access the ServiceCenter 5.x Change Management module.

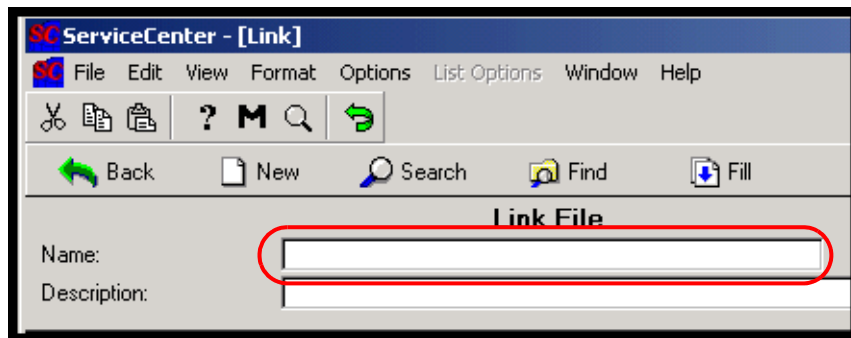
Users are authenticated using ServiceCenter Operator records, with special capability words provided for use with Get-Services. Refer to the Security chapter in the *Get-Services Administration Guide* for more information about user authentication.

Updating ServiceCenter

You must update ServiceCenter 4.x to take advantage of the Get-Services 4.1.2 functionality of opening a related Incident from a Call. This change facilitates transfer of data from Calls to Incidents. This procedure is not necessary for ServiceCenter 5.x.

To update ServiceCenter 4.x to include new Get-Services functionality:

- 1 From the ServiceCenter Utilities tab, click Tools, then Links to open the Link dialog box.

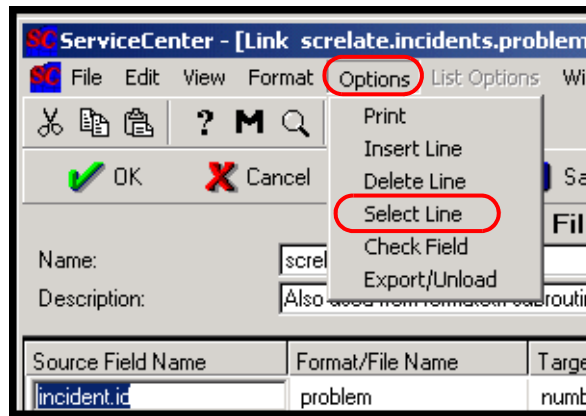


Type the name of the Link File in the Name text box.

- 2 In the Name text box, type `screlate.incidents.problem`, then click Search.

- Click `incident.id` to highlight it, then select **Options > Select Line**.

Highlight `incident.id` in the Source Field Name.



- In the **description** row, change the Target Field (Fill From/Post to) text from **Action, action** to **action**.

| | | |
|----------------------------------|----------------------------------|--------------------|
| Field (From/Source): | Format/File (To/Target): | Field (To/Target): |
| incident.id | problem | number |
| Comment: | | |
| Query: | | |
| QBE Format: | | |
| Expressions: | | |
| Source Field (Fill To/Post From) | Target Field (Fill From/Post To) | |
| description | action | |

Click **Save**.

Applying the unload files to ServiceCenter

The next step in the Get-Services installation involves installing updated RAD codes, event register records, event maps, and processes that are contained in unload files. The unload files that you apply depend on how you intend to use Get-Services. You apply different unload files to ServiceCenter 4.x and ServiceCenter 5.x. See the respective tables in the following sections.

The `\oaa` directory referenced in the following tables is a subdirectory of the directory where the Peregrine OAA Server files are installed. For example, if you installed Tomcat 4.1.24 as your Peregrine OAA server, the `\oaa` directory is a subdirectory of the `\Tomcat4\webapps` directory on the machine where you installed Tomcat 4.1.24.

Warning: This procedure overwrites existing ServiceCenter files when you apply the new unload files. If you tailored ServiceCenter, you will lose changes made to the original files.

ServiceCenter 4.x unload files with Get-Services 4.1.2

The path for the unload files is in `oaa\WEB-INF\etc\Version4\`.

Note: Unload these three files in the order shown:

```
gs22upd.unl
apm.bg.edit.unl
epmusc405_scr26513_24921.unl
```

| This file | Contains this information |
|-------------------------------------------|--------------------------------------------------------|
| <code>apm.bg.edit.unl</code> | rad: apm.bg.edit |
| <code>accessm.unl</code> | rad: acces.sm |
| <code>callmgmt.unl</code> | eventmap: e service management eventregister: esmin |
| <code>callupdate.unl</code> | eventmap: e service management |
| <code>epmusc405_scr26513_24921.unl</code> | rad: acces.apm apm.bg.edit |

| This file | Contains this information |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| epmx.unl Note: Refer to the Security chapter in the <i>Administration Guide</i> for a list of all the capability words. | capability: getit.answers getit.service getit.itemployee getit.itmanager getit.admin contacts: Hartke Tossi eventmap: e problem close e problem open e problem update eventregister: epmc epmo epmu operator: Hartke Tossi formatctrl problem.template.browse problem.template.update rad: gs.epmx |
| gs22upd.unl | rad: apm.bg.edit apm.get.display.format |
| openrelated.unl | eventregister: epmosmu eventmap: e problem open smu e problem open smu out rad: axces.apm.epmosmu cc.open.related.incident |
| SCR.25463.axces.apm.setup.unl | rad: axces.apm.setup |

ServiceCenter 5.0.x unload files with Get-Services 4.1.2

The path for the unload files is in oaa\WEB-INF\etc\Version5\.

Note: Unload these three files in the order shown:

gs22upd.unl
 apm.bg.edit.unl
 epmusc5_scr26513_24917.unl

and load these two files last:

sc5_scr25463.unl and sc5_scr26822.unl

| This file | Contains this information |
|----------------------------|--------------------------------------------------------|
| apm.bg.edit.unl | rad: apm.bg.edit |
| accessm.unl | rad: acces.sm |
| callmgmt.unl | eventmap: e service management eventregister: esmin |
| callupdate.unl | eventmap: e service management |
| epmusc5_scr26513_24917.unl | rad: acces.apm apm.bg.edit |

| This file | Contains this information |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| epmx.unl Note: Refer to the Security chapter in the <i>Administration Guide</i> for a list of all the capability words. | capability: getit.answers getit.service getit.itemployee getit.itmanager getit.admin contacts: Hartke Tossi eventmap: e problem close e problem open e problem update formatctrl problem.template.browse problem.template.update rad: gs.epmx eventregister: epmc epmo epmu operator: Hartke Tossi |
| esapproval.unl | eventregister: approval |
| gs22upd.unl | rad: apm.bg.edit apm.get.display.format |
| openrelated.unl | eventregister: epmosmu eventmap: e problem open smu rad: axces.apm.epmosmu cc.open.related.incident |

| This file | Contains this information |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| sc5_cmreopenall.unl | rad: cm3.unlock cm3.lock axces.cm3 cm3r.main cm3t.main Process: cm.update.save eventmap cm3r cm3t |
| sc5_scr25463.unl | rad:axces.sm |
| sc5_scr26822.unl | rad:axces.cm3 |
| sc50_scr25923_task24364.unl | eventmap: cm3r cm3t |

ServiceCenter 5.1 unload files with Get-Services 4.1.2

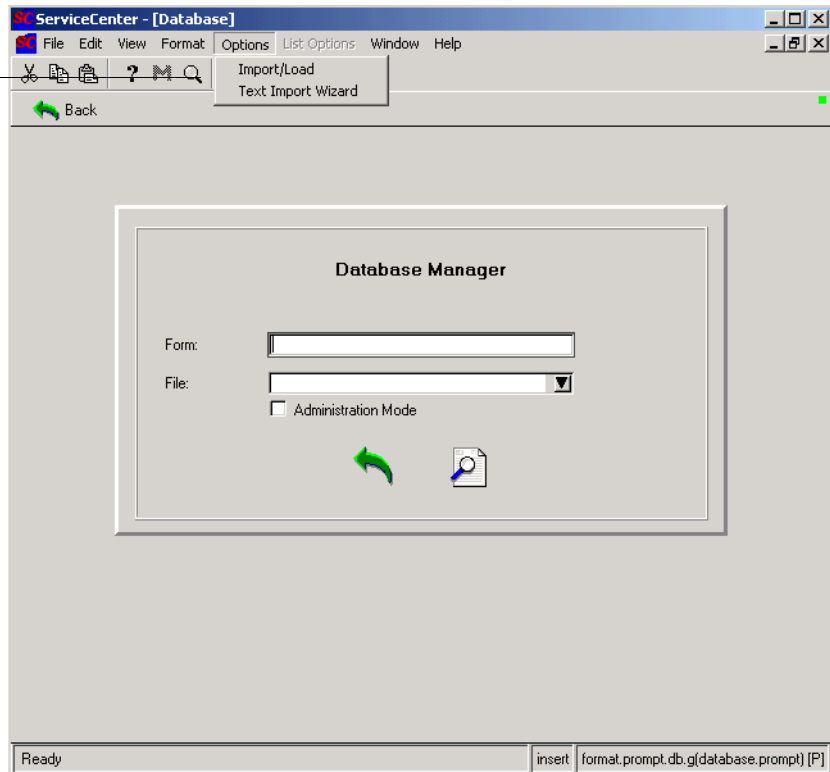
The path for the unload files is in oaa\WEB-INF\etc\Version51\.

| This file | Contains this information |
|----------------------------|----------------------------------|
| apm.bg.edit.unl | rad: apm.bg.edit |
| epmusc5_scr26513_24917.unl | rad: axces.apm apm.bg.edit |
| sc51_scr25463.unl | rad:axces.sm |
| sc51_scr26822.unl | rad: axces.cm3 |

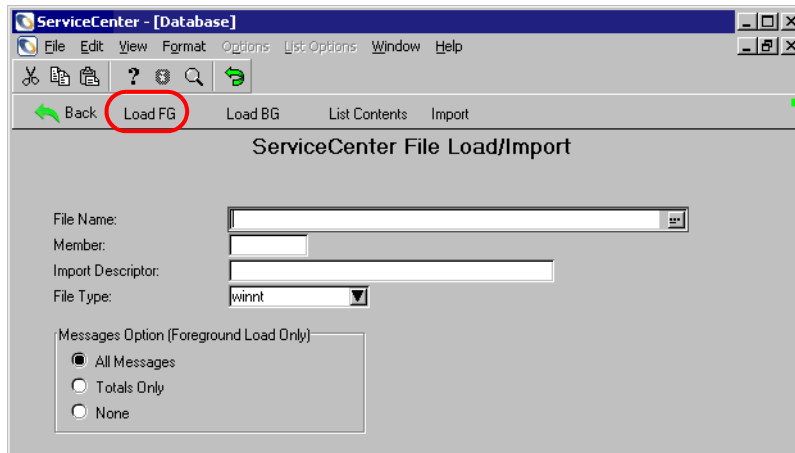
To apply unload files to ServiceCenter:

- 1 In ServiceCenter, go to Toolkit and choose Database Manager. The ServiceCenter Database Manager dialog box opens.

Choose Import/Load from the Options command.



- 2 From **Options**, choose **Import/Load** to open the **File Load/Import** dialog box.



- 3 In the **Filename** text box, browse to, or type, the path for the unload file that pertains to your particular integration. See the previous tables to determine which unload files pertain to your integration.
- 4 Click **Load FG** and note any errors.
- 5 Repeat step 3 and step 4 for each unload file that pertains to your integration.

6 Configuring the Adapters

CHAPTER

Final configuration settings necessary to complete the installation of Get-Services are performed in the Peregrine Portal Administration module. This includes parameter configuration and login information for the back-end system, as well as verification of adapter connectivity for Get-Services.

A more detailed description of additional features necessary for administration and maintenance using the Peregrine Portal Administration utility is available in the *Get-Services Administration Guide*.

Note: Incident Management is called Problem Management in ServiceCenter versions prior to 4.x. Some parameters in Incident Management use *problem* terminology because they are mapped to *problem* tables in ServiceCenter.

This chapter covers the following topics:

- *Accessing the Peregrine Portal Admin module* on page 185
- *Configuring connections to ServiceCenter* on page 190

Accessing the Peregrine Portal Admin module

The Peregrine Portal administrator login page accesses the Peregrine Portal Admin module. You use the Admin module to define the settings for your Peregrine system.

A default administrator, System, gives you access to the Admin module without being connected to a back-end system. After you configure your user name on the Common tab, you can also access the Admin module from the Navigation menu.

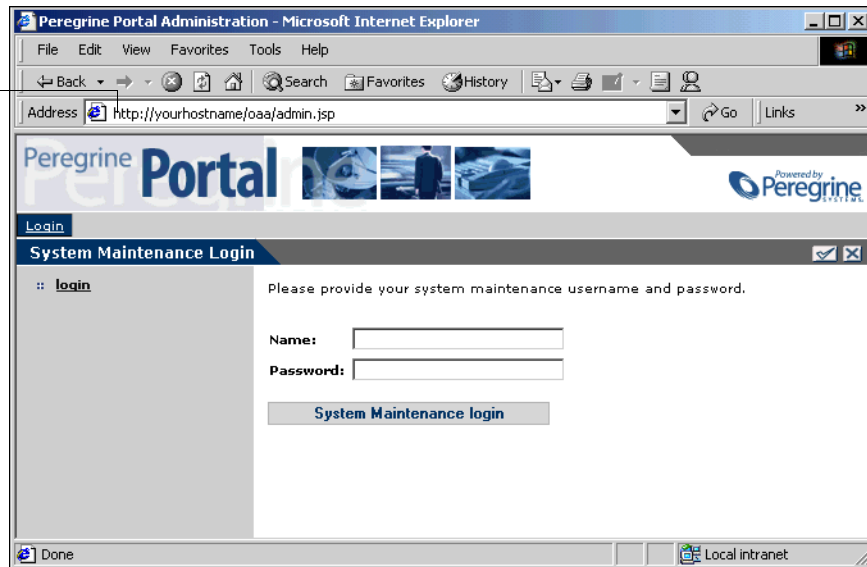
Important: When you change parameters using the Admin module, a `local.xml` file is created in the `\<application_server>\WEB-INF` directory to store these parameters. If you reinstall Get-Services, make a copy of this file and store it outside your Get-Services installation. Failure to do this will result in your parameter values being lost during the new installation.

To access the Peregrine Portal administrator login page:

- 1 Verify that your application server (for example, Tomcat) is running.
- 2 In your Web browser Address field, type:
`<hostname>/oaa/admin.jsp`
- 3 Press Enter to open the Portal administrator login page.

Type your hostname to connect to your local server.

System is the default administrator name.



- 4 In the Name field, type System.

No password is required on initial login. Refer to the *Get-Services Administration Guide* for detailed instructions on how to change the Administrator login name and password.

- 5 Click **System Maintenance login** to open the Control Panel page.

Use the Admin module to define settings to Get-Services.

The screenshot shows the Control Panel Admin interface. On the left is a navigation menu with options like Admin, Control Panel, Deployed Versions, Server Log, Settings, Show Script Status, Show Message Queues, Show Queue Status, Import / Export, Adapter, Transactions/Minute, IBM Websphere Portal Integration, and a Reset Server button. The main content area displays a message: "Here is a list of the adapters currently registered in this server. If necessary, you may also reset the server and all its connections." Below this are three tables: Connection Status, Active User Sessions, and Page Hits per Minute.

| Target | Adapter | Status |
|-----------------------------|--------------------------------------------|-----------|
| weblication | com.peregrine.oaa.adapter.sc.SCAAdapter | connected |
| mail | com.peregrine.oaa.adapter.mail.MailAdapter | connected |
| portalDB | com.peregrine.oaa.adapter.sc.SCAAdapter | connected |
| ec | com.peregrine.oaa.adapter.sc.SCAAdapter | connected |

| Server Name | Last Min. | 5 Min. Avg. | 20 Min. Avg. | Peak |
|-------------|-----------|-------------|--------------|------|
| localhost | 1 | 1 | 1 | 2 |

| Server Name | Last Min. | 5 Min. Avg. | 20 Min. Avg. | Peak |
|-------------|-----------|-------------|--------------|------|
| localhost | 0 | 0 | 0 | 15 |

Activity menu

The left pane Activity menu provides access to a number of different administrative utilities for Get-Services. You need to access some of these during this installation process. The utilities and their functions are described in detail in the *Get-Services Administration Guide*.

Using the Control Panel

Use the Control Panel page to check the status of the connections to the databases you are accessing with Get-Services and your Web applications. You can also reset the connection between the Archway servlet and the adapters to the back-end systems.

Note: When you first access the Control Panel page, the status for all target adapters is “Disconnected.” The status changes after you define target adapters, as described later in this section.

All changes involving the Control Panel require the following steps:

- Step 1** Log in to the Admin page with the username System.
- Step 2** Go to the Settings page.
- Step 3** Make your changes.

Step 4 Reset the server.

Using the Settings page

From the Admin module Activity menu, click **Settings** to open the current parameter settings. The Settings page is divided into tabs. The tabs that you see depend on the Web applications that you installed and the adapters that you use. The Common tab is available for all installations.

To open the Settings page:

- 1 From the Admin module, click **Settings**.

The Settings page opens, you use the various tabs to configure settings for Get-Services.

By default, the Common settings page opens.

| Change Management | Common | E-mail | Logging | Portal | Portal DB | ServiceCenter | Service Desk |
|-------------------------------------|-----------------|------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------|--------------|
| Themes | Web Application | XSL | | | | | |
| Maximum attached file size (in KB): | | 0 | | The size limit, in KB, 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: | | portalDB | | Adapter target name used to support common user operations. | | | |
| List of target aliases: | | weblication;mail | | Specifies a list of semicolon delimited target aliases used by web applications in this package. | | | |
| System Maintenance username: | | System | | The system maintenance username. This login provides access to administrative functionality. The system maintenance user is independent of any deployed adapter(s). Use this login to configure a newly installed system or to troubleshoot an existing install. | | | |
| System Maintenance password: | | | | The system maintenance password. | | | |
| Application path: | | WEB-INF/apps/ | | Directory location of the Peregrine Portal Web Applications. | | | |
| Event queue: | | portalDB | | Enter the name of the adapter that should be used by the Peregrine Portal event queue engine. For example: <ul style="list-style-type: none"> • To use ServiceCenter's repository, enter "sc" • To use AssetCenter's repository, enter "ac" | | | |

- 2 Click the appropriate tab to change setting parameters.

When you change the parameter default value for any setting and save it, the corresponding description column adds a link with the default value listed in brackets so that you can return to the default at any time.

To revert to the default setting:

- 1 Navigate to the appropriate setting parameter.
- 2 From the description column next to the changed parameter, select the **Click for default** link.

| Personalization | |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End user personalization: Enabled <input type="button" value="v"/> | The level of personalization access granted to end users: |
| | <ul style="list-style-type: none"> • Enabled - Full end user access to personalize screens. • Disabled - Disable personalization for non admin end users. • Limited - Non admin end users limited to move or remove existing fields. |
| | Click for default: [Limited] |

- 3 To return to the default setting, click **Click for default: [Limited]** and click **Save**.

The parameter returns to the default state.

| | |
|-------------------------------------------------------|------------------------------------------------------------------------------|
| Anonymous password: <input type="text"/> | Anonymous user password for the mail adapter |
| Outbound mail host: mailhost | The full name or IP address of the machine hosting the outbound mail server. |
| Outbound mail user ID: <input type="text"/> | The user ID used to access the outbound mail server. |

Resetting the server

After making any configuration changes in the Peregrine Portal Administration module, the system returns to the Admin Control Panel and the following informational message appears at the top of the page:

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

The following instructions explain how to reset the server and apply your configuration changes to Get-Services.

To reset the connection between the Archway servlet and back-end system:

- 1 From Control Panel, click **Reset Server**.

When the operation is complete, the following message indicates that the connections are reset:

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

- 2 Verify your changes in the Connection Status table.
Changes include the addition, removal, or connectivity of the target adapters.

Configuring connections to ServiceCenter

Get-Services connects to the ServiceCenter database through a special adapter, the SCAdapter. This section describes how to configure and verify the following settings:

- ServiceCenter adapter
- Portal DB adapter
- Web Application database adapter
- Service Desk
- Incident Management
- Change Management

Connection settings

This section describes how to configure and verify back-end system settings.

To define ServiceCenter as the back-end system for Get-Services:

- 1 From the Peregrine Portal Admin module, click **Settings**.

This displays the Settings page which provides access to the various tabs that configure settings for Get-Services.

The Common settings page opens by default.

| Change Management | Common | E-mail | Logging | Portal | Portal DB | ServiceCenter | Service Desk |
|-------------------------------------|--------|------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------|--------------|
| Themes | | Web Application | | XSL | | | |
| Maximum attached file size (in KB): | | 0 | | The size limit, in KB, 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: | | portalDB | | Adapter target name used to support common user operations. | | | |
| List of target aliases: | | weblication;mail | | Specifies a list of semicolon delimited target aliases used by web applications in this package. | | | |
| System Maintenance username: | | System | | The system maintenance username. This login provides access to administrative functionality. The system maintenance user is independent of any deployed adapter(s). Use this login to configure a newly installed system or to troubleshoot an existing install. | | | |
| System Maintenance password: | | | | The system maintenance password. | | | |
| Application path: | | WEB-INF/apps/ | | Directory location of the Peregrine Portal Web Applications. | | | |
| Event queue: | | portalDB | | Enter the name of the adapter that should be used by the Peregrine Portal event queue engine. For example: <ul style="list-style-type: none"> • To use ServiceCenter's repository, enter "sc" • To use AssetCenter's repository, enter "ac" | | | |

2 Update the fields as required.

The Common tab includes settings for the following:

- Language Translation
- Personalization
- Attachments
- Server-Side Scripts
- Encoding, Locales, and Sessions
- Performance Tuning

Tip: You can reload forms without having to reset your Peregrine OAA server. Set the **Reload Forms** option to **Yes** under **Performance Tuning**. This works best in a production environment.

Performance Tuning

File Change Monitor Interval:

Reload Forms:

Yes No

Set the Reload Forms option to yes to automatically reload the forms if their sources have been modified after the server has started.

- 3 Click **Save** to return to the Admin Control Panel page.
- 4 Click **Reset Server** at the bottom of the page to apply your changes to the system.

ServiceCenter database settings

Get-Services requires the ServiceCenter adapter to connect to the ServiceCenter database.

To connect to the ServiceCenter database:

- 1 From the Peregrine Portal Admin module, click **Settings**.
- 2 At the top of the Settings page, click the **ServiceCenter** tab to open the ServiceCenter settings page.

| Change Management | Common | E-mail | Logging | Portal | Portal DB | ServiceCenter | Service Desk |
|---------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|-----------|---------------|--------------|
| Themes | | Web Application | | XSL | | | |
| Host: | | Host name of the ServiceCenter server | | | | | |
| <input type="text" value="localhost"/> | | Click for default: localhost | | | | | |
| Port: | | Port number of the ServiceCenter server | | | | | |
| <input type="text" value="12670"/> | | | | | | | |
| Log: | | Path to SC logging used by the ServiceCenter client connection | | | | | |
| <input type="text"/> | | | | | | | |
| Admin user: | | Administration user used by the Peregrine Portal when performing tasks such as user authentication and registration in ServiceCenter | | | | | |
| <input type="text" value="falcon"/> | | | | | | | |
| Admin password: | | Admin user password for ServiceCenter | | | | | |
| <input type="password"/> | | | | | | | |
| Anonymous user: | | Anonymous user name used when an unknown user attempts to communicate with ServiceCenter | | | | | |
| <input type="text" value="falcon"/> | | | | | | | |
| Anonymous password: | | Anonymous user password for ServiceCenter | | | | | |
| <input type="password"/> | | | | | | | |
| Default capabilities: | | Semicolon separated list of default access rights that all users should have regardless of their profile. Access rights are assigned to target adapters in the following way: portalDB(getit.portal) | | | | | |
| <input type="text"/> | | | | | | | |
| Adapter: | | Full class path for adapter associated with this target. | | | | | |
| <input type="text" value="com.peregrine.oaa.adapter.sc.SCAdapter"/> | | | | | | | |
| Enum Source: | | Specifies the xml file which provides the values for enumeration data types. Leave this blank if the enum values are stored in backend database (i.e. bizdoc is present). | | | | | |
| <input type="text" value="WEB-INF/bizdoc/Enum/SysEnums.xml"/> | | | | | | | |
| <input type="button" value="Save"/> | | | | | | | |

3 Update the following fields as necessary:

| Field Name | Value Description | Default Value |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Host | Host name of the ServiceCenter server. | localhost |
| Port | Port number of the ServiceCenter server. | 12670 |
| Log | The path to SC logging that the ServiceCenter client connection uses | (none) |
| Admin user | Administration login name that the Peregrine Portal uses when performing tasks such as user authentication and registration | falcon |
| Admin password | Administrator password | (none) |
| Anonymous user | Name to use when unknown user attempts to connect with ServiceCenter | falcon |
| Anonymous password | Anonymous user password for ServiceCenter | (none) |
| Default capabilities | Access rights for all users. | (none) |
| Adapter | Full class path for adapter associated with this target | com.peregrine.oaa.adapter.sc.SCAdapter |
| WEB-INF/bizdoc/Enum/SysEnums.xml | The xml file that provides the values for enumeration data types | (none) |

- 4 When finished, click **Save** at the bottom of the page to return to the Admin Control Panel page.
- 5 Click **Reset Server** at the bottom of the page to apply your changes to the system.
- 6 When the operation is complete, verify that the sc target adapter, `com.peregrine.oaa.adapter.sc.SCAdapter`, is displayed in the Connection Status table.

Note: Unless the ServiceCenter system you are using as a back-end is configured with default login information, the status for the ServiceCenter target adapter displays “Disconnected” until you connect Get-Services to the ServiceCenter database.

Setting the PortalDB adapter

Get-Services lets you personalize portal application screens without manually changing and compiling code. To enable this feature, Get-Services requires a database adapter connection to store portal settings and customizations in the back-end database. Until a database adapter is defined for the portal page, users cannot see or make personalizations to the Peregrine Portal home page.

To configure Get-Services to save personalization settings in the ServiceCenter back-end database:

- 1 From the Peregrine Portal Admin module, click **Settings**.
- 2 At the top of the Settings page, click the **Portal DB** tab.

This displays the Portal Database settings page.

| | | | | | | | |
|-----------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------|---------------------------|-------------------------------|------------------------------|
| Change Management | Common | E-mail | Logging | Portal | Portal DB | ServiceCenter | Service Desk |
| Themes | Web Application | XSL | | | | | |
| Default capabilities: | | Semicolon separated list of default access rights that all users should have regardless of their profile. Access rights are assigned to target adapters in the following way: portalDB(getit.portal) | | | | | |
| <input type="text" value="portalDB(getit.portal)"/> | | | | | | | |
| Alias for: | | Specifies the target configuration for which this target is an alias. Click for default: [] | | | | | |
| <input type="text" value="sc"/> | | | | | | | |
| <input type="button" value="Save"/> | | | | | | | |

- 3 In the **Alias for** field type `sc`. Then click **Save** to return to the Admin Control Panel page.
- 4 Click **Reset Server** at the bottom of the page to apply your changes to the system.
- 5 When the operation completes, verify that the adapter used for the **portalDB** target is `com.peregrine.oaa.adapter.sc.SCAdapter` and displays “Connected” in the Connection Status table.

Important: If you specify one alias and subsequently change that alias, you lose the personalizations of your portal application screens.

Setting Web Application database adapter

Get-Services requires a database adapter connection to store settings and customizations to the Web application's interface screens. Until a database adapter is defined for the Web application, users cannot make personalization changes to the Web application.

To configure Get-Services to save personalization to the Web application in the ServiceCenter back-end database:

- 1 From the Peregrine Portal Admin module, click **Settings**.
- 2 At the top of the Settings page, click the **Web Application** tab to open the Web Application settings page.

| | | | | | | | |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------|--------|-----------|---------------|--------------|
| Change Management | Common | E-mail | Logging | Portal | Portal DB | ServiceCenter | Service Desk |
| Themes | Web Application | XSL | | | | | |
| Default capabilities: | Semicolon separated list of default access rights that all users should have regardless of their profile. Access rights are assigned to target adapters in the following way: portalDB(getit,portal) | | | | | | |
| weblication(oaa.bva) | | | | | | | |
| Alias for: | Specifies the target configuration for which this target is an alias. | | | | | | |
| sc | | | | | | | |
| Save | | | | | | | |

- 3 In the **Alias for** field type `sc`. Then click **Save** to return to the Admin Control Panel page.
- 4 Click **Reset Server** at the bottom of the page to apply your changes to the system.
- 5 When the operation completes, verify that the adapter used for the **weblication** target is `com.peregrine.oaa.adapter.sc.SCAdapter` and displays "Connected" in the Connection Status table.

Important: If you specify one alias and subsequently change that alias, you lose personalizations made to forms.

Setting Change Management parameters

The Change Management module shows field technicians their current tasks and a history of all their closed tasks. This section lists Change Management parameters. You configure these parameters with the Change Management tab on the Admin Settings page.

To configure Change Management parameters:

- 1 From the Peregrine Portal Admin module, click **Settings**.
- 2 At the top of the Settings page, click the **Change Management** tab to open the Change Management settings page.

| Change Management | Common | E-mail | Logging | Portal | Portal DB | ServiceCenter | Service Desk | Themes |
|-----------------------------|--------|-------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------|--------------|--------|
| Web Application XSL | | | | | | | | |
| Default Change Priority: | | 3 (below test & prod) ▼ | | This is the default change priority when user opens a new change request | | | | |
| Cancel Change Options: | | Send Email ▼ | | Action to perform when a change request is cancelled | | | | |
| Default Change Coordinator: | | Tossi | | Default change coordinator, if no coordinator is defined for a given change request, this is the operator that cancel change email will send to if send email for cancel is selected in cancel change option setting. | | | | |

- 3 Select the Default Change Priority from the drop-down menu:

| |
|----------------------------------|
| E (emergency) |
| 1 (if time allows) |
| 2 (normal) |
| 3 (below test & prod) |
| 4 (above test) |
| 5 (above test & prod) |

This list specifies the default change priority when a user opens a new change request.

- 4 Select the Cancel Change Options from the drop-down menu:

| |
|-------------------|
| No Cancel |
| Send Email |
| Open Ticket |

This list specifies what action to take when a user cancels a change request.

- 5 Type the name of the change coordinator to notify when a user cancels a change request.
- 6 Click **Save** to return to the Control Panel.
- 7 Click **Reset Server** to save your changes.

Setting Service Desk parameters

This section lists parameters that are specific to Get-Services. You configure these settings with the Service Desk tab on the Admin Settings page.

Incident Management is the default module used for incident (problem) tickets opened in Get-Services with the ServiceCenter adapter. If you want end users to be able to create ServiceCenter call tickets, you enable the Service Management module and configure the appropriate Get-Services settings.

To enable Service Management for Get-Services:

- 1 From the Peregrine Portal Admin module click **Settings**, then click the **Service Desk** tab.

| Change Management | Common | Email | Logging | Portal | Portal DB | ServiceCenter | Service Desk | Themes |
|---------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|-----------|---------------|--------------|--------|
| Web Application XSL | | | | | | | | |
| Ticket reassignment: | | Choose the user role for ticket reassignment. Click for default: [get-itmanager] | | | | | | |
| [get-employee] | | | | | | | | |
| End User Category Level: | | This value defines how many level of categorization to use when open a ticket. Example, if value set to 3, then Category, SubCategory and Product Type will be used | | | | | | |
| 4 | | | | | | | | |
| Category Level For IT Employee: | | This value defines how many level of categorization to use when open a ticket. Example, if value set to 3, then Category, SubCategory and Product Type will be used | | | | | | |
| 4 | | | | | | | | |
| Enable ESS users to close tickets: | | Determines whether Employee Self Service Users can close their own tickets. | | | | | | |
| <input checked="" type="radio"/> Yes <input type="radio"/> No | | | | | | | | |
| ServiceCenter Service Management Settings | | | | | | | | |
| Enable Service Management: | | Enable Service Management if you want tickets created from Services to be opened in the Service Management module of your ServiceCenter installation. Click for default: [No] | | | | | | |
| <input checked="" type="radio"/> Yes <input type="radio"/> No | | | | | | | | |
| Default Category for Service Management: | | Enter the default Category to be used when creating Call Tickets. This is only used if Service Management is enabled. Click for default: [example] | | | | | | |
| shared infrastructure | | | | | | | | |
| Default Subcategory for Service Management: | | Enter the default Subcategory to be used when creating Call Tickets. This is only used if Service Management is enabled. Click for default: [tbd] | | | | | | |
| workgroup | | | | | | | | |
| Default Product Type for Service Management: | | Enter the default Product Type to be used when creating Call Tickets. This is only used if Service Management is enabled. Click for default: [tbd] | | | | | | |
| applications | | | | | | | | |
| Default Problem Type for Service Management: | | Enter the default Problem Type to be used when creating Call Tickets. This is only used if Service Management is enabled. Click for default: [tbd] | | | | | | |
| business applications | | | | | | | | |
| Ticket default severity: | | Choose the default severity to be used when creating tickets. Click for default: [4] | | | | | | |
| Medium | | | | | | | | |
| Default Site Category for Service Management: | | Enter the default Site Category to be used when creating Call Tickets. This is only used if Service Management is enabled. | | | | | | |
| A | | | | | | | | |
| Default Assignment Group for Service Management: | | Default Assignment Group is used to route tickets . This is only used if Service Management is enabled. | | | | | | |
| DEFAULT | | | | | | | | |
| ServiceCenter Incident Management Settings | | | | | | | | |
| Ticket default category: | | Enter the default category used when inserting a new ticket. Please select a VALID category using the magnifying glass lookup. Click for default: [example] | | | | | | |
| client system | | | | | | | | |
| Default Subcategory for Incident Management: | | Enter the default Subcategory to be used when creating Incident Tickets. Click for default: [tbd] | | | | | | |
| software | | | | | | | | |
| Default Product Type for Incident Management: | | Enter the default Product Type to be used when creating Incident Tickets. Click for default: [tbd] | | | | | | |
| standard applications | | | | | | | | |
| Default Problem Type for Incident Management: | | Enter the default Problem Type to be used when creating Incident Tickets. Click for default: [tbd] | | | | | | |
| office | | | | | | | | |
| Ticket default severity: | | Choose the default severity to be used when creating tickets. Click for default: [3] | | | | | | |
| 2 - Urgent | | | | | | | | |
| Default Site Category for Incident Management: | | Enter the default Site Category to be used when creating Incident Tickets. | | | | | | |
| A | | | | | | | | |
| Field Technician Settings | | | | | | | | |
| Allow Task Reopen: | | Whether or not to allow closed task to be reopened Click for default: [No] | | | | | | |
| <input checked="" type="radio"/> Yes <input type="radio"/> No | | | | | | | | |
| List of target aliases: | | Specifies a list of semicolon delimited target aliases used by web applications in this package. | | | | | | |
| sc | | | | | | | | |
| <input type="button" value="Save"/> | | | | | | | | |

- 2 Select **Yes** in the **Enable ESS users to close tickets** parameter if you want to let Employee Self Service (ESS) users close their own tickets.

| | |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Enable ESS users to close tickets: <input checked="" type="radio"/> Yes <input type="radio"/> No | Determines whether Employee Self Service Users can close their own tickets. |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|

- 3 Select **Yes** in the **Enable Service Management** parameter if you want tickets created from Get-Services to be opened in the Service Management module of your ServiceCenter installation.

| ServiceCenter Service Management Settings | |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enable Service Management: <input type="radio"/> Yes <input checked="" type="radio"/> No | Enable Service Management if you want tickets created from Services to be opened in the Service Management module of your ServiceCenter installation. |

- 4 Click **Save** to return to the Control Panel.
- 5 Click **Reset Server** to save your changes.

Service Management

When you enable the Service Management module, end users can open and view both Incident tickets and Call tickets. You can then change Service Management parameters as needed.

To set Service Management for Get-Services:

- 1 From the Peregrine Portal Admin module, click **Settings**. Then click the **Service Desk** tab and scroll to the ServiceCenter Service Management Settings.

| ServiceCenter Service Management Settings | |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enable Service Management: <input type="radio"/> Yes <input checked="" type="radio"/> No | Enable Service Management if you want tickets created from Services to be opened in the Service Management module of your ServiceCenter installation. |
| Default Category for Service Management: example | Enter the default Category to be used when creating Call Tickets. This is only used if Service Management is enabled. |
| Default Subcategory for Service Management: tbd | Enter the default Subcategory to be used when creating Call Tickets. This is only used if Service Management is enabled. |
| Default Product Type for Service Management: tbd | Enter the default Product Type to be used when creating Call Tickets. This is only used if Service Management is enabled. |
| Default Problem Type for Service Management: tbd | Enter the default Problem Type to be used when creating Call Tickets. This is only used if Service Management is enabled. |
| Ticket default severity: Low | Choose the default severity to be used when creating tickets. |
| Default Site Category for Service Management: A | Enter the default Site Category to be used when creating Call Tickets. This is only used if Service Management is enabled. |
| Default Assignment Group for Service Management: DEFAULT | Default Assignment Group is used to route tickets . This is only used if Service Management is enabled. |

- Update the following fields as needed to define the ServiceCenter Service Management settings for Get-Services.

| Field name | Default value | Value description |
|-------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Enable Service Management | No | When set to Yes, tickets created in Get-Services are opened using the Service Management module of your ServiceCenter installation. |
| Default Category for Service Management | example | The default ServiceCenter category used for creating Call tickets. This parameter is used only if Service Management is enabled. |
| Default Subcategory for Service Management | tbd | The default ServiceCenter Subcategory used for creating Call tickets. This parameter is used only if Service Management is enabled. |
| Default Product Type for Service Management | tbd | The default Product Type used when creating Call tickets. This parameter is used only if Service Management is enabled. |
| Default Problem type for Service Management | tbd | Defines the default ServiceCenter category for Problem tickets. |
| Ticket default severity | Low | The default severity used when creating tickets from the drop-down list. This parameter is used only if Service Management is enabled. |
| Default Site Category for Service Management | A | The default Site Category used when creating Call tickets. This parameter is used only if Service Management is enabled. |
| Default Assignment Group for Service Management | Default | Used to route tickets, this is only used if Service Management is enabled. |

- Click **Save** to return to the Control Panel.
- Click **Reset Server** to save your changes.

Incident Management

The following parameters control the default settings that Incident Management uses when a user opens a Get-Services ticket. These settings are in the Service Desk tab on the Admin Settings page.

To set Incident Management for Get-Services:

- 1 From the Peregrine Portal Admin module, click **Settings**. Then click the **Service Desk** tab and scroll to the ServiceCenter Incident Management Settings.

| ServiceCenter Incident Management Settings | |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Ticket default category: example | Enter the default category used when inserting a new ticket. Please select a VALID category using the magnifying glass lookup. |
| Default Subcategory for Incident Management: tbd | Enter the default Subcategory to be used when creating Incident Tickets. |
| Default Product Type for Incident Management: tbd | Enter the default Product Type to be used when creating Incident Tickets. |
| Default Problem Type for Incident Management: tbd | Enter the default Problem Type to be used when creating Incident Tickets. |
| Ticket default severity: 3 - Normal | Choose the default severity to be used when creating tickets. |
| Default Site Category for Incident Management: A | Enter the default Site Category to be used when creating Incident Tickets. |

The following table describes the parameters that define the ServiceCenter Incident Management settings for Get-Services.

Note: Only a ServiceCenter user with Admin rights can change the settings.

| Field name | Default value | Value description |
|-----------------------------------------------|---------------|-----------------------------------------------------------------------------|
| Ticket default category | example | The default Category used when creating new Incident tickets. |
| Default Subcategory for Incident Management | tbd | The default Subcategory used when creating Incident tickets. |
| Default Product Type for Incident Management | tbd | The default Product Type used when creating Incident tickets. |
| Default Problem Type for Incident Management | tbd | The default Problem Type used when creating Incident tickets. |
| Ticket default severity | 3 - Normal | The default Severity used when creating Incident tickets. |
| Default Site Category for Incident Management | A | The default Site Category used when creating Incident tickets. |
| List of target aliases | sc | A list of semicolon delimited target aliases that the Web application uses. |

- 2 Change the parameters, as needed.

- 3 Click **Save** to return to the Control Panel.
- 4 Click **Reset Server** to save your changes.

Field Technician

The following parameters control the default settings for Field Technicians. These settings are in the Service Desk tab on the Admin Settings page.

To set Field Technicians parameters for Get-Services:

- 1 From the Peregrine Portal Admin module, click **Settings**. Then click the **Service Desk** tab and scroll to the Field Technician Settings.

| Field Technician Settings | |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Allow Task Reopen: <input type="radio"/> Yes <input checked="" type="radio"/> No | Whether or not to allow closed task to be reopened |
| List of target aliases: sc | Specifies a list of semicolon delimited target aliases used by web applications in this package. |

- 2 Click **Yes** to allow technicians to reopen tasks.
- 3 Click **Save** to return to the Control Panel.
- 4 Click **Reset Server** to save your changes.

Troubleshooting the ServiceCenter database connection

If the Connection Status table in the Admin Control Panel displays “Disconnected” for any of the target adapters, perform the following procedures to troubleshoot possible configuration issues:

To troubleshoot the ServiceCenter database connection:

- 1 From the Admin module, check the Control Panel page to confirm the database connectivity status.
 - If `sc` is disconnected, verify that the ServiceCenter service is running and the ServiceCenter console has been started.
- 2 From the Settings page ServiceCenter tab:
 - a Verify that the parameters for Host and Port are correct.
 - b Verify that the Admin user name and password defined for Get-Services are the same login values used when logging directly into the ServiceCenter back-end system as an Administrator.
- 3 Verify that you have ServiceCenter full client connectivity by starting a client that points to the port listed on the Settings page in the Admin module.

In the ServiceCenter settings page of the Admin module in Get-Services:

- Verify that the parameters entered for the Host: and Port: fields are correct.
- Verify that the Admin user name and password defined for Get-Services are the same login values used when logging directly into the ServiceCenter back-end system as an Administrator.

Refer to *ServiceCenter database settings* on page 192 for detailed instructions on how to perform these functions.

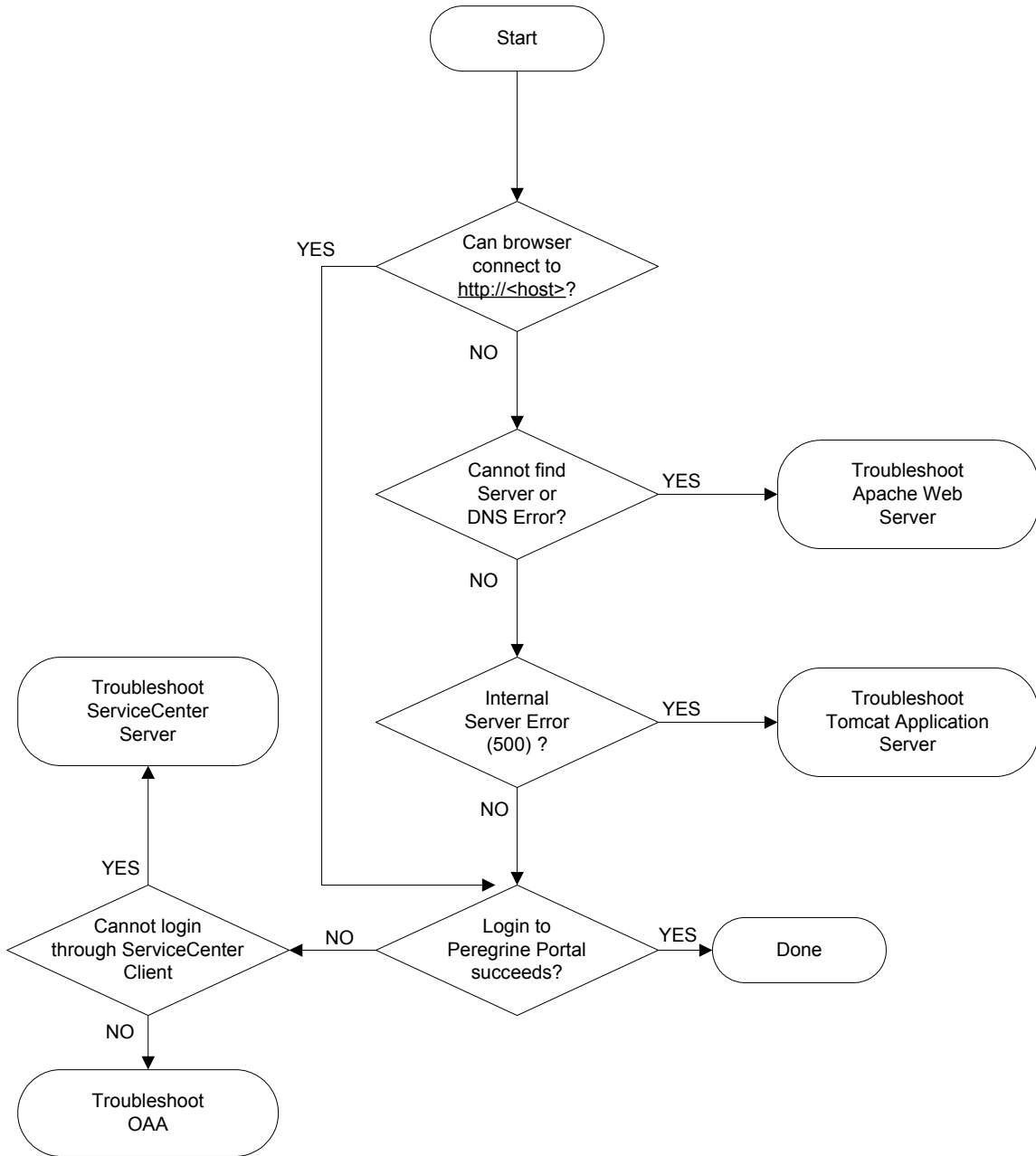
7 Troubleshooting

CHAPTER

This chapter covers the following topics:

- *Troubleshooting Apache Web server for Windows* on page 206
- *Troubleshooting Apache Web server for UNIX* on page 209
- *Troubleshooting Tomcat* on page 210
- *Troubleshooting OAA* on page 213
- *Troubleshooting WebSphere* on page 214
- *Troubleshooting ServiceCenter server* on page 215

The following troubleshooting diagram shows areas to consider when trying to resolve installation problems.



Troubleshooting Apache Web server for Windows

If you are having trouble with the Apache Web server for Windows, follow these instructions.

The Web server is not responding

If the Web server is not responding:

- Step 1** Verify that the network connections are enabled.
- Step 2** Verify that the `apache.exe` program is running.
- Step 3** Restart Apache service.
- Step 4** Make sure the port that Apache uses is not in use by another network service (Apache uses port 80 by default).

To verify that the network connections are enabled:

- 1 Click Start.
- 2 Point to Settings.
- 3 Click Network and Dial-up connection.
- 4 Click Local area connection.
- 5 In the dialog box, verify that under Connection, Status is listed as Connected.

To verify that the `apache.exe` program is running:

- 1 Press Ctrl+Alt+Del.
- 2 Click Task Manager.
- 3 On the Processes tab, verify that the `Apache.exe` program is listed in the Image Name column.

To restart Apache service:

- 1 Click Start.
- 2 Click Programs.
- 3 Click Administrative Tools.
- 4 Click Services.
- 5 Locate the Apache service in the list and restart it.

To make sure the port that Apache uses is not in use by another network service (Apache uses port 80 by default):

- 1 Stop Apache.
 - a Click Start.
 - b Click Programs.
 - c Click Administrative Tools.
 - d Click Services.
 - e Locate the Apache service in the list and stop it.
- 2 Click Start.
- 3 Click Run.
- 4 Enter `cmd` and click OK.
- 5 In the command line window, enter `netstat -a` and press return.
- 6 Make sure that an entry with `Proto=TCP, Local Address=<host>:http` does not exist.

Note: This ensures that when Apache is not running, no other service is listening on the http port (80).
- 7 Correct the problem by either changing Apache's default port (refer to customization documentation) or disabling/changing the conflicting service.

Users cannot access the Web server even though the server is running, and the network and Internet connections are enabled

If users cannot access the Web server, follow these instructions:

- Step 1** Verify that the WINS server is installed.
- Step 2** Verify that the DNS server is installed.
- Step 3** Check Apache log files for additional errors.

To verify that the WINS server is installed:

- 1 Click Start.
- 2 Point to Settings.
- 3 Click Control Panel.
- 4 Click Add/Remove program.
- 5 Click Add/Remove Windows Components.

- 6 Click Networking Services.
- 7 Click Details.
- 8 Verify that the WINS Server check box is selected and properly configured on the network. Also verify that it is functioning.

To verify that the DNS server is installed:

- 1 Click Start.
- 2 Point to Settings.
- 3 Click Control Panel.
- 4 Click Add/Remove program.
- 5 Click Add/Remove Windows Components.
- 6 Click Networking Services.
- 7 Click Details.
- 8 Verify that DNS is installed, and that the DNS servers (or server) are connected and working on the network.

To view Apache log files for additional errors:

- ▶ From a text editor, open the Apache log files.
The default files are in `c:\Program Files\Peregrine\Common\Apache2\logs`.

Troubleshooting Apache Web server for UNIX

If you are having trouble with the Apache Web server for UNIX, follow these instructions.

The Web server is not responding

If the Apache Web server is not responding, check the network setup.

To check the network setup:

- 1 Make sure the port that Apache uses is not in use by another network service.

Note: Apache uses port 80 by default. You can change this by using the **Port** directive in the `httpd.conf` file. Use the `netstat` command to list all ports being listened to after shutting down Apache.

```
$ /etc/init.d/oaactl stop
$ netstat -a | grep 80
```

- 2 Make sure the IP address and hostname of the server are configured correctly. If so,

- The `Ping` command successfully gets a response from the server.
- The `nslookup hostname` displays the correct mapping from the hostname to the IP address.
- The `telnet hostname 80` successfully connects to the server.

```
$ /usr/sbin/ping hostname -n 5
```

```
$ telnet hostname 80
Trying...
Connected to hostname
Escape character is '^]'
```

View Apache log files for advanced errors

If you are having trouble with the Apache Web server, view the log files.

To view Apache log files for advanced errors:

- From a text editor, open the Apache log files.

The default Apache log files are in:

```
<base install directory>/peregrine/common/apache2/logs.
```

Troubleshooting the IBM HTTP Server

The Get-Services installer creates duplicate alias entries in the IBM HTTP Server when you install more than one Peregrine OAA Platform application on WebSphere.

Duplicate entries can also occur if you reinstall Get-Services or install another Peregrine OAA Platform application on a system that formerly had Get-Services installed on it.

Remove any duplicate alias entries from the IBM HTTP Server `httpd.conf` file.

Troubleshooting Tomcat

Before you can troubleshoot problems on Tomcat, you must become familiar with starting and stopping Tomcat on your operating system. You also need know where the Tomcat log files are located.

To start/stop Tomcat on Windows

- 1 Click Start.
- 2 Click Programs.
- 3 Click Administrative Tools.
- 4 Click Services.
- 5 Locate the PeregrineTomcat service in the list and start/stop/restart it.

To start/stop Tomcat on UNIX

- ▶ `$/etc/init.d/oaactl <start/stop/restart>`

The following table contains the default Tomcat log file locations.

| Operating system | Default Tomcat log files location |
|------------------|--------------------------------------------------------------------------------|
| Windows | C:\Program Files\Peregrine\Common\Tomcat4\logs |
| UNIX | / <code><installed base directory></code> /peregrine/common/tomcat4/logs |

Check for Tomcat port conflicts

The following table displays the default Tomcat port usage.

| Port number | Tomcat service |
|-------------|--------------------------|
| 8005 | Tomcat Administration |
| 8009 | Tomcat AJP13 Worker Port |

In the Tomcat log file `stderr.log`, the following line indicates the currently succeeded AJP13 port being used:

```
[INFO] ChannelSocket - -JK2: ajp13 listening on tcp port 8009
```

To check for Tomcat port conflicts:

- 1 Stop the Tomcat service.
- 2 Use `netstat -a` to list ports being listened on. Check for port conflicts.
- 3 Make necessary modifications to Tomcat port configuration or disable (or modify) the conflicting service. Additional information about Tomcat is available at <http://jakarta.apache.org/tomcat/>.

Checking for Port Conflicts: an example

Check for entries where the Proto value is “TCP” and the State is “Listening.” For example, the following output from the `netstat -an` command shows that ports 80, 8009, 8025, 12670, and 1585 are in use:

Active Connections

```
Proto Local Address Foreign Address State
TCP 0.0.0.0:8 0.0.0.0:0 LISTENING
TCP 0.0.0.0:8009 0.0.0.0:0 LISTENING
TCP 0.0.0.0:8025 0.0.0.0:0 LISTENING
TCP 0.0.0.0:12670 0.0.0.0:0 LISTENING
TCP1 0.2.3.154:1032 66.163.173.77:80 ESTABLISHED
TCP1 0.2.3.154:1342 10.2.3.154:12670 ESTABLISHED
TCP1 0.2.3.154:1585 0.0.0.0:0 LISTENING
TCP1 0.2.3.154:1585 10.2.0.112:139 ESTABLISHED
```

Check for Tomcat errors

Make sure that you are working with clean files.

To ensure a clean environment for troubleshooting:

- 1 Shutdown the Apache and Tomcat services.
- 2 Remove all log files.
- 3 Restart the Apache and Tomcat services.
- 4 Use a browser to connect to the Web server.

File mod_jk.log

This file contains log information regarding the out-of-process TCP connection between the Apache Web server and Tomcat.

This file is empty when there are no errors. It contains hints about connection failures when the AJP13 port is in conflict with another service, or when the Tomcat mod_jk connector is configured incorrectly.

File stdout.log

The following is a normal output of this log file:

```
Bootstrap: Create Catalina server
Bootstrap: Starting service
Starting service Tomcat-Standalone
Apache Tomcat/4.1.12
Instantiating Archway Servlet...
2002-12-10 12:22:13,079 INFO [main] - Using application preferences in
/C:/Program Files/Peregrine/Common/Tomcat4/webapps/oa/WEB-INF/local.xml
2002-12-10 12:22:13,119 INFO [main] - Using default preferences in /C:/Program
Files/Peregrine/Common/Tomcat4/webapps/oa/WEB-INF/default/archway.xml
2002-12-10 12:22:13,200 INFO [main] - Using default preferences in /C:/Program
Files/Peregrine/Common/Tomcat4/webapps/oa/WEB-INF/default/common.xml
2002-12-10 12:22:13,240 INFO [main] - Using default preferences in /C:/Program
Files/Peregrine/Common/Tomcat4/webapps/oa/WEB-INF/default/logging.xml
2002-12-10 12:22:13,270 INFO [main] - Using default preferences in /C:/Program
Files/Peregrine/Common/Tomcat4/webapps/oa/WEB-INF/default/themes.xml
2002-12-10 12:22:13,280 INFO [main] - Using default preferences in /C:/Program
Files/Peregrine/Common/Tomcat4/webapps/oa/WEB-INF/default/xsl.xml
Bootstrap: Service started
```

Look for the following in this file during an error:

- Archway Servlet is not instantiated.

- The `webapps` location is incorrect.
- Bootstrap service failed to start.

File `stderr.log`

The following is a normal output of this file:

```
Created catalinaLoader in: C:\Program Files\Peregrine\Common\Tomcat4\server\lib
[INFO] Registry - --Loading registry information
[INFO] Registry - --Creating new Registry instance
[INFO] Registry - --Creating MBeanServer
[INFO] ChannelSocket - --JK2: ajp13 listening on tcp port 8009
[INFO] JkMain - --Jk running ID=0 time=0/120 config=C:\Program
Files\Peregrine\Common\Tomcat4\conf\jk2.properties
```

Look for the following problems in this file during an error:

- `catalinaLoader` was not created or is pointing to an incorrect location.
- `ChannelSocket - JK2: ajp13` failed to connect or is connecting on an incorrect port number.
- `JkMain` is not using the right `jk2.properties`.

File `localhost_log.<date>.txt`

There should not be any Java errors in this log file. This file logs application manager activity in deploying Peregrine OAA Web applications.

Troubleshooting OAA

If you are having trouble with your Peregrine OAA Web application, verify your application's back-end server and view the OAA logs.

OAA back-end configuration

Make sure that the Peregrine OAA application is connecting to the right back-end server and that it is currently functional.

Note: After you have set the Portal DB adapter, you can lose personalizations to your portal application screens if you subsequently change the adapter. After you have set the Web Application database adapter, you can lose personalizations to forms if you subsequently change the adapter. (See Chapter 6, “Configuring the adapters,” for more information about setting the PortalDB and Web Application database adapters.)

To check back-end configuration:

- 1 Browse to <http://hostname/oaadmin/admin.jsp>.
- 2 Login as **System** and no password (providing this has not changed after installation).
- 3 From the Administration module, verify the connection status of the listed adapters.
- 4 Click on the target for the back-end server, for example, `sc`.
- 5 Verify that the host and port for the back-end server are correct.

OAA log files

The following table lists the default file locations of the Peregrine OAA log files.

| Operating system | Default Peregrine OAA log files location |
|------------------|-----------------------------------------------------------------|
| Windows | C:\Program Files\Peregrine\Common\Tomcat4\bin\archway.log |
| UNIX | <installed base directory>/peregrine/common/tomcat4/archway.log |

Make sure that the log files contain:

- A listing of installed OAA components and their version numbers.
- A correct listing of registered packages.
- An Archway **initialization complete** statement.

If the file contains Java ClassNotFound exceptions, check to see if all the required jar files are found.

Troubleshooting WebSphere

Duplicate alias entries can occur from the IBM HTTP Server `httpd.conf` file during a WebSphere installation. If this happens, the Admin form at <http://hostname/oaadmin/login.jsp> does not render.

Remove duplicate Alias `/oaadmin` lines from the `httpd.conf` file under the `conf` directory of the IBM HTTP or Apache web server. You want only one of the following:

```
Alias /oaadmin "C:\WebSphere\AppServer\installedApps\oaadmin.ear\portal.war"
Alias /oaadmin "C:/WebSphere/AppServer/installedApps/oaadmin.ear/portal.war"
```

Troubleshooting ServiceCenter server

If you are having trouble with the ServiceCenter server:

Step 1 Check the ServiceCenter Auth code and port setting.

Step 2 Check the ServiceCenter log.

Before you troubleshoot problems, you must become familiar with starting and stopping the ServiceCenter server on your operating system. You also need to know where the ServiceCenter log files are located.

To start/stop ServiceCenter on Windows:

- 1 Click Start.
- 2 Click Programs.
- 3 Click Administrative Tools.
- 4 Click Services.
- 5 Locate the PeregrineServiceCenter service in the list and start/stop/restart it.

To start/stop ServiceCenter on UNIX:

- ▶ `$/etc/init.d/oaactl <start/stop/restart>`

The following table contains the default ServiceCenter log file locations.

Operating system Default ServiceCenter log files location

| | |
|---------|---------------------------------------------------------------------------------|
| Windows | C:\Program Files\Peregrine\ServiceCenter\sc.log |
| UNIX | / <code><installed base directory></code> /peregrine/servicecenter/sc.log |

Check ServiceCenter Auth code and port setting

The following table contains the ServiceCenter setting file location.

Operating system ServiceCenter setting file location

| | |
|---------|--------------------------------------------------------------------------------------|
| Windows | C:\Program Files\Peregrine\ServiceCenter\RUN\sc.ini |
| UNIX | / <code><installed base directory></code> /peregrine/servicecenter/RUN//sc.ini |

To check the ServiceCenter Auth code and port setting:

- 1 Make sure the auth code set by the `auth:` tag is correct.

- 2 Make sure the port setting for **system:** matches the setting for the OAA back-end.

View ServiceCenter log

To view the ServiceCenter log:

- 1 View the log file for auth code expiration errors.
- 2 View the log for resource attachment errors.
- 3 Refer to *ServiceCenter Administration Guide* for further troubleshooting if required.

Using ServiceCenter on Oracle

When using ServiceCenter on Oracle as the back-end database, personalization does not display pages correctly. From ServiceCenter, you must map the `giComponentUsers` table to Oracle.

To map the `giComponentUsers` table to Oracle:

- 1 Open the ServiceCenter client.
- 2 Log in as Administrator.
- 3 Add a `sqlsystemtables` record.
 - a Click the Toolkit tab to open the Database Manager dialog box.
 - b Type `sqlsystemtables` in the File field and click Search.
 - c Check the **Map as Blob** flag.
- 4 Go to the `sqlmapping` table and delete all records for `giComponentUsers` table.
- 5 Map the `giComponentUsers` table to Oracle.

Contact your ServiceCenter Administrator for more information on updating ServiceCenter table definitions.

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