

# HP Client Automation

## Administrator

for the Windows®, Linux, and Macintosh operating systems

Software Version: 8.10

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## Installation and User Guide

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# 1 Introduction

The *HP Client Automation Administrator Installation and User Guide* describes the installation of HP Client Automation (HPCA) Administrator and the HPCA Administrator tools for the Windows, Linux, and Macintosh operating systems.

The HPCA Administrator tools are:

- HP Client Automation Administrator Agent Explorer (Windows, Linux)
- HP Client Automation Administrator AMP Editor (Windows)
- HP Client Automation Administrator CSDB Editor (Windows)
- HP Client Automation Administrator Packager (Windows)
- HP Client Automation Administrator Publisher (Windows, Linux, and Macintosh)
- HP Client Automation Administrator Screen Painter (Windows)

▶ The details of the HPCA Administrator AMP Editor are not discussed in this book. For information on HPCA Administrator AMP Editor, see the *HP Client Automation Application Management Profiles User Guide*.

## Audience

The administrators can use this book to learn how to install the HPCA Administrator and how to use the HPCA Administrator tools to administer the HP Client Automation product.

## Abbreviations and Variables

This guide uses the abbreviations and variables defined in the following tables.

**Table 1** Abbreviations Used in this Guide

Abbreviation	Definition
HPCA	HP Client Automation
Core and Satellite	HPCA Enterprise environment consisting of one Core server and one or more Satellite servers. All features are installed as part of the Core or Satellite server installation.
CSDB	Configuration Server Database
Portal	HPCA Portal

**Table 2 Variables Used in this Guide**

Variable	Description	Default Values
<i>InstallDir</i>	Location where the HPCA server is installed	For a 32-bit OS: C:\Program Files\Hewlett-Packard\HPCA For a 64-bit OS: C:\Program Files (x86)\Hewlett-Packard\HPCA
<i>SystemDrive</i>	Drive label for the drive where the HPCA server is installed	C:

## About the HPCA Administrator

The HPCA Administrator contains a set of tools that you use to manipulate the contents of the HPCA Configuration Server Database (CSDB).

- **HPCA Administrator Agent Explorer**  
enables you to create and edit HP Client Automation objects.
- **HPCA Administrator AMP Editor**  
enables you to rapidly deploy and manage software products such as Microsoft Office 2007, Symantec Antivirus, and Citrix Presentation Agent that are typically required on desktop clients. For information on HPCA Administrator AMP Editor, see the *HP Client Automation Application Management Profiles User Guide*.
- **HPCA Administrator CSDB Editor**  
enables you to inspect and manipulate the contents of the HPCA CSDB.
- **HPCA Administrator Packager**  
enables you to use a packaging method called Installation Monitor Mode when you are not familiar with all the components that should be part of a package. This method performs a scan before and after you install the software. The difference between the two scans becomes the contents of the package.
- **HPCA Administrator Publisher**  
enables you to use Component Select Mode to create a package and to then add that package to the HPCA CSDB. When you use this method, you select each component that you want to add to the package.
- **HPCA Administrator Screen Painter**  
enables you to design and create dialog boxes.

## 2 Installing HP Client Automation Administrator: Windows

HP Client Automation (HPCA) Administrator installation program uses Microsoft Windows Installer. The program consists of one MSI package with HPCA Administrator tools. HPCA Administrator consists of:

- HPCA Administrator Agent Explorer
- HPCA Administrator Packager
- HPCA Administrator Publisher
- HPCA Administrator Screen Painter
- HPCA Administrator CSDB Editor
- HPCA Administrator AMP Editor

### System Requirements

- A Clean computer. A **clean computer** is a computer with only the target subscriber's operating system installed.
- Windows Server 2003, Windows Server 2008, Windows XP, Windows Vista, or Windows 7 (x86 or x64 where applicable).
- TCP/IP connection to the HP Client Automation Configuration Server (HPCA Configuration Server).
- Minimum screen resolution of 800 x 600.
- Administrative rights to the computer.

### Platform Support

For detailed information about supported platforms, see HPCA 8.10 Release Notes that accompany this release.

### About the Installation Files

This section describes the files that you use for installation.

#### `setup.exe`

The `setup.exe` is located in the HPCA installation media folder, `\Setup-Core\Media\admin\default\win32`.

It accepts any command line parameters and passes them to Windows Installer.

You can also create a Windows Installer Administrative Installation Point (AIP) for network installations.

▶ A Windows Installer Administrative Installation Point (AIP) is also known as an Administrative Control Point (ACP).

The AIP starts the Windows Installer and passes command line parameters to it. To create the Windows Installer Administrative Installation Point (AIP) in a specified target directory, type:

```
SETUP.EXE /a TARGETDIR=drive:\targetdirectory /qb
```

The target directory contains HPCAE-ADMIN.MSI, the installation folders, and setup.exe.

## HPCAE-ADMIN.MSI

HPCAE-ADMIN.MSI is the MSI database file, that contains the default configuration information for the installation. This file is stored on the HPCA installation media folder, \Setup-Core\Media\admin\default\win32.

# Installing HPCA Administrator for Windows

You can install HPCA Administrator for Windows using the Installation Wizard or Command Line.

## Installing HPCA Administrator using Wizard

- 1 Run setup.exe file from the HPCA installation media folder, \Setup-Core\Media\admin\default\win32. HPCA Administrator Installation Wizard opens.
- 2 Click **Next**. The License Agreement window opens.
- 3 Read and accept the license agreement, then click **Next**.

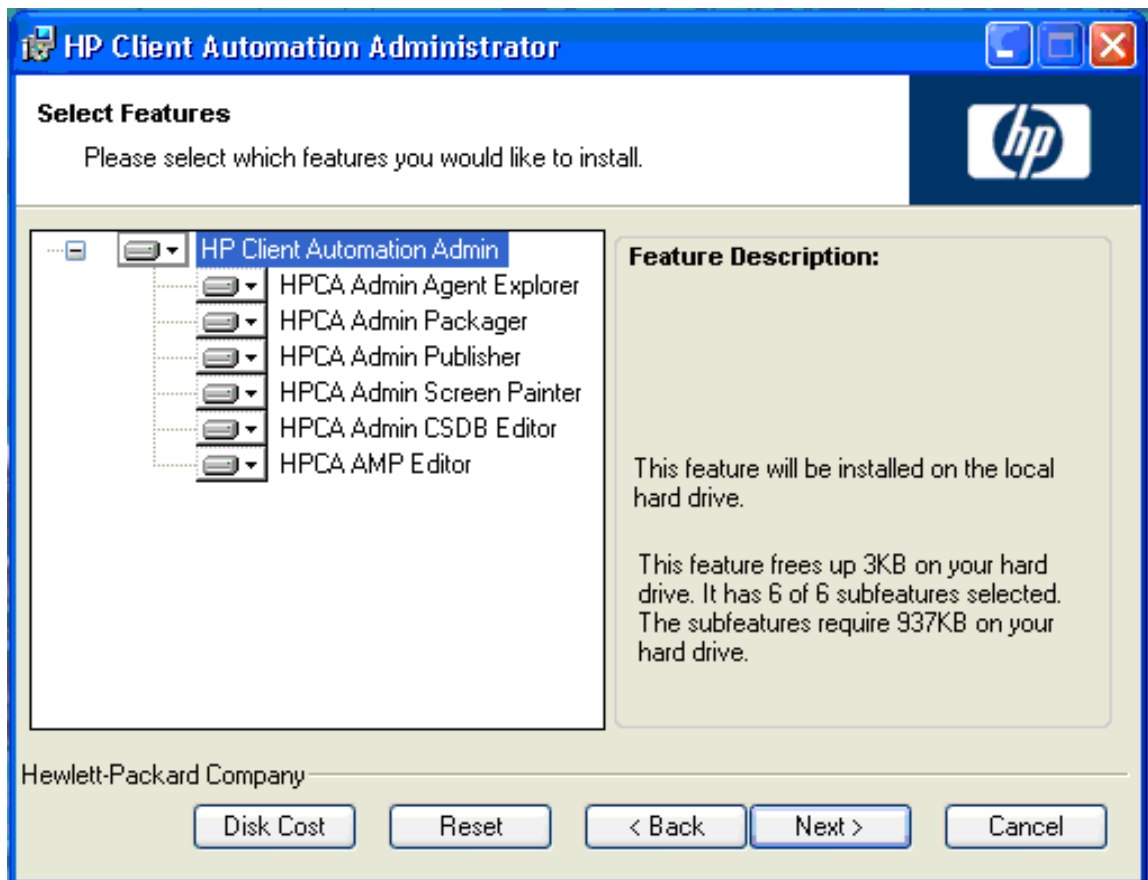
If HPCA Agent is not installed on the computer, the Destination Folder window opens.

▶ If HPCA Agent is already installed on the computer, the Destination Folder window will not open. HPCA Administrator is installed in the same location as the HPCA Agent.


If you want to select a different destination for HPCA Administrator, click **Browse**, and then navigate to the appropriate destination folder, then click **OK** to continue.

- 4 Click **Next**. The Configuration Server window opens.
- 5 In the IP Address text box, type the IP address of the Configuration Server.
- 6 In the Port text box, type the port number (default is 3464).
- 7 Click **Next**. The License window opens.
- 8 Enter a valid license file (for Starter, Standard, or Enterprise edition), or navigate to and select it.
- 9 Click **Next**. The Select Features window opens.

- If you enter a Starter or Standard license file in step 8, you will have two tools from which to choose: HPCA Admin Agent Explorer, and HPCA Admin Publisher.
  - If you enter an Enterprise license file in step 8, you will have 6 tools from which to choose: HPCA Admin Agent Explorer, HPCA Admin Packager, HPCA Admin Publisher, HPCA Admin Screen Painter, HPCA Admin CSDB Editor, and HPCA AMP Editor.
- ▶ If you enter an Enterprise license file in step 8, the next window opens.



10 Click  to select the features that you want to install.


- ▶ If you want to set the same options for all of the features, you can click  next to HP Client Automation Admin and select the appropriate option to apply the setting to all features

Each time you click , a shortcut menu for that feature opens.

- 11 From the shortcut menu, select an installation option. The following table contains descriptions of these options.

**Table 3 Feature settings for the Administrator**

Option	Description
Will be installed on local hard drive	Installs the top-level feature on the local hard drive, but not any sub-features.
Entire feature will be installed on local hard drive	Installs the entire feature, including sub-features. Note: In this installation program, selecting this option or the "Will be installed on local hard drive" option for any of the features results in the same installation because these features do not contain sub-features.
Entire feature will be unavailable	The feature will not be installed. If previously installed, this feature will be removed.

 You can click **Disk Cost** to see an overview of the disk space needed for the installation.

- 12 Click **Next**. The Ready to Install the Application window opens.
- 13 Click **Install** to begin the installation. When the installation is done, HPCA Administrator has been successfully installed window opens.
- 14 Click **Finish** to exit the installation.

## Installing HPCA Administrator using Command Line

From the directory containing HPCA Administrator installation files type a command line with the following syntax:

**SETUP.EXE FeatureStateArgument=Feature1, Feature2**

where *FeatureStateArgument* is one of the arguments in the following table and *Feature1* and *Feature2* are arguments in [Table 5](#) on page 15.

**Table 4 HPCA Administrator feature state arguments**

Specify the following arguments	To set the feature state
ADDLOCAL	Type a comma-delimited list of features that you want to set to "Will be installed on local hard drive."

**Table 4 HPCA Administrator feature state arguments**

<b>Specify the following arguments</b>	<b>To set the feature state</b>
ADDSOURCE	Type a comma-delimited list of features that you want to set to "Will be installed to run from network."
ADVERTISE	Type a comma-delimited list of features that you want to set to "Feature will be installed when required."
REMOVE	Type a comma-delimited list of features that you want to set to "Entire feature will be unavailable."  This only removes the features not the entire product. Therefore, if you use the REMOVE property and type each of the feature names, the core product will still be stored on your computer.  If you want to remove the entire product, type REMOVE=ALL.

**Table 5 HPCA Administrator features arguments**

<b>Administrator Feature</b>	<b>Feature Argument</b>
Agent Explorer	NVDINSTALLCLIENTEXPLORER
Packager	NVDINSTALLPACKAGER
Publisher	NVDINSTALLPUBLISHER
Screen Painter	NVDINSTALLSCREENPAINTER
CSDB Editor	NVDINSTALLSYSTEMEXPLORER
AMP Editor	NVDINSTALLAMPEDITOR

### Examples

If you want to install only HPCA Administrator Packager on a computer, type the following command line:

```
SETUP.EXE ADDLOCAL=NVDINSTALLPACKAGER
```

If you want to install HPCA Administrator CSDB Editor and HPCA Administrator Agent Explorer on a computer, type the following command line:

```
SETUP.EXE ADDLOCAL= NVDINSTALLSYSTEMEXPLORER,NVDINSTALLCLIENTEXPLORER
```



If you run the installation from a command line, be sure to pass the IP address for the Configuration Server to the installation. For example:

```
SETUP.EXE NVD OBJZMASTER_ZIPADDR=10.10.10.1
```

## Additional Command Line Arguments

The following table describes some additional arguments that you can pass to the installation program on the command line.

**Table 6 Command Line Arguments**

Argument	Description
/qn	Performs a silent installation.
/qb	Displays the progress bar only during the installation.
/l*v drive:\instal l.log	Creates a detailed Windows Installer log. Note: Using this option may impact the performance of the installation.
/a TARGETDIR= drive: \targetdirect ory	Creates a Windows Installer AIP in the specified target directory.  The target directory contains HPCAE-ADMIN.MSI, the installation folders, and setup.exe.  After you create the AIP, you can run setup.exe and pass the appropriate command line parameters. This starts the Windows Installer and passes the specified parameters to it.
INSTALLDIR=	Specify the installation directory to be used. Use quotes for paths that contain spaces.
LICENSEFILE=	Specify the full path of the license file to be used. Use quotes for paths that contain spaces. In case this property is not specified, the installer looks for license.nvd in the setup folder, by default.

## Changing HPCA Administrator Installation

The Windows Installer installation program enables you to modify, repair, and remove HPCA Administrator.

### Using the Installation Wizard to Change the Installation

This section describes how to use the Installation Wizard to modify, repair, and remove (uninstall) HPCA Administrator.



To remove specific tools of HPCA Administrator, use the Modify option on the Application Maintenance window.

To use the Installation Wizard to change the Administrator installation

- 1 From the folder on the installation media that contains HPCA Administrator installation files, double-click **setup.exe**. The Application Maintenance window opens.
- 2 Select the **Modify, Repair, or Remove** option.
- 3 Click **Next**.



- If you select **Modify**, the Select Features window opens. Select the features that you want to modify, then click **Install**. For information on feature settings, see [Installing HPCA Administrator using Wizard](#) on page 12.
  - If you select **Repair**, the Ready to Repair the Application window opens. Click **Install**.
  - If you select **Remove**, click **Remove**.
- 4 Click **Finish**.

## Using a Command Line to Change the Installation

This section describes how to use a command line to modify, repair, and remove (uninstall) HPCA Administrator using a command line.

### To use a command line to modify HPCA Administrator

From `\Setup-Core\Media\admin\default\win32`, HPCA Administrator installation media folder, type the following command line:

```
SETUP.EXE FeatureStateArgument=Feature1,Feature2
```

where *FeatureStateArgument* is one of the arguments in [Table 4](#) on page 14 and *Feature1* and *Feature2* are arguments in [Table 5](#) on page 15.

### Examples

If you want to silently remove HPCA Administrator CSDB Editor and HPCA Administrator Agent Explorer, type:

```
SETUP.EXE REMOVE=NVDINSTALLSYSTEMEXPLORER, NVDINSTALLCLIENTEXPLORER /  
qn
```

To install HPCA Administrator Packager to the local hard drive, and to make HPCA Administrator CSDB Editor and HPCA Administrator Agent Explorer unavailable, type the following command line:


```
SETUP.EXE ADDLOCAL=NVDINSTALLPACKAGER  
REMOVE=NVDINSTALLSYSTEMEXPLORER,NVDINSTALLCLIENTEXPLORER
```



# 3 HP Client Automation Administrator Tools for Windows

The HPCA Administrator Tools for Windows are:

- HPCA Administrator Agent Explorer
- HPCA Administrator Packager
- HPCA Administrator Publisher
- HPCA Administrator Screen Painter
- HPCA Administrator CSDB Editor
- HPCA Administrator AMP Editor

 You must have administrative privileges to use HPCA Administrator Tools.

## HPCA Administrator Agent Explorer

This section describes how to create and edit HPCA objects using HPCA Administrator Agent Explorer.

HPCA Administrator Agent Explorer is installed automatically with the HPCA Administrator. You can use the HPCA Administrator Agent Explorer as a diagnostic utility to view local objects on the desktop and, if desired, to edit existing objects or create new ones.

If you have multiple HPCA agents that rely on a single file server in your environment, you can use the HPCA Administrator Agent Explorer to edit objects stored on that file server.

The HPCA Administrator Agent Explorer can also be used to edit objects on other HPCA agent desktops. For diagnostic purposes, you can view and edit managed objects configured for other HPCA agents to which you are connected on a local area network (LAN).



HPCA screen objects can be viewed with the HPCA Administrator Agent Explorer, however, the actual screens are not displayed. HPCA screens must be created and edited using the HPCA Administrator Screen Painter. Be careful not to corrupt the variables of screen objects while viewing them with the HPCA Administrator Agent Explorer.

## Accessing HPCA Administrator Agent Explorer

The following instructions explain how to access the HPCA Administrator Agent Explorer.

To access HPCA Administrator Agent Explorer

Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator Agent Explorer**

or

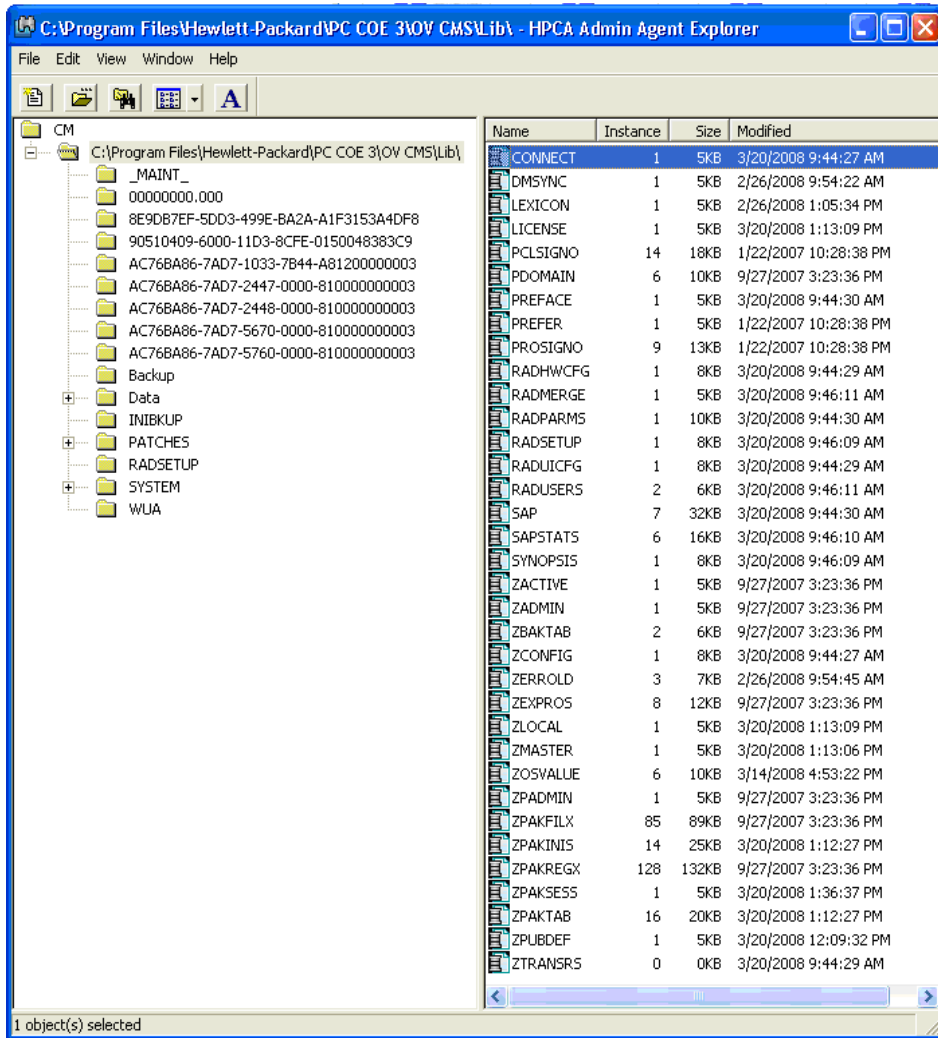
at the command line type `NVDOBJED . EXE`.

The HPCA Administrator Agent Explorer opens with the object list displayed in the right pane, see [Figure 1](#) on page 20. The object list contains the names of HPCA objects that you can view and edit.



HPCA uses objects that begin with "Z". When naming a new object that you create, HP recommends that you do *not* click a name beginning with the letter "Z."

**Figure 1 HPCA Administrator Agent Explorer Window**



## Menus in the HPCA Administrator Agent Explorer Window

Use the menus in the HPCA Administrator Agent Explorer window to manage objects, and to manage the appearance of the HPCA Administrator Agent Explorer window.

## File Menu

Use the **File** menu to open, copy, delete, rename, and create new objects.

**Table 7 HPCA Administrator Agent Explorer File menu**

<b>Menu option</b>	<b>Function</b>
New	Click <b>New</b> , type a new object name, and click <b>OK</b> .
Open	Select an object from the object list and click <b>Open</b> . The Object View window opens.
Copy	Select an object from the object list, click <b>Copy</b> , and type the name of a new object to which you want to copy the object characteristics, then click <b>OK</b> .
Rename	Select an object from the object list, click <b>Rename</b> , and type the new name over the old name in the list.
Change Directory	Click <b>Change Directory</b> , navigate to the directory you want, then press <b>Enter</b> .
Defined Directories	Click <b>Defined Directories</b> . From the shortcut menu select <b>Admin</b> , <b>Lib</b> , or <b>System</b> .
Exit	Click <b>Exit</b> to close the HPCA Administrator Agent Explorer.

## Edit Menu

Use the **Edit** menu to navigate objects.

**Table 8 HPCA Administrator Agent Explorer Edit menu**

<b>Menu Option</b>	<b>Function</b>
Select All	Place the cursor in the right pane, then click <b>Select All</b> .
Byte Convert	Select an object from the object list. Click <b>Byte Convert</b> to convert to Little Endian or Big Endian.
Find in Objects	Click <b>Find in Objects</b> , enter your search criterion, click <b>Find</b> . From the list of objects returned, click the object you want to view to open the Object View window.

## View Menu

Use the **View** menu to customize the way the HPCA Administrator Agent Explorer window looks.

**Table 9 HPCA Administrator Agent Explorer View menu**

<b>Menu option</b>	<b>Function</b>
Toolbar	To view the toolbar at the top of the window click <b>Toolbar</b> .
Status Bar	To view the status bar at the bottom of the window click <b>Status</b> .
Full Row Select	To select the full row of object information (including the its number of instances, size, and when it was last modified) in the object list when it is selected, click <b>Full Row Select</b> .
Show Grid Lines	To view the grid lines in the object list, click <b>Show Grid Lines</b> .
Refresh	To refresh the window, click <b>Refresh</b> .
Object Options	Click <b>Object Options</b> , then select one or more of the following: <ul style="list-style-type: none"><li>• <b>Live Editor</b> Edits contents of disk instead of memory.</li><li>• <b>Use Recycle Bin</b> Sends deleted objects to the Recycle Bin.</li><li>• <b>Esc Closes Object</b> Enables you to press <b>Esc</b> to close an object.</li></ul>
View Styles	Click <b>View Styles</b> , then select whether you want to view the objects as icons or in a list.
User Defined Directory	Click <b>User Defined Directory</b> , and type the name of a path to load.
Font	Click <b>Font</b> , and then select the font you want to use for display in all windows.

## Window Menu

Use the **Window** menu to close all objects.

**Table 10 HPCA Administrator Agent Explorer Window menu**

<b>Menu option</b>	<b>Function</b>
Close All	To close all open objects, click <b>Close All</b> .

## Help Menu

Use the **Help** menu to view information about the HPCA Administrator Agent Explorer and to register it as the default editor for `.edm` files.

**Table 11 HPCA Administrator Agent Explorer Help menu**

Menu option	Function
Register as Default Viewer	Sets the HPCA Administrator Agent Explorer as the default editor for <code>.edm</code> files.
About Agent Explorer	Displays version and copyright information.

## Object View Window

The Object View window displays the contents of an HPCA object for you to view or edit, and contains four drop-down menus: Object, Variable, Instance, and Options.

## Object Menu

Use the **Object** menu to manage, navigate, and print objects.

**Table 12 Object menu options**

Menu option	Function
Information	Displays the Object Information screen.
Sort	Sorts the heaps of a multi-heap object by the values of variables.
Sort Order	Select an ascending or descending sort order.
Print	Prints the contents of the Object View window.
Export	Exports the object to a <code>.CSV</code> file and puts it in the same location as the object file.
Save	Saves the changes you made.
Close	Closes the Object View window.

## Variable Menu

Use the **Variable** menu to add, delete, and rename variables, and manage and navigate through the heaps in an object based on their variable's values.

**Table 13 Variable menu options**

Menu option	Function
Add	Adds a variable with a user-specified name to an object.
Delete	Deletes a variable from an object.
Edit	Changes the value of a variable.

**Table 13 Variable menu options**

<b>Menu option</b>	<b>Function</b>
Modify All	Changes the value of this variable for all heaps in an object.
Filter	Displays all the variables that contain a user-specified character string.
Rename	Renames a variable in an object.
Calculate Row Value	For a selected variable, sums all the decimal only entries for all heaps in the object.
Find	For a user-selected variable, finds the heaps whose values contain a user-specified character string. Available only for multi-heap objects.
Find Next	After you use the Find command to enter a character string to find, this command finds the next occurrence of this character string.
Find Prev	After you use the Find command to enter a character string to find, this command finds the previous occurrence of this character string.
Replace	Find and replace a user-specified character string in a variable's value.

## Instance Menu

Use the **Instance** menu to add, delete, and copy instances in an object, and to navigate through the instances in an object.

An instance is also called a heap. To view each instance in an object, click >> or << at the bottom of the Object View window.

**Table 14 Instance menu options**

<b>Menu option</b>	<b>Function</b>
Add	Adds an instance with blank values. Go to <b>Variable</b> → <b>Edit</b> to enter the values.
Delete	Deletes the instance you select. Click >> or << to navigate to the instance that you want to delete.
Duplicate heap	Makes a copy of the instance you select, including its values. Click >> or << to navigate to the instance you want to duplicate.
Copy heap to	Copies the instance that you select to the object that you type in the Copy Instance to dialog box.



**Table 14 Instance menu options**

Menu option	Function
Go to	Jumps to the instance whose number you type in the New Instance # dialog box.
Home	Jumps to the first instance in an object.
End	Jumps to the last instance in an object.

## Options Menu

Use the **Options** menu to manage the Object View window.

**Table 15 Options menu options**

Menu option	Function
Resolve Values	Displays variable substitution for a named object and attribute using the ampersand convention &(variable). <ul style="list-style-type: none"> <li>• &amp;(DATE) will display the DATE variable contents in that heap of the object.</li> <li>• &amp;(ZERROR.ZERRDATA) will display the ZERRDATA variable contents from the ZERROR object in the current directory.</li> </ul>
Show Length	Displays the number of characters allowed for an instance's value.
Split View	Displays the variable's values for two consecutive instances at the same time.
Save Window Position	Saves any changes to the format of the window that you made in the Options menu.
Object Format	Select Little Endian for PC and Big Endian for UNIX and Mac.

## Using HPCA Administrator Agent Explorer to View HPCA Agent Objects

The HPCA Administrator Agent Explorer is installed as a component of the HPCA Administrator. Use it to view objects in the IDMLIB directory. You can view any object if you have access to the HPCA agent computer's IDMLIB directory. Otherwise, you might need to manually retrieve the object file and store it on your HPCA administrator computer.

### To view an object using HPCA Administrator Agent Explorer

- 1 Navigate to **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator Agent Explorer**. The HPCA Administrator Agent Explorer opens.
- 2 If necessary, from the **File** menu, select **Change Directory** to navigate to the HPCA agent computer's IDMLIB directory or to the directory in which the object is stored.

- 3 Double-click the object's name in the list view. The HPCA Administrator Agent Explorer displays the selected object.
- 4 Click **Save/Exit** to close the dialog box.

## Redirecting the HPCA Administrator CSDB Editor to another Database

You can use the HPCA Administrator Agent Explorer to redirect the HPCA Administrator CSDB Editor to another database.

To redirect the HPCA Administrator CSDB Editor to another database

- 1 Open the HPCA Administrator Agent Explorer.  
Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator Agent Explorer**  
or  
at the command line type **NVDOBJED . EXE**.
- 2 Select the **ZMASTER** object and right-click to open the Object View Window.
- 3 Change the value of ZIPADDR to the name or IP address of the computer where the other Configuration Server is running.

The HPCA Administrator CSDB Editor will now be directed to the database that resides on the computer.

## HPCA Administrator Packager



HP recommends that you use the HPCA Administrator Packager only on a clean computer.

The HPCA Administrator Packager must not be used on a device that has HPCA Administrator installed along with the HPCA Core. The Core services may affect the HPCA Administrator Packager processing.

Use the HPCA Administrator Packager to create packages using Installation Monitor Mode.

In **Installation Monitor Mode**, the HPCA Administrator Packager determines what to package by scanning the computer before and after you install the software. It differences the before and after scans to determine what changes were made to the computer after the installation. These differences become the package that you will publish to the CSDB.

HP recommends this mode for packaging when you do not know all of the components that make up an application.

**Packaging** is the process of identifying the components of the software that you want to manage, and organizing them into **packages**. Packages contain the files, shortcuts, links, and/or registry entries that make up the software.

## Set Package Properties

Before you begin to package data, you might want to use the Global Default Properties dialog box to set default properties for the files that will be included in the package. Changes made to the default properties apply to new HPCA Administrator Packager sessions.

If necessary, you can modify the properties later for any file or folder from the Instance Properties dialog box in Installation Monitor Mode.

You can also use the HPCA Administrator CSDB Editor to modify the default properties in the base instance. Alternatively, after you promote the package to the CSDB, you can modify the properties for an individual instance in the FILE, REGISTRY, or DESKTOP Classes.

**Global Default Properties** and **Instance Properties** have three tabs: Agent Management, Data Options, and Agent Behaviors.

To access the Global Defaults Properties dialog box

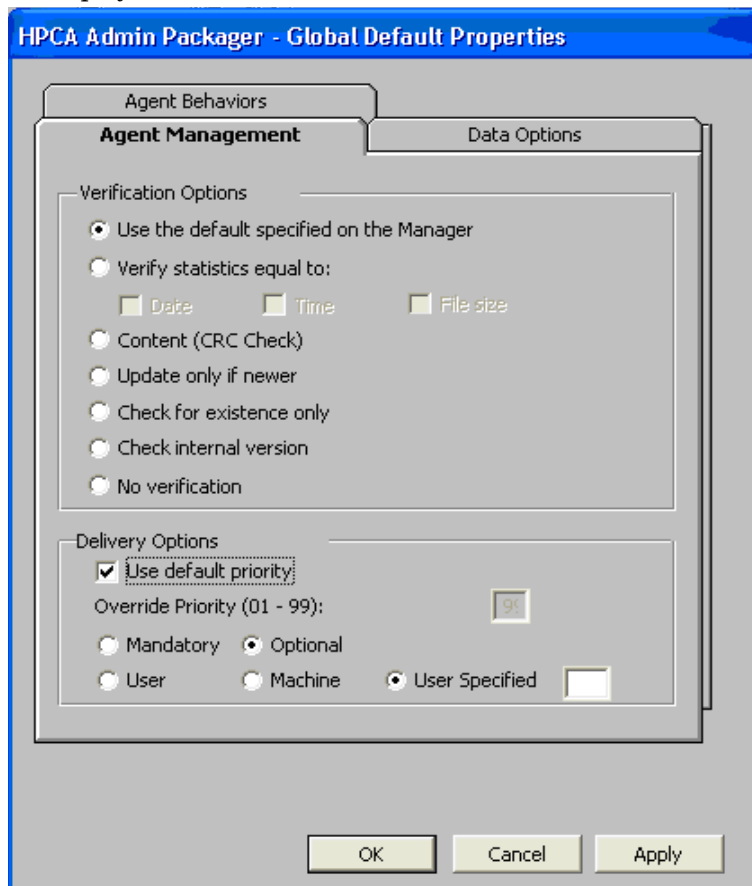
- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **Client Automation Administrator Packager**.
- 2 In the **Packager Security Information** dialog box, type your user ID and password in the appropriate text boxes.
  - ▶ The default user ID and password are:  
User ID: **ADMIN**  
Password: **secret**
- 3 Click **OK**.
- 4 From the **Edit** menu, select **Change Global Defaults**. The HPCA Administrator Packager – Global Default Properties dialog box has three tabs: Agent Management, Data Options, and Agent behaviors.

## Agent Management Tab

Use the **Agent Management** tab to set verification and delivery options for the selected file or folder in the package. After publishing this package to the CSDB, you can still modify these settings using the HPCA Administrator CSDB Editor.

- Use **Verification Options** to specify the verification actions that the HPCA agent will take for this file or folder.

- Use **Delivery Options** to specify delivery options, such as the order in which files are deployed.



### Verification Options

- **Use the default specified on the Manager** (default)

Select this option so that verification options for this file or folder are inherited from the base instance of the FILE Class in the CSDB.

Use the HPCA Administrator CSDB Editor to look at the ZRSCVRFY attribute of the base instance of the FILE Class to determine what the default verification options are.

- **Verify statistics equal to**

Select this option so that the agent checks the selected statistics (Date, Time, File Size) for the file on the agent computer. The file is deployed from the CSDB (or Proxy Server) if its statistics are different from the file on the agent computer. You can also use the CSDB Editor to set this option: ZRSCVRFY=D, ZRSCVRFY=S, ZRSCVRFY=T, or ZRSCVRFY=Y.

- **Content** (CRC Check)

Select the CRC option so that the HPCA agent checks the statistics of the file on the agent computer. When the file is verified, the *first* the Date, Time, and File Size are checked. To save time during the verification, the CRC will be checked *only* if the file passes the Date, Time, and File Size verification. Then, the Configuration Server (or Proxy Server) will deploy a file if its statistics are different from those on the agent computer. By selecting this option, the Packager will calculate the CRC and put the value in the ZRSCCRC attribute.

- **Update only if newer**

Select this option so that this file is deployed from the CSDB (or Proxy Server) if it has a later date/time stamp than the one on the agent computer. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCVRFY=U.

- **Check for existence only**

Select this option so that this file is deployed only if it is not on the agent computer. No action is taken if it already exists on the agent computer, even if its statistics differ from those in the CSDB. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCVRFY=E.

- **Check internal version**

Select this option to compare the version of the file being deployed against the version that may already exist on the agent computer. This ensures that the correct file will be updated if more than one version exists. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCVRFY=V. This feature applies to the following file types: .DLL, .EXE, .OCX, .SYS, .VBX.

- **No verification**

Select this option so that the file is deployed the first time the application is deployed. No subsequent action is taken. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCVRFY=N.

#### Delivery Options

- **Use default priority**

Select this check box to use the default priority of 50. Priority determines the order of deployment, from highest priority to lowest priority. You can also use HPCA Administrator CSDB Editor to set this option: ZRSCPRI=50.

- **Override Priority (01-99)**

Type a number from 1 to 99 to override the default priority of 50. 1 is the highest priority and 99 is the lowest. You can also use HPCA Administrator CSDB Editor to set this option: ZRSCPRI=1.

The following options apply *only* if there is not enough space on the agent computer to install the entire application.

- **Mandatory**

Select this option to indicate that this file is critical to the application.

- If there is not enough space on the agent computer for the entire application, HPCA will *only* deploy mandatory files.
- If there is not enough space for the mandatory files, then the application is not deployed at all.

You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCMO=M.

- **Optional** (default)

Select this option to indicate that a file is not critical to the application.

- If there is not enough space on the agent computer for the entire application, HPCA will not deploy optional files.

You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCMO=O.

The following options apply only to operating systems supporting multiple users with a required sign on, such as Windows Server 2003.

- **User**

Select **User** if you want to indicate that the file should be deployed only to the subscriber logged on when the application is initially deployed. You can also use the HPCA Administrator CSDB Editor to set this option: ZCONTEXT=U.

- **Machine**

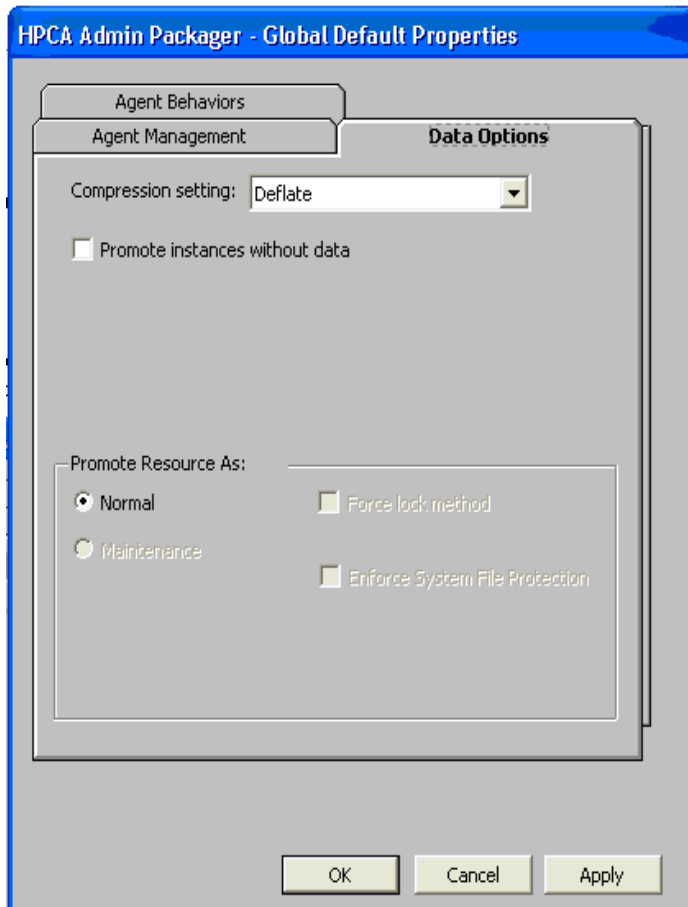
Select **Machine** to indicate that the file should be deployed to all users of the computer. You can also use the HPCA Administrator CSDB Editor to set this option: ZCONTEXT=M.

- **User Specified**

This option is reserved for future use.

## Data Options Tab

Use the **Data Options** tab to specify data compression and other details about the files or folders that you want to distribute.



- **Compression setting**

If necessary, select the compression setting for storing this file in the CSDB. Compression minimizes the time required to transmit data and the amount of disk space required to store it.

- Select **Deflate** for the most efficient compression, which produces smaller compressed images.

- Select **None** if the file is already compressed. If you are packaging an application that contains a compressed file, do *not* have HPCA Administrator Packager also compress it, as the file may actually grow in size if it is compressed again.
- **Promote instances without data**  
 Select this check box to indicate that this file should not be transferred to the CSDB as part of the package. Only the *instance* representing it is included in the package. The data remain in compressed format in the IDMDATA location on your computer. The default IDMDATA location is <InstallDir>\Agent\Lib\Data\.

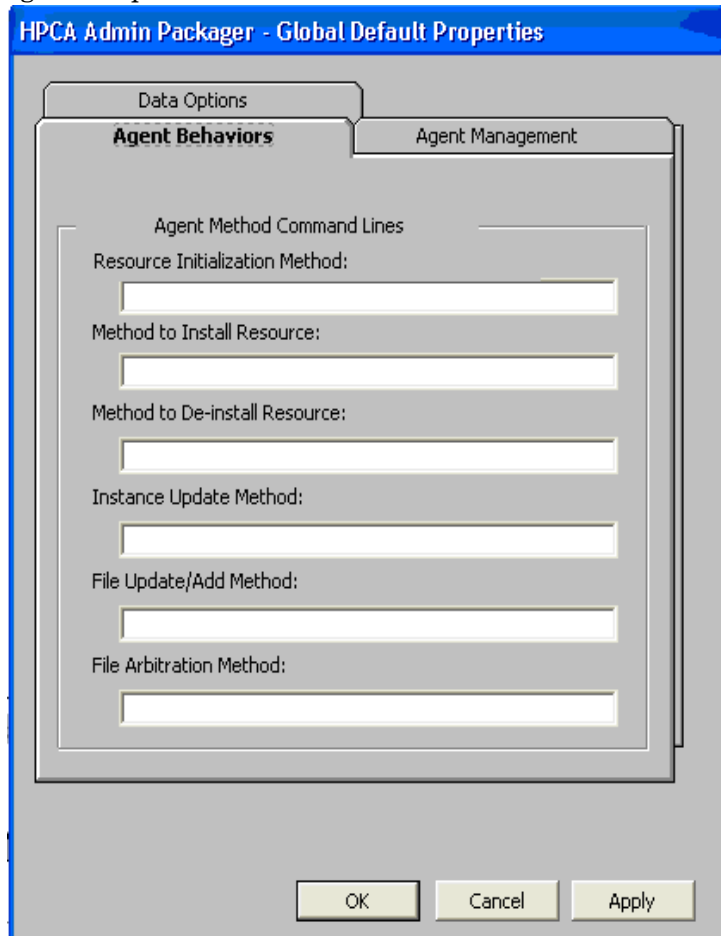
#### Promote Resource As

- **Normal**  
 Select this option to indicate that this file should be deployed as part of an application.
- **Maintenance**  
 This feature is no longer supported.
- **Force lock method**  
 Select this check box to force the use of the **locked file method** for deploying this file. If the file is in use on the agent computer when HPCA attempts to deploy a new copy of it, the locked file method is normally used to deploy it. If necessary, it is decompressed and stored locally in a folder. The agent connect process forces a restart when it ends and the file is deployed to its correct location during startup.
- **Enforce System File Protection** (Windows Server 2003 only)  
 Select this check box to specify that you want to enforce Windows System File Protection (SFP). HPCA first attempts to verify the resource using the current verify options, as specified in the ZRSCVRFY attribute located in the FILE Class.
  - If the verification is successful, the resource is in the desired state and no further verification is necessary.
  - If the verification fails, HPCA checks to see if System File Protection protects the file. If the file is protected, it will not be deployed.
 Finally, HPCA checks this attribute to see whether you want to enforce SFP.
  - If you select this check box, the ZRSCVRFY attribute is set to P and deployment of this resource and the service are marked as failed due to SFP processing.
  - If you do not enforce SFP, the file is marked as having passed verification.
 A ZERROR instance is created to describe the actions taken against the SFP file.

In the WinZip example, we accepted the default data options.

## Agent Behaviors Tab

Use the **Agent Behaviors** tab to specify methods (programs) that HPCA executes on the agent computer.



The command lines that you type in this dialog box are stored in attributes in the FILE Class instances in the SOFTWARE Domain.

### Agent Method Command Lines

- **Resource Initialization Method** (Attribute in database: ZINIT)  
Type the method to run when the file is stored on the agent computer.
- **Method to Install Resource** (Attribute in database: ZCREATE)  
Type the method to run after the file has been stored on the agent computer. This is used if some processing is required to enable it to be used on the agent computer.

➤ To enable deployment of applications that require user interaction on Windows Vista operating system, use the "runasuser" method modifier. During publishing, add the modifier "runasuser" to the Method to Install Resource text box.

For example: `runasuser setup.exe`

The method modifier "runasuser" cannot be used along with modifier "hide" as these modifiers are mutually exclusive.



- **Method to De-install Resource** (Attribute in database: ZDELETE)

Normally, files are removed if the subscription to the software is cancelled. If a file, such as a shared DLL file, is not supposed to be deleted from the agent computer, even if the subscription to the software is cancelled, type **\_NONE\_** (with the underscores) as the value for the **Method to De-install Resource**.

- **Instance Update Method** (Attribute in database: ZUPDATE)

Type the method to run when the instance is modified on the computer, after the file has been deployed.

- **File Update/Add Method** (Attribute in database: ZFILEUPD)

Type the method to run when the file is new or has been updated. This method executes just before it is deployed to the agent computer.

- **File Arbitration Method** (Attribute in database: ARBITRAT)

Type the method to run if a file is about to be replaced. This method compares the version information of the file or folder on the agent computer and the one that is going to replace it, and then determines which to keep.



You must add the ARBITRAT method to the CSDB to use this field. For more information, see the Technical Note *About the File Arbitration Method* on the HP Software web site.

## Component Select Mode

The HPCA Administrator Packager no longer supports Component Select mode. However, you can enable Component Select mode in the HPCA Administrator Packager to package links or registry keys. To enable component selection mode in the Packager, add a variable to ZMASTER called **PKGCOMP** and set the value to 'Y'. Component Select mode will then be enabled for the HPCA Administrator Packager.

## Installation Monitor Mode

There are five phases to create a package in Installation Monitor Mode:

- 1 **Define** the application's hardware, software, and operating system requirements.
- 2 **Analyze** (scan) the hardware and software on the computer.
- 3 **Install** the software that you want to package.
- 4 **Analyze** (scan) the hardware and software on the computer again. The difference between the pre- and post-scans represents the software you installed.
- 5 **Publish** the package to the CSDB.

## Recommendations

The scans performed in Installation Monitor Mode are highly effective. Therefore, we will select some of the subtleties that you might want to consider. If you are already familiar with systems management software, some of this material may be redundant.

Before you package an application in Installation Monitor Mode:

- Set up a **clean computer**.

A clean computer has the same operating system as your target audience and has the HPCA Administrator installed. Do *not* make any other changes to the computer.

- Use the same operating system and language version as the target computers for all packaging activities.



There are distinct differences between the national language implementations of operating systems. These differences may include different registry key names and directory locations, which can create a significant operational gap between the expected behavior of the packaged application and the actual operation of the application.

For example, if you are installing the French version of Office 2000 for Windows on computers using the French language version of Windows Server 2003, package the application on a computer with the French language version of the target operating system.

- Package on a computer with a static IP address.  
If your packaging computer uses Dynamic Host Configuration Protocol (DHCP) to obtain a dynamic IP address, each time the computer is restarted you will receive a different IP address. If you are using Installation Monitor Mode, and the software you are packaging causes the computer to restart, the IP address in the registry will change. Therefore, HP recommends packaging on a computer with a static IP address.
- If you are packaging Visual Basic applications, create an HPCA package that includes the Visual Basic 6 support files.

When HPCA Administrator CSDB Editor is installed with the HPCA Administrator, it is a Visual Basic 6 application. Therefore, the following Visual Basic 6 support files are installed:

ASYCFILT.DLL	COMCAT.DLL
COMCTL32.OCX	COMDLG32.OCX
MSVBVM60.DLL	OLEAUT32.DLL
OLEPRO32.DLL	STDOLE2.TLB

If you use Installation Monitor Mode to package a Visual Basic 5 application on a computer that has HPCA Administrator CSDB Editor installed, the support files listed above will not be included in the package. These files exist on the computer, even before the pre-installation scan is done. Therefore, the post-installation scan will not recognize these files as being added when the software is installed.

To distribute the necessary support files with your Visual Basic applications, use the Component Select Mode in HPCA Administrator Publisher to create a package that includes only the Visual Basic 6 support files. Then, include this package in any application package for Visual Basic 6.

Alternatively, package Visual Basic 6 applications on a computer that does not have the HPCA Administrator CSDB Editor installed. To install the HPCA Administrator without the HPCA Administrator CSDB Editor, put the CD-ROM in the drive and type the following on the command line:

```
CDDrive:\HPCAAdmin.msi -ne
```

## Using Installation Monitor Mode to Create a Package

This section explains how to use Installation Monitor Mode to create a package, and also provides detailed information about each of the screens you will encounter.

### Task 1: Log on to Packager

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator Packager**.
- 2 In the **Packager Security Information** dialog box, type your User ID and Password in the appropriate text boxes.
  - ▶ The default user ID and password are:  
User ID: **ADMIN**  
Password: **secret**
- 3 Click **OK**.

### Task 2: Complete the Open Packaging Session Window

Use the Open Packaging Session window to select the packaging mode and enter information to identify the packaging session.

At the end of a **packaging session**, you will have a package—a unit of distributable software or data—that you will connect to a service. You will set up policies to distribute the software or data to the targeted subscribers.

- ▶ Review the Global Defaults before you begin any Packaging Session. For more information on Global defaults, see [Set Package Properties](#) on page 26.

In previous versions of HPCA Administrator Packager, the Import Mode was available for applications installed or maintained using Windows Installer. For information on packaging these applications, see *HP Client Automation Extensions for Windows Installer User Guide*. This is a separately licensed product.

- 1 In the Session Type area, **Installation Monitor Mode** is the only option available. Component Select Mode is now only available in the HPCA Administrator Publisher. For more information on HPCA Administrator Publisher, see [HPCA Administrator Publisher](#) on page 45.
- 2 In the **What to Open** area, select **New Session** to begin a new packaging session. You must complete the Session ID and Description fields  
or  
Select **Existing Session** to resume a previous session.
- 3 In the **Session ID** field, type a unique 1 to 6 character name for the session. If you do not complete this packaging session, you will need to remember this ID to return to it later.
- 4 In the **Description** field, type a description for the session.
- 5 Click **Next**. The Package Properties window opens.

### Task 3: Enter Package Properties

Use the Package Properties window to name the package and include additional descriptive information.

- 1 In the **Package Name** field type a name for the package. This is the name for the PACKAGE Class instance in the CSDB, and should conform to your naming conventions. The name cannot contain any spaces.
  - ▶ You might want to establish a naming convention to ensure that identifiers are unique. HPCA Administrator Packager uses this identifier to construct data objects and file names.

If you enter a name of an existing package you will receive an error message. Go back and enter a different name for this new package, or go back and open the existing package.
- 2 In the **Domain** field select the domain in which you want to store the instance. This is normally the SOFTWARE Domain unless you customized the CSDB with proprietary domains.
- 3 In the **Description** field type a description of the package.
- 4 In the **Release** field, type the release number of the software.
  - ▶ The current session information is stored in `<InstallDir>\Agent\LIB\ZPAKSESS.EDM` on your computer. Use the HPCA Administrator Agent Explorer to view this object. For more information on HPCA Administrator Agent Explorer, see [HPCA Administrator Agent Explorer](#) on page 19.

If you decide to close this packaging session and do not plan to complete it, you can delete this object. You can also use the HPCA Administrator CSDB Editor to delete the PACKAGE Instance from the CSDB. Locate the object in the SOFTWARE Domain, Packages Class.
- 5 Click **Next** to go to the System Configuration window.

### Task 4: Set the Required System Configuration

Use the System Configuration window to limit the distribution of the package to computers that meet specific requirements. Distribution is based on the operating system, installed RAM, and processor.

- 1 Select **Target Operating System** to activate the **Operating System** list box. Then, select one or more operating systems required for this package.
  - To select multiple, consecutive operating systems, press and hold down the **Shift** key on your keyboard and click the items.
  - To select multiple, non-consecutive operating systems, press and hold down the **Ctrl** key on your keyboard and click the items.

If you do not select an option, the package will be available to users running all operating systems.
- 2 Select **Minimum Megabytes of Memory Required** to activate the Megabytes options. Then, select the minimum RAM required for this package.

If you do not select an option, the package will be available to users with any amount of available memory.

- 3 Select **Minimum Processor Required** to activate the Processor options. Then, select the minimum processor that is required for this package.

If you do not select an option the package will be available to users with any processor.

If none of the above three options is selected, the package will be available to all eligible subscribers.

- 4 Click **Next** to go to the Availability window.

### 64-Bit Applications

Use HPCA Administrator Packager on a 64-bit computer to package 64-bit applications, and on a 32-bit computer to package 32-bit applications, regardless of the target computer's bit architecture. This avoids accessing both 32-bit and 64-bit registry and file systems during one packaging session.

32-bit applications being deployed to the `Program Files` directory will not be redirected to the `Program Files (x86)` directory by the HPCA Application Manager on a 64-bit computer. This is a convention implemented through environment variables, and not a hard requirement. There will be no adverse effect to installing 32-bit applications in the `Program Files` directory, unless you are deploying a 64-bit version of the application to the same device and same `Program Files` directory. If this situation arises, there are two methods to resolve it:

- Use the HPCA Administrator CSDB Editor to copy the 32-bit package and change the `Program Files PATH` instances to reference `Program Files (x86)`.
- Convert the application to an MSI install and enables MSI to determine the correct `Program Files` location.

The packaging and publishing tools on a 64-bit operating system automatically generate a ZSTOP expression. Two examples are:

- `WORDPOS (EDMGETV (ZMASTER, ZOSTYPE), 'WINX64_NT')=0`
- `WORDPOS (EDMGETV (ZMASTER, ZOSTYPE), 'WINIA64_NT')=0`

### Task 5: Set Date and Time Constraints

Use the Availability window to specify the date and/or time when the package will be available for deployment. The date and time are based on the system clock of the computer running the Configuration Server.

If you do not specify date and time constraints, the package will be available as soon as it is promoted to the CSDB and configured for distribution.

- 1 Select **Before** to prevent distribution of the package before the specified date and time. Use the **Month**, **Day**, **Year**, **Hour**, and **Min** text boxes to specify the date and time.
- 2 Select **After** to prevent distribution of the package after the specified date and time. Use the **Month**, **Day**, **Year**, **Hour**, and **Min** text boxes to specify the date and time.
- 3 Click **Next** to go to the What to Scan — Set Packaging Options window.

### Task 6: Identify What to Scan

Use the What to Scan: Set Packaging Options window to identify areas where the software might make changes to the target computer. You can select to scan the desktop, registry, file system, or to compare file content.

Before you install the application, the HPCA Administrator Packager scans the selected areas and takes a **snapshot** that records their current state. After you install the application, the HPCA Administrator Packager takes another snapshot. HPCA compares these before and after snapshots, and the differences make up the package.

If you do not know how the installation of the application will affect the target computers, scan all areas to ensure that all changes made by the application are recorded.

The more information that you have about the software that you are packaging, the easier it is to package and deploy. One benefit of knowing the application is that you can save time during scanning. Below are some examples of this.

- If you know that the application does not make any registry changes, you can clear the **Registry** option so that HPCA Administrator Packager does not scan the registry.
- If you are packaging some favorites to Internet Explorer and you know that Internet Explorer stores favorites in individual `.URL` files, you can scan only the file system to pick up the changes.
- If you are packaging several bookmarks to Netscape Navigator and you know that Netscape Navigator stores bookmarks in a single `.HTM` file, you can include this file in the File Contents to be Scanned list, select the File Content Comparison check box, and the HPCA Administrator Packager picks up the changes to the bookmark file.



HPCA does *not* support the packaging of files from the `IDMSYS`, `IDMLIB`, or `IDMLOG` directories.


- 1 To identify which areas of the computer you want to scan, select one or more of the following check boxes:
  - **File System**
  - **Desktop (Icons, Shortcuts, Groups)**
  - **Registry**
  - **File Content Comparison**
- 2 If you select **File Content Comparison**, you must include the file name in the **File Contents to be Scanned** list box. To do this, type the full path and file name in the **File Name** text box, or click **Browse** to navigate to and select it. Then click **Add**.
- 3 Click **Next**. If, in step 1, you chose to scan the File System, the Set Drives to Scan window opens. If not, the Pre-Installation window opens, see [Task 8](#) on page 39.

#### Task 7: Identify What to Scan in the File System

Use the What to Scan — Directories window to select the areas of the file system that you want to scan. All of the drives (local and network) connected to your computer are considered the **file system**. Many factors, including the computer's hardware and software, affect the amount of time it takes to scan the system.



This window opens *only* if you selected **File System** in the Set Packaging Options: What to Scan window.

- 1 Select *all* the folders or drives that will be affected by the installation.
  -  HP recommends that you do *not* scan network drives. These can take longer due to the overhead transmission across the network. Also, the mapping of network drives may vary from one user to another.
- 2 Click **Add** to move your selections into the Directories to be Scanned list.
- 3 Click **Next** to go to the Pre-Installation Scan window.


#### Task 8: [Begin the Pre-Installation Scan](#)

Use the Pre-Installation Scan window to begin the scan.

- 1 Click **Begin Scan**. A check mark appears next to each area as the scan is finished.
- 2 When the scan is done, a message box opens.
- 3 Click **OK**.

#### Task 9: [Install the Software](#)

After the pre-installation scan is complete, you must install the software.

 Do *not* do anything other than install the application. If you do, you risk making changes to the file system, registry, desktop, and so on. HPCA will detect these (unrelated) changes during the post-installation scan and include them in the package.

- 1 In the Pre-Installation Scan window, click **Next**. A message opens.
- 2 Click **OK**. The HPCA Administrator Packager minimizes and HPCA Administrator Packager icon appears in the system tray.
- 3 Install the application using its native installation.
  - ▶ If the application that you are installing requires that you restart your computer, the HPCA Administrator Packager icon in the system tray will be available when you log on again.
- 4 After the application is installed, double-click the HPCA Administrator Packager icon in the system tray. A message asks if the installation was successful.
- 5 Click **Yes**. The HPCA Administrator Packager logon window opens.
- 6 Type your User ID and Password, and then click **OK**. The Post Installation Scan window opens.

#### Task 10: [Begin the Post-Installation Scan](#)

Use the Post-Installation Scan window to do the final scan.

▶ The comparison of the registry scans may take a long time, and there may be very little disk activity. Although it may seem as though no progress is being made during this step, be patient. The registry scan comparison will complete normally. Use a clean computer to minimize the time it takes to complete this comparison.

[To begin the post-installation scan](#)

- 1 Click **Begin Scan**. When the scan is done, a message box opens.
- 2 Click **OK**. A list of how many items were found that were different from the pre-installation scan appears.
  - ▶ After differencing the before and after scans, the HPCA Administrator Packager creates three registry (.EDR) files in the REGISTRY class. These files are published to the Configuration Server.
- 3 Click **Next** to go to the Summary window.

### Task 11: Review the Modifications to the File System

Use the Summary window, to review the changes that were made when you installed the software on your computer.

- 1 Click **Files** tab to review the files that were added, deleted, or updated.
- 2 Click **Desktop** tab to review the program groups, links, and shortcuts that were added, deleted, or updated.
- 3 Click **Registry** tab to review changes detected in the registry.

Detailed information about the Files, Desktop, and Registry tabs follows, beginning with View File Properties and Locations below.

### Task 12: View File Properties and Locations


Use the **Files** tab in the Summary window to see the files and folders that will be included in the package.

#### To view the selected items


- 1 Right-click the topmost **Selected** branch in the tree and select **Expand All**. Check marks indicate that the properties for the file have been specified and the HPCA Administrator Packager is ready to publish them.
- 2 Select an item in the tree view to see its properties in the list view. Some of the properties such as Verify, Priority, and Mandatory/Optional, are initially set according to the selections in the HPCA Administrator Packager – **Global Default Properties** dialog box. For information on the Global Default Properties, see [Set Package Properties](#) on page 26.

#### To filter the displayed items

If the package contains many items, you can use filtering to limit the type of items that you want to see in the window.

- 1 Click  to filter the items in the tree view.
- 2 In the **Set Filter** dialog box, type the item type as a string, such as `.DLL`. If the filter string is found anywhere in the item's name, it is considered a match.
- 3 Click **OK**. Only those items that meet the filter requirements are displayed.

#### To remove a filter

- 1 Click  to open the **Set Filter** dialog box.
- 2 Click **Clear**.
- 3 Click **OK**. All files are displayed.
- 4 Click **Next** to continue.

### Task 13: Set File Properties and Locations

You can modify the properties of the files and folders displayed on the **Files** tab, or you can exclude them from the package.

#### To edit a file's properties

- 1 Right-click a file. A shortcut menu opens with the following three options.



- Set properties
  - Active
  - Inactive
- 2 To exclude this file from the package, click **Inactive**.
  - 3 To include this file in the package, click **Active**. This is the default setting.
  - 4 To modify the properties of the file, select **Set Properties**. The **Instance Properties** dialog box opens.
  - 5 Use the **Instance Properties** dialog box as described in [Set Package Properties](#) on page 26.

#### To edit a folder properties

- 1 Right-click a folder. A shortcut menu opens with the following three options.
  - Set properties
  - Active
  - Inactive
- 2 To exclude this folder from the package, click **Inactive**. All the files in that folder will also be inactive.
- 3 To include this folder in the package, click **Active**. This is the default setting. All the files in that folder will also be active.
- 4 To modify the properties of the folder, select **Set Properties**. You must also indicate whether you want the changes to affect the Directory Only or Directory and Files.
- 5 Select **Directory and Files**. The **Instance Properties** dialog box opens.
 

Use this dialog box to modify the attributes of the files in the package. The properties of a file are stored in its instance in the CSDB. The default values of these properties are set in the **Global Default Properties** dialog box. For more information see [Set Package Properties](#) on page 26.

#### Task 14: Updated Files

In addition to the files that were added, you might notice Updated files.

Updated files are control files whose ASCII text has been modified, such as configuration files. You can set the properties for a standard ASCII text file as described in [View File Properties and Locations](#) on page 40.

If a control file, such as `WIN.INI`, has been updated, the file name of the desktop object is listed, followed by the name of the section in the `.INI` file that has been modified. You can see the changes to individual lines below the section name. Each line is listed separately so that you can edit them as necessary.

#### To edit a line in a control file

Right-click the line that you want to modify in the tree view and perform one of the following actions:

- Click **Active** to include the change to the text file in the package
- Click **Inactive** if you do *not* want to include the change to the text file in the package.
- Click **Override Value** if want to modify the change to the text file. The **Override Text File Data** dialog box opens.

To use the **Override Value** feature

- 1 Click **Override Value**.
- 2 Type the New Value for the line in the text box.
- 3 Click **OK**.

To restore the text line

- 1 Right-click the line that you want to modify in the tree view.
- 2 Click **Override Value**.
- 3 Click **Reset**.
- 4 Click **OK** to save your changes and close the dialog box.

#### Task 15: Set Desktop Properties and Locations

Use the **Desktop** tab in the Set Properties and Locations window to see the selected program groups, links, and shortcuts in the package, and to modify their properties.

To view the selected program groups, links, and shortcuts

Right-click **Selected Links**, and select **Expand All**.

To set properties for program groups, links, and shortcuts

Right-click the link in the tree view. A menu opens with options listed below.



When you select a folder or link, HPCA applies the changes to all links within that folder or within the link's branch in the tree view.

#### — **Just In Time (HPCA Application Manager Only)**

The HPCA Application Manager lets you designate applications as **self-maintaining**. This means that each time the user launches the application, a connection is made to the Configuration Server to verify the application and, if necessary, update or repair it.

Note that the use of **Just In Time** with Machine/User applications can only verify or repair either the Machine or User portion of the service. If the **Just In Time** icon is using **context=M**, then **startdir** should be set to **SYSTEM**, and the user portion of the service will not be verified/repared. If the **Just In Time** icon is using **context=U**, then **startdir** should be **\$USER**, and only the user portion of the service will be verified/repared.

#### — **Active**

Select **Active** to include this link or folder in the package.

#### — **Inactive**

Select **Inactive** to exclude this link or folder from the package.

#### — **Properties**

Select **Properties** to open the Verify/Type submenu.

## Verify Menu Commands

- **Full Verify**

Select this command to deploy the link every time a user connects to the Configuration Server, even if it already exists on the agent computer. This repairs broken or modified links.

- **No Verify**

Select this command if you do *not* want to verify the link after initial deployment. No repairs are made to the link, even if the user modifies or removes it.

- **Exists**

Select this command to deploy the link only if it does not exist on the agent computer during initial deployment and on each subsequent connection. The link is deployed again only if it was deleted. This enables users to modify the link.

## Type Menu Commands

The following options apply only to operating systems that support multiple users, such as Windows XP or Windows Server 2003.

- **User**

Select this command to deploy this link only to the subscriber logged on when the application is initially deployed.

- **Machine**

Select this command to deploy this link to all users of the computer.

### Task 16: Set Registry Properties and Values

Use the **Registry** tab in the Set Properties and Locations window to see the changes that will be made to the registry when the application is deployed. You can also modify the values in registry keys and set deployment options.

#### To view the selected registry

Right-click **Selected Registry Keys**, and select **Expand All**.

#### To edit values in a registry key

- 1 Select the registry key in the tree view.
- 2 Double-click the registry key in the list view.
- 3 Edit the data in the **New Value** text box.
- 4 Click **OK** to save your changes and close the dialog box.

#### To restore the registry key to its original value

- 1 Double-click the registry key in the list view.
- 2 Click **Reset**.
- 3 Click **OK** to save your changes and close the dialog box.

## To set properties for registry keys

Right-click the link in the tree view. A shortcut menu opens.

▶ When you right-click a registry key, HPCA applies the changes to all registry keys within the key's branch in the tree view.

- **Active**

Select this command to include registry changes in the package.

- **Inactive**

Select this command to prevent registry changes from being included in the package.

- **Properties – Deploy / Verify**

- **Unconditional/Enforced**

Select this command to deploy the registry key, even if it already exists on the agent computer. If the registry key is modified, the next time the user connects to the Configuration Server, this registry key is reset to the packaged value. Use this setting for registry keys that must not change in order for the application to function properly.

- **Unconditional/Exist (default)**

Select this command to deploy the registry key upon initial deployment or if it has been deleted. However, the value of the registry key is not reset.

- **Exist/Exist**

Select this command to deploy the registry key only if it does not exist on the agent computer. This enables you to modify the registry key and your changes will not be overwritten because the key will be deployed again only if it is deleted.

## Task 17: Publish the Package

After you create a package, you **publish** it to the CSDB. The package is copied to the HPCA CSDB and several instances are created, as described below.

- An Application Packages (PACKAGE) instance that represents the promoted package.
- One File Resources (FILE) instance for each file in the package.
- One Desktop (DESKTOP) instance for each program group, link, and shortcut in the package.
- One Path (PATH) instance for each unique path to one or more components on the computer where the software is installed.
- One Registry Resources (REGISTRY) instance for each hive in the package.

▶ Each instance described above is stored in one of the default classes in the SOFTWARE Domain, such as the PACKAGE or FILE Class. You can also add your own classes, such as a DLL class, to the CSDB. For information on how to add a class, see [Adding a Class](#) on page 106.

After you have set all file properties and locations, click **Next**. The HPCA Administrator Packager creates the object to be published. This is the package that will be published to the CSDB.



After you publish the package, the session's objects are deleted and you cannot resume the session. Therefore, you may want to save the session so that you can re-open it later. For example, you might find problems while testing the deployment of the package, and want to make corrections. Here's how to save the session:

Copy the `LIB` directory (and its subdirectories) from `<InstallDir>\Agent\LIB` to a backup location. The `LIB` directory contains the objects that were built by the HPCA Administrator Packager during your packaging session.

By saving the `LIB` directory, promoting the package, and then restoring the `LIB` directory, you can alter the settings in the HPCA Administrator Packager's windows, and publish the package again. Use the toolbar buttons to jump directly to the various windows in the HPCA Administrator Packager.

If you find a problem while testing the deployment of the promoted package, this enables you to fix it.



If you need to change or modify your selections, click **Prev** until you reach the appropriate window. When you are satisfied with the package, click **Next** until you arrive back at this window.

You can also use the buttons in the toolbar to return to a previous screen.

#### To view the files to be promoted

Right-click **Files to be Promoted**, and select **Expand All**.

#### To publish the package

- 1 Right-click **Files to be Promoted**, and select **Expand All** to view the files that will be promoted.
- 2 Click **Promote**.
- 3 Click **OK** when you receive the prompt that the package has been promoted successfully.
- 4 Click **Finish** to close HPCA Administrator Packager.
- 5 Click **Yes** to confirm that you want to close the HPCA Administrator Packager.

Next, use the HPCA Administrator CSDB Editor to create a service. For more information, see [Creating Services with the New Application Wizard](#) on page 122.

## HPCA Administrator Publisher

The HPCA Administrator Publisher is a tool you use to package data and publish it to the CSDB in a form that HPCA can easily manage.



When you publish an application that is targeted for Windows Vista deployment, if you choose to install it under system account, then you must make sure that the application will deploy without any user interaction on the target Windows Vista computer.

**Publishing** is the process of importing a package and its imbedded information into the CSDB. A package must be published before its content can be distributed and deployed into your environment.

The HPCA Administrator Publisher supports four different types of publishing. The following table lists the types of publishing and where to find information about each one. This book describes only two types, [Component Select Mode](#) on page 48 and [Windows Installer Files](#) on page 61.

**Table 16 Types of files published by HPCA Administrator Publisher**

<b>Publication Type</b>	<b>Where to find information</b>
Component Select	<a href="#">Component Select Mode</a> on page 48.
Hardware Configuration	<i>HP Client Automation OS Manager Hardware Configuration Guide</i>
Operating System images	<i>HP Client Automation OS Manager System Administrator Guide</i>
Windows Installer Files	<a href="#">Windows Installer Files</a> on page 61.

## Batch Mode

The HPCA Administrator Publisher enables publication of files in batch mode. This lets you use a configuration file to publish multiple `.msi` files to the CSDB during one publishing session. For more information, see [Publishing Multiple .msi Files \(Batch Mode\)](#) on page 74.

## Session 0 Isolation

In Windows XP, Windows Server 2003, and earlier versions of the Windows, all services run in the same session as the first user who logs on to the console. This session is called Session 0. In Windows Vista and above (including Windows 7), session 0 is now isolated from the user. As a result, any operation that requires user interaction should not be performed in session 0. To address this new restriction, a new method modifier has been provided called *runasuser*. This modifier will execute the method under the user's session, and not the system's session 0.

In order to use this modifier, insert it before the method command line. Using ZCREATE as an example, if your ZCREATE method was:

```
setup.exe
```

It would now look like:

```
runasuser setup.exe
```

Please be aware that the method modifier *runasuser* cannot be used with the method modifier *hide*; these are mutually exclusive. In addition, since *runasuser* executes the method under the user's context, the user must have sufficient privileges to perform the operation.

To change the method using the HPCA console:

- 1 Click the Service ID to open the Software Details window for a service.
- 2 Open the Properties tab.
- 3 Add the modifier *runasuser* to the beginning of the existing method command Line as shown above.

Alternatively, this modifier can be included during publishing by adding it to the Method property or Method to Install Resource.

- ▶ In CA Standard, existing applications cannot be modified, so one should modify the Install method during publishing as instructed above.

## Hide Method Modifier

When the administrator deploys an application onto the user's computer, some console application windows flicker on the user's screen. To hide these pop-ups from appearing on the user's computer screen, the administrator can use the *hide* method modifier.

To use this modifier, insert it before the method command line. Using ZCREATE as an example, if your ZCREATE method was:

```
ZCREATE = cmd.exe nvdkit runthis.tcl
```

It will now look like:

```
ZCREATE = hide cmd.exe nvdkit runthis.tcl
```

The hide method modifier supports two command lines to launch 32 bit and 64 bit applications. The commands are `/sys32` for 32 bit applications and `/sys64` for 64 bit applications. The hide modifier uses the 32 bit version of `cmd.exe`, by default. As an administrator, if you want the 64 bit version of `cmd.exe` to open, you must run the following command:

```
hide /sys64
```

- ▶ Please be aware that the method modifier `hide` cannot be used with the method modifier `runasuser`; these are mutually exclusive.

To change the method using the HPCA console:

- 1 Click the Service ID to open the Software Details window for a service.
- 2 Open the **Properties** tab.
- 3 Add the hide modifier to the beginning of the existing method command line, as shown above.

Alternatively, this modifier can be included during publishing by adding it to the Method property or Method to Install Resource.

## Getting Started

To open HPCA Administrator Publisher

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator Publisher**.
- 2 Use the HPCA Administrator password to log on to the HPCA Administrator Publisher. By default, the user name is **ADMIN** and the password is **secret**.

Each of the publishing modes that are discussed in this guide – Component Select mode and Windows Installer files – consists of four basic tasks:

- 1 **Selecting:** Select the files that you want to package
- 2 **Editing:** Edit the file properties
- 3 **Configuring:** Enter package and service information

- 4 Publishing: Publish the package to the CSDB.

## Component Select Mode

In HPCA Administrator Publisher, you can select the individual components that make up the application, such as files, directories, registry entries, and links. HP recommends this mode for packaging simple data or applications where you can easily identify all the components in the package.

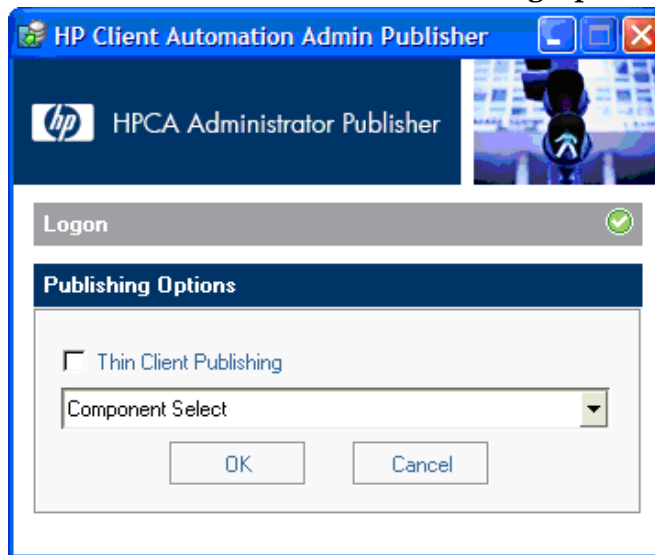
### Publishing in Component Select Mode

As of the 5.1 release of the HPCA Administrator Publisher contained a new feature: Component Select Mode. Prior to this release this mode of publishing was available in the HPCA Administrator Packager. It is now unavailable in the HPCA Administrator Packager, and is available only in the HPCA Administrator Publisher.

To publish in Component Select Mode

- 1 Start the HPCA Administrator Publisher.

Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator Publisher**. The **Publishing Options** window opens.

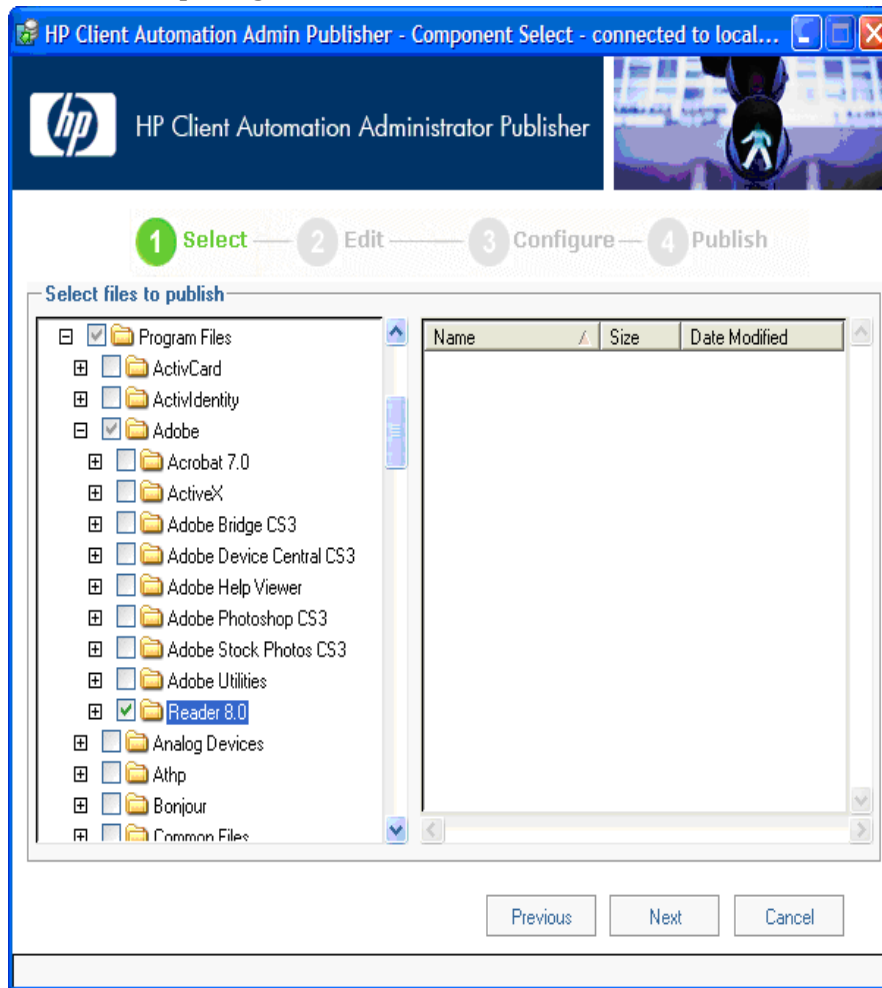


- 2 In the Publishing Options window:
  - If you are publishing for thin clients, select **Thin Client Publishing**.
  - From the drop-down list, select **Component Select**.
- 3 Click **OK**. The Select window opens.



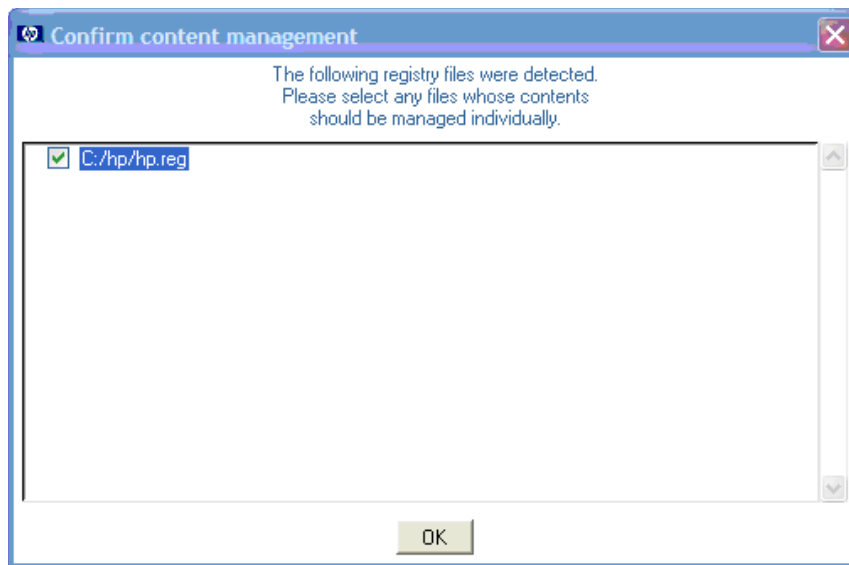
## Task 1: Select Files to Publish

Use the Select window to select the files, folders, registry keys, and links that you want to include in the package.



- 1 Navigate through the file system in the left pane. Select all the items that you want to include in the package.
- 2 Click **Next**.

- If you selected one or more registry files, a **Confirm content management** dialog box opens. Select the registry files whose content you want to manage individually, and click **OK**.



- If you selected one or more link files, a **Confirm content management** dialog box opens. Select the link files whose content you want to manage individually, and click **OK**.

The Edit window opens.

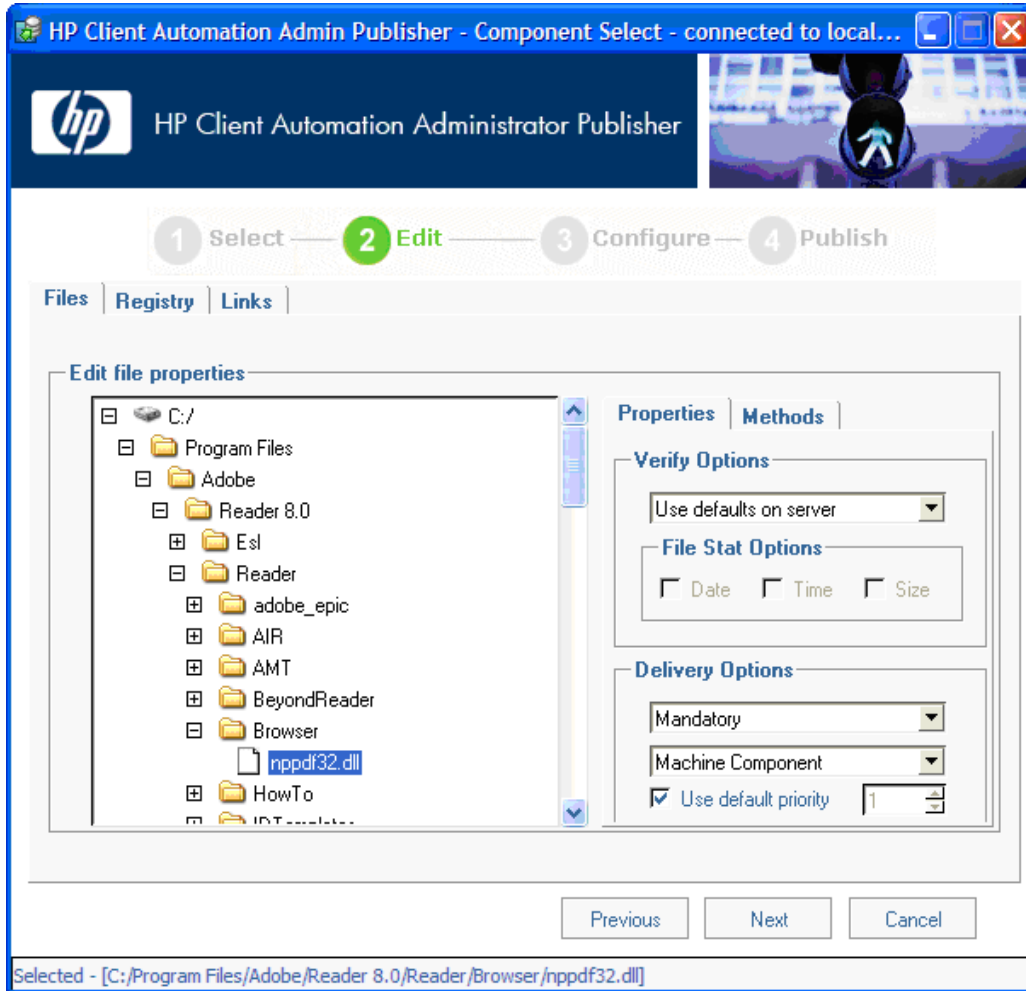
#### Task 2: [Edit Properties and Methods](#)

Use the Edit window to edit properties and methods.

##### [Editing File and Folder Properties](#)

- 1 Select the **Files** tab.

- 2 All files and folders that will be included in the package are listed in left pane.



- 3 Select any files or folders whose properties you want to edit.
- 4 Click the **Properties** tab to edit the file or folder's verification and delivery options.

### Verify Options

- **Use defaults on server** (default)

Select this option to inherit verification options from the FILE, REGISTRY, or DESKTOP Class' base instance in the CSDB.

- **File statistics**

Select this option so that the HPCA agent checks the selected statistics (Date, Time, or File Size) for the files or folders on the computer. Select the Date, Time, or File Size options below the Verify options drop-down list. The files or directories are deployed from the CSDB if the statistics of the files or folders on the computer are different from the statistics for these files or folders in the database. You can also use HPCA Administrator CSDB Editor to set this option: ZRSCVRFY=D, ZRSCVRFY=S, ZRSCVRFY=T, or ZRSCVRFY=Y.

- **Content check using CRC**

Select this option so the HPCA Application Manager checks the statistics of the file on the agent computer. When the file is verified, *first* check the Date, Time, and File Size. To save time during the verify, the CRC will be checked *only* if the file passes the Date, Time, and File Size verification. Then, the Configuration Server (or Proxy Server) will

deploy a file if its statistics are different from those on the agent computer. By selecting this option, the HPCA Administrator Publisher will calculate the CRC and put the value in the ZRSCCRC attribute. ZRSCVRFY is set to **Y**.

► Content CRC checking is a time consuming process and should be used sparingly

— **Update if newer**

Select this option so that these files or folders are deployed if the files or folders in the CSDB have a later date/time stamp than those on the agent's computer. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCVRFY=U.

— **Existence only**

Select this option so that these files or folders are deployed if they are not on the subscriber's computer. No action is taken if the files or folders already exist on the agent's computer, even if the statistics differ from those in the CSDB. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCVRFY=E.

— **None**

Select this option so that the files are deployed the first time the application is deployed. No subsequent action is taken. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCVRFY=N.

### Delivery Options

The following options apply only if there is not enough space on the user's computer to install the entire application. Select if the application will be Mandatory or Optional.

— **Mandatory**

Select this option to indicate that these files or folders are critical to the application. If there is not enough space on the agent's computer for the entire application, HPCA will deploy only mandatory files. If there is not enough space for the mandatory files, then the application is not deployed at all. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCMO=M.

— **Optional** (default)

Select this option to indicate that files or folders are not critical to the application. If there is not enough space on the user's computer for the entire application, HPCA will not deploy optional files. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCMO=O.

— **Use default priority**

Select the **Use default priority** check box (default) to use the default priority of 50. Priority determines the order of deployment, from highest priority to lowest priority. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCPRI=50.

If you clear the check box, you can enter a number from 1 to 99 to override the default priority of 50. 1 is the highest priority and 99 is the lowest. You can also use the HPCA Administrator CSDB Editor to set this option: ZRSCPRI=1.

- 5 When you are finished editing file properties, click the **Methods** tab to edit the methods. The command lines that you type in the dialog boxes on the **Methods** tab are stored in attributes in the FILE Class instances in the SOFTWARE Domain.

— **Resource Initialization Method** (Variable in database: ZINIT)

Type the method to run when the files or folders are stored on the agent computer.

— **Method to Install Resource** (Variable in database: ZCREATE)

Type the method to run after the file or folder is stored on the computer. Use this if some processing is required to enable the file to be used on the agent computer.

- ▶ To enable deployment of applications that require user interaction on Windows Vista operating system, use the "runasuser" method modifier. During publishing, add the modifier "runasuser" to the **Method to Install Resource** text box.

For example:

```
runasuser setup.exe
```

Note: The method modifier "runasuser" cannot be used along with modifier "hide" as these modifiers are mutually exclusive.

— **Method to Uninstall Resource** (Variable in database: ZDELETE)

Normally, files are removed if the subscription to the software is cancelled. If a file, such as a shared object file, should not be deleted from the agent computer, even if the subscription to the software is cancelled, type **\_NONE\_**--with the underscores--as the value for Method to De-install Resource.

— **Instance Update Method** (Variable in database: ZUPDATE)

Type the method to run when the instance is modified on the agent computer, after the file has been deployed.

— **File Update/Add Method** (Variable in database: ZFILEUPD)

Type the method to run when the file is new or has been updated. The method executes just before the file is deployed to the agent computer.

— **File Arbitration Method** (Variable in database: ARBITRAT)

Type the method to run if files or folders are about to be replaced. This method compares the version information of the files or folders that exist with the files or folders that are going to replace them, and then determines which to keep.

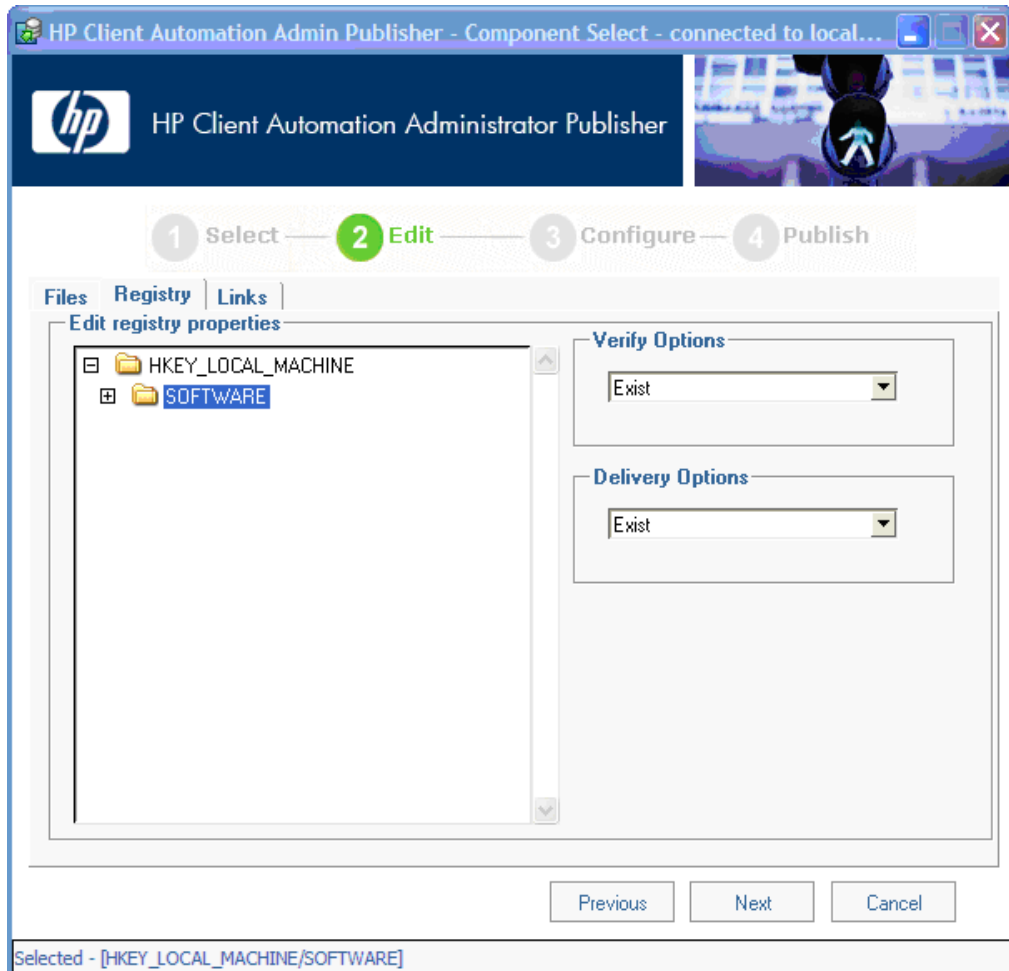
- ▶ You must add the **ARBITRAT** method to the CSDB to use this text box. See the technical note about the File Arbitration Method on the HP Software web site.

- 6 When you are finished editing file and method properties, click **Next** to go to the Configure window, see [Enter Package and Service Information](#) on page 56.

## Editing Registry File Properties

In this window you can edit the verify and delivery options for the registry keys you selected.

- 1 Select the **Registry** tab. All registry keys that will be included in the package are listed in left pane.



- 2 Select any registry keys whose properties you want to edit.
- 3 In the **Verify Options** and **Delivery Options** boxes you may select the following combination of verify and delivery options:
  - **Enforced/Unconditional**

Select this command to deploy the registry key, even if it already exists on the agent computer. If the registry key is modified, the next time the user connects to the Configuration Server, this registry key is reset to the packaged value. Use this setting for registry keys that must not change in order for the application to function properly.
  - **Exist/Unconditional**

Select this command to deploy the registry key upon initial deployment or if it has been deleted. However, the value of the registry key is not reset.

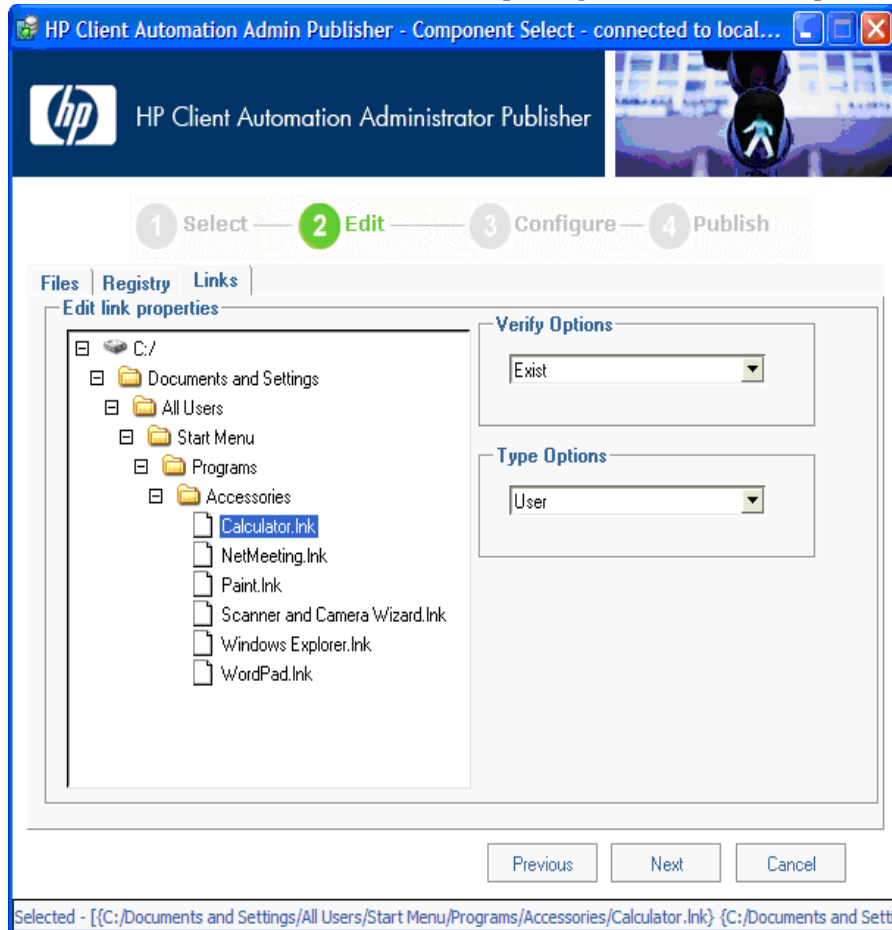
— **Exist/Exist**

Select this command to deploy the registry key only if it *does not exist* on the agent computer. This enables you to modify the registry key and your changes will not be overwritten because the key will be deployed again only if it is deleted.

- ▶ You may *not* select a verify value of Enforced in combination with a delivery value of Exist. This is not a valid combination. If you make these selections, the values will revert to a verify value of Enforced, and a delivery value of Unconditional.

### Editing Link Properties

- 1 Select the **Link** tab.
- 2 All links that will be included in the package are listed in left pane.



- 3 Select any links whose properties you want to edit.
- 4 In the **Verify Options** box, from the drop-down list, select **Full**, **None**, or **Exist**.

— **Full**

Select this command to deploy the link every time a user connects to the Configuration Server, even if it already exists on the agent computer. This repairs broken or modified links.

— **None**


Select this command if you do *not* want to verify the link after initial deployment. No repairs are made to the link, even if the user modifies or removes it.

- **Exist**  
Select this command to deploy the link during initial deployment and on each subsequent connection only if it *does not* exist on the agent computer. The link is deployed again only if it was deleted. This enables users to modify the link.
- 5 In the Delivery Options box, from the drop down list, select **User** or **Machine**.
    - **User**  
Select **User Component** if you want to indicate that the file will be deployed only to the agent that is logged on when the application is initially deployed. You can also use the HPCA Administrator CSDB Editor to set this option.
    - **Machine**  
Select **Machine Component** to indicate that the file will be deployed to all users of the computer. You can also use the HPCA Administrator CSDB Editor to set this option.
  - 6 When you are finished editing file and method properties, click **Next** to go to the Configure window, see [Enter Package and Service Information](#).

### Task 3: Enter Package and Service Information

Use the Configure windows to enter information about the package and the service. Here you name the package and include additional descriptive information and set package deployment limitations based on hardware and operating system settings. You also enter descriptive information about the service, and information about how it will be managed after it is deployed.



- 1 In the **Package Information** area enter the following information:
  - a In the **Name** field, type a name for the package. This is the name for the PACKAGE Class instance in the CSDB and should conform to your naming conventions. Note that the name cannot contain any spaces.  
 You may want to establish a naming convention to ensure that identifiers are unique. HPCA Administrator Publisher uses this identifier to construct data objects and file names. For more information, see [Appendix B, Naming Conventions](#).
  - b In the **Display name** field, enter a display name for the package. This is the friendly name used in the HPCA Administrator CSDB Editor.
  - c From the **Domain** drop-down list, select the domain in which to store the instance. This is normally the SOFTWARE Domain unless you customized the CSDB with proprietary domains. As shipped, the default domains are ADMIN, AUDIT, CLIENT, PATCH, POLICY, PRDMAINT, SOFTWARE, and SYSTEM.
  - d In the **Description** field, type a description for the package.
  - e In the **Release** field, type the release number of the software.
  - f From the **Class** drop-down list, select the class for which you want to create the instance. In some cases, the class selection is not honored and the instance is created for the default class for the selected domain.
- 2 In the **Limit package to systems with** area, enter the following information. If none of these options is selected, the package will be available to all eligible users.
  - a **Operating system**  
Select the operating systems to which this package applies.
  - b **Hardware**  
To limit distribution based on minimum RAM or processor speed, select the check box next to the appropriate configuration option and enter the minimum requirement in the text box provided.

- 3 Click **Next** to go to the Service Information window

HP Client Automation Admin Publisher - Configure Service - connected to local...

hp HP Client Automation Administrator Publisher

1 Select — 2 Edit — 3 **Configure** — 4 Publish

**Service Information**

Create new     Use existing     No service

Name:     Display name:

Vendor:     Web URL:

Description:     Author:

**Assignment type**

Mandatory     Optional

**Management type**

Automatic     Manual

**Report on the following events**

Use Base

<b>Install</b>	<input checked="" type="checkbox"/> Success	<input checked="" type="checkbox"/> Failure
<b>Remove</b>	<input checked="" type="checkbox"/> Success	<input checked="" type="checkbox"/> Failure
<b>Update</b>	<input checked="" type="checkbox"/> Success	<input checked="" type="checkbox"/> Failure
<b>Verify</b>	<input type="checkbox"/> Success	<input checked="" type="checkbox"/> Failure
<b>Repair</b>	<input type="checkbox"/> Success	<input checked="" type="checkbox"/> Failure

Previous    Next    Cancel

Ready

- 4 Select **Create new** if you want to create a new service, **Use existing** to use an existing service, or **No service** to skip creating a service at this time.
  - ▶ If you want to create only a package, select **No service**. This is useful if, for example, you have a single service, but want to create multiple packages and later connect them to the existing service using the HPCA Administrator CSDB Editor.
- 5 Enter a Name, Display name, Vendor, Web URL, Description, and Author.
  - ▶ If you are using an existing service, make sure you enter the service name correctly.
- 6 In the **Assignment type** section, select whether the service is mandatory or optional. **Mandatory** is the default. This will distribute the service to all available users. Optional services are only available if you are using the HPCA Application Self-service Manager.
- 7 In the **Management type** section, indicate how the application will be managed after it is deployed.

**Management type** and **Assignment type** correspond to the ZSVCMO service attribute value. This field can contain two values, depending on what you select for each type. The table below displays the possible attribute values.


**Table 17 ZSVCMO Variables**

<b>Assignment Type</b>	<b>Management Type</b>	<b>ZSVCMO Value</b>	<b>Explanation</b>
Mandatory	Automatic	M	Service is deployed to all users and managed by HPCA.
Mandatory	Manual	MO	Service is deployed to all users and is not managed by HPCA after deployment.
Optional	Automatic	OM	Service is deployed only to those users that accept it and is managed by HPCA.
Optional	Manual	O	Service is deployed only to those users that accept it and is not managed by HPCA after deployment.

- 8 In the **Report on the following events** section, select the events you would like to record. If you would like to use the default application reporting events available in the Base Instance, select **Use Base**.
- 9 Click **Next** to open the Publish window.

#### Task 4: Publish the Package

Use the Publish window to view the package and service information and then to publish it.

-  If you need to change or modify your selections, click **Previous** until you reach the appropriate window. When you are satisfied with the package, click **Next** until you arrive back at this window.

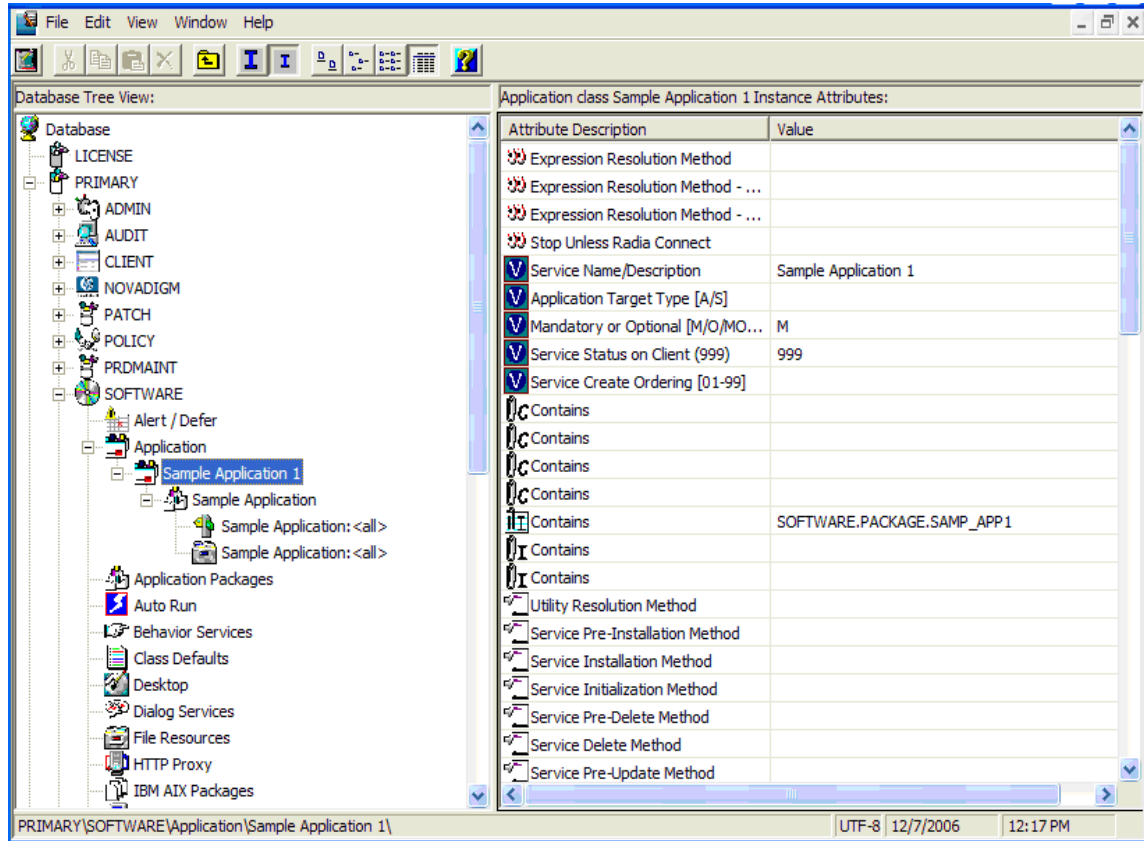
You can also use the buttons in the toolbar to return to a previous screen.

#### To publish the package

- 1 Click **Publish**. The package is published to the database.
- 2 Click **Finish** when the status bar at the bottom of the window displays the message, **Process completed successfully**.
- 3 Click **Yes** to confirm that you want to exit.

You can now view the published service in the HPCA Administrator CSDB Editor.

**Figure 2 Sample Application**



## HPCA Batch Publisher

The HPCA Batch Publisher is a command-line alternative to using Component Select Mode. It offers an automated, repeatable command-line process to create packages and store them in the CSDB. For more information, see the *HP Client Automation Batch Publisher Installation and Configuration Guide*.

The HPCA Batch Publisher can:

- Search for files on multiple drives/file systems.
- Search for and publish files from any mapped file/drive system.
- Be configured to limit the subdirectories that are searched.
- Include or exclude at the file level.
- Select files by type.

The HPCA Batch Publisher can also accommodate frequent patching of internal applications. Its capacity to revise content is reliable, and can be designed to perform continuously, at designated times, and at predetermined intervals. The HPCA Batch Publisher can be easily executed from within any script or code capable of calling a command prompt.

- ▶ The HPCA Batch Publisher is an optional feature available from HP. Contact your sales representative for more details.

## Windows Installer Files

Windows Installer uses MSI files to distribute software packages to your operating system. The HPCA Administrator Publisher uses the files to create a package and service that are then published to the CSDB. After they are added to the CSDB, the software packages are ready for distribution to your environment.

## VMware ThinApp Isolated Applications

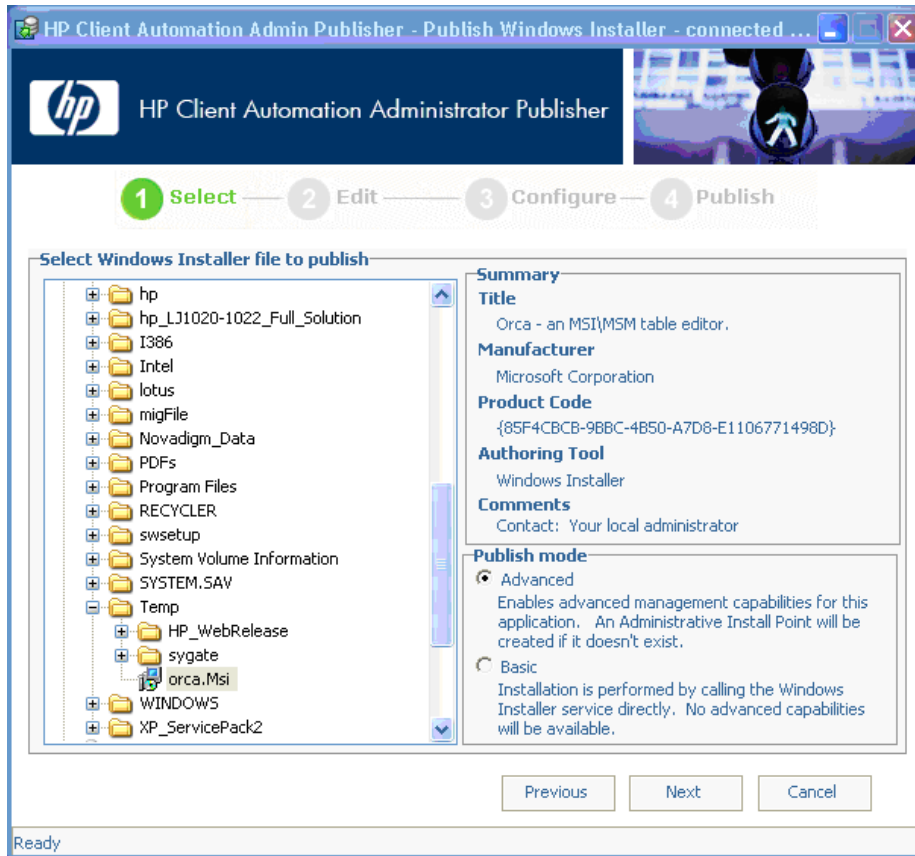
The HPCA Administrator Publisher has been updated to recognize the existence of a VMware ThinApp Isolated Application packaged inside an MSI. If detected, Advanced Publishing Mode will be disabled and the associated service will be marked as containing a VMware ThinApp, see [Advanced Publishing Mode](#) on page 63. The administrator is asked if he wants to enable auto-updates of the ThinApp by using VMware's AppSync facility. If selected, this option will also be indicated inside the associated service for future processing. This change is the first step in tighter integration with virtual applications, and can be leveraged in future improvements in this area.

### To publish Windows Installer files

- 1 Access the HPCA Administrator Publisher.
- 2 From the **Type of data to publish** drop-down list, select **Windows Installer**.
- 3 Click **OK**. The Select window opens.

## Task 1: Select Files to Publish

Use the Select window to select all the files that you want to include in the package.



- 1 In the left pane, select the Windows Installer file that you want to publish. The right pane displays any information that is available for the `.msi` file you select.
  - Make sure the Windows Installer file folder location does not contain a lot of files. HPCA Administrator Publisher reads all the files in the folder location to enable publishing of additional files along with the Windows Installer file. Depending on the number of files, the HPCA Administrator Publisher can take considerable amount of time to respond. To avoid this, place the Windows Installer file in a separate folder location along with the additional files you want to publish to the CSDB.
- 2 In the **Publish mode** section, select either **Basic** or **Advanced**.
- 3 Click **Next** to go to the Edit window.

## Task 2: Edit File Properties and Methods

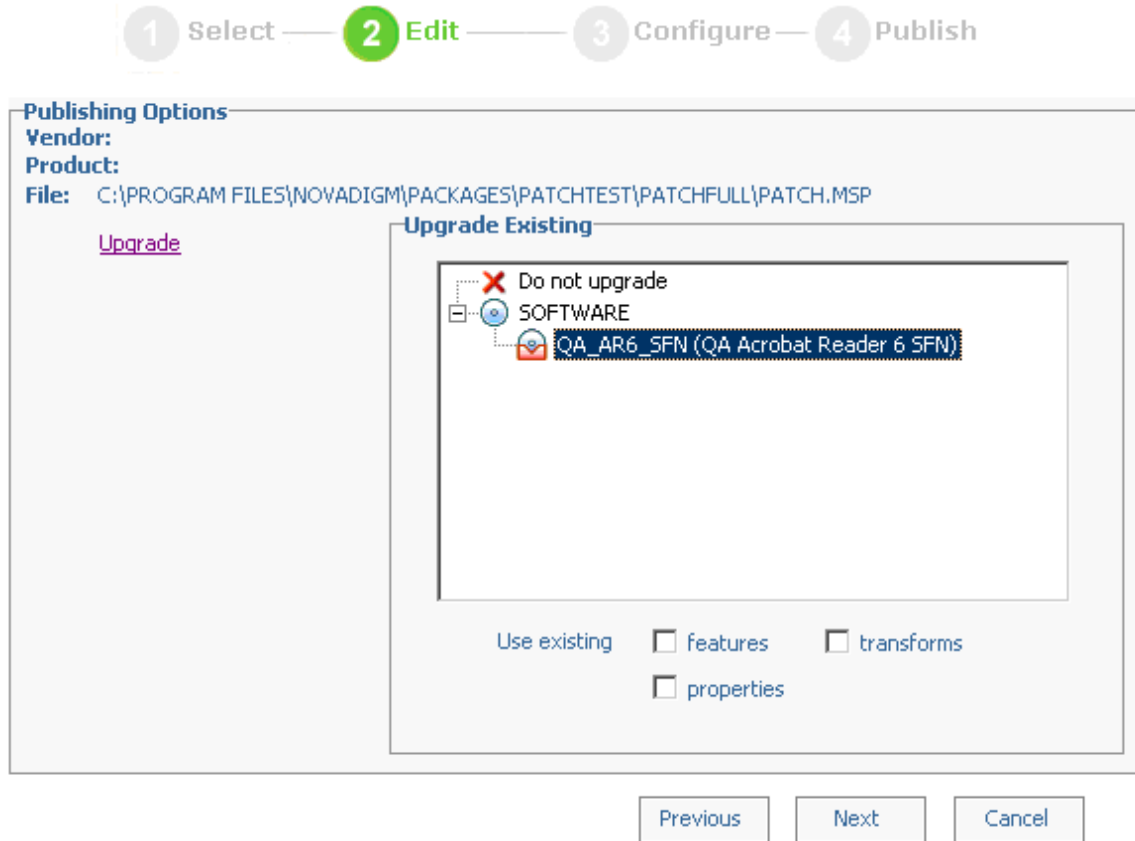
This task differs depending on whether you:

- Selected a Microsoft patch file (`.msp`) in [Task 1, Step 1](#). If so, see [Upgrading an Existing Package using an .MSP File](#) on page 63.
- Selected the Advanced publishing mode in [Task 1, Step 2](#). If so, see [Advanced Publishing Mode](#) on page 63.
- Selected the Basic publishing mode in [Task 1, Step 2](#). If so, see [Basic Publishing Mode](#) on page 69.

## Upgrading an Existing Package using an .MSP File

If you selected a Microsoft patch file (.msp) to publish, the Edit window will have only one option: Upgrade. The Upgrade Existing window shows all available packages in the CSDB that can be upgraded with the selected file.

- 1 From the Upgrade Existing window, select the corresponding package that you want to upgrade.



- 2 Select any of the options in the **Use existing** section at the bottom of the window to use the existing package's features, properties, or transforms.

You can also upgrade an existing package using another Windows Installer file. When publishing this type of file (.msi), the Advanced Publishing Mode presents you with the Upgrade option. For more information, see [Advanced Publishing Mode](#) on page 63.



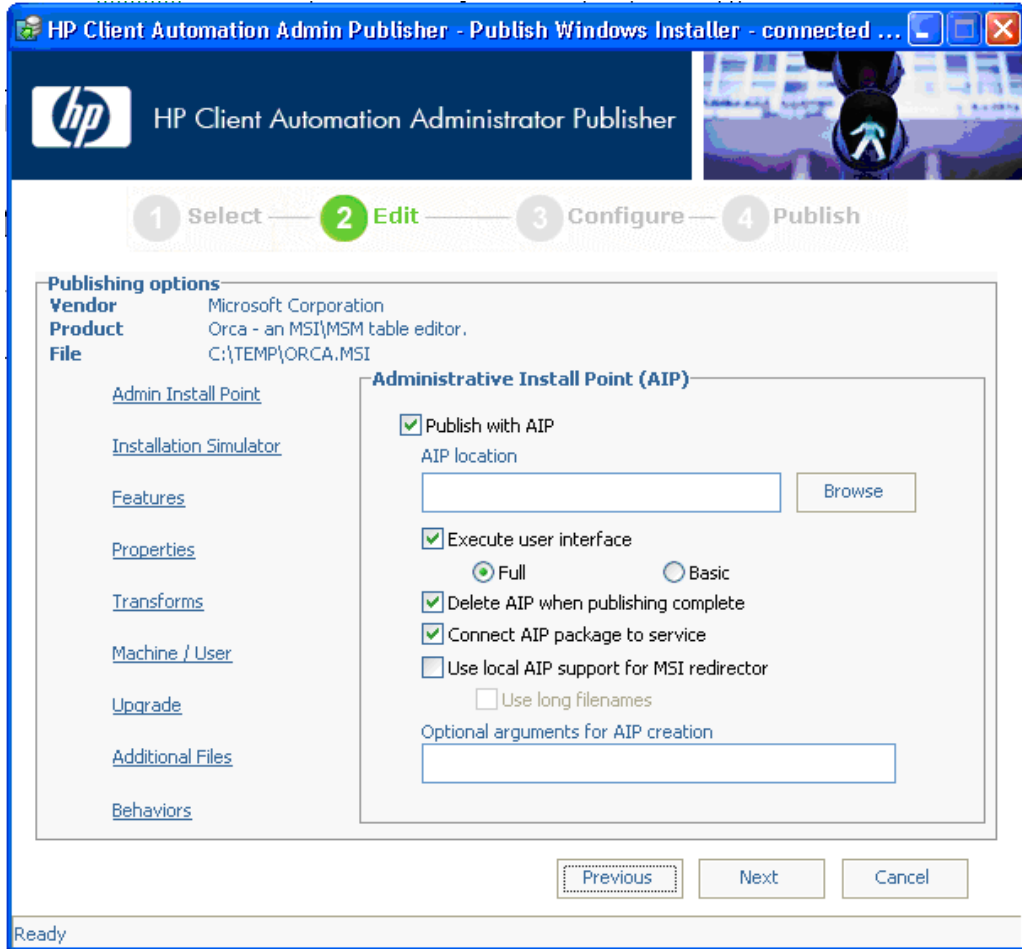
The HPCA Administrator Publisher will create a new package for the upgrade. After the new upgrade package is published to the CSDB, connect it to the existing package using the HPCA Administrator CSDB Editor. For more information on HPCA Administrator CSDB Editor, see [HP Administrator CSDB Editor](#) on page 91.

## Advanced Publishing Mode

The Advanced Publishing mode enables you to edit many of the publishing options used to create the package.

To publish in Advanced Publishing Mode

- 1 If the Administrative Install Point (AIP) window is not open, click the **Admin Install Point** option on the left. The Administrative Install Point (AIP) window opens.



### ▶ Creating the Windows Installer AIP

Previously, the Windows Installer publishing process required the manual creation of an AIP outside of the publishing process. This is no longer required. Now, you can supply the .msi file in its original state without any modifications and the HPCA Administrator Publisher then automatically creates the AIP in the short file name format.

- 2 In the Administrative Install Point (AIP) window make the following selections to create an AIP:

**Table 18 Creating an AIP**

Options	Description
Publish with AIP	Select this check box to publish using an AIP.
AIP location	Type in or click <b>Browse</b> to designate the AIP location.
Execute user interface	Select to execute either a full or basic user interface after package installation.

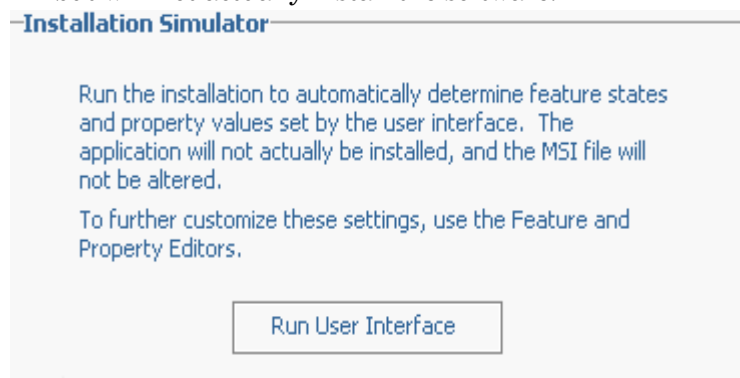


**Table 18 Creating an AIP**

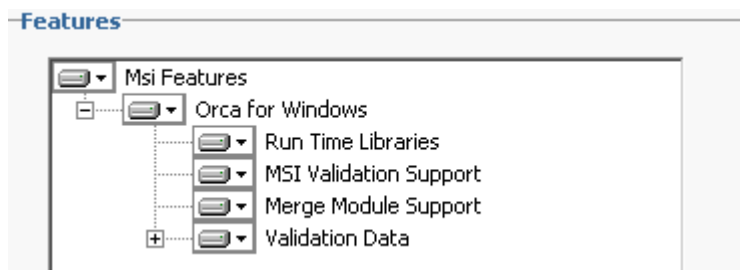
Options	Description
Delete AIP when publishing complete	Select to delete the AIP after the package is published to the CSDB.
Connect AIP package to service	Select to connect the AIP package to the associated service.
Use local AIP support for MSI redirector	Select to create a temporary local AIP to support Client Automation advanced data management and caching during the installation. Enable this feature for installations that do not inherently support HTTP-based MSI installs. After selected, select the Use long filenames check box to use long file names.
Optional arguments for AIP creation	Type any additional arguments to include during the AIP creation.

➤ In order to connect the AIP package to the service, select the **Connect AIP package to service** check box. When this check box is selected, the AIP package will be connected to the service and will have its ZSTOP000 set to 1. This prevents the AIP package from being delivered to the desktop, but its connection to the service will guarantee its travel during Proxy Server operations.

- 3 Click **Installation Simulator**, then click **Run User Interface**. This will simulate an installation, but will not actually install the software.

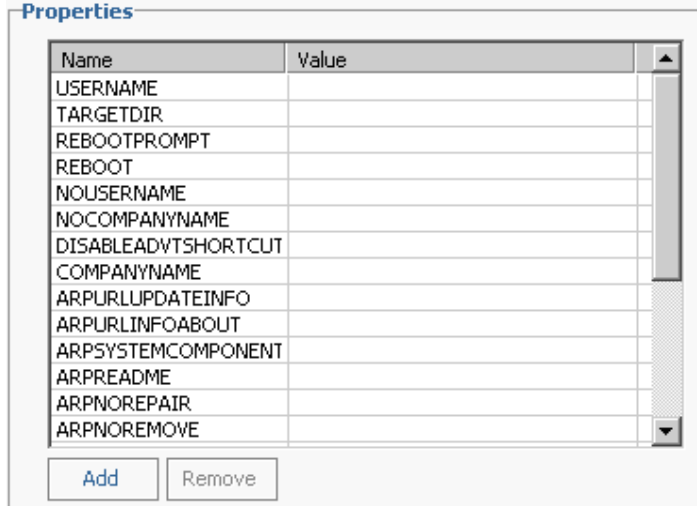


- 4 Click **Features**. The Features window opens. Use this window to configure the available MSI features.

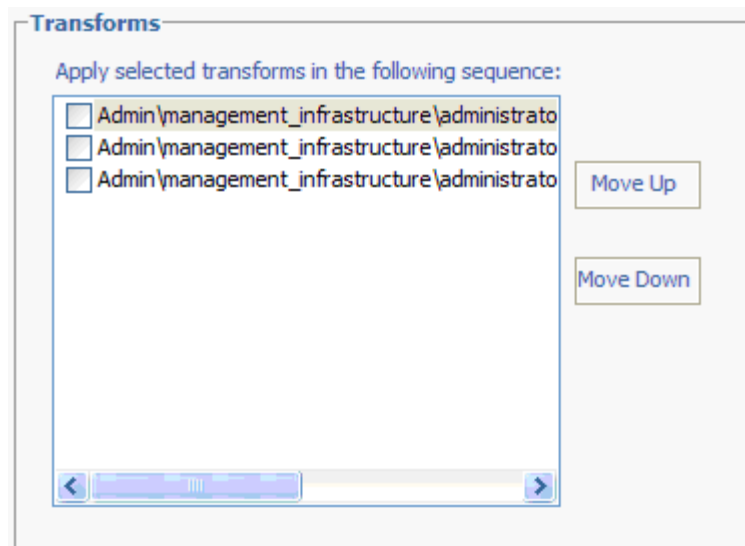


- 5 Right-click each feature and select if you want it to be hidden or disabled.
  - ▶ Selecting features using the above interface overrides ADDLOCAL command specified in the command line. If you install a .msi file using ADDLOCAL command, make sure you disable all the MSI features before you start the installation. To disable the MSI features while publishing, use HPCA Administrator Publisher or HPCA Administrator CSDB Editor and set DISABLE=ⓧ in MSIFEATS class.

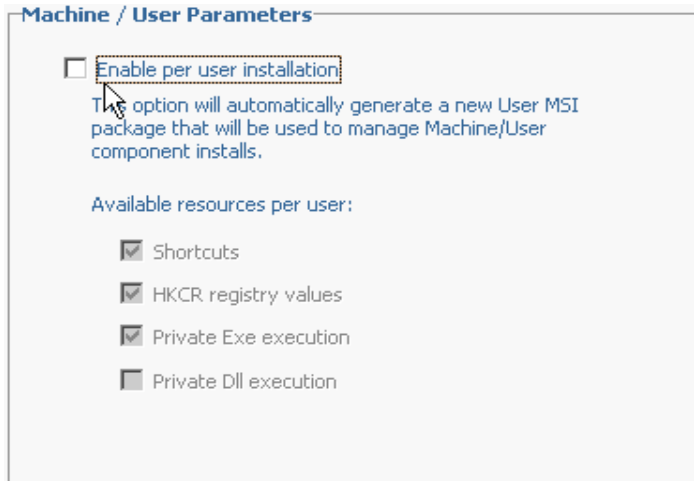
- 6 Click **Properties**.



- 7 In the Properties window, view and modify the msi file properties. Some Windows Installer files may require additional command line parameters to deploy correctly. For example, an application may require a custom property to pass a serial number during installation. Use the Properties window to include any additional parameters.
  - Click **Add** to add a new property.
  - Click **Remove** to delete an existing property.
  - To modify a property **Name** or **Value**, click the item you want to change and enter the new value.
- 8 Click **Transforms**. Use this window to reorder the application of any transform files associated with the Windows Installer file.



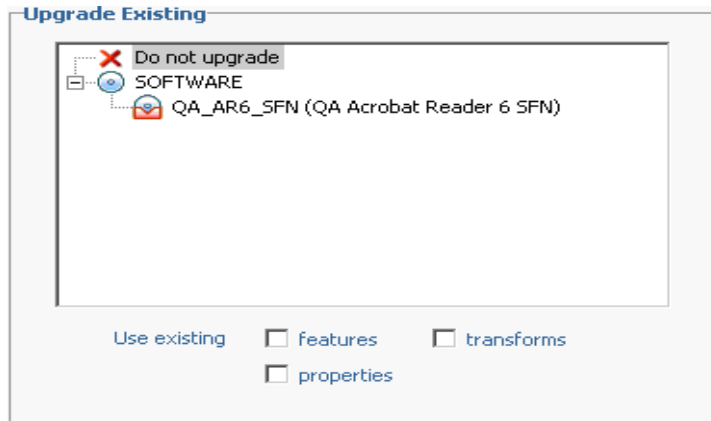
9 Click **Machine / User**. Use this window to define Machine/User parameters.



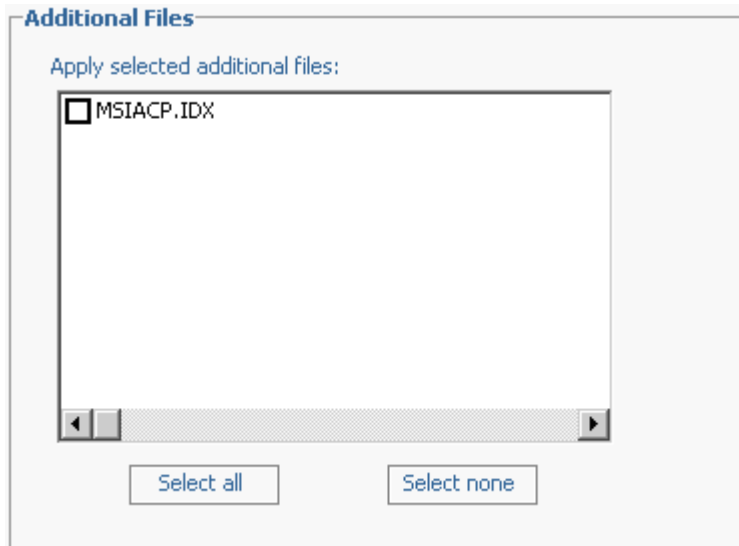
— **Enable per user installation** – Select this option to automatically generate a new user MSI package to be used to manage Machine/User component installations.

— **Available resources per user** – Select which resources should be made available per user.

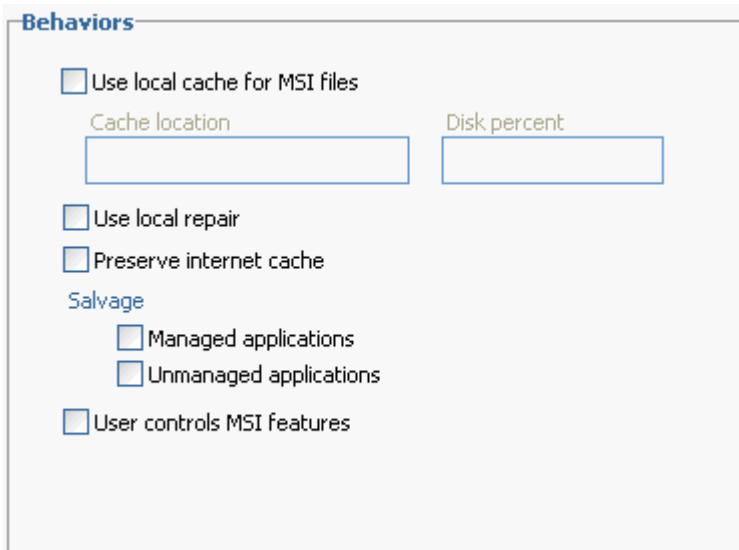
10 Click **Upgrade**. This window displays existing MSI packages in the CSDB that are available for upgrade using the current Windows Installer patch (.MSP). Select to use existing features properties or transforms by selecting the appropriate options.



- 11 Click **Additional Files**. Select any additional files that you want to include as part of the AIP.



- 12 Click **Behaviors**. This window contains options for using a local MSI file cache, enabling local repair, saving Internet cache, controlling MSI features, and determining salvage status.



- **Use local cache for MSI files** – Select this to determine the location and size of your cache. Enter the cache location in the Cache location text box and the upper limit of the percentage of disk space to be used in the **Disk percent for cache** text box.

When you select **Use local cache for MSI files**, during the application installation, the cache directory is created in the specified location. If the used disk space on the target machine becomes greater than the cache percentage limit, caching is automatically turned off.

- **Use local repair** – Select this to enable local repair. Choosing this option retains the MSI cache on the local agent computer, and enables repairs to be made locally, instead of going back to the CSDB for the missing or required data.
- **Preserve internet cache** – Select this to avoid having the Internet cache purged after an HTTP installation.

- **Salvage** – Enables you to take advantage of existing files on the target computer. When a package is installed, if any portion of that package is discovered, the installation will use the existing files instead of going back to the CSDB for the redundant data. You have the option to enable the Salvage feature for HPCA managed and unmanaged applications, select the appropriate options--Managed applications or Unmanaged applications-- to determine which type of application should have this feature enabled. Both types of applications can be selected.
- **User controls MSI features** – Select this to enable the end user to control which MSI features are installed during the installation. Selecting this option displays the feature editor during the application installation.

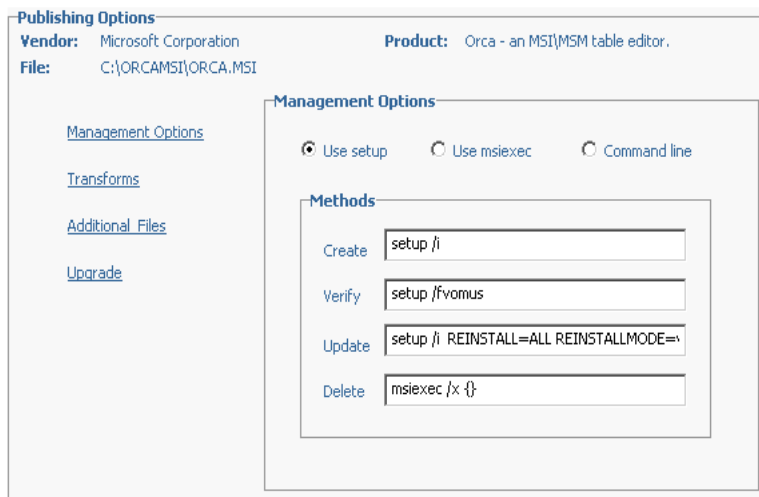
13 Click **Next** to go to the Configure window.

## Basic Publishing Mode

The basic publishing mode offers four options, which are available in the Publishing Options window.

### To publish in Basic Publishing Mode

- 1 After you select the publishing mode in the Select window, click **Next**. The Edit window opens. This window contains four options, click any link to configure that aspect of the basic publishing mode.



- **Management Options**

Select which management option you would like to apply. The Management Option you select defines how the application will run after it is deployed.

- **Use setup**
- **Use msiexec**
- **Command line**

- **Transforms**

Reorder the application of any transform files associated with the Windows Installer file.

- **Additional Files**

Apply any available additional files.

### — Upgrade

Displays existing MSI packages within the CSDB that are available for upgrade using the current Windows Installer package. Select this to use existing feature properties or transforms by selecting the appropriate options.

▶ The `zcreate.cmd` file enables the ZCREATE method to contain more than 100 characters. This is applicable for the Windows Installer mode and the Component Select Mode in HPCA standard edition.

- 2 When you are finished editing the publishing options, click **Next** to go to the **Configure** window.

#### Task 3: Enter Package and Service Information

Use the Configure windows to enter information about the package and the service. For detailed description of these windows, see [Enter Package and Service Information](#) on page 56.

- 1 In the **Package information** section, enter the package information.
- 2 Use the **Limit package to systems with** section to limit the package to any specific operating system or hardware. Click any link to display the options.
- 3 Click **Next**. The Service Information window opens.
- 4 Enter service information in this window
- 5 Click **Next** to go to the Publish window.

#### Task 4: Publish the Package

- 1 Review the **Summary** section to verify the package and service information you provided during the previous steps. When you are satisfied, click **Publish**.
- 2 When the publishing process is finished, click **Finish** to exit the Publisher. Use the HPCA Administrator CSDB Editor to view your operating system package or service.

The service is now ready for distribution to your enterprise.

▶ In the Basic Publishing Mode, a patch (`.msp`) file cannot be updated in an existing installer (`.msi`) file. The Advanced Publishing Mode supports the feature to update an existing `.msi` file.

## Command Line Publishing

▶ Command line publishing is *only* supported for Windows Installer (`.msi`) files.

The HPCA Administrator Publisher supports a non-graphical publishing mode that substitutes any values entered in the HPCA Administrator Publisher interface with values predefined in a configuration file. The configuration file enables you to predefine any package and service values and store them in a text file. Run the HPCA Administrator Publisher from the command line with the parameter `-cfg` designating which configuration file to use during the publishing session.

The following is a sample command line to run the HPCA Administrator Publisher with a configuration file called `test.cfg`:

```
nvdtk.exe pubport.tkd -cfg "c:\program files\test.cfg" -user <USER> -password <PASSWORD>
```

- ▶ Make sure to use a fully qualified file name when designating the configuration file.

The following table describes the parameters of the configuration file.

**Table 19 Configuration file parameters**

Parameter	Description
package	Defines the PACKAGE Class instance name.
pkgname	Specifies the friendly name of the PACKAGE Class instance (NAME attribute).
pkgdesc	Specifies a description of the PACKAGE Class instance (DESCRIPT attribute).
service	Defines the name of the ZSERVICE Class instance that will be optionally created.
svcname	Specifies the friendly name of the ZSERVICE instance (NAME attribute). The ZSVCNAME attribute is also set from this value.
svcdesc	Specifies a description of the ZSERVICE Class instance (DESCRIPT attribute).
addtosvc	Controls whether or not a service instance is created for this session. 1 = create service 0 = don't create
path	Defines the CSDB path to the file and domain to which the package will be published, for example, PRIMARY.SOFTWARE.
attr CLASS {body}	Additional instance attribute values to be added during the publishing process. Note that the HPCA Administrator Publisher only supports PACKAGE and ZSERVICE as values for CLASS. Any attribute of these classes can be passed, even those not supported by the interface. Examples: <pre>attr ZSERVICE {   AUTHOR   {John J. User}   URL      {http://www.nowhere.com}   OWNER    {Microsoft Corp} }  attr PACKAGE {   RELEASE  {1.0} }</pre> Enclose values in braces.

**Table 19 Configuration file parameters**

Parameter	Description
msi {body}	<p>This section specifies MSI interface settings. The settings you can use are:</p> <ul style="list-style-type: none"><li>• <b>aiplocation</b> This specifies where the AIP is to be created (if needed).</li><li>• <b>publishmode</b> Advanced or Basic.</li><li>• <b>execui</b> How to execute the MSI interface during AIP creation. The values you can use are <b>Full</b>, <b>Basic</b>, or <b>None</b>.</li><li>• <b>deleteaip</b> Whether or not to delete the AIP after publishing. The values you can use are <b>y</b> or <b>n</b>.</li><li>• <b>aiparguments</b> Optional arguments for AIP creation.</li><li>• <b>enableperuser</b> Whether to disable per user installation of this package (N) or any combination of the following: S=shortcuts, R=registry, E=private exe, D=private dll. Specifying "SD", for example, will turn on per user installation for shortcuts and private dlls.</li><li>• <b>additionalfiles</b> Whether additional files should be included. The values you can use are <b>y</b> or <b>n</b>.</li><li>• <b>connectaiptosvc</b> Whether the AIP should be included. The values you can use are <b>y</b> or <b>n</b>.</li></ul> <p>Following is an example of the msi section:</p> <pre>msi {      aiplocation          {c:\testaip}     publishmode         advanced     execui              none     deleteaip          n     aiparguments        ""     enableperuser       sre  }</pre> <p>Note: Values are case-sensitive.</p>



**Table 19 Configuration file parameters**

Parameter	Description
customZcreate	Enables you to create a customized <code>zcreate.cmd</code> file. By default, HPCA Administrator Publisher creates a <code>zcreate.cmd</code> file if the ZCREATE method exceeds more than 100 characters. 1= creates a customized <code>zcreate.cmd</code> file. 0= HPCA Administrator Publisher creates the <code>zcreate.cmd</code> file.
appendTransform	Enables you to append the transform ( <code>.mst</code> ) files specified at the end of the ZCREATE method. By default, transform files are added to the ZCREATE method if they reside in the same location as the <code>.msi</code> files. 1= HPCA Administrator Publisher appends the transform files. 0= HPCA Administrator Publisher does not append the transform files.
appendMsiProp	Enables you to append the MSI properties specified at the end of the ZCREATE method. 1= HPCA Administrator Publisher appends the MSI properties. 0= HPCA Administrator Publisher does not append the MSI properties.

Here is a sample configuration file.

```

pkgname          MYTESTPKG
package          CJMTEST
pkgdesc          {This is a test package}
path             PRIMARY.SOFTWARE
addtosvc         1
service          CJMTESTS
svcname          MYTESTSVC
svcdesc          {This is a test service}
customZcreate    0
appendTransform  1
appendMsiProp    1
attr PACKAGE {
    RELEASE 1.0
    BEHAVIOR
}
attr ZSERVICE {
    AUTHOR      me
    URL          {HTTP://WWW.NOWHERE.COM}
    OWNER       {Microsoft Corp.}
    PRICE       {5}
}

```

```

msi {
    aiplocation      {g:\aip}
    publishmode      advanced
    deleteaip        n
    aiparguments     {}
    enableperuser    n
}

```

## Defining Windows Installer Files to Publish on the Command Line

In addition to defining a configuration file, you can define any Windows Installer file to be published on the command line. Use the `-file` parameter to define which Windows Installer file to use in the publishing session.

```

nvdtk.exe pubport.tkd -cfg "c:\program files\test.cfg" -file
"c:\program files\test.msi" -user <USER> -password <PASSWORD>

```

## Publishing Multiple .msi Files (Batch Mode)

The HPCA Administrator Publisher enables you to publish multiple `.msi` files to the CSDB during one publishing session. This is achieved by calling the Publisher from the command line and designating a location using the `-batchmsi` parameter. The Publisher then scans this location and all subdirectories for `.msi` files as well as any configuration files or transform (`.mst`) files.

- ▶ Unlike publishing single `.msi` files using the command line, when publishing batches of `.msi` files with the HPCA Administrator Publisher, the command line parameter `-cfg` cannot be used to designate a configuration file. Instead, at least one configuration file must be included within the `.msi` file directory location.

Directories are scanned until a conforming directory is found. Each directory should contain the components of an HPCA package that will be published to the CSDB, including at least one `.msi` file as well as, optionally one configuration file and any applicable transform files. After a conforming directory has been processed, scanning continues to look for additional conforming directories that exist under the starting directory.

The files contained in the designated location must follow a few simple rules:

- If more than one `.msi` file exists in a directory, an error will be recorded and the publishing session scan will continue.
- If more than one configuration file exists in a directory, an error will be recorded and the publishing session scan will continue.
- If desired, only one configuration file can be used for all `.msi` files found. When only one configuration file is discovered in the root directory location, the HPCA Administrator Publisher will apply that configuration to all `.msi` files it finds thereafter. To define a unique name to each package then, use symbolic substitution, as described in [Customizing Configuration File Values with Symbolic Substitution](#) on page 77.
- In order for the scan to be successful, at least one configuration file must be present at the root directory location or co-located with any MSI that is found.

- The scan is run repeatedly until an MSI file is found. At that point, the MSI file is processed, and the scan does not run any deeper in that directory tree. Scanning continues at the parent directory of the MSI file that is found.
- If the `additionalfiles` keyword was defined with a `y` value in the configuration file, any additional files at the level of the MSI file and below are included with the AIP (in advanced mode) or the package (in basic mode).
- In batch mode, any transform files co-located with the MSI file are included in the package.

The following is a sample command line to run the HPCA Administrator Publisher and designate a location to scan:

```
nvdtk.exe pubport.tkd -batchmsi "c:\msifileslocation" -user <USER> -password <PASSWORD>
```

This example will cause the HPCA Administrator Publisher to scan the directory `c:\msifileslocation` and all its subdirectories looking for `.msi` files as well as any configuration files or transforms.

When the publishing session is finished, verify the session by referring to the `pubport.log` file located in your log directory.

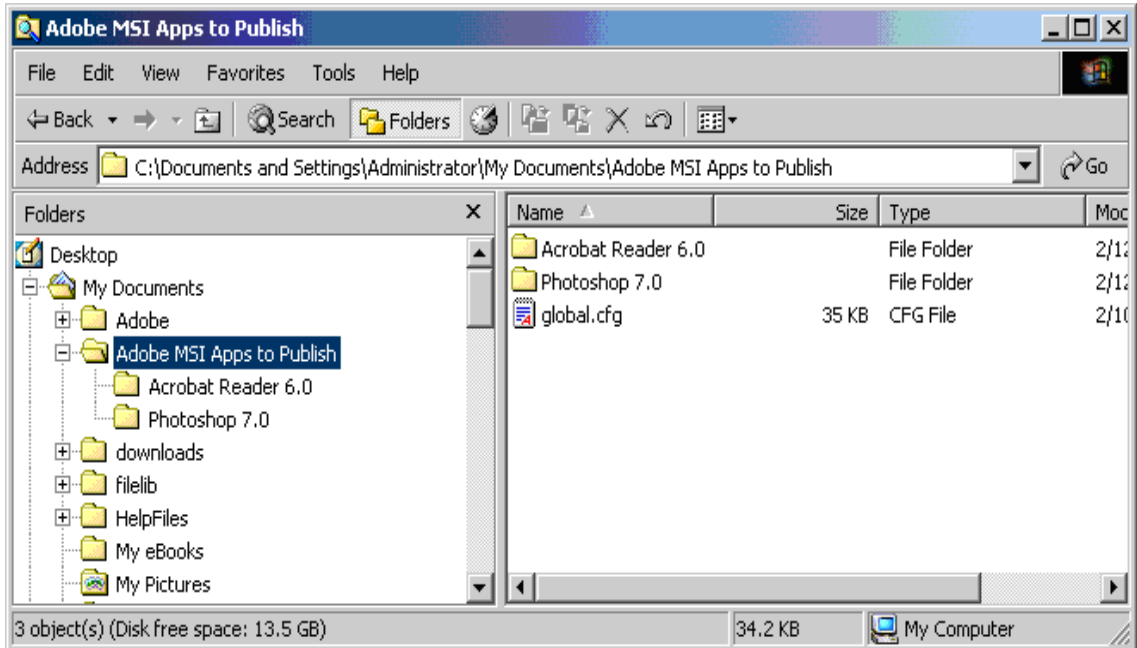
## Using Multiple Configuration Files

As discussed in [Customizing Configuration File Values with Symbolic Substitution](#) on page 77, only one configuration file is required for all the `.msi` files that you publish as long as you are using symbolic substitution to assign unique package names. However, if you would like to apply a separate configuration file to each `.msi`, then a separate configuration file must reside within the directory of the `.msi` to which it will be applied.

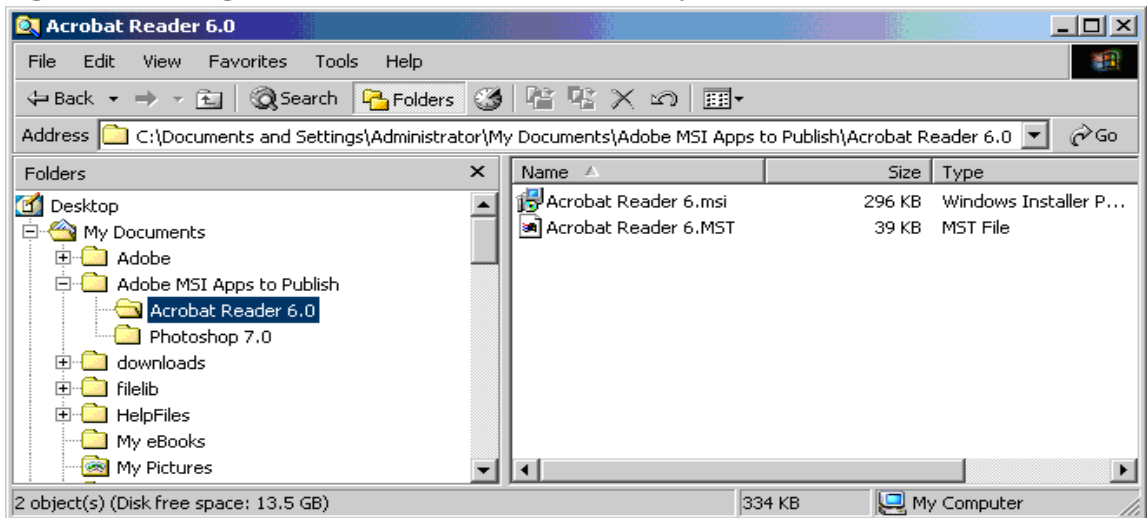
Any configuration file found within a directory will be applied to the `.msi` file found within that directory and any subsequent `.msi` files found in each subdirectory, unless another configuration file is found.

For instance, the `Acrobat Reader 6.msi` file, as displayed in [Figure 3](#) on page 76, will use the configuration file `global.cfg`, located in the root location directory, `\Adobe MSI Apps to Publish`, since no configuration file is included in the `\Acrobat Reader 6.0` directory.

**Figure 3 Root location directory that contains configuration file**



**Figure 4 Configuration files within the directory structure**

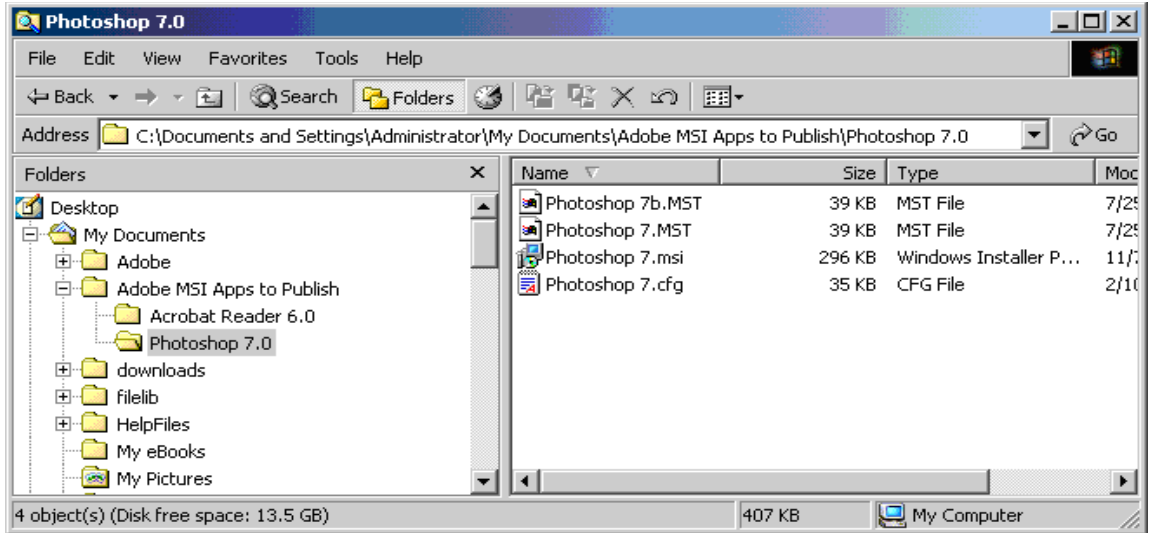


### Including Transform (.mst) Files

You can apply any number of transform files with your .msi files by including those transforms in the same directory with the .msi file to which they will be applied. Transform files are only applied to the .msi file with which they share a directory.

Figure 5 on page 77 displays two transform files, both of which will be included with the Photoshop 7.msi package upon publication.


**Figure 5 Transform files included in the directory structure**



## Customizing Configuration File Values with Symbolic Substitution

If you want to publish similar `.msi` files and would like to use only one configuration file, you can direct the HPCA Administrator Publisher to use symbolic substitution to assign unique values. For instance, to create unique package names set the `pkgname` variable within the configuration file to `%MSIPROP.VARNAME%` or another symbolic variable as found in your `.msi` file. When used, the HPCA Administrator Publisher will search the current individual `.msi` file it is publishing and substitute the `pkgname` value with the corresponding value found within the `.msi` file, based on the symbolic value you supplied.

The sample configuration file below that displays the use of symbolic substitution.

 You cannot use symbolic substitution for the path attribute.

```
#
-----
#   Publisher - Sample imbedded MSI Properties Configuration File
#
-----
#-----
#
#   Package related variables
#-----
-----
pkgname          {%MSIPROP.RADIA_PKG_DISPLAY_NAME%}
package          {%MSIPROP.RADIA_PKG_INSTANCE_NAME%}
pkgdesc         {%MSIPROP.RADIA_PKG_DESCRIPTION%}
path             {PRIMARY.SOFTWARE}
```

```

#-----
#
#      Service related variables
#-----
addtosvc          {%MSIPROP.RADIA_ADDTOSVC%}
service           {%MSIPROP.RADIA_SVC_INSTANCE_NAME%}
svcname          {%MSIPROP.RADIA_SVC_DISPLAY_NAME%}
svcdesc          {%MSIPROP.RADIA_SVC_DESCRIPTION%}

attr PACKAGE {
    RELEASE       {%MSIPROP.RADIA_PKG_RELEASE%}
}

attr ZSERVICE {
    AUTHOR        {%MSIPROP.RADIA_SVC_AUTHOR%}
    URL           {%MSIPROP.RADIA_SVC_URL%}
    OWNER        {%MSIPROP.RADIA_SVC_OWNER%}
    PRICE        {%MSIPROP.RADIA_SVC_PRICE%}
    ZSVCMO       {%MSIPROP.RADIA_SVC_ZSVCMO%}
    ZCREATE      {%MSIPROP.RADIA_SVC_ZCREATE%}
}

msi {
    aiplocation   {%MSIPROP.RADIA_AIPLOCATION%}
    publishmode   {%MSIPROP.RADIA_PUBLISHMODE%}
    execu         {%MSIPROP.RADIA_EXECUI%}
    deleteaip    {%MSIPROP.RADIA_DELETEAIP%}
    aiparguments  {%MSIPROP.RADIA_AIPARGS%}
    enableperuser {%MSIPROP.RADIA_ENABLEPERUSER%}
    additionalfiles {%MSIPROP.RADIA_ADDITIONALFILES%}
}

```

Notice in the example above that every value for each package and service that is created will be generated from the associated .msi file property table.

There are two primary MSI substitution value sources.

- **%MSISUMM\_summary\_variable\_name%**  
extracted from the summary information associated with the MSI file.
- **%MSIPROP\_property\_name%**  
extracted from the property table associated with the MSI file.

## Embedded MSI Properties and Extensions for Windows Installer User-Defined Properties

When you use the Extensions for Windows Installer to create an `.msi` package, you can automatically add a set of MSI properties and their default values. To do this use the HPCA Administrator Packager for **Windows Installer** → **Windows Installer Options** dialog box that is shown at the end of a Unified Packager session. Select the **Information** tab to define User-defined properties. You can manually add these properties to any package whether created by Wise, InstallShield, or another vendor.

## Publishing Hardware Configuration Elements

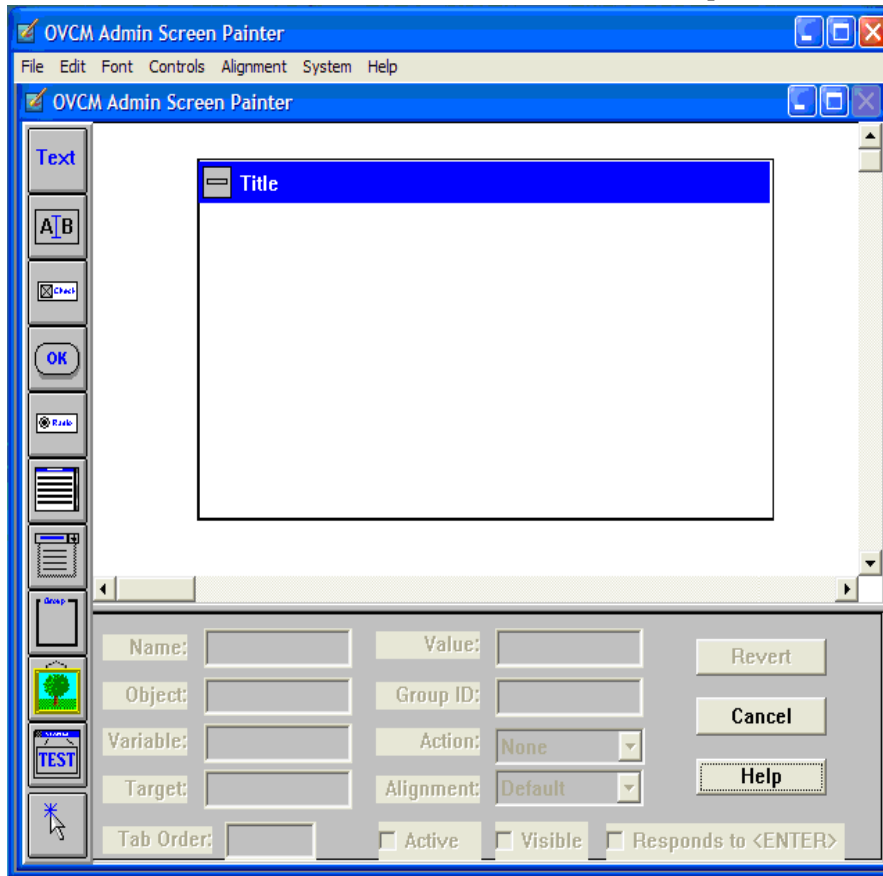
Use the HPCA Administrator Publisher to publish hardware configuration elements for distribution to devices in your environment. For detailed information, see *HP Client Automation OS Manager Hardware Configuration Guide*. This guide contains detailed steps for publishing hardware configuration elements.

## HPCA Administrator Screen Painter

This section contains a description of the HPCA Administrator Screen Painter, a tool that you can use to design and create dialog boxes. It provides an interface, with drag-and-drop capabilities, for creating and positioning typical controls such as check boxes, list boxes, and buttons.

To open the Screen Painter

Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator Screen Painter**. The Screen Painter window opens.



## File Menu

The following table describes the navigation features in the **File** menu.

**Table 20 Screen Painter File Menu**

Feature	Function
New	Creates a new dialog box.
Open	Opens the <b>Select a Panel Object File for Editing</b> dialog box. From the list, select a panel object to edit.
Close	Closes the current editing session.
Save	Saves the current panel object with the same name.
Save As	Saves the current panel object with a new name.
Revert	Reverts to a previously saved version of the panel object.



**Table 20 Screen Painter File Menu**

<b>Feature</b>	<b>Function</b>
Page Setup	Select a portion of the current dialog box to make this option available. It is the standard Windows Print Setup dialog box.
Print	Enables you to print a copy of the dialog box. Note: HPCA Administrator Screen Painter's Print function prints the current dialog box pixel-by-pixel, with one printer dot per pixel. If you have a high-resolution printer set at 600 DPI, the resulting printout will be illegibly small. To fix this, use the Properties button of the Page Setup dialog box to reduce the printer resolution to approximate screen resolution. This will produce a printout roughly the same size as that which appears on the screen.
Exit	Closes the Screen Painter.

## Edit Menu

The **Edit** menu contains the standard Windows editing functions.

## Font Menu

The **Font** menu enables you to change the font of the text displayed for one or more selected dialog box elements.












## Controls

The following instructions explain how to add and set controls in a dialog box, and how to add or change the title of a dialog box. Use either the **Controls** toolbar or the **Controls** menu.

## Controls Toolbox

The **Controls toolbox** provides buttons to facilitate the process of adding controls to a dialog box. The following is a table of the buttons and a brief description of the function of each control associated with it.

**Table 21 Controls Toolbox**

Book	Button Name	Function
	Static Text	For displaying labels, descriptions, and object variable values.
	Edit	For entering text and displaying object variable values.
	Check Box	For Yes/No or On/Off types of controls.
	Push Button	For performing an action such as EXIT or displaying another dialog box.
	Radio Button	For a multiple choice option where only one item can be selected.
	List Box	For a list of choices where only one item can be selected.
	List Button	For a drop-down list of choices where only one item can be selected.
	Group Box	For grouping and organizing controls.
	Image	For displaying a bitmap image.
	Test	For executing the dialog box in real-time mode.
	Select	For selecting and modifying dialog boxes, controls, and properties.

## Properties Box

Use the **Properties box** to assign properties to each element in the screen object. You will not need to assign all these properties to every control in your screen object. Some controls need only a few properties. Use the **Properties box** at the bottom of the HPCA Administrator Screen Painter window to add properties.

**Figure 6 Screen Painter Properties box**

The following table describes these properties.

**Table 22 Properties box elements**

Property	Description
Name	The label displayed on the control. Also used for indicating a target name.
Object	The object from which the control reads and writes data.
Variable	The variable from which the control reads and writes data.
Target	The dialog box, file, or control that is affected by what is specified in the Action field.
Value	Enabled only for Check Box, Radio Button, and List Box. See these sections for an explanation of specifications for this field.
Group ID	A user-specified identifier that enables you to group together several controls.
Action	Specifies what the control will do when selected.
Alignment	Justification for the text entered in the Static field of the Static Text control. Push Button text defaults to 'center'.
Tab Order	Specifies the order in which the control is reached when the user presses <b>Tab</b> . The default is the order in which the controls were added to the dialog box.
Active	Determines whether the control will be initially selectable or dimmed. (default: Active.)
Visible	Determines whether the control will be initially displayed or hidden. (default: Visible.)
Responds to <Enter>	Enables the user to select the selected Push Button by pressing <b>Enter</b> . This feature works only with Push Buttons, and only one per dialog box.

**Table 22 Properties box elements**

<b>Property</b>	<b>Description</b>
Revert	Restores the property values for the control to when the control was last updated.
Cancel	Closes the editing session without saving changes.
Help	Invokes on-line help (not available yet).

## Controls Menu

This section describes the controls that are available on the **Controls** menu.

### Deleting a Control

Select one or more controls and press **Delete** to delete a control.

### Static Text

Use this control to label other controls, or add descriptions or instructions to the dialog box.

#### To insert static text

- 1 Select the **Static Text** tool from the toolbar or **Static Text** from the Controls menu.
- 2 Click-and-drag a rectangle in the dialog box. Re-size this control later, if needed.
- 3 Click on the static text control just created.
- 4 In the **Properties** box, specify values for the active fields.

For the **Static text** control, the **Name** field becomes the **Static** field. This field enables you to enter static text to label a control (or controls) in this dialog box. Leave this blank if text is coming from a variable in an object.

### Edit

Use this tool to add a text box. A text box is a control that enables the entry and display of variable data.

#### To insert a text box

- 1 Select the **Edit** tool from the toolbar, or **Edit** from the Controls menu.
- 2 In the dialog box, click-and-drag a rectangle. Re-size this control later, if needed.
- 3 Click on the text box just created.
- 4 In the **Properties** box, specify values for the active fields.

For the **Edit** control, the **Name** field becomes the **Edit** field. The **Edit** field is the name of the control for referencing in groups.

### Push Button

A push button enables the user to initiate an action.

#### To insert a push button

- 1 Select the **Push Button** tool from the toolbar or **Push Button** from the **Controls** menu.

- 2 In the dialog box, click-and-drag a rectangle. Re-size this control later, if needed.
- 3 Click the push button just created.
- 4 In the **Properties** box, specify values for the active fields.

For the **Push Button** control, the **Name** field becomes the **Push** field. The **Push** field is text label displayed on the button.

The following table describes the actions that you can assign to a **Push** button.

**Table 23 Actions for Push Buttons**

<b>Action</b>	<b>Description</b>
EXIT	Saves the contents of the dialog box, and closes it.
CANCEL	Closes the dialog box without saving changes.
SHOW	Toggles the control whose name is specified in the Target field to be visible or invisible. If the Target field contains a Group ID for a group of controls in the dialog box, then that group of controls is made invisible or visible.
ENABLE	Toggles the control whose name is specified in the Target field to be enabled (for example, capable of becoming the focus of input) or disabled (for example, dimmed, and incapable of becoming the focus of input). If the Target field contains a Group ID for a group of controls in the dialog box, then that group of controls is enabled or disabled.
PANEL	<p>Exits the current dialog box and displays the dialog box specified in the Target field. If the Target field is blank, then the Object and Variable fields specify a variable that contains the name of the dialog box to be displayed.</p> <p>You can use a push button in conjunction with a list box to enable the user to select which dialog box to display next from a list. The user selects an item from the list box, and presses the associated push button to launch his choice. To accomplish this, the push button's Target field must contain the name of a list box, and the push button's Object and Variable fields identify some variable in the multi-heap object that is the data source for the list box. In each heap of the list box's data source object, this variable contains the name of the panel object corresponding to the dialog box to display next, for the user choice associated with data displayed in the list box from that heap.</p>

**Table 23 Actions for Push Buttons**

<b>Action</b>	<b>Description</b>
LAUNCH	<p>Launches the application specified in the Target field. If the Target field is blank, then the Object and Variable fields specify the variable that contains the path and file name of the file to be launched.</p> <p>You can use a push button in conjunction with a list box to enable the user to select which program to launch from a list. The user selects an item from the list box, and presses the associated push button to launch his choice. To accomplish this, the push button's Target field must contain the name of a list box, and the push button's Object and Variable fields identify some variable in the multi-heap object that is the data source for the list box. In each heap of the list box's data source object, this variable contains the path and file name of the program to launch for the user choice associated with data displayed in the list box from that heap.</p>
PREVHP	Pages to the previous heap in a multi-heap object (if not on the first heap) and reloads all the controls that use that object. The object to be paged is specified in the Object field. The variable specified in the Value field is displayed.
NEXTHP	Pages to the next heap of a multi-heap object (if not on the last heap) and reloads all the controls that use that object. The object to be paged to is specified in the Object field. The variable specified in the Value field is displayed.
LNCHEX	Launch and Exit. Does the same thing as the LAUNCH action, and also exits the dialog box.
STDFILE	Presents the standard Windows Open File dialog box and places the user's selection (with full path information) into the variable specified by the Object and Variable fields.
STDFOLD	Presents the standard Windows Select Folder dialog box, and places the user's selection (with full path information) into the variable specified by the Object and Variable fields.

### Check Box

A **Check box** enables the user to indicate a binary choice such as yes or no.

#### To insert a check box

- 1 Select the **Check Box** tool from toolbar or **Check Box** from the Controls menu.
- 2 In the dialog box, click-and-drag a rectangle. You can resize this control later.
- 3 Click the check box just created.
- 4 In the **Properties** box, specify values for the active fields.

For the **Check Box** control, the **Name** field becomes the **Check** field. The **Check** field is label for the check box and the name of this control when referenced as a target by other controls.

## Radio Button

A **Radio button** enables the user to click one item from a set. Insert radio buttons individually, but group them in order to establish a set.

### To insert a radio button

- 1 Select the **Radio Button** tool from the toolbar or **Radio Button** from the Controls menu.
- 2 In the dialog box, click-and-drag a rectangle. Re-size this control later, if needed.
- 3 Click the radio button just created.
- 4 In the **Properties** box, specify values for the active fields.

For the **Radio Button** control, the **Name** field becomes the **Radio** field. The **Radio** field is label for the radio button. The name of this control when referenced as a target by other controls.

- ▶ When created, a radio button defaults to a preset size. If the text entered exceeds the limits of the text box, expand it horizontally. The gray area will retain its size, but the full text will be displayed to the user.

## Group Box

A **Group box** enables you to visually group a set of controls within a defined area of the dialog box.

### To insert a group box

- 1 Select the **Group Box** tool from toolbar or **Group Box** from the Controls menu.
- 2 In the dialog box, click-and-drag a rectangle. Re-size this control later, if needed.
- 3 Click on the group box just created.
- 4 In the **Properties** box, specify values for the active fields.

For the **Group Box** control, the **Name** field becomes the **Group** field. The **Group** field is the text label for the group box.

- ▶ First create and align the controls, then place a group box around them. This will save time if you decide to reposition, add, or delete controls that will be grouped.

## List Box

A **List Box** is a scrollable box from which the user may select only one item at a time.

### To insert a list box

- 1 Select the **List Box** tool from toolbar or **List Box** from the Controls menu.
- 2 In the dialog box, click-and-drag a rectangle. Re-size this control later, if needed.
- 3 Click the list box just created.
- 4 In the **Properties** box, specify values for the active fields.

For the **List Box** control, the **Name** field becomes the **List Box** field. The **List Box** field is the name of the control for specifying it as a target, and the name of this control when referenced as a target by other controls.

## List Button

A **List Button** is a drop-down list control that enables the user to select one of the choices presented.

### To insert a list button

- 1 Select the **List Button** tool from toolbar or **List Button** from the Controls menu.
- 2 In the dialog box, click-and-drag a rectangle. Re-size this control later, if needed.
- 3 Click the list button just created.
- 4 In the **Properties** box, specify values for the active fields.

For the **List Button** control, the **Name** field becomes the **List** field. The **List** field is the name of the control for specifying it as a target. Also, the name of this control when referenced as a target by other controls.

- ▶ In order for your List Button to have drop-down capability, you must expand the control vertically in the design space.

## Image

### To insert a bitmap image

- 1 Select the **Bitmap Image** tool from toolbar, or **Image** from the Controls menu.
- 2 Click-and-drag a rectangle proportionate to the image it will display. Re-size this control later, if needed.

- ▶ The image is scaled to fill the entire frame.

- 3 Click the frame just created.
- 4 In the **Properties** box, specify values for the active fields.

For the **Image control**, the **Name** field becomes the **Image** field. The **Image** field is the full path of the bitmap image to be displayed, including the `.bmp` extension.

## Select

The mouse-cursor functions as a select (arrow) tool. Click a control in the dialog box with the cursor in this mode, and HPCA Administrator Screen Painter selects it with handles.

### To resize a control

Grab one of the control's handles and drag it to the desired size.

### To reposition a control

Click-and-drag the item to the desired location.

## Set Title

Name a dialog box to make it easier for the user to remember its function.

### To give the dialog box a title

- 1 From the **Controls** menu, click **Set Title**, or double-click the blue title bar of the dialog box.
- 2 Type the title in the dialog box, and press **Enter**.




## Alignment Menu

Arrange the controls you have inserted for a more legible appearance. The following table explains the nine options available for aligning controls.

The following instructions explain how to align controls. Users will find the dialog boxes easier to use if the controls are arranged in an orderly fashion. These features are available only from the **Alignment** menu.

**Table 24 Alignment Functions**

Feature	Function
Align Tops	Aligns the selected controls to the top edge of the uppermost selected control.
Align Bottoms	Aligns the selected controls to the bottom edge of the lowest selected control.
Align Lefts	Aligns the selected controls to the left edge of the leftmost selected control.
Align Rights	Aligns the selected controls to the right edge of the rightmost selected control.
Align Centers	Centers all selected controls on an imaginary vertical line that bisects the right edge of the right-most selected control and the left edge of the left-most selected control.
Align Same Height	Vertically resizes all selected controls to the same height as the (first) selected reference control.
Align Same Width	Horizontally resizes all selected controls to the same width as the (first) selected reference control.
Align Even Vertical	Adjusts the spacing among a group of selected controls so that there is an identical amount of vertical space between each pair of adjacent controls.
Align Even Horizontal	Adjusts the spacing among a group of selected controls so that there is an identical amount of horizontal space between each pair of adjacent controls.

 At least three controls must be selected for the Align Even Vertical and Align Even Horizontal functions to have any effect.

### To align controls

The first five options of the Alignment menu enable you to reposition controls for a standard appearance.

- 1 Drag-and-drop a reference control to the desired position.
- 2 Select at least three controls that you want to align with the reference control by holding down **Shift** and clicking each one.
  - To align controls vertically, from the **Alignment** menu, click **Align Lefts** or **Align Rights**.
  - To align controls horizontally, from the **Alignment** menu, click **Align Tops** or **Align Bottoms**.

- To align controls by their centers, from the **Alignment** menu, click **Align Centers**.
- ▶ Align controls prior to placing a Group Box around them. Any aligning or positioning done now can be revised at a later time.

### To adjust a control's height and width

You can resize the controls for a consistent appearance.

- 1 Select a control to be used as a reference. (This control's size will not change. The other controls will resize to the same height or width as this reference control.)
- 2 To select the remaining controls you want to resize, hold down **Shift** and click each one.
- 3 From the Alignment menu, click **Align Same Height** or **Align Same Width**.

### To space controls

You can set the spacing between controls for a consistent appearance.

- 1 Hold down **Shift** and click at least three controls.
- 2 From the Alignment menu, click **Align Even Vertical**, or **Align Even Horizontal**.

## System Menu

The **System** menu contains choices for testing the dialog box.

Periodically, during the dialog box creation, and especially after it is finished, it is a good idea to test it to ensure that it works as you designed and intended. Doing a test runs the Panel Manager program, `edmpnlwr.exe`, using the current dialog box. This shows how the dialog box will look when it is displayed in production.

There are two methods, which are discussed below, for testing a dialog box:

- Common
- REXX Processing

### Common

To test a screen using the common method

- 1 Click the **Test** tool from the **Controls** toolbar or **Test** from the System menu.
- 2 To end the test, click the displayed dialog box's close icon, or click a push button whose action terminates the dialog box.

### REXX Programming

To test a screen using the REXX processing

- 1 Click **Use REXX for Test** from the **System** menu.
- 2 To end the test, click the displayed dialog box's close icon, or click a push button whose action terminates the dialog box.

### Do Not Resolve Panel

To display variable names without resolving objects

- 1 Specify the symbolic notation in the **Name** field of the controls that you want left unresolved. Note that HPCA always resolves any data specified in the **Object** and **Variable** fields in the **Properties** Box.

- 2 From the System menu, click **Do Not Resolve Panel**.

## Help Menu

**About** is the only function that currently works. It displays the HPCA version number.

# HP Administrator CSDB Editor

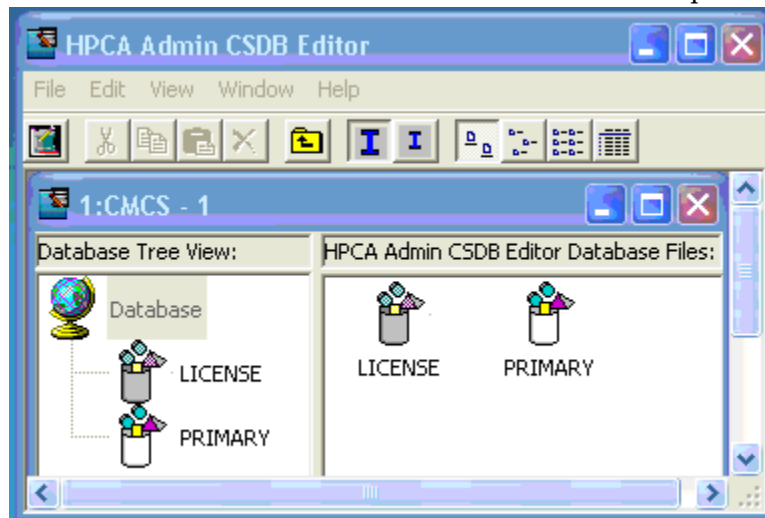
This section describes how to use the HPCA Administrator CSDB Editor to manage the CSDB.

## Getting Started

This section helps you understand the working of HPCA Administrator CSDB Editor better.

To open the HPCA Administrator CSDB Editor

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator CSDB Editor**. The logon dialog box opens.
- 2 Type your User ID and Password.
  - ▶ The default user ID and password are:  
User ID: **ADMIN**  
Password: **secret**
- 3 Click **OK**. The HPCA Admin CSDB Editor window opens.



## HPCA Admin CSDB Editor Window

This is the main window of the HPCA Administrator CSDB Editor. This section guides you through the methods of customizing the look and feel of the HPCA Administrator CSDB Editor and the usage of its menu items.

## Customizing the HPCA Admin CSDB Editor Window

You can customize the look of the HPCA Administrator CSDB Editor and how it functions by using options from the shortcut menus. The most frequently used functions are available from the HPCA Administrator CSDB Editor Toolbar. For additional information about these functions, see [HPCA Administrator CSDB Editor Toolbar](#) on page 94.

### HPCA Admin CSDB Editor Window Menus

This section describes each of the menus in the main HPCA Admin CSDB Editor window.

#### File Menu

Use these options to open additional HPCA Admin CSDB Editor windows or to close the current one. Multiple windows can be open at the same time. You can drag items between multiple windows.

#### Edit Menu

Use these options to edit the CSDB. The first six operations apply to the selected items in the active pane or dialog box.

**Table 25 Edit Menu options**

Operation	Description
New	Creates a new occurrence of the selected item such as domain, class, or instance.
Cut	Removes the selected text and places a copy of it on the Windows clipboard.
Copy	Copies the selected text to the Windows clipboard.
Paste	Copies the current content of the Windows clipboard to the current cursor location.
Rename	Changes the friendly name and/or internal name of the selected item.
Delete	Removes the selected items from the CSDB.
Select All	Selects all of the instances in the list view of an HPCA Administrator CSDB Editor window.
Invert Selection	Toggles the selection status of the instances in the list view. The ones that are selected are cleared and those that are cleared are selected.
Find	Searches the Name and Instance Name columns in the selected class for instances that contain the text you specify. The results of the search appear selected and sorted at the top of the list in the list view.

## View Menu

Use these options to control the appearance of the HPCA Administrator CSDB Editor. You can show or hide the toolbar and status bar, control the size and display of the icons, refresh the window, or set the display and operational options with the help of this menu.

**Table 26 View Menu options**

Options	Description
Toolbar	Toggles the toolbar display on and off.
Status Bar	Toggles the Status Bar display on and off.
Tree Icons	Toggles the display between large and small icons.
List View	Select from among four different displays for your list view—Large Icons, Small Icons, List, and Details.
Line Up Icons	Re-arranges the list view, arranging the icons either vertically or horizontally.
Refresh	Re-arranges the list view of the selected HPCA Admin CSDB Editor window, lining up all of the elements for easy reading.
Options	Opens the HPCA Administrator CSDB Editor Options dialog box. For more information, see <a href="#">Setting Preferences: Options Dialog Box</a> on page 95.
Font	Opens a dialog box that enables you to change the font used to display text in the HPCA Administrator CSDB Editor windows.

## Window Menu

Use these options when you have more than one HPCA Administrator CSDB Editor window open.

**Table 27 Window Menu options**

Option	Description
Cascade	Organizes and overlaps the windows starting at the top, left corner of the HPCA Administrator CSDB Editor interface.
Tile Horizontal	Automatically sizes open windows to the width of the HPCA Administrator CSDB Editor interface. It allocates the available height within the HPCA Administrator CSDB Editor interface equally, stacking the windows one on top of the other.

**Table 27 Window Menu options**

Option	Description
Tile Vertical	Automatically sizes open windows to the height of the HPCA Administrator CSDB Editor interface. It allocates the available width equally, stacking the windows next to each other.
Arrange Icons	Docks minimized HPCA Administrator CSDB Editor windows in the bottom left corner of the interface.
1 1:CSname – 1	CSname stands for the Configuration Server name. Multiple View enables the administrator to toggle between open HPCA Administrator CSDB Editor sessions. A check mark next to a session indicates which window is active.

### Help Menu

Get details about the HPCA Administrator CSDB Editor and the link to the HP Software web site.

**Table 28 Help Menu options**

Option	Description
Contents	Opens a traditional Windows-style help interface.
Hewlett-Packard on the Web	Opens a sub-menu with links to the Hewlett-Packard web site pages for Technical Support and Home Page. Selecting one of these links opens your default Web browser and connects to the selected page over the Internet.
About CS Database Editor	Displays information about the current HPCA Administrator CSDB Editor version number, Configuration Server information, and so forth. Click <b>System Info</b> to display a standard Microsoft System Information window. This application analyzes your machine and shows the results in an easy to navigate format.













### HPCA Administrator CSDB Editor Toolbar

The HPCA Administrator CSDB Editor toolbar provides easy access to frequently used functions.

**Figure 7 HPCA Administrator CSDB Editor Toolbar**

The following table describes the functions of these toolbar buttons.

**Table 29 CSDB Editor Toolbar buttons**

Button	Function
	Open a new HPCA Administrator CSDB Editor window.
	Not available.
	Copy the selected item.
	Not available.
	Delete the selected item.
	Display the database level above.
	Display large icons in the tree view.
	Display small icons in the tree view. Maximizes the number of items that can be seen in the list view of the HPCA Administrator CSDB Editor at one time.
	Display large icons in the list view.
	Display small icons in the list view. Maximizes the number of items that can be seen in the list view of the HPCA Administrator CSDB Editor window at one time.
	Display the list view vertically. Maximizes the number of items that can be seen in the list view of the HPCA Administrator CSDB Editor window at one time.
	Display the list view vertically. Adds a column for TYPE such as Class and Instance. Maximizes the number of items and provides detailed description of the list view.

## Setting Preferences: Options Dialog Box

The HPCA Administrator CSDB Editor has an **Options** dialog box that enables you to control some of the features of the HPCA Administrator CSDB Editor.

To open the Options dialog box

- 1 Click **View** → **Options**.

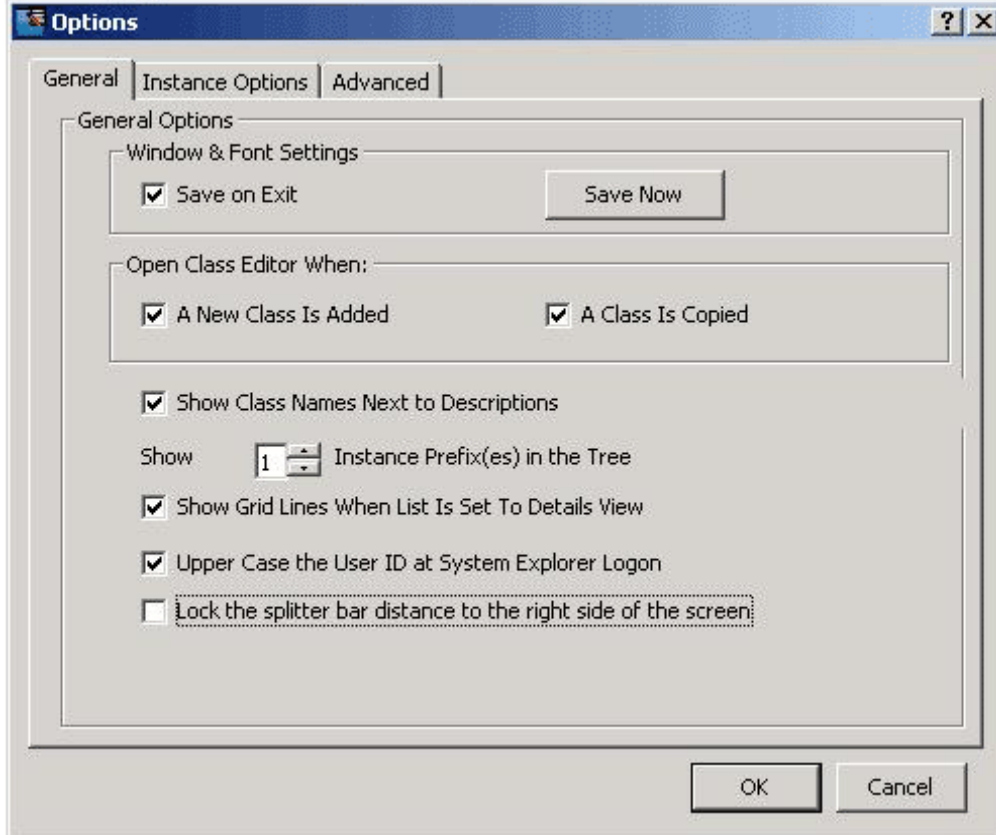
There are three tabs on the **Options** dialog box:

- General
- Instance Options
- Advanced

2 Click a tab to access its configuration options.

### General Tab

**Figure 8 HPCA Administrator CSDB Editor Options General tab**





The following table describes the **General** tab options.

**Table 30 Functions of General tab options**

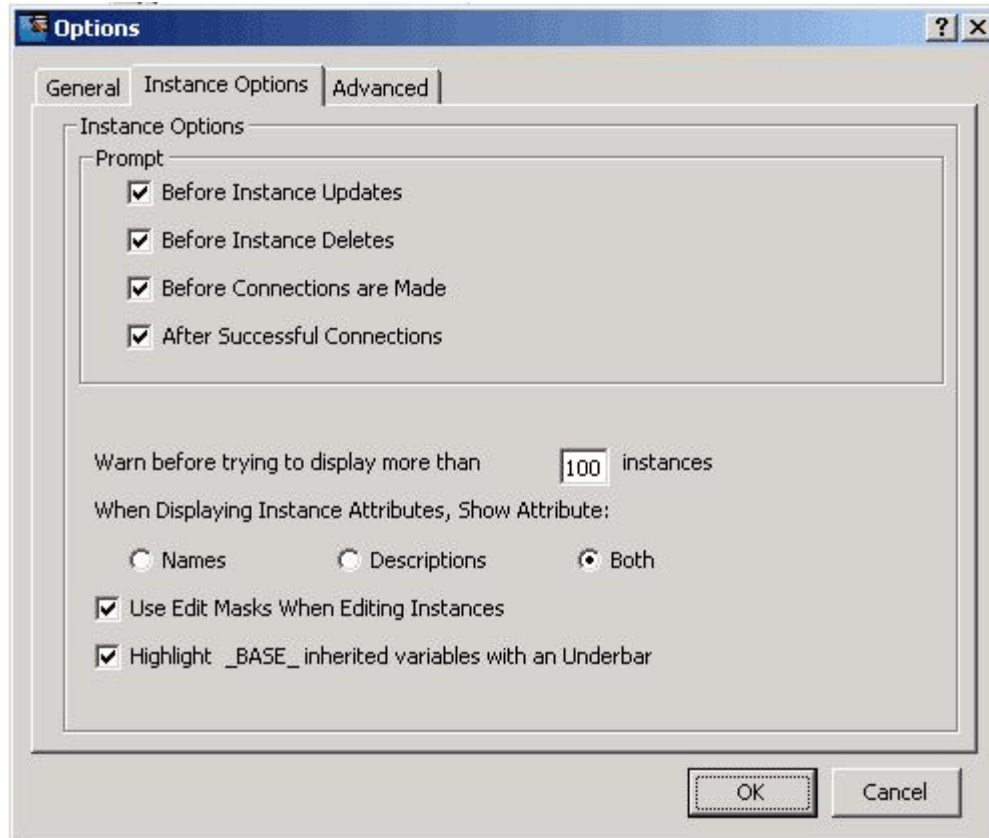
<b>Option</b>	<b>Function and Use</b>
Window & Font Settings	<p>Select the <b>Save on Exit</b> checkbox to tracks certain window settings and the font to use for displaying text when you exit from the HPCA Administrator CSDB Editor session.</p> <p>The window settings include the view setting for example, large icons, small icons, list, or details, for the tree and list views of the HPCA Administrator CSDB Editor window, and the relative width of each pane. Window settings are saved independently for each level of the HPCA Administrator CSDB.</p> <p><b>Save Now</b> saves the current window settings and font in use. To change the font, select a font from the dialog box that opens when you click <b>View</b> → <b>Fonts</b> from the menus.</p>
Open Class Editor When	<p><b>A New Class is Added</b> opens the <b>Editing Class</b> dialog box when you add a class.</p> <p><b>A Class is Copied</b> opens the <b>Editing Class</b> dialog box when you copy a class.</p> <p>Since you will probably want to edit the newly copied or newly added class, HP recommends that you have these two options selected.</p>
Show Class Names Next to Descriptions	<p>Shows the HPCA internal name for classes next to their friendly names in the tree view and in the list view. The internal name will appear in parentheses next to the friendly name.</p> <p>This is useful if you usually do not use the Details View for the list view. The Details View in the list view window always shows the internal name for classes in the Type column.</p>
Show <i>n</i> Instance Prefix(es) in the Tree	<p>This option can be set to 0, 1, 2, or 3 to control how many levels of instance name prefixes--delimited by the underscore character--will be compressible and expandable in the tree view. This is described in <a href="#">Navigating the HPCA Administrator CSDB Editor</a> <a href="#">Navigating the HPCA Administrator CSDB Editor</a> on page 101.</p>

**Table 30 Functions of General tab options**

Option	Function and Use
Show Grid Lines When List Is Set To Details View	Displays grid lines in the list view when its view option is set to Details.
Uppercase the User ID at CSDB Editor Logon	Automatically converts the user ID into all uppercase.
Lock the splitter bar distance to the right side of the screen	Locks the width of the right side of the HPCA Administrator CSDB Editor window during resizing. When this check box is not selected and the window is resized, the width of the left side of the window remains fixed, and the width of the right side of the window varies.

Instance Options Tab

**Figure 9 HPCA Administrator CSDB Editor Options Instance Options tab**



The following table describes the **Instance Options** tab options.

**Table 31 Functions of Instance tab Options**

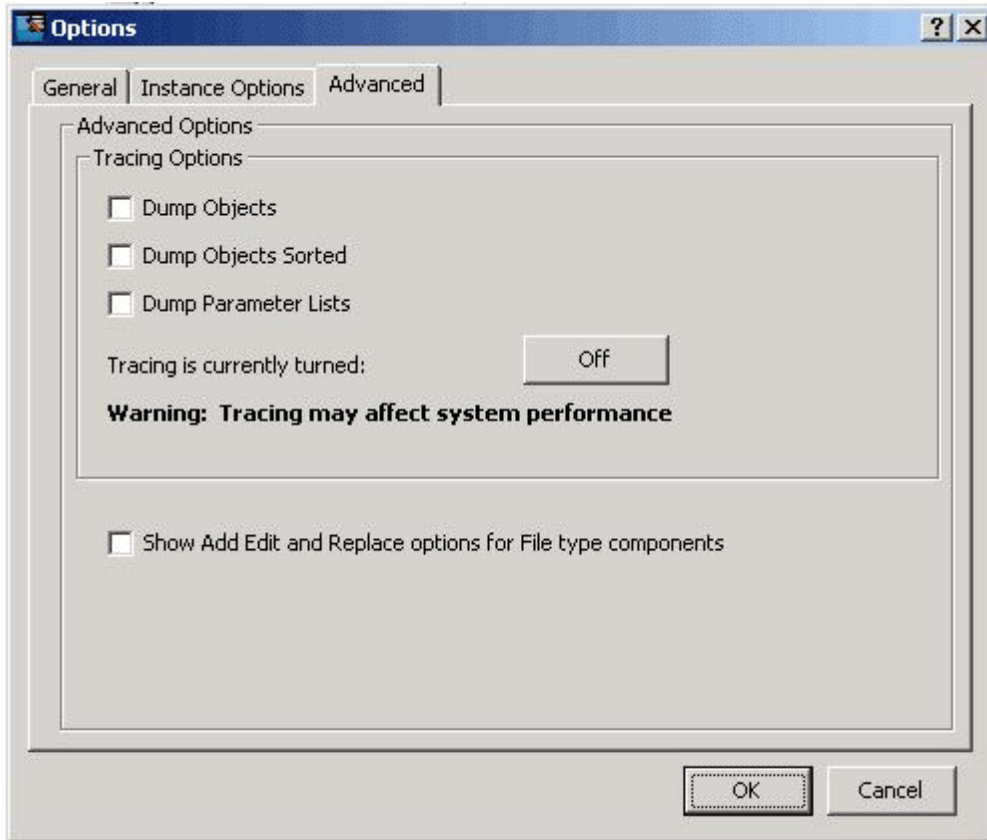
<b>Options</b>	<b>Functions and Use</b>
Prompt	These four check boxes control whether HPCA Administrator CSDB Editor prompts you before completing the actions indicated by their descriptions.
Warn before trying to display more than $n$ instances	<p>In large desired states, certain classes such as FILE or USER can contain many instances. If you attempt to view the instances of a class that contains more instances than this option setting, a warning opens. This gives you the opportunity to filter the class instances, before they are displayed. This is a performance issue. If you try to display too many instances, you will wait while the HPCA Administrator CSDB Editor retrieves them from the CSDB, and you will have to scroll through a large list to find the instances you want to work with.</p> <ul style="list-style-type: none"><li>• Click <b>Yes</b> to open the <b>Filter Class</b> dialog box, and enter an appropriate filter.</li><li>• Click <b>No</b> to display all of the instances.</li><li>• Click <b>Cancel</b> to close the warning without displaying any instances.</li></ul>

**Table 31 Functions of Instance tab Options**

<b>Options</b>	<b>Functions and Use</b>
When Displaying Instance Attributes, Show Attribute	This setting determines which columns to display such as Name, Description, or both in the Details view on the list view of the window, when you open an instance by double-clicking its name in the tree view.
Use Edit Masks When Editing Instances	<p>This setting determines whether the <b>Edit Instance</b> dialog box will be sensitive to the attribute type in the data entry area of the dialog box.</p> <p>If you select this option, attributes that hold logical data such as Yes or No have check boxes in the data entry area. Attributes that have multiple choices have drop-down lists in the data entry area. A flag set will appear as a series of check boxes in the data entry area.</p> <p>You can set the mask by entering the valid choices for an attribute within square brackets at the end of the attribute's description in the class definition.</p> <p>If you do not select this option, all data entry in the <b>Edit Instance</b> dialog box will be plain text.</p> <p>This facility is described in detail in <a href="#">Optional Attribute Editing Controls</a> on page 114.</p>
Highlight <code>_BASE_</code> inherited variables with an Underscore	Use this setting if you want to see which values in an instance are inherited from the <code>_BASE_INSTANCE_</code> of the class. The inherited instances will show with a red underscore.

## Advanced Tab

**Figure 10 HPCA Administrator CSDB Editor Options Advanced tab**



The following table describes the **Advanced** tab options.

**Table 32 Functions of the Advanced tab Options**

Options	Functions and Use
Tracing Options	Use these settings only for troubleshooting the HPCA Administrator CSDB Editor.
Show Add, Edit and Replace options for File type components	<ul style="list-style-type: none"><li>• Edit this Component</li><li>• Replace Component Data</li><li>• Add a Component</li></ul> For details, see <a href="#">Appendix B, Naming Conventions</a> .

## Navigating the HPCA Administrator CSDB Editor

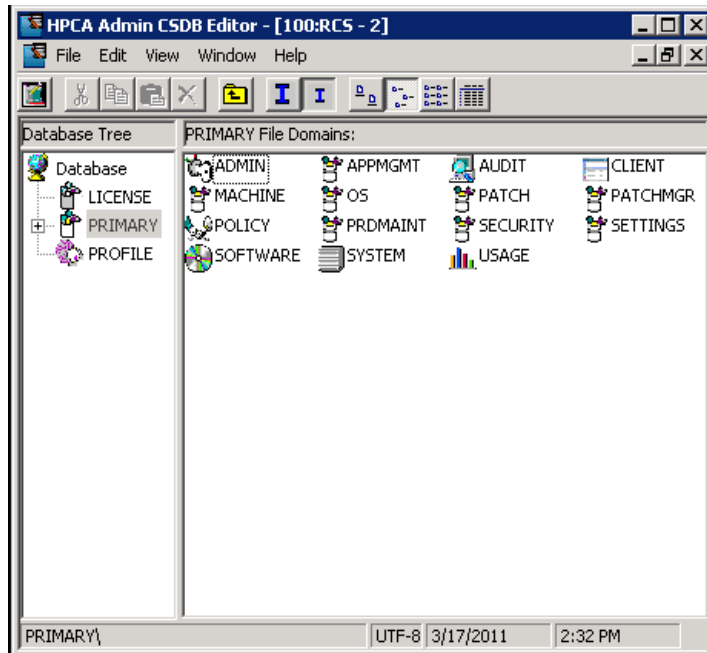
The CSDB is hierarchically organized and subdivided into files, domains, classes, and instances. The tree view enables you to view successively lower levels in the hierarchy, and easily locate and work with specific CSDB components.

To navigate the tree structure

- 1 Open the HPCA Administrator CSDB Editor, and double-click **PRIMARY** in the tree view.

▶ The PRIMARY File domains will vary according to which HPCA products have been installed in your environment.

The HPCA Admin CSDB Editor window will be similar to the following:



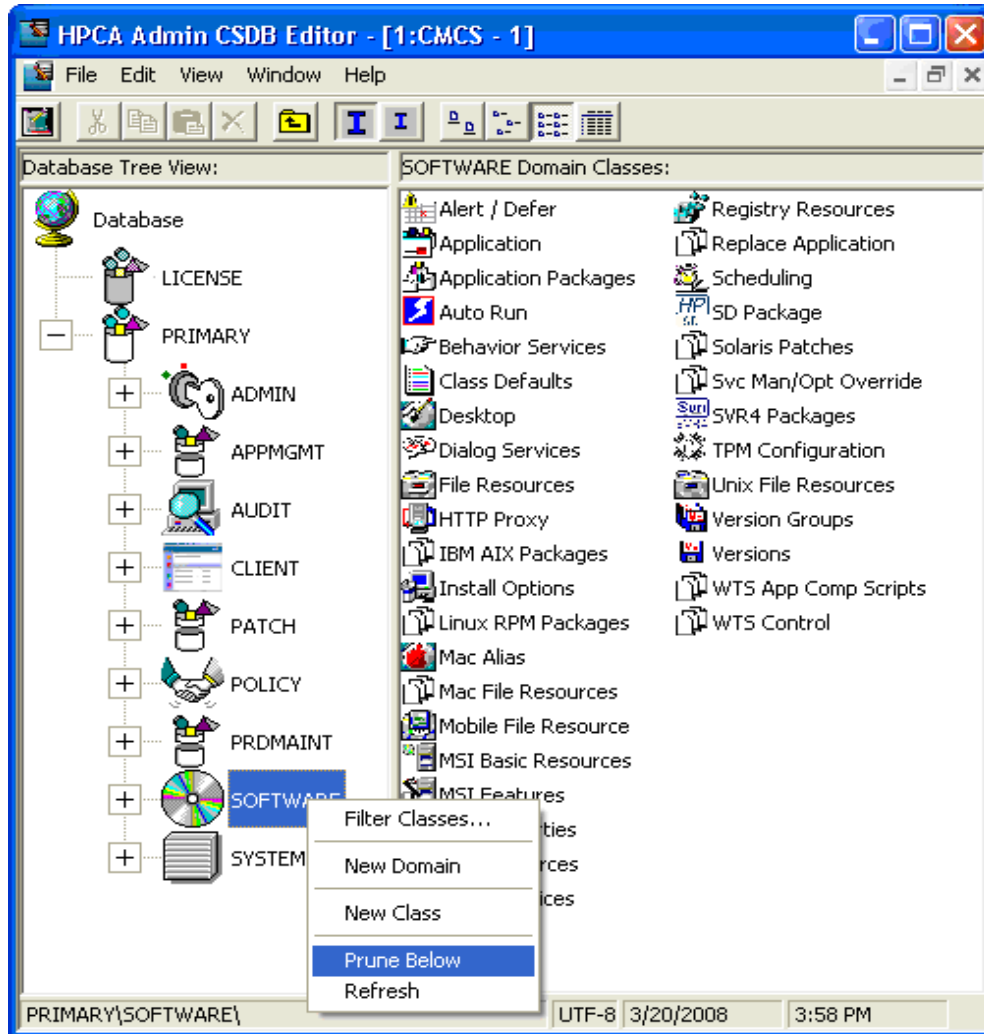
- 2 To open a CSDB domain, double-click its icon.

### Navigation History

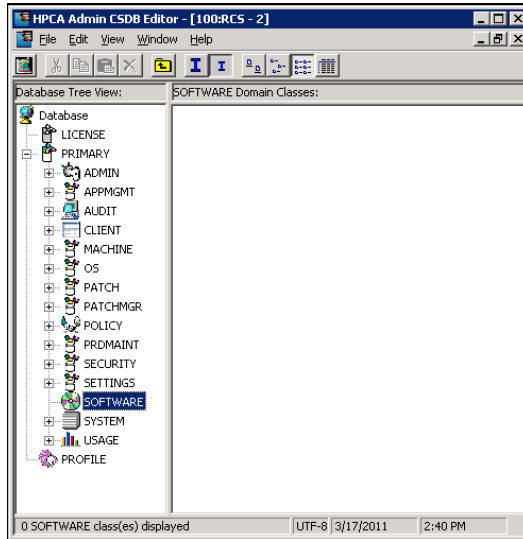
Most navigation features in the HPCA Administrator CSDB Editor are similar to those in Windows Explorer. However, to discard the history of which branches were previously opened beneath a particular component, use the **Prune Below** function.

To use the Prune Below function

- 1 Right-click the **SOFTWARE** domain icon in the tree view. A shortcut menu opens.



- 2 Click **Prune Below**. The tree view collapses all open nodes below the SOFTWARE domain, and discards navigation history.

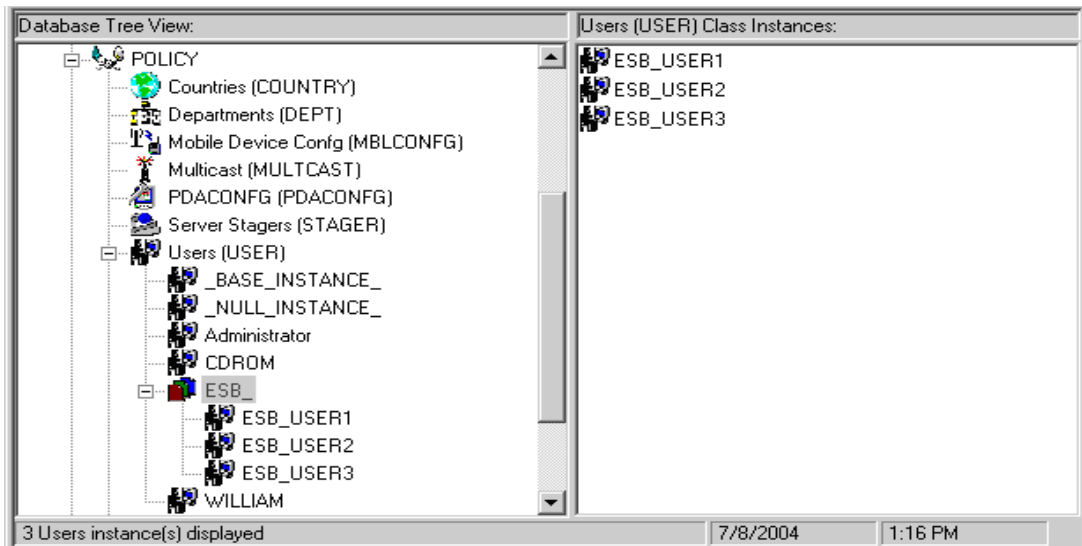


## Compound Names

Use compound names to make navigation in the tree view more manageable. HPCA provides one, two, or three collapsible levels, based upon one, two, or three high-level qualifiers of the instance name.

A compound name has one, two, or three prefixes, each separated from the rest of the name by an underscore character. For example, you might want to group your users according to the building where they are located. Instance names for these users will have a building identifier prefix. If you had users in the Empire State Building, you might assign **ESB\_** as the instance name prefix to identify them. Each user in the Empire State Building will be assigned an instance name beginning with **ESB\_**. The tree view will automatically add a level.

**Figure 11 Compound Names**



The number of prefix levels in an instance name (0, 1, 2, 3) that are displayed in the tree view is controlled by the **Show n Instance Prefixes in the Tree** option setting. This is found on the **General** tab of the **Options** dialog box and can be accessed from the **View** menu. The Options dialog box is described in [Setting Preferences: Options Dialog Box](#) on page 95.

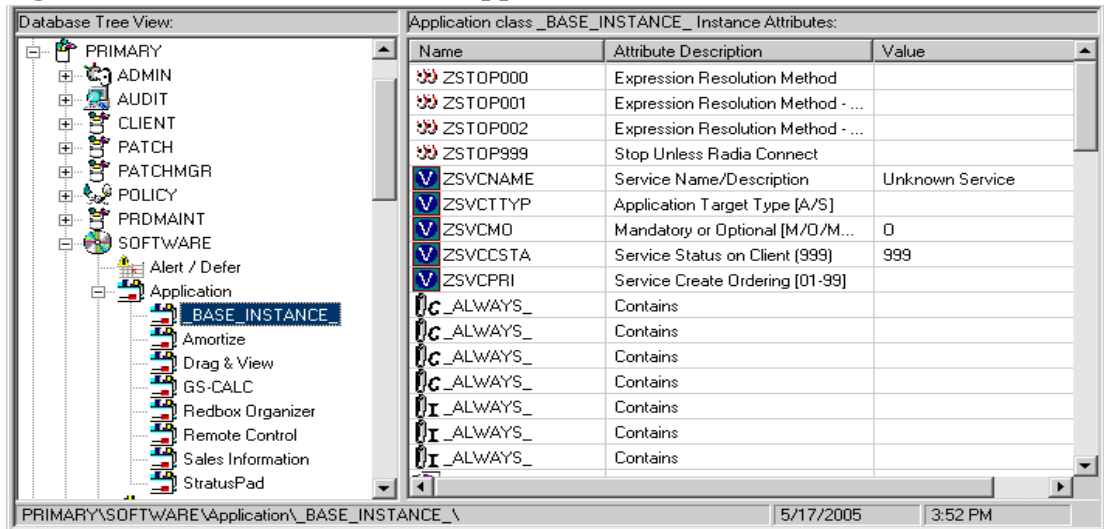


Each underscore in an instance name defines a level for the tree view. Thus, the instance name `ESB_FLOOR10_USER1` has two levels of prefix, which, if the setting **Show n Instance Prefixes in the Tree** were set to 2 or 3, would be displayed in two collapsible non-elementary levels (FLOOR10, within ESB).

## Inheritance in the CSDB

Each class in the CSDB has a *base instance*, named `_BASE_INSTANCE_`. It provides the default values for the other instances of the class. Any attribute in an instance will inherit its value from the same attribute in the `_BASE_INSTANCE_` unless it has been specifically assigned another value.

**Figure 12** `_BASE_INSTANCE_` of Application (ZSERVICE) Class



Inherited values appear in the instance the same as those values that you enter directly into the instance. You can tell if a variable's value is inherited from the `_BASE_INSTANCE_` by inspecting the `_BASE_INSTANCE_`. Also, if you delete a value from a variable (see [Working with Classes](#) on page 106 to learn how), and the value re-appears in the instance automatically, the value is being inherited from the `_BASE_INSTANCE_`.

## Managing Domains, Classes, and Instances

In the HPCA Administrator CSDB Editor you can add, copy, edit, rename, and delete CSDB components such as domains, classes, and instances. You can also connect different instances.

You can access these functions from shortcut menus that open when you right-click targets in the HPCA Administrator CSDB Editor window. The menu that opens contains choices depending upon which target you right-click.

### Working with Domains

This section describes how to add a domain to a file. Domain names can be a maximum of eight characters, and can include letters and numbers.

#### To add a domain to a file

- 1 Right-click the **PRIMARY** file or any domain, and select **New Domain** from the shortcut menu that opens. The **Create Domain** dialog box opens.

- 2 Enter a name for the new domain and click **OK**.

## Working with Classes

This section describes how to add, edit, and delete a class.

### Adding a Class

New classes can be added by

- copying an existing class,  
or
- creating a new class.

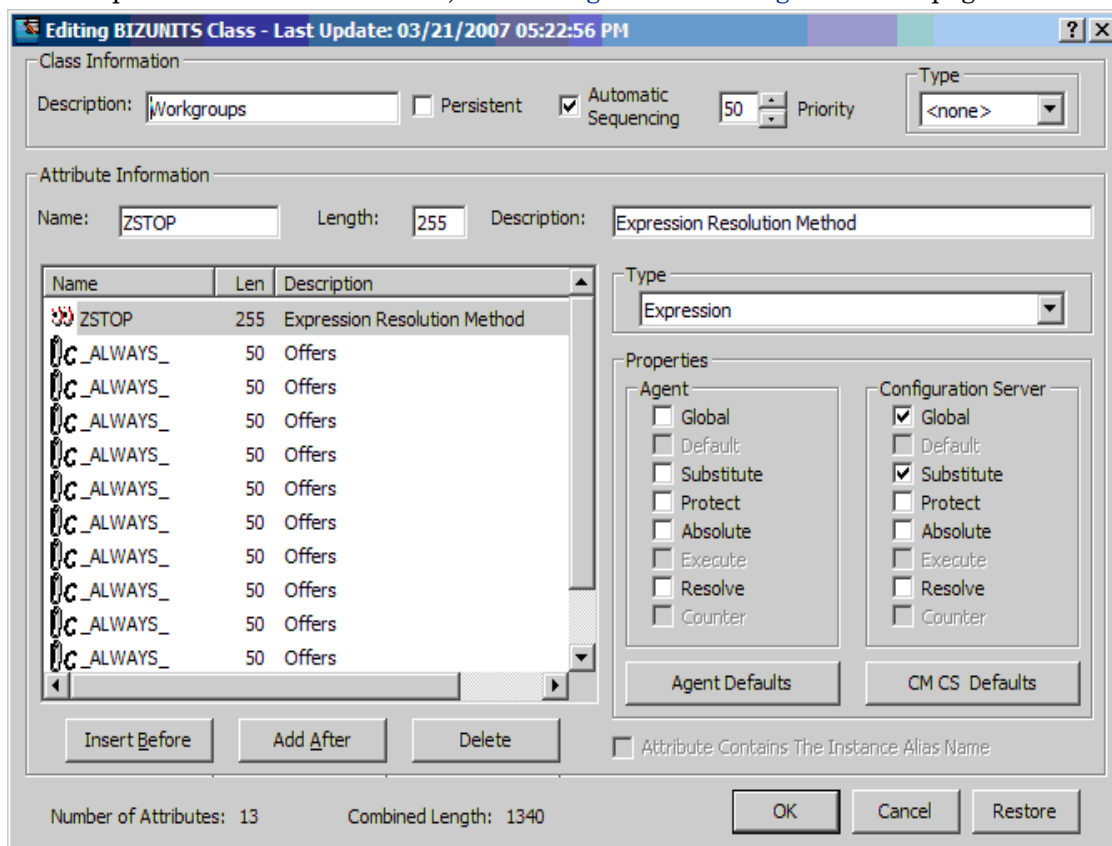
The method you select depends upon whether a class already exists whose attributes are substantially similar to the class that you want to add. If so, copy the existing class; otherwise, create a new one.

Copying a class creates a new class with the same attributes as the copied class, and a `_BASE_INSTANCE_` for the new class with its attribute values set as in the `_BASE_INSTANCE_` of the copied class.

### To copy an existing class

- 1 Select the class to be copied and right-click it.
- 2 Select **Copy Class** from the shortcut menu. The **Copy class** dialog box opens.
- 3 Enter a name for the new class, and click **OK**.
  - When you set preferences in the **Options** dialog box, [Setting Preferences: Options Dialog Box](#) on page 95, you did not select to open the Class Editor when a class is copied, the original class is copied with the new name, the Class Editor is not opened, and no warning is issued. You will have to manually open the Class Editor to edit the new class.

- Conversely, if you *did* select to open the Class Editor, the **Editing Class** dialog box opens. For more information, see [Editing a Class](#) on page 108.



- 4 To complete the addition of the copied class, change the **Description** field to identify the copied class, edit the class to reflect the new class' requirements, and click **OK**.

The **Class Edit Confirmation** warning message warns you to back up your database before proceeding.

- 5 Click **Yes**. The new class addition is complete.

➤ If you click **No** or **Cancel** in the **Class Edit Confirmation** warning message, the **Class Editing** dialog box closes, but the copying of the class does not terminate.

If you have created a class and want to delete it, see [Deleting a Class](#) on page 116.

After you create a class, check the MASTER\_CONNECTION\_RULES variable to determine if you need to establish a drag-and-drop rule for the new class. For additional information regarding connection rules and drag-and-drop connections, see [Maintaining Connection Rules in the CSDB](#) on page 147.

#### To create a new class

- 1 Select the domain in which you want to create the new class.
- 2 Right-click the domain name.
- 3 Select **New Class** from the shortcut menu. The **Create Class** dialog box opens.

- 4 Enter a name for the new class, for example, BIZUNITS and Click **OK**. The **Editing Class** dialog box opens. For more information, see [Editing a Class](#) on page 108.

Name	Len	Description
ZFIELD1	1	Field 1

- 5 To complete the addition of the new class, change the **Description** field to identify the new class, edit the class to reflect the new class' requirements, and click **OK**.
- 6 Click **Yes**. The new class is added.

➤ If you click **No** or **Cancel** in the **Class Edit Confirmation** warning message, the **Class Editing** dialog box closes, but the copying of the class does not terminate.

If you created a class and want to delete it, see [Deleting a Class](#) on page 116.

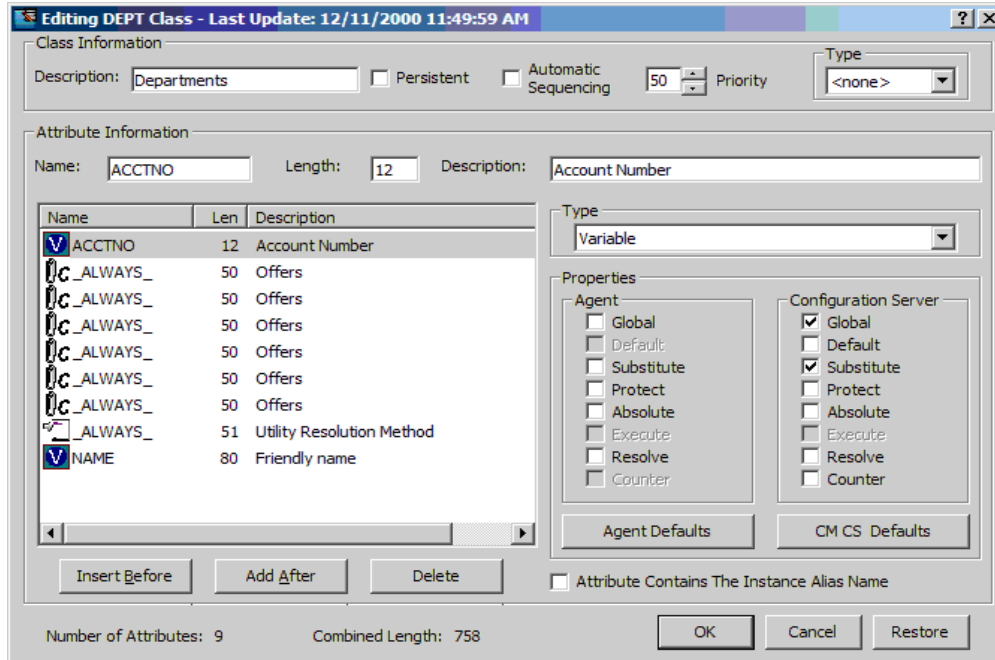
After you create a class, check the MASTER\_CONNECTION\_RULES variable to determine if you need to establish a drag-and-drop rule for the new class. For additional information regarding connection rules and drag-and-drop connections, see [Maintaining Connection Rules in the CSDB](#) on page 147.

### Editing a Class

When you click **Edit Class** from a shortcut menu, or during the addition of a new class as described in [Adding a Class](#) on page 106, the **Editing Class** dialog box opens.

To edit a class

- 1 Right-click the **Departments** Class in the tree view of the CSDB, and select **Edit Class** from the shortcut menu. The **Editing Class** dialog box opens.



- 2 Set the **Class Information** properties at the top of the dialog box.

### Description

The friendly name that describes the class and its purpose. This name appears next to the class icon in the tree view.

### Persistent

This property should be used only by administrators who have a thorough understanding of the HPCA resolution process.

A persistent class is one whose attributes and objects remain in global memory for the duration of the resolution process. The instances created from persistent classes are available to the HPCA agent for storage on its desktop.

If a class is not persistent, it is transient. A transient object exists only while it is being processed during resolution. Instances created from transient classes are not available to the HPCA agent for storage on the desktop.

For more information about persistent and transient objects and how they are handled in the resolution process, see [Appendix F, Resolution Process](#).

### Automatic Sequencing

Normally, resolution proceeds from attribute to attribute in the order that appears in the Attribute List. See [Appendix F, Resolution Process](#) for a discussion of resolution.

Select this option to impose a grouping on the order in which attributes of the class are processed during resolution:

- Expressions
- Variables
- Classes (connections)

— Methods

Within Connections, the resolution is done in the order CAIRO:

- C Specific connect messages
- A Always generic
- I Include generic
- R Required connection for packages
- O Object (deprecated)

**Priority**

This field is two characters long and has a value between 00 and 99. During object resolution, the Configuration Server puts this value in the ZOPJPRI variable. If there is a blank or zero value in this field, the Configuration Server supplies the default value specified for that particular class. The default values for the classes are:

PATH	5
REGISTRY	60
DESKTOP	70
FILE	50
METACLAS	10
ZSERVICE	50
MACALIAS	70
All others	50

**Type**






This field classifies classes according to their purpose and use. HPCA uses this classification to affect the resolution process. For example, resolution to populate the Service List on an agent computer does not process classes classified as Component classes.

Select one of the following values from the drop-down list:

- **<none>** – This class is not classified.
  - **Configuration** – This class identifies content to be managed by HPCA on agent computers on an aggregate level. Typically, instances of this class do not have data that can be distributed. They are connected to instances of one or more Component classes. Examples: ZSERVICE, PACKAGE, VGROUP, VERSION, and so forth.
  - **Component** – This class identifies items such as files, registry entries, links, icons. that comprise the content identified by a Configuration class instance. Typically, instances of this class have data that can be distributed. Examples: FILE, REGISTRY, and DESKTOP.
  - **Policy** – This class identifies one, or a group of agent computers. Typically, instances of Policy classes are connected either to an instance of another Policy class, or instances of Configuration classes.
- 3 To modify the definition of an attribute, click its name in the Attribute List to select it. The name, length, and description of the selected attribute appear in the **Attribute Information** text boxes. The **Type** field indicates the type of the selected attribute.

- 4 Type your changes into the **Attribute Information** fields, and click the **Type** option to set the attribute's type. Class attributes can be one of four types as described in the following table.

**Table 33 Class Attribute types and their functions**

Attribute Type	Usage
Expression 	Contains a single line REXX command that is executed during resolution. If the expression evaluates to true, in an attribute named ZSTOP, resolution of the current instance terminates.
Variable 	A piece of named storage containing a variable value. The variable's value forms a part of the agent's resolved desired state, and can influence the resolution process through messaging or symbolic substitution.
Connection (available)  Connection (set)  Note: The letter in the icon denotes the connection type: <ul style="list-style-type: none"> <li>• A – Always</li> <li>• C – Class</li> <li>• I – Includes</li> <li>• R – Requires</li> </ul>	Class connections determine the path of resolution of an agent's desired state during the agent connect process. Available connections are attributes into which a connection to another class can be set. Set connections are attributes containing a specification for a connection to another class. A class connection is, in effect, a branch in the resolution process. For more information, see <a href="#">Appendix F, Resolution Process</a> . <ul style="list-style-type: none"> <li>• An Always connection is always resolved, no matter what the name of its attribute.</li> <li>• A Class connection is resolved if its attribute's name is <code>_ALWAYS_</code>, or if the name of its attribute matches the current value of the system message.</li> <li>• An Includes connection is always resolved, no matter what the name of its attribute.</li> <li>• A Requires connection blocks resolution of instances in the required instance and its children whose instance names are identical to instance names in the requiring instance and its children.</li> </ul> Requires and Includes connection types are useful, among other things, for expressing inter-package relationships, connecting instances of the PACKAGE Class. When one package Requires another, components of the required package are superseded by the same component in the requiring package. When one package Includes another, both are deployed as a single entity.
Method 	Methods are programs executed as part of the resolution process. The method attribute identifies the program to be executed.

As you make changes, they are immediately reflected in the Attribute List.

- 5 The **Properties** options are either enabled or disabled depending upon the attribute type.

#### Agent Properties

- ▶ All HPCA agent properties, except for Protect and Execute, are reserved for future enhancements, and you should leave them set to their default values.
- Select the **Agent Protect** property to indicate that the value of an attribute stored in an object on the agent computer will be encrypted.
- Select the **Agent Execute** property, which applies only to method attributes, to indicate that the method to be executed will be executed on the agent computer.

#### Configuration Server Properties

The following section summarizes the significance of the Configuration Server properties.

- **Global**  
When selected for a variable in a transient class, this indicates that during resolution the variable can migrate--flow--from the child object to a parent object, before the transient object being resolved.
- **Default**  
Used internally by HPCA and is not available to Administrators. It prevents default values in transient-class objects from being incorporated into parent, persistent-class objects.
- **Substitute**  
Indicates that symbolic substitution will occur for symbols--references to other variables identified by an initial ampersand--in the value of the variable. Clearing this option treats the value of the variable as literal text, preventing symbolic substitution.  
  
The **Substitute** property determines whether symbolic substitution occurs when a variable is created as a result of a Configuration Server GET operation, such as occurs when a REXX program calls the EDMGET function. If a variable in the object retrieved by EDMGET contains a symbol, and the Substitute check box was selected for that variable when the object was created, substitution occurs as the variable is created in storage.  
  
For example, the expression &(ZMASTER.ZUSERID) will evaluate to WILLIAM after symbolic substitution, if the value of the ZUSERID attribute of the ZMASTER object is WILLIAM at the time symbolic substitution occurs.
- **Protect**  
Indicates that the value of the attribute is to be encrypted during resolution. The attribute value exists in encrypted form in memory during resolution, but remains as plain text in the CSDB.
- **Absolute**  
When selected for a variable in a persistent class, prevents identically named variables in child objects (instantiated from a transient class) from overlaying the values for those variables in the parent object.
- **Execute**  
Indicates that the value of the attribute identifies a method to be executed by the Configuration Server.
- **Resolve**  
Indicates that symbolic substitution will occur for symbols--references to other variables identified by an initial ampersand--in the value of the variable. Clearing this property's check box causes the value of the variable to be treated as literal text, preventing symbolic substitution.



The Resolve property determines whether symbolic substitution occurs when a variable is PUT into an object, such as occurs when a class instance is retrieved from the CSDB and instantiated as an object in storage.

- **Counter**

Indicates that the variable contains an integer that the Configuration Server will accumulate. The accumulated total will be stored in a variable with the same name in all parent persistent objects.

For example, this property can be used for calculating the total uncompressed size of all resources distributed for a service, and storing the result in the ZSERVICE object. Select this check box for the ZRSCSIZE variable in the FILE Class, and a ZRSCSIZE variable will be added to the ZSERVICE object, containing the sum of the ZRSCSIZE values of all FILE instances in the service. The total size of all services' resources for the user will automatically be stored in a ZRSCSIZE variable in the user's ZMASTER object. The ZRSCSIZE variables in the ZSERVICE and ZMASTER objects are created and maintained automatically by the Configuration Server when the Counter check box is selected for the ZRSCSIZE variable in the FILE Class template.

Any variable containing an integer can be accumulated and stored in parent persistent objects by selecting the Counter check box in the variable's definition in the class template. For example, select this check box on the ZCMPSIZE variable of the FILE Class to calculate the total compressed size of resources distributed for a service.

You can reset the property settings for the selected--selected--attribute to their default values by clicking the default buttons at the bottom of the **Properties** group box.

#### To add an attribute to a class

- 1 To add a new attribute, first determine where in the Attribute List the attribute should be inserted. Unless the **Automatic Sequencing** option is selected, as described above, attributes are processed during resolution in the order in which they appear in the Attribute List.
- 2 Click an attribute next to the insertion location, to select it. Then click **Insert Before** or **Add After**. A blank attribute--a variable attribute by default--is inserted at the indicated location.
- 3 Enter a name, length, and description in the Attribute Information data entry fields, and then select the **Type** option from the drop-down list.

Attribute names can be up to eight characters long. Attribute names can have significance in the resolution process. Values of variables in child objects instantiated from within transient classes can replace the values of identically named variables in parent objects represented within persistent classes. Methods can be conditionally executed or skipped, and class connections can be conditionally followed or ignored based upon the name of the method or class connection attribute. If the attribute's name is **\_ALWAYS\_**, the method will be executed or the class connection will be followed unconditionally. Otherwise, the method will be executed, or a class connection will be followed only if the name of the attribute is identical to the current value of the system message. For more information, see the [Appendix F, Resolution Process](#).

Specify the length of the attribute, in characters. Enter a number greater than or equal to the maximum number of characters for a value of the attribute. For connection and method attributes, a length of 50 is normally adequate. The length needed for a variable attribute depends on the data it is intended to hold.

The description you enter appears in the Attribute Description column of the Editing Instance dialog box. The clearer the description you enter now, the easier it will be for those who edit instances of this class later. For variable attributes, enter a description

that clearly identifies the data to be held in the variable attribute. For class connections, you can enter Connect to, or a description that is more meaningful for your purposes. For methods and expressions, try to indicate the purpose of the method or expression in the description.

- 4 To set the value of an attribute as the display name in the HPCA Administrator CSDB Editor, select the attribute, and then select **Attribute Contains the Instance Alias Name**. This is usually set on the Name--friendly name--attribute. Only one attribute should have this turned on per instance.

#### Optional Attribute Editing Controls

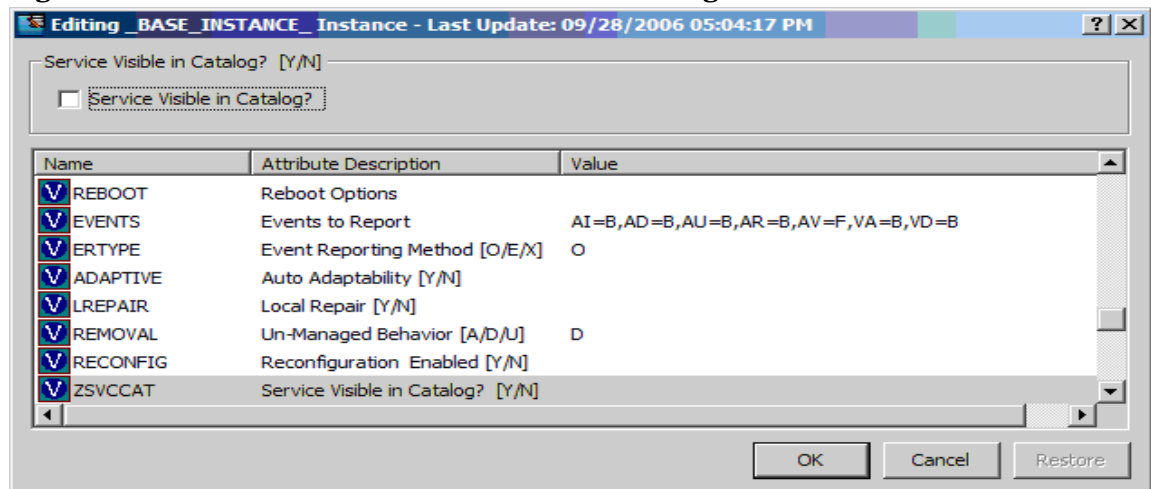
The Attribute Description for variable attributes can be used to determine the control that the HPCA Administrator CSDB Editor displays for entering or editing that attribute in the **Editing Instance** dialog box. Normally, variable attributes are entered or edited as free text in a text box. You can change this to a check box, a set of check boxes, or a drop-down list.

To enable this feature, select the **Use Edit Masks When Editing Instances** option on the **Instance Options** tab of the **Options** dialog box. For details, see [Table 31](#) on page 99.

- **Flag Attribute**

A **Flag Attribute** is a one-character field whose value can be Y or N. To display a check box for entering or editing flag attributes in instances, the Attribute Description for the attribute in the class template must terminate with [Y/N], as shown in the following figure.

**Figure 13 ZSVCCAT variable contains [Y/N] for flag attribute**



The ZSVCCAT attribute is one character in length, and its **Attribute Description**, **Service Visible in Catalog? [Y/N]**, ends with [Y/N]. Thus, to enter or edit this variable, the HPCA Administrator CSDB Editor interface contains a check box.

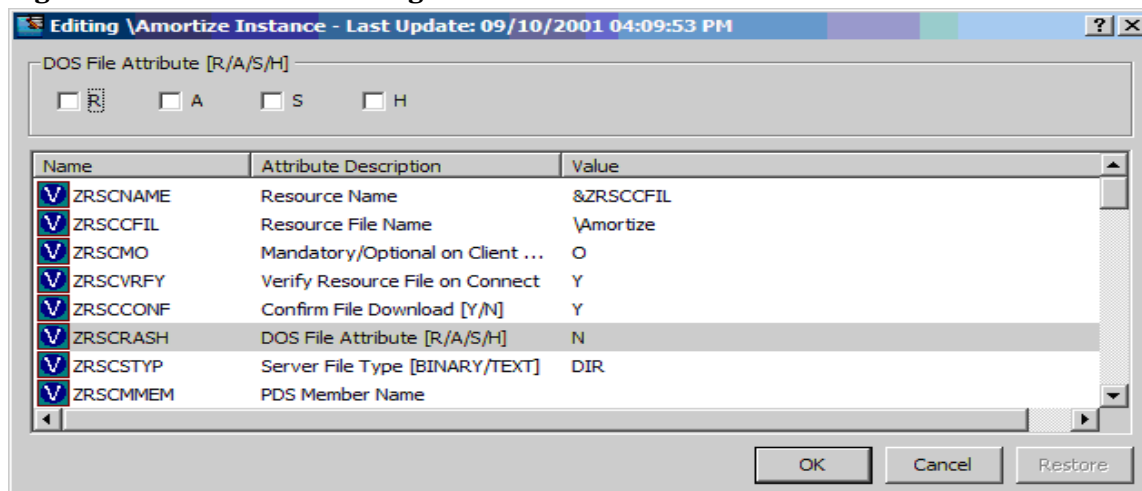
- **Flag Set Attribute**

A **Flag Set Attribute** is a two- or more character field that holds a value composed of zero or more single-character flags. If a flag is on, the character value that is associated with the flag appears in the flag set string. If a flag is off, the character value that is associated with the flag does not appear in the flag set string. An empty flag set string indicates that no flags are on.

For example, the DOS File Attribute flag set for a particular file is contained in the ZRSCRASH attribute of the FILE Class. You use this four-character attribute to indicate which of the DOS File Attributes such as, **R**=Read-only, **A**=Archive, **S**=System, **H**=Hidden

should be turned on for the file associated with the FILE instance when that file is deployed to a user desktop. When editing this attribute in an instance, as shown in the following figure.

**Figure 14 An attribute ending with a set of one-character choices**



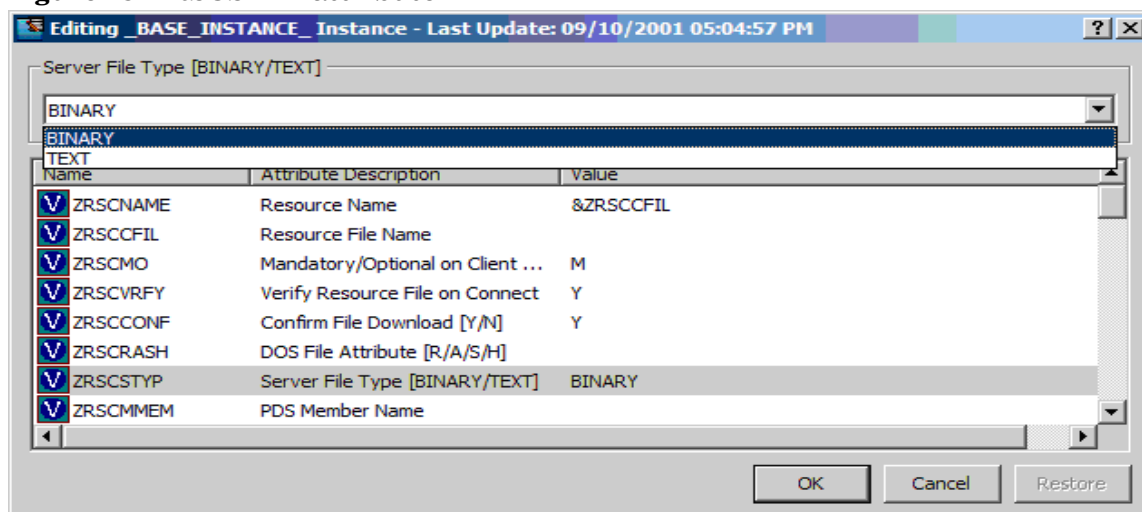
If the Attribute Description ends with one-character choices separated by slashes, and the number of choices equals the length of the attribute, for example, the ZRSCRASH attribute above, the HPCA Administrator CSDB Editor treats the attribute as a flag set. It displays a check box for each potential value in the flag set in the **Editing Instance** dialog box. If a check box is selected, its associated value is inserted in the attribute.

- **Drop-Down List**

The HPCA Administrator CSDB Editor displays a drop-down list for entering or editing attributes whose Attribute Description in the class template terminates with a series of choices separated by slashes and enclosed in square brackets.

For example, the following figure shows that the ZRSCSTYP attribute of the FILE Class has two choices in the Attribute Description. An attribute description that terminates with a series of choices separated by slashes and enclosed in brackets will have a drop-down list for editing attributes.

**Figure 15 ZRSCSTYP attribute**



- 1 As you make changes to a class, you might change your mind and wish to start over. After a change has been made during class editing, the **Restore** button is enabled. Click **Restore** to discard changes you have made to the class since the **Editing Class** dialog box opened.

The **Confirm Restore** message appears.

- Click **Yes** to discard changes and restart editing the class.
  - Click **No** to dismiss the confirmation without discarding your changes.
- 2 When you are finished editing the class, click **OK** to save your changes and exit the **Editing Class** dialog box.
    - If there are blank attribute names or descriptions in the class, or if an attribute's length is zero, an alert message pops-up.
    - If there are no blank attribute names or descriptions in the class, and no attribute's length is zero, the **Class Edit Confirmation** message opens. It warns you to back up your database before proceeding.
  - 3 Click **Yes** to update all existing instances of the class.  
Click **No** to discard your changes to the class, and avoid updating the instances.  
Click **Cancel** to return to the **Editing Class** dialog box.

## Deleting a Class

### To delete a class and all of its instances

- 1 Right-click on the class in the HPCA Administrator CSDB Editor tree view.
- 2 Select **Delete Class** from the shortcut menu that opens. A **Confirm Delete** dialog box opens.
- 3 Click **Yes** to delete the class and all of its instances or Click **No** to close the message without deleting anything.

## Working with Instances

Much of the work of administrators consists of adding, editing, and deleting instances of various classes, and setting or removing connections between them.

### Naming Instances

Use these guidelines when naming instances in the CSDB:

- Use characters that can be displayed and printed.
- Do not include a period ( . ). Periods are reserved characters used to delimit the File, Domain, Class, and Instance names (F.D.C.I) of a fully-qualified instance in the CSDB.
- Do not include special characters that have a specific meaning to the file system or command shell of any operating system, such as these:  
  \ | / : ; < > \* ? ` " ' , ( ) &
- Do not include sequential underscores. This reserved sequence indicates a Group Resource in the CSDB.
- Do not include embedded spaces or control characters, such as blanks, CR (Carriage Return), LR (Line Return), or tabs.

### Friendly Instance Names

Friendly instance names do not have the same restrictions as instance names. Use characters that can be displayed and printed. Spaces and other special characters are allowed. To avoid confusion, it is recommended that you do not use periods in friendly names.

## Adding an Instance

You can add a new instance from scratch or copy an existing instance. The method you select depends upon whether an instance exists whose attribute values are substantially similar to the instance you want to add. If so, copy the existing instance; otherwise, add a new instance from scratch.

## Copying an Instance

Copying an instance creates a new instance with the same attribute values as the copied instance.

### To copy an existing instance

- 1 Select **Copy Instance** from a shortcut menu. A **Copy Instance** dialog box opens.
- 2 Enter a display name--a friendly name--and an instance name for the new instance, and click **OK**.

The instance will be created and will appear in both the tree view and in the list view of the HPCA Administrator CSDB Editor window.

The friendly name appears in the tree view, and the instance--internal--name appears in the title bar of the list view of the HPCA Administrator CSDB Editor window.

## Adding an Instance

Creating a new instance results in an instance with attribute values set as in the `_BASE_INSTANCE_` of the class.

### To add a new instance

- 1 Select **New Instance** from a shortcut menu. A **Create Instance** dialog box opens.
- 2 Type a display name--a friendly name--and an instance name, and click **OK**.

The instance will be created and will appear in both the tree view and in the list view of the HPCA Administrator CSDB Editor window.

The friendly name appears in the tree view, and the instance--internal--name appears in the title bar of the list view of the HPCA Administrator CSDB Editor window.

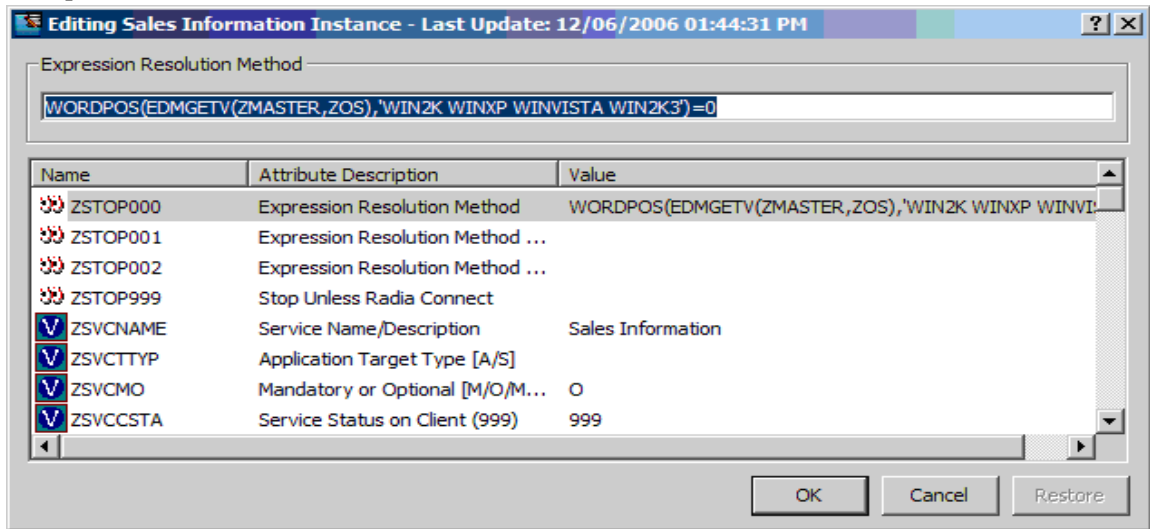
You can now edit the attribute value of the new instance.

## Editing an Instance

This section describes how to edit a single instance.

To edit an instance

- 1 Select **Edit Instance** from a shortcut menu, or double-click an attribute's name in the list view of the HPCA Administrator CSDB Editor window. The **Editing Instance** dialog box opens.



The dialog box lists the attributes in the instance, and their current values. The selected attribute is open for editing in the data entry field at the top of the dialog box.

- 2 Type the value into the text box at the top of the dialog box.

For information about how the HPCA Administrator CSDB Editor determines which edit control to use for a particular attribute, see [Optional Attribute Editing Controls](#) on page 114.

- 3 To select a different attribute, click its name.
- 4 Continue to edit each attribute you want to change.
- 5 Click **OK** to close the dialog box and save your changes.

▶ If you selected the **Prompt: Before Instance Updates** option on the **Instance Options** tab of the **Options** dialog box, see [Figure 9](#) on page 98, an **Instance Edit Confirmation** message box opens.

- 6 If the **Instance Edit Confirmation** message box opens:
  - Click **Yes** to complete the update of the instance.
  - Click **No** to discard your changes to the instance, and return to the HPCA Administrator CSDB Editor main window.
  - Click **Cancel** to return to the **Editing Instance** dialog box.

When you edit connection attributes, notice the warning about editing class connections manually at the bottom of the dialog box. Connection values can be complicated to type, and a single typographical error can produce unexpected and undesirable results during resolution. It is recommended that you use the drag-and-drop method.

### Editing Multiple Instances

The HPCA Administrator CSDB Editor enables you to edit multiple instances in a single operation.

One of the selected instances serves as a template. The template instance's values appear in the **Editing Instance** dialog box. When you change a value in the template instance, the change is applied to all the instances in the selected set. No changes are stored in the CSDB until you exit the dialog box and confirm the change operation.

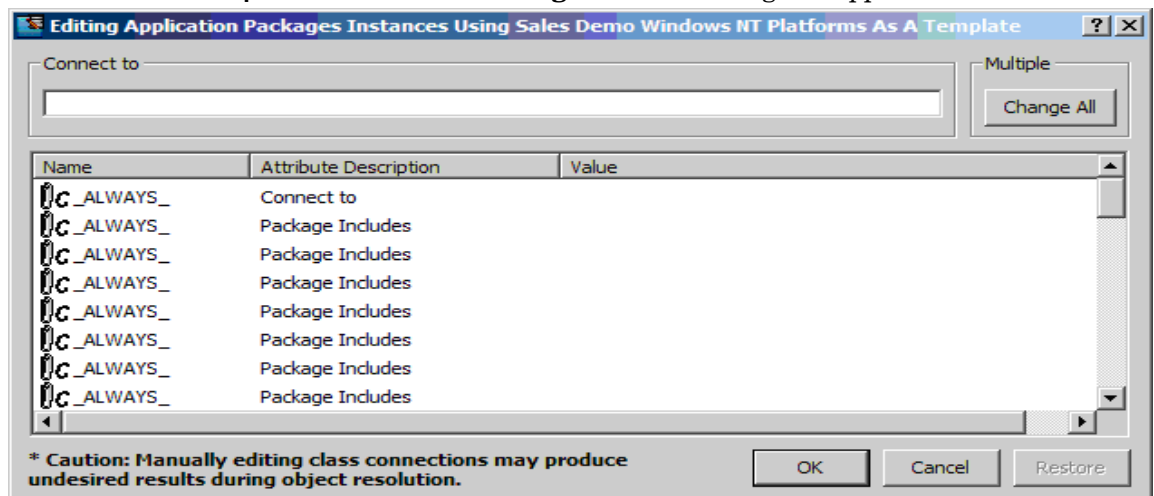
To edit multiple instances at the same time

- 1 Select the instances in the list view of the HPCA Administrator CSDB Editor window.  
Click on an instance to select it.
  - **Ctrl**-click to add an instance to the selected set
  - or
  - **Shift**-click and/or **Ctrl-Shift**-click to add a range of instances to the selected set.

Selected instances are highlighted:

Name	Instance Name	Type
[-] _BASE_INSTANCE_	_BASE_INSTANCE_	SOFTWARE.PACKAGE Instance
[-] _CLASS_BEHAVIORS_FILE_	_CLASS_BEHAVIORS_FILE_	SOFTWARE.PACKAGE Instance
[-] _CLASS_BEHAVIORS_REGISTRY_	_CLASS_BEHAVIORS_REGISTRY_	SOFTWARE.PACKAGE Instance
[-] _CLIENT_BEHAVIORS_	_CLIENT_BEHAVIORS_	SOFTWARE.PACKAGE Instance
[-] Amortize Windows NT Platforms	AMORTIZE2_NT	SOFTWARE.PACKAGE Instance
[-] Drag & View Windows NT Platforms	DRAGVIEW2_NT	SOFTWARE.PACKAGE Instance
[-] GS-Calc Windows NT Platforms	GSCALC2_NT	SOFTWARE.PACKAGE Instance
[-] Radia Behaviors 5/18/99	ADAPT	SOFTWARE.PACKAGE Instance
[-] Radia Behaviors Panels	RADIA_BEHAVIORS_PANELS	SOFTWARE.PACKAGE Instance
[-] Radia Client Behaviors	CLIENT_BEHAVIORS_237	SOFTWARE.PACKAGE Instance
[-] Redbox Organizer Windows NT Platforms	REDBOX2_NT	SOFTWARE.PACKAGE Instance
[-] Sales Demo Windows NT Platforms	SALES2_NT	SOFTWARE.PACKAGE Instance
[-] Sales Update - Microsoft	SALES_MS	SOFTWARE.PACKAGE Instance
[-] StratusPad Windows NT Platforms	STRATUSPAD2_NT	SOFTWARE.PACKAGE Instance
[-] TightVNC	TIGHTVNC	SOFTWARE.PACKAGE Instance
[-] Update and Install Behavior August 10, 1...	CLIENT_BEHAVIOR_081098	SOFTWARE.PACKAGE Instance

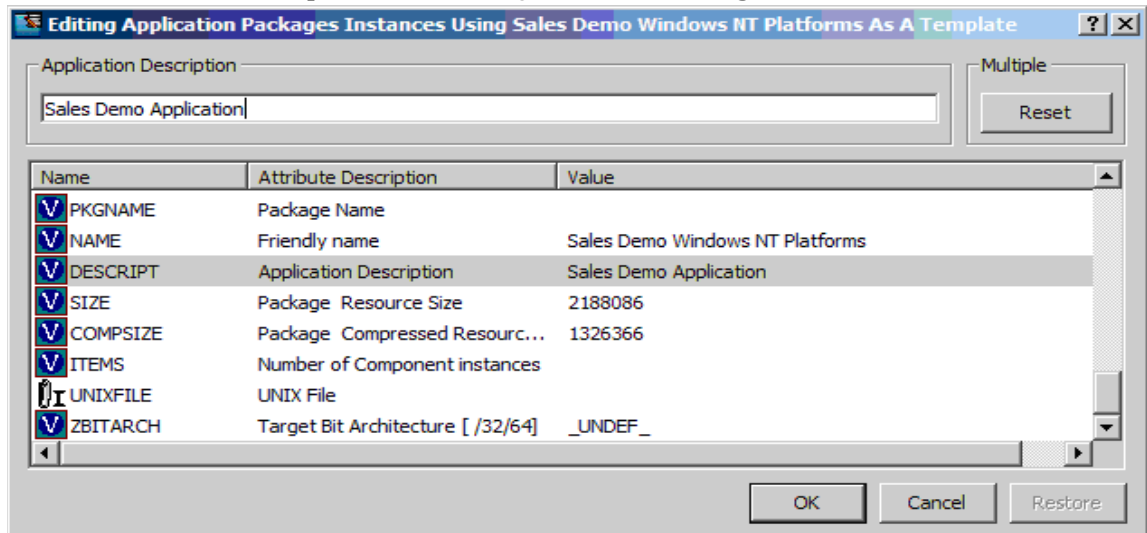
- 2 Right-click on the instance that you want to use as the template for the multiple instance-edit operation. A shortcut menu opens.
- 3 Select **Edit Multiple Instances**. The **Editing Instance** dialog box appears.



The title bar displays how many instances are in the set of selected instances, the selected instances' class friendly name, and the friendly name of the instance serving as the template.

- 4 Scroll to and select a variable whose value you want to copy to all instances in the selected set.
  - If the selected variable in the template instance already has the desired value, click **Change All** to copy that value to the other instances in the selected set.
  - If the selected variable does not have the desired value, edit the value.

In either case, the caption of the **Change All** button changes to **Reset**.



To restore the value of a currently selected variable to its original contents:

- Click **Reset**.
  - As you scroll through the instance variables, you can determine if you made a change to the selected variable by referring to the caption on this button.
    - If the caption is **Change All**, you have made no change to the variable during the current editing session.
    - If the caption is **Reset**, you have made a change to the selected variable.

After making a change to at least one variable, and selecting a different variable, the **Restore** button becomes enabled.

To undo all changes made in the current editing session

- 1 Click **Restore**. The **Confirm Restore** message opens.
- 2 Click **Yes** to discard all changes made in the current editing session.
  - Click **No** to resume the editing session without restoring original values.
  - Changes made during the editing session are not saved in the CSDB until you click **OK** and confirm your changes.
- 3 Click **OK** to save the changes made in the template instance to all of the selected instances.
  - Click **Cancel** to resume the **Editing Instance** dialog box session.
  - You can click **Cancel** in the **Editing Instance** dialog box to exit the dialog box without saving any changes.



## Renaming an Instance

Be careful when renaming instances. Instances are connected using the connection attributes they contain. When you rename an instance, any other instance connected to the renamed instance will have a broken connection. This can produce unexpected and undesirable effects during resolution. Before renaming an instance, make sure you know which other instances are connected to the renamed instance, and edit them appropriately.

### To rename an instance

- 1 In the tree view right-click the instance. A shortcut menu opens.
- 2 Select **Rename Instance**. A **Rename Instance** dialog box opens.
- 3 Enter a new display name--friendly name--and/or a new instance name for the instance, and click **OK**.

## Deleting an Instance

Be careful when deleting instances. Instances are connected using the connection attributes they contain. When you delete an instance, any other instance connected to the deleted instance will have a broken connection. This can produce unexpected and undesirable effects during resolution. Before deleting an instance, make sure you know which other instances are connected to the instance to be deleted, and edit them appropriately.

### To delete an instance

- 1 Right-click on the instance. A shortcut menu opens.
- 2 Select **Delete Instance**. The **Confirm Delete** message opens.
- 3 Click **Yes** to delete the instance  
or  
Click **No** to close the dialog box without deleting the instance.

## Access Rules and Administrators

An Administrator's database access can be defined as any of three levels of access, as detailed in the following table. HPCA Administrator CSDB Editor administrator access rules are stored in the ZACCESS Domain.

**Table 34 Administrator Access-Level Values**

Access Value	Definition
ALLOW	Configuration Server does <i>not</i> check the administrator access rules before granting access to an administrator. This value disables all administrator access-rule checks, even if they are defined in the database.
DENY	Configuration Server checks administrator access rules before granting access to an administrator. An administrator will be unable to perform an action unless there is an access rule defined in the database for that administrator specifically allowing it. This is the recommended setting when configuring administrator security. Notes: If this option is specified, undefined administrators will not have access to any CSDB administrator functions, unless the ADMINID._NULL_INSTANCE_ is modified to enable access to those functions.
IGNORE	Configuration Server checks administrator access rules before granting access to an administrator. An administrator will be able to perform an action unless there is an access rule defined in the database for that administrator specifically prohibiting it.

All Configuration Servers have an `edmpprof` file. This file is divided into multiple sections, and it defines the operational parameters for the Configuration Server, including its behavior regarding administrator access to the CSDB as described in [Table 34](#) on page 122. The administrator access parameters are located in the MGR\_ACCESS section.

To set the administrator access value

- 1 Shut down the Configuration Server.
- 2 Open the `edmpprof` file.
- 3 Specify the ADMIN setting with one of the values in [Table 34](#) on page 122.
- 4 Save and close the `edmpprof` file.
- 5 Restart the Configuration Server.

## Creating Services with the New Application Wizard

After you create a package with the HPCA Administrator Packager or HPCA Administrator Publisher, use the **New Application Wizard** in the HPCA Administrator CSDB Editor to create a service. A **service** is the fundamental unit of content managed by HPCA. Use the HPCA Administrator CSDB Editor to see services listed in the Application (ZSERVICE) class.

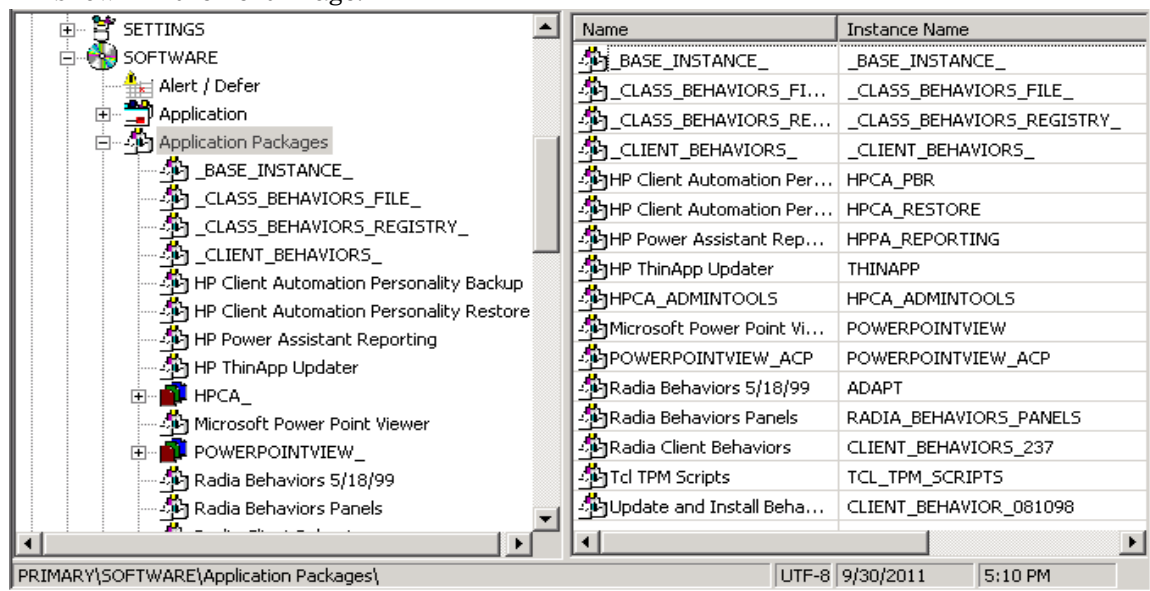
### Task 1: Access the HPCA Administrator CSDB Editor

For instructions on how to Access the HPCA Administrator CSDB Editor, see [Getting Started](#) on page 91.

### Task 2: Navigate to the Package Class

To navigate to the PACKAGE Class of the SOFTWARE Domain

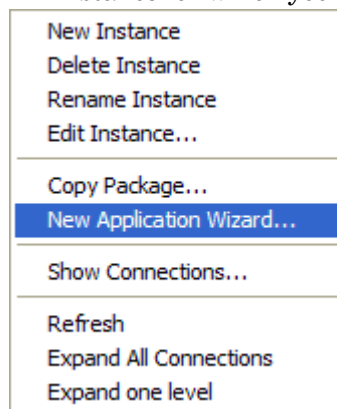
- 1 Double-click **PRIMARY**. The domains of the PRIMARY File appear beneath its icon in the tree view and in the list view.
- 2 Double-click **SOFTWARE**. The classes of the SOFTWARE Domain appear beneath its icon in the tree view and in the list view.
- 3 Double-click **Application Packages (PACKAGE)** to open the PACKAGE Class. The instances of the PACKAGE Class appear beneath its icon in the tree view and in the list view as shown in the next image.



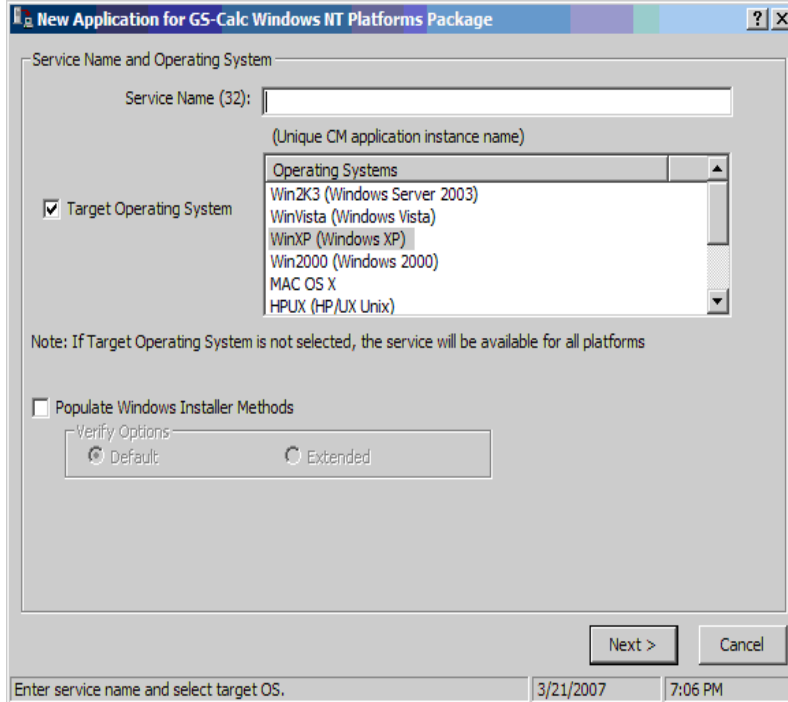
### Task 3: Create a Service

To create a service using the New Application Wizard

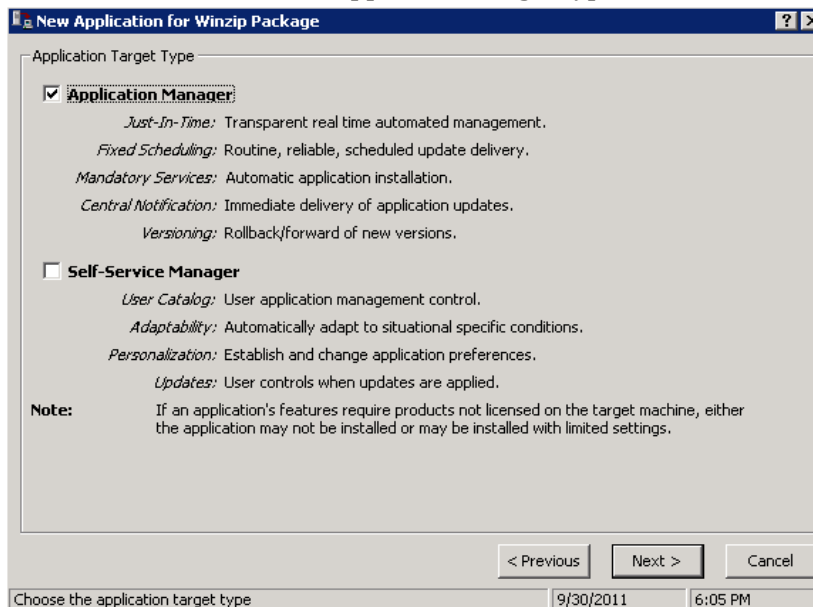
- 1 In the PACKAGE Class of the SOFTWARE Domain, right-click the PACKAGE Class instance for which you want to create a service. A shortcut menu opens.



- 2 Click **New Application Wizard**. The New Application Wizard opens.



- 3 In the **Service Name (32)** text box, type a name, such as **WINZIP0009**, for the Application (ZSERVICE) instance. Follow the instance naming guidelines in [Working with Instances](#) on page 116.
- 4 Select the **Target Operating System** if you want to specify which operating systems are eligible for this service. Then, select the appropriate operating systems.  
  
If you do not select the **Target Operating System** option, the service is available on *all* platforms.
- 5 If you are creating a service for a Windows Installer-enabled application, you must select **Populate Windows Installer Methods**.
- 6 Click **Next** to select the application target type.



- 7 Select **Application Manager**. This designates the service as a mandatory application for your subscribers.

▶ When using the Application Manager, applications *must* be mandatory in order to deploy them to your users.

or

Select **Self-Service Manager** to designate this as an optional application that users may select to install.

- 8 Click **Next** to enter the application properties.

The screenshot shows a dialog box titled "New Application for Winzip Package". It contains a section for "Application Properties" with the following fields:

Service Name	WINZIP0009
Long Description:	WinZip 9.0 Compression Utility
Short Description:	WinZip
Vendor:	WinZip Computing, Inc.
Version:	9.0
Author:	WinZip Computing, Inc.
Web URL:	www.winzip.com

At the bottom of the dialog box, there are three buttons: "< Previous", "Next >", and "Cancel". The status bar at the bottom of the window shows "Enter the application properties", "9/30/2011", and "6:07 PM".

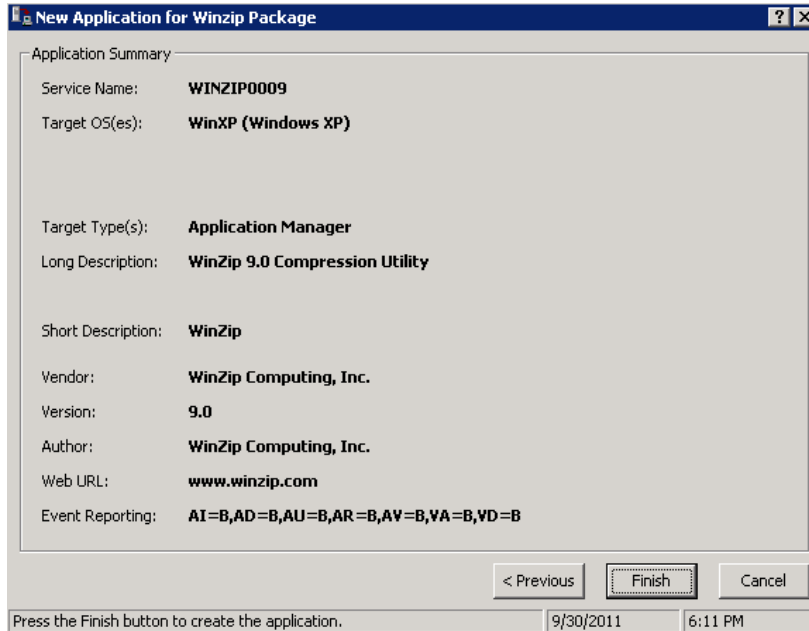
- 9 Type the appropriate information in the text boxes as shown in the **Application Properties** dialog box.
- 10 Click **Next** to select the events that the Application Manager will report on.
- 11 Select the option for each application event that you want to report on. Then, select the appropriate option button to indicate whether to report on the event's success, failure, or both.

or

Click **Use Base** if you want to inherit the values for the ERTYPE and EVENTS attributes from the base instance of the Application (ZSERVICE) instance. These attributes control event reporting.

- 12 If you want to save the current settings as the default settings for the Application Event Panel, click **Save as Default**.

13 Click **Next** to see a summary of your selections.



14 Click **Finish** to create the application instance.

15 Click **OK** to the message that the application has been added. The instance appears in the ZSERVICE Class.

- Use the HPCA Administrator CSDB Editor to modify any of the information that you entered in the New Application Wizard. Locate the corresponding attribute in the ZSERVICE instance and change its value.

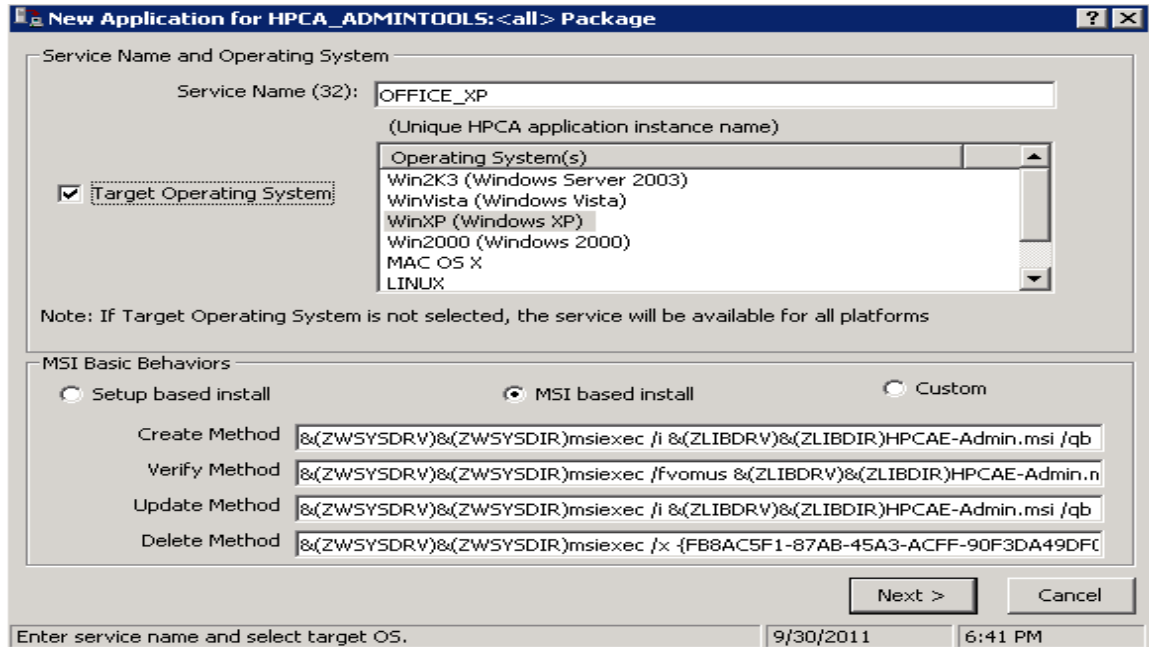
## Defining MSI Basic Behaviors in the New Application Wizard

In contrast to Advanced Package Management, where HPCA provides on-going management of the components of an MSI package, Basic Package Management is used for packages that:

- Do not support administrative installation.
- Are to be installed and uninstalled by HPCA, but whose components are not to be managed by HPCA. That is, the HPCA agent is not to be instrumental in any component verification or repair capability.

The New Application Wizard permits you to define MSI Basic Behavior methods for packages created with the HPCA Administrator Packager for Windows Installer. These packages have a connection to the MSIBASIC Class in the CSDB.

**Figure 16 MSI Basic Behaviors in New Application Wizard**



Packages that cannot be administratively installed will default to Basic Package Management with the HPCA manageability features disabled. Use the MSI Basic Behaviors section of the **New Installation Wizard** dialog box to specify the install type and MSI native mode methods to be used for package management.

To define the MSI Basic Behaviors section of the New Application Wizard

- 1 Select the install type that reflects how the package is installed:

**Setup-based install**

The package installs with a `SETUP.EXE` file that calls `MSIEXEC` to install the package. This will run the native `setup.exe` for the MSI application. If `setup.exe` supports any command line switches, such as `/s` for silent or `ADDLOCAL=ALL` for complete installation, you can add them to the Create Method. Not all MSI applications support the same command-line switches. For `setup.exe`, see the application’s documentation for details.

**MSI-based install**

The package installs with `MSIEXEC`.

**Custom**

The package uses a custom installation method.

- 2 If necessary review and modify the native MSI commands and switches that are to be used for the Create, Verify, Update, and Delete Methods for basic package management.

## Version Group Editor

The **Version Group Editor** is a feature of HPCA Administrator CSDB Editor when the HPCA Application Manager is installed. Use it to create and edit instances of the **Version Group** Class. Features of the Version Group Editor enable you to create, edit, and delete Version instances of the Version Group and control the Version Group’s deployment. For more information, see [Appendix D, Creating Services Using Advanced Capabilities](#).

## Service Optimization

Service Optimization uses patches to maximize the efficiency of distributing periodic updates to the packages in a service. Later the packages contain revisions and additions to files published in earlier packages.

A **patch** is a published package of data--bytes--that is needed to upgrade or fix an application that is already published and installed on an agent computer. Since a patch contains only the differences between the packages, deployment of a patch takes less time and requires less network bandwidth. Patches should be built only for file changes that can be distributed more efficiently as patches than as replacement files.

Here is how Service Optimization works:

- 1 The HPCA Administrator Packager or the HPCA Administrator Publisher calculates the message-digest algorithm (MD5) signature of the file as it is being published. The MD5 algorithm can take input and create a 128-bit fingerprint--message digest--of the input. This information is then stored in compressed form in the Configuration Server. For more information about MD5 signature, visit:

**[www.faqs.org/rfcs/rfc1321.html](http://www.faqs.org/rfcs/rfc1321.html)**

- 2 The PATCH Domain in the CSDB contains the list of available patches in the PATCH Class. The file signatures of a patch are used to identify the associated instance that contains the data for the patch. For more information about the PATCH Domain, see *HP Client Automation Configuration Server Database Reference Guide*.



Prior to deploying patches to users, change the ZOBJPTCH variable from N to Y in the USER Class of the POLICY Domain.

- 3 In the HPCA Administrator CSDB Editor, **Optimize Service** is an option on the Application (ZSERVICE) instance shortcut menu. It enables the administrator to create, display, and delete patches for selected application components.

### Using the Optimize Service Option

In order to create a patch using the Optimize Service option, you first need to publish your packages using the HPCA Administrator Packager or the HPCA Administrator Publisher. For instructions on how to do this, see [HPCA Administrator Packager](#) on page 26 and [HPCA Administrator Publisher](#) on page 45.



Patches can be created for packages that contain a signature only. Initially, only MD5 is supported. Packages being used for patching must be published from the same location, or computer, to qualify for byte-level differencing patching. This will populate the eight-byte CRC found in the suffix of the instance names.

As the HPCA Administrator Packager and the HPCA Administrator Publisher calculate and use the MD5 signature, and this signature is vital to the patching functionality, there is no backward compatibility to previously published packages.

This section provides you with detailed instructions for:

- Creating an Application (ZSERVICE) in the SOFTWARE Domain for packages for which you will create a patch.
- Creating the patches using the Optimize Service wizard.

In this example, you will optimize a series of text files called BLD. These files were packaged and promoted to the CSDB. Each text file is its own package in the SOFTWARE Domain.



After you publish your packages to the CSDB, you need to create a ZSERVICE instance.



In some cases, the difference in size between two packages is so minimal that creating a patch will actually increase the size of the file. In this case, the creation of the patch will not be allowed.



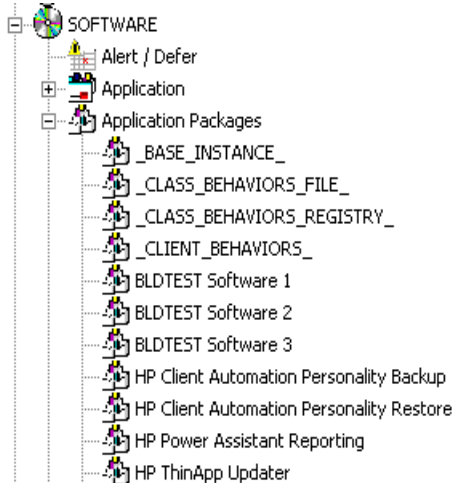
When publishing the files needed for this example, the following naming conventions were used:

- The file `bld1.txt` was originally published as `bld.txt`.
- When the second file was about to be published, it was renamed to `bld.txt`; the original `bld.txt` file was renamed `bld1.txt`.
- When the third file was about to be published, it was renamed `bld.txt`; the second file was renamed `bld2.txt`.

By using the same file name and the same machine during publishing, you are assuring the same CRC needed to correctly create patches.

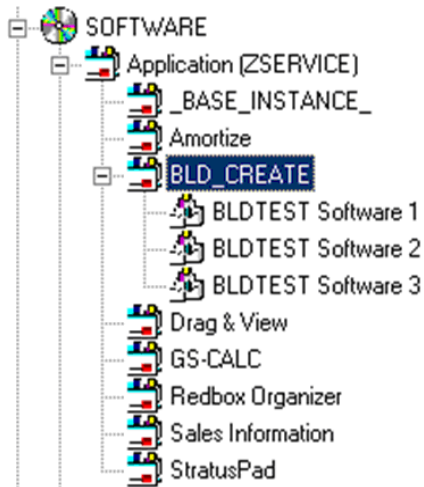
### To configure the Optimize Service feature

- 1 Expand the tree view to the PRIMARY.SOFTWARE.PACKAGE Class and locate the BLDTEST packages.



- 2 Right-click on the **Application (ZSERVICE)** Class. A shortcut menu opens.
- 3 From the shortcut menu, select **New Instance**.
- 4 Create a new instance named `BLD_CREATE`, and click **OK**. The `BLD_CREATE` service is added to the CSDB.

- 5 Drag-and-drop the BLDTEST1, BLDTEST2, and BLDTEST3 packages to the BLD\_CREATE instance in the Application (ZSERVICE) Class.

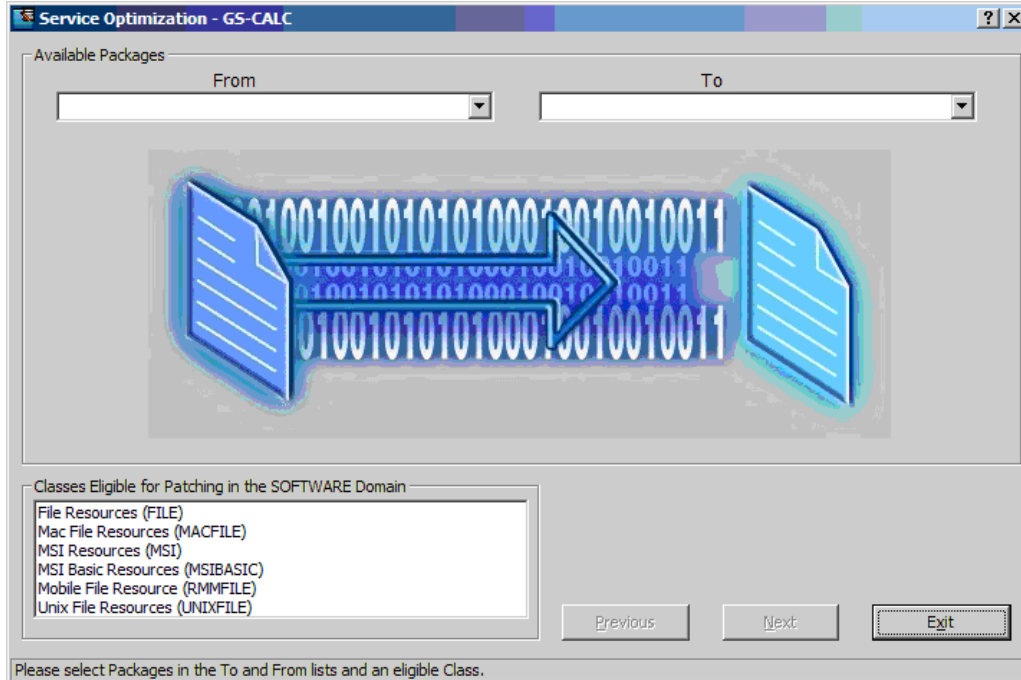


After you create the Application in the ZSERVICE Class that contains the Application Packages from the PACKAGE Class, you can create your patches.

Just as you create a plan or policy for users, you might want to develop a plan for creating, editing, and deleting patches. Some important things to remember when creating patches:

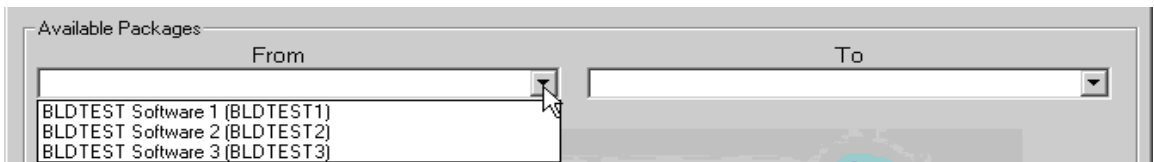
- It is important to devise a means by which to document the packages that will create your patches. When building different patches in a small database, it is relatively easy to follow the schema of connected paths that create a patch. As your database grows, it is possible for the patch class, and the packages that they represent, to grow unwieldy.
  - Only those packages that contain an MD5 signature are eligible for patching.
  - Patching is different from *versioning*. If a patch fails to deploy properly, there is no previous version option.
- 6 Right-click the Application (ZSERVICE) Class **BLD\_CREATE**. A shortcut menu opens.

7 Select **Optimize Service**. The **Service Optimization** dialog box.



8 Click **Available Packages From** drop-down arrow. This lists the available packages for the service you are trying to optimize. When you click the **From** drop-down arrow, all of the packages for the Application (ZSERVICE) are displayed. In this example, click the **From** list to show all of the packages in the BLD\_CREATE Application (ZSERVICE).

The packages that are available for the service you selected in step 6 BLD\_CREATE, are listed.



9 From the drop-down list select **BLDTEST Software 1 (BLDTEST1)**. The Available Packages To list is populated with the packages that are available for patching in the BLD\_CREATE service.

10 Click **Available Packages To** drop-down arrow. This lists those packages available for patching in the service you are optimizing.

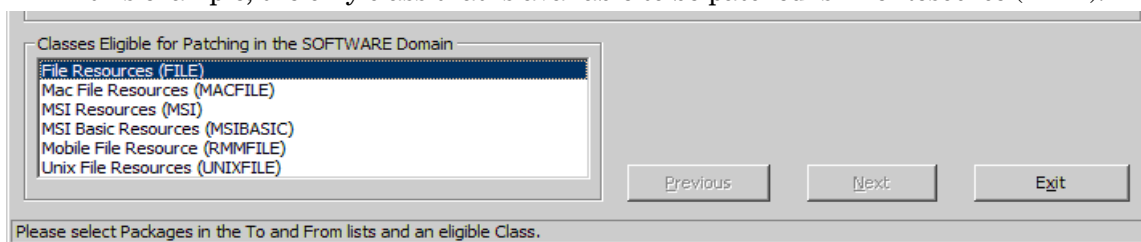
11 From the drop-down list, select **BLDTEST Software 2 (BLDTEST2)**.



12 From **Classes Eligible for Patching in the SOFTWARE Domain** select the appropriate class for patching in the SOFTWARE Domain. Select the class in which the file resources for the package are located.

- Currently, File Resources (FILE), MAC File Resources (MACFILE), MSI Resources (MSI), MSI Basic Resources (MSIBASIC), Mobile File Resources (RMMFILE), and Unix File Resources (UNIXFILE) qualify for patch building.

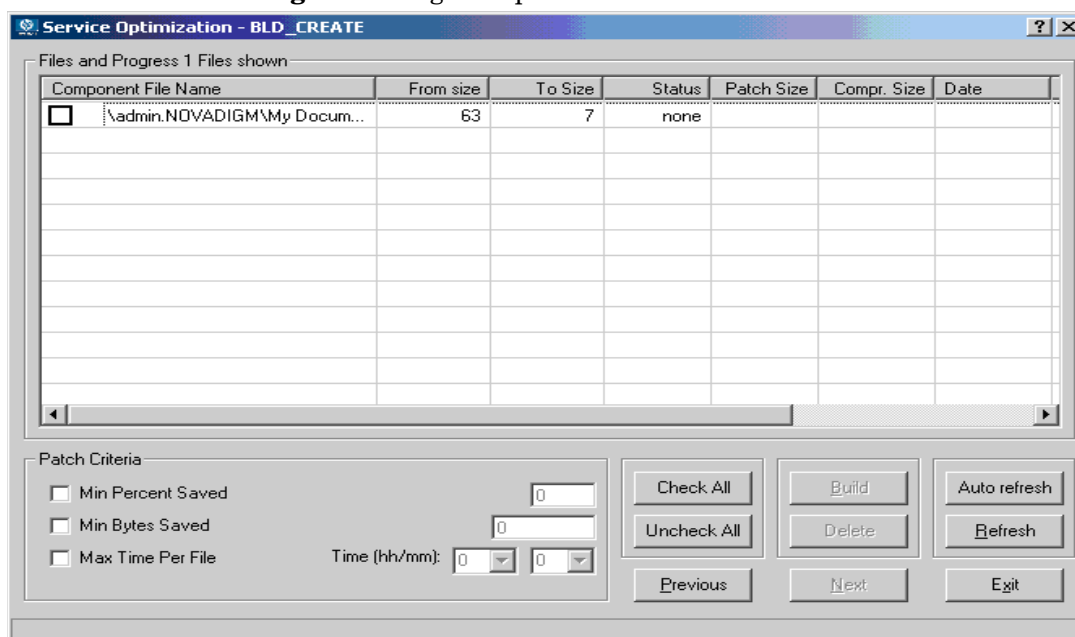
In this example, the only class that is available to be patched is File Resource (FILE).



➤ To determine which classes are available for patching within your package, expand your Application (ZSERVICE) instance to the attribute level. Examine your instances to determine which resources are available for patching.

13 Select **File Resource (FILE)** and click **Next** to continue.

The **Files and Progress** dialog box opens.



This dialog box displays files and progress information. The Service Optimization wizard gathers the instance information based on the selections made in the **Available Packages** dialog box.

The following table shows the options in the Files and Progress section of this dialog box. [Table 36](#) on page 133 shows the options in the Patch Criteria area.

**Table 35 Files and Progress information**

Column	Description
Component File Name	The name of the patch that is being created.
From Size	The original resource-package size.
To Size	The original target-resource size.
Status	The status of the package. The valid values are none, queued, rejected, active, and built.

**Table 35 Files and Progress information**

<b>Column</b>	<b>Description</b>
Patch Size	The size difference between the original package data (BLD1) and the changed package data (BLD2).
Compressed Size	The compressed size of the package listed in the From Size.
Data	The date on which the package was published.
SizeLimit	This information is pulled from the Patch Criteria, Min Percent Saved field. This field is populated after the Patch has been built or when the patch building process has ended.
% Limit	This information is pulled from the Patch Criteria, Min Bytes Saved field. It is populated after the Patch has been built or when the patch building process is ended.
Time Limit	This information is pulled from the Patch Criteria, Max Time Per File field. This field is populated after the Patch has been built or when the patch building process is ended.

It is possible to set patch-building restrictions, such as percent size, bytes, and time elements by configuring the Patch Criteria options. You can control the creation of patches by setting criteria that will apply to all files whose check boxes are currently marked in the file list.

Suppose that the number of files in the list is large and you do not want to evaluate each file manually to determine if you want to build a patch for it. Click **Check All** to select all the files in the list. Then, use the Patch Criteria options to limit the building of patches to those files likely to produce a benefit.

The following table details the options of the Patch Criteria area. The default for these three options is an empty (unselected) check box.

**Table 36 Patch Criteria information**

<b>File Option</b>	<b>Description</b>
Min Percent Saved	Specify the minimum percent of the To component to save. Otherwise, the patch will not be built.
Min Bytes Saved	Specify the minimum number of bytes that the patch must save. Otherwise, the patch will not be built.
Max Time per File	Specify the maximum processing time for the patch. Use the drop-down list to indicate the maximum time allowable for patch building. The time can be set in minutes, or hours and minutes.

After a component file has been selected, the buttons used for patch building are enabled.

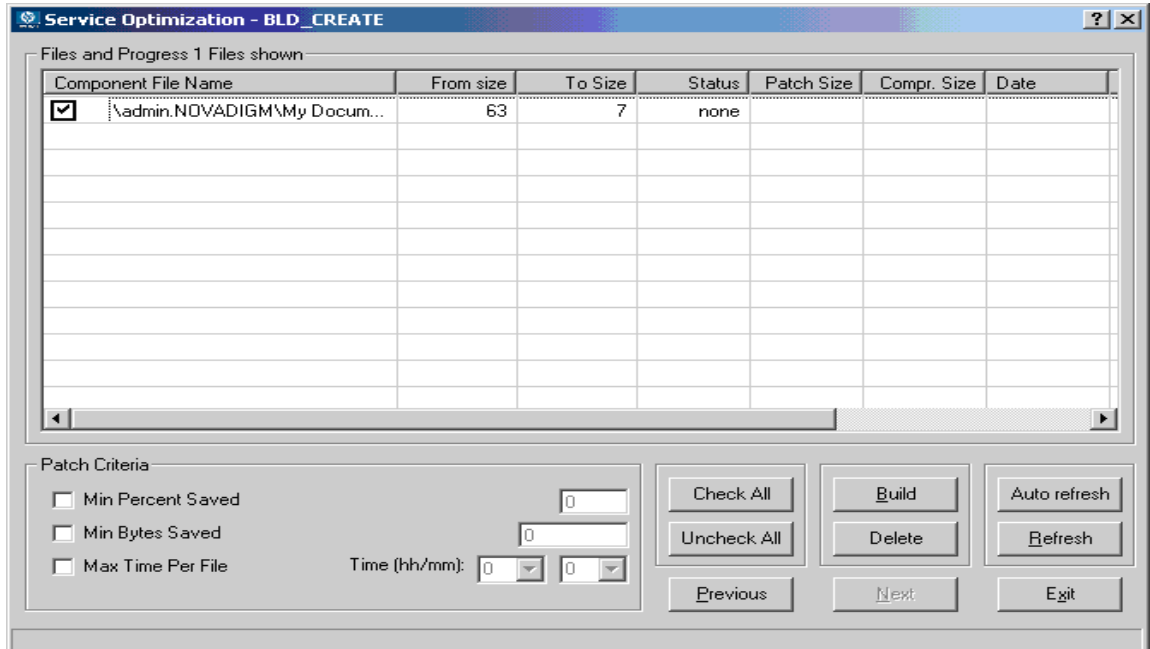
To apply a criterion, select the options provided. The adjacent data entry fields are enabled. Enter the criteria into the associated data fields. The criteria for the patch are applied in combination. In order for a patch to be built for a selected file, it must meet all the criteria you apply.

The following table explains the functions of the Patch Criteria buttons.

**Table 37 Patch Criteria button functions**

Button	Action
Check All	Selects all the files that are listed in the Component File Name column.
Build	Begins the patch build process.
Auto Refresh	Select <b>Auto refresh</b> to open the <b>Auto Refresh Timer</b> dialog box. When you use <b>Auto Refresh</b> , type a refresh interval between 1 and 99 minutes. You can cancel the auto refresh by typing 0.
Uncheck All	De-selects all files that are selected in the Component File Name column.
Delete	Deletes a selected component file.
Refresh	Refreshes build status.
Previous	Returns to the previous screen.
Next	Proceeds to the next screen.
Exit	Exits the Optimization Wizard.

14 Select the check box next to the files to be patched.



15 Click **Build**. The HPCA Administrator CSDB Editor will prompt you to confirm the new patch build.

16 Click **Yes** to continue

or

Click **No** to exit.

When you click **Yes**, any current patches of the pair will be deleted. A patch-creation request for each selected file pair is then sent to the Configuration Server.

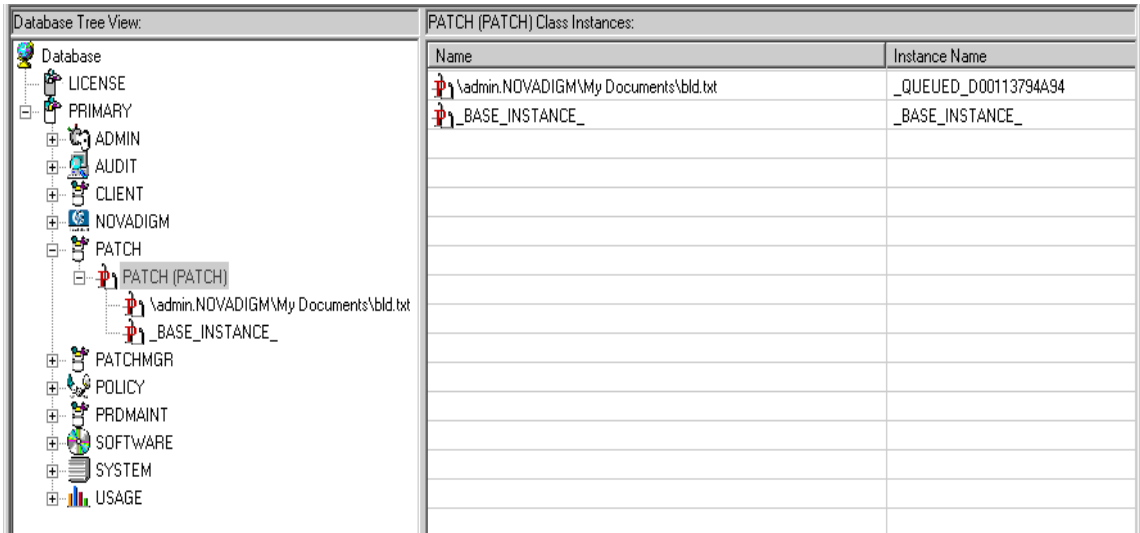
17 To update the Status, click **Refresh**.

18 Click **Exit** to exit the **Service Optimization** wizard

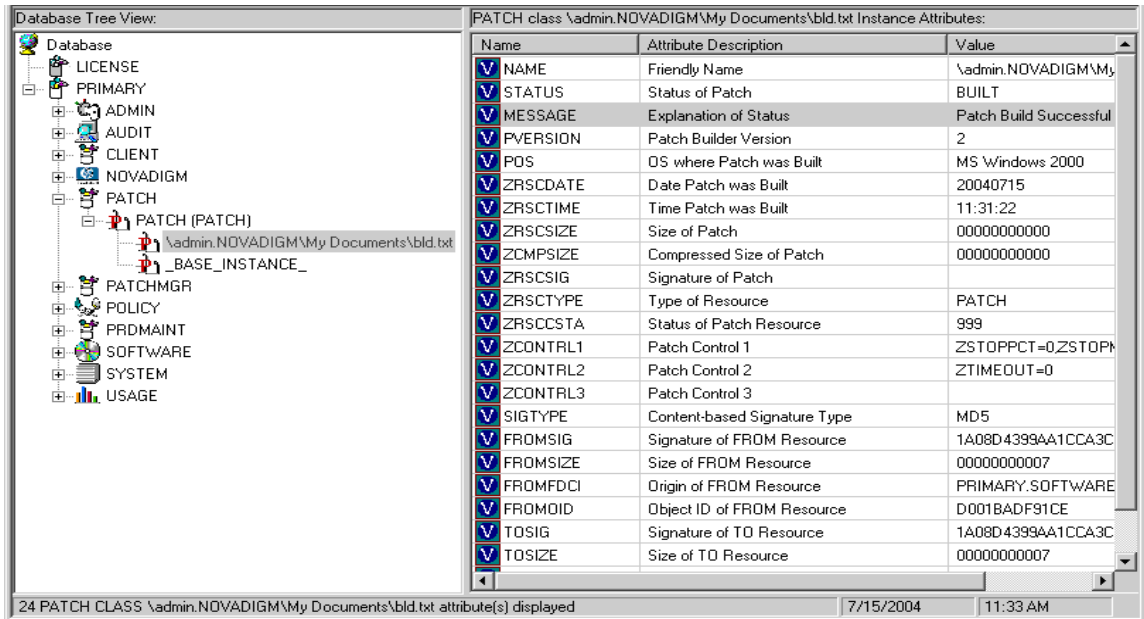
or

Click **Previous** to return to the **Available Packages** dialog box to build more patches.

The patch is located in the PATCH Domain, under the PATCH Class.



Examine PATCH.PATCH and verify that the patch instances are built. Examine rejected patches to determine why they were rejected. To determine the current status of requested patches, see the MESSAGE variable.



## Service Groups

HPCA manages products that require more than one service package to establish full product installation or operation. You can use **Service Groups** when a product requires other service packages or has dependencies on other services. This includes MSI-packaged products where:

- A product can use more than one MSI service package, for example where Microsoft Office requires other language pack services.
- A large product, for example, Microsoft Office might need to be split into smaller sub-services to install only specific parts of the product suite.

Service grouping enables multiple services to be grouped by a higher, or **master** service. This action enables administrators to logically group together similar or related components into one easy to understand collection.

Use the HPCA Administrator CSDB Editor to define and then group services and packages to form the master service.

- ▶ Make sure to target actions, such as notifies or timer updates, to the master service. Any action applied to the master service is applied to all sub-services.

## Component Enhancements

- **HPCA Application Manager**  
The RADSKMAN command contains the logic to process multiple service requests. It performs the request on each of the individual sub-services and reports the final results back to the master service.
- **HPCA Application Self-service Manager**  
Each service in the Service List displays only the master service.

## Prerequisites

Before you configure a master service for a service group, change or confirm the following settings:

- **Configuration Server (versions 4.5 and above):** in the `edmpprof` file, verify that `ALLOW_DUPLICATE_INSTANCES` in the `MGR_OBJECT_RESOLUTION` section is set to No.
- **Configuration Server (versions prior to 4.5):** in the `edmpprof` file, verify that in the `MGR_OBJECT_RESOLUTION` section:
  - `ALLOW_CIRCULAR_REFERENCE` is set to Yes
  - and
  - `ALLOW_DUPLICATE_INSTANCES` is set to No.
- **CSDB**  
To configure a set of services (a grouping in which services depend on one another for installation), add a variable to the `_BASE_INSTANCE_` of the Application (ZSERVICE) Class. This is a variable called `ZSVCGRP`. If you would like to add this variable to the ZSERVICE Class, use the following table to help you set the variable.



For information on editing a class, see [Editing a Class](#) on page 108.

**Table 38 ZSVCGRP variable**

Value	Behavior
Y	Specify <b>Y</b> (Yes) for the Configuration Server to process the service groups as if they are unrelated applications or applications that are not dependent on one another for installation. If this variable is not present, this is the default.
D	Specify <b>D</b> (Dependent) for the Configuration Server to process the services under the service group as though they are dependent on one another for installation. If one sub-service fails, the remaining services will not be installed.
N	Specify <b>N</b> (No) for no service groups.

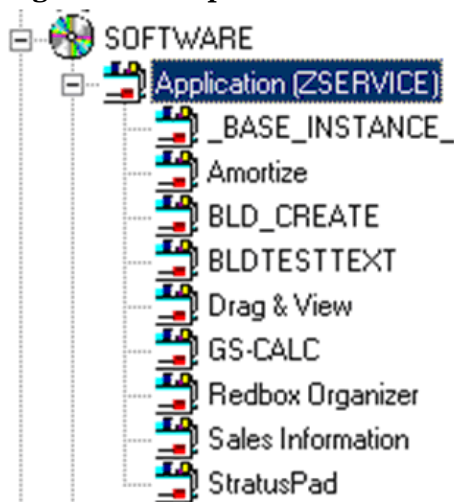
## Creating a Master Service for a Service Group

After you make the changes to the `edmprof` file, you can create a master service instance for a service group.

Use the HPCA Administrator CSDB Editor to create a new Application (ZSERVICE) instance for the master service. Next, for each service that is to be a member of the group, make a connection between the member service and the master service. You can add service members to the master service at any time.

For example, we will create a master service instance called Sales Services. This master service will contain the Amortize and GS-Calc services.

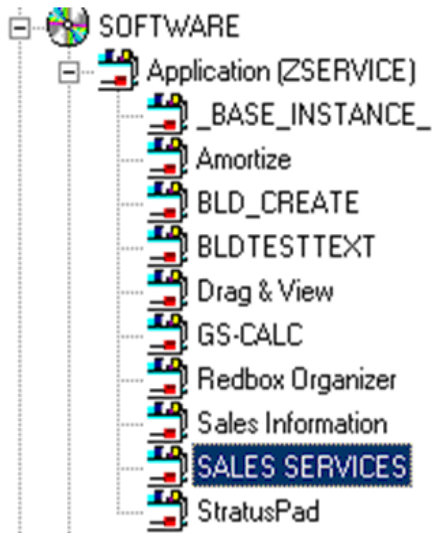
**Figure 17 Sample services in the ZSERVICE Class**



### To create a Master Service for a Service Group

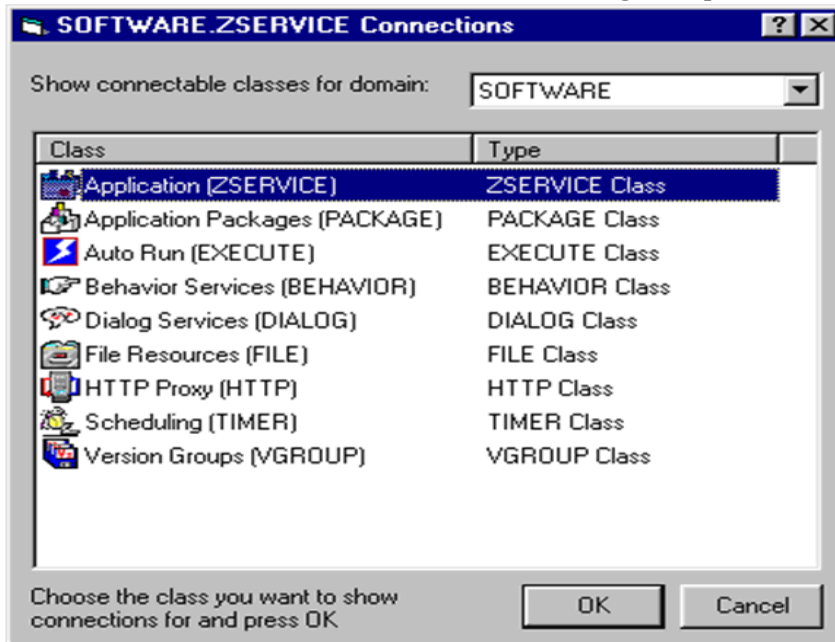
- 1 Open the HPCA Administrator CSDB Editor and navigate to the PRIMARY.SOFTWARE.ZSERVICE Class.
- 2 Expand the class to display the Application (ZSERVICE) instances.
- 3 Right-click **Application (ZSERVICE)**. A shortcut menu opens.
- 4 Select **New Instance** from the shortcut menu. The **Create Instance** dialog box opens.

- 5 Enter the name of the new ZSERVICE instance (SALES SERVICES).
- 6 Click **OK** to create the instance. The new instance appears in the Application (ZSERVICE) Class.

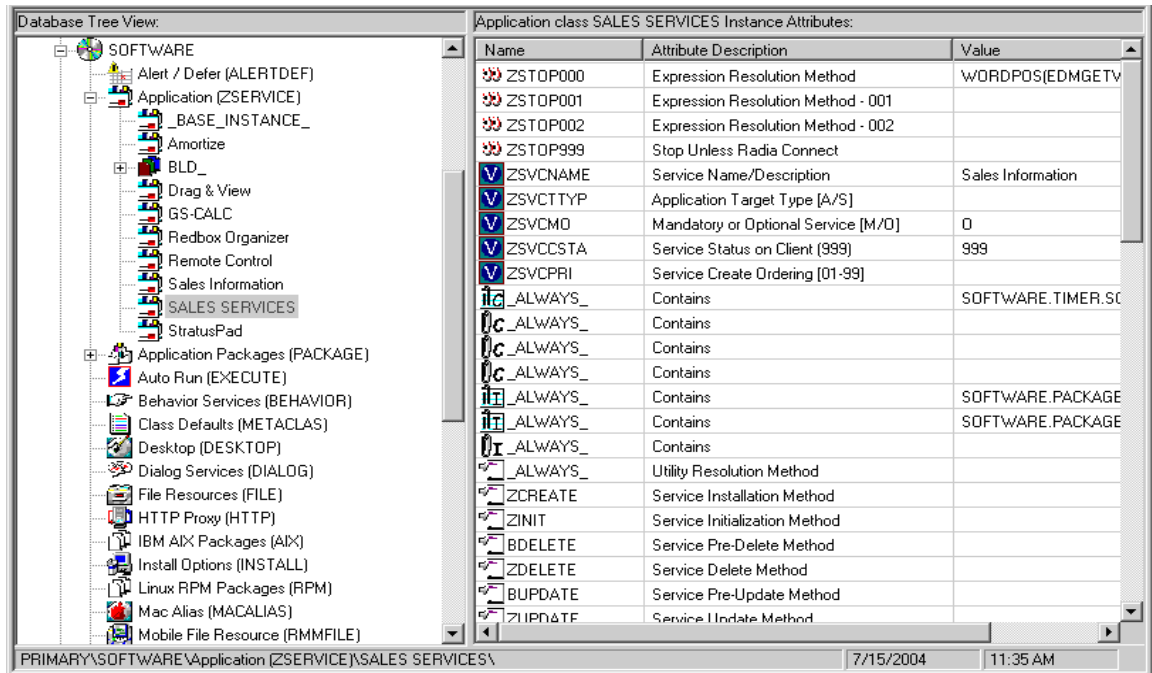


Now you can add services to the master service.

- 7 Right-click **SALES SERVICES**, and select **Show Connections** from the shortcut menu. The **SOFTWARE.ZSERVICE Connections** dialog box opens.

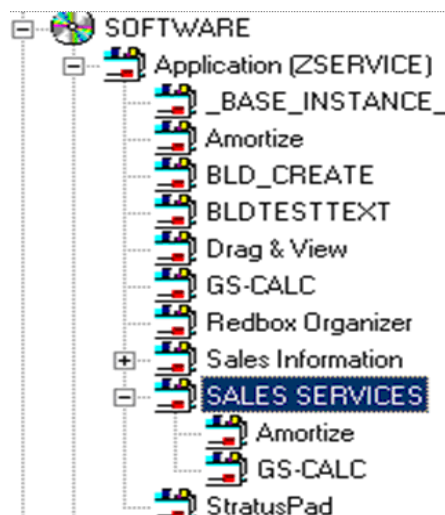


- 8 Select the **Application (ZSERVICE)** Class from the **SOFTWARE.ZSERVICE connections** dialog box, and click **OK**. The ZSERVICE Class instances are displayed on the list view of the screen.



- 9 Select the services from the right, and drag them to the ZSERVICE.SALES SERVICES instance.
- 10 Drop them onto the service when the cursor changes into a paper clip.
- 11 Confirm the connection.
- 12 Follow the steps that are outlined above to add services, if needed. The master service instance for this service group is now complete.

▶ The services grouped into a master service will install from top-down according to the order in which they are connected to the master service instance in the database. Member services in a master service group do not honor the settings in ZSVCPRI.



You can now deploy this master service to the users.

## Filtering—Viewing Portions of the CSDB

As your desired state grows, you will find it convenient to restrict the HPCA Administrator CSDB Editor to view only a portion of the CSDB. This saves effort in scrolling through the window to locate the domain, class, or instance you need to inspect or edit. The HPCA Administrator CSDB Editor has the ability to set filters to provide user-defined restricted views of the CSDB. This is particularly valuable for classes that can have thousands of instances such as the **USER** Class or the **FILE** Class.

The filter specification determines which domains, classes, or instances to display in the HPCA Administrator CSDB Editor. Filtering is based upon matching the name of the domain, class, or instance with the filter specification you provide.

Filter specifications can contain one or more wildcards, represented by an asterisk, and/or one or more placeholder characters represented by a question mark. An asterisk matches any number of characters in the name of the component being filtered. Each question mark represents any one character in the name of the component being filtered.

Here are a few examples of valid filter expressions, and what they select.

**Table 39** Examples of valid filter expressions

Filter Specification	Selects
*	Wildcard to select all; removes any filter currently in effect.
_*	Names whose first character is an underscore.
*_A*	Names that have a prefix, and any level of the prefix is followed by an <b>A</b> .
*.?LL	Names ending in a period, followed by any one character, followed by <b>LL</b> .
*-??WORD*.HP	Names containing any number of characters preceding a dash, followed by any two characters, followed by <b>WORD</b> , followed by any number of characters up to a period, followed by <b>HP</b> , followed by any one character.

You can apply filters that remain in effect for an entire HPCA Administrator CSDB Editor session--permanent filters--, or filters that apply only to the current HPCA Administrator CSDB Editor window--temporary filters--.

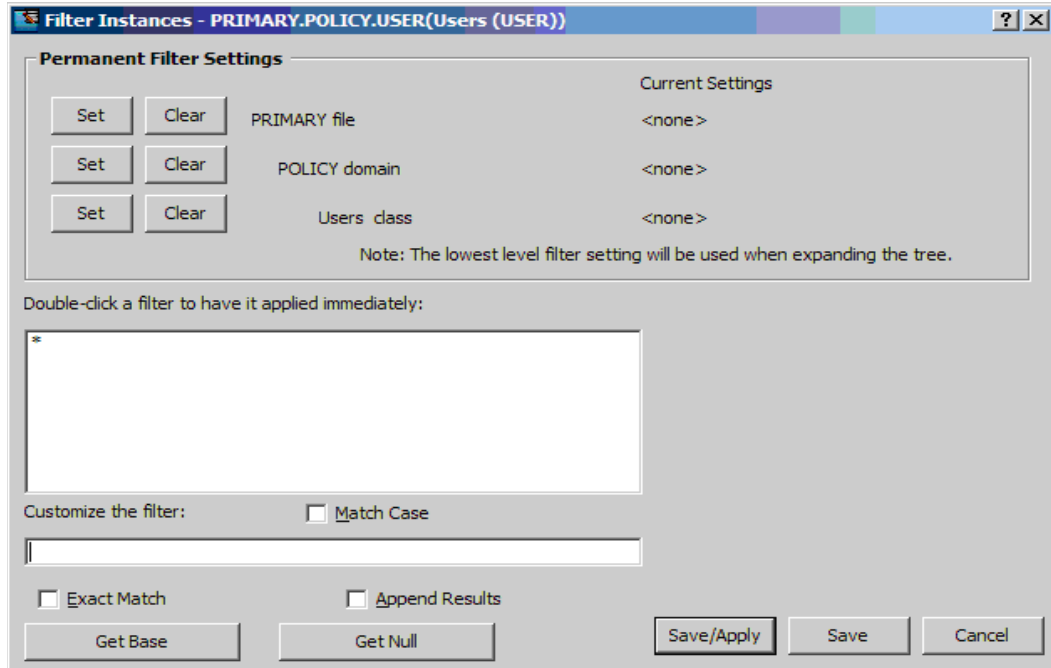
### Permanent Filters

Permanent filters are applied every time you open any HPCA Administrator CSDB Editor window and remain in effect for that entire HPCA Administrator CSDB Editor session. Each class can have its own permanent filter specification.

To set or clear a permanent filter use the **Permanent Filter Settings** group box at the top of the **Filter** dialog box.

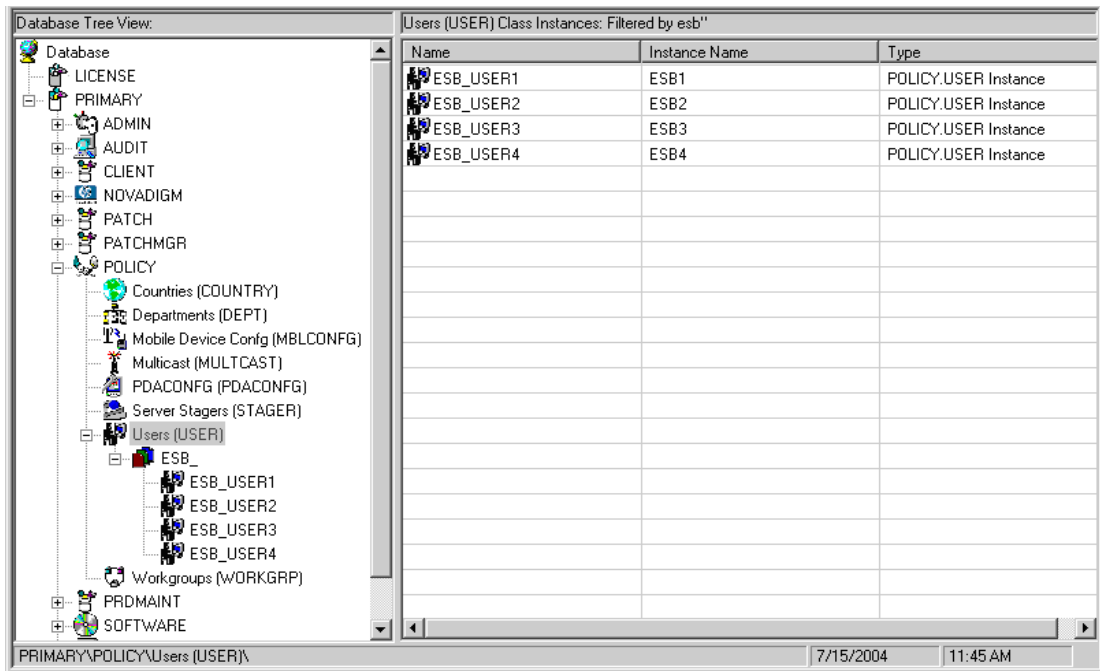
To set a permanent filter to filter instances of the USER Class on the prefix ESB\_

- 1 Expand the POLICY Domain in the tree view.
- 2 Scroll down the tree view until you reach the USER Class.
- 3 Right-click the **USER Class**. A shortcut menu opens.
- 4 Click **Filter Instances** to open the **Filter Instances** dialog box.



- 5 Type **ESB\_\*** in the Customize the filter text box.
- 6 In the **Permanent Filter Settings** group box, click **Set** next to Users class. The filter specification is displayed.

- To apply the filter, click **Save/Apply** at the bottom of the dialog box. The dialog box closes, and the tree display will be updated with the filter applied.



This filter is applied to the USER Class in any additional HPCA Administrator CSDB Editor windows you open during the current HPCA Administrator CSDB Editor session.

#### To remove a permanent filter

- Click the appropriate **Clear** button in the **Filter Instances** dialog box.
- Click **Save/Apply** to remove the filter.

### Temporary Filters

The **Filter Instances** dialog box also enables you to apply temporary filters. Temporary filters remain in effect only as long as the current CSDB Editor window is open. To create a temporary filter, enter a filter specification in the Customize the filter field, and then click **Save/Apply**.

#### To set a temporary filter to filter instances of the USER Class on the prefix ESB\_

- Expand the POLICY Domain in the tree view.
- Scroll down the tree view until you reach the USER Class.
- Right-click the **USER Class**. A shortcut menu opens.
- Select **Filter Instances** to open the **Filter Instances** dialog box.
- Type **ESB\_\*** in the **Customize the filter** text box.
- Click **Save/Apply**.

#### To remove a temporary filter

- Apply **\*** as a filter specification.

This matches any domain, class, or instance name, effectively removing the filter. The **\*** filter specification is frequently found in the *express filter* list.

- 2 Click **Save/Apply** to remove the filter.

## Viewing the Base or Null Instance

The **Filter Instances** dialog box also enables you to restrict your view to only the Base Instance or the Null Instance of the class.

To view the base or null instance

- 1 Expand the POLICY Domain in the tree view.
- 2 Scroll down the tree view until you reach the USER Class.
- 3 Right-click the **USER Class**.
- 4 Select **Filter Instances** from the shortcut menu. The **Filter Instances** dialog box opens.
- 5 Click **Get Base** to view the `_BASE_INSTANCE_` of the USER Class, or click **Get Null** to view the `_NULL_INSTANCE_` of the USER Class.
- 6 Click **Save/Apply**.

## Appending Filter Results

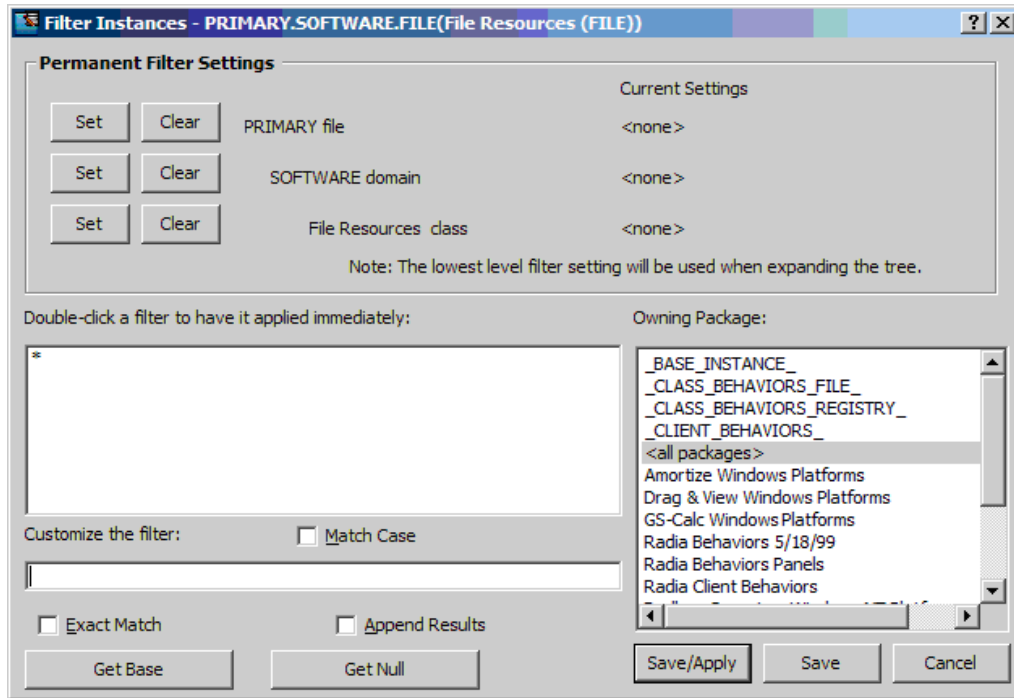
You might want to continue viewing the current filter's result, and add an additional filter. To view both results at the same time, select **Append Results** when you perform the next filter.

## Filtering Component Class Instances

Component class instances such as those of the FILE and DESKTOP Classes can be filtered based on the configuration class instance to which they are connected.

When filtering component classes such as the FILE class of the SOFTWARE Domain, the **Filter Instances** dialog box contains a scrolling list labeled **Owning Package**, as shown in the figure below. The package instances are listed in this scrolling list.

**Figure 18 Filtering component classes**



To filter FILE instances to select only those connected to a particular PACKAGE instance

- Double-click a package listed in the **Owning Package** list.
- or
- Click the package in the **Owning Package** list, and click **Save/Apply**.

For example, select **Amortize Windows Platforms** in the **Owning Package** list, and then click **Save/Apply**. The **Filter Instances** dialog box will close, and the selected instances will appear in the list view of the HPCA Administrator CSDB Editor window.

## Express Filters

The box beneath the label contains a list of potentially useful filter specifications that an administrator with appropriate authority can customize.

These are express filter specifications. As the label indicates, simply double-click the specification of your choice to apply it immediately. The filter is temporary, applying only to the current HPCA Administrator CSDB Editor window.

### Customizing Express Filters

You can specify the lists of express filters that appear in the **Filter Instances** dialog box by storing them in the CSDB, and making any needed connections. The HPCA Administrator CSDB Editor retrieves the list of express filters for a particular **Filter Instances** dialog box from the CSDB as the dialog box opens.

The HPCA Administrator CSDB Editor locates the correct list in the CSDB by starting a resolution process based on the user ID that was entered when the HPCA Administrator CSDB Editor session was started, and the HPCA components, for example, domain, class, or instance are filtered. For more information, see [Appendix F, Resolution Process](#).

The list of express filters for a particular domain is taken from an instance of the ZLIST32 class of the ADMIN Domain in the PRIMARY File. Here's how:



Assume you have logged on as user ID ADMIN. The authority and defaults associated with an administrator's user ID are stored in the ADMIN Domain of the PRIMARY File. The ADMINID Class contains an instance for each administrator's user ID in this case, the instance name is ADMIN.

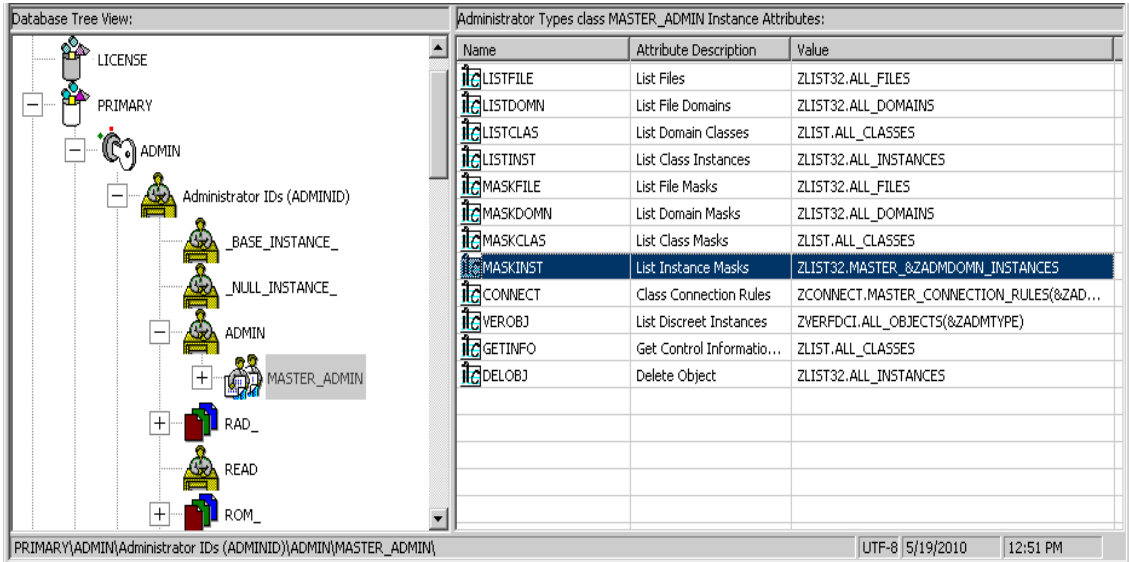
The ADMIN instance contains a connection to an instance of the ZADMIN class, in this case ZADMIN.MASTER\_ADMIN.

**Figure 19 The ADMIN instance connections**

Name	Attribute Description	Value
ADMNAME	Administrator Name	Master Administrator
ADMMDPT1	Department Prefix 1	_NULL_
ADMMDPT2	Department Prefix 2	_NULL_
ADMMDPT3	Department Prefix 3	_NULL_
ADMMDPT4	Department Prefix 4	_NULL_
ADMMDPT5	Department Prefix 5	_NULL_
ADMMPFX1	Application Prefix 1	_NULL_
ADMMPFX2	Application Prefix 2	_NULL_
ADMMPFX3	Application Prefix 3	_NULL_
ADMMPFX4	Application Prefix 4	_NULL_
ADMMPFX5	Application Prefix 5	_NULL_
ADMMPFX6	Application Prefix 6	_NULL_
ADMMPFX7	Application Prefix 7	_NULL_
ADMMPFX8	Application Prefix 8	_NULL_
ADMMPFX9	Application Prefix 9	_NULL_
ADMMPFX10	Application Prefix 10	_NULL_
_ALWAYS_	ZADMIN Connect To	ZADMIN.MASTER_ADMIN(&ZADMFUNC)

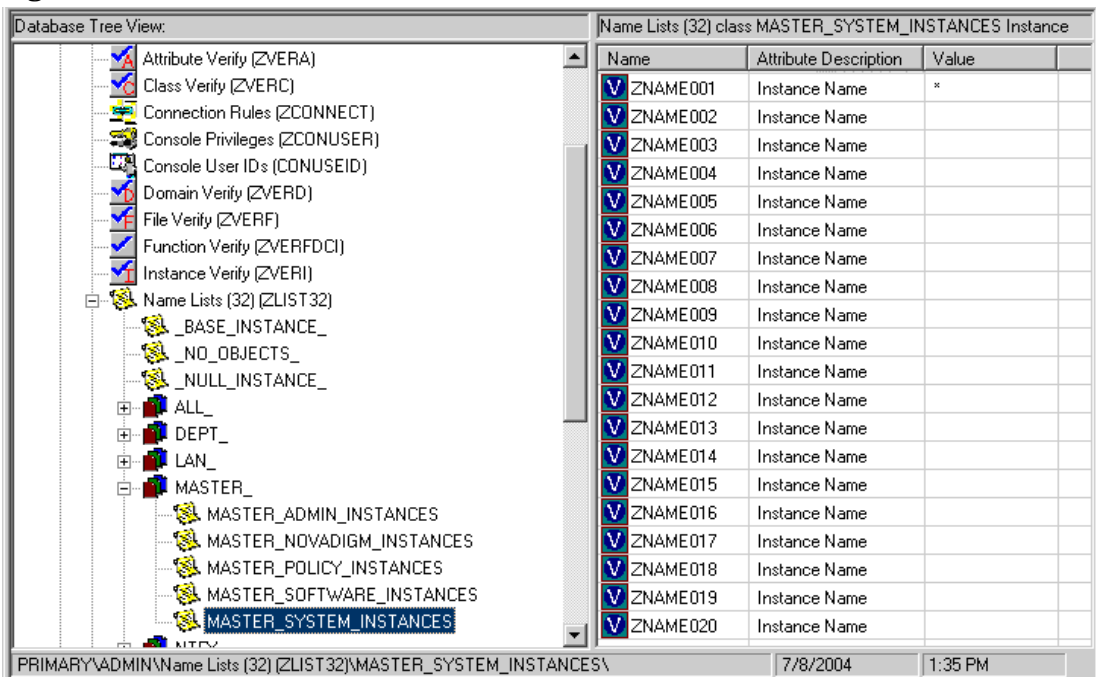
The connection to ZADMIN.MASTER\_ADMIN passes a parameter in the system message (&ZADMFUNC) that indicates which of the connections contained in the ZADMIN.MASTER\_ADMIN instance should be made. Only those connections whose names match the value of the system message (or whose name is \_ALWAYS\_) are actually made during a particular resolution. The HPCA Administrator CSDB Editor sets the parameter's value before initiating the resolution. In this case, the HPCA Administrator CSDB Editor sets the value of the ZADMFUNC variable (and thus, after symbolic substitution, the value of the system message) to MASKINST, because the **Filter Instances** dialog box needs to retrieve a list of instance masks.

**Figure 20 ZADMFUNC variable set to MASKINST**



This causes a connection to an instance of the ZLIST32 class, ZLIST32.MASTER\_ & ZADMDOMN\_INSTANCES, based upon the domain to be filtered (SYSTEM). The domain is dynamically set in the ZADMDOMN variable by the HPCA Administrator CSDB Editor. This is determined by the class the administrator right-clicked to access the **Filter Instances** dialog box. In our example, the connection will be made to ZLIST32.MASTER\_SYSTEM\_INSTANCES after the resolution process performs symbolic substitution, that contains the desired list of default express filter specifications.

**Figure 21 Connection to LIST32.MASTER\_SYSTEM\_INSTANCES**



To change the list of express filters for a domain, edit the appropriate instance of the ZLIST32 class. The changes will affect all administrators whose user IDs connect to the ZLIST32 instance you modify.

To set custom express filters for particular administrators, use the information detailed above to connect their user ID instances in the ADMIN.ADMINID Class to the appropriate ZLIST32 instance containing the desired list of express filters.

For information on how to use the HPCA Administrator CSDB Editor to make these changes, see [Adding an Instance](#) on page 117 and [Editing an Instance](#) on page 117.

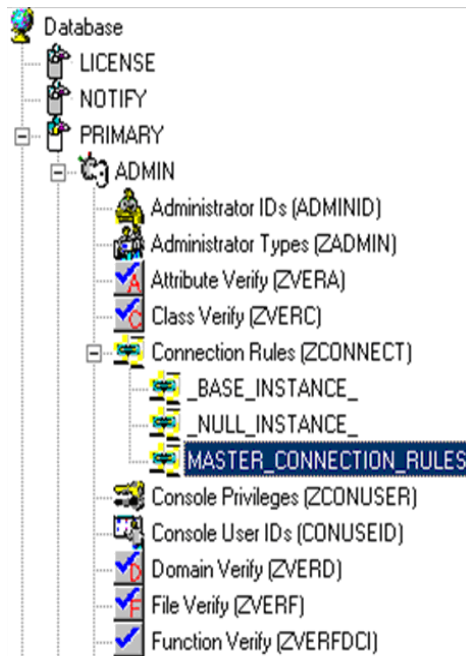
## Maintaining Connection Rules in the CSDB

The HPCA Administrator CSDB Editor provides drag-and-drop connections between instances of classes. These connections, which contain connection rules, are stored in the CSDB.

### Connection Rules Overview

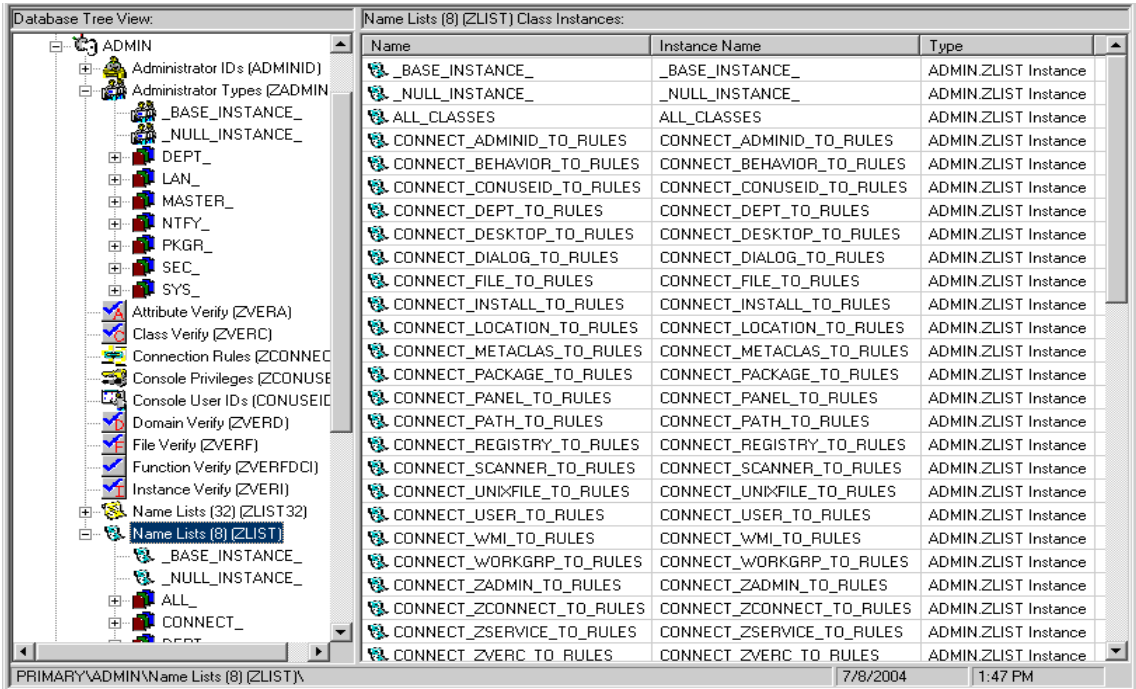
To enable drag-and-drop capabilities for a new class, you need to establish rules for the new class. These connection rules are stored in the PRIMARY File, ADMIN Domain, ZCONNECT Class, MASTER\_CONNECTION\_RULES Instance.

**Figure 22 MASTER\_CONNECTION\_RULES instance**



While the ZCONNECT Class contains the connection rules, the Name List (ZLIST) Class contains all of the rules for all of the classes. In order to create a **connection rule**, you need to create the rule in the ZLIST Class. Then you add the rule to the ZCONNECT Class.

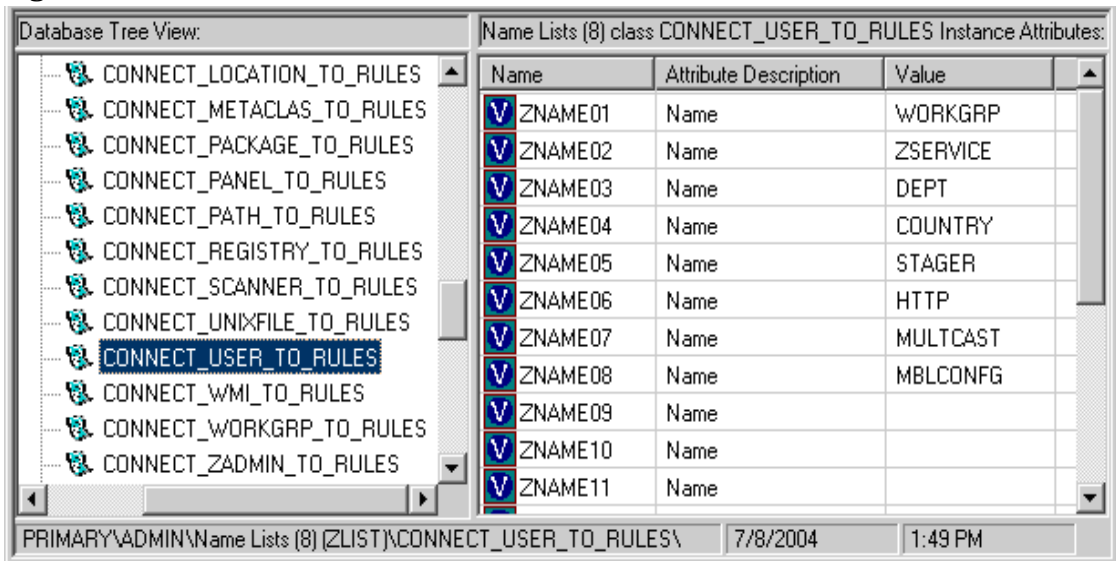
**Figure 23 Name Lists (ZLIST) Class in ADMIN Domain**



The HPCA Administrator CSDB Editor then uses these rules to populate the class list in the **Show Connections** dialog box, and to control drag-and-drop connections.

For example, notice the connection rules that have been established for the USER Class. To do this, examine the ZLIST.CONNECT\_USER\_TO\_RULES Instance as shown in the following figure.

**Figure 24 ZLIST.CONNECT\_USER\_TO\_RULES Instance**



An instance of this particular USER Class can contain a connection to any of the following classes:

- WORKGRP
- ZSERVICE
- DEPT

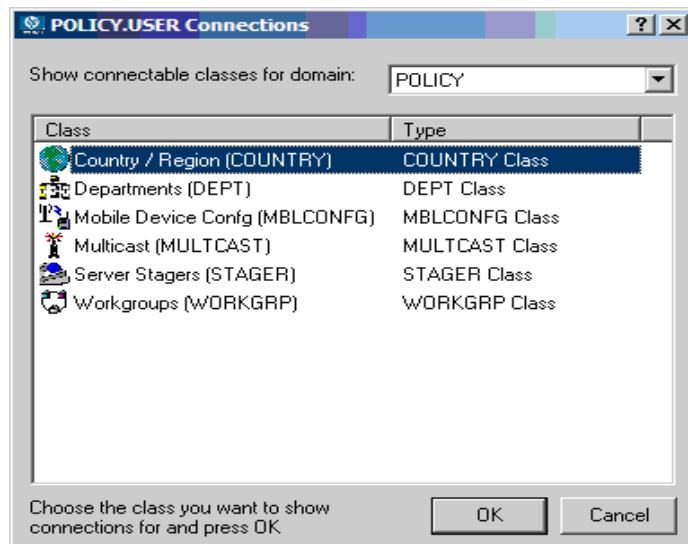
- COUNTRY
- STAGER
- HTTP
- MULTICAST
- MBLCONFIG

The ZLIST instance contains a list of up to 20 classes to which the class, represented by the ZLIST instance, in this case USER, can connect. You can edit this list to include additional classes, or remove classes from a connection rule. If any class in the CSDB needs to be able to connect to more than 20 different classes, you can edit the ZLIST Class template and add more ZNAME $n$  variables.

After you establish the rules for connection in the Name List (ZLIST) Class, the connection type can be created. Since we are creating a connection rule for drag-and-drop, the class variable is added to the Connection Rules (ZCONNECT) Class. Then edit the Rules variable to define the type of connection that can be made to the USER Class.

Now you can make a drag-and-drop connection to the new class. The following figure shows the connectable classes for the POLICY Domain where the USER Class is located.

**Figure 25 Connectable classes for the POLICY Domain**



## Enabling Connections in New Classes

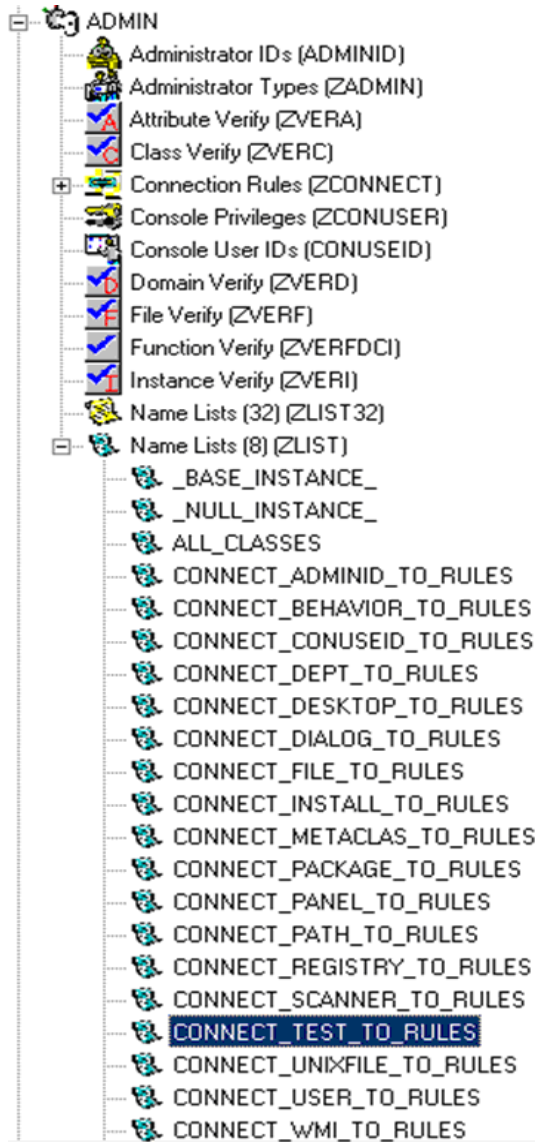
If you add a new class to the CSDB that can validly contain connections to other classes, you need to:

- Create an instance in the ZLIST Class to represent the new class.
- Set the new ZLIST Class instance to enable the connection rules.
- Add the new class to the ZCONNECT Class template.
- Set the new class' variable in the MASTER\_CONNECTION\_RULES.

For example, the steps below show how to add the connections for a new class called TEST.

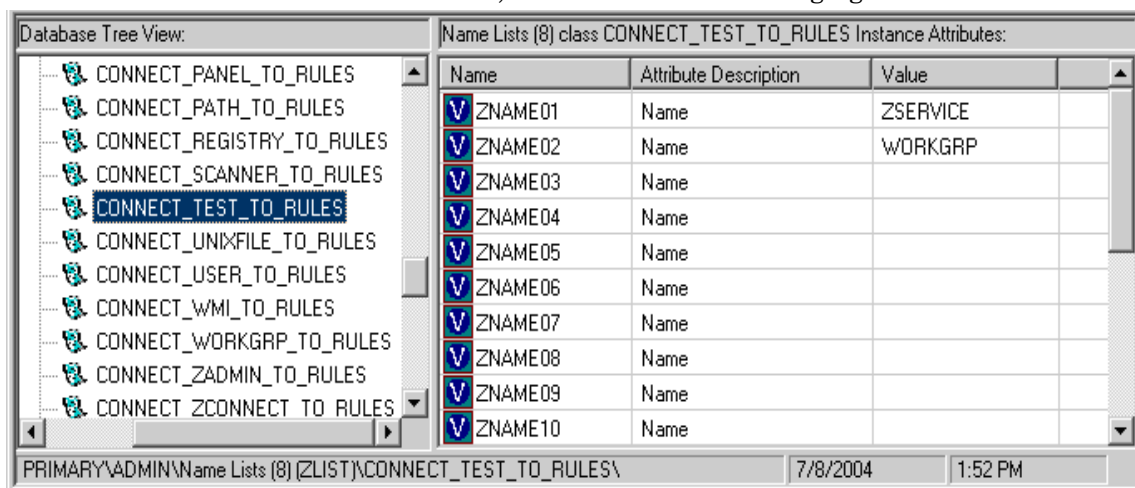
- 1 Create an instance of the ZLIST Class named `CONNECT_newclass_TO_RULES`, where *newclass* is the name of the new class, for example, TEST.

- 2 Open the HPCA Administrator CSDB Editor and navigate to the PRIMARY.ADMIN.Name Lists (8) (ZLIST) Class.
- 3 Right-click **ZLIST** and select **New Instance**.
- 4 Name the new instance as suggested above, **CONNECT\_TEST\_TO RULES**. This figure shows the added **CONNECT\_TEST\_TO\_RULES** in the **ZLIST** Class.



- 5 Edit the **CONNECT\_TEST\_TO\_RULES** Instance, setting each **ZNAME<sub>nn</sub>** variable to the name of a class to which the new class can be connected.

For example, set values for ZNAME01 and ZNAME02 to enable connections to the ZSERVICE and WORKGRP Classes, as shown in the following figure.

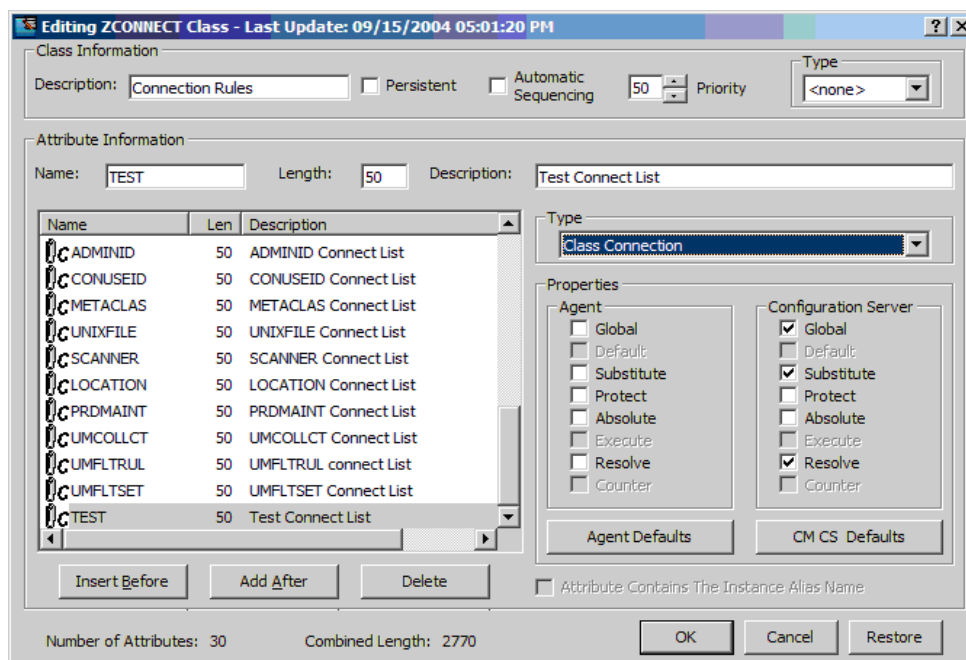


Now you need to add the **connection rule** variable to the Connection Rules (ZCONNECT) Class.

- 6 Navigate to the PRIMARY.ADMIN.ZCONNECT Class.
- 7 Right-click **ZCONNECT** Class and select **Edit Class** from the shortcut menu.
- 8 Add the new class variable (TEST) to the class template for the ZCONNECT Class. The length of the attribute is 50, and the description is Test Connect List.

▶ When adding an attribute to the ZCONNECT Class, be sure to change the attribute type to Class Connection. See the figure below.

For information on editing a class, see [Editing a Class](#) on page 108.



After you add the new attribute to the class template, you need to set the value of the new attribute in the ZCONNECT.MASTER\_CONNECTION\_RULES Instance.

- 9 Locate the new instance in the list view on the right side and set the value of the new variable to ZLIST.CONNECT\_TEST\_TO\_RULES.

For example, check the value that has been set for the TEST attribute in the next figure.

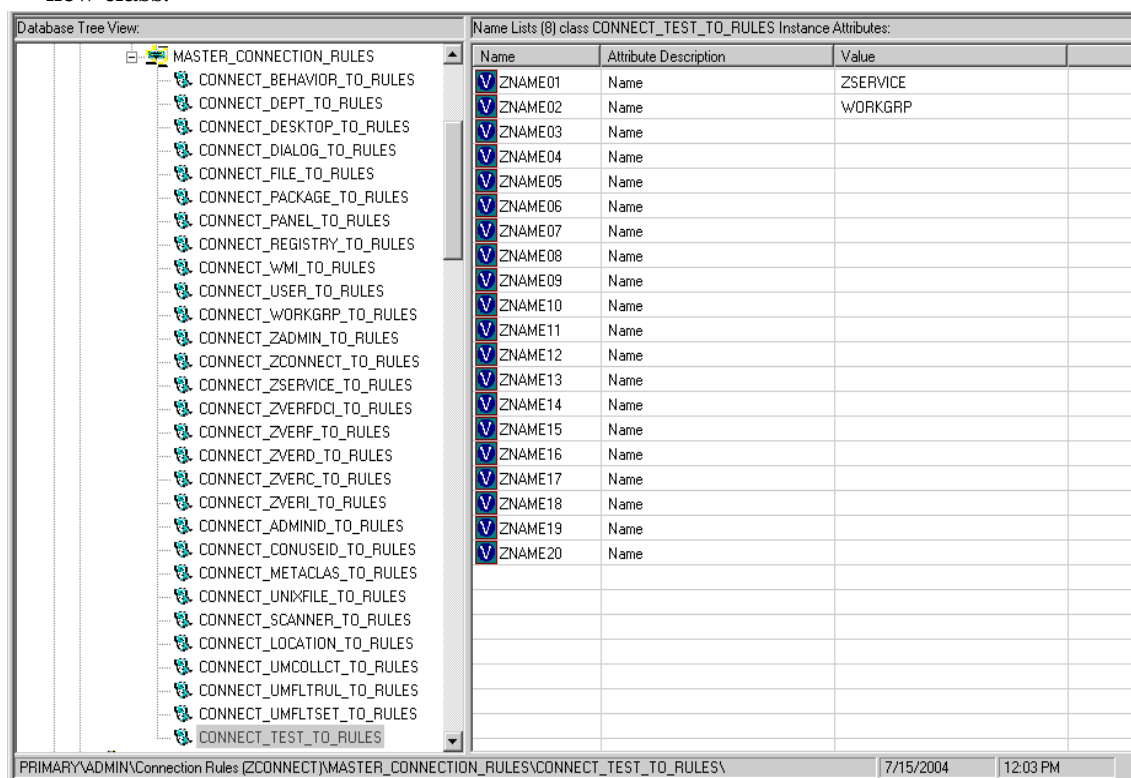
The screenshot displays a software interface with two main panes. The left pane, titled 'Database Tree View', shows a hierarchical tree structure under the root 'MASTER\_CONNECTION\_RULES'. The right pane, titled 'Connection Rules class MASTER\_CONNECTION\_RULES Instance Attributes:', contains a table with three columns: 'Name', 'Attribute Description', and 'Value'. The 'TEST' row is highlighted in grey.

Name	Attribute Description	Value
DESKTOP	DESKTOP Connect List	ZLIST.CONNECT_DESKTOP_TO_...
DIALOG	DIALOGUE Connect List	ZLIST.CONNECT_DIALOG_TO_R...
FILE	FILE Connect List	ZLIST.CONNECT_FILE_TO_RULES
PACKAGE	PACKAGE Connect List	ZLIST.CONNECT_PACKAGE_TO_...
PANEL	PANEL Connect List	ZLIST.CONNECT_PANEL_TO_RU...
REGISTRY	REGISTRY Connect List	ZLIST.CONNECT_REGISTRY_TO...
WMI	WMI Connect List	ZLIST.CONNECT_WMI_TO_RULES
USER	USER Connect List	ZLIST.CONNECT_USER_TO_RU...
WORKGRP	WORKGRP Connect List	ZLIST.CONNECT_WORKGRP_TO...
ZADMIN	ZADMIN Connect List	ZLIST.CONNECT_ZADMIN_TO_R...
ZCONNECT	ZCONNECT Connect List	ZLIST.CONNECT_ZCONNECT_T...
ZSERVICE	ZSERVICE Connect List	ZLIST.CONNECT_ZSERVICE_TO...
ZVERFDCL	ZVERFDCL Connect List	ZLIST.CONNECT_ZVERFDCL_TO...
ZVERF	ZVERF Connect List	ZLIST.CONNECT_ZVERF_TO_RU...
ZVERD	ZVERD Connect List	ZLIST.CONNECT_ZVERD_TO_R...
ZVERC	ZVERC Connect List	ZLIST.CONNECT_ZVERC_TO_R...
ZVERI	ZVERI Connect List	ZLIST.CONNECT_ZVERI_TO_RU...
ADMINID	ADMINID Connect List	ZLIST.CONNECT_ADMINID_TO_...
CONUSEID	CONUSEID Connect List	ZLIST.CONNECT_CONUSEID_TO...
METACLAS	METACLAS Connect List	ZLIST.CONNECT_METACLAS_TO...
UNIXFILE	UNIXFILE Connect List	ZLIST.CONNECT_UNIXFILE_TO_...
SCANNER	SCANNER Connect List	ZLIST.CONNECT_SCANNER_TO...
LOCATION	LOCATION Connect List	ZLIST.CONNECT_LOCATION_TO...
UMCOLLCT	UMCOLLCT Connect List	ZLIST.CONNECT_UMCOLLCT_T...
UMFLTRUL	UMFLTRUL Connect List	ZLIST.CONNECT_UMFLTRUL_T...
UMFLTSET	UMFLTSET Connect List	ZLIST.CONNECT_UMFLTSET_TO...
TEST	Test Connect List	ZLIST.CONNECT_TEST_TO_RUL...

At the bottom of the interface, the path 'PRIMARY\ADMIN\Connection Rules (ZCONNECT)\MASTER\_CONNECTION\_RULES\' is shown on the left, and the date '7/15/2004' and time '12:03 PM' are shown on the right.



The next figure shows that the new connection rule was added to the MASTER\_CONNECTION\_RULES, thereby allowing drag-and-drop connections for the new class.



## Managing WI-enabled Applications

This section describes the **Feature Set Editor**.

### Feature Set Editor Overview

The HPCA Administrator CSDB Editor has a Feature Set Editor, with a wizard type interface, that guides you through the selection and configuration of the features of a Windows Installer-enabled software package managed by HPCA. This enables you to use the features of Windows Installer while taking advantage of the packaging and deployment technologies of HPCA.

With the release of Microsoft Office 2000, Microsoft introduced new technology, Microsoft Windows Installer, for installing and maintaining software products on the Windows platform. HPCA products can install and manage Windows Installer-enabled applications as follows:

The HPCA Administrator Publisher has *basic* and *advanced* methods of publishing and configuring Windows Installer-enabled applications.

- ▶ For information regarding the publishing of Windows Installer-enabled applications, see [Windows Installer Files](#) on page 61.

The CSDB enables HP products to store Windows Installer feature sets.

HPCA provides policy administration and state data gathering.

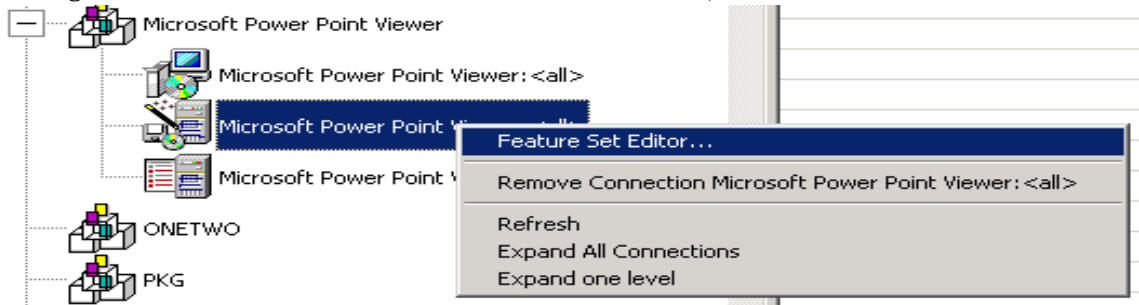
HPCA provides the ability to control the customization of MSI packages without the need to create Windows Installer Transform (MST) files.

HPCA provides the ability to discover and manage previously installed Windows Installer-enabled applications that were not deployed using HPCA.

## Accessing the Feature Set Editor

To access the Feature Set Editor

- 1 Locate the Application Packages instance that represents the software package whose features you want to edit.
- 2 Double-click this instance to display its MSI and MSIFEATS connections.
- 3 Right-click the MSIFEATS connection in the tree view, as follows:



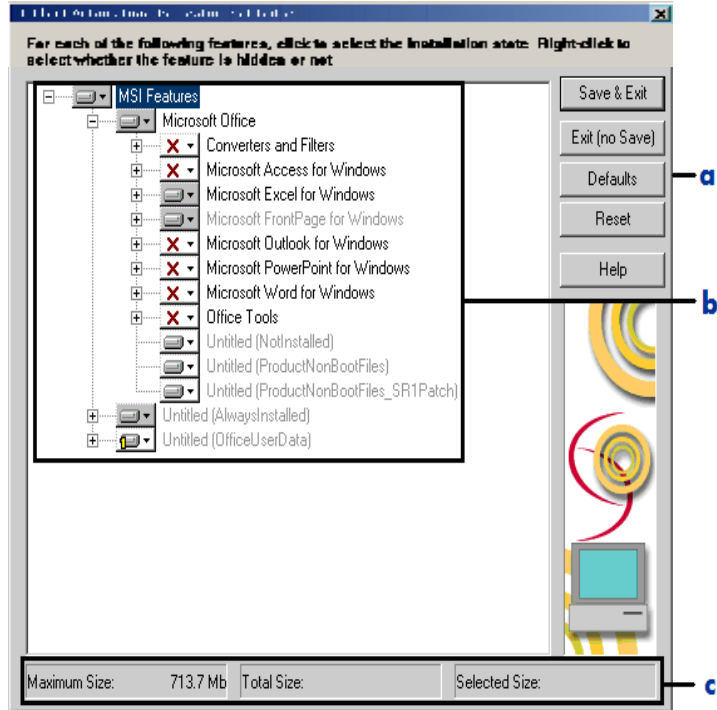
- 4 Select **Feature Set Editor** from the shortcut menu.

The **Feature Set Editor** dialog box opens.

## About the MSI Feature Set Editor

Figure 26 on page 155 shows that the **Feature Set Editor** interface is divided into three areas, the **tree view** on the left, **buttons** on the right, and **package size information** on the bottom.

**Figure 26 Feature Set Editor dialog box**



- a Buttons
- b Tree View
- c Package size information

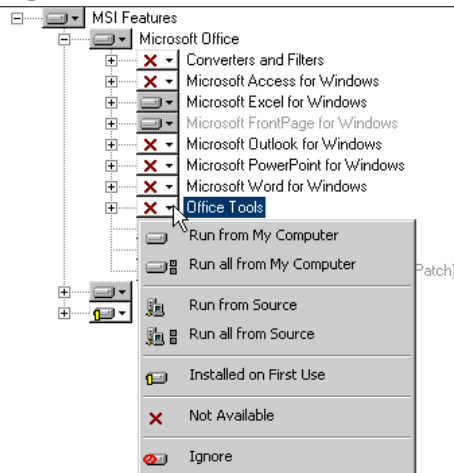
### Tree View

Features are grouped into a hierarchy through which you navigate using the tree control. Higher-level features consist of two or more lower-level, child features. Navigate through the tree as you would through a typical Windows Explorer tree.

### Features Menu

When you click on the drop-down button next to a feature, the **Features** menu opens.

**Figure 27 Features menu**






Each of the features has an attribute that indicates how that feature is to be installed and maintained.


Names of features whose attributes are changed during the current session of the MSI Feature Set Editor appear in boldface in the tree.

Normally, by setting an attribute for a higher-level feature, the setting is automatically applied to all of the child features that comprise it. See the attribute descriptions in the following table for exceptions to this rule.



**Table 40 Features menu options**

<b>Feature Icon and Name</b>	<b>Description of Function</b>
 <p>Run from My Computer</p>	<p>Features are physically installed on a hard drive on the agent computer, and therefore perform best.</p> <p>This applies to all child features, unless the child feature's attribute is already set to Installed on First Use or Not Available.</p> <p>The children appear on branches of the tree, and are beneath and connected to the selected feature.</p>
 <p>Run all from My Computer</p>	<p>Features are physically installed on a hard drive on the agent computer. All features that are children have their attributes changed to Run from My Computer, and they, too, are physically installed on the agent computer.</p> <p>Features perform best because they are run from the end user's machine. Mobile computer users should have all of the features they need while traveling set to Run from My Computer or Run all from My Computer. Otherwise, when they use a feature that is not installed on their computer's hard drive, they will be prompted for the original installation media, which might not be available.</p>
 <p>Run from Source</p>	<p>Features are not physically installed on a hard disk on the agent computer; rather they are run from the Administrative Installation Point (AIP). This is normally a network share persistently accessible to the agent computer.</p> <p>When you select this attribute for a feature, the attribute is automatically applied to all features that are children, unless the child feature's attribute is already set to Not Available.</p> <p>The Run from Source and Run all from Source attributes save local hard drive space at the expense of slower performance and the need to have an active connection to the AIP.</p>


**Table 40 Features menu options**

<b>Feature Icon and Name</b>	<b>Description of Function</b>
 Run all from Source	<p>Features are not physically installed on a hard disk on the agent computer, rather they are run from the AIP. This is normally a network share persistently accessible to the agent computer.</p> <p>When you select this attribute, the Run from Source attribute is applied automatically to all features that are children, regardless of the attribute currently assigned to the child feature.</p> <p>The Run from Source and Run all from Source attributes save local hard drive space at the expense of slower performance and the need to have an active connection to the AIP.</p>

**Table 40 Features menu options**

<b>Feature Icon and Name</b>	<b>Description of Function</b>
 Installed on First Use	<p>Features are not installed on the agent computer until the end user tries to use the feature through a shortcut or menu selection. Shortcuts for shortcut-accessible features are deployed when the package is initially installed. When the end user first invokes the feature, files that are needed to support the feature are installed on the end user's hard disk, where they remain. Future uses of the feature are run from the agent computer.</p> <p>In order to install such a feature, the agent computer must be running the Redirector service, and it must be able to connect to the Configuration Server computer.</p> <p>This minimizes the use of hard disk space on agent computers by allocating space only to features that they actually use. On the other hand, end users are subject to the delay needed to install the feature at the time when they first invoke it.</p> <p>When you select this attribute, the Installed on First Use attribute is applied automatically to all features that are children, unless the child feature's attribute is already set to Not Available.</p>
 Not Available	<p>Features are not installed, are unavailable to the end user, but could affect other services. The attributes for all child features are also set to Not Available.</p> <p>For example, one service is defined to deploy Microsoft Word, and all other features of Office are set to Not Available. Another service is defined to deploy Microsoft Excel, and all other features of Microsoft Office are set to Not Available.</p> <p>Now, imagine that the end user installs the Microsoft Word service. It installs successfully and does not install any of the other features of Microsoft Office. A bit later, the end user installs the Microsoft Excel service. The Microsoft Excel service indicates that all other features of Microsoft Office are Not Available. Therefore, Microsoft Excel is installed, but Microsoft Word is uninstalled.</p> <p>If the end user selects an option that requires the feature, the software instructs the end user to run the setup again and change the installation state of the feature. However, end users whose software is managed by HPCA generally do not have access to the setup.</p> <p>Assign the Not Available attribute only to features that must be unavailable to end users. Provide information to the end user about what to do if they receive a message.</p>

**Table 40 Features menu options**

Feature Icon and Name	Description of Function
 Ignore	<p>Note: This is available for backward compatibility. You do not need to determine which features need to be ignored by a service.</p> <p>Features set to Ignore are not installed, are unavailable to the end user, but will not affect other services. HPCA management products act as though the feature were not a component of the managed software at all. The attributes for all child features are also set to Ignore.</p> <p>For example, one service is defined to deploy only Microsoft Word, with all other features of Microsoft Office set to Ignore. Another service is defined to deploy Microsoft Excel and Microsoft PowerPoint, setting all other features of Microsoft Office to Ignore. If an end user installs both services, the features installed by the first-installed service will not be affected by the installation of the second-installed service.</p> <p>Both services can be created from one package published to the CSDB. The package is cloned by copying it with another name. You can then use the Feature Set Editor to edit the features of each package.</p>

Names of features whose attributes have been changed during the current session of the MSI Feature Set Editor appear in boldface in the tree.

**Hide and Disable Features**

When you right-click the name of a feature as in the following example, Microsoft Word for Windows, the shortcut menu for Hide and Disable opens:

**Figure 28 Shortcut menu for Hide and Disable**



When you select **Hide**, the feature and all of its child features will not appear in the native **Microsoft Windows Installer Update Features** dialog box, which is accessible to the user using the Control Panel's **Add/Remove Programs** applet.

All features that are hidden appear in the MSI Feature Set Editor tree with the prefix (H) before the name of the feature.

When you select **Disable**, the feature and all of its child features are ignored by the HPCA agent. A disabled feature's value is determined by Windows Installer, from the combination of MSI and MST files, instead of the value in the HPCA instance.

All features that are disabled appear in the MSI Feature Set Editor tree with the prefix [D] before the name of the feature

### Feature Set Editor Buttons

The Feature Set Editor buttons are located on the right side of the Feature Set Editor window. The following table describes these buttons.

**Table 41 Feature Set Editor Buttons**

Button	Description of Function
Save & Exit	Click <b>Save &amp; Exit</b> to accept the changes that were made to the attributes of the file and exit the Feature Set Editor. It is also possible to exit the Feature Set Editor by clicking the <b>X</b> on the top right corner.
Exit (no Save)	Click <b>Exit (no Save)</b> to discard any changes that were made, and to then exit the Feature Set Editor. It is also possible to exit the Feature Set Editor by clicking on the <b>X</b> on the top right corner.
Defaults	Click <b>Defaults</b> to reset all features' attributes to the settings in the MSI file distributed with the software by the software vendor. The default setting will not be applied to the feature set until the feature set is saved when you click <b>Save &amp; Exit</b> .
Reset	Click <b>Reset</b> to discard any changes made to feature settings since you opened the current session of the MSI Feature Set Editor. Settings for all features are refreshed by re-reading them from the CSDB.
Help	Click <b>Help</b> to access the HPCA Administrator CSDB Editor Help topics.

### Package Information

Use the package information to view the size of the current Windows Installer-enabled features that you are configuring.

#### Maximum Size

This is the total number of bytes that would be needed on the agent computer to install the features in the tree, *if all* features in the tree they were given the Run from My Computer or Run All from My Computer attribute.

#### Total Size

This is the total number of bytes needed on the agent computer to install only those features in the tree that have the Run from My Computer or Run All from My Computer attribute.



## Selected Size

This is the total number of bytes needed on the agent computer to install a single feature including the child features that you have selected. The size calculation includes only features with the Run from My Computer or Run All from My Computer attribute.

## Windows Add or Remove Programs Settings

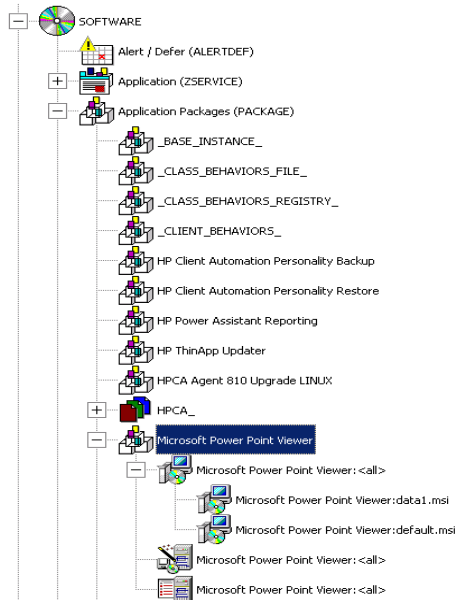
When a Windows Installer-enabled software package, such as Microsoft Office, is installed on an agent computer, it is normally added to the list of applications that can be managed by the Add or Remove Programs application of Windows Control Panel.

HPCA enables you to not list an application in the Add or Remove Programs application of Windows Control Panel. This prevents the end user from interfering with HPCA products' centralized management of the application. Alternatively, HPCA also enables you to selectively hide individual features from access by the Add or Remove Programs application.

### Preventing an Application's Listing in Add or Remove Programs

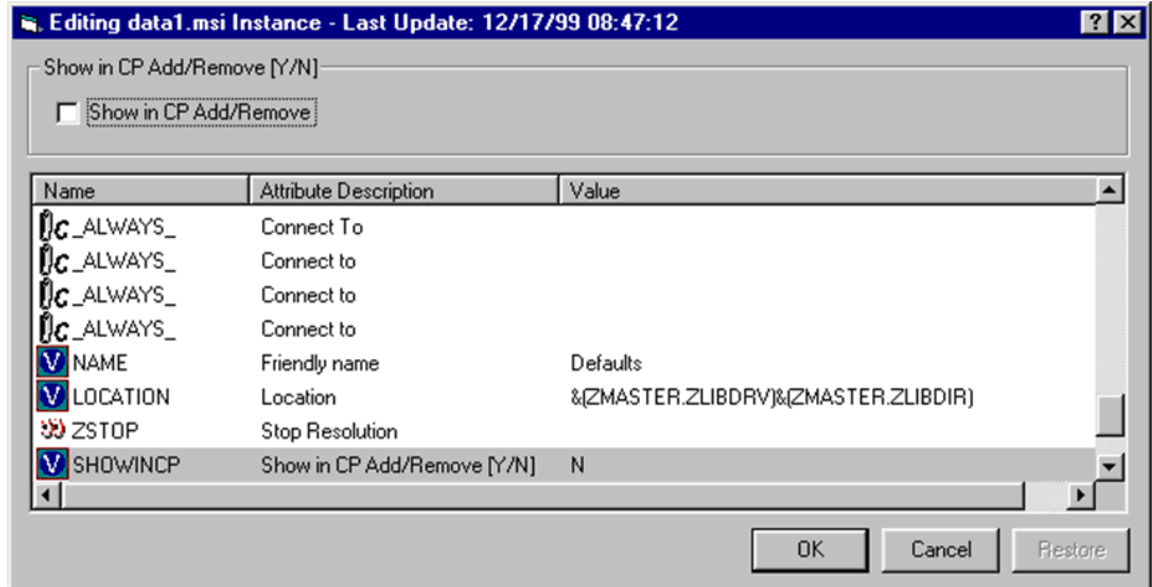
To prevent listing the application in the Add or Remove Programs application, use HPCA Administrator CSDB Editor to change the setting of the SHOWINCP variable of the MSI class instance for the DATA1.MSI file that is connected to the Application Packages Class instance:

**Figure 29 DATA1.MSI instance**



Change the value of the SHOWINCP variable to **N**, as follows:

**Figure 30 Editing DATA1.MSI instance**



#### Hiding Features displayed by Microsoft Windows Installer Update Features

When the end user selects the Windows Installer-enabled software package in the Add or Remove Programs application and clicks **Change**, Microsoft Windows Installer is invoked, and opens its native interface for manipulating features of the installation on the agent computer. If the end user clicks **Add or Remove Features**, Microsoft Windows Installer displays its Update Features windows.

Use the MSI Feature Set Editor's Hide function to prevent individual features from appearing in the Microsoft Windows Installer Update Features dialog box. This enables you to use HPCA to control the end user's installation of the application software's features using the HPCA management product's capabilities, and avoids possible end-user interference.

#### Copying a Windows Installer Enabled Package

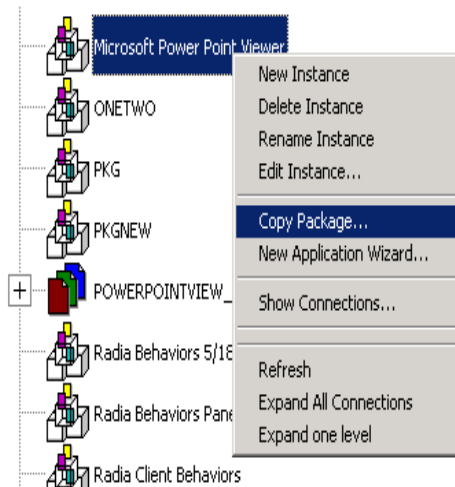
One of the key advantages of using HPCA products to manage Windows Installer-enabled applications is the ability to specify variants of the software package, and make those variants available to targeted users.

When you use the advanced capabilities of HPCA, you to create only one comprehensive AIP, and publish it to the CSDB. All variant sets of features are encapsulated in individual packages in the CSDB.

## To make a new variant set of features

Copy an existing package, and edit it to meet its unique requirements.

- 1 Right-click on the Application Packages instance and select **Copy Package** from the shortcut menu.



A message tells you that copying a package instance will result in a duplication of all the package's component instances, and that this may take a while.

- 2 Select **Yes** to continue the **Copy Package** function.

Select **No** to cancel the **Copy Package** function.

Copying the package copies the package instance and all of the component class instances that belong to the package instance. The new package is a complete copy of the original. This operation maintains the integrity of the CSDB, because each package retains control over its own components.

- 3 In the **Copy Package and Components** dialog box, type the name for the newer copied package.
- 4 Click **OK** to continue. The Configuration Server takes a few moments to copy the package.
- 5 When the newly copied package appears in the HPCA Administrator CSDB Editor's tree view, right-click on the MSIFEATS instance beneath the package and select **Feature Set Editor** from the shortcut menu.

The MSI Feature Set Editor opens.

- 6 Set the properties of the applications that should not be deployed to Ignore.
- 7 Click **Save & Exit**, and the feature set for the package is updated. You can now connect this package to the appropriate policy instances such as USER, DEPT, WORKGRP, to deploy and manage a single feature as a stand-alone application.

## Managing Feature Sets in Native Mode

In some enterprises, packaging applications and administering HPCA are separate functions. You might not want to use the MSI Feature Set Editor to edit the transform (MST) files. Use the following procedure to publish the package and MST files and enable you to manage feature sets in native MSI mode.

- 1 Use the HPCA Administrator Publisher in Advanced mode to create the ACP and publish the Windows Installer package.

After you publish the package, use HPCA Administrator CSDB Editor to remove the connection to `SOFTWARE.MSIFEATS.packageprefix_*` from the Application Packages (PACKAGE) instance.

- 2 If you have multiple MST files, use the HPCA Administrator Publisher in Component Select Mode to promote each of the MST files into individual packages. This will create a new PACKAGE instance for each MST file.
- 3 Connect the MSI PACKAGE instance to each of the transform file's PACKAGE instances.
- 4 Create one Application (ZSERVICE) instance for each of the transform packages.
- 5 Assign subscribers to the appropriate transform package's service.

▶ Any changes to or replacement of the `*.MST` file will cause HPCA to call `MSIEXEC` to uninstall and reinstall the application.

When the service is installed or modified, HPCA will detect the absence of the `MSIFEATS` object, and will use the native MSI mode, `MSIEXEC`. HPCA will call `MSIEXEC` natively with the proper location of the data source. If HPCA calls `MSIEXEC` and detects the presence of a single MST file, it will add the `.MST` file to the command line that invokes `MSIEXEC`. If HPCA calls `MSIEXEC` and detects more than one MST file, it will run `MSIEXEC` only for the MSI file. The MSI native behavior will be used for update and repair.

▶ If you are using an MST file to include a new feature that is not already a feature available in the Feature Set Editor (`MSIFEATS`), the new feature from the MST file will be included in the MSI service. However, if there is a feature in the MST file that already exists in the `MSIFEATS` object, the feature state indicated in `MSIFEATS` will be used, and the one in the additional MST file will be disregarded. If you want to manage the MSI package using only your MST file, use the procedure described in this section.

## Registry File Editor

Use the **Registry File Editor** to edit the properties or values for registry keys associated with a Client Automation package.

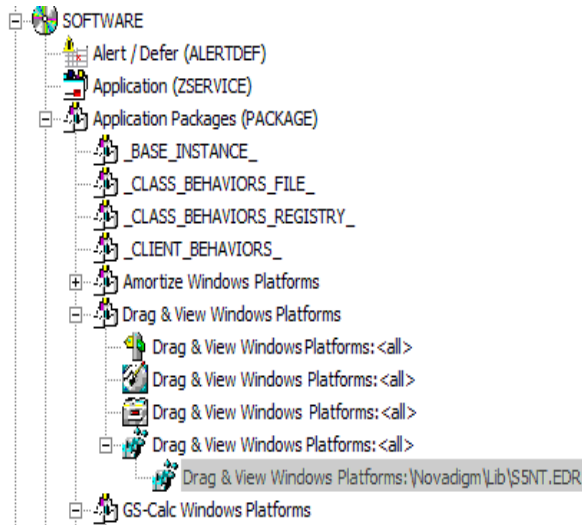
When you use HPCA Administrator Packager to create a package, all of the registry changes for that package are stored in a file with an `.EDR` extension in the `LIB` directory. Use the Registry File Editor to modify this file. Then, the file is re-published to the CSDB and the instance is updated.

### Accessing the Registry File Editor

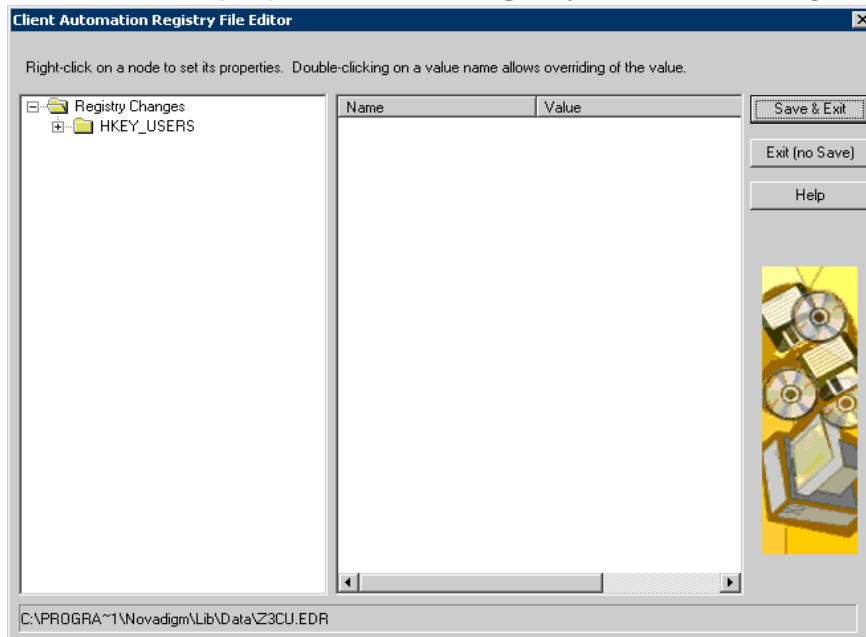
To access the Registry File Editor

- 1 Locate the Registry Resources instance that represents the software package whose registry settings you want to change.

- Right-click the instance in the tree view. A shortcut menu opens. For example, locate the registry instance for the Drag & View Windows Platforms package and right-click.



- Select **Edit Registry Resource**. The **Registry File Editor** dialog box opens.



- The tree view on the left displays nodes that represent keys in the registry file.
- The list view or value name in the middle displays the contents of a selected registry key.
- The buttons on the right enable you to **Save & Exit**, **Exit** without saving, or access the **Help** function in the Registry File Editor.

## Set Properties Shortcut Menu


To set properties for the Registry File Editor, right-click any node of the tree view in the Registry File Editor. A shortcut menu opens.

Each option in this shortcut menu is described in the following sections.

## Active

Select **Active** to include the registry keys in the package.

## Inactive

Select **Inactive** to prevent the registry keys from being included in the package. Inactive nodes appear with a  symbol covering its folder.

## Deploy/Verify

Click **Deploy/Verify** to access the following submenu:

- **Unconditional/Enforced**  
HPCA deploys the registry key every time the subscriber connects to the Configuration Server, even if it already exists on his desktop. This setting repairs the registry key if it is modified or deleted. Use this setting for registry keys that must remain invariant in order for the application software to function properly.
- **Unconditional/Exist**  
HPCA deploys the registry key upon initial deployment or if it has been deleted. However, the value of the registry key is not reset if the user modifies it. This is the default setting.
- **Exist/Exist**  
HPCA deploys the registry key only if it does not exist on the subscriber's desktop, during both the initial deployment and on each subsequent connection. This gives users full control over the registry key value, but reinstalls the key if it is accidentally deleted.

## New Key

Click **New Key** if you would like to add a new value to your registry. This opens a dialog box to enter the New Key name. Click **OK** to accept the new key, or **Cancel** to return to the Registry File Editor.

## New Value

Click **New Value** to add a value to a newly created key or to add a value to an existing registry key. This opens a dialog box where you enter the following information:

### Value Name

Enter the name of the value you want to add to the registry file. This name will appear in the Value Name (center) of the Registry File Editor window.

### Data Type

Use the drop-down menu to select from the list of available data types. The type selected is as follows:

- **REG\_SZ**  
A text sequence most typically used for descriptive information. This is the default setting.
- **REG\_DWORD**  
Data represented by an integer that is 4 bytes long and is displayed in the binary, hexadecimal, or decimal format.
- **REG\_EXPAND\_SZ**  
An expandable data string. This text contains a variable that is replaced when called by an application.
- **REG\_MULTI\_SZ**  
A string containing multiple text entries of user-readable text.

### Delete Always

Click **Delete Always** if you want all values under a Registry key to be deleted during a Radreg32 Delete operation. When this option is turned on, all values under the key are deleted *without* restoring their original registry values in the backup EDR file.

### Delete Never

Click **Delete Never** if you want to retain all values under a key during a Radreg32 Delete operation.

### Delete (Default)

Click **Delete (Default)** if you want the Radreg32 Delete operation to exhibit normal Delete behavior with regards to deleting or restoring values.

## Editing a Registry Key

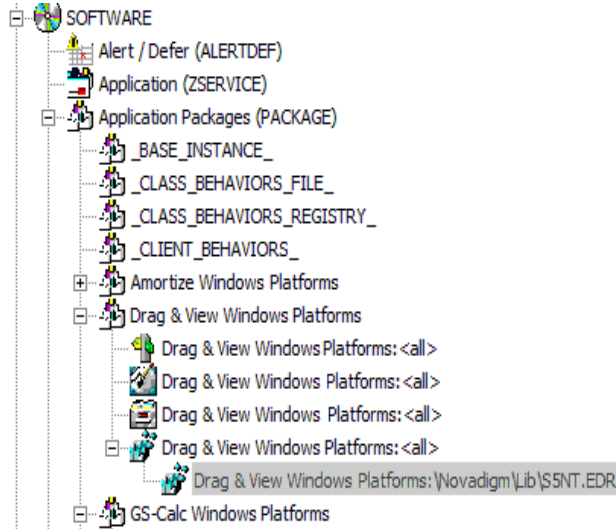
To edit a registry key's value access the key through the Registry File Editor. Follow the example in this section to edit the information in a registry key.

- ▶ Use extreme caution when you use the Registry File Editor. Editing registry keys without thorough understanding of their functions could render a package or service useless.

### To edit the data in a registry key

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator CSDB Editor**. The HPCA Administrator CSDB Editor Security Information dialog box appears.
  - ▶ The default user ID and password are:  
User ID: **ADMIN**  
Password: **secret**
- 2 If necessary, type a user ID and password, then click **OK**. The HPCA Administrator CSDB Editor splash screen appears briefly.
- 3 Double-click **PRIMARY**.
- 4 Expand the SOFTWARE Domain and then the Application Packages (PACKAGE) Class.
- 5 Expand the package Drag & View Windows Platforms.

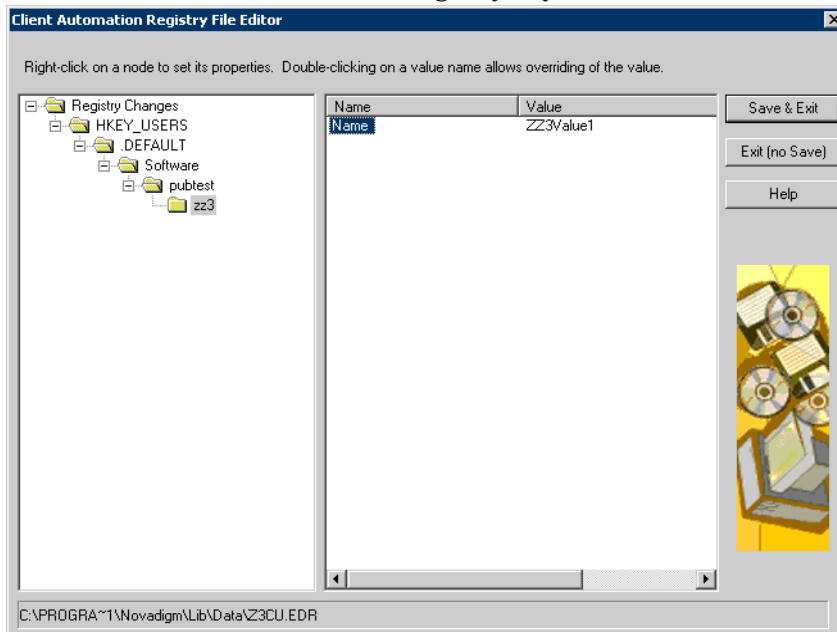
6 Expand the Registry instance.



7 Right-click the registry file and select **Edit Registry Resource** from the shortcut menu. The **Registry File Editor** dialog box opens.

8 Click the node to expand and display the contents of the registry key in the list view.

9 Double-click the name of the registry key in the list view.



The **Override Value** dialog box opens.

10 Edit the data in the **New Value** text box.

11 Click **OK** to save the changes and close the dialog box

or

Click **Cancel** to close the dialog box without saving the changes.

To restore the data in a registry key

1 Double-click the name of the registry key in the list view.

2 Click **Reset**.



- 3 Click **OK** to save the changes and close the dialog box.

or

Click **Cancel** to close the dialog box without saving the changes.

### Closing the Registry File Editor

Close the **Registry File Editor** dialog box when you are finished making changes to instances of the Registry file.

### To close the Registry File Editor

- 1 Click **Save & Exit** to save the changes and close the dialog box.

or

Click **Exit (no Save)** to discard the changes and close the dialog box.

- 2 Click **Yes** to confirm that you want to save the changes and close the dialog box.

or

Click **No** to return to the **Registry File Editor** dialog box.



# 4 Installing HP Client Automation Administrator: Linux and Macintosh

HPCA Administrator for LINUX contains two tools: HPCA Administrator Publisher and HPCA Administrator Agent Explorer.

HPCA Administrator for Macintosh contains one tool: HPCA Administrator Publisher.

## System Requirements

TCP/IP connection to a computer running the HPCA Configuration Server.

## Platform Support


For detailed information about supported platforms, see the release note document that accompanies this release.

## Prerequisites

- HP recommends installing the HPCA Administrator as **root** (or as a Mac OS X administrator user ID capable of issuing **sudo** commands).
- Install the HPCA Administrator on a local file system.
- If you plan to run any of the graphical components of HPCA Administrator, make sure the LINUX environment variable DISPLAY is set in your environment. If it is not, the installation will default to a non-graphical installation. However, you can set this variable to indicate the host name or IP address to which you would like to redirect the graphical display.

**Table 42 Setting the DISPLAY Variable**

In a...	Type...
C shell	setenv DISPLAY IP address or hostname:0.0
Bourne, Bash, or Korn shell	DISPLAY=IP address or hostname:0.0 export DISPLAY

-  If the DISPLAY environment variable is not set in your environment, the installation defaults to a non-graphical installation.

## Troubleshooting

If you encounter any problems while installing the HPCA Administrator, perform the following steps before contacting technical support:

- Enable diagnostic tracing by appending the text `-loglevel 9` to the installation command line and run the installation again.
  - ▶ The install option `-loglevel 9` should only be used to diagnose installation problems.
- Access `tmp/setup/setup.log` located in the home directory of the user ID who ran the install.

## Recommendations

HP recommends that you install and run HPCA Administrator as **root**.

- ▶ Root authority is required to apply owner and group designators to managed resources.

## Installation Methods

To install HPCA Administrator do either of the following:

- Execute the installation procedure directly from the installation media.
- Copy the files from the installation media into a temporary directory and execute the installation procedure.

You can use several parameters on the command line when you install HPCA Administrator.

- **-mode plain**

Example: `./install -mode plain`

Installs HPCA Administrator in plain mode. The installation graphics are displayed in plain mode (no moving graphics). This is useful for remote installations where network bandwidth might be an issue.

- **-mode text**

Example: `./install -mode text`

Installs HPCA Administrator in text mode using the non-graphical installation. The installation takes place completely on the command line. The installation will default to text mode if the `DISPLAY` environment variable is not set.

## Installing HPCA Administrator for LINUX or Macintosh

### Graphical Installation

To install HPCA Administrator for LINUX or Macintosh using a GUI

- ▶ If the user ID of the person performing HPCA Administrator installation has previously installed an HPCA Agent, the location of HPCA Administrator will default to the location of the HPCA Agent.

- 1 Depending on your operating system, change your current working directory to the correct subdirectory on the installation media.

Examples:


In Linux:

```
/Setup-Core/Media/admin/default/linux
```

In Mac OS:

```
/Setup-Core/Media/admin/default/macx86
```

- 2 Type `./install` (for Mac OS X, type `sudo ./install`) and then press **Enter**. The Welcome window opens.
- 3 Click **Next**. The HP Software License terms window opens.
- 4 Read the software license terms and click **Accept**.

 If you are installing HPCA Administrator to a computer with the same user ID that had previously installed an HPCA Agent, the installation program will prompt you for the HPCA Configuration Server's IP address. The next three windows: Administrator Location, Lib directory, and Log directory, are needed only if you are installing HPCA Administrator to a computer that does not have an HPCA Agent already installed.

HPCA Administrator Location window opens.

- 5 Type the name of the directory where you are installing HPCA Administrator, or click **Browse** to navigate to it.
- 6 Click **Next**. If the specified directory already exists you will be prompted to verify this location.
  - If you would like to update the existing directory, click **OK**.
  - If you would like to change the directory location, click **Cancel**.

The Lib Directory window opens.

- 7 Type the name of the directory where you would like to store proprietary information created by HPCA (the `lib` directory), or click **Browse** to navigate to it.
- 8 Click **Next**. The Log Directory window opens.
- 9 Type the name of the directory where you would like to store the log files generated by HPCA, or click **Browse** to navigate to it.
- 10 Click **Next**. The HPCA Configuration Server IP Address window opens.
- 11 Type the IP address (format: `xxx.xxx.xxx.xxx`) or host name of the Configuration Server you will be publishing to.
- 12 Click **Next**. The HPCA Configuration Server Port Number window opens.
- 13 Type the port number of your HPCA Configuration Server (default is 3464).
- 14 Click **Next**. The Package Settings window opens.
- 15 Review the settings displayed in the Package Settings window. If you would like to change any of the settings, click **Back** until you get to the appropriate window.
- 16 When you are satisfied with the Package Settings, click **Install**. HPCA Administrator is installed.

## Command-Line Installation

- 1 At a command prompt, change your current working directory to the correct operating system subdirectory on the installation media.  
  
Example:  
  
In Linux:  

```
/Setup-Core/Media/admin/default/linux
```

  
In Mac OS:  

```
/Setup-Core/Media/admin/default/macx86
```
- 2 Type `./install -mode text` (for Mac OS X, type `sudo ./install -mode text`) and then press **Enter**.  
  
HPCA Administrator installation begins.
- 3 Type **C**, and then press **Enter**.
  - ▶ If you are installing HPCA Administrator to a computer with the same user ID that had previously installed an HPCA Agent, the installation program will prompt you for the HPCA Configuration Server's IP address. The next three sections: HPCA Administrator Location, Lib directory, and Log directory, are only needed if you are installing HPCA Administrator to a computer that does not have an HPCA Agent already installed.
- 4 Specify the installation location for HPCA Administrator, and then press **Enter**.
- 5 Specify the location for the HPCA proprietary objects (`IDMLIB`), and then press **Enter**.
- 6 Specify the location for the log files created by HPCA (`IDMLOG`), and then press **Enter**.
- 7 Specify the IP address of the HPCA Configuration Server, and then press **Enter**.
- 8 Specify the port number of the HPCA Configuration Server, and then press **Enter**.
- 9 Review the installation settings you have chosen. If you want to install HPCA Administrator with these settings, press **Enter** to accept the default (Y) and begin the installation or type **N**, to re-enter your installation information.
- 10 To complete the configured installation process, press **Enter**. HPCA Administrator is installed.

# 5 HP Client Automation Administrator for Linux and Macintosh

HP Client Automation (HPCA) Administrator for LINUX consists of:

- HPCA Administrator Agent Explorer
- HPCA Administrator Publisher

HPCA Administrator for Macintosh consists of HPCA Administrator Publisher.

## HPCA Administrator Agent Explorer

The HPCA Administrator Agent Explorer is available for Linux, but is not available for Macintosh.

### Accessing the HPCA Administrator Agent Explorer

The following instructions explain how to open and close the HPCA Administrator Agent Explorer.

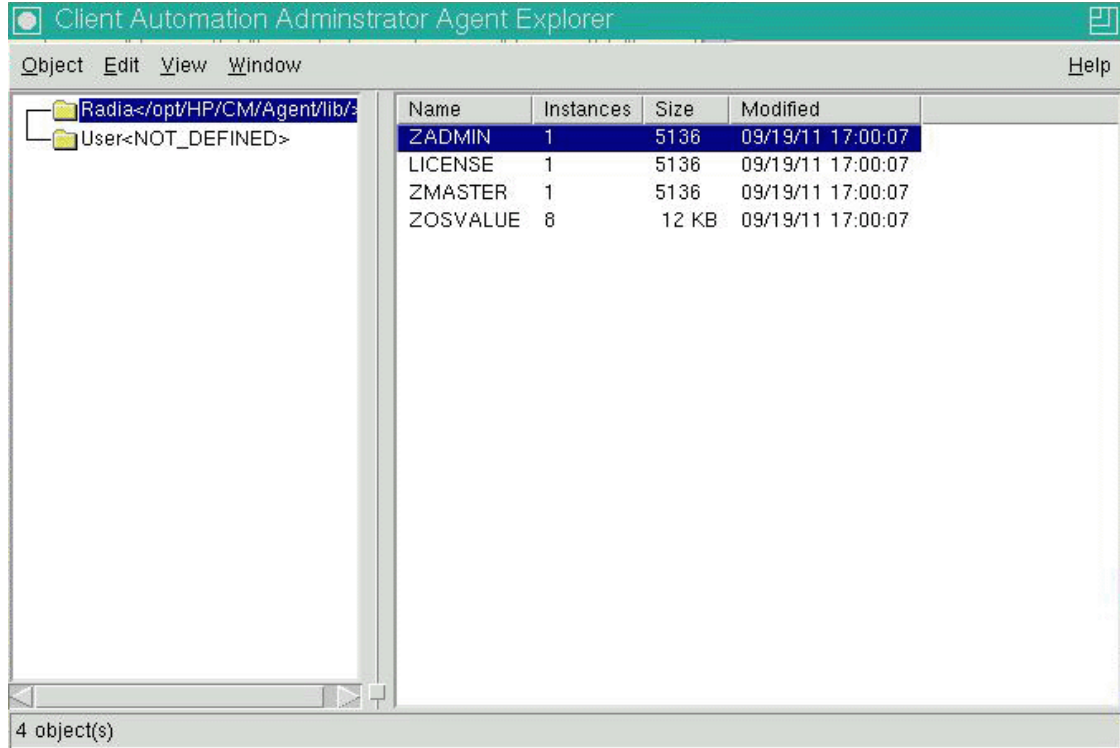
To open the Agent Explorer

From the **HP Client Automation Administrator folder**, click **HP Client Automation Administrator Agent Explorer** or at the command line type `./radobjed`.

The HPCA Administrator Agent Explorer opens with the object list displayed in the right pane as shown in [Figure 31](#) on page 176. The object list contains the names of HPCA objects that you can view and edit.

- ▶ Objects that begin with "Z" are used by HPCA. When naming an object that you create, HP recommends that you do not click a name beginning with the letter "Z."

**Figure 31 Agent Explorer Window**



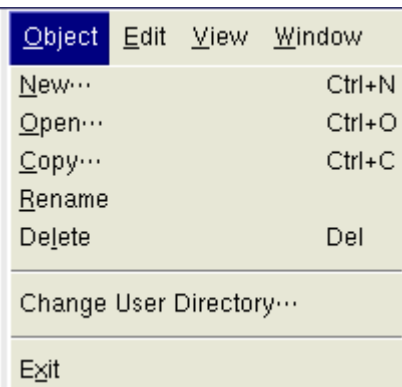
### Menus in the Object List Window

Use the menus in the HPCA Administrator Agent Explorer window to open, copy, delete, rename, and create new objects, and to navigate the HPCA Administrator Agent Explorer.

### Object Menu

Use the object menu to open, copy, delete, rename, and create new objects.

**Figure 32 Object menu in the object list window**





**Table 43 Object menu options**

<b>Menu option</b>	<b>Function</b>
New	Click <b>New</b> and type a name for the new object in the <b>Create New Object</b> dialog box.
Open	Select an object in the object list and click <b>Open</b> . The Object View window opens where you can edit and manage variables and heaps for that object.
Copy	Select an object in the object list. Click <b>Copy</b> , and type a name for the new object. A new object is created with the same variables and values.
Rename	Select an object in the object list. Click <b>Rename</b> . Type a new name for the object.
Delete	Select an object from the object list. Click <b>Delete</b> to remove it from the object list. After it is deleted, an object, its heaps, and its variables cannot be recovered.
Change User Directory	Select this option to change the default object directory.
Exit	Click <b>Exit</b> to close the HPCA Administrator Agent Explorer.

## Edit Menu

### **Select All**

Click **Select All** to select all the objects in the object list. You can then perform actions from the Object menu on all objects at the same time.

## View Menu

### **Refresh**

Refreshes the screen.

## Table Window Menu

### **Close all**

Click **Close all** to close all open objects.

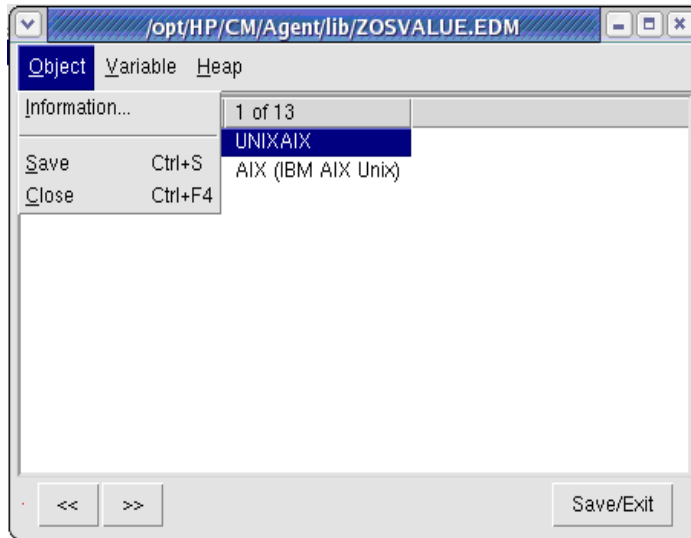
## Menus in the Object View Window

The Object View window displays the contents of an HPCA object for you to view or edit, and contains four drop-down menus: Object, Edit, View, and Window.

## Object Menu

Use the **Object** menu to view information about the object, save changes you make, and close the object.

**Figure 33 Object menu**



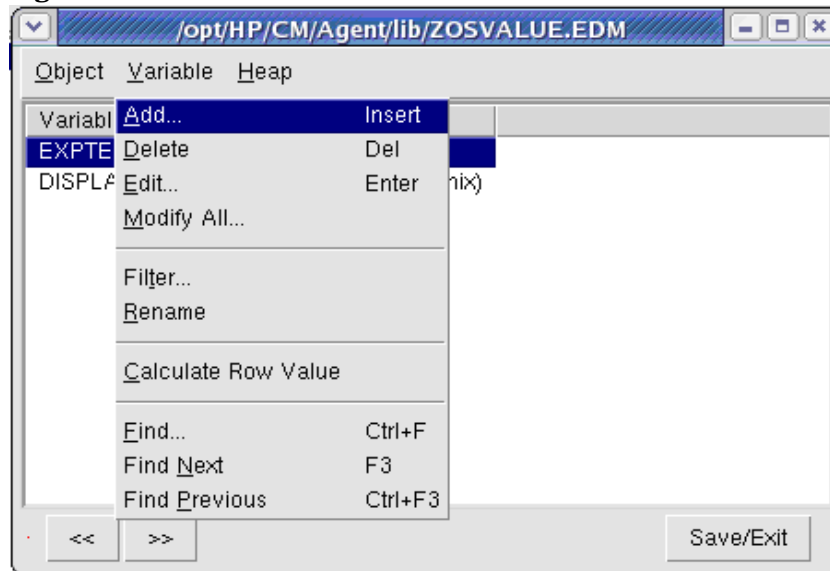
**Table 44 Object menu options**

Menu option	Function
Information	Displays the Object Information screen.
Save	Saves the changes you made.
Close	Closes the Object View window.

## Variable Menu

Use the **Variable** menu to add, delete, and rename variables, and manage and navigate through the heaps in an object based on their variable's values.

**Figure 34 Variable menu**



**Table 45 Variable menu options**

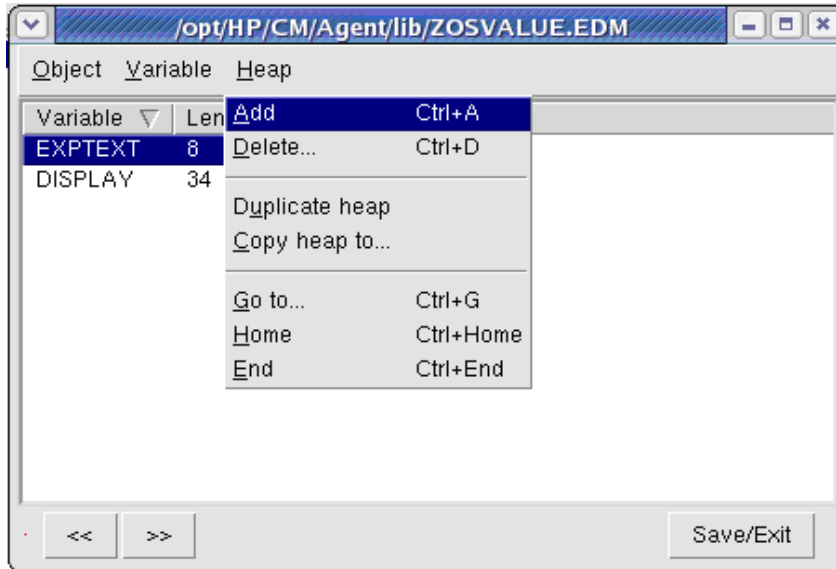
<b>Menu option</b>	<b>Function</b>
Add	Adds a variable with a user-specified name to an object.
Delete	Deletes a variable from an object.
Edit	Changes the value of a variable.
Filter	Displays all the variables that contain a user-specified character string.
Modify All	This feature is yet to be implemented. It changes the value of the variable for all heaps in an object.
Rename	Renames a variable in an object.
Calculate Row Value	For a selected variable, sums all the decimal only entries for all heaps in the object.
Find	For a user-selected variable, finds the heaps whose values contain a user-specified character string. Available only for multi-heap objects.
Find Next	After you use the Find command to enter a character string to find, this command finds the next occurrence of this character string.
Find Previous	After you use the Find command to enter a character string to find, this command finds the previous occurrence of this character string.

## Heap Menu

Use the **Heap** menu to add, delete, and copy instances in an object, and to navigate through the instances in an object.

An instance is also called a heap. To view each instance in an object, click >> or << at the bottom of the Object View window.

**Figure 35 Heap menu**



**Table 46 Heap menu options**

Menu option	Function
Add	Adds an instance with blank values. Navigate to <b>Variable</b> → <b>Edit</b> to enter the values.
Delete	Deletes the instance you select. Click >> or << to navigate to the instance that you want to delete.
Duplicate heap	Makes a copy of the instance you select, including its values. Click >> or << to navigate to the instance you want to duplicate.
Copy heap to	Copies the instance that you select to the object that you type in the Copy Instance to dialog box.
Go to	Jumps to the instance whose number you type in the New Instance # dialog box.
Home	Jumps to the first instance in an object.
End	Jumps to the last instance in an object.

## HPCA Administrator Packager

The HPCA Administrator Packager is not available for Linux or Macintosh. For both of these operating systems, the package feature is part of the HPCA Administrator Publisher.

# HPCA Administrator Publisher

The HPCA Administrator Publisher is available for the Linux and Macintosh operating systems. This section describes how to use HPCA Administrator Publisher.

The HPCA Administrator Publisher for Linux and Macintosh only has one publishing mode – Component Select mode.

In Component Select mode, you select the individual components that make up the application, such as files, directories, and links to create a package.

Publishing in Component Select mode involves four phases:

- 1 **Select** the individual files to be published.
- 2 **Edit** the file properties and methods.
- 3 **Configure** the package and service options.
- 4 **Publish** the files to the CSDB.

## Prerequisites

Before you publish the application in Component Select mode, install the target application on your packaging machine. This ensures that the files you need to select reside on the computer.

## Publishing

This section describes the typical publishing steps of Component Select mode, and by referring you to the HPCA Administrator Publisher for Windows, provides detailed information about each screen that you encounter. Note that publishing in the HPCA Administrator Publisher for Linux and Macintosh are identical to publishing for Windows except for the delivery options. For Linux and Macintosh, the User Component and Machine Component options are not available, see [Task 2](#) on page 182.

### To publish in Component Select Mode

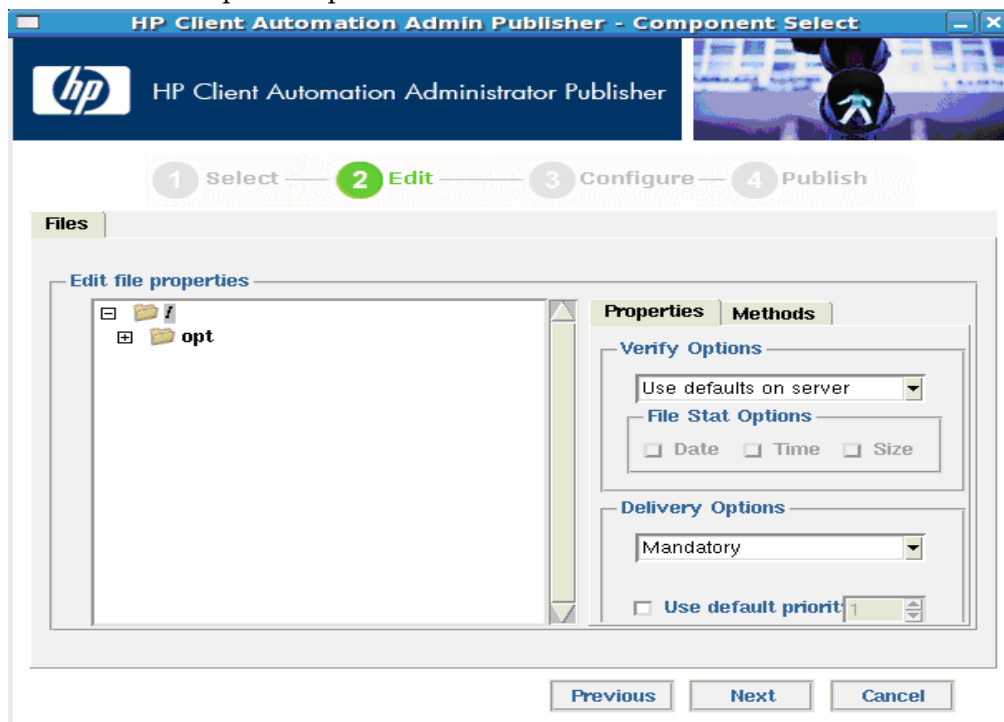
- 1 Log on as root.
- 2 To launch the HPCA Administrator Publisher run `./publishr` from the location where you installed the HPCA Administrator.
- 3 Type your User ID and Password in the appropriate fields.
  - ▶ The default user ID and password are:  
User ID: **ADMIN**  
Password: **secret**
- 4 In the **Type of data to publish** drop-down box, leave the default choice of **Component Select**. (This is the only publishing mode currently available for UNIX and Macintosh.)
- 5 Click **OK**. The Select window opens.

### Task 1: Select Files to Publish

Use the Select files to publish window to select all files that you want to include in the package. This process is the same as it is for the HPCA Administrator Publisher for Windows. For details, see [Select Files to Publish](#) on page 49.

### Task 2: Edit File Properties and Methods

Use the Edit window to edit file and folder properties and methods. This process is the same as it is for the HPCA Administrator Publisher for Windows, except for Delivery Options. For the Linux and Macintosh version of the HPCA Administrator Publisher, the User Component and Machine Component options are not available.



For similarities, see [Edit Properties and Methods](#) on page 50.

### Task 3: Enter Package and Service Information

Use the Configure window to name the package and include additional descriptive information as well as set package deployment limitations based on hardware and operating system settings. Use the Service Information window to enter descriptive information about the service, and information about how it will be managed after it is deployed. These processes are the same as they are for the HPCA Administrator Publisher for Windows, except for the options in the **Class** drop-down list. For Linux the only class available is **UNIXFILE**, and for Macintosh, the only class available is **MACFILE**.

For similarities, see [Enter Package and Service Information](#) on page 56.

### Task 4: Publish the Package

Use the Publish window to view the package and service information and then to publish it. This process is the same as it is for the HPCA Administrator Publisher for Windows. For more information, see [Publish the Package](#) on page 59.

## UNIX File Resources (UNIXFILE)

During the publication process, the UNIXFILE attributes are defined. These attributes define the owner and group associations and permissions of each published resource. Each package published has a corresponding UNIXFILE instance in the PRIMARY File.

- ▶ If publishing is performed from Macintosh operating system, the package is published to Mac File Resources (MACFILE) class in HPCA Administrator CSDB Editor.

Use HPCA Administrator CSDB Editor to view and modify the attributes in UNIXFILE and MACFILE class.

- ▶ The following instructions use the HPCA Administrator CSDB Editor. The HPCA Administrator CSDB Editor is currently available for 32-bit Windows platforms. For more information, see HPCA Administrator CSDB Editor on page 131

To view UNIXFILE Class instances using HPCA Administrator CSDB Editor

You can also use the following steps to view MACFILE class instances.

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator CSDB Editor**.

The **CSDB Editor Security Information** dialog box opens.

- 2 If necessary, type a User ID and Password, and then click **OK**.

- ▶ The default user ID and password are:

User ID: **ADMIN**

Password: **secret**

- 3 Double-click **PRIMARY**.
- 4 Double-click **SOFTWARE**.
- 5 Double-click **Unix File Resources (UNIXFILE)**.

- ▶ To view MACFILE class, Double-click **Mac File Resources (MACFILE)**.

- 6 Double-click the appropriate application. The attributes for the UNIXFILE instances for that application appear in the list view.

To change any instance attribute, double-click the attribute name in the list view. Make changes in the box that opens, and click **OK**.

## Published Owner, Group, and Permission Considerations

The UNIXFILE Class contains the attributes ZPERUID and ZPERGID. They define the user ID and group association of the promoted resource. These attributes are populated during the publishing session and reflect the user ID and group association of the resources being

promoted. In addition, permission characteristics are captured during publishing and stored in the UNIXFILE.ZRSCRASH attribute. These attributes can be changed using the HPCA Administrator CSDB Editor.

**Table 47 Attributes exclusive to the UNIXFILE Class**

<b>Attribute</b>	<b>Description</b>
ZPERUID	User ID associated with the promoted resource. The resource will be owned by this user ID when deployed, providing the HPCA Application Manager is run by root and the user ID exists on the agent workstation.
ZPERGID	Group ID associated with the promoted resource. The resource will be associated with this group when deployed, providing the HPCA Application Manager is run by root and the group exists on the agent workstation.
ZRSCRASH	This should be a four-digit octal notation of the managed resources permissions (example: 7555). This is populated during the publishing session based on the characteristics of the published resources.
DIRPERMS	Permissions assigned to unmanaged folders that are created when the directory structure does not exist. HPCA assigns permissions based on umask settings if this attribute is not defined.  For example, if the managed file <code>file.txt</code> is placed in <code>/opt/newlocation</code> , and the directory <code>/newlocation</code> does not exist, it will be created. This is an unmanaged directory.  If more than one file is installed to a new location, the first one installed determines the assigned permissions.

If the HPCA Agent is run as a non-root user ID:

- All deployed resources will be associated with the user ID and group of the user ID who is running the HPCA Application Manager.
- During publishing, the owner and group of the resource is stored in the UNIXFILE instance data. The owner and group attributes within the instance are only applied if the HPCA agent is run as root for only root has the ability to perform changes in owner and group characteristics.
- HPCA agent capabilities are limited to the permission constraints of the current user ID and group membership for the user ID running the connect.
- HPCA will be unable to deploy to directories where the directory permissions prohibit the non-root user and or group membership to write.
- HPCA may be unable to set permissions on resources placed under HPCA Management that are already on the agent workstation though owned by a different UID and/or GID.
- HPCA will be unable to launch agent methods requiring root authority.

If the HPCA Application Manager is run as root and:

- If the owner name of the resource, as defined in ZPERUID, and the user ID exist on the agent workstation, the resource will be owned by the user ID specified.



- If the group name of the resource, as defined in ZPERGID, and the group exist on the agent workstation, the resource will be associated with the group specified.
  - ▶ To prevent security breaches please note the following:
    - If the owner of a resource, as defined in ZPERUID, does not exist on the agent workstation, the owner designation of the managed resource will be set to "nobody" (uid 60001).
    - If the group of a resource, as defined in ZPERGID, does not exist on the agent workstation, the group designation of the managed resource will be set to "nobody" (gid 60001).

## Native Packaging

Native Packaging is a feature of the HPCA Batch Publisher specifically designed for Linux environments. Native Packaging is installed during the regular installation of the HPCA Batch Publisher on a Linux system.

Native Packaging explores Linux native software depots, searches for available native packages, and publishes wrapped native packages to the Configuration Server. Native Packaging publishes all the information that you need for immediate installation of native software to end agents. When the HPCA Application Manager agent is installed, a Tcl script is included in the IDMSYS directory that is required when packages that are published using Native Packaging are deployed. For more information, see the *HP Client Automation Batch Publisher Installation and Configuration Guide*.

- ▶ The HPCA Batch Publisher is an optional feature available from HP. Contact your sales representative for more details.



## 6 Troubleshooting

This chapter describes common problems in the HPCA Administrator and the possible resolution to these problems.

[Packages can have connection to FILE and PATH instances that do not exist](#)

### **Issue**

Published packages that only contain registry keys can have connection to the FILE and PATH instances that do not exist.

### **Cause**

The HPCA Administrator Publisher populates the FILE and PATH instances even though there are no connections specified for the FILE and PATH instances.

### **Possible Resolution**

This issue does not affect the deployment of the packages. You can safely ignore this issue.

[Publishing Windows Installer file using HPCA Administrator Publisher takes long time to respond.](#)

### **Cause**

A large number of files are present in the same directory location as the Windows Installer file that you want to publish.

### **Possible Resolution**

Place the Windows Installer file in a separate location along with the additional files that you want to package.



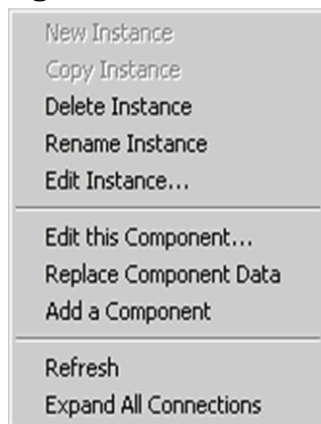
# A Modifying Component Instances (Non-Production only)

- ▶ HP does not support this feature in production environments, and assumes no responsibility if a customer uses this feature where packages are actively being deployed to agents in a production environment. Using this feature in such an environment would likely result in massive distributions of unnecessary package updates, since HPCA would detect a package change and automatically distribute the change to all authorized agents.

This appendix explains how to dynamically edit the distributed contents of a file from within HPCA Administrator CSDB Editor.

The following figure shows the shortcut menu commands for component modifications.

**Figure 36 Instance shortcut menu**



# When to Use these Commands

Examples of when you might want to use this option to modify component instances are listed in the following table.

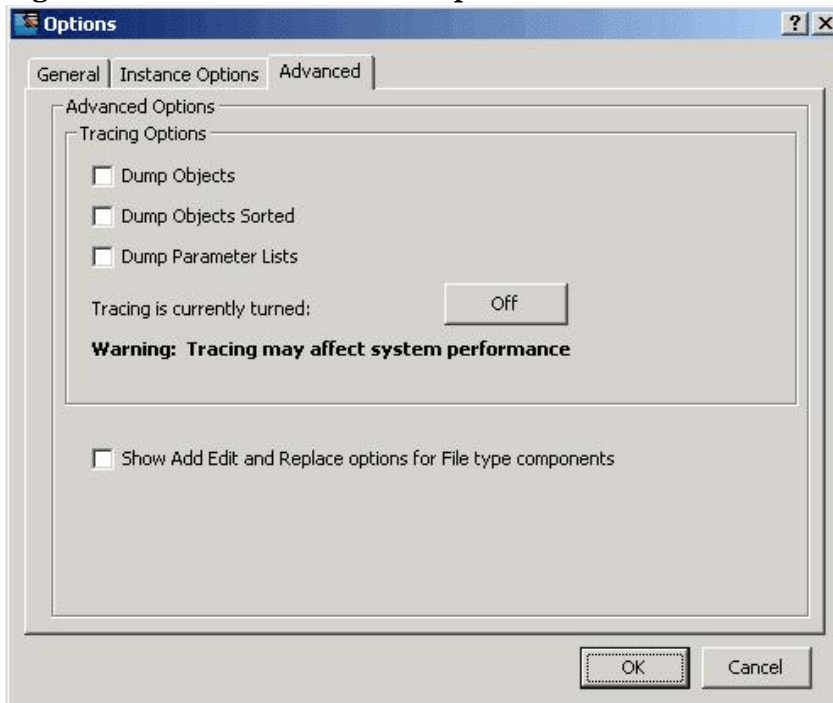
**Table 48 When to use the Advanced Edit Component commands**

Command	Typical use
Edit this Component	Change a serial number deployed with a file. Edit the contents of a <code>readme</code> file, document, spread sheet, logo image, or PDF.
Replace Component Data	Replace the entire contents of an existing file in a package with contents of another file outside of CSDB.
Add a Component	Add a new file instance to a package, using another packaged file as a template.

## Accessing the Add, Edit, and Replace Component Commands

The following setting is available on the **Advanced** tab of the **Options** dialog box: **Show Add Edit and Replace Options for File type components**.

**Figure 37 Advanced tab of the Options window**



For non-production environments only, select **Show Add Edit and Replace options for File type components** to enable these commands on the shortcut menu for applicable instances.

- ▶ HP does not support this feature in production environments, and assumes no responsibility if a customer uses this feature where packages are actively being deployed to agents in a production environment. Using this feature in such an environment would likely result in massive distributions of unnecessary package updates, since HPCA would detect a package change and automatically distribute the change to all authorized agents.

When you select this option the **Instance** shortcut menu opens, see [Figure 36](#) on page 189.

## Editing a Component

The **Edit this Component** option permits you to select an editor of your choice with which to dynamically modify the distributed contents of a file instance. After you save the changes to the file, the modified file is sent (re-promoted) to the Configuration Server and the instance in the CSDB is updated.

- ▶ HP does not support this feature in production environments, and assumes no responsibility if a customer uses this feature where packages are actively being deployed to agents in a production environment. Using this feature in such an environment would likely result in massive distributions of unnecessary package updates, since HPCA would detect a package change and automatically distribute the change to all authorized agents.

For example, you can edit the distributable contents of any component instance that has been packaged and is represented in the HPCA Administrator CSDB Editor. You must save the edited file with the same name as the original file. The modified file immediately replaces the existing file in the package. The HPCA Administrator CSDB Editor takes care of the publishing for you, saving you from having to republish the package.

The original component's contents are not retained in the HPCA Administrator CSDB Editor.

For information on creating and promoting packages to the CSDB, see [HPCA Administrator Publisher](#) on page 45.

## To edit a component

- ▶ The component editor does not know a component's target operating system. Before you edit an instance, HP recommends that you note or export the values of the following attributes, as well as any other attributes, whose values should not change due to your edits:

ZRSCMEMM (PDS Member Name)

ZRSCCRC (Resource CRC)

ZRSCPADM (PDS AdminID)

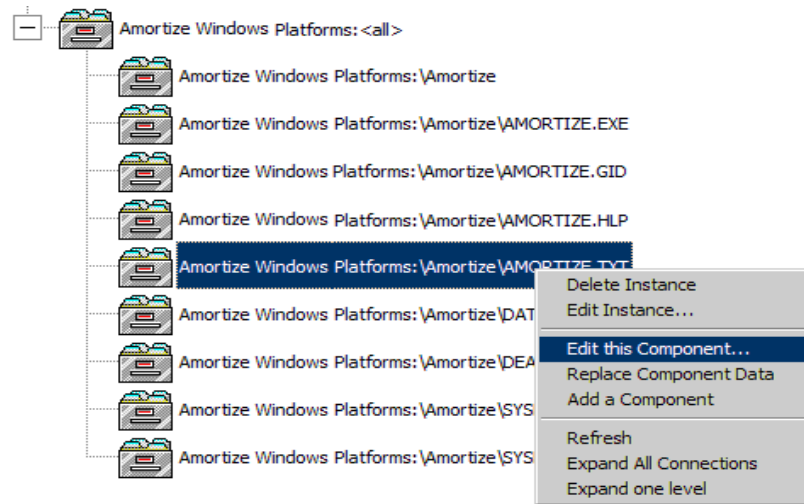
ZPUBVER (Packager/Publisher Version)

If the values of these attributes change as a result of the editing process, HP recommends that you restore the original values.

For example, if a component is targeted for a Windows operating system, the ZRSCMEMM, ZRSCCRC, and ZRSCPADM attributes do not apply and should be null. After editing a component, if these attributes show values other than null, you should clear the inserted values. Likewise, the values for other attributes, such as ZPUBVER, should remain unchanged due to an edit. If changed, restore ZPUBVER to its original value.

- 1 In the HPCA Administrator CSDB Editor, go to **Options** → **Advanced tab**, and select **Show Edit Replace and Add Component options for File type components**.
- 2 Locate the file instance that belongs to the software package whose contents you want to change in the CSDB.
- 3 Right-click the instance in the tree view. A shortcut menu opens.

The following figure shows an example of the shortcut menu for the `Amortize.TXT` readme file instance within the Amortize Platforms package. It includes the commands: **Edit this Component**, **Replace Component Data**, and **Add a Component**.



- 4 Select **Edit this Component** from the shortcut menu. The **Editor Selector** for `AMORTIZE.TXT` dialog box opens.

Use this dialog box to select the resident editor you want to use to make the changes to this file. For example, double-click **Notepad** to open the `AMORTIZE.TXT` file with `Notepad.exe`. The **Editor Selector** dialog box opens.

For details on using this dialog box, see [Using the Editor Selector Dialog Box](#) on page 193.



- 5 Double-click an editor from the **Editors** list box. The selected editor is launched and opens the previously selected file component instance.
- 6 Make the required changes to the file's contents and save it with the *same name*.
  - ▶ If you save the file with a different name, the HPCA component editor cannot make the changes to the file you selected from the HPCA Administrator CSDB Editor.
- 7 Close the editor.
- 8 If necessary, click **OK** to close the **Editor Selector** dialog box and save the changes to the instance.
- 9 The **File Re-Promote** dialog box opens, and requests a confirmation that you want to commit the changes to the selected instance in the database.
  - Click **Yes** to save the changes, perform a mini-publish and re-promote the changed file to the database.
  - Click **No** to cancel the edits and the edit session. No changes are made to the database instance.

After you commit the changes, the instance attributes for ZRSCDATE ZRSCTIME, and ZRSCSIZE reflect the edited file size and date.

Name	Attribute Description	Value
ZRSCNAME	Resource Name	&ZRSCCFIL
ZRSCCFIL	Resource File Name	\Amortize\AMORTIZE.T...
ZRSCMO	Mandatory/Optional on Client [M/O]	0
ZRSCVRFY	Verify Resource File on Connect	Y
ZRSCCONF	Confirm File Download [Y/N]	Y
ZRSCRASH	DOS File Attribute [R/A/S/H]	A
ZRSCSTYP	Server File Type [BINARY/TEXT]	BINARY
ZRSCMEM	PDS Member Name	21859BAE
ZRSCDATE	Resource Date Stamp - From Promote	20021023
ZRSCTIME	Resource Time Stamp - From Promote	16:27:40
ZRSCSIZE	Resource Size - From Promote	00000001193
ZRSCVERS	Resource Version - From Promote	
ZRSCCSTA	Client File Status	999
ZRSCCKPT	Resource Checkpoint	
ZRSCCRC	Resource CRC	

- ▶ HP recommends that you compare all attributes' values against their original ones, and restore any values that changed unnecessarily. For example, you might need to clear values from OS-related attributes whose values were originally null. For details, see the cautionary text at the beginning of this procedure on page 268.

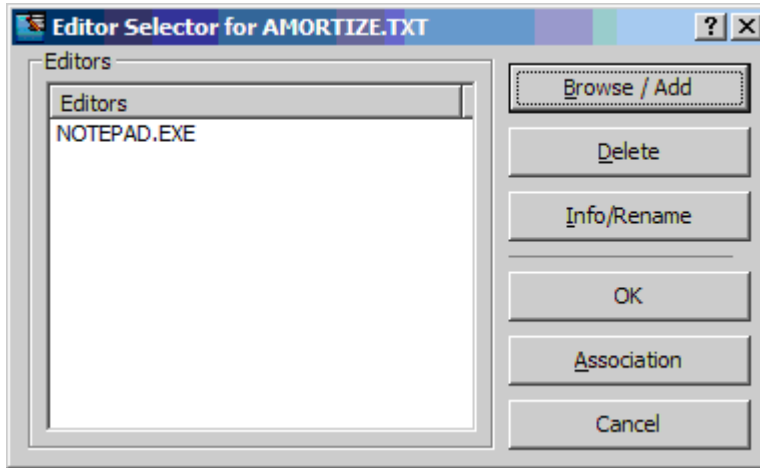
## Using the Editor Selector Dialog Box

Use the **Editor Selector** dialog box to select a resident editor with which to edit the named file.

To select an editor, choose an entry from the **Editors** list, or click **Association** to use the Windows default editor associated with file's extension.

To add, delete, or rename the editors displayed in the **Editors** list, use the top three buttons on the right.

**Figure 38 Editor Selector dialog box to edit a component**



The following table summarizes the **Editor Selector** dialog box button actions.

**Table 49 Editor Selector Dialog Box Buttons**

Button	Action
Browse/Add	Opens a <b>File Browse</b> dialog box that you can use to select a program to add to the list of editors. Adds an entry from the <b>Browse</b> dialog box to the <b>Editors</b> list below the highlighted entry.
Delete	Deletes a selected (highlighted) program from the <b>Editors</b> list.
Info/ Rename	For the selected editor program, opens a dialog box that displays the editor's program name and path, and allows you to assign a friendly name to display on the <b>Editors</b> list.
OK	Opens the selected file, named in the title bar, with the highlighted editor. Alternatively, you can double-click on the <b>Editors</b> list-box entry.
Association	Opens the selected file, named in the title bar, with the default editor associated with that file type through Windows. If no association is available, you will be returned to the <b>Editor Selector</b> dialog box where you can specify an editor or cancel.
Cancel	Cancels the <b>Edit a Component</b> command without making any changes to the selected component or package.

## Replacing Component Data

Use the **Replace Component Data** command to replace the entire contents of a packaged file with the contents of a file that exists outside the database. For example, if there is a new `Readme.TXT`, and you want to completely replace its contents, prepare a revised `Readme.TXT` file outside of the HPCA Administrator CSDB Editor. Then, use the **Replace Component Data** command from within the HPCA Administrator CSDB Editor to replace the contents of the existing `Readme.TXT` with the new one. When you use the **Replace Component Data** command, none of the properties of the packaged file changes, just its distributed contents.

- ▶ HP does not support this feature in production environments, and assumes no responsibility if this feature is used where packages are actively being deployed to agents in a production environment. Using this feature in such an environment would likely result in massive distributions of unnecessary package updates, since HPCA would detect a package change and automatically distribute the change to all authorized agents.

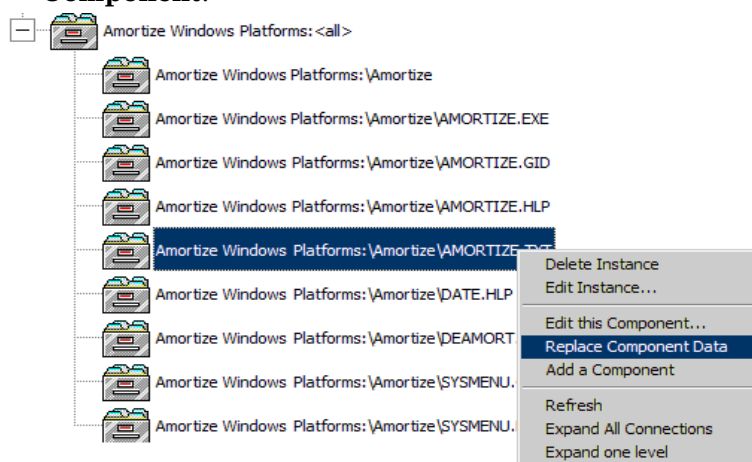
To replace [all] component data

- 1 Prepare a file outside of HPCA Administrator CSDB Editor whose contents represent the replacement data for a packaged component file in the CSDB. The prepared file can have any name.

- ▶ The entire contents of the prepared file will replace the entire data contents of the file selected from the HPCA Administrator CSDB Editor using the **Replace Component Data** command. Verify the contents of the files prior to continuing with this procedure.

- 2 In the HPCA Administrator CSDB Editor, navigate to **Options** → **Advanced tab**, and select **Show Edit Replace and Add Component options for File type components**.
- 3 Locate the file instance in the software package whose data you want to replace in the CSDB.
- 4 Right-click the instance in the tree view. A shortcut menu opens.

The following figure shows an example of the shortcut menu for the `Amortize.TXT` readme file instance within the `Amortize Windows Platforms` package. It includes the commands: **Edit this Component**, **Replace Component Data**, and **Add a Component**.



- 5 Select **Replace Component Data** from the shortcut menu. A standard **Windows Open** dialog box opens.

- 6 Navigate to the prepared file whose contents will replace the data for the file you selected from the HPCA Administrator CSDB Editor.
- 7 Click **Open** to select the file with the replacement data. A confirmation message opens.
- 8 Click **Yes** to replace the data; click **No** to abort the data replacement.

If you click **Yes**, the HPCA Administrator CSDB Editor substitutes the entire contents of the data to be distributed with the selected file's data, and republishes the package.

The instance attributes for ZRSCDATE, ZRSCTIME, and ZRSCSIZE reflect the new file size and date, as previously illustrated.

If you click **No**, the replacement command is cancelled.

## Adding a Component

The **Add a Component** command is available for file and behavior components only. Files always belong to an owning package, so the most likely place to perform an Add is from the connection under a package. New files can be added by copying the properties of an existing published file; files cannot be created from scratch, that is, from files that have not been promoted from the HPCA Administrator Packager.

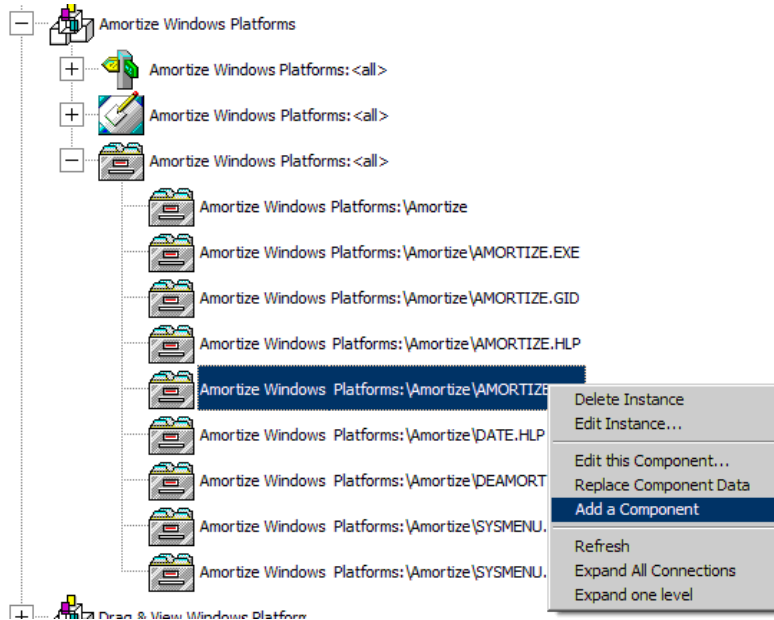
- ▶ HP does not support this feature in production environments, and assumes no responsibility if this feature is used where packages are actively being deployed to agents in a production environment. Using this feature in such an environment would likely result in massive distributions of unnecessary package updates, since HPCA would detect a package change and automatically distribute the change to all authorized agents.

New files are added by selecting an instance to use as a template. The HPCA Administrator CSDB Editor will derive the path for the new instance from the template's LOCATION variable. After a template is selected, right-click it to display the shortcut menu and select **Add Component**. An **Open File** dialog box opens where you can select the file you want to add to your package. A final confirmation box will enable you to stop the process if you need to. Click **Yes** in the box to promote the file that was selected in the **Open File** dialog box. The package now contains the new file.

### To add a component to a package

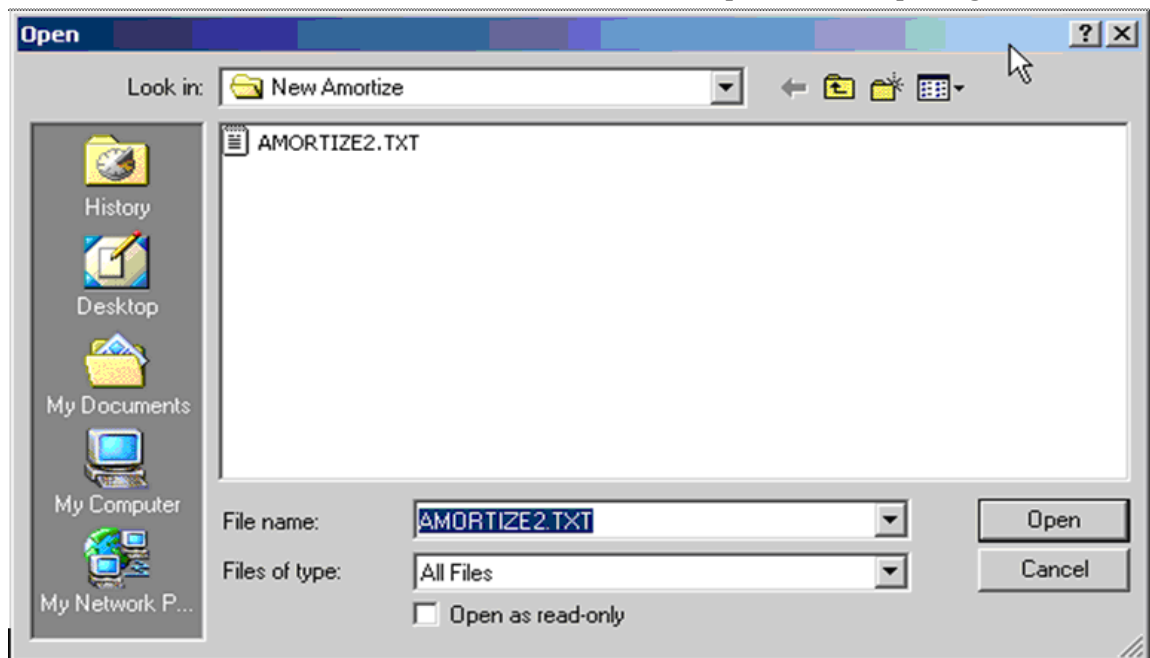
- 1 In the HPCA Administrator CSDB Editor, navigate to **Options** → **Advanced tab**, and select **Show Edit Replace and Add Component options for File type components**.
- 2 Locate a file instance in the software package whose LOCATION can serve as a template for the component to be added.
- 3 Right-click the template file's instance in the tree view. A shortcut menu opens.

The following figure shows an example of the shortcut menu for the `Amortize.TXT` readme file instance within the Amortize Windows Platforms package. It includes the commands: **Edit this Component**, **Replace Component Data**, and **Add a Component**.



- 4 Select **Add a Component** from the shortcut menu. A standard **Windows Open** dialog box opens.
- 5 Navigate to the prepared file you want to add to the package.

The following figure shows an example of navigating to a prepared file named `AMORTIZE2.TXT`. In this case, we want to add this component to the package.



- 6 Click **Open** to select the file to be added with the same **LOCATION** as the template file. A confirmation message opens.
- 7 Click **OK** or **Cancel**.

If you click **OK**, the CSDB Editor promotes the added file and republishes the package. The instance attributes for the added file's LOCATION reflect the template file's location.

If you click **No**, the **Add a Component** command is cancelled.

## B Naming Conventions

This appendix discusses the use of naming conventions to help you organize the software stored in the Configuration Server Database (CSDB).

When publishing applications, subscribers may have different requirements such as:

- Different operating systems.
- Different amounts of free space on their hard drives.
- Different processors, memory, and so on.
- Different data or applications, depending upon their job function or other factors.

Due to these varying requirements, you might need to create several packages for a single application. To keep your data organized in the CSDB, HP recommends that you create a naming convention to be used within your organization.

This section provides some recommendations that you can use as a starting point to create your own standards.

### Categorizing Information

In general, consider using unique high-level identifiers with an underscore (\_) to categorize information in the CSDB. HPCA Administrator CSDB Editor groups instances based on the identifier that precedes the underscore.

- ▶ If you decide to use a high-level identifier *without* an underscore (\_), you can use the HPCA Administrator CSDB Editor's filtering capabilities to display only the instances with that identifier.

For example, if you had a Windows XP version and a Windows Server 2003 version of an application to calculate loan amortizations, you might name the packages AMORTIZE\_XP and AMORTIZE\_2003.

## Naming Conventions for the POLICY Domain

HP recommends that you use a variation of the following standards. When naming instances in a workgroup, use information that groups your subscribers appropriately. For example, if your company is organized by division and location, you might use conventions such as the following:

**Table 50 Naming conventions for the USER Class**

<b>Format</b>	<b>Description</b>	<b>Example</b>
USERID	Identifies the subscriber.	SJones
DIV_LOC_DES C	Defines ownership or assignment.	CTS_CLE_EVERYONE
DIV	Identifies the division.	CTS (Corporate Technology Services)
LOC	Identifies the location.	CLE (Cleveland)
DESC	Provides additional description of the group.	EVERYONE (all users)

## Naming Conventions for the SOFTWARE Domain

In a company organized by division and location, you might organize your data using the following standards.

**Table 51 Naming Conventions for the PACKAGE Class**

<b>Format</b>	<b>Description</b>	<b>Example</b>
DIV_LOC_APPN AME_VER_OS	Defines the application.	CTS_CLE_WINZIP_80_XP
DIV	Identifies the division.	CTS (Corporate Technology Services)
LOC	Identifies the location.	CLE (Cleveland)
APPNAME	Identifies the application.	WINZIP
VER	Identifies the version of the application.	80
OS	Identifies the operating system that the application runs on.	XP



**Table 52 Naming Conventions for Delivery and Auditing Classes**

<b>Format</b>	<b>Description</b>	<b>Example</b>
REG_DIV_LOC_APPNAME_ VER_OS	Defines the application.	NAM_CTS_CLE_WINZIP
REG	Identifies the region.	NAM (North America)
DIV	Identifies the division.	CTS (Corporate Technology Services)
LOC	Identifies the location.	CLE (Cleveland)
APPNAME	Identifies the application.	WINZIP

Determining the conventions that make sense for your organization may take some time. However, creating a convention up front and communicating it to all of your Administrators will keep you organized in the future.



# C Creating Users and Groups in Configuration Server Database

## Creating Users and Groups

There may be times when you need to create individual users or groups in HPCA. For example, you might want to create a lab environment that is used to test the distribution and management of your data. To create a simple environment, create several users, assign them to groups, and then assign services to the groups.

In this section, you will learn how to create a user in the USER Class of the POLICY Domain. You can follow the same steps to create a new WORKGRP or DEPT instance by substituting the appropriate Class name.

In the following example, you will use the HPCA Administrator CSDB Editor to create a new user (SSampson) in the USER Class.

To create a new user

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator CSDB Editor**. The **HPCA Administrator CSDB Editor Security Information** dialog box opens.
  - ▶ The default user ID and password are:  
User ID: **ADMIN**  
Password: **secret**
- 2 If necessary, type a user ID and password, and click **OK**. The HPCA Administrator CSDB Editor window opens.
- 3 Double-click **PRIMARY**.
- 4 Double-click **POLICY**.
- 5 Right-click **Users (USER)**.
- 6 Select **New Instance**.
- 7 In the **Create Instance** dialog box, type a display name (up to 25 characters) and an instance name (up to 25 characters).
- 8 Click **OK**.

The user instance, SSampson, is created.

## Assigning Users to Groups

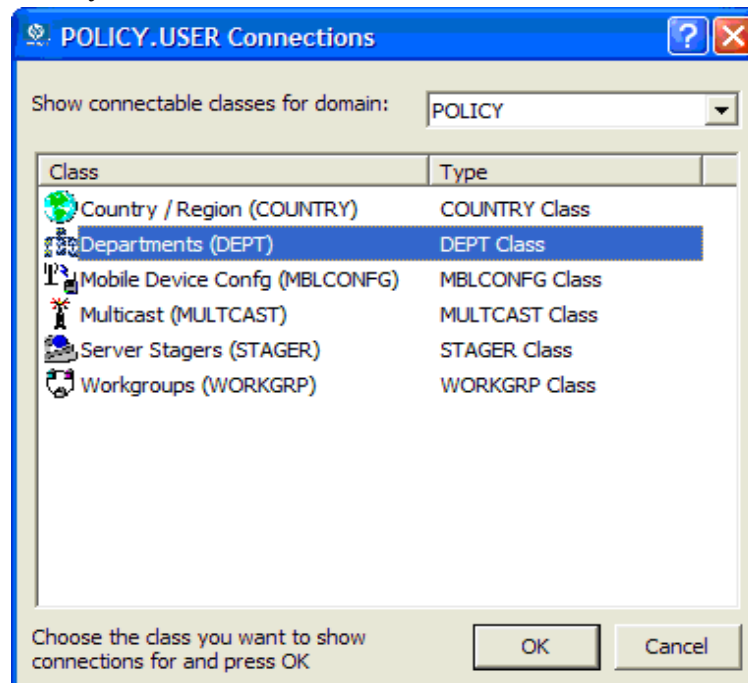
If you created several users, you might want to assign them to one or more groups. In the following example, we will use the HPCA Administrator CSDB Editor to assign the user SSampson to the Sales department.

- ▶ The Sales instance, shown in the Departments (DEPT) Class, might not appear in your Configuration Server Database. To add this instance (or instances that are appropriate to your organization), follow the procedure [To create a new user](#) on page 203. However, instead of right-clicking USER, right-click the appropriate Class, such as Departments (DEPT).

### To assign a user to a group

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator CSDB Editor**. The **HPCA Administrator CSDB Editor Security Information** dialog box opens.
  - ▶ The default user ID and password are:  
User ID: **ADMIN**  
Password: **secret**
- 2 If necessary, type a user ID and password, and click **OK**. The HPCA Administrator CSDB Editor window opens.
- 3 Double-click **PRIMARY**.
- 4 Double-click **POLICY**.
- 5 Double-click **Users (USER)** to open the list of all user instances.
- 6 Right-click the user instance (in this example, SSampson) and select **Show Connections** from the shortcut menu.

The **POLICY.USER Connections** dialog box opens and displays a list of classes to which you can connect the selected instance.



- 7 Select **Departments (DEPT)**, and then click **OK**.

The DEPT Class instances appear in the list view. This allows you to easily make a connection between an instance in the DEPT Class and an instance in the USER Class.

- 8 Select the **Sales** instance from the list view and drag it to the appropriate USER instance (in this example, SSampson). When your cursor turns into a paper clip, release the mouse button. The **Select Connection Attribute** dialog box opens.
- 9 Click **Copy** to create the connection from Users.SSampson to Department.Sales.
- 10 Click **Yes** to confirm the connection.
- 11 Click **OK** when you receive the confirmation that “SSampson has been connected to Sales.”

SALES is now listed under the SSAMPSON user instance, indicating that SSampson is part of the Sales department.

## Connecting Services to Groups

Whether you are using an external policy source or managing policy within HPCA, you will need to define the services that your subscribers will receive.

- ▶ If you are using the Policy Server, see the *HP Client Automation Enterprise Policy Server Reference Guide*.

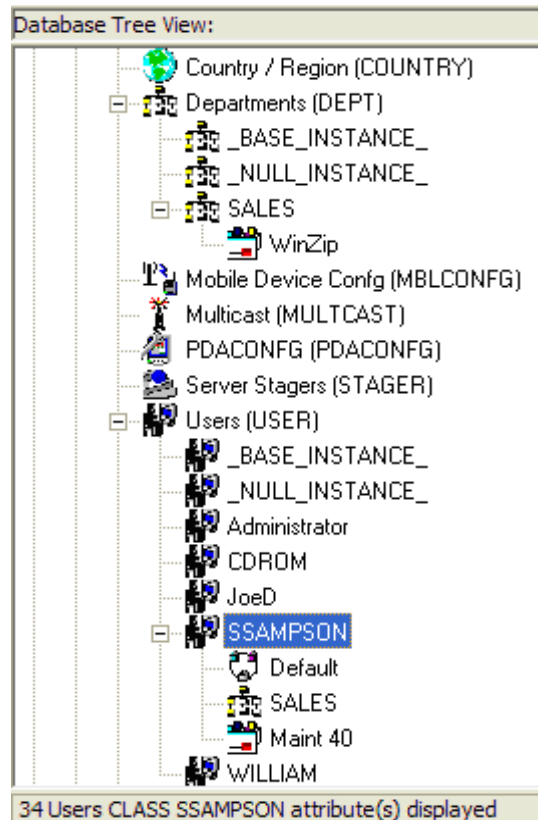
In this section, you will learn how to connect users and groups to the services that HPCA will manage. In the following example, we will use the HPCA Administrator CSDB Editor to authorize the WinZip application for all users in the Sales department.

## To connect the WinZip application to the Sales department

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator CSDB Editor**. The **HPCA Administrator CSDB Editor Security Information** dialog box opens.
    - ▶ The default user ID and password are:
      - User ID: **ADMIN**
      - Password: **secret**
  - 2 If necessary, type a user ID and password, and click **OK**. The HPCA Administrator CSDB Editor window opens.
  - 3 Double-click **PRIMARY**.
  - 4 Double-click **POLICY**.
  - 5 Double-click **Departments (DEPT)** to open the Departments Class.
  - 6 Right-click the **Sales** instance (in the tree view) and select **Show Connections**.

The **POLICY.DEPT Connections** dialog box opens. This dialog box displays a list of classes to which you can connect the selected instance.
  - 7 From the **Show connectable classes for domain** drop-down list, select **SOFTWARE**.
  - 8 Click **Application (ZSERVICE)**, and then click **OK**. The instances in the ZSERVICE Class appear in the list view.
  - 9 Select the **WinZip** Instance from the list view and drag it to the appropriate Departments instance (in this example, Sales). When your cursor turns into a paper clip, release the mouse button. The **Select Connection Attribute** dialog box opens.
  - 10 Click **Copy** to create the connection from DEPT.SALES to Application.WinZip.
  - 11 Click **Yes** to confirm the connection.
  - 12 Click **OK** when you receive the confirmation that “Sales has been connected to WinZip.”
- In the image that follows, note the following:
- WinZip is listed under DEPT.SALES, which indicates that the entire Sales department is authorized to receive the WinZip application.
  - SSampson is listed under the USER Class, as is the SALES Instance, indicating that SSampson is part of the Sales department.

Therefore, based on these two conditions, HPCA will manage the WinZip application on SSampson's computer.



Whether you are using an external policy store, or managing policy within HPCA, you can quickly modify the services that individuals are authorized for by manipulating the connections between services and groups, adding users to groups, or removing users from groups.





# D Creating Services Using Advanced Capabilities

## Configuring Applications in the Machine/User Context

Your enterprise might require that applications be configured to accommodate multiple users, or that one computer always has available the same applications regardless of the user. A service might be considered multi-context if it has components to be installed in the machine context and in the user context.

▶ This is a feature of HPCA Application Manager agent.

In order to complete the installation of a multi-context service, the HPCA agent computer will need to connect to the Configuration Server twice: once to install the machine components and once to install the user components. The machine components are installed first. If the machine portion does not successfully complete, installation of the user component will not take place. The machine portion can be invoked through Notify and timers. The user portion should be embedded in a logon script, desktop shortcut, or batch file that is local to the user.

Complete the following steps to configure your service for machine or user installations.

- Use either HPCA Administrator Publisher or HPCA Administrator CSDB Editor to specify whether a package component is to be installed in the User or Machine context. For instructions, see [Setting the Context of Components](#).
- Use HPCA Administrator CSDB Editor to configure your service to deploy under either the system or user account. See [Setting the Service Mode](#) on page 150.
- Use HPCA Administrator CSDB Editor to set the deployment methods for the service. See [Deploying a Machine/User Service](#) on page 153.

### Setting the Context of Components (ZCONTEXT)

Use HPCA Administrator Publisher to select machine and user components separately. Set the context of a component using either HPCA Administrator Publisher during the publishing process, or using HPCA Administrator CSDB Editor after the publishing process.

▶ To take advantage of the Machine/User context, previously packaged applications must be repackaged.

To set the context in HPCA Administrator Publisher

- 1 Right-click the files or directories and select **Set Properties**. The **Instance Properties** dialog box opens.
- 2 In the **Agent Management** tab select the appropriate context for the component.

If you have already completed the publishing process, use HPCA Administrator CSDB Editor to set the ZCONTEXT attribute in the component's instance.

To set the context in HPCA Administrator CSDB Editor

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator CSDB Editor**. The **HPCA Administrator CSDB Editor Security Information** dialog box opens.

▶ The default user ID and password are:

User ID: **ADMIN**

Password: **secret**

- 2 If necessary, type a user ID and password, and click **OK**. The HPCA Administrator CSDB Editor window opens.
- 3 Double-click **PRIMARY**.
- 4 Double-click **SOFTWARE**.
- 5 Double-click **Application Packages (PACKAGE)**.
- 6 Double-click the component's class.
- 7 Double-click the component.
- 8 Double-click **ZCONTEXT**.
- 9 Type the appropriate value based on the information in the following table.

**Table 53 Component Context (ZCONTEXT) options**

<b>Setting</b>	<b>Explanation</b>
blank	Leave ZCONTEXT blank if the component is independent of context. This component is installed during machine and user connects.
U	Type <b>U</b> to indicate that this component will be deployed only to the user logged on when the application is initially deployed.
M	Type <b>M</b> to indicate that the file should be deployed to all users of the computer.
User Specified	<i>This option is for future use.</i>

- 10 Click **OK** to complete the changes.
- 11 Click **Yes** to confirm the changes and return to HPCA Administrator CSDB Editor.

▶ As a rule, the component will be processed if its ZCONTEXT attribute matches the value of the context parameter in the RADSKMAN command line or if the component's ZCONTEXT attribute is blank.

Now that you have set the component's context, specify that the ZSERVICE instance for the application has machine and user components.

## Setting the Service Mode (ZSVCMODE)

The ZSVCMODE attribute in the ZSERVICE class is used to determine if the machine/user context is relevant to the package's deployment. If you need to create the ZSVCMODE attribute, add it to the class template for the ZSERVICE class. Create it as a variable of length 3. Accept the other default properties. The possible values are M, U, MU, blank, and EMU.



HP recommends you back up the CSDB prior to making class template changes.

**Table 54 Values for ZSVCMODE in the ZSERVICE Class**

<b>Value</b>	<b>Explanation</b>
Blank	Use this when you want the components to install whether the client is logged on in the machine or user context. The application will only be installed using the available context.
EMU	Enhanced Machine/User service: If the HPCA agent connect is being made in the user context, but the machine side of the application has not yet been installed, this will force the machine connect. After the machine connect completes successfully, the user connect is initiated to install the user components. Use this for optional applications that the user controls through HPCA Application Self-service Manager.

**Table 54 Values for ZSVCMODE in the ZSERVICE Class**

<b>Value</b>	<b>Explanation</b>
EMU:AD=N	<p>Enhanced Machine/User service:</p> <p>If the HPCA agent connect is run in the user context, but the machine side of the application are not yet installed, this will force the machine connect. After the machine connect completes, the user connect is initiated to install the user components.</p> <p>Use this for optional applications on a shared computer that the user controls through the Application Self-service Manager. The addition of AD=N prevents a user from being able to remove the machine components of the application. Other users of the agent computer may still need the machine components of the application. The valid application events are:</p> <p>AI = application install  AD = application delete  AU = application update  AR = application repair  VA = version activation  VD = version deactivation</p> <p>The default for each event is <b>Y</b>. Separate multiple events with a comma.</p>
M	<p>Machine service only</p> <p>Set ZSVCMODE to <b>M</b> if the service has only machine components. This service will be ignored if context is set to <b>u</b> on the RADSKMAN command line.</p>
MU	<p>Machine/User service</p> <p>Set ZSVCMODE to <b>MU</b> if the service has both machine and user components. The user connect will verify that the machine components have been installed before installing the user components. The user components will not be installed if the machine components are not present.</p>


To set ZSVCMODE in ZSERVICE

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator CSDB Editor**. The **HPCA Administrator CSDB Editor Security Information** dialog box opens.
  - ▶ The default user ID and password are:
    - User ID: **ADMIN**
    - Password: **secret**
- 2 If necessary, type a user ID and password, and click **OK**. The HPCA Administrator CSDB Editor window opens.
- 3 Double-click **PRIMARY**.
- 4 Double-click **SOFTWARE**.
- 5 Double-click **Application (ZSERVICE)**.

- 6 Double-click the appropriate service.
- 7 Double-click **ZSVCMODE** in the list view.
- 8 Type the appropriate values based on the values discussed in [Table 54](#) on page 211.
- 9 Click **OK** to complete the changes.
- 10 Click **Yes** to confirm the changes and return to HPCA Administrator CSDB Editor.

## Enhanced Machine and User Services for HPCA Application Self-service Manager

When an application has machine and user components, HPCA Application Self-service Manager agent needs elevated privileges on the HPCA agent in order to properly install machine components, and the user components need a user logged on to access the user's settings. A machine component might be a file or registry key while a user component might be a desktop shortcut. If context is set to **U**, the user will not be able to install the machine side of the application, and the user connect will fail. By setting ZSVCMODE to **EMU**, when the user selects the application to install, HPCA Application Self-service Manager agent will check to see if the machine components are already installed. If they are not, HPCA Application Self-service Manager agent will install the machine components *for that service only*, and then, install the user components. In other words, two separate HPCA agent connects will run, one in machine context and one in user context. Set the CONTEXT tag to **U** in the `args.xml` file to enforce EMU behaviors.

 ZSVCMODE must be changed to 3 bytes and EMU must be one of the choices.

If ZSERVICE.ZSVCMODE is set to **EMU**, and HPCA Application Self-service Manager agent encounters a service that is marked as EMU, it first checks to see if the machine catalog exists, and if the requested service exists in the machine catalog:

- If the service exists, and is marked installed in the machine catalog, the service is installed for the user.
- If the service is not installed on the machine side, but the catalogs are synchronized, then the client will first install the machine side of the service and then install the user piece of the service.
- If the machine catalog is missing (because a machine connect never ran), then the client gets the machine catalog, and installs the service on the machine side. Then, if the service was successfully installed on the machine side, the user side of the service will be installed.

## Deploying a Machine or User Service

The HPCA agent will need to connect to the Configuration Server twice to complete the installation of services that are marked with ZSVCMODE set to **MU**. The first connect will be in the machine context. In the RADSKMAN command line, add a parameter **context=M**. This will set the **startdir=SYSTEM** by default. Do this by using either a Timer or a Notify command.

The second connection will install the user components. Do this in a logon script, batch file, or desktop icon since the user needs to be logged on. Use the RADSKMAN command line with **context=U** parameter. If ZSVCMODE is **MU**, the user components will only be installed if the machine connect has finished successfully.

## Service Groups

HPCA manages products that require more than one service-package to establish full product installation or operation. You can use Service Groups when a product requires other service-packages or has dependencies on other services.

This includes MSI-packaged products where:

- A product can use more than one MSI service-package. For example, if MS Office requires other language-pack services.
- A large product, such as MS Office, needs to be split into smaller sub-services in order to install only specific parts of the product suite.

HPCA Application Self-service Manager interface will display only the master service.

For detailed information on creating Service Groups, see [Service Groups](#) on page 136.

## Restarting the HPCA Agent Computer

You might need to restart an HPCA agent computer based on an application event. To do this, specify a reboot type and reboot modifiers in the ZSERVICE.REBOOT attribute. The modifiers allow you to:

- Set the type of warning message.
- Handle a reboot with either a machine or user connect.
- Cause an immediate restart after the application event.



If the `hreboot` parameter is missing from the RADKSMAN command line, the parameter defaults to **Y** to handle service reboot requests. If `hreboot = p`, the HPCA agent computer will power down, regardless of whether there is a service requiring a reboot.

First, specify the application event that needs the reboot. [Table 55](#) on page 215 lists the codes for all possible application events. Set the application event code to a reboot type and any reboot modifier that you need to use. The sections below describe each type of reboot and all reboot modifiers.

If you need an application to immediately perform a hard reboot with no warning messages on application installation and repair, set ZSERVICE.REBOOT to **AI=HQI, AR=HQI**.



The parameters for the reboot attribute are not case-sensitive.

**Table 55 Reboot Events and Codes**

Application Events	Code	Description
Install	AI	Specifies a reboot behavior for application installations. The default is no reboot.
Deinstall	AD	Specifies a reboot behavior for application removals. The default is no reboot.
Locked File	AL	Specifies a reboot behavior when a locked file is encountered. The default behavior when a locked file is encountered is to perform a Hard reboot with just an OK button (HY).
Update	AU	Specifies a reboot behavior for application updates. The default is no reboot.
Repair	AR	Specifies a reboot behavior for application repairs. The default is no reboot.
Version Activation	VA	Specifies a reboot behavior for application version activations. The default is no reboot.

## Reboot Types

After deciding which application events need a reboot, choose the type of reboot. HPCA sends a message to the operating system that the computer needs to reboot. There are three types of reboot.

- Hard Reboot (H)**  
 All applications are shut down regardless of whether there are open, unsaved files or not. The subscriber will not be prompted to save open, modified files.
- Soft Reboot (S)**  
 Users are prompted to save their data if applications have open, unsaved files. If applications have unsaved data, the reboot will wait for the user to respond to the application's request for the user to save his data.
- No Reboot (N)** (default reboot type)  
 The computer will not restart after completing the specified application event. This is the default reboot type for all application events except a Locked File Event (AL). If you specify AL=N, the agent computer will not perform a hard reboot with an OK and Cancel button when a locked file is encountered. If no restart type is specified for an application event, no restart will occur.

## Reboot Modifier: Type of Warning Message

You can specify the type of warning message you want to send to the subscriber before the restart occurs. If you specify a type of reboot, but do not specify a type of warning message, the default warning message for that type will be displayed. There are three types of warning messages. Warning messages are displayed automatically for HPCA Application Self-service Manager and HPCA Application Manager used with the HPCA System Tray. If you do not want to show a warning message, specify **ask=N** in a RADSKMAN command line.

- **Quiet (Q)**  
No reboot panel will be displayed.
  - **OK Button (A)**  
A warning message will display with an OK button only. Clicking the **OK** button will initiate the reboot. The user will not be able to cancel the restart.
  - **OK and Cancel Button (Y)**  
Clicking the **OK** button will initiate reboot. If the user clicks **Cancel**, the reboot will be aborted.
- ▶ You can specify a timeout value for the **Warning** message box by adding the **RTIMEOUT** value to the RADSKMAN command line. Set **RTIMEOUT** to the number of seconds you want the HPCA agent to wait before continuing with the reboot process.

## Reboot Modifier: Machine and User Options

The HPCA agent can connect as a machine or as a user by specifying the context parameter on the RADSKMAN command line. Use the machine/user reboot modifier to specify if the reboot should complete based on the type of connect.

- **Reboot on Machine connect (blank)**  
When a machine/user reboot modifier is not supplied, the default behavior will be to reboot on a machine connect only. This default behavior should satisfy the majority of reboot requirements.
- **Reboot on User connect only (U)**  
The reboot will be honored on a user connect only where **context=u** in RADSKMAN or if the context parameter is not specified. The reboot will not occur where **context=m** in RADSKMAN.
- **Reboot on both Machine and User connect (MU)**  
Reboot will only occur when both the machine and user components of the application are installed.

## Reboot Modifier: Immediate Restart

You can modify each type of reboot by adding **I** (for Immediate). Use this when you want the computer to restart immediately after resolving the current service. HPCA will resolve the rest of the user's services after the computer restarts. If you specify **I** but not **H** (hard) or **S** (soft) as the type of reboot, a hard reboot will be performed.

## Specifying Multiple Reboot Events

If you have two services that require a reboot event on the same HPCA agent connect, the most restrictive reboot type and reboot panel will be used. The least restrictive reboot type is No Reboot (N), followed by Soft Reboot (S), and the most restrictive is Hard Reboot (H). The least restrictive reboot warning message supplies both an OK and Cancel button (Y), followed by an OK button only (A), and the most restrictive is completely quiet (Q).



Suppose a user is assigned to an application that needs a soft reboot with just an OK button on installation, AI=SA. The user is also assigned a second application that needs a hard reboot that displays both an OK and Cancel button, AI=HY. After all of the subscriber's application events are completed, a Hard Reboot (H) with only an OK button displayed (A) will be performed.

## Preparing Versioned Applications

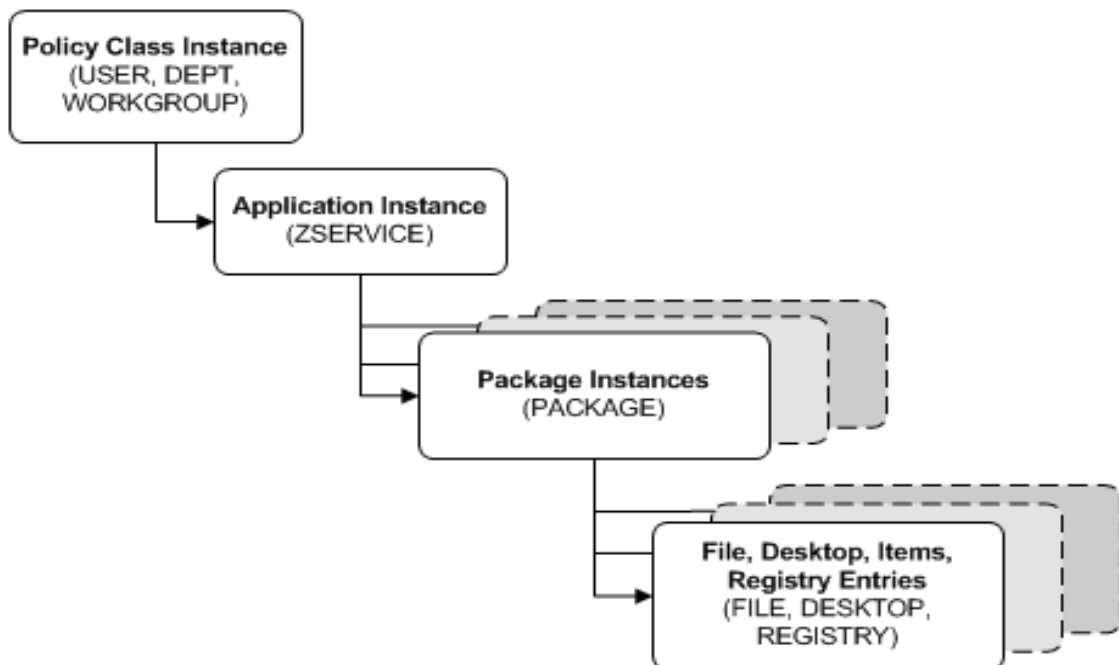
Typically, when you deploy an application to an HPCA agent computer, using either HPCA Scheduler or HPCA Notify, it is activated immediately. There is another option, **Version Groups**, which enables you to roll out a new version of an application to users; it gives you the options of having it activate upon delivery or at a pre-determined time. If the installation of the new version fails, HPCA will automatically roll back to the previous version. If problems occur in the new version after installation, you can deactivate the new version and roll back to the previous version for some, or all, users.

After versioning is configured, the compressed files are stored on the HPCA agent computer, and the versioning takes place. The roll forward/roll back can be entirely local, not requiring any data to be transferred at the version change time. It can also be configured to be partially local, with a minimum of data being transmitted.

## Versioned vs. Non-versioned Applications

Versioned and non-versioned applications adhere to different connection models within the CSDB. For non-versioned applications, one Application instance (ZSERVICE) connects to one or more package instances.

**Figure 39 CSDB path for non-versioned application deployments**

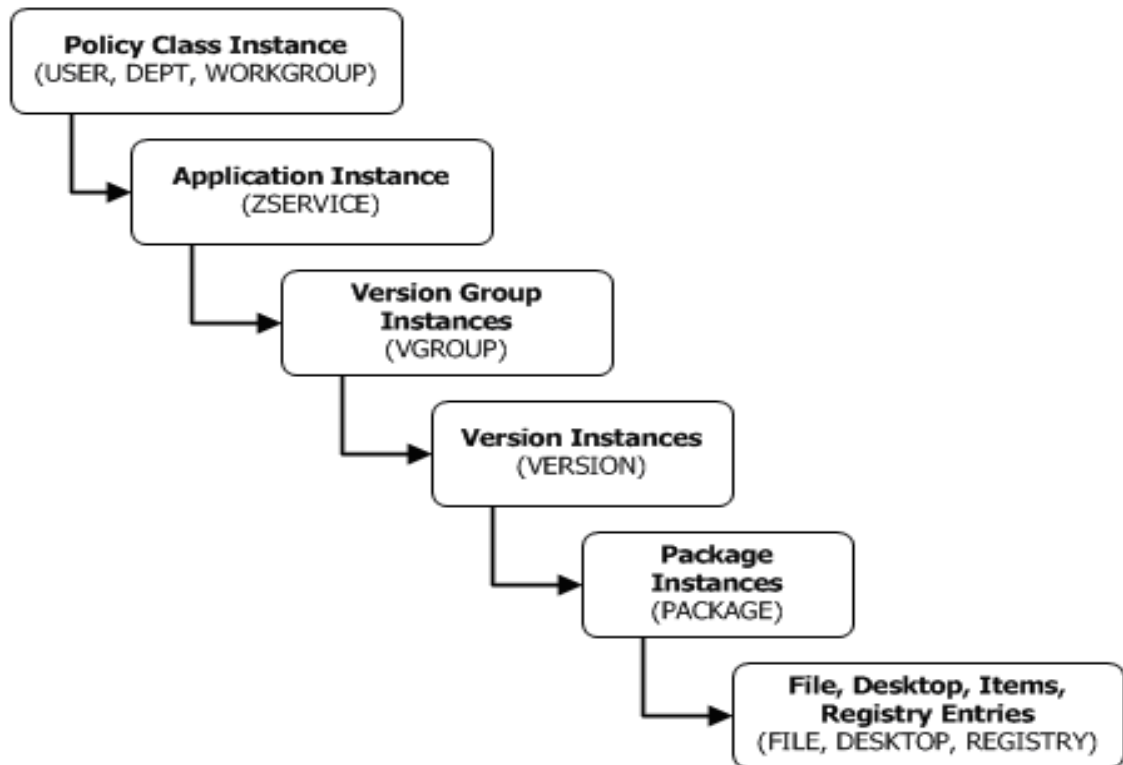


Versioned applications adhere to a different connection model than non-versioned applications. For versioned applications, an Application instance (ZSERVICE) connects to a single Version Group (VGROUP) instance.

- ▶ If you want to use multiple Version Groups, you must create one service for each Version Group.

The Version Group instance connects to one or more Version instances that connect to one or more Package instances. A Version instance (which represents one version of a software application) contains one HPCA package. Each HPCA package is represented in the CSDB by an instance of the PACKAGE Class.

**Figure 40 CSDB path for deployments of versioned application**



To prepare versioned applications

- 1 Use HPCA Administrator Publisher to package the application.
- 2 Right-click **ZSERVICE** class and select **New Instance**.
- 3 In the **Create Instance** dialog box, type a display name and an instance name, and click **OK**.

To finish creating the Version Group, see the following section, [Version Group Editor](#).

## Version Group Editor

Use Version Group Editor, in HPCA Administrator CSDB Editor, to create, edit, and delete instances for each version of an application, as well as manage the deployment of a version group. A version group contains all versions of an application.

To manage a versioned application, in the Version Group class create an instance that represents the set of versions for the application. Then, use the Version Group Editor to create instances for each version of the application.

## Creating a Version Group

In the following example, we will use HPCA Administrator CSDB Editor to create a new instance in the Version Group (VGROUP) class.

### To create a Version Group

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator CSDB Editor**. The **HPCA Administrator CSDB Editor Security Information** dialog box opens.
  - ▶ The default user ID and password are:  
User ID: **ADMIN**  
Password: **secret**
- 2 If necessary, type a user ID and password, and click **OK**. The HPCA Administrator CSDB Editor window opens.
- 3 Navigate to **PRIMARY.SOFTWARE**, right-click **Version Group (VGROUP)**.
- 4 Select **New Instance**. The **Create Instance** dialog box opens.
- 5 In the text field of the **Create Instance** dialog box, type a name (such as Amortize) for the Version Group, and click **OK**. The **Editing Version Group** dialog box opens.

## Creating a Version Instance

Now that you have created a Version Group (VGROUP) instance, it is necessary to learn how to create an instance for each version of your application.

### To create a version instance

- 1 In the Version Group Editor, click **Add**. The **Create Version** dialog box opens.
- 2 Type a suffix that identifies the version. For example, **Version 1**.
- 3 Click **OK**. The **Version Editor** dialog box opens.

The Version Editor dialog box contains a list of Application Package (PACKAGE) instances that are stored in the Configuration Server Database. Use this dialog box to connect the new Version (VERSION) instance to an Application Package (PACKAGE) instance. There is a one-to-one correspondence between these two instances.

- 4 Click the appropriate Application Package (PACKAGE) instance.
- 5 Click **OK**. The Version instance appears in the **Unassigned Version** list.

Add a Version instance for each version of the application that will be available to subscribers through this Version Group.

### To delete a version instance

- 1 In the **Version Group Layout** list, select the version that you want to delete.
- 2 Click **Delete**.

The instance for the version appears in the **Unassigned Versions** list. The icon is in a dimmed state, ready for deletion.

To restore the instance, click the instance in the **Unassigned Versions** list and then click **Un-delete**.

The version instance will not be deleted until you close the Version Group Editor.

- 3 Click **OK** to close the Version Group Editor.

## Assigning Version Instances to the Version Group

After creating your Version instances, you must assign them to the Version Group.

### To assign Version instances to the Version Group

In the **Unassigned Versions** list, click a Version instance and drag it over a connection labeled <no assigned version> in the Version Group Layout list.

Assign each of the Version instances that you created to the Version Group.

### To remove a Version instance assignment

In the Version Group Layout, click a Version instance and drag it to the Unassigned Versions area. Then, release the mouse button.

## Preparing a Version Group for Deployment

Now that you have created the Version instances and assigned them to your Version Group, you are ready to specify how you would like to deploy the versions. Use the Version Group Information area in the Version Group Editor to define the deployment of the versions.

### To prepare a Version Group for deployment

- 1 In the Versioning Controlled By drop-down list, select:
  - **Manager** if you want to control the version to be deployed.
  - **Client** if you want the user to control the version to be deployed.

*This is used with HPCA Application Self-service Manager only.*

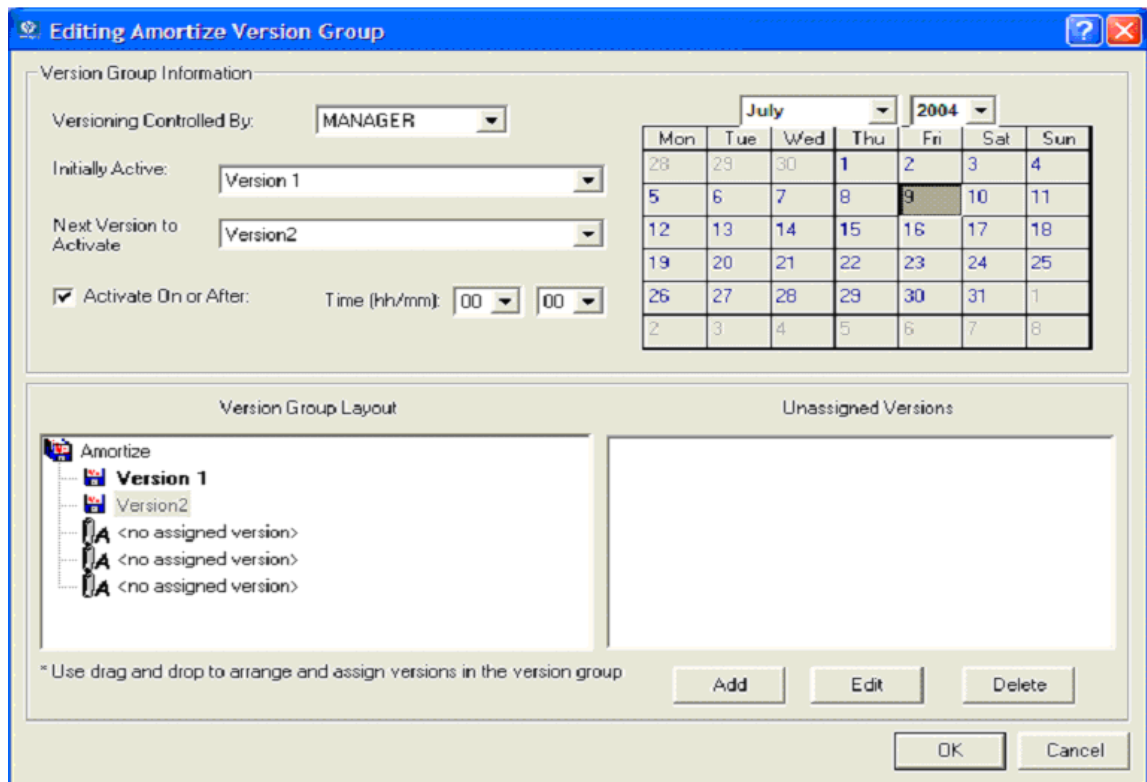
- ▶ If you want the ability to schedule the version deployments with the Configuration Server you must select **MANAGER** from the **Versioning Controlled By** drop-down list.

- 2 In the **Initially Active** drop-down list, select the version that you want to activate on the HPCA agent computer the next time the user connects to the Configuration Server.

You can also select from the versions that appear in the **Version Group Layout** list. The selected version appears in bold text in the **Version Group Layout** list, as shown in the next figure.

- 3 Select the **Activate on or After** check box to access additional controls that can be used to delay activation of a version until a specific date and time.

- ▶ If you select **MANAGER** in the **Versioning Controlled By** drop-down list, you must select the **Activate On or After** check box so that the Configuration Server knows when to activate the next version.



- 4 In the **Next Version to Activate** drop-down list, select the version of the application that you want to activate after the initial version.
- 5 In the **Time (hh/mm)** drop-down list, select when you want the version to be activated.
- 6 Use the Calendar controls to set the date of deployment for the next version.



If you use the Time and Calendar controls to schedule the deployment of a version, consider the following:

- You can schedule deployments of versions only if the Configuration Server controls the versions
  - If you selected **MANAGER** in the **Versioning Controlled By** drop-down list, you must select the **Activate On or After** check box to let the Configuration Server know when to activate the next version.
  - If you delete a VGROUP instance, the associated TIMER instance will be deleted.
- 7 Click **OK** to save the information in the Version Group Editor.
  - 8 Click **Yes** to confirm your changes.

The Version Group instance appears in the Version Groups (VGROUP) Class. If you scheduled the next version to activate, HPCA creates an instance in the Scheduling (TIMER) Class and automatically connects the timer to the Version Group.


#### To connect the Version Group to the Service

- 1 In HPCA Administrator CSDB Editor, navigate to **PRIMARY.SOFTWARE.ZSERVICE**.
- 2 Right-click the appropriate service (such as Amortize) and select **Show Connections**. The **SOFTWARE.ZSERVICE Connections** dialog box opens.

- 3 Click **Version Groups (VGROUP)** and click **OK**.

The Version Group instances appear in the list view of HPCA Administrator CSDB Editor.

- 4 Click **Amortize** in the list view and drag it to the appropriate Application (ZSERVICE) instance (in this example, Amortize). When your cursor changes to a paper clip, release the mouse button. The **Select Connection Attribute** dialog box opens.
- 5 Click **Copy**.
- 6 Click **Yes** to confirm that you want to connect the Amortize Version Group to the Amortize service.
- 7 Click **OK** when you receive a confirmation message.

 Be sure to connect the ZSERVICE instance to the POLICY instance for the subscribers to whom you want to deploy this.

The next time the HPCA agent connects to the Configuration Server, the initial version of the application is activated and the compressed files for the next version will be stored on the HPCA agent computer.

## Editing a Version Group

After you create a version group and its instances, you might want to return to the Version Group Editor to make changes.

### To edit a Version Group

- 1 In HPCA Administrator CSDB Editor, navigate to the Version Group instance located in **PRIMARY.SOFTWARE.VGROUP**.
- 2 Right-click the appropriate Version Group instance and select **Version Group Editor**. The Version Group Editor opens.
- 3 Edit the Version Group as necessary.
- 4 Click **OK** to save your changes.

or

Click **Cancel** to close the Version Group Editor without saving your changes.

## Version Group (VGROUP) Class

Each instance of the Version Group (VGROUP) Class defines a set of versions for an application, and contains connections to the Versions (VERSION) Class. The following table describes the VGROUP Class attributes.

**Table 56 Version Group (VGROUP) Class Attributes**

Attribute	Description
ZSTOP00 <i>n</i>	In ZSTOP attributes, expressions that evaluate to true cause resolution of the instance to be skipped. If left blank, the instance is not skipped and resolution continues. This is useful for assigning a version to a set of users. Use HPCA Administrator CSDB Editor to set this attribute.
CONTROL	Indicates whether the HPCA administrator (MANAGER) or the user (CLIENT) controls which version to activate on the HPCA agent computer. Use the Versioning Controlled By drop-down list in the Version Group Editor to set this option.  Note: HPCA agents support HPCA administrator-controlled version activation, but do not support subscriber-controlled activation.
INITIAL	Indicates which version to activate on the HPCA agent computer. Use the <b>Initially Active</b> drop-down list in the Version Group Editor to set this option.
ROLLBACK	Indicates whether to automatically roll back to the previously activated version when deployment of a new version fails. The default is <b>Y</b> .
REQACTDT	The earliest date on which a version in this Version Group will be activated on any HPCA agent computer. If this attribute is blank, the version identified by the INITIAL attribute will be activated at the end of the HPCA agent connect that causes the version to be transferred to the HPCA agent computer. Use the calendar controls in the Version Group Editor to set REQACTDT.
REQACTTM	The earliest time, on the date specified by the REQACTDT attribute, after which a version in the Version Group will be activated on any HPCA agent computer. The version identified by the INITIAL attribute will be activated during the next HPCA agent connect. Use the <b>Time (hh/mm)</b> drop-down lists in the Version Group Editor to set REQACTTM.
NAME	The friendly name for the VGROUP instance. This is set when you create the instance using HPCA Administrator CSDB Editor.
ACTDATE	This data is set and maintained, by the HPCA agent, in the VGROUP object on the HPCA agent computer. <i>Do not alter its value.</i>

**Table 56 Version Group (VGROUP) Class Attributes**

<b>Attribute</b>	<b>Description</b>
STATUS	This data is set and maintained, by the HPCA agent, in the VGROUP object on the HPCA agent computer. <i>Do not alter its value.</i>
CURVERS	This data is set and maintained, by the HPCA agent, in the VGROUP object on the HPCA agent computer. <i>Do not alter its value.</i>
NEXTVERS	This data is set and maintained, by the HPCA agent, in the VGROUP object on the HPCA agent computer. <i>Do not alter its value.</i>
SOURCE	This data is set and maintained, by the HPCA agent, in the VGROUP object on the HPCA agent computer. <i>Do not alter its value.</i>
TIMERCON	If you specify a “next version to activate,” HPCA Administrator CSDB Editor automatically creates a timer and stores the connection to that timer in this attribute.
VERCON0n	Connects to each version in the Version Group. Each VERCON0n attribute contains a connection to one instance of the VERSION Class. This is set when you assign a version to the Version Group in the Version Group Editor.

## Versions (VERSION) Class

Each instance of the VERSION Class defines one version of an application to be deployed and managed by HPCA. Use the Version Group Editor to create VERSION Class instances and assign them to a Version Group. The following table describes the VERSION Class attributes.

**Table 57 Versions (VERSION) Class Attributes**

<b>Attribute</b>	<b>Description</b>
ZSTOP00n	In ZSTOP attributes, expressions that evaluate to true cause resolution of the instance to be skipped. If left blank, the instance is not skipped and resolution continues. This is useful for assigning a version to a set of users. Use HPCA Administrator CSDB Editor to set this attribute.
NAME	The friendly name for the VERSION instance. This is set when you create the instance using HPCA Administrator CSDB Editor.
PACKAGE	Connects to a PACKAGE Class instance, which represents the packaged software for this version.



## Application (ZSERVICE) Attributes

This section describes the attributes of the Application (ZSERVICE) instance in HPCA Administrator CSDB Editor. Many of the values for these attributes are set when using the HPCA Administrator tools, such as HPCA Administrator Packager and the New Application Wizard in HPCA Administrator CSDB Editor. You can also use HPCA Administrator CSDB Editor to modify the values of these attributes in the SOFTWARE.ZSERVICE class.

You might notice that some attributes do not have values, or their values are not displayed in HPCA Administrator CSDB Editor. The HPCA agent uses these attributes.

**Table 58 Modifiable SOFTWARE.ZSERVICE Attributes**

Attribute	Description
ZSTOP $nnn$	Stops resolution if the expression evaluates to TRUE. Example: <code>WORDPOS (EDMGETV (ZMASTER, ZOSTYPE) , 'WIN32_NT WIN64_NT') =0</code> This example expression will stop resolution (the application will not be installed) on the instance if the HPCA agent's operating system is neither Windows 32-bit nor Windows 64-bit.
ZSVCNAME	Use this attribute to set the name of the service that will display in HPCA Application Self-service Manager interface. This value is initially set in the <b>Short Description</b> field in the New Application Wizard.
ZSVCTTYP	This indicates for which HPCA agent this application was packaged. <ul style="list-style-type: none"><li>• Specify <b>A</b> for HPCA Application Manager.</li><li>• Specify <b>S</b> for HPCA Application Self-service Manager.</li></ul> This value is initially set in the New Application Wizard.

**Table 58 Modifiable SOFTWARE.ZSERVICE Attributes**

Attribute	Description
ZSVCMO	<p>Use this attribute to designate a service as mandatory or optional.</p> <ul style="list-style-type: none"> <li>• When using HPCA Application Manager, services are typically designated as mandatory (<b>M</b>);</li> <li>• When using HPCA Application Self-service Manager, services are typically designated as optional (<b>O</b>).</li> </ul> <p>If both HPCA agents are being used you could also specify mandatory then optional (<b>ZSVCMO=MO</b>), or optional then mandatory (<b>ZSVCMO=OM</b>).</p> <ul style="list-style-type: none"> <li>• The first character indicates how the application should be handled before installation.</li> <li>• The second character indicates how the application should be handled after installation.</li> </ul> <p>Note: You might need to edit the ZSERVICE class template to allow the <b>ZSVCMO=OM</b> setting. For information on editing a class, see <a href="#">Editing a Class</a> on page 108.</p> <p>To process mandatory applications using HPCA Application Self-service Manager, add <b>enterprisemanagement=auto</b> to the <code>args.xml</code> file.</p> <p>This value is initially set based on the setting for the application target type (ZSVCTTYP) in the New Application Wizard.</p>
ZSVCPRI	<p>Use this attribute to set the priority level for the service. Services are created based their priority. The lower the number, the higher the service's priority.</p> <ul style="list-style-type: none"> <li>• A service with <b>ZSVCPRI=01</b> would have the highest priority.</li> <li>• A service with <b>ZSVCPRI=99</b> would have the lowest priority.</li> </ul>
<u>_ALWAYS_</u>	Any method that you specify for this attribute is unconditionally executed when this instance is resolved.
ZCREATE	A method that runs when the service is installed.
ZINIT	A method that runs when the service is initialized.
ZDELETE	A method that runs when the service is deleted.
ZUPDATE	A method that runs when the service is updated.
ZVERIFY	A method that runs when the service is verified.
ZREPAIR	A method that runs when the service is repaired.
PUBDATE	<i>Reserved for future use.</i>
UPDDDATE	<i>Reserved for future use.</i>

**Table 58 Modifiable SOFTWARE.ZSERVICE Attributes**

<b>Attribute</b>	<b>Description</b>
AUTHOR	The name of the author of the service. This appears in the extended information area in HPCA Application Self-service Manager interface. This value is initially set in the <b>Author</b> field in the New Application Wizard.
DESCRIPT	A description of the service. This appears in the properties for the service in the Service List. This value is initially set in the <b>Long Description</b> field in the New Application Wizard.
VENDOR	The name of the vendor of the service. This appears in HPCA Application Self-service Manager interface. This value is initially set in the <b>Vendor</b> field in the New Application Wizard.
URL	The web address where the subscriber can find additional information about the service. This appears in the properties for the service in HPCA Application Self-service Manager interface. This value is initially set in the <b>Web URL</b> field in the New Application Wizard.
CATGROUP	Use this attribute to group a set of applications. You can display applications based on their group in HPCA Application Self-service Manager interface.
PRICE	Specify the price of an application. This will be displayed to subscribers in the extended information area in HPCA Application Self-service Manager interface.
SCHEDOK	<i>For HPCA Application Self-service Manager only.</i> <ul style="list-style-type: none"> <li>Specify <b>Y</b> to allow the user to locally change the update schedule.</li> <li>Specify <b>N</b> to retain control on the Configuration Server.</li> </ul>
VERSION	The version of the software. This appears in the properties for the service in HPCA Application Self-service Manager interface. The value is initially set in the <b>Version</b> field in the New Application Wizard.
NAME	This name appears in the properties for the service in HPCA Application Self-service Manager interface. The value is initially set in the <b>Short Description</b> field in the New Application Wizard.
OWNER	<i>Reserved for future use.</i>
RUNDLG	Specify <b>Y</b> to enable the processing of DIALOG Class instances during the installation of the service; specify <b>N</b> (the default) to disable this processing.

**Table 58 Modifiable SOFTWARE.ZSERVICE Attributes**

Attribute	Description
REBOOT	<p>This attribute is used to restart the HPCA agent computer based on an application event. Specify the action by equating an application event to a reboot type, panel, or connect.</p> <p>Event on which to Restart:  <b>AI</b> = Install; <b>AD</b> = Deinstall; <b>AU</b> = Update; <b>AR</b> = Repair; <b>AV</b> = Verify</p> <p>Type of Panel:  <b>Q</b> = No panel; <b>A</b> = OK button only; <b>Y</b> = OK and Cancel buttons.</p> <p>Type of Reboot:  <b>S</b> = Soft reboot (default of type Y panel); <b>H</b> = Hard reboot (default of type A panel); <b>N</b> = No reboot</p> <p>Type of Connect:  None specified = Reboot on machine connect (<b>context=m</b>);  <b>U</b> = reboot on user connect (<b>context=u</b>); <b>MU</b> = reboot when machine and user parts of the service have been installed.</p>
EVENTS	<p>Set this attribute to indicate on which events to report. Specify your event by equating an application event to an event type.</p> <p><b>AI</b>=Application Install; <b>AD</b>=Application Deinstall;  <b>AU</b>=Application Update; <b>AR</b>=Application Repair;  <b>AV</b>=Application Verify; <b>VA</b>=Version Activation; <b>VD</b>=Version Deactivation</p> <p>What to Report on:  <b>S</b>=Success; <b>F</b>=Failure; <b>B</b>=Both (success and failure);  <b>N</b>=None</p> <p>The default is <b>AI=B,AD=B,AU=F,AR=N,VA=F,VD=F</b></p>
ERTYPE	<p>Set this attribute to send an APPEVENT object. Currently, this supports the Object format only, so the default is ERTYPE=O.</p>
ADAPTIVE	<p>Set this attribute to indicate whether the installed package is dependent on HPCA agent settings that must be monitored periodically.</p> <ul style="list-style-type: none"> <li>• Specify <b>Y</b> for Yes.</li> <li>• Specify <b>N</b> for No.</li> </ul> <p>If the settings change, the HPCA agent must reconnect to the Configuration Server to get new or different components.</p>

**Table 58 Modifiable SOFTWARE.ZSERVICE Attributes**

<b>Attribute</b>	<b>Description</b>
LREPAIR	<p>Set this attribute to enable local repair of broken applications. If an application is broken due to missing files, the files (locally stored) can be used to repair the application.</p> <ul style="list-style-type: none"> <li>• Specify <b>Y</b> for Yes.</li> <li>• Specify <b>N</b> (the default) for No.</li> </ul>
REMOVAL	<p>This attribute controls how the application is managed when a service is removed.</p> <ul style="list-style-type: none"> <li>• <b>REMOVAL=A</b> (Abandon) will delete the service's objects on the HPCA agent, but leave its components. The service will no longer be managed by HPCA.</li> <li>• <b>REMOVAL=D</b> (Delete) will delete the service's objects and components. The service will still be managed by HPCA. — This is the default.</li> <li>• <b>REMOVAL=U</b> (Unmanage) will stop management of the service by HPCA. Neither the objects nor the components will be deleted. This applies only to optional applications (<b>ZVSCMO=O</b>) that are removed based on entitlement policy.</li> </ul> <p>Note: If a user removes an optional application, the service's objects are also removed, regardless of the REMOVAL setting.</p>
RECONFIG	<p>Set this attribute to indicate whether an application can be relocated after it has been installed. For example, you can move an application from the C drive (on which it was installed) to the D drive without having to remove and re-install the application.</p> <ul style="list-style-type: none"> <li>• Specify <b>Y</b> for Yes.</li> <li>• Specify <b>N</b> for No.</li> </ul>
ZSVCCAT	<p>Set this attribute to indicate whether the service is visible in HPCA Application Self-service Manager catalog. For optional applications, the default is <b>Y</b>; for mandatory applications, the default is <b>N</b>. These defaults can be overridden.</p>
UIOPTION	<p>Set this attribute to indicate whether the Service Status window will be displayed. Possible values are:</p> <ul style="list-style-type: none"> <li>• <b>UIOPTION=NONE</b>: No interface displayed.</li> <li>• <b>UIOPTION=FULL</b>: Interface displayed; Cancel button is available.</li> <li>• <b>UIOPTION=INFO</b>: Interface displayed; no Cancel option.</li> </ul>

**Table 58 Modifiable SOFTWARE.ZSERVICE Attributes**

Attribute	Description
UIOPTMSI	<p>This attribute provides control over the MSI status window, to the user. The possible values are:</p> <p>UIOPTMSI=NONE: No interface displayed.</p> <p>UIOPTMSI=FULL: Displays what is happening on the agent computer and provides the subscriber with controls to make changes..</p> <p>UIOPTMSI=INFO: Displays what is happening on the agent computer, but disables all the controls so that the subscriber cannot make any changes. See the Setup log files and Event Viewer for warnings, errors, successes, failures, and other details.</p>
CACHE	<p>This attribute enables element caching.</p> <ul style="list-style-type: none"> <li>• Specify <b>Y</b> for Yes.</li> <li>• Specify <b>N</b> (the default) for No.</li> </ul>
CACHELOC	<p><i>For Windows Installer applications only.</i></p> <p>Specify the location of the folder, on the HPCA agent computer, that is used to cache the compressed application files that are needed for the product. The default is <b>_UNDEF_</b>.</p> <p>HPCA support for Windows Installer tags the PRODGUID value to this value in order to create the folder. For example, if</p> <p><b>CACHELOC=C:\progra~1\Hewlett-Packard\HPCA\Agent</b> and <b>PRODGUID=12345_XXXX</b></p> <p>the cache folder would be</p> <p>C:\progra~1\Hewlett-Packard\HPCA\Agent\12345_XXXX\cache.</p> <p>Note: The folder \cache is automatically appended to PRODGUID. If you are not deploying a Windows Installer-enabled application, the files will be cached in IDMDATA.</p>
CACHELIM	<p><i>For Windows Installer applications only.</i></p> <p>Specify a number between <b>000</b> and <b>100</b> to indicate the cache limit—defined as “the percentage of used drive space.”</p> <p>If the percent of used space is greater than the cache limit, all of the product’s cached files are removed and the cache folder is deleted. This is checked after every file is cached on the disk.</p>

**Table 58 Modifiable SOFTWARE.ZSERVICE Attributes**


<b>Attribute</b>	<b>Description</b>
ZDISCONN	Set this attribute to indicate whether the HPCA agent is allowed to disconnect from the Configuration Server if there is an open session with the Configuration Server. <ul style="list-style-type: none"><li>• Specify <b>Y</b> to disconnect the HPCA agent from the Configuration Server.</li><li>• Specify <b>N</b> (the default) to keep the HPCA agent connected to the Configuration Server.</li></ul>
ZSYSACCT	Set this attribute to indicate whether to install the service under the system account or the user's account. <ul style="list-style-type: none"><li>• Specify <b>Y</b> to install the application using the system rights.</li><li>• Specify <b>N</b> (the default) to install the application using the rights of the user that is logged on.</li></ul>
MCELIGBL	Indicates whether the application is eligible for multicasting. <ul style="list-style-type: none"><li>• Specify <b>Y</b> (the default) for Yes.</li><li>• Specify <b>N</b> for No.</li></ul>

**Table 58 Modifiable SOFTWARE.ZSERVICE Attributes**

Attribute	Description
RSTRSIZE	Use this attribute in the appropriate ZSERVICE Class instance to control which files are enabled for check-point restart based on the amount of data (in bytes) that are being downloaded.
ZSVCMODE	<p>Set ZSVCMODE to:</p> <ul style="list-style-type: none"> <li>• <b>M</b> if the service has machine components only. This service will be ignored if <b>context=u</b> on the RADSKMAN command line.</li> <li>• <b>U</b> if the service has user components only. This service will be installed if <b>context=u</b> or is left blank on the RADSKMAN command line. You might want to use this setting if the application consists only of user registry changes or user desktop shortcuts.</li> <li>• <b>MU</b> if the service has machine and user components. The user connect will verify that the machine components have been installed before installing the user components. You will need to run two RADSKMAN connects—one with <b>context=m</b> and one with <b>context=u</b>.</li> <li>• <b>EMU</b> if the HPCA agent connect is being made in the user context but the machine side of the application has not yet been installed, because this will force the machine connect. After the machine connect completes, the user connect is initiated to install the user components. Use this for optional applications that the user controls through HPCA Application Self-service Manager.</li> </ul> <p>Leave ZSVCMODE blank to treat the service as single mode that can be installed independently by the machine or the user. In other words, install the entire service ignoring the component's ZCONTEXT.</p>
ZBITARCH	<p>Use this attribute to specify the bit size-based architecture to which the service can be deployed.</p> <ul style="list-style-type: none"> <li>• Set to <b>32</b> to deploy to 32-bit architectures.</li> <li>• Set to <b>64</b> to deploy to 64-bit architectures.</li> <li>• Leave blank to deploy to all architectures.</li> </ul>

## Reporting Attributes in ZSERVICE

Some of the attributes in the ZSERVICE Class are calculated. They are updated when the service is installed, verified, updated, repaired, or deleted and reported in the HPCA agent computer's service objects.

 These attributes should not be modified using HPCA Administrator CSDB Editor.



**Table 59 Calculated ZSERVICE Attributes – DO NOT MODIFY**

<b>Attribute</b>	<b>Description</b>
ZSVCCSTA	This status code for the service is used to determine why files for a service might not be correctly deployed. Values range from 000–999.
SIZE	<p>The uncompressed size of the application that is displayed to the users in the extended information area in HPCA Application Self-service Manager interface.</p> <p>This “calculated” field is the cumulative value of the SIZE that is defined in the PACKAGE class; <i>do not modify it.</i></p>
COMPSIZE	<p>The compressed size of the application that is displayed to the users in the extended information area in HPCA Application Self-service Manager interface.</p> <p>This “calculated” field is the cumulative value of the COMPSIZE that is defined in the PACKAGE class; <i>do not modify it.</i></p>
ZAVIS	<p>The HPCA agent manages this attribute to show, in the catalog, the different states of the application. The four states are:</p> <ul style="list-style-type: none"> <li>• <b>Available</b> indicates whether a service is available from the Configuration Server.</li> <li>• <b>Verified</b> indicates whether a service has been verified.</li> <li>• <b>Installed</b> indicates whether the service has been installed.</li> <li>• <b>Synchronized</b> indicates whether the installed service has all of the latest changes from the Configuration Server.</li> </ul> <p>The valid values for each state are: <b>Y</b> (Yes), <b>N</b> (No), and <b>X</b> (unknown).</p>
VERDATE	This attribute indicates (in local time, in the format of MMM DD,YYYY HH:MM:SS) when the application was last verified on the HPCA agent computer. This is displayed to the users in the extended information area in HPCA Application Self-service Manager interface. The HPCA agent manages this attribute.

**Table 59 Calculated ZSERVICE Attributes – DO NOT MODIFY**

Attribute	Description
UPGDATE	This attribute indicates (in local time, in the format of MMM DD,YYYY HH:MM:SS) when the application was last updated on the HPCA agent computer. This is displayed to the users in the extended information area in HPCA Application Self-service Manager interface. The HPCA agent manages this attribute.
INSTDATE	This attribute indicates (in local time, in the format of MMM DD,YYYY HH:MM:SS) when the application was installed on the HPCA agent computer. This is displayed to the users in the extended information area in HPCA Application Self-service Manager interface. The HPCA agent manages this attribute.
DELDATE	This attribute indicates (in local time, in the format of MMM DD,YYYY HH:MM:SS) when the application was removed on the HPCA agent computer. The HPCA agent manages this attribute.

## Local Catalog Processing

Local catalog processing reduces the network bandwidth and the number of connects required to the Configuration Server to manage applications. Use a Timer or a Notify command to make the machine connect with **context = m** on the RADSKMAN command line.

▶ The ZSVCMODE attribute of the application must be M or MU to use this feature.

If you have only one user for a computer or multiple users on one computer with the same entitlements, local catalog processing allows you to make one connection to the Configuration Server for the machine and user components of a service. During the machine connect, the required configuration information will be downloaded to the agent computer, machine and user components of the services will be downloaded in a compressed format, and the machine components will be installed. For the user connect, set **cat = m**, **local = y**, and **context = u** on the RADSKMAN command line. When the user connect is made, the user's services will be resolved based on the machine's service list, and the already downloaded resources will be added, modified, or deleted as needed.

If an HPCA agent computer has two or more users with distinct entitlements, you will need to create policies for each machine so that all components for all of the services for all users of that HPCA agent computer will be downloaded. Contact Professional Services for implementation.

# E Creating Timers in Configuration Server Database

To schedule the deployment of a service, configure a timer in the Configuration Server Database. When the HPCA agent computer connects to the Configuration Server, the timer information is transferred to the HPCA agent computer in the ZTIMEQ object.

## Creating a Timer

Use HPCA Administrator CSDB Editor to create a Scheduling (TIMER) instance in the SOFTWARE Domain.

To create a TIMER instance in the SOFTWARE Domain

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator CSDB Editor**. The **HPCA Administrator CSDB Editor Security Information** dialog box opens.
  - ▶ The default user ID and password are:  
User ID: **ADMIN**  
Password: **secret**
- 2 If necessary, type a user ID and password, and click **OK**. HPCA Administrator CSDB Editor window opens.
- 3 Navigate to **PRIMARY.SOFTWARE.Scheduling (TIMER)**, and right-click **TIMER** Instance.
- 4 Select **New Instance**. The **Create Instance** dialog box opens.
- 5 Type a name, for example, **Mandatory Apps Timer**, and click **OK**.

## Scheduling (TIMER) Class Attributes

The TIMER Class attributes are described in the following table. They contain information that is needed to execute the timer on the HPCA agent computer.

**Table 60 Scheduling (TIMER) Class Attributes**

Attribute	Usage
<code>_ALWAYS_</code>	Stores connections to other instances.
NAME	The friendly name for this instance.
PINGDLAY	If <b>ZNOPING=N</b> , PINGDLAY specifies the time (in milliseconds) between pings. The default is <b>2000</b> .

**Table 60 Scheduling (TIMER) Class Attributes**

Attribute	Usage
PINGCNT	If <b>ZNOPING=N</b> , PINGCNT specifies number of ping attempts. The default is <b>3</b> .
RETRYINT	Specify the number of minutes to wait between command executions. Note: This is ignored if <b>RETRYFLG=N</b> .
RETRYLMT	Specify the number of times to retry the command. <ul style="list-style-type: none"> <li>Specify <b>0</b> to retry until the command succeeds.</li> </ul> Note: This will be ignored if <b>RETRYFLG=N</b> .
NETAVAIL	Use to check the availability of the network. <ul style="list-style-type: none"> <li>Specify <b>Y</b> to check for network availability before executing the <b>TIMER</b> instance. If the network is not available, network availability will be checked every time the timer wakes up until the network is available.</li> <li>Specify <b>N</b> (the default) and the <b>TIMER</b> instance will be executed without checking for network availability.</li> <li>Specify <b>W</b> to check for network availability before executing the <b>TIMER</b> instance. If the network is not available and the time window's end limit has been reached, the timer will wait until the next time window before checking for network availability again.</li> </ul>
RETRYFLG	Use to specify the retry activity. <ul style="list-style-type: none"> <li>Specify <b>Y</b> to retry the command up to <b>&lt;RETRYLMT&gt;</b>, ignoring the end time for the timer.</li> <li>Specify <b>W</b> to retry the command up to up to <b>&lt;RETRYLMT&gt;</b>, but stop retrying after the specified limit time has passed.</li> <li>Specify <b>N</b> to not retry.</li> </ul> Note: A return code other than 200 will indicate success, and stop the retries.
RETRYRC	Specify return codes that qualify for the retry logic. If this variable does not exist or is blank, <b>RETRYRC</b> will default to <b>200</b> which means there was a fatal error due to a network connection failure with the Configuration Server. If you populate this attribute and a return code of 200 qualifies for a retry, be sure to specify 200 in the list. Example: <b>RETRY=200, 202, 209</b>

**Table 60 Scheduling (TIMER) Class Attributes**

<b>Attribute</b>	<b>Usage</b>
ZNOPING	<p>Use this attribute to control automatic sensing of a network connection between the HPCA agent computer and the Configuration Server. The default is <b>Y</b>.</p> <ul style="list-style-type: none"> <li>• Specify <b>Y</b> to prevent the Scheduler service from pinging the Configuration Server. This is especially useful for mobile users.</li> <li>• Specify <b>N</b> to have the Scheduler service to ping the Configuration Server.</li> <li>• Specify <b>w</b> if you are specifying an end limit in the ZCHDEF attribute. The Scheduler will ping the Configuration Server before executing the command. If the Configuration Server is unavailable, the ZPENDING flag will be set to <b>w</b>. If the ZSCHEDEF has a limit time, then, when that time passes, the ZPENDING flag will be set to <b>N</b> and the Scheduler will not attempt to execute the command until its next scheduled time.</li> </ul> <p>An expired timer continually evaluates whether communications with the Configuration Server can be established. When communications are established, the command line that is associated with the timer is executed. After executing the command line, the Scheduler service resumes normal evaluation of whether the timer has expired again.</p> <p>If this attribute is not present in the ZTIMEQ object, the Scheduler service will not ping the Configuration Server. If the Configuration Server is successfully pinged, the command in ZRSCCMDL executes and the ZPENDING attribute—in the HPCA agent’s ZTIMEQ object—is set to <b>N</b>, to indicate that the Scheduler service does not need to ping the Configuration Server again.</p> <p>If the Configuration Server is not successfully pinged, the timer is not processed any further, and the ZPENDING attribute value remains <b>Y</b>, to indicate that the next time the Scheduler service “pops,” it should ping the Configuration Server again.</p>
ZRSCCMDL	<p>Use this attribute to specify the command line that is executed on the HPCA agent computer when the timer expires.</p> <p>Use RADSKMAN to verify and update HPCA-managed mandatory applications. For a list of the parameters and examples, see Connection Parameters (RADSKMAN) on page 183.</p>

**Table 60 Scheduling (TIMER) Class Attributes**

Attribute	Usage
ZSCHDEF	<p>Use this attribute to specify when the timer expires. The syntax for this attribute varies depending on the frequency, which can be <b>DAILY</b>, <b>HOURLY</b>, <b>WEEKLY</b>, <b>MONTHLY</b>, <b>INTERVAL</b>, <b>MONTHDAY</b>, <b>NUMDAY</b>, <b>WEEKDAY</b>, or <b>STARTUP</b>.</p> <p>For instructions on how to set ZSCHDEF, see <a href="#">Specifying the Timer Expiration (ZSCHDEF)</a> on page 241.</p>
ZSCHFREQ	<p>Use this attribute to specify how often the timer should expire.</p> <ul style="list-style-type: none"><li>• Specify <b>ONCE</b> to have the timer to expire one time.</li><li>• Specify <b>PERIODIC</b> to have the timer to expire repeatedly.</li><li>• Specify <b>RANDOM</b> to have the timer to expire in random intervals.</li></ul> <p>For more information, see <a href="#">Deploying Applications over a Period of Time</a> on page 247.</p>

**Table 60 Scheduling (TIMER) Class Attributes**

Attribute	Usage
ZSCHTYPE	<p>This attribute is valid only when <b>ZSCHFREQ=PERIODIC</b>. Valid values are IMMEDIATE and DEFERRED.</p> <p>Specify <b>DEFERRED</b> to indicate that the first time an event is attempted to be launched, it will be deferred until the next scheduled time, regardless of when the timer instance is evaluated. This was designed so that events that are scheduled for off-peak hours will not launch while a user is working.</p> <p><b>Example 1</b></p> <p>Assume a timer with  <b>ZSCHDEF=DAILY (&amp;ZSYSDATE , 04 : 00 : 00 ) .</b></p> <ul style="list-style-type: none"> <li>• If <b>ZSCHTYPE=IMMEDIATE</b> and it is: <ul style="list-style-type: none"> <li>— Earlier than 4:00 a.m., the command in the instance will be executed the same day at 4:00 a.m.</li> <li>— Later than 4:00 a.m., the command in the instance will be executed immediately.</li> </ul> </li> <li>• If <b>ZSCHTYPE=DEFERRED</b> and it is: <ul style="list-style-type: none"> <li>— Earlier than 4:00 a.m., the command in the instance will be executed the same day at 4:00 a.m.</li> <li>— Later than 4:00 a.m., the command in the instance will be executed the next day at 4:00 a.m.</li> </ul> </li> </ul> <p><b>Example 2</b></p> <p>Assume a timer with  <b>ZSCHDEF=WEEKDAY (FRIDAY , 04 : 00 : 00 ) .</b></p> <ul style="list-style-type: none"> <li>• If <b>ZSCHTYPE=IMMEDIATE</b> and it is: <ul style="list-style-type: none"> <li>— Either not Friday, or earlier than 4:00 a.m. on Friday, the command in the instance will be executed on Friday at 4:00 a.m.</li> <li>— Later than 4:00 a.m. on Friday, the command in the instance will be executed immediately.</li> </ul> </li> <li>• If <b>ZSCHTYPE=DEFERRED</b> and it is: <ul style="list-style-type: none"> <li>— Not Friday, the command in the instance will be executed on the next occurring Friday, at 4:00 a.m.</li> <li>— Earlier than 4:00 a.m. on Friday, the command in the instance will be deferred one week and executed a week later on the following Friday, at 4:00 a.m.</li> <li>— Later than 4:00 a.m. on Friday, the command in the instance will be executed a week later on Friday at 4:00 a.m.</li> </ul> </li> </ul>
ZSTOP	<p>Expressions evaluating to “true” in ZSTOP attributes cause resolution of the instance to be skipped. If left blank, the instance is accepted and resolution continues. This is useful if you want to set conditions on which of your subscribers receive the timer.</p>

**Table 60 Scheduling (TIMER) Class Attributes**

Attribute	Usage
<i>The values for the following attributes are inherited from the <code>_BASE_INSTANCE_</code> of the <code>TIMER</code> Class; they should not be edited.</i>	
RUNSYNC	Specifies whether synchronous timer execution will take place. The default value is <b>Y</b> .
ZOBJPRI	The deployment priority level (relative to the other elements being deployed during the HPCA agent connect) of the <code>ZTIMEQ</code> object. A value of <b>90</b> is inherited from the <code>_BASE_INSTANCE_</code> . Note: Elements with priority levels that are lower than this value will be deployed before this <code>ZTIMEQ</code> object.
ZSCHMODE	This attribute is specific to HPCA Application Self-service Manager and is used when a <code>ZTIMEQ</code> Instance is run. Its value, <code>Default</code> , should not be changed.
ZSVCOID	The object ID of the Application instance to which this Scheduling instance is connected.
ZCHNNAME	The Configuration Server Database domain that contains the Application instance to which this Scheduling instance is connected.
ZPRVNAME	The name of the Configuration Server to which the subscriber that is receiving this timer instance is connected. The value is inherited from the <code>_BASE_INSTANCE_</code> .
ZCREATE	The Scheduler “create” method that runs on the HPCA agent computer. The value is inherited from the <code>_BASE_INSTANCE_</code> .
ZVERIFY	The Scheduler “verify” method that runs on the HPCA agent computer. The value is inherited from the <code>_BASE_INSTANCE_</code> .
ZUPDATE	The Scheduler “update” method that runs on the HPCA agent computer. The value is inherited from the <code>_BASE_INSTANCE_</code> .
ZDELETE	The Scheduler “delete” method that runs on the HPCA agent computer. The value is inherited from the <code>_BASE_INSTANCE_</code> .



## Configuring the Timer

This section offers a review of the syntax that is used to configure the attributes of the `TIMER` instance. Following that, in the section, [Deploying Applications over a Period of Time](#) on page 247, is a sample exercise on how to configure a `TIMER` instance to deploy mandatory applications during off-peak hours.

### Specifying the Timer Expiration (ZSCHDEF)

Use `ZSCHDEF` and `ZSCHFREQ` attributes to specify when and how often a timer will expire.

- `ZSCHDEF` indicates when the timer will expire;
- `ZSCHFREQ` indicates how often the timer will expire.

The syntax of the `ZSCHFREQ` attribute will influence the settings of the `ZSCHDEF` attribute. Use [Table 61](#) on page 243 to determine the appropriate syntax for the value of `ZSCHDEF`. Before configuring the `ZSCHDEF` attribute, review the following syntax-formatting considerations.

- The value of `WEEKDAY` must be `UPPERCASED` and will accept only the days of the week: `MONDAY`, `TUESDAY`, `WEDNESDAY`, `THURSDAY`, `FRIDAY`, `SATURDAY`, and `SUNDAY`.
- In all `ZSCHDEF` attribute syntax, the time value must be expressed in base-24 time, in the format `HH:MM:SS`. Valid values are `00:00:00–23:59:59`.
- In all `ZSCHDEF` attribute syntax, the *date* value must be expressed in the format `YYYYMMDD`.

### Start Time and End Time Parameters:

When `ZSCHFREQ=RANDOM` is specified the time parameter is automatically replaced with two parameters, **start time** and **end time**. The start time and end time parameters are used to specify the time limit between which the command can be chosen to be executed. For example, the command

```
DAILY (20070707,10:00:00,12:00:00[,20:00:00])
```

will choose to execute in between the start time parameter (10 a.m.) and the end time parameter (12 p.m.) on July 7, 2007. However, it will not execute after the limit time parameter (8 p.m.). So, if the target machine is not powered on (or the Scheduler is not running) during this time, the command will not execute. It will be rescheduled for the next occurrence to start in between 10 a.m. and 12 p.m.” and end before 8 p.m, in this case. As it is a “daily” command, it will execute on the next day, July 8, 2007.

### Limit Time Parameter

The **limit time** parameter is used to specify a time after which the command will not be executed. For example, the command

```
DAILY (20070707,18:00:00[,20:00:00])
```

will execute any time between 6 p.m. and 8 p.m. on July 7, 2007, but it will not execute after 8 p.m. So, if the target machine is not powered on (or the Scheduler is not running) during this time, the command will not execute. It will be rescheduled for the next occurrence of “between 6 p.m. and 8 p.m.” which, in this case, because it is a “daily” command, will execute on the next day, July 8, 2007.

## ZSCHFREQ=RANDOM

When **ZSCHFREQ=RANDOM** is specified the **time** parameter is automatically replaced with two parameters, **start time** and **end time**.

Be sure to not use the limit time parameter as an *end time* indicator; their functionalities are different and doing so will result in a malformed ZSCHDEF command.

- If **ZSCHFREQ=RANDOM** and the limit time parameter is *NOT* specified:

The end time parameter can span midnight (it can be the next day). For example, the commands

```
DAILY (20070707,20:00:00,06:00:00) and
```

```
NUMDAYS (20070707,20:00:00,06:00:00,,14)
```

will execute at random times between 8 p.m. on July 7, 2007 and 6 a.m. on July 8, 2007. Note that even though the limit time parameter is not specified in either command, NUMDAYS still requires the third comma in order to be considered a valid argument; DAILY does not.

- If **ZSCHFREQ=RANDOM** and the limit time parameter *IS* specified: The end time parameter cannot span midnight. If it does, the **RADTIMEQ** create method will log a warning and set the start time to midnight (00:00:00).

**Table 61 ZSCHDEF Attribute Syntax**

Attribute	Description
HOURLY	<p>The timer will expire and run hourly, starting any time after the specified time but not later than the specified limit time, based on the system's date.</p> <p>Syntax: <code>&amp;SYSDATE,time[,limit time]</code></p> <p>Example: <code>ZSCHDEF=HOURLY (&amp;ZSYSDATE,04:30:00)</code></p> <p>Note: If <b>ZSCHFREQ=RANDOM</b>, the start time and end time parameters are activated.</p> <p>Syntax: <code>&amp;SYSDATE,start time,end time[,limit time]</code></p> <p>Example:  <code>ZSCHDEF=HOURLY (&amp;ZSYSDATE,04:30:00,09:00:00)</code></p> <p>For more information, see <a href="#">Specifying the Timer Expiration (ZSCHDEF)</a> on page 241.</p>
DAILY	<p>The timer will expire and run daily at the specified time (but not later than the specified limit time), based on the system's date.</p> <p>Syntax: <code>&amp;SYSDATE,time[,limit time]</code></p> <p>Example: <code>ZSCHDEF=DAILY (&amp;ZSYSDATE,12:00:00)</code></p> <p>Note: If <b>ZSCHFREQ=RANDOM</b>, the start time and end time parameters are activated.</p> <p>Syntax: <code>&amp;SYSDATE,start time,end time[,limit time]</code></p> <p>Example:  <code>ZSCHDEF=DAILY (&amp;ZSYSDATE,12:00:00,14:00:00,18:00:00)</code></p> <p>For more information, see <a href="#">Specifying the Timer Expiration (ZSCHDEF)</a> on page 241.</p>
WEEKLY	<p>The timer will expire and run at the specified time (but not later than the specified limit time) on every seventh day, based on the system's date.</p> <p>Syntax: <code>&amp;SYSDATE,time[,limit time]</code></p> <p>Example: <code>ZSCHDEF=WEEKLY (&amp;ZSYSDATE,08:00:00)</code></p> <p>Note: If <b>ZSCHFREQ=RANDOM</b>, the start time and end time parameters are activated.</p> <p>Syntax: <code>&amp;SYSDATE,start time,end time[,limit time]</code></p> <p>Example:  <code>ZSCHDEF=WEEKLY (&amp;ZSYSDATE,08:00:00,12:00:00,14:00:00)</code></p> <p>For more information, see <a href="#">Specifying the Timer Expiration (ZSCHDEF)</a> on page 241.</p>

**Table 61 ZSCHDEF Attribute Syntax**

Attribute	Description
INTERVAL	<p>The timer will expire and run every <i>n</i> minutes starting at the specified time (but not later than the specified limit time), based on the system's date. Once the limit time has been reached, the command will stop executing. The same command will execute the next day, again, within the same time limits.</p> <p>Syntax: <code>&amp;SYSDATE,time,[limit time],interval</code></p> <p>Example:  <b>ZSCHDEF=INTERVAL (&amp;ZSYSDATE,04:00:00,06:00:00,30)</b></p> <p>Notes: INTERVAL must be specified in minutes.  The third comma is required regardless of whether a third argument is specified.  If <b>ZSCHFREQ=RANDOM</b>, the time parameter is automatically replaced with two parameters, start time and end time.</p> <p>Syntax: <code>&amp;SYSDATE,start time,end time,[limit time],interval</code></p> <p>Example:  <b>ZSCHDEF=INTERVAL (&amp;ZSYSDATE,04:00:00,23:00:00,06:00:00,30)</b></p> <p>For more information, see <a href="#">Specifying the Timer Expiration (ZSCHDEF)</a> on page 241.</p>
WEEKDAY	<p>The timer will expire and run at the specified time (but not later than the specified limit time) on the specified weekday, every week.</p> <p>Syntax: <code>WEEKDAY,time[,limit time]</code></p> <p>Example: <b>ZSCHDEF=WEEKDAY (TUESDAY,01:00:00)</b></p> <p>Note: If <b>ZSCHFREQ=RANDOM</b>, the time parameter is automatically replaced with two parameters, start time and end time.</p> <p>Syntax: <code>WEEKDAY,start time,end time[,limit time]</code></p> <p>Example:  <b>ZSCHDEF=INTERVAL (TUESDAY,04:00:00,06:00:00,10:00:00)</b></p> <p>For more information, see <a href="#">Specifying the Timer Expiration (ZSCHDEF)</a> on page 241.</p>

**Table 61 ZSCHDEF Attribute Syntax**

<b>Attribute</b>	<b>Description</b>
MONTHDAY	<p>The timer will expire and run at the specified time (but not later than the specified limit time) on the specified weekday in the week of the month that is indicated by the 4th parameter.</p> <p>Syntax: WEEKDAY, time, [limit time], week of the month</p> <p>Example: <b>ZSCHDEF=MONTHDAY (TUESDAY, 01:00:00, , 2)</b></p> <p>Notes: The valid values for the 4th parameter are 1–5. If this argument is not specified, the timer will expire during the first week of the month.</p> <p>The third comma is required regardless of whether a third argument is specified.</p> <p>If <b>ZSCHFREQ=RANDOM</b>, the time parameter is automatically replaced with two parameters, start time and end time.</p> <p>Syntax: WEEKDAY, start time, end time, [limit time], week of the month</p> <p>Example: <b>ZSCHDEF=MONTHDAY (TUESDAY, 01:00:00, 04:00:00, , 2)</b></p> <p>Important Note: Consider the consequences of specifying an end time that spans midnight (occurs on the following day). For more information, see <a href="#">Specifying the Timer Expiration (ZSCHDEF)</a> on page 241.</p>

**Table 61 ZSCHDEF Attribute Syntax**

Attribute	Description
MONTHLY	<p>The timer will expire and run at the specified time (but not later than the specified limit time) on the nth of every month, starting in the specified month and year.</p> <p>Syntax: date,time[,limit time]</p> <p>Example:  <b>ZSCHDEF=MONTHLY (20040215,01:00:00,05:30:00)</b></p> <p>Note: If <b>ZSCHFREQ=RANDOM</b>, the time parameter is automatically replaced with two parameters, start time and end time. For more information, see <a href="#">Specifying the Timer Expiration (ZSCHDEF)</a> on page 241.</p> <p>Syntax: date,start time,end time[,limit time]</p> <p>Example:  <b>ZSCHDEF=MONTHLY (20040215,01:00:00,05:30:00,07:00:00)</b></p> <p>Important Note: This attribute reschedules differently than other ZSCHDEF attributes; it will reschedule by adjusting the month (but retaining the date) for which it was originally scheduled, rather than adjusting the date based on when it eventually ran.</p> <p>For example, assume <b>ZSCHDEF=MONTHLY (20040116,05:30:00)</b> and that the HPCA agent device was powered off on January 16th and that the timer didn't execute until January 18th. The new schedule would automatically revise to <b>MONTHLY (20040216,05:30:00)</b> rather than <b>MONTHLY (20040218,05:30:00)</b>.</p>
NUMDAYS	<p>The timer will expire and run at the specified time (but not later than the specified limit time) on the specified date, then again on every nth day (as specified by the 4th parameter).</p> <p>Syntax: date,time,[limit time],number of days</p> <p>Example:  <b>ZSCHDEF=NUMDAYS (20040803,18:00:00,21:30:00,14)</b></p> <p>Notes: The third comma is required regardless of whether a third argument is specified.</p> <p>If <b>ZSCHFREQ=RANDOM</b>, the time parameter is automatically replaced with two parameters, start time and end time.</p> <p>Syntax: date,start time,end time,[limit time],number of days</p> <p>Example:  <b>ZSCHDEF=NUMDAYS (20040803,18:00:00,21:30:00,22:00:00,14)</b></p> <p>For more information, see <a href="#">Specifying the Timer Expiration (ZSCHDEF)</a> on page 241.</p>

**Table 61 ZSCHDEF Attribute Syntax**

Attribute	Description
STARTUP	<p>When the Scheduler starts on the HPCA agent device, it will immediately execute all Timer instances that have <b>ZSCHDEF=STARTUP</b> specified.</p> <p>It will check for special conditions such as <b>NETAVAIL</b>, <b>ZNOPING</b>, and <b>RETRYFLG</b>.</p> <p>After executing all the <b>STARTUP</b> instances, <b>RADSCHEM</b> will return to its regular timer loop. It will execute <b>STARTUP</b> instances in the regular timer loop only if the <b>ZPENDING</b> flag on that instance was set (because <b>NETAVAIL</b> or <b>ZNOPING</b> could not get through or <b>RETRYFLG</b> is on and the return code was 200 during startup run).</p>

## Deploying Applications over a Period of Time

Applications can be deployed over a period of time in order to balance the workload on the Configuration Server and alleviate network congestion.

To do this, configure the timer for “random” expiration and use **ZSCHDEF** to specify the period of time during which the applications should be deployed. The time-period options are detailed in [Table 61](#) on page 243.

In the following example, a timer will be configured to deploy mandatory applications on a weekly basis. The deployments will be scheduled to run between 5:00 p.m. and 7:00 p.m. in order to alleviate network congestion.

### To specify when the timer expires

- 1 In HPCA Administrator CSDB Editor, navigate to the timer instance and double-click **ZSCHFREQ**. The **Editing Instance** dialog box opens.
- 2 In the **Frequency** drop-down list, select **RANDOM**.
- 3 Click **ZSCHDEF**.
- 4 In the **Timer Parameter** text box, type **WEEKLY (&ZSYSDATE, 17:00:00, 19:00:00)**.
- 5 Click **ZSCHTYPE**.
- 6 In the **Type (Immediate/Deferred)** drop-down list, select **IMMEDIATE**.
- 7 If you are done editing the attributes for the timer instance, click **OK** and then click **Yes** when prompted to confirm your changes.

or

Select another attribute to edit.

## Specifying the Command Line (ZRSCCMDL)

When the timer expires, it executes on the HPCA agent computer any command line that you've specified.

- ▶ To see how timers work, create a timer that runs a command line such as *SystemDrive:\Notepad.exe*.

Remember to configure the timer to immediately expire, and attach it to a service. Then, deploy the service. When the timer expires on the HPCA agent computer, the Notepad application opens.

### To specify a command line

- 1 In HPCA Administrator CSDB Editor, navigate to the timer instance and double-click **ZRSCCMDL**. The **Editing Instance** dialog box opens.
- 2 In the **Command line to execute** text box, type the appropriate command line to execute the program.
- 3 Click **OK**, and then click **Yes** when prompted to confirm your changes.

At the beginning of this section, we indicated that we would be deploying new mandatory applications on a weekly basis. The following procedure will demonstrate how to specify a command line that will update all mandatory services and perform self-maintenance.

## Connecting the Timer to a Service

Once you have created the timer, you must connect it to a service. Each subscriber that receives the service with which the timer is associated will receive the timer information in the ZTIMEQ object the next time his/her HPCA agent connects to the Configuration Server.

In the example in this section, we created a timer that is intended to deliver mandatory applications. Now, we will connect the timer to a service and assume that all subscribers are receiving it.

- ▶ For the following exercise, assume a service named ProDraw. The steps are identical for the services in your database.

### To connect the timer to a service

- 1 In HPCA Administrator CSDB Editor, navigate to **PRIMARY.SOFTWARE.Application (ZSERVICE)**, and right-click **ProDraw**.
- 2 In the menu that opens, click **Show Connections**. The **SOFTWARE.ZSERVICE Connections** dialog box opens.
- 3 Select **Scheduling (TIMER)** and click **OK**. The **TIMER Class** instances appear in the list view.
- 4 In the list view, click **Mandatory Apps Timer** and drag it to **ProDraw**. When the cursor changes to a paper clip icon, release the mouse button. The **Select Connection Attribute** dialog box opens.
- 5 Click **Copy**.
- 6 Click **Yes** to confirm that you want to connect the **ProDraw** service to the **Mandatory Apps Timer**.
- 7 Click **OK** to close the confirmation message.



## Testing the Timer Deployment

The first time that an HPCA agent computer connects to the Configuration Server after the timer has been created, the timer information is transferred to the HPCA agent computer in the ZTIMEQ object, ZTIMEQ.EDM.

In the exercise that follows, you will force the HPCA agent computer to connect to the Configuration Server so that you can view the ZTIMEQ object.

### To connect to the HPCA Configuration Server

- 1 On the HPCA agent computer, go to a command prompt and change the directory to the location of RADSKMAN. The default location is `<InstallDir>\Agent`.
- 2 Type `radskman ip=manager_ip,port=mgr_port`. Be sure to specify a valid IP address and port for the Configuration Server.

▶ For information about RADSKMAN and the above parameters, see Connection Parameters (RADSKMAN) on page 183.

- 3 Press **Enter**.

After the HPCA agent connect completes, you can view the ZTIMEQ object on the HPCA agent computer, as described in the next section.

▶ If you plan to do additional testing, consider creating a batch file that contains the command line. Save the file in IDMSYS (by default, `<InstallDir>\Agent`) on the HPCA agent computer. Then, create a shortcut on the desktop of the HPCA agent computer.

## Removing the Timer Object

After the timer expires, the ZTIMEQ object will be removed from the HPCA agent computer during its next connect to the Configuration Server. This is dependent on the expiration settings in the TIMER.ZSCHFREQ attribute.

- If the timer is configured to expire once, the ZTIMEQ object will be removed immediately after the timer expires, during the next HPCA agent connect to the Configuration Server.
- If the timer is configured to expire more than once, the ZTIMEQ object will be removed after the timer expires for the last time, during the next HPCA agent connect to the Configuration Server.

## Viewing the Timer Object

After having forced the HPCA agent to connect to the Configuration Server and retrieve the ZTIMEQ object, it can be viewed (and modified) using HPCA Administrator Agent Explorer, which was installed as part of the HPCA Administrator.

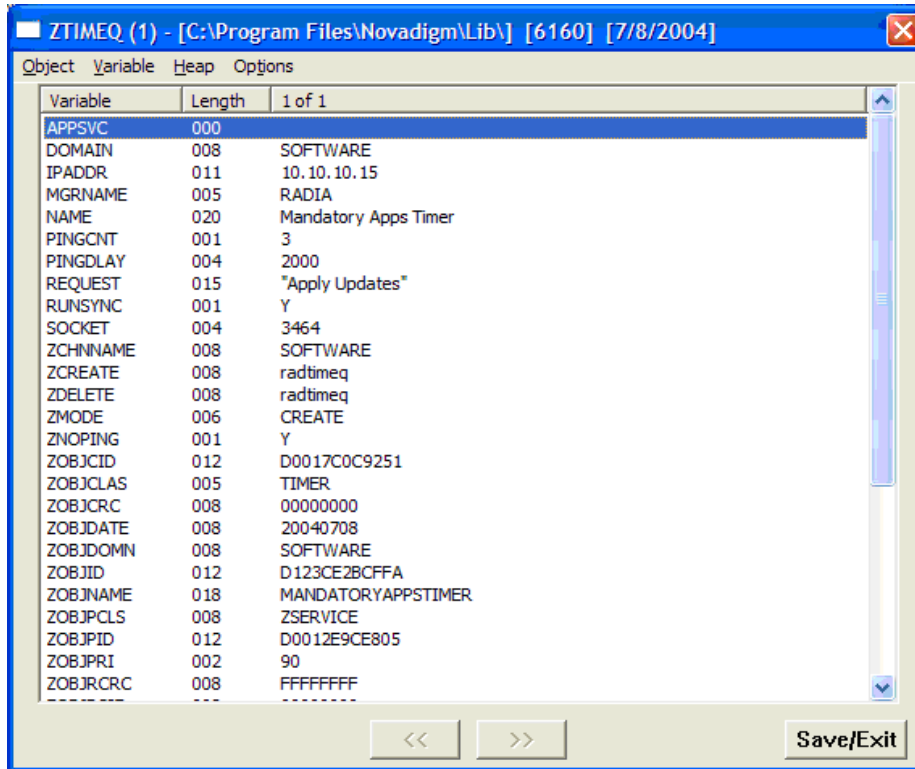
The ZTIMEQ object contains one instance for each Scheduling (TIMER) instance in the Configuration Server Database. Therefore, if two services have associated timer instances there will be two instances in the ZTIMEQ object.

### To view the ZTIMEQ object on the HPCA agent computer

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator Agent Explorer**.

- 2 Double-click the **ZTIMEQ** object. The ZTIMEQ object opens.

**Figure 41 ZTIMEQ object window**



## Experimenting with Timers

If you want to experiment with timers, you can modify the ZRSCCMDL, ZSCHDEF, ZSCHFREQ, and ZSCHTYPE variables in the ZTIMEQ object on the HPCA agent to see what happens in various situations.

To edit a variable in ZTIMEQ

- 1 Click **Start** → **Programs** → **HP Client Automation Administrator** → **HP Client Automation Administrator Agent Explorer**.
- 2 Double-click the **ZTIMEQ** object. The ZTIMEQ object opens.
- 3 Double-click the variable that you want to edit. The **Change Variable** dialog box opens.
- 4 Type the new value.
- 5 Click **Save/Exit**.

To quickly determine whether the timer expires, change ZRSCCMDL to run any executable, such as Notepad. When the timer expires, Notepad should open, confirming that the timer expired.

# Timer Logs

Timer events are tracked in three logs—RADSCHED.LOG, RADSHIST.LOG, and RADTIMEQ.LOG—that are stored in the IDMLOG directory (by default, <InstallDir>\Agent\Log).

**Table 62 Timer Logs**

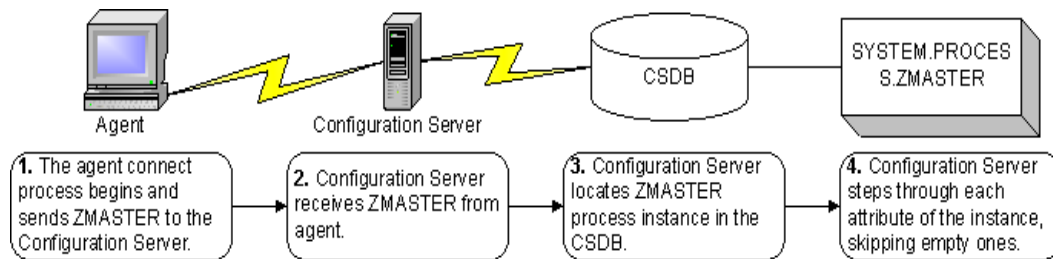
Log File	Description
RADSCHED.LOG	<p>Lists the results of the most recent Scheduler expiration.</p> <p>The Scheduler, RADSCHED, runs in the background. It wakes up once per minute and examines the ZTIMEQ object to determine whether a timer has expired.</p> <p>This log contains information from only the most recent expiration.</p>
RADSHIST.LOG	<p>Lists all of the programs that were dispatched because a timer instance expired. It reflects all activity that has taken place since RADSCHED was last started.</p>
RADTIMEQ.LOG	<p>Lists the events that occurred during the last execution of the RADTIMEQ method.</p> <p>RADTIMEQ executes when the application to which the timer is attached is created, updated, verified, or deleted. Only the last execution's events appear in the log, with an indication of what activity took place regarding the application.</p>



## F Resolution Process

The Configuration Server uses the **resolution process** to accomplish a unit of work in response to a service request. The unit of work is defined by the contents of the CSDB and parameters included in the request. In other words, what the Client Automation infrastructure does depends on what information is stored in its CSDB and what information accompanies the request for Client Automation to perform some action. For example, the agent connect submits service requests to the Configuration Server, and the Configuration Server performs a resolution in response to each request.

**Figure 42 Configuration Server performs resolution**



The ZMASTER object is sent to the Configuration Server during the agent connect. The ZMASTER object contains information about the agent computer that is needed to run Client Automation, such as the identity of the subscriber and the IP address of the agent computer.

The Configuration Server stores the ZMASTER object in **global memory**. Global memory is a temporary storage area in the Configuration Server. The Configuration Server maintains global memory's contents for the duration of the resolution process.

**Figure 43 Subscriber's local ZMASTER object**

The screenshot shows a window titled "ZMASTER (1) - [C:\Program Files\Novadigm\Lib\] [5136] [7/6/2005]". The window contains a table with columns for "Variable", "Length", and "1 of 1". The table lists various system and application variables. The "ZUSERID" row is highlighted in blue.

Variable	Length	1 of 1
ZLOGDIR	023	\PROGRA~1\Novadigm\Log\
ZLOGDRV	002	C:
ZLUNAME	006	NONSNA
ZNEWPWD	008	<ENCRYPTED>
ZNTFPORT	004	3465
ZNTFYSEC	001	Y
ZOBJCRC	008	00000000
ZOS	005	WINXP
ZPATH	021	C:\PROGRA~1\Novadigm\
ZPKGREL	013	V401.20050617
ZPWD	008	<ENCRYPTED>
ZROOTDIR	023	\PROGRA~1\Novadigm\Lib\
ZROOTDRV	002	C:
ZSYNC	001	N
ZSYSDIR	019	\PROGRA~1\Novadigm\
ZSYSDRV	002	C:
ZTIMEO	003	360
ZTRACE	001	N
ZTRACEL	003	040
ZUSERID	004	alee
ZVERPWD	008	<ENCRYPTED>
ZVRFYUID	001	N
ZWINDIR	009	\WINDOWS\
ZWINDRV	002	C:
ZWSYSDIR	018	\WINDOWS\system32\
ZWSYSDRV	002	C:

At the bottom of the window, there are navigation buttons "<<" and ">>" and a "Save/Exit" button.

After storing ZMASTER in global memory, the Configuration Server finds the Process instance for the ZMASTER. This is the **process entry point**. Its location is SYSTEM.PROCESS.ZMASTER.

The Configuration Server reads each attribute of SYSTEM.PROCESS.ZMASTER. Based on an attribute's value, the Configuration Server may:

- Set variable values.
- Evaluate an expression.
- Execute a method.
- Connect to other instances

If there is a connection to another instance, the Configuration Server processes the connected instance. Then the resolution process resumes in the referring instance at the next attribute after the connection attribute. For example, in [Figure 44](#) on page 255, the first connection instance links to SYSTEM.ZINTENT.&(SESSION.INTENT). After processing this connection instance, the resolution process will return to PRIMARY.SYSTEM.PROCESS.ZMASTER.

**Figure 44 PRIMARY.SYSTEM.PROCESS.ZMASTER instance**

Radia Processes class ZMASTER Instance Attributes:		
Name	Attribute Description	Value
_ALWAYS_	Method	
_ALWAYS_	Method	
_ALWAYS_	Connect To	
_ALWAYS_	Connect To	SYSTEM.ZINTENT.&(SESSION.INTENT)
_ALWAYS_	Method	
_ALWAYS_	Method	
_ALWAYS_	Method	
_ALWAYS_	Method	
_ALWAYS_	Method	
_ALWAYS_	Method	
_ALWAYS_	Method	
_ALWAYS_	Method	
DESCRIPT	Process Description	Processing Client Request for &ZCUROBJ
ZMAXOKRC	Max acceptable method Return Code	008

UTF-8 9/21/2011 5:46 PM

During resolution the Configuration Server performs symbolic substitution to set values and to connect to other instances. For example, in SYSTEM.PROCESS.ZMASTER there is a connection to SYSTEM.ZINTENT.&(SESSION.INTENT). The Configuration Server substitutes the value of the INTENT from the SESSION object that is in global memory. If the INTENT is CATALOG\_RESO, the resolution process will connect to SYSTEM.ZINTENT.CATALOG\_RESO and resolve that instance. In the SYSTEM.ZINTENT.CATALOG\_RESO instance, there is a connection to SYSTEM.ZPRODUCT.&(PREFACE.ZDOMNAME). The Configuration Server substitutes the value of the ZDOMNAME from the PREFACE object that is in global memory. If the ZDOMNAME is SOFTWARE, the resolution process will connect to SYSTEM.ZPRODUCT.SOFTWARE and resolve that instance. In SYSTEM.ZPRODUCT.SOFTWARE there is a connection to POLICY.USER.&(ZMASTER.ZUSERID). The Configuration Server substitutes the value of the ZUSERID from the ZMASTER object that is in global memory.

In [Figure 43](#) on page 254, the value of ZUSERID is alee. Therefore, the resolution process will connect to POLICY.USER.ALEE, and resolve that instance.

**Figure 45 POLICY.USER.ALEE instance**

Name	Attribute Description	Value
V UNAME	Name	
V ZCONFIG	Collect Hardware Info [Y/N]	Y
V ZSETMSGA	Send Message to Audit Resource	DAILY
V ZDLIMIT	Maximum Disk Space	0
V USERID	Enterprise User Id	
V ZTIMED	Client Timeout (Seconds)	240
V ZTRACEL	Trace Log Level [0-999]	040
V ZTRACE	Trace On or Off [Y/N]	N
V ZPRIORIT	Exec. Priority	000
V ZSHOW	Display Status Indicator [Y/N]	N
igc _ALWAYS_	Utility Method	
igc _ALWAYS_	Member of	SOFTWARE.ZSERVICE.AMORTIZE
igc _ALWAYS_	Member of	
igc _ALWAYS_	Member of	
igc _ALWAYS_	Member of	
igc _ALWAYS_	Member of	
igc _ALWAYS_	Member of	
igc _ALWAYS_	Member of	
igc _ALWAYS_	Member of	
igc _ALWAYS_	Member of	PRDMAINT.ZSERVICE.MAINT_40
V NAME	Friendly name	ALEE
V ZVERDT	Verify Desktop [Y/D/R/I]	Y
V SELFPIND	Self Maintenance Display [Y/N]	N
V SLFINTVL	Self Maintenance Interval (hours)	0
V TYPESEL	Type Selection - Calc. Pack Sizes	Typical
V EMAIL	E-mail Address	
V ZOBJPFUE	Free Unused Pool Elements	Y
V MSITRACE	activates MSI verbose Trace~vpath	
V ZGRPINFD	Gather Group membership info[Y/N]	N
V ZOBJPTCH	Perform Patching [Y/N]	N

In Figure 45 above, after setting a number of variables, the first connection attribute is to SOFTWARE.ZSERVICE.AMORTIZE. In your implementation, the POLICY instance may connect to a workgroup that connects to a service.

**Figure 46 ZSERVICE.AMORTIZE instance**

Name	Attribute Description	Value
ZSTOP000	Expression Resolution Method	WORDPOS(EDMGETV(ZMASTER.ZO:
ZSTOP001	Expression Resolution Method - 001	
ZSTOP002	Expression Resolution Method - 002	
ZSTOP999	Stop Unless Radia Connect	
V ZSVCNAME	Service Name/Description	Amortize
V ZSVCCTYP	Application Target Type [A/S]	
V ZSVCMO	Mandatory or Optional Service [M/O]	0
V ZSVCSTA	Service Status on Client (999)	999
V ZSVCPRI	Service Create Ordering [01-99]	
igc _ALWAYS_	Contains	SOFTWARE.PACKAGE.AMORTIZE2_
igc _ALWAYS_	Contains	SOFTWARE.PACKAGE.AMORTIZE2_
igc _ALWAYS_	Contains	
igc _ALWAYS_	Contains	
igc _ALWAYS_	Contains	
igc _ALWAYS_	Contains	



A Service instance links to packages. [Figure 46](#) above begins with a ZSTOP expression variable. An expression variable contains statements that, if evaluated to “true,” stop the resolution of the current instance. An expression allows alternative paths to be taken during resolution based on variable data. In this case, the expression checks to be sure that the operating system of the agent computer is authorized for the Amortize software.

If the agent computer’s operating system is Windows 2003, Windows XP, or Windows Vista, the resolution process continues with this instance, connecting the file instances, registry entries, path instances, and shortcuts. If the agent has an operating system other than one of the four that were previously mentioned, resolution returns to SOFTWARE.ZSERVICE.AMORTIZE, and to the next connection instance.

Eventually, the resolution process will return to the User instance, finish resolving it, and return to the process entry point, SYSTEM.ZPROCESS.ZMASTER.

After processing all attributes in the SYSTEM.PROCESS.ZMASTER instance, resolution terminates.



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