

HP Configuration Management

Application Manager and

Application Self-service Manager

for Windows® operating systems

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Installation and Configuration Guide

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i n v e n t

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Documentation Updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
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Table 1 below lists the changes that were made to this document for this and previous releases.

Table 1 Documentation changes

Chapter	Version	Changes
N/A	5.10	The CM Application Manager and CM Application Self-Service Manager guides were combined for this release.
N/A	5.10	The CM Administrator installation and Packaging and Publishing information was removed from the CM Application Manager and CM Application Self-Service Manager guides and is now included in the CM Administrator Guide.
N/A	5.10	Deleted the appendix <i>Naming Conventions</i> . The info in this appendix has been relocated to the <i>HP Configuration Management Administrator Configuration Server Database Editor Guide</i> .
N/A	5.10	Deleted the appendix <i>Adding Classes and Attributes to the CM Configuration Server Database</i> . The info in this appendix has been relocated to the <i>HP Configuration Management Administrator Configuration Server Database Editor Guide</i> .
Chapter 1	5.10	The sections CM Proxy Server (formerly in the user-interface chapter) & CM Reporting Server (formerly in the directories-and-objects chapter) were moved to the section CM

Chapter	Version	Changes
		Infrastructure.
Chapter 2	5.10	The sections Local AIP Support for the CM MSI Redirector & Using an Internet Proxy were moved from the user-interface chapter to the end of this chapter, Installing the CM Agents .
Chapter 2	5.10	Page 48, inserted a note regarding the recommendation to use the <code>setup.exe</code> file for the agent installation.
Chapter 3	5.10	This chapter, CM Agent Directories, Objects, and Logs , was relocated from the chapter-8 position. Additional changes: the CM Agent Logs section that was in the user-interface chapter was consolidated with the “CM agent log” information that was at the end of this chapter; this chapter was renamed (formerly, “CM Agent Directories and Objects”) to include “Logs.”
Chapter 7	5.10	Page 163, the section, Configuring the Timer , was revised and updated to include expanded information on the <code>limit time</code> parameter and the impact of the <code>ZSCHFREQ=RANDOM</code> setting.
Chapter 7	5.10	Page 165, added a Note regarding concurrent CM agent connects from separate remote terminal sessions to the same machine.
Chapter 2	5.00	Page 30, System Requirements have changed for this version.
Chapter 2	5.00	Page 31, CM Agent Installation Process , the file <code>Radia401.msi</code> has been renamed to <code>CM-MgmtApps50.msi</code> .
Chapter 2	5.00	Page 38, Default_catalog , Default_catalog_only , and Root_catalog_name are new attributes available in the <code>args.xml</code> file.
Chapter 6	5.00	Page 159, ZBITARCH is a new attribute of the ZSERVICE Class.
Chapter 2	4.0	Page 34, [PROPERTIES] Section of <code>INSTALL.INI</code> : The following have been added to the Properties section of the <code>INSTALL.INI</code> file: <code>NVDSTARTWMICFGMGR</code> , <code>NVDAMSHORTCUT</code> , <code>NVDAMSTARTMENUSHORTCUT</code> ; <code>NVDAMCONNECT</code> , <code>NVDMAINTDIR</code> , <code>NVDNOTIFYINTERACT</code> , <code>NVDREDIRECTORINTERACT</code> , <code>NVDSCHEDULERINTERACT</code> .

Chapter	Version	Changes
Chapter 2	4.0.1	Page 34, [PROPERTIES] Section of INSTALL.INI, NVDINSTALLSVR has been added as a value of ADDLOCAL. This allows you to install the CM Server Management Client. This change also affects Specifying the CM Agent Features to Install .
Chapter 2	4.0	Page 45, Specifying the CM Agent Features to Install : The CM Patch Manager and CM OS Manager agents have been added to the CM agent installation.
Chapter 5	4.0	Page 97: Client Operations Profiles (COP) is a new feature of the CM agents. Client Operations Profiles allow you to create redundancy and fail-over capabilities for CM Configuration Servers and CM Proxy Servers, control hardware scans, diagnostic settings, and user interface options.
Chapter 6	4.0	Radia 4.0 has augmented its machine/user services.
Chapter 8	4.0	The CM agents now support French and German.
Chapter 8	4.0	Page 226, CM Agent Self-maintenance : is now supplied to the customer in the form of export decks. The Radia 4.0 clients use the PRDMAINT Domain.
Chapter 8	4.0	Page 59, Local AIP Support for the CM MSI Redirector : allows you to add another level of redirection at the local file-system level. When using this method, MSI is told that the AIP is local, and requests files directly from the file system.
Chapter 3	4.0	Page 66, Table 10 : added a row for SMINFO.
Chapter 3	4.0	Page 66, Table 10 : The following client objects are documented in this guide: ZCONFIG, SAPSTATS, SYNOPSIS, PREFACE, and SMINFO. PREFACE was introduced in version 3.1. SAPSTATS and SYNOPSIS are used with Client Operations Profiles. SMINFO is a new object that includes device information taken from the client computer's BIOS.
Chapter 3	4.0	Page 73, Table 13 : Removed the RETRYINT and RETRYLIM attributes from this table.

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1 Introduction

At the end of this chapter, you will:

- Understand the components of HP Configuration Management products.
- Be familiar with the structure of the HP Configuration Management Configuration Server Database (CM Configuration Server Database).
- Be familiar with the structure of the CM agents:
 - the HP Configuration Management Application Manager (CM Application Manager) and
 - the HP Configuration Management Application Self-service Manager (CM Application Self-service Manager).
- Understand suggested deployment strategies.

About This Guide

This guide covers the suggested implementations for the CM agents: HP Configuration Management Application Manager (CM Application Manager) and HP Configuration Management Application Self-service Manager (CM Application Self-service Manager).

HP recommends that CM administrators review this guide for a better understanding of the the use and functionality of the CM agents.

The chapters in this guide are arranged as follows.

- **Chapter 2, Installing the CM Agents**
describes how to install the CM agents.
- **Chapter 4, Implementing Entitlement Policy**
shows you how to define users and groups, and how to connect them to the appropriate applications.
- **Chapter 5, Configuring Client Operations Profiles**
explains how to configure CM agents to use the most appropriate CM Configuration Servers and CM Proxy Servers, provide for fail over capabilities, and configure your CM agents.
- **Chapter 6, Preparing Services**
describes services options such as restarting the CM agent computer and implementing applications that have machine- and user-specific components.
- **Chapter 7, Deploying Services**
describes the deployment methods that are available in CM, as well as how to use a timer to deploy a service, and how to use the Notify function to update and remove application and send an e-mail message to a subscriber.
- **Chapter 8, CM Application Self-service Manager User Interface**
explains how to use the CM Application Self-service Manager user interface.
- **Chapter 3, CM Agent Directories, Objects, and Logs**
shows you where to find and how to examine the results of your CM implementation.

HP Configuration Management Solutions

Configuration Management solutions automate the management of data on target devices in your enterprise. These solutions manage devices based on parameters that you configure.

The following are some key characteristics of CM solutions:

- **Desired State Approach**
You can configure and maintain the desired state of a device's operating system, applications, and configuration. If there is a difference between the device's desired state and the current state, the HP differencing technology determines the precise component-level changes that are required and sends only those changes to the managed device.
- **Policy based Management**
You can define entitlements, which control the deployment of data to authorized users or target devices. For example, an IT administrator could implement a policy that permits access to only certain financial databases by a select workgroup within an organization's finance department. Subsequent changes to entitlements cause data to be installed, changed, or removed for affected users or devices.
- **Adaptive Configuration Management**
As the policies change, the current state is differenced and reconfigured to correspond to the desired state.
- **End-to-End Lifecycle Management**
You can automate the policy-based management of data throughout the deployment life-cycle. With HP OVCM solutions you can:
 - Package applications.
 - Analyze the impact of packages prior to deployment.
 - Discover, collect, and report on hardware and software information.
 - Configure policy assignments to assign data to the appropriate device or user.
 - Distribute and install data across enterprise networks.
 - Repair data and configurations through the desired state process.
 - Deploy patches, service packs, hot fixes, and application updates.
 - Remove data from managed devices by changing entitlement policies.

With the HP OVCM products, you can manage data and continuously configure devices.

Terminology

The following terms are used throughout this guide. HP recommends reviewing and becoming familiar these in order to better understand the concepts that are presented herein.

agent

The software—such as the CM Application Manager, CM Application Self-service Manager, and CM Inventory Manager—that runs on a managed device and communicates with the CM Configuration Server.

CM agent connect

The process by which CM-managed devices communicate with the CM Configuration Server.

CM Configuration Server

Used in conjunction with the CM Configuration Server Database, a server that stores, manages, and distributes application package information, and manages policy relationships and information about managed devices. This server is the only product that is mandatory in the CM environment; without it, the infrastructure will not function.

desired state

The condition of a device as defined by the configuration parameters that are set in the CM Configuration Server Database.

device

In this document, a device is a piece of hardware—such as a computer or ATM—that is either a managed device or a target device.

managed device

A computer, ATM, or other piece of hardware that is managed by HP Configuration Management solutions.

package

(n) A unit of software or data that can be published to the CM Configuration Server Database.

(v) The process of grouping data into a unit that can be published to the CM Configuration Server Database.

policy

A designation of the services to which a user, a target device, or a managed device is entitled.

resolution

The process by which the object attribute values on a managed device are replaced with those that are required to achieve its desired state.

service

A group of related packages, methods, or behaviors organized into manageable units.

target device

A workstation or server on which you want to install, replace, or update software.

user or subscriber

In HP Configuration Management solutions, the identity of the device or subscriber being managed.

Desired State

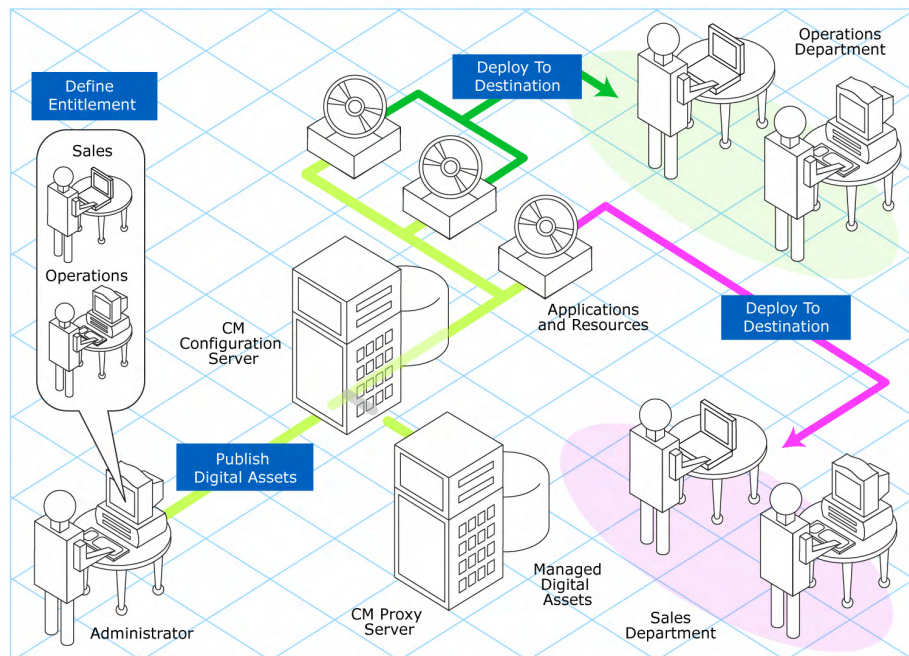
Configuration Management manages the distribution of assets based on your **desired state**. This records the identities and intended configurations of your managed devices. The desired state can be simple or complex.

At a minimum, the desired state includes the following five elements:

- **Users**
The identity of the devices being managed. This can be either a computer name or a user name.
- **Applications**
The software that is being managed.
- **Application Resources**
The components that make up the applications.

- Deployment Source**
 The location where the application components are stored, such as on a HP Configuration Management Proxy Server (CM Proxy Server) or on an HP Configuration Management Configuration Server (CM Configuration Server), so they can be distributed to the users.
- Deployment Destinations**
 The location to which the application and its files will be distributed such as desktop computers, servers, PDAs, and laptops.

Figure 1 Elements in the desired state.



Use CM to manage all of these components. You will publish **packages** of digital assets, determine entitlement policy, and define how the packages will be deployed.

► A package is a unit of distributable software or data.

The CM Configuration Server Database

The HP Configuration Management Configuration Server Database (CM Configuration Server Database), located on the HP Configuration Management Configuration Server (CM Configuration Server), records your enterprise's desired state model. This model is made up of the data to be distributed, policies that define the services to which users or devices are entitled, and security and access rules for administrators. Refer to the *HP Configuration Management Configuration Server Database Reference Guide (CM Database Reference Guide)* for information on the structure and usage of CM classes.

The database is hierarchically structured as follows:

- **Files** are used to group similar domains. The PRIMARY File is used to define and maintain the desired state.
- **Domains** are logical file partitions used to group similar classes. For example, the POLICY Domain contains the classes needed to create users and groups.
- **Classes** are templates containing the attributes needed to create an instance. A class represents a category of the desired state. For example, the USER Class of the POLICY Domain defines users of managed applications. It defines all of the attributes necessary to identify the managed device.
- **Instances** are actual occurrences of classes. The attributes of a class instance contain data describing one specific entity of that class. For example, a USER Instance contains the information needed to identify a target device or user.
- **Attributes** are data elements of a class. The class contains the definition (e.g., the name, data type, description, and length) for each attribute belonging to the class. Each class instance created from the class contains a value for each of the attributes defined in the class. For example, the NAME attribute of a USER Class contains the name of the user.

Default Files and Domains

When you install the CM Configuration Server, LICENSE and PRIMARY are the only two files available. As you use Configuration Management, your database could change. Some of the management infrastructure products add other domains. For example, CM Patch Manager adds the PATCHMGR Domain, and CM ApplicationUsage Manager adds the USAGE Domain.

- The LICENSE File is read-only and is used for CM Configuration Server processing. This file is for HP use only, and should not be modified.
- The PRIMARY File is where you will find most information regarding software management. Within the PRIMARY File, there are seven default domains.
 - Use the ADMIN Domain to define administrative rights and rules for connecting classes.
 - Use the AUDIT Domain to configure tasks that will inventory assets on your devices.
 - Use the CLIENT Domain to configure Client Operations Profiles. This includes defining which CM Configuration Servers and CM Proxy Server the managed device can use. For more information, see Chapter 5, Configuring Client Operations Profiles.
 - Use the POLICY Domain to create users and groups, and to assign users to groups. See Chapter 4, Implementing Entitlement Policy.
 - Use the PRDMAINT Domain to store packages for self-maintenance. The agent software uses this domain to heal and update itself.
 - The SOFTWARE Domain contains information about the software being managed and the methods used to deploy the software. See Chapter 6, Preparing Services.
 - The SYSTEM Domain contains administrative and process control definitions.

As you begin to use Configuration Management, the PROFILE File appears after the first device has registered with the CM Configuration Server. This file contains information that is collected from managed devices. This information is used to connect to devices to deploy data managed by CM, and to see the configuration of the managed device. The PROFILE File is discussed in Chapter 3, CM Agent Directories, Objects, and Logs.

The NOTIFY File contains information about attempts by the Notify function to update, remove or e-mail subscribers. This file appears after the first attempted Notify.

CM Infrastructure

Use Configuration Management infrastructure components to take advantage of its ability to manage your enterprise's computing environment.

Depending on its configuration, your infrastructure might be enhanced by any combination of these components. The CM components can be divided into four categories.

- CM management applications
- CM management infrastructure
- CM extended infrastructure
- CM management extensions

Some of the basic CM infrastructure components are described below. For more information on all of the CM products, refer to the *HP Configuration Management Configuration Server, Portal, and Enterprise Manager Getting Started Guide (CM Getting Started Guide)* on the HP support web site.

CM Configuration Server

The CM Configuration Server is part of the *CM management infrastructure*, and resides on a single server or across a network of servers. Applications and information about the subscribers and agent computers are stored in the CM Configuration Server Database. The CM Configuration Server distributes packages based on policies established by the CM administrator. Refer to the *HP Configuration Management Configuration Server User Guide (CM Configuration Server Guide)* for more information.

CM Portal

The CM Portal is a web-based interface that you can use to manage your CM infrastructure. The CM Portal is part of the *CM extended infrastructure*. Whether you are already using CM, or are just beginning, you can use the portal to create a graphical representation of your infrastructure. Refer to the *HP Configuration Management Portal Guide (CM Portal Guide)* for more information.

CM Proxy Server

The HP Configuration Management Proxy Server (CM Proxy Server) can store a copy of the digital assets that are available to the subscribers that are attached to it. This means that a portion of the work that is required for deploying applications can be off-loaded from the CM Configuration Server to a “proxy” server. The benefits of this practice are:

- The CM Proxy Server is closer to the CM agents on the network
- The load on the CM Configuration Server is reduced

The software that is to be distributed to CM agents is copied to the CM Proxy Server, which then provides the software to those CM agents that are not required to obtain their software from the CM Configuration Server.

The CM Proxy Server is part of the CM *extended infrastructure*. For more information, refer to the *HP Configuration Management Proxy Server Installation and Configuration Guide (CM Proxy Server Guide)*.

CM Reporting Server

As part of the Configuration Management (CM) *extended infrastructure*, the web-based HP Configuration Management Reporting Server (CM Reporting Server) allows you to query the data in several CM Configuration Server Databases (CM-CSDB) and create detailed reports. In addition, you have the option of mounting an existing LDAP directory, which allows you to filter your data using your LDAP directory levels.

The CM Reporting Server interface provides a way to use CM SQL data for reporting and environment assessment. Refer to the *HP Configuration Management Reporting Server Installation and Configuration Guide* for additional information.

CM Administrator

CM comes with the CM Administrator, a set of tools that you use to carry out software management functions. This is part of the CM *management infrastructure*. For additional information about each tool refer to the *HP Configuration Management Administrator User Guide*. CM Administrator tools include:

- **CM Administrator Packager**
Use the CM Admin Packager to create groups of components, called packages, and promote them to the CM Configuration Server.
- **CM Administrator Configuration Server Database Editor**
Use the CM Admin Configuration Server Database Editor to view and to manipulate the CM Configuration Server Database.
- **CM Administrator Agent Explorer**
Use the CM Admin Agent Explorer to view and to manipulate CM objects on the agent computer.

- **CM Administrator Screen Painter**
Use the CM AdminScreen Painter to create custom dialog boxes.
- **CM Administrator Publisher**
Use the CM Administrator Publisher to publish Windows Installer files.

Management Applications

Management applications (CM agents) allow you to automate deployment, update, repair, and deletion activities, and inspect hardware and software. Install the CM management applications onto the subscriber's computer.

There are six types of management applications available for communicating with the CM Configuration Server. Install the only those agents for which you have a license.

- **HP Configuration Management Application Manager (CM Application Manager)**
Use this agent to distribute mandatory applications throughout the enterprise. This agent is described in this guide.
- **HP Configuration Management Application Self-service Manager (CM Application Self-service Manager)**
Subscribers install, remove, or update optional applications that are available to them in a service list.
- **HP Configuration Management Inventory Manager (CM Inventory Manager)**
This client allows you to collect hardware information and send it to the CM Inventory Manager for collection and reporting. Refer to the *HP Configuration Management Inventory Manager Guide (CM Inventory Manager Guide)* for details.
- **The HP Configuration Management Patch Manager (CM Patch Manager)**
The CM Patch Manager analyzes and manages security patches. Refer to the *HP Configuration Management Patch Manager Guide (CM Patch Manager Guide)*.
- **HP Configuration Management OS Manager (CM OS Manager)**
The CM OS Manager controls the provisioning of operating systems. Refer to the *HP Configuration Management OS Manager Guide (CM OS Manager Guide)*.

- **HP Configuration Management Solutions for Servers (CM Solutions for Servers)**

Server Management includes the capabilities to control server applications, analyze settings and baselines. Refer to the *HP Configuration Management Server Management* guides.

If you install both CM agents (CM Application Self-service Manager and CM Application Manager), you can decide whether an application is mandatory or optional, and specify who controls the installation of the application. By adding the CM Inventory Manager, you can also discover the hardware and software configurations of CM agent computers.

Summary

- Configuration Management provides the *flexibility and control* to efficiently manage desktop software.
- The CM Configuration Server Database includes all the information that is needed to *manage your software*.
- You can use CM Proxy Servers to *minimize network traffic* or to *minimize the workload* on the CM Configuration Server.
- HP provides *suggested deployment strategies* that can be tailored to suit your organization's needs.

2 Installing the CM Agents

At the end of this chapter, you will:

- Understand the system requirements for installing CM agents.
- Know how to customize the installation process.
- Be able to modify the [PROPERTIES] section of the `INSTALL.INI` in order to customize the behavior of the installation process.
- Be able to modify the [ARGS] section of the `INSTALL.INI` in order to customize the behavior of the HP Configuration Management Application Self-service Manager (CM Application Self-service Manager).
- Be able to modify the [OBJECTS] section of the `INSTALL.INI` in order to specify CM objects to be created on the agent computer.
- Know how to use the Installation Wizard.
- Know how to remove and repair CM agents using the Installation Wizard and command lines.
- Know how to modify the installation of the CM agents using the Installation Wizard and command lines.
- Know how to use a pre-install script to customize MSI properties that affect installation.
- Know how to use a post-install script to run processes after installing CM agents.

CM Agent Installation

The CM agent installation program uses Microsoft Windows Installer. The program consists of one MSI package with six feature sets:

- HP Configuration Management Application Manager (CM Application Manager)
- HP Configuration Management Application Self-service Manager (CM Application Self-service Manager)
- HP Configuration Management Inventory Manager (CM Inventory Manager)
- HP Configuration Management OS Manager (CM OS Manager)
- HP Configuration Management Patch Manager (CM Patch Manager)
- HP Configuration Management Server Management (CM Server Management)



Install only the CM agents for which you have licenses. If you do not have a license, the CM agent will not authenticate with the HP Configuration Management Configuration Server (CM Configuration Server).

System Requirements

- Microsoft .NET runtime version 1.1 or higher (required for CM Application Self-service Manager only). The .NET installation program is available in the `\dotnet` folder on the CM agent media. If .NET does not exist on the agent computer, the .NET installation program runs automatically. Microsoft .NET requires Microsoft Internet Explorer 5.01 or later.
- TCP/IP connection to a computer running the CM Configuration Server.
- For Windows 2000, Windows Server 2003, Windows XP, and Windows Vista, you must have administrator rights to the computer to install the CM agents.

Platform Support

For information about the platforms that are supported in this release, see the accompanying release notes.

CM Agent Installation Process

Whether the CM agent installation program is distributed as an executable (`setup.exe`) or a Windows Installer **Administrative Installation Point (AIP)**, the installation process is the same. You can customize many aspects of the installation including which CM agents to install and to which directory the installation files should be copied. If you want to customize the installation process, you should be familiar with the following files.

- **setup.exe**
Stored in the `\win32` directory on the CM agent media, it accepts any standard Windows Installer command line parameters and passes them to the Windows Installer service.

You can also create an AIP for network installations.



An AIP is also known as an **Administrative Control Point (ACP)**.

To create the Windows Installer AIP in a specified target directory, type:

```
setup.exe /a TARGETDIR=drive:\targetdirectory /qb
```

The target directory contains `CM-MgmtAppsxx.msi`, the installation folders, `setup.exe`, and any files (such as `Install.ini` or Visual Basic scripts) stored in the same directory as `setup.exe`. Next, copy the `\dotnet` and `\MSI` folders into the target directory.

- **CM-MgmtAppsxx.msi**
The MSI database file; it contains the default configuration information for the installation. This file is stored in the `\win32` directory on the CM agent media.
- **Install.ini**
Use `Install.ini` to customize the installation or the CM agent arguments file, or to create or set attributes for CM objects. Settings in `Install.ini` override the defaults stored in `CM-MgmtAppsxx.msi`.

A sample `Install.ini` is available in the `\win32` directory on the CM agent media.

- **args.xml**

The CM Application Self-service Manager arguments file created from information stored in the [ARGS] section of `Install.ini`. This file, stored in `IDMLIB` on the agent computer, controls the behavior of the CM Application Self-service Manager. The default directory for `IDMLIB` is `SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\Lib\`.

- **Pre-install scripts**

(Recommended for experienced users only.)

Use custom Visual Basic scripts to customize MSI properties that affect the installation. For an example of a simple script, see [Using a Pre-Install Script](#) on page 57.

- **Post-install scripts**

(Recommended for experienced users only.)

Use custom Visual Basic, REXX, or Tcl scripts to run processes such as the first agent connect. For an example, see [Using a Post-Install Script](#) on page 58.

Preparing INSTALL.INI

Create an installation file, `INSTALL.INI`. Use this file to:

- Customize the installation.
- Customize the CM agents.
- Create or set attributes for CM objects.

Below is a sample `INSTALL.INI`. A description of the three sections and the attributes in each of these sections follows.



A semi-colon (;) at the beginning of attributes, properties, and object names indicates that this item is commented out and will be ignored. If you want to specify a value for any of these items, delete the semi-colon (;) and then type the appropriate value.

The following is a sample `INSTALL.INI`:

```
[Properties]
;.MSI Property overrides (Novadigm properties have the "nvd" prefix)

;.Uncomment and specify the installation directory to replace the default directory
;INSTALLDIR=
```



```

;Uncomment to prevent subscribers from using Add/Remove Programs in the Control Panel to remove
the CM Agent
;ARPNOREMOVE=1

;Uncomment and specify the features that you want to install
;ADDLOCAL=NVDINSTALLLRAM,NVDINSTALLRSM,NVDINSTALLRIM,NVDINSTALLRLAE

;Uncomment to show/hide panels in the installation wizard (defaults shown below)
;NVDENABLEUSER=Y
;NVDENABLEIP=Y
;NVDENABLEPROXY=N
;NVDENABLESHORTCUT=Y
;NVDSHORTCUT=Y
;NVDSTARTMENUMICON=Y
;NVDSTARTWMICFGMGR=Y
;NVDDRAMSHORTCUT=N
;NVDDRAMSTARTMENUSHORTCUT=N
;NVDDRAMCONNECT="radntfyc localhost radskman
cat=prompt,uid=$machine,ulogon=n,hreboot=y,ind=y,ask=y,ip=xxx.xxx.xxx.xxx,port=3464,mnam
e=Radia,dname=Software,startdir=SYSTEM,timeout=1800,context=m,log=connect_manual.log"

;Uncomment and specify the location of maintenance files
;NVDMAINTDIR=

;Uncomment to allow notifies only from the local host.
;NVDLOCALNOTIFYONLY=Y

;Uncomment to start the System Tray automatically if CM Application Manager is selected durin
the client install process.
;NVDRADTRAYSTART=Y

;Uncomment to disable "Allow service to interact with desktop" flag for HP CM Services
;NVDNOTIFYINTERACT=N
;NVDREDIRECTORINTERACT=N
;NVDSCHEULERINTERACT=N

;Uncomment and specify the file names of pre- and post-install custom action scripts
;NVDPRECAPATH=
;NVDPOSTCAPATH=

[Args]
; Tags to be placed into the CM Application Self Service Manager Agent ARGS.XML file
; A value of _NONE_ removes the tag from the file
;
;askconfirm=
;channelname=software
;dataurl=
;enterprisemanagement=
;identification=$USER

```

```

;log=connect.log
;logsize=
;logonpanel=
;managerurl=
;providername=Radia
;redirect=
;resolutionmanager=
;resolutionport=
;sslmanager=
;sslport=
;startdir=
;uioption=

[Objects]
; Set CM object attribute values
; A value of _NONE_ will set the attribute to blank
;
;ZMASTER_ZDSTSOCK=3464
;ZMASTER_ZIPADDR=xxx.xxx.xxx.xxx
;ZMASTER_ZNTFPORT=3465
;ZMASTER_ZNTFYSEC=Y
;ZMASTER_ZTIMEO=240
;ZMASTER_ZTRACE=N
;ZMASTER_ZTRACEL=_NONE_
;ZMASTER_ZUSERID=
;ZMASTER_ZVRFYUID=N
;
;PROXYINF_USEPROXY=
;PROXYINF_DISCOVER=
;PROXYINF_PROXADDR=
;
; Uncomment to enable Client Operations Profile (COP)
;RADSETUP_COP=Y
; Uncomment to disable collection of AD information
;RADSETUP_ADINFO=N
; Uncomment to disable collection of NT Group information
RADSETUP_ZGRPINFO=N
; Uncomment to always send configuration objects to the RCS
RADSETUP_ALWAYS=Y

```

[PROPERTIES] Section of INSTALL.INI

Use the [PROPERTIES] section to modify Windows Installer properties or HP-specific properties to customize the behavior of the installation program. The values that you set in this section override the default values stored in the Cm-Mgmtapps50.Msi database file.



All properties such as INSTALLDIR must be typed in all uppercase.

Table 2 [PROPERTIES] Section of INSTALL.INI

Argument	Description
ADDLOCAL	<p>Specify the features that you want to install on the local hard drive. There is no default for this argument.</p> <p>The features are:</p> <ul style="list-style-type: none">• NVDINSTALLRAM = CM Application Manager• NVDINSTALLRSM = CM Application Self-service Manager• NVDINSTALLRIM = CM Inventory Manager• NVDINSTALLROM = CM OS Manager• NVDINSTALLPATCH = CM Patch Manager• NVDINSTALLSVR = CM Server Management• NVDINSTALLRLAE = CM Local AIP Extension <p>Note: This must be installed to use the Local AIP Support for the CM MSI Redirector feature described on page 59.</p>
ARNOREMOVE	<p>Set to 1 to disable the ability to remove the CM agent from the computer using Add/Remove Programs in the Control Panel.</p> <ul style="list-style-type: none">• For Windows 2000 and XP, the Remove button is disabled.• For earlier operating systems, the CM agent will not be listed in Add/Remove Programs in the Control Panel. <p>Note: Setting to 0 will not disable this option due to a Windows Installer issue. If you want to allow your subscribers to remove the CM agent from the computer using Add/Remove Programs, place a semi-colon (;) in front of the ARPNOREMOVE argument in <code>INSTALL.INI</code>.</p>
INSTALLDIR	<p>Specify the directory in which to install the CM agent. The default is <code>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent</code>.</p> <p>This value will be overridden if a new directory is specified in the Destination Folder window in the CM Agent Installation Wizard.</p>

Argument	Description
NVDENABLEUSER	<p>Indicate whether to show or hide the Set User window in the Installation Wizard.</p> <ul style="list-style-type: none"> • Specify Y (the default) to show the window. • Specify N to hide the window. • Specify D to show the window, but disable the User Name field. The Create CM Application Self-service Manager icon on the desktop check box is still available. <p>Note: If you hide the window, the Create CM Application Self-service Manager icon on the desktop check box will no longer be available to your subscribers.</p>
NVDENABLEIP	<p>Indicate whether to show or hide the CM Configuration Server window in the Installation Wizard. The default is Y.</p>
NVDENABLE PROXY	<p>Indicate whether to show or hide the Proxy Information window in the Installation Wizard. The default is N.</p> <p>If you want to use a CM Proxy Server during the CM agent connect, show this window.</p> <p>The information that is specified in the Proxy Information window is stored, by default, in the PROXYINF object in the agent computer's IDMLIB directory.</p>
NVDENABLE SHORTCUT	<p>Indicate whether to show the Create CM Application Self-service Manager icon on the desktop check box in the Set User window. The default is Y.</p> <p>Selecting this check box installs a shortcut on the subscriber's desktop for the CM Application Self-service Manager.</p>
NVDSHORTCUT	<p>Indicate whether to install a desktop shortcut for the CM Application Self-service Manager on the subscriber's computer. The default is Y.</p>
NVDSTART MENUICON	<p>Indicate whether to install an icon in the Start Menu for the CM Application Self-service Manager on the subscriber's computer. The default is Y.</p>
NVDSTARTWMI CFGMGR	<p>Indicates whether to install the shortcuts for WMI. The default is Y.</p>
NVDDRAMSHORT CUT	<p>Indicate whether to install a desktop shortcut for the CM Application Manager on the subscriber's computer. The default is N.</p>

Argument	Description
NVDRAMSTART MENUSHORTCUT	Indicate whether to install an icon in the Start Menu for the CM Application Manager on the subscriber's computer. The default is N .
NVDRAMCONNECT	Specify a command line to run if a CM Application Manager shortcut is created on the desktop or the Start Menu. There is no default for this argument.
NVDMAINTDIR	Specify a directory in which to store the CM agent maintenance files. The default is the <code>MAINT</code> sub-directory of the folder that contains <code>setup.exe</code> . Note: Specify a value only if you want to store maintenance files in a directory other than the default. If files in this directory are more recent than the installation files, they will be copied into the CM agent's <code>IDMSYS</code> directory.
NVDLOCAL NOTIFYONLY	If set to y , the agent will allow CM Notifies from the local host only. The default is N .
NVDRADTRAY START	Set to y to start the System Tray automatically if the CM Application Manager is selected during the CM agent installation process. The default is N .
NVDNOTIFY INTERACT	Set to y to enable the CM Notify Daemon to interact with the desktop. The default is N .
NVDREDIRECT ORINTERACT	Set to y to enable the CM MSI Redirector to interact with the desktop. The default is N .
NVDSCHEDULER INTERACT	Set to y to enable the CM Scheduler to interact with the desktop. The default is N .
NVDPRECAPATH	Specify the fully qualified path and filename of a custom Visual Basic pre-install script. There is no default for this argument. Note: New objects or properties must be defined in <code>INSTALL.INI</code> . You can use a pre-install script to override a value for the object or property, but if you attempt to specify a new object or property in the pre-install script, it will be ignored. For an example of a simple script, see Using a Pre-Install Script on page 57.

Argument	Description
NVDPOSTCAPATH	Specify the fully qualified path and filename of a custom Visual Basic or REXX post-install script. There is no default for this argument. For an example, see Using a Post-Install Script on page 58.

[ARGS] Section of INSTALL.INI

Use the [ARGS] section to control the behavior of the CM Application Self-service Manager. The information in this section is used to build the CM Application Self-service Manager arguments file, `args.xml`, which is stored in `IDMLIB` on the CM agent computer. The default directory for `IDMLIB` is `SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\Lib\`.

The following is an example of `args.xml`.

```
<?xml version="1.0" ?>
<RADIA_ARGUMENTS>
<ARGUMENTS><CHANNELNAME>software</CHANNELNAME>
<IDENTIFICATION>jsmith</IDENTIFICATION>
<PROVIDERNAME>radia</PROVIDERNAME>
<RESOLUTIONMANAGER>10.10.10.1</RESOLUTIONMANAGER>
<LOG>connect.log</LOG>
<RESOLUTIONPORT>3464</RESOLUTIONPORT>
<ROOT_CATALOG_NAME>All Software</ROOT_CATALOG_NAME>
</ARGUMENTS>
</RADIA_ARGUMENTS>
```



The XML tags (arguments) that are described in this section are not case-sensitive when you type them in `INSTALL.INI`. However, they will be automatically converted to uppercase in `args.xml`. If you are using the CM Application Manager, any of the parameters in the [ARGS] section can be added to the `RADSKMAN` command line.

Table 3 [ARGS] section of INSTALL.INI

Argument	Mandatory or Optional	Description
askconfirm	Optional	<p>Controls the display of a confirmation message to your subscribers. For example, some instances in which a confirmation message might display are:</p> <ul style="list-style-type: none"> • A reboot is required. • There is insufficient disk space during deployment. • A data download is interrupted. <p>The default is Y.</p>
channelname	Mandatory	<p>The CM Configuration Server Database Domain from which applications are retrieved. The default is SOFTWARE.</p>
default_catalog	Optional	<p>Set the default catalog that is selected when the CM Application Self-service Manager starts. There is no default for this argument.</p>
default_catalog_only	Optional	<p>Set to Y to make only the Default_catalog available when the CM Application Self-service Manager starts. The default is N.</p>
identification	Optional	<p>Identifies the CM agent to the CM Configuration Server by defining the value for the ZUSERID variable in the ZMASTER object. The default is \$USER.</p> <p>This value will be overridden if a different User Name is specified in the Set User window in the CM Agent Installation Wizard. If you do not want this value to be modified, set NVDENABLEUSER=N in the [PROPERTIES] section of INSTALL.INI.</p> <p>\$MACHINE: The CM user ID is the name of the subscriber's computer.</p> <p>\$USER: The CM user ID is the logon ID for the subscriber currently logged on.</p> <p>CUSTOM: literal custom specification.</p>

Argument	Mandatory or Optional	Description
log	Optional	Specifies the name of the log stored in IDMLLOG. IDMLLOG is specified in NVD.INI. The default is Connect.log. The default location of NVD.INI is <i>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\LIB.</i>
logsize	Optional	Specifies (in bytes) the size of the log file. The default is 1000000 . When the logsize is reached, a backup file (.bak) is created. By default, this file is connect.bak. If a backup file already exists, it will be overwritten.
logonpanel	Optional	Controls the display of the logon panel. The default is Y .
managerurl	Optional	Specifies the address (in the form <i>http://hostname:port/nvdurl</i>) of the CM Configuration Server to be used for HTTP object transfer. There is no default for this argument.
providername	Mandatory	The name of the CM Configuration Server, as was set during its installation. The default is Radia . This is used to name the folder below the STARTDIR on the CM agent computer. See startdir on page 42 for more information.
redirect	Optional	<i>Used for the CM Application Self-service Manager only.</i> Specifies an alternate start-up file (<i>filename.xml</i>) that can be accessed via a network path or URL. There is no default for this argument. If the redirect tag is set in args.xml, the CM Application Self-service Manager uses the properties that are specified in the alternate file.

Argument	Mandatory or Optional	Description
resolutionmanager	Mandatory	<p>The IP address of the CM Configuration Server. The CM Configuration Server name can also be used. There is no default for this argument.</p> <p>This value will be overridden if a different IP address is specified in the CM Configuration Server window in the CM Agent Installation Wizard.</p> <p>To prevent this value being modified, set NVDENABLEIP=N in the [PROPERTIES] section of <code>INSTALL.INI</code>.</p>
resolutionport	Mandatory	<p>The port for the CM Configuration Server. There is no default for this argument.</p> <p>This value will be overridden if a different port is specified in the CM Configuration Server window in the CM Agent Installation Wizard.</p> <p>To prevent this value being modified, set NVDENABLEIP=N in the [PROPERTIES] section of <code>INSTALL.INI</code>.</p>
root_catalog_name	Mandatory	<p>Use this to customize the name of the root catalog display name. There default is All Software.</p>
sslmanager	Optional	<p>The address of the CM Configuration Server that is to be used for SSL communications. There is no default for this argument.</p> <p>If you want self-maintenance to use SSL communications, append ::SM to the end of the specified IP address or host name, as in sslmanager=hostname::SM.</p> <p>Warning: Use the ::SM switch with the following caveat in mind: the file (<code>cacert.pem</code>) that contains the CA root certificates cannot be maintained. If the corresponding CA root certificate for the certificate in use by the CM Configuration Server should ever become expired, revoked, or corrupt, it will result in disabling SSL communications to the CM Configuration Server.</p>

Argument	Mandatory or Optional	Description
sslport	Optional	The TCP/IP port (usually 443) on which the SSL Manager task is listening. There is no default for this argument. The sslport specification takes the form <i>sslport=port</i> .
startdir	Optional	The starting IDMLIB directory (by default, <i>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\Lib\</i>). The default is \$USER . \$MACHINE : The current computer name. \$USER : The user ID of the subscriber that is currently logged on. CUSTOM : literal custom specification. Type startdir=foldername . If the folder name contains embedded spaces, enclose the entire name in quotation marks (“”). Note : Do this to distribute a set of applications that will be shared by all subscribers of a multi-user computer.
uioption	Optional	Controls the display of the status window. The default is N .

[OBJECTS] Section of INSTALL.INI

Use the [OBJECTS] section to specify CM objects to be created on the agent computer and to set their default values. The format is *clientobject_attribute*. For example, if you want to set the IP address for your CM Configuration Server, set ZMASTER_ZIPADDR.

Table 4 [OBJECTS] section of INSTALL.INI

Argument	Description
ZMASTER_ZDSTOCK	The port setting for the CM Configuration Server. The default is 3464 .

Argument	Description
ZMASTER_ZIPADDR	The IP address for the CM Configuration Server. There is no default for this argument.
ZMASTER_ZNTFPORT	The port on which the CM agent's Notify daemon is "listening." The default is 3465 .
ZMASTER_ZNTFYSEC	This attribute allows a Notify operation to execute programs from the <code>IDMSYS</code> directory only. This is used for security during Notify operations. The default is Y .
ZMASTER_ZTIMEO	The duration (in seconds) that the CM agent will wait for a response from the CM Configuration Server before it times out. The default is 240 . Valid values are numerals from 0 to 3200.
ZMASTER_ZTRACE	Indicates whether communications buffer information will be included in the log; also generates unique logs for create methods. The default is N . <ul style="list-style-type: none"> • Y enables Communication and Method Tracing. • S enables Communication summary information; Method Tracing is not enabled. • N disables Communication Tracing and Method Tracing.
ZMASTER_ZTRACEL	The level of tracing that is generated in the CM agent log files. The default is 040 . Valid values are 0 to 999, where 0 = minimal tracing, 40 is acceptable for most activity, and 999 = maximum tracing.
ZMASTER_ZUSERID	The subscriber's user ID. The default is the name of the user that is currently logged on to the computer.
ZMASTER_ZVRFYUID	Specify Y to verify the user ID that was sent by the CM Configuration Server's Notify command. This verification uses the ZUSERID field from the CM agent's ZMASTER object. The default is N .
PROXYINF_USEPROXY	Indicates whether a proxy server is used when connecting to the CM Configuration Server. The default is N .
PROXYINF_DISCOVER	<i>For use with Microsoft Internet Explorer.</i> Set to the proxy address and port that your web browser is using. The default is N .

Argument	Description
PROXYINF_PROXADDR	The IP address and port number of your proxy server. The default is xxx.xxx.xxx.xxx:1080 .
RADSETUP_COP	Set to Y to enable Client Operations Profiles. The default is N .

Installing the CM Agents

Before installing the CM agents, decide whether to initiate the installation from:

- *a command line.*
See Installing the CM Agent from a Command Line starting below.
- *a logon script.*
See Initiating the CM Agent Installation from a Logon Script starting on page 47.
- *the CM Portal.*
Recommended for mass rollouts in Windows environments. Refer to the *HP Configuration Management Portal Installation and Configuration Guide (CM Portal Guide)* for more information.

After initiating the installation, the CM Agent Installation Wizard runs. This section describes some of the ways that you can initiate the CM agent installation, and then describes the standard CM Agent Installation Wizard.

Installing the CM Agent from a Command Line

Before performing an installation from a command line, determine:

- Which CM agent features (CM Application Manager, CM Application Self-service Manager, CM Patch Manager, CM Inventory Manager, CM OS Manager, CM Server Management) will be installed, and
- How the CM agent installation program will be made available to your subscribers. This can be done via: a web page, an FTP site, a mapped drive, a CD-ROM, and e-mail,

With these decisions made, pass the arguments on a command line. The arguments are detailed in the section, Specifying the CM Agent Features to Install, starting below, as well as in Table 5 below and Table 6 on page 46.

Referencing the CM Agent Features

When specifying the arguments on the command line, reference the CM agent features as follows:

- NVDINSTALLRAM installs the CM Application Manager.
- NVDINSTALLRSM installs the CM Application Self-service Manager.
- NVDINSTALLRIM installs the CM Inventory Manager.
- NVDINSTALLROM installs the CM OS Manager.
- NVDINSTALLPATCH installs the CM Patch Manager.
- NVDINSTALLSVR installs CM Server Management.

Specifying the CM Agent Features to Install

To specify the features that you want to install, use the appropriate feature state argument, as described in the following table.

Table 5 CM Agent Feature State Arguments

Specify:	Action
ADDLOCAL	Type a comma-delimited list of features that you want set to “Will be installed on local hard drive.”
REMOVE	Type a comma-delimited list of features that you want set to “Entire feature will be unavailable.” This removes the features only, not the 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 product, type REMOVE=ALL .

Additional Command Line Arguments

Some additional arguments that you can pass to the installation program on the command line are described Table 6 below.

Table 6 Command Line Arguments

Sample	Sample
<code>/qn</code>	Performs a silent installation. Note: A silent installation is one that takes place without a user interface. This might also be referred to as a “quiet installation,” or an “unattended installation.”
<code>/qb</code>	Displays the progress bar only during the installation.
<code>/L*v</code> <code>drive:\install.log</code>	Creates a detailed Windows Installer log. Note: Using this option could impact the performance of the installation.
<code>/a TARGETDIR=drive:</code> <code>\targetdirectory</code>	Creates a Windows Installer AIP in the specified target directory. Note: A Windows Installer Administrative Installation Point (AIP) is also known as an Administrative Control Point (ACP). The target directory contains <code>RADIA.MSI</code> , the installation folders, <code>setup.exe</code> , and any files (such as <code>INSTALL.INI</code> or Visual Basic scripts) stored in the same directory as <code>setup.exe</code> . After you have created the AIP, you can run <code>setup.exe</code> and pass the appropriate command-line parameters. This starts the Windows Installer and passes the specified parameters to it.
<code>NVDINIFILE=path</code> <code>\INIfilename</code>	To rename the installation INI file, pass this parameter to the command line. Be sure to include the fully qualified path. By default, the installation program refers to <code>INSTALL.INI</code> which is located in the current directory.
<code>INSTALLDIR=</code>	Specify the installation directory. Use quotation marks if the path contains spaces.

If you initiate a CM agent installation with a command line that does not contain the silent installation arguments (`/qn`), the CM Agent Installation

Wizard opens. See [Using the CM Agent Installation Wizard](#) on page 48 for more information.

Examples

The following is an example of a command line that will silently install the CM Application Self-service Manager and create a detailed Windows Installer log.

```
SETUP.EXE ADDLOCAL=NVDINSTALLRSM /qn /L*v C:\Hewlett-  
Packard\CM\Agent\install.log
```

For example, to install the CM Application Manager and the CM Application Self-service Manager to the computer, use the following command line:

```
SETUP.EXE ADDLOCAL= NVDINSTALLRAM,NVDINSTALLRSM
```

The arguments in this command line, and others, are described in [Specifying the CM Agent Features to Install](#) on page 45 and [Table 6](#) on page 46.

Initiating the CM Agent Installation from a Logon Script

You can use a logon script on a Windows 2000, Windows Server 2003, Windows XP, or Netware agent to automate installation of the CM agents.



To install the CM agents automatically on subscriber's Windows 2000 Professional or XP Professional computer, subscribers *must* have administrator rights on their local computers, and a domain controller must authenticate each subscriber's logon.

The following is an example of code that you can add to the logon script that installs the CM agents. If the CM agents are not already installed when the subscriber logs on to the server, this logon script runs the CM agent installation program.

Here is a sample logon script:

```
:begin  
@echo off  
if exist C:\progra~1\Hewlett-Packard\CM\Agent\LIB\zmaster.edm  
goto skipinst  
start setup.exe /qn  
:skipinst
```

```
if exist C:\progra~1\Hewlett-Packard\CM\Agent\lib\zmaster.edm
goto skipinst
```

To determine if the CM agents already exist, the script checks to see if the ZMASTER object (ZMASTER.EDM) exists in its default location on the local computer.

► The ZMASTER object begins the resolution process and is the first object to be exchanged during the CM agent “connect.”

If ZMASTER.EDM *exists*, the script skips the installation. If ZMASTER.EDM *does not exist*, the CM agent installation program launches.

```
start setup.exe /qn
```

This command line performs a silent installation of the CM agents.

► Modify this script to reflect your organization’s needs.

If you initiate a CM agent installation using a command line that does not contain the silent installation arguments, the CM Agent Installation Wizard opens. See [Using the CM Agent Installation Wizard](#) below for more information.

Using the CM Agent Installation Wizard

If you start a CM agent installation without the arguments for a silent installation, the CM Agent Installation Wizard opens. The following steps describe the standard installation procedure. These steps can vary based on INSTALL.INI or any arguments passed when running the installation.

► You can initiate the agent installation with the .msi file, but this results in some important files not getting created. HP recommends using the setup.exe file to install the agent, in order to ensure that all required files are created.

To install CM agents using the Installation Wizard

- 1 From the folder containing the CM agent installation files, run setup.exe.



You can initiate `setup.exe` from a command line, logon script, or from the CM Portal. Go to the beginning of this chapter for more information.

The CM Agent Installation Wizard opens.

- 2 Click **Next**.

The License Agreement window opens.

- 3 After reading and accepting the license agreement, click **Next**.

The Destination Folder window opens.

The default location for the CM agents is `SystemDrive:\Program Files\Hewlett-Packard\CM\Agent`.

If you want to select a different destination for the CM agent, click **Browse** and navigate to the appropriate destination folder. This overrides the value set for `INSTALLDIR` in `INSTALL.INI`.

- 4 Click **OK** to continue.

- 5 Click **Next**.

The Set User window opens.

- 6 In the User Name text box, type the name of the subscriber for whom you are installing the CM agents. This overrides the value set for `IDENTIFICATION` in `INSTALL.INI`.

- 7 Select the **Create CM Application Self-service Manager icon on the desktop** check box if necessary.

- 8 Click **Next**.

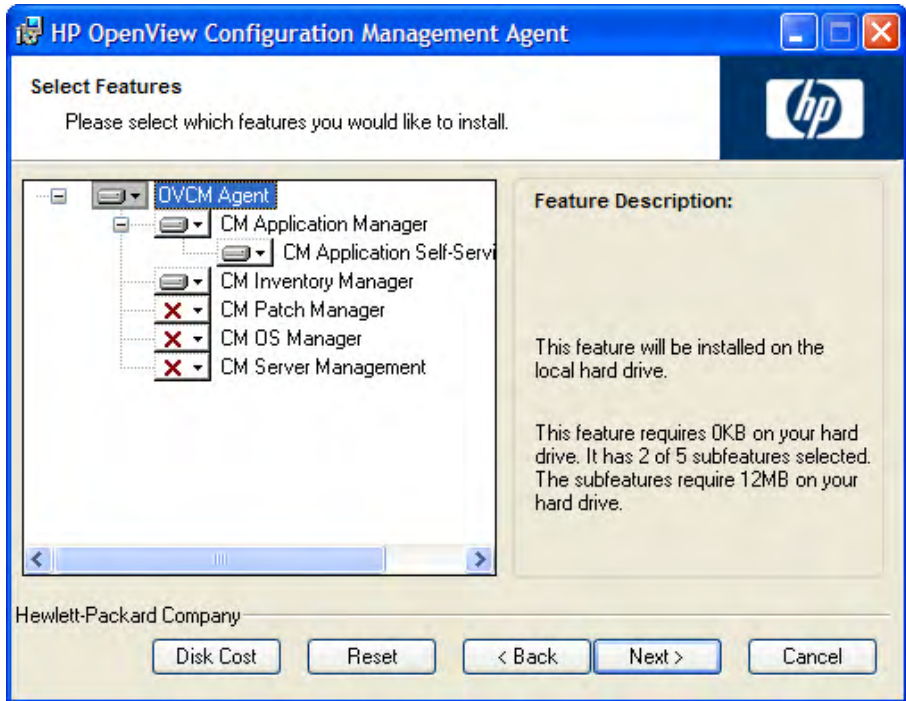
The CM Configuration Server window opens.

- 9 In the IP Address text box, type the IP address for the CM Configuration Server. This overrides the value set for `RESOLUTIONMANAGER` in `INSTALL.INI`.


- 10 In the Port text box, type the port number. This overrides the value set for `RESOLUTIONPORT` in `INSTALL.INI`.


- 11 Click **Next**.

The Select Features window opens.



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

Each time you click , a shortcut menu for that feature opens (see the next figure).

 Install only the CM agents for which you are licensed.


13 From the shortcut menu, select an installation option. These options are described in Table 7 below.

Table 7 Feature Settings for CM Agents

Option	Description
Will be installed on local hard drive	Installs the top-level feature on the local hard drive, but not any sub-features listed below.

Option	Description
Entire feature will be installed on local hard drive	<p>Installs the entire feature, including any sub-features listed below.</p> <p>Note: In this installation program, selecting this option or the “Will be installed on local hard drive” option for the CM Application Self-service Manager, CM Application Manager, or CM Inventory Manager results in the same installation because these features do not contain sub-features.</p> <p>Example: If you select this option for the CM agent feature in the Select Features window, all of the CM agents will be installed on the local hard drive.</p>
Entire feature will be unavailable	The feature will not be installed. If previously installed this feature will be removed.



If you want to set the same options for all of the features, you can click  **OVC Agent** and select the appropriate option to apply the setting to all features.

Click **Disk Cost** to see an overview of the disk space needed for the installation.

14 Click **Next**.

If .NET is not installed on the agent computer and you have chosen to install the CM Application Self-service Manager, .NET will be installed during the CM agent installation. However, if you copied the installation program to your computer and did not include the \DotNet folder, the DotNet Settings message will open.

15 Click **OK**.

16 If necessary, click **Next** again.

If .NET is not already installed on the computer, the .NET Installation window opens.

17 Click **Next**.



If you have installed .NET Beta, be sure to remove it before installing .NET.

The Ready to Install the Application window opens.

18 Click **Install** to begin the installation.

If necessary, the .NET Framework Setup wizard opens. Follow the prompts to install .NET on the agent computer. After .NET is successfully installed, the CM agent installation begins.

When the installation is done, successful installation window opens.

- 19 Click **Finish** to close the Installation Wizard.

Removing the CM Agents

The Windows Installer installation program offers the ability to remove your CM agents. This section describes how to remove the CM agent using the Installation Wizard and using a command line.

Using the Installation Wizard to Remove CM Agents

This section describes how to remove the CM agent using the Installation Wizard.



To remove features of the CM agent, use the Modify option on the Application Maintenance window. This is discussed in Modifying the CM Agent Installation on page 55.

To remove CM agents using the Installation Wizard

- 1 From the folder containing the CM agent installation files, double-click **setup.exe**. The Application Maintenance window opens.
- 2 Select the **Remove** option.
- 3 Click **Next**.
The CM Agent Uninstall window opens.
- 4 Click **Remove**.
The files for all CM agents are removed from the computer.
The CM agent has been successfully uninstalled window opens.
- 5 Click **Finish**.

Using a Command Line to Remove CM Agents

This section describes how to use a command line to remove CM agents.

To remove CM agents using a command line

- From the folder containing the CM agent installation files, type the following command line:

```
SETUP.EXE REMOVE=ALL
```

See *Installing the CM Agent from a Command Line* on page 44 for additional arguments.

or

If you would like to remove a single CM agent, type a comma-delimited list of the features that you want to remove on the command line.

Reference the features for the CM agent installation as follows:

- CM Application Manager NVDINSTALLRAM
- CM Application Self-service Manager NVDINSTALLRSM
- CM Inventory Manager NVDINSTALLRIM
- CM OS Manager NVDINSTALLROM
- CM Patch Manager NVDINSTALLPATCH
- CM Solutions for Servers NVDINSTALLSVR

Example

To silently remove the CM Application Self-service Manager and CM Application Manager, type:

```
SETUP.EXE REMOVE=NVDINSTALLRSM,NVDINSTALLRAM /qn
```



This removes the features only, not the entire product. Therefore, if you use the REMOVE argument and type each of the feature names, the core product will still be stored on your computer.

Repairing the CM Agents

The Windows Installer installation program offers the ability to repair your CM agents. For example, if you have a missing CM agent module, you can use this tool to repair the installation. This tool will not overwrite modules that exist on the agent computer if they are newer than the ones provided with the installation.

This section describes how to repair CM agents using the Installation Wizard and using a command line.

Using the Installation Wizard to Repair CM Agents

This section describes how to repair CM agents using the Installation Wizard.

To repair CM agents using the Installation Wizard

- 1 From the folder containing the CM agent installation files, double-click **setup.exe**.

The Application Maintenance window opens.

- 2 Select the **Repair** option.

- 3 Click **Next**.

The Ready to Repair the Application window opens.

- 4 Click **Next**.

When the repair is done, the CM agent has been successfully installed window opens.

- 5 Click **Finish**.

Using a Command Line to Repair CM Agents

This section describes how to repair CM agents using a command line.

To repair CM agents using a command line

- From the folder containing the CM agent installation files, type the following command line:

```
msiexec /f Cm-MgmtappsXX.Msi
```



In the above command line, the *XX* is a placeholder for the version of the Management Applications software release; be sure to replace this with the appropriate version number.

You can use additional parameters with this command line. For more information, see your Windows Installer documentation.

Modifying the CM Agent Installation

The Windows Installer installation program offers the ability to modify your CM agent installation by adding or removing individual features. This section describes how to modify the installation of CM agents using the Installation Wizard and using a command line.

Using the Installation Wizard to Modify the CM Agent Installation

This section describes how to modify the installation of CM agents using the Installation Wizard.

To modify the installation of CM agents using the Installation Wizard

- 1 From the folder containing the CM agent installation files, double-click **setup.exe**.

The Application Maintenance window opens.

- 2 Select the **Modify** option.

- 3 Click **Next**.

The Select Features window opens. See [Using the CM Agent Installation Wizard](#) on page 48 for information about how to use this window.

- 4 Click **Next**.

The Ready to Modify the Application window opens.

- 5 Click **Next**.

The CM agent has been successfully installed window opens.

- 6 Click **Finish** to close the installation program.

Using a Command Line to Modify the CM Agent Installation

This section describes how to modify the installation of CM agents using a command line.

To modify the installation of CM agents using a command line

- From the folder containing the CM agent installation files, type the following command line:

```
SETUP.EXE FeatureStateArgument=feature1, feature2
```

Table 8 CM agent feature state arguments

Specify:	Action
ADDLOCAL	Type a comma-delimited list of features that you want to set to “Will be installed on local hard drive.”
REMOVE	Type a comma-delimited list of features that you want to set to “Entire feature will be unavailable.” This removes the features only, 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 .

Reference the features for the CM agent installation as follows:

- CM Application Manager NVDINSTALLRAM
- CM Application Self-service Manager NVDINSTALLRSM
- CM Inventory Manager NVDINSTALLRIM
- CM OS Manager NVDINSTALLROM
- CM Patch Manager NVDINSTALLPATCH
- CM Solutions for Servers NVDINSTALLSVR

Example

If you want to install the CM Application Self-service Manager, and to make the CM Inventory Manager and CM Application Manager unavailable, use the following command line:

```
SETUP.EXE ADDLOCAL=NVDINSTALLRSM  
REMOVE=NVDINSTALLRIM,NVDINSTALLRAM
```

See *Installing the CM Agent from a Command Line* on page 44 for additional arguments.

Using a Pre-Install Script

Use Visual Basic scripts to customize MSI properties that affect the installation. The following is a very simple Visual Basic script, which is intended to be an example only.



Be sure to use the `NVDPRECAPATH` argument to specify the fully qualified path and file name of a custom Visual Basic pre-install script in `INSTALL.INI` or on the command line. See the description of `NVDPRECAPATH` in Table 2 on page 35.

Here is a sample pre-install script:

```
` The following sample demonstrates fetching an MSI property,  
then setting the same property.
```

```
` The property values are displayed in message boxes for  
debugging purposes.
```

```
Option Explicit
```

```
msgbox Session.Property("ALLUSERS")
```

```
Session.Property("ALLUSERS") = "1"
```

```
msgbox Session.Property("ALLUSERS")
```

You can use a pre-install script to override the property settings of the arguments that control the behavior of the CM Application Self-service Manager, such as those in the `[ARGS]` section of `INSTALL.INI`, as well as the attribute values for CM objects, such as those specified in the `[OBJECTS]` section of `INSTALL.INI`.



New objects or properties must be defined in `INSTALL.INI`. You can use a pre-install script to override a value for the object or property, but if you attempt to specify a new object or property in the pre-install script, it will be ignored.

To override property settings or attributes for objects



Be sure to type the name of the property or the object and its attribute such as `NVDOBJZMASTER_ZDSTSOCK` in uppercase letters.

- Use the prefix `NVDARG` to override property settings.

For example, to override the value set for the identification property, which identifies the subscriber session to the CM Configuration Server, type:

```
Session.Property ("NVDARGIDENTIFICATION")="jenns"
```

- Use the prefix `NVDOBJ` to override object attributes.

For example, if you want to override the value set for the `ZDSTSOCK` attribute of the `ZMASTER` object, which is the port setting for the CM Configuration Server, type:

```
Session.Property ("NVDOBJZMASTER_ZDSTSOCK")="3462"
```

Using a Post-Install Script

Use custom Visual Basic, REXX, or Tcl scripts to run processes after installing CM agents. For example, your post-install script can initiate a connection to the CM Configuration Server in order to process mandatory applications.



Be sure to use the `NVDPOSTCAPATH` argument to specify the fully qualified path and filename of the custom Visual Basic or REXX post-install script in `INSTALL.INI` or on the command line. See the description of `NVDPOSTCAPATH` in Table 2 on page 35. For example, if you want to run a script called `redstart.rex`, uncomment and set `NVDPOSTCAPATH=C:\Progra~1\Hewlett-Packard\CM\Agent\radstart.rex`

Include the script in the `\maint` folder of the agent install. It will automatically get copied into `IDMSYS`. A script example is shown below:

The following is a sample REXX from a post-install script.

```
/** RADSTART.REX                                                    **/  
/**                                                                **/  
/** DESCRIPTION:                                                  **/  
/** Client REXX will perform a CM connection to a CS defined in the **/  
/** install.ini to process all mandatory applications.            **/  
/**                                                                **/  
/** AUTHOR:              HP                                       **/  
/** LANGUAGE:            REXX                                       **/  
/**                                                                **/  
/*****  
/* trace i */  
  
fullcmd = 'HIDE radntfyc localhost wait radskman context=m,log=connect_initial.log'  
call edncmd fullcmd;
```

Local AIP Support for the CM MSI Redirector



Windows 2000, Service Pack 4 Note

In order for the Local AIP driver to work, the Microsoft Windows 2000 Rollup 1 cumulative patch must be installed.

The Configuration Management MSI Redirector is a specialized, local-host HTTP server that accepts and satisfies file requests that are made during an MSI installation. On receiving the HTTP request from MSI, the Redirector retrieves the file from its local cache (if it exists); if the file is not in its local cache, the Redirector requests the file from an upstream CM Configuration Server or CM Proxy Server. This process requires that the MSI installation supports HTTP, although some vendors (including Microsoft) have removed HTTP support from their product installations. Without HTTP support, the MSI installation will not be able to directly request the files from the CM MSI Redirector.

In order to continue to use the CM MSI Redirector, a level of redirection now exists at the local file-system level. When using this method, MSI is told that the AIP is local, and requests the files directly from the file system. This request is captured and forwarded to the CM MSI Redirector, which satisfies the request in its usual way. The file is then placed in the defined local AIP where MSI can process it. The local AIP is temporary; it is removed after the installation is completed.

To enable using the Local Application Installation Point

- 1 Use the CM Admin CSDB Editor to navigate to the MSI Resources (MSI) Class in the SOFTWARE Domain.
Each MSI application will have an MSI instance and an IDX instance.
- 2 Right-click the MSI instance and select **Edit Instance**.
- 3 Set **MSIDRIVR (Use Local AIP [Y/N])** to **Y**.



If MSIDRIVR is not in your database, create it in the MSI Resources (MSI) Class as a 1-byte variable with a description of **Use Local AIP [Y/N]**.

HP recommends backing up your database before making changes to a Class template.

For information on editing Class templates, refer to the *CM Admin User Guide*.

- 4 Click **OK**.
- 5 Click **Yes** to confirm the changes.
- 6 Configure the SETTINGS.LOCALAIP variable in COPs to control the destination of the local AIP folder on the CM agent desktop. For example, **C:\localaip**.



HP recommends keeping your LOCALAIP as short as possible to accommodate AIPs that have deep directory structures.

Internet Proxies

Internet proxies are put in place by companies for a variety of reasons. HP Configuration Management can detect when an Internet proxy is being used. It stores the proxy's address in `PROXYINF.EDM`, which is in the CM agent computer's `IDMLIB` directory, thereby allowing the CM agent authority to pass through the proxy.

You must enable the CM agent to discover and use Internet proxies by setting

USEPROXY=Y and **DISCOVER=Y**

in the CM agent `PROXYINF.EDM` object.

The next time that the CM agent connects to the CM Configuration Server it will use the Internet proxy that is specified.

Summary

- The CM agent installation program consists of *one package with six feature sets*: CM Application Manager, CM Application Self-service Manager, CM Inventory Manager, CM Patch Manager, CM OS Manager, and CM Server Management.
- You can install the CM agents using either a *command line* or the *Installation Wizard*.
- The installation can be *customized to suit your enterprise*.
- *Pre-install* and *post-install scripts* can be created in order to run processes (such as connecting to the CM Configuration Server) before or after the CM agents are installed.
- CM can *detect Internet proxies* and *store their addresses* in `PROXYINF.EDM`.

3 CM Agent Directories, Objects, and Logs

At the end of this chapter, you will:

- Know the directory structure of the CM agent.
- Be familiar with core CM agent objects.
- Know where CM agent objects are stored.

CM Agent Directories

The initialization settings for the CM agents are located in the [NOVAEDM] section in the NVD.INI file, on the CM agent computer. By default, NVD.INI is located in the IDMLIB directory.

Table 9 NOVAEDM Parameters

Parameter	Description
IDMDATA	<p>When CM installs software, the CM agent temporarily stores compressed files received from the CM Configuration Server in this directory. Once the files are decompressed and installed on the CM agent computer, the compressed files are deleted.</p> <p>The default is: <i>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\Lib\Data\</i></p>
IDMLIB	<p>The dynamic directory that stores the objects for the service that is currently being managed.</p> <p>The default is: <i>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\Lib\</i></p>
IDMSYS	<p>The directory that stores the CM agent executables, such as the .EXE and .DLL files.</p> <p>The default is: <i>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\</i></p>
IDMROOT	<p>The base directory for IDMLIB. This is a static path.</p> <p>The default is: <i>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\Lib\</i></p>
IDMLOG	<p>The directory in which the CM agent logs are stored.</p> <p>The default is: <i>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\Log\</i></p>

CM Agent Version

Some of the objects that are described in this guide apply to CM agents, version 3.1 and later only. To verify or query a CM agent's version:

- Open the connect.log file in the IDMLOG directory of the host system and, using a text editor, search on the word “version.”

- You can also check the **Version** tab of the Properties of RADSKMAN in the `IDMSYS` directory.

CM Agent Objects

CM agent objects are stored in the `IDMLIB` directory on the CM agent computer. When a CM agent connects to a CM Configuration Server, an information exchange (called **resolution**) takes place, during which CM checks the status of services, and updates the CM Configuration Server with information from the CM agent objects.

The CM agent objects can be used to get answers to questions such as:

- *What is the hardware configuration of the CM agent computer?*
- *Was the service successfully installed?*
- *When was the service installed?*
- *What is the CM agent computer's name, and which user most recently logged on?*
- *What are the possible data sources for this CM agent computer?*

While there are multiple CM objects on a CM agent computer at any time, there is a core group of five CM agent objects that supply information about the status of the current CM agent connect. These core objects are listed below, described in Table 10 on page 66, and then detailed in their respective sections following the table.

- ZCONFIG, starting on page 67;
- SYNOPSIS, starting on page 71;
- SAPSTATS, starting on page 72;
- PREFACE, starting on page 74; and
- SMINFO, starting on page 75;

Table 10 includes information about when the object is created and updated, and a brief summary of what the object includes.

Table 10 CM Agent Objects

Object	Description
ZCONFIG	<p>This object is created at the start of the CM agent “connect” process and contains basic hardware information such as processor, operating system, and drives.</p> <p>Note: a “connect” is the CM agent connecting to a CM Configuration Server in order to perform resolution and achieve its desired state (see desired state on page 243 of the Glossary in this guide).</p> <p>See Table 11 on page 68 for more information.</p>
SYNOPSIS	<p>This object contains a job summary and is transferred to the CM Configuration Server at the end of the CM agent connect. It reports some of the parameters from the RADSKMAN command line and information on the number of files and bytes added, removed, and repaired.</p> <p>Note: Client Operations Profiles must be enabled for this object to be present.</p> <p>See Table 12 on page 71 for more information.</p>
SAPSTATS	<p>This object is updated by any network-bound modules (such as RADCONNECT, RADSTGRQ, and RADSTGMS) that need to access the Server Access Profile (SAP). It has one instance for each CM agent computer’s SAP. For each SAP it summarizes information such as speed, number of files sent and received, and the role of the SAP. RADSKMAN deletes the SAPSTATS object at the beginning of the job.</p> <p>Note: Client Operations Profiles must be enabled for this object to be present.</p> <p>See Table 13 on page 73 for more information.</p>
PREFACE	<p>This object contains core information about each invocation of RADSKMAN and is sent to the CM Configuration Server at every phase of a RADSKMAN process.</p> <p>See Table 14 on page 74 for more information.</p>
SMINFO	<p>This object is created during Client Operations Profiles resolution but it does not require Client Operations Profiles. It collects information that is independent of the hardware and software that are installed on the computer, and some network information.</p> <p>See Table 15 on page 76 for more information.</p>

Using the CM Admin Agent Explorer to View CM Agent Objects

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

To view an object using the CM Admin Agent Explorer

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin Agent Explorer**.

The CM Admin Agent Explorer opens.

- 2 If necessary, from the File menu, select **Change Directory** to navigate to the CM 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 CM Admin Agent Explorer displays the selected object.

- 4 Click **Save/Exit** to close the dialog box.

ZCONFIG (Hardware Configuration Information)

The ZCONFIG object stores hardware configuration information from the CM agent computer. Use the CM Admin Agent Explorer to view the ZCONFIG object. The following table describes the attributes of ZCONFIG arranged in alphabetical order. These attributes could vary depending on the configuration of the CM agent computer.

- ▶ The ZCONFIG object is sent to the CM Configuration Server automatically for viewing with the CM Admin CSDB Editor. If you do not want this object sent to the CM Configuration Server, set the `POLICY.USER.ZCONFIG` attribute to **N** in the `_BASE_INSTANCE_`. This will stop collection from ALL users. The object will still exist on the CM agent computer.

Table 11 ZCONFIG Attributes

Attribute	Description
BOOTDRV	The boot drive.
BOOTDRVI	The type of boot drive, such as IDE.
DHCPSR0 _n	The IP address of the DHCP Server of the LADAPT0 _n adapter.
DHCPSVR	The IP address of the DHCP Server for the current LAN adapter.
DNSDMN01	The name of the domain that is used by the CM agent computer for the LADAPT0 _n adapter.
DNSDOMN	The name of the domain that is currently being used.
DNSHNM01	The host name that is used by the CM agent computer for the LADAPT0 _n adapter.
DNSHOSTN	The host name that is currently being used.
GATEWY01	The Gateway Address of network adapter 1.
HALCOMP	The company of HAL.DLL.
HALDATE	The date and time of HAL.DLL.
HALFNAME	The original name of HAL.DLL.
HALFVER	The internal version of HAL.DLL.
HALINAME	The name of HAL.DLL.
HALLANG	The language of HAL.DLL.
HALPNAME	The product name of HAL.DLL.
HALPVER	The product version of HAL.DLL.
HALSIZE	The size of HAL.DLL.
IPADDR01	The IP address of network adapter 1.
LADAPT01	LAN Adapter 1
REBOOTD	The reboot date.
REBOOTT	The reboot time.
SCANTYPE	The type of hardware scan.
SUBNET01	The Subnet Mask for LADAPT01.
ZGATEWAY	The Gateway Address.

Attribute	Description
ZHDWARCH	The operating system architecture.
ZHDWBIOS	The BIOS type.
ZHDWCDDR	The CD-ROM drive letter.
ZHDWCOMP	The computer name.
ZHDWCPU	The CPU type.
ZHDWCPUN	The number of CPUs that are installed.
ZHDWCPUS	The CPU speed.
ZHDWCTYP	The computer type (desktop or laptop).
ZHDWD00	The drive name for drive 00.
ZHDWD00C	The drive classification for drive 00.
ZHDWD00F	The current free space on drive 00.
ZHDWD00S	The type of file system on drive 00.
ZHDWD00T	The total space for drive 00.
ZHDWD01	The drive name for drive 01.
ZHDWD01C	The drive classification for drive 01.
ZHDWD01F	The current free space on drive 01.
ZHDWD01S	The file system on drive 01.
ZHDWD01T	The total space for drive 01.
ZHDWDF_A	The information for floppy drive A.
ZHDWDLST	The list of assigned drive letters.
ZHDWDNUM	The number of assigned drive letters.
ZHDWFPU	The current FPU type.
ZHDWIPAD	The IP address.
ZHDWKYBD	The keyboard type.
ZHDWLANA	The LAN Adapter.
ZHDWLANG	Language
ZHDWMEM	The total physical memory (RAM).

Attribute	Description
ZHDWMEMF	The current total free memory (RAM).
ZHDWMOUS	The type of mouse (pointing device).
ZHDWNET1	Network adapter 1 information
ZHDWNNET	The number of network adapters installed.
ZHDWOS	The operating system and version.
ZHDWOSCL	The operating system classification (workstation or server).
ZHDWOSDB	The operating system build.
ZHDWOSOG	The operating system organization.
ZHDWOSOW	The operating system owner.
ZHDWPA00	Printer 00 information
ZHDWPA01	Printer 01 information
ZHDWPPAR	The number of parallel ports.
ZHDWPPRN	The number of available printers.
ZHDWPSER	The number of serial ports.
ZHDWSVCP	The applied service pack.
ZHDWVIDEO	The video type.
ZHDWXPAG	The page size.
ZHWCPU01	First CPU type
ZHWFPU01	First FPU type
ZHDWVIE	Microsoft Internet Explorer version
ZHDWVMSI	MSI version
ZHDWVRES	Video resolution
ZMODEM	Modem present?
ZOBJRRC	Resolution return code
ZOBJRSTY	Resolution type
ZUSERID	User ID or computer name

SYNOPSIS (Client Operations Profile Summary)

The SYNOPSIS object is created on CM agents that are using Client Operations Profiles. It summarizes the most recent CM agent connect, and can be used to confirm the success/failure of the CM agent connect process.

Table 12 SYNOPSIS Attributes

Attribute	Description
STARTIME	The start time, in ISO8601 time format. For example, 1997-08-15T11:12:00-0400
ENDTIME	The end time, in ISO8601 time format.
EXITCODE	The exit code from the job.
ERRORMSG	The text message corresponding to the EXITCODE described in the <i>HP Configuration Management Management Applications Messages and Codes Guide</i> .
PRIORAPP	The total number of applications that existed in the service list (installed/not installed) before this job started.
PRIORINS	The total number of installed applications that existed in the service list before this job was started.
PRIORERR	The total number of applications in the service list that have errors before this job started.
CURRAPP	The number of applications in the service list after the job completed.
CURRINS	The number of applications in the service list that have been installed.
UPDNUM	The number of updates found in the service list.
UPDSKIP	The number of updates skipped.
UPDDONE	The number of updates processed.
UPDFAIL	The number of updates that failed.
ADDNUM	The number of new applications found in the service list.
ADDSKIP	The number of installs skipped (possibly optional applications).
ADDONE	The number of installs processed.
ADDFAIL	The number of installs that failed.
DELNUM	The number of deletes found in the service list.

Attribute	Description
DELSKIP	The number of deletes skipped.
DELDONE	The number of deletes processed.
DELFAIL	The number of deletes that failed.
VERNUM	The number of applications that were verified.
VERSKIP	The number of verifications skipped.
VERDONE	The number of verifications processed.
VERFAIL	The number of verifications that failed.
REPNUM	The number of applications that were repaired.
REPSKIP	The number of repairs skipped.
REPDONE	The number of repairs processed.
REPFAIL	The number of repairs that failed.
CREFRESH	Catalog Refreshed (Y/N)?
JOBID	The job ID that was passed in on the command line via notify.
ZUSERID	The user ID for this job.
ZCONTEXT	The (machine or user) context of this job.
MACHNAME	The machine name of the agent computer from where this was run.
USEREXEC	The user that executed the job.
CMDLINE	The command-line parameters used to execute this job.

SAPSTATS (Service Access Profile Status)

The SAPSTATS object is generated on CM agents that are using Client Operation Profiles, and is used to report the Server Access Profile (SAP) status and usage statistics from the CM agent. The SAPSTATS object contains all the variables that are defined in the SAP Class in the CM Configuration Server Database along with the following usage related variables.

Table 13 SAPSTATS Object Attributes

Attribute	Description
BANDWDTH	The percent of bandwidth to use (between 1 and 99).
BYTERCVD	The number of bytes received.
BYTESENT	The number of bytes sent.
ENABLED	Is this SAP is enabled (Y N)?
ERRCOUNT	The number of errors.
FILEMISS	The number of files not found.
FILERCVD	The number of files received.
FILESENT	The number of files sent.
LASTAXSD	The last date/time accessed, in ISO format.
NAME	The friendly name of the SAP.
OBJRCVD	The number of objects received.
OBJSEND	The number of objects sent.
PRIORITY	The priority for this SAP (obtained from the CLIENT.LOCATION Class instance).
PROXY	The Internet proxy URI through which the CM agent will connect to the SAP. This value is maintained by the CM agent.
ROLE	The role of the SAP. The valid values are: O (Client Operations Profiles); M (Self-maintenance); S (Services); D (Data); and A (All roles).
SPEED	The speed to the SAP from the CM agent computer measured in bytes per second.
STATUS	The status of this SAP. <ul style="list-style-type: none"> • 000 = SAP was successfully accessed • 920 = SAP could not be accessed • 999 = SAP was not used
STREAM	Specifies if streaming is used. This overrides the CM agent setting in ZMASTER.ZNORSPNS.
THROTYPE	The type of bandwidth throttling used. The valid values are NONE , ADAPTIVE , and RESERVED .
TIMEOUT	The communications timeout, in seconds.

Attribute	Description
TYPE	The type of SAP. The valid values are: RCS (CM Configuration Server) and DATA (CM Proxy Servers, Staging Servers or a CD-ROM).
URI	The Universal Resource Identifier for the SAP.

PREFACE (RADSKMAN Execution)

The PREFACE object contains information about each execution of RADSKMAN. It is sent to the CM Configuration Server at every phase of a RADSKMAN process.

At each new phase of the CM agent connect, the PREFACE object is updated. The variables in the PREFACE object can be used for resolution and reporting. For resolution, use the attributes of the PREFACE object for ZSTOP expressions, symbolic substitution, and dispatching messages. For reporting, combine MACHNAME, ZUSERID, ZCONTEXT, JOBID, and CTYPE to know which user ran the CM agent connect, as well as the type and context of the connect.

Table 14 PREFACE Object Attributes

Attribute	Description
CMDLINE	The RADSKMAN command-line parameters that were used for the current CM agent connect.
COMPDN	The distinguished name of the computer in the Active Directory format. This field will be blank if the system is not part of an Active Directory or a Domain environment. Windows operating systems that do not authenticate to Active Directory would show this as their DomainName/MachineName. Example: CN=ALEE ,CN=Computers ,DC=usa ,DC=asdfoods ,DC=com
CTYPE	The type of CM agent. The valid values are: <ul style="list-style-type: none"> • RSM: CM Application Self-service Manager • RAM: CM Application Manager • RPS: CM Proxy Server or CM Staging Server (for preloading application resources)
JOBID	The job ID that was specified on the command line for this connect

Attribute	Description
LOCALUID	The starting directory under <code>IDMROOT</code> on the CM agent computer. The value is derived from the <code>STARTDIR</code> <code>RADSKMAN</code> parameter. So, if <code>STARTDIR = \$USER</code> , <code>LOCALUID</code> would contain the user's ID. If <code>STARTDIR = SYSTEM</code> , <code>LOCALUID</code> would contain <code>SYSTEM</code> . Note: <code>UID</code> stands for <i>user's initial directory</i> ; not user's identification.
MACHNAME	The CM agent computer's machine name.
USEREXEC	The user who is currently logged on and who executed the command. For <code>Notify</code> and <code>Timers</code> , this would be <code>SYSTEM</code> . For <code>logon</code> scripts, this would be the subscriber's network account name.
ZCONTEXT	The value of <code>ZCONTEXT</code> as passed on the <code>RADSKMAN</code> command line. <ul style="list-style-type: none"> • M indicates that <code>RADSKMAN</code> was run in a machine context. • U indicates that <code>RADSKMAN</code> was run in a user context. • A blank indicates that no context was specified on the <code>RADSKMAN</code> command line; the context will default to the context in which the CM agent connect was launched.
ZDOMNAME	The CM Configuration Server Database domain that is specified in the <code>DNAME</code> parameter of the <code>RADSKMAN</code> command line. The default is SOFTWARE .
ZMGRNAME	The CM Configuration Server name that is specified in the <code>MNAME</code> parameter of the <code>RADSKMAN</code> command line.
ZUSERID	This field contains the same value that is found in the CM agent's <code>ZMASTER.ZUSERID</code> . In most scenarios, it represents the machine name of the CM agent computer, but it could also contain the current user name or another value. The value found in this field is often used as the key for policy resolution or reporting. The <code>UID</code> <code>RADSKMAN</code> parameter sets this value.

SMINFO (Systems Management Information)

The `SMINFO` (Systems Management Information) object is created on all CM agent computers. It summarizes hardware-specific information that is independent of the operating system and software that is installed on the CM agent computer. CM uses `SMBIOS` standards to access data about the BIOS. `SMINFO` also includes some network and user ID information.

Table 15 SMINFO Attributes

Attribute	Description
ASSETTAG	The Unique Asset Tag number of the CM agent computer from the BIOS.
COMPDOMN	The computer domain.
COMPNAME	The computer name.
IPADDR	The CM agent computer's IP address.
MACADDR	The CM agent computer's MAC address.
MACHUUID	The unique machine user ID.
SNENCLOS	The serial numbers for the system enclose structures (from the BIOS).
SNSYSTEM	The serial numbers for the system structures (from the BIOS).
SUBMASK	The subnet mask.
SUBNET	The subnet.
SYSMANUF	The system manufacturer information (from the BIOS).
SYSPROD	The system manufacturer product information (from the BIOS).

The PROFILE File

Some CM agent objects, such as ZCONFIG and ZMASTER, are sent to the CM Configuration Server during a CM agent connect and are stored in the PROFILE File of the CM Configuration Server Database. Each CM agent is stored as a Domain, and these objects are stored as instances.

By default, each CM agent is identified by the subscriber who is currently logged on. The subscriber can be either a computer name or a user name.

Table 16 describes some of the objects in the PROFILE File; these will vary from one CM-CSDB to another because of different configurations.

Table 16 Objects in the PROFILE File

Instance	Information Recorded
ZCONFIG	This instance contains basic hardware information (such as processor, operating system, and drives) for the CM agent computer.
ZMASTER	This instance contains information (such as user ID and operating system) that is used to run the CM agent.
ZSVCSTAT	This instance contains information about a service after it has been installed on the CM agent computer. This is useful for reporting functions, such as determining which users have the service and when it was installed. One instance is created for each service.
ZSTATUS	This instance contains information (such as the number of objects going to and from the CM agent computer) about the most recent CM agent connect.

Each domain contains several classes that represent the objects that were received from the CM agent computer. Use CM Admin CSDB Editor to view the PROFILE File.

CM Agent Logs

The CM agent has three primary modules: RADSKMAN, RADPINIT, and RADCONCT. However, the activity-reporting of these three modules is shared in one log file, `connect.log` (the default name).



The default location of `connect.log` is *System Drive*:\Program Files\Hewlett-Packard\CM\Agent\log.

When `connect.log` reaches 1 MB in size, a backup log (`connect.bak`) is created.

As stated, `connect.log` and `connect.bak` are the default names given to these logs. You can rename the log (using the parameter, **log**) in a format that better suits your needs. (For example, you might prefer to name your logs based on the date and time. Then, if you notice a problem occurring on a certain date, you can retrieve only the logs that you need to review.)

Additionally, you have the option of appending information to a log by using

the parameter, **alog**. The **log** and **alog** parameters are discussed in Table 17 starting below.

Each of the three primary CM agent modules can be instructed to use a specific log file by simply adding the **log** parameter to its command line. The three primary CM agent modules take command-line parameters in the following format.

Keyword = value (in comma-delimited format)

Use the optional **log** and **alog** parameters on the command line to name the log file and append information to an existing log file, respectively. For example, you could add the **log** parameter to a RADSKMAN command line in a Notify in order to generate a specific log name, as in:

radskman log=notify10012003.log

Table 17 Parameters for Log Files

Parameter	Description
log	<p>The name of the log file that is to be created, such as <code>Connect.log</code>, the default.</p> <p>Use a valid filename without a path (by default, logs are stored in the <code>IDMLOG</code> folder).</p> <p>If there is a log file with the same name, CM creates a backup of that file called <code>logname.bak</code>. If there is an existing <code>logname.bak</code>, it will be overwritten.</p>
alog	<p>The name of the log file to which the information will be appended. For example, alog=Application1.log.</p> <p>Use a valid filename without a path (by default, logs are stored in the <code>IDMLOG</code> folder).</p> <p>This parameter has no default; if it is not specified, the information will be appended to the log file that is named in the log parameter.</p>

The value for the **log** parameter is stored in the `LOGNAME` attribute, which is located in the `ZMASTER` object in the catalog and application directories.

Diagnostic Module (RADSTATE)

RADSTATE is a diagnostic module that will give an overview of the current state of the CM agent. The information in the RADSTATE output is based on data that is retrieved from numerous CM agent objects.

When RADSTATE is run with the Verbose parameter (mode **v**), it provides basic information regarding the CM agent environment, such as:

- Global object statistics
- Current date and time
- Current operating system
- Locations of the IDMSYS, IDMLIB, and IDMLOG directories
- Environment settings
- Emulator settings
- Trace levels
- Timeout settings
- All service status including component totals by user and service, as well as instance and byte totals.
- CM agent Timer information

Run RADSTATE at any time to check CM agent configurations, such as after each CM agent connect. After RADSTATE is run using mode option **o**, the ZRSTATE and ZRSTATES objects are built and can be sent to the CM Configuration Server.

RADSTATE should be run:

- Whenever CM agent-specific information is required.
- If it is suspected that some files did not correctly deploy.
- If desktop updates have not occurred.

Manual execution of RADSTATE produces a summary style report, `radstate.log`, which contains the current state of the services and resources that are installed on the CM agent desktop. RADSTATE is executed from a command line using the appropriate parameters, separated by a comma, for example:

```
radstate mode=vo, IDMROOT=C:\Program Files\Hewlett-Packard\CM\Agent\Lib
```


Summary

- The *initialization settings* for the CM agents are located in the [NOVAEDM] section in the `NVD.INI` file on the CM agent computer.
- A *CM agent's version* can be determined by checking either:
 - The `connect.log` file in the `IDMLOG` directory of the host system, or
 - The **Version** tab of the Properties of RADSKMAN in the `IDMSYS` directory.
- *CM agent objects* are stored in the `IDMLIB` directory on the CM agent computer. These objects can be queried for hardware-configuration, service, and CM agent information.
- Use the CM Admin Agent Explorer to *view objects* that are stored on the CM agent computer.
- The *information exchange* between CM agents and a CM Configuration Server is called **resolution**.
- The PROFILE File in the CM Configuration Server Database stores *objects received from the CM agent computer*. The objects are stored as instances.
- The *CM agent has three primary modules*: RADSKMAN, RADPINIT, and RADCONCT; their activity-reporting is shared in one log file.
- RADSTATE is a *diagnostic module* that provides an overview of the current state of the CM agent.

4 Implementing Entitlement Policy

At the end of this chapter, you will:

- Understand how CM can integrate with your existing policy information.
- Understand the POLICY Domain.
- Be able to create new users and assign them to groups for use in simple environments.
- Be able to connect services to groups.

CM and Policy Management

The Configuration Management products allow a CM administrator to use existing policy information while managing the data in an environment.

CM can use real-time policy information from:

- Active Directory
- NDS
- iPlanet
- ISOCOR
- SQL Server, Oracle, or Sybase
- SQL 92-compliant (ODBC) data sources
- Any LDAP-compliant directory

You can continue to use the tools that you are familiar with to manage policies and, as you modify group assignments, subscriptions to data are kept up-to-date.

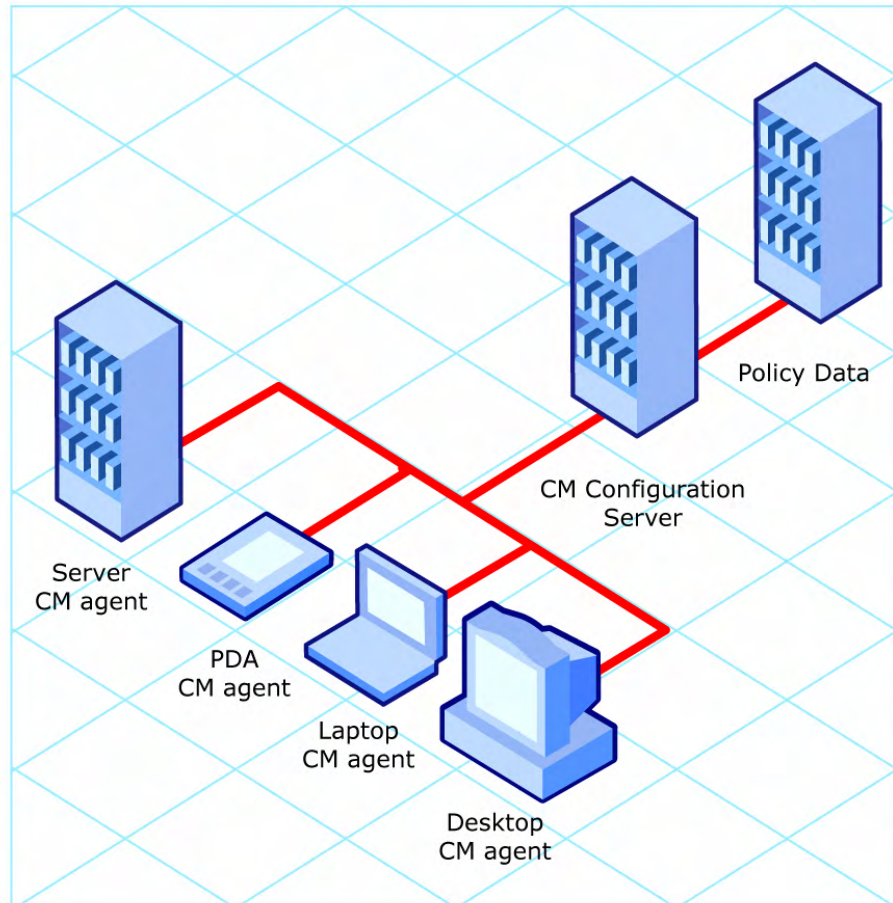
Accessing Existing External Policy Information

When a CM agent connects to the CM Configuration Server, CM retrieves policy information in real-time from the appropriate data stores. In the simplest environment, such as a lab used for testing, you might want CM to search the CM Configuration Server Database for this information. In a large-scale environment where an external policy store already exists, CM can leverage this existing information. This information is sent back to the CM Configuration Server, which determines which data are to be managed for the user, group, or computer.



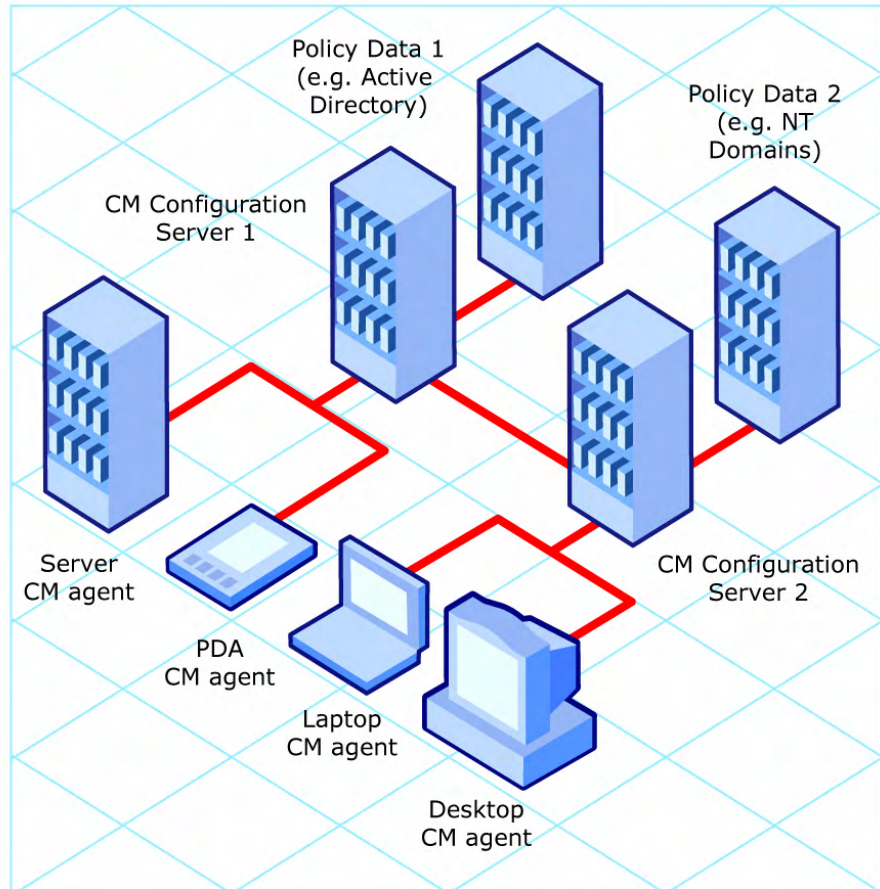
For technical details about integrating your existing policy using the CM Policy Server, see the HP support web site and the *HP Configuration Management Policy Server Installation and Configuration Guide (CM Policy Server Guide)*.

Figure 2 Policy information from an external source



CM also supports multiple CM Configuration Servers with multiple types of external policy stores. This is especially useful in migration scenarios where you are consolidating multiple external policy stores over a period. During this time, you can continue to use as many existing policy stores as necessary.

Figure 3 Policy information from multiple external sources



Directories-Based Entitlement

(such as Active Directory and NDS)

If you want to leverage your investment in LDAP-based directory services or SQL-based databases, HP offers the HP Configuration Management Policy Server (CM Policy Server). The CM Policy Server is a plug-in to the CM Integration Server used for administration purposes such as mapping services to users or computers in the directory tree. The CM Configuration

Server can be configured to query the CM Policy Server to determine what services should be distributed and managed for the agent.



The CM Policy Server is an optional feature available from HP. Contact your HP sales representative for details.

Refer to the *CM Policy Server Guide* for more information.

CM's integration with existing policy greatly reduces the total cost of ownership of your environment by allowing you to continue to manage policies from your existing repository while CM manages your data.

The POLICY Domain

If you are using real-time policy information from an external source, such as NT domains, to manage your data, you might need to configure a connection from your external policy store to the POLICY Domain in the CM Configuration Server Database. The configuration may vary based on the policy store.

This section contains an overview of the POLICY Domain. Most medium to large organizations will use its existing policy information and will have limited use for this domain. However, in the simplest environment, you can use the POLICY Domain in the CM Configuration Server Database to organize subscribers into logical groups in preparation for distributing software.

In this section, you will learn:

- About the classes in the POLICY Domain.
- How to create users and groups.
- How to assign users to groups.

Once you are familiar with the POLICY Domain and understand the basics of managing policy information within CM, you can extend that knowledge to learn how to integrate your existing policy information with CM. This information might also be useful if you want to create a simple lab environment to test the management of your data.

To access the POLICY Domain

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Admin CSDB Editor Security Information dialog box opens.

- 2 If necessary, type a User ID and Password, and then click **OK**.



The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation.

You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

The CM Admin CSDB Editor window opens.

- 3 Double-click **PRIMARY**.
- 4 Double-click **POLICY**.

Classes in the POLICY Domain

The POLICY Domain has eight default Classes, as described in Table 18.

Table 18 Classes in the POLICY Domain

Class	Description	Example Instances
Country/Region (COUNTRY)	Use for clock synchronizations with the CM Configuration Server. Do not assign services to this class.	France, Japan
Departments (DEPT)	Use to group subscribers into departments.	Finance, Manufacturing
Mobile Device Config (MBLCONFIG)	Defines the parameters for mobile device configuration when using the CM Mobility Server.	RmmUser
Multicast (MULTICAST)	Use to configure CM agent computers to use multicasting.	MCast1, Mcast2
PDACONFIG (PDACONFIG)	Defines the parameters for PDA configuration.	PDAUser

Class	Description	Example Instances
Server Stagers (STAGER)	Define CM Proxy Servers and Staging Servers within your distribution network.	CDROM, RPS
Users (USER)	Define individual subscribers. This can be either a user name or a computer name.	William, SSampson
Workgroups (WORKGRP)	Use to group subscribers into functional groups.	Project Planning, Project Team

You can also add other classes to the POLICY Domain in accordance with your organization's needs. For example, if your organization is an insurance company, you can add AGENTS and OFFICES classes. If your organization is a bank, you might add classes such as BRANCHES and TELLERS to organize your subscribers.



Refer to the *HP Configuration Management Administrator User Guide* for information about creating new classes.

Creating Users and Groups

There may be times when you need to create individual users or groups in CM. 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 CM Admin CSBD Editor to create a new user (SSampson) in the USER Class.

To create a new user

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Admin CSDB Editor Security Information dialog box opens.



The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation.

You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

- 2 If necessary, type a User ID and Password, and then click **OK**.

The CM Admin 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 CM Admin 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 CM Configuration Server Database. To add this instance (or instances that are appropriate to your organization), follow the procedure To create a new user, starting on page 89. However, instead of right-clicking **USER**, right-click the appropriate Class, such as Departments (DEPT).

To assign a user to a group

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Admin CSDB Editor Security Information dialog box opens.



The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation.

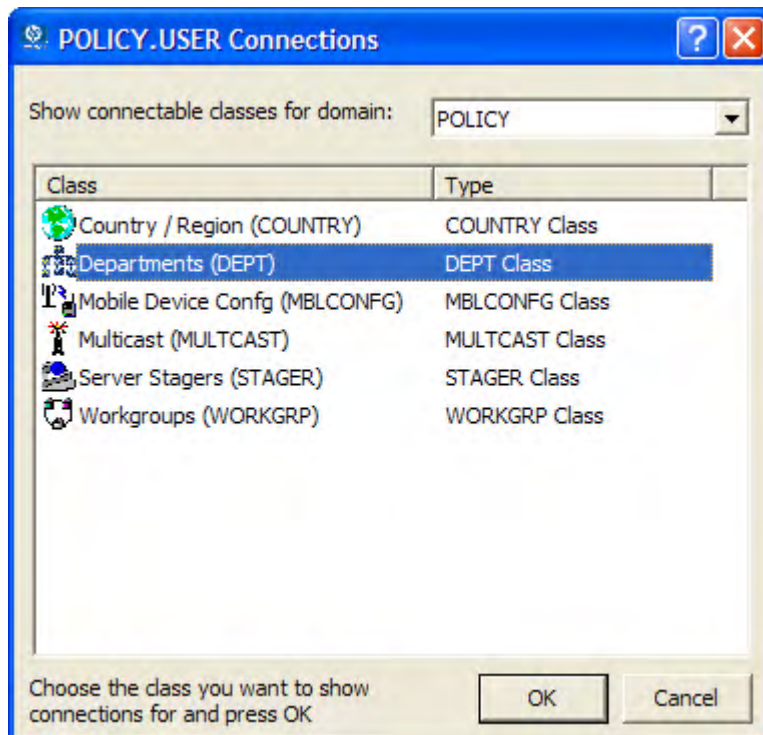
You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

- 2 If necessary, type a User ID and Password, and then click **OK**.

The CM Admin 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 menu that opens.

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.

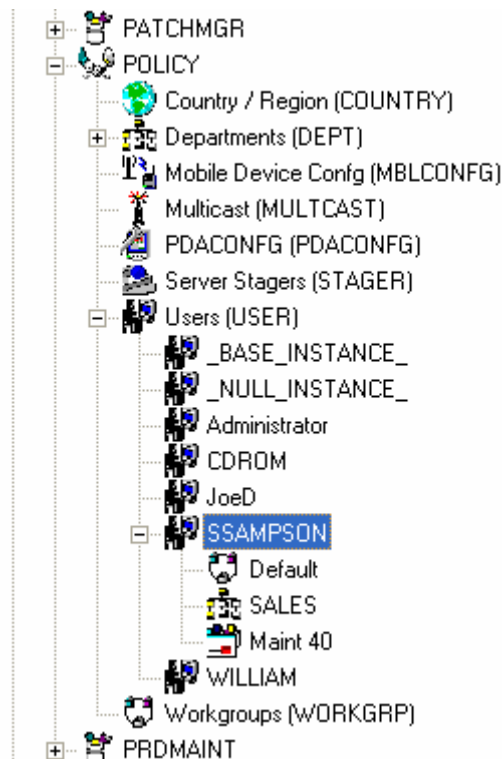
The Select Connection Attribute dialog box opens.

- 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 CM, you will need to define the services that your subscribers will receive.



If you are using the CM Policy Server, refer to the *CM Policy Server Guide* for more information.

In this section, you will learn how to connect users and groups to the services that CM will manage. In the following example, we will use the CM Admin CSDB Editor to authorize the WinZip application for all subscribers in the Sales department.

To connect the WinZip application to the Sales department

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Admin CSDB Editor Security Information dialog box opens.



The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation.

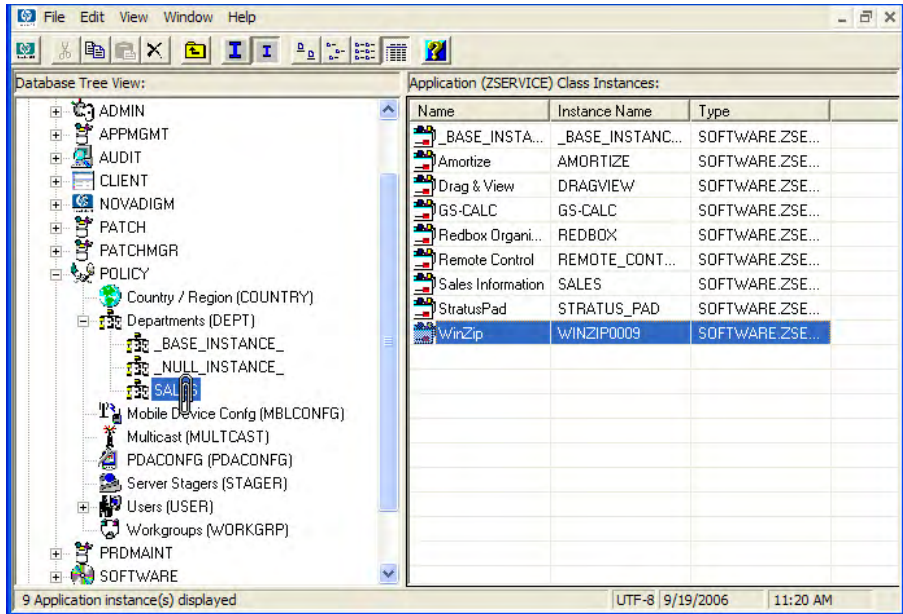
You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

- 2 If necessary, type a User ID and Password, and then click **OK**. The CM Admin 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.



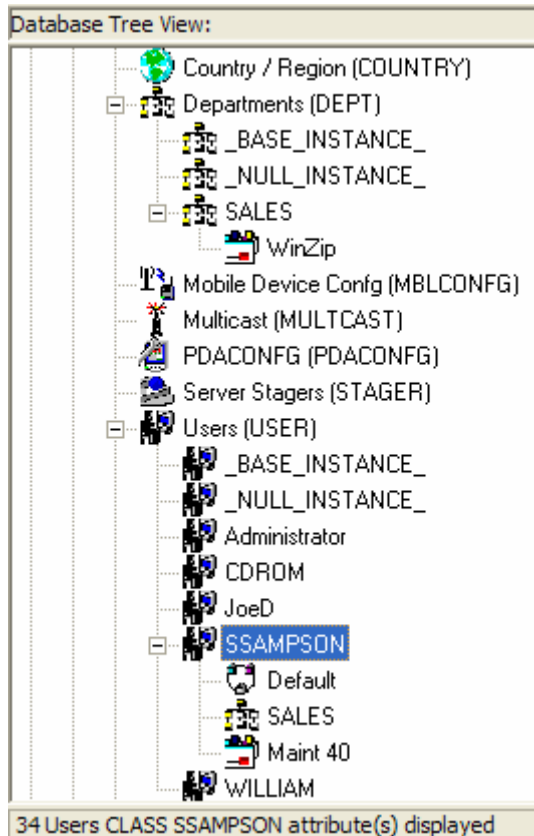
The Select Connection Attribute dialog box opens.

- 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, CM will manage the WinZip application on SSampson’s computer.



Whether you are using an external policy store, or managing policy within CM, 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.

Summary

- CM can integrate with your *existing policy information*.
- The POLICY Domain *organizes subscribers* into logical groups.
- The CM-CSDB Editor facilitates:
 - Creating new users and groups;
 - Assigning users to one or more groups;
 - Connecting services to the users and groups

5 Configuring Client Operations Profiles

At the end of this chapter, you will:

- Understand the benefits of Client Operations Profiles.
- Know how to implement Client Operations Profiles.
- Know more about the CLIENT Domain and designating servers for CM agents, controlling troubleshooting settings, hardware scan settings, and user interface settings.
- See a simple implementation example.

Client Operations Profiles

If you have multiple CM Configuration Servers, CM Proxy Servers, or want to store files that manage applications on a local CD-ROM, you might want to reconfigure the CM agent before connecting to the CM Configuration Server. Use Client Operations Profiles to do this. Client Operations Profiles, along with the CM object-oriented schema, allow you to control certain agent behaviors based on any attribute from an agent object. Benefits of using Client Operation Profiles include, but are not limited to:

- Failover capability for CM servers.
- Dynamic assignment and selection of an agent computer's available servers based on network location, speed, or other criteria.
- Defining which CM Configuration Server to use based on its functional role, allowing for load balancing among CM Configuration Servers.
- Enhanced diagnostics capabilities.



To use Client Operations Profiles, you must be using version 3.1 or later of the CM agent and the CM Configuration Server Database.

The CLIENT Domain

The CLIENT Domain in the CM Configuration Server Database controls Client Operations Profiles. It includes six classes with sample instances that you can use to configure your CM agent computers operations. We provide an example of using the agent computer's network location, stored in the ZCONFIG object to prioritize the downloadable locations for application data for each agent computer. The six classes are:

- **Core Settings (SETTINGS)**
Use an instance in the SETTINGS Class to define how to use your Server Access Profile, to define scripts you want to use, and to set other global parameters.
- **Diagnostics (DIAGS)**
Use instances in this class to override tracing levels set on the CM agent.
- **Hardware Scan Config (RADHWCFG)**
Use an instance in this class to control the type of hardware scan that the CM agent should perform.

- **Network Location (LOCATION)**
Use the LOCATION Class to group users based on a location, such as their subnet.
- **RSM UI Preferences (RADUICFG)**
Use instances in this class to manage the display of the CM Application Self-service Manager user interface.
- **Server Access Profile (SAP)**
Use instances in the Server Access Profile (SAP) class to define CM Configuration Servers and possible data access points for CM-managed services.

Recommendations

We recommend the following for using Client Operations Profiles.

- Use our Professional Services to help you implement this feature.
- Configure Client Operations Profiles only if you fully understand this process.
- Avoid single point of failure in all aspects, for servers of both types and for each role. Create redundancy where possible.
- Use base and null instances for unknown and new network addresses.

Implementing Client Operations Profiles

Use Instances of the CLIENT Domain to customize the profiles to meet your enterprise's needs. There are five major steps for implementation.

- 1 Identify servers.
- 2 Create Server Access Profile instances.
- 3 Set criteria for Server Access Profile instances.
- 4 Set priorities for Server Access Profile instances.
- 5 Enable Client Operations Profiles.

The following sections describe each of these steps. Before beginning this procedure, a discussion of Server Types and Roles is required.

Understanding Server Types and Roles

A Server Access Profile (SAP) is a generic way to define all possible data access points for a service. A SAP can be a CM Configuration Server, CM Proxy Server, or CD-ROM drive. Client Operations Profiles allow you to identify and prioritize data access points without the need to use additional customized scripts.

Before beginning this process, you must have an understanding of server types and roles. These are reflected, respectively, in the TYPE and ROLE attributes of the SAP Class. A server can either be identified as an RCS or DATA type. Only a CM Configuration Server can be identified as type RCS. A CM Configuration Server, CM Proxy Server, or CD-ROM drive can be identified as DATA in the TYPE attribute. Use DATA type only for servers from which the agent will download applications.

In addition, each CM Configuration Server can have a role, or function, specified in the ROLE attribute of the SAP Class. Possible roles are:

- **Client Operations Profiles (O)**
Use this CM Configuration Server to get the CM agent computer's Client Operations Profile.
- **Service resolution (S)**
Use this CM Configuration Server to resolve the CM agent computer's services.
- **Agent self-maintenance (M)**
Use this CM Configuration Server to perform agent self-maintenance.
- **Reporting (R)**
Use this CM Configuration Server for storing reporting objects from the CM agent computer. These objects are stored in the PROFILE File in the CM Configuration Server Database.
- **Data download (D)**
Use this CM Configuration Server to download application data to the CM agent computer.
- **All (A)**
Use this CM Configuration Server for any of the roles listed above.

A CM Proxy Server or CD-ROM can only serve the role of Data download (D). A CM Configuration Server can serve any of the above roles.



When an agent is ready to download files, the agent will first use servers with TYPE=DATA in order of priority set in the LOCATION Class. If a server with TYPE=DATA, has a ROLE of anything other than D, it will be skipped and not used for data download.

If the agent is still unable to download all the needed files after processing all servers with TYPE=DATA, then the agent will begin processing servers of TYPE=RCS in order of priority. In order to use a CM Configuration Server for data download, two conditions must be met:

- The SETTINGS.RCSDATA attribute for the agent computer must be set to Y.
- The SAP.ROLE for the CM Configuration Server must be either D or A.

Task 1 Identify CM Servers

Identify your CM Servers, and determine the type and role for each. Types are defined in the TYPE attribute of the SAP Class. Roles are defined in the ROLE attribute of the SAP Class. Your CM Server can be a CM Configuration Server, CM Proxy Server, or CD-ROM. CM Servers with TYPE=DATA, must have a role of Data download (D). CM Configuration Servers, set to TYPE=RCS, can serve many roles. You will need to decide which roles your CM Configuration Servers can perform.



Only a CM Configuration Server can be designated as anything other than data download. For all other SAP instances, if you specify anything other than data download, the SAP will be ignored.

Task 2 Create Server Access Profile Instances (SAP)

The SAP Class of the CM Configuration Server Database contains samples for each type of Server Access Profile (SAP). Use the CM Admin CSDB Editor to copy the instance that most closely resembles the server type and role for which you need a SAP instance. Table 19 on page 102 describes the attributes in the SAP Class.

After copying the instance, use Table 19 to configure the instance for your enterprise.



Instances in the SAP Class are used before the IP that is specified in the RADSKMAN command line.

Table 19 Attributes of the SAP Class

Attributes	Description
ZSTOP00n	Use to stop the process from completing if certain requirements are met. For example, you might want to prevent a laptop computer from using this SAP.
NAME	Friendly name of the SAP instance.
TYPE	<p>Use to specify the type of CM server.</p> <ul style="list-style-type: none"> • Set to RCS if using CM Configuration Server. • Set to DATA for CM Proxy Server or CD-ROM. <p>If the CM agent computer is unable to reach any of its Server Access Profiles, it will default to the last known CM Configuration Server. See Table 20 on page 105 for examples.</p>
URI	Create the URI (Universal Resource Identifier) to specify the CM Configuration Server or CM Proxy Server. See Table 20 on page 105 for examples.
ROLE	<p>Specifies the role of the SAP. Valid values are:</p> <ul style="list-style-type: none"> • A = ALL (default) • D = Data download • M = CM agent self-maint. • O = Client Operations Profiles • R = Reporting • S = Service resolution <p>The default is A. A blank or null value defaults to ALL. Multiple values can be specified, but must be separated by a comma.</p> <p>Note: Only CM Configuration Servers can be designated as anything other than type D. For servers where TYPE=DATA, if you specify anything other than D, that SAP instance will be skipped.</p>
ENABLED	Specify whether this SAP is enabled (Y) or disabled (N). The default is Y . If the variable is blank or non-existent, the SAP is enabled.
TIMEOUT	<p>Specify (in seconds) the communications timeout. Valid values are numerals 0 through 3200.</p> <p>If this is a valid numeric value, it will override the CM agent timeout value (found in ZMASTER.ZTIMEO). If it is blank, the CM agent's ZMASTER.ZTIMEO value will be used.</p>

Attributes	Description
PUSHBACK	Specify the number of times for a CM agent to retry connecting to a CM Configuration Server if the CM Configuration Server pushed it back. The default is 0 , which means skip this CM Configuration Server. Valid values are numerals 1 through 999.
THROTYPE	Specify the bandwidth throttling options. <ul style="list-style-type: none"> • Set to ADAPTIVE to yield to other services that are using the network. • Set to RESERVED to allow for a specific reservation of the bandwidth. It is the maximum percentage of network bandwidth to use. • Set to NONE to disable bandwidth throttling and use the maximum available bandwidth. If this attribute contains a valid value, it will override CM agent bandwidth throttling. If this attribute is blank, the existing variable value on the CM agent computer will be used.
BANDWDTH	Specify the percentage of bandwidth to use. Valid values are numerals 1 through 99. If this attribute contains a valid value, it will override CM agent bandwidth setting. If this attribute is blank or non-existent, all bandwidth will be used.
STREAM	Specify Y to enable streaming. The default is N . This value will override the CM agent setting that is found in ZMASTER.ZNORSPNS. Caution: Streaming is not suitable for all network environments. Consult your network administrator before enabling it.
PROXY	<i>Do not modify.</i> The Internet proxy URI through which the CM agent will connect to the SAP.
PRIORITY (&(LOCATION. SAPPRI))	<i>Do not modify.</i> The SAP obtains its priority by querying the priority value that is specified in the LOCATION Class.

Attributes	Description
PRODUCT	<p>Specify which CM agents can use this SAP instance. Multiple CM agents can be specified, but they must be separated by a comma. The default is <i>all CM agents</i>, which can be expressed with a blank.</p> <p>The following are suggested identifiers for the CM agents:</p> <ul style="list-style-type: none"> • CM Application Manager: AM • CM Inventory Manager: IM • CM Application Self-service Manager: ASM • CM OS Manager: OSM • CM Patch Manager: PATCH <p>On a RADSKMAN command line, use this parameter to specify which products to filter. For example, if this SAP should be used by CM Application Manager only, set this attribute to AM, then set product to CM-AM on the RADSKMAN command line.</p>
FILTER	<p>Use this attribute to filter the SAP based on any available object attribute. For example, if you want to use this SAP for a specific service, specify APPINFO.ZOBJNAME=Service Name.</p> <p>Note: The ZSERVICE object is not available during installation. Use the APPINFO object instead. APPINFO, located in the service's LIB directory, is a copy of the service's instance from the ASERVICE object.</p>
NETTTL	<p>Specify the number of "hops" for the CM agent computer to use for ICMP speed checks. The default is 3.</p>



If you want to override the use of the SAP object, add the RCSURI parameter to the RADSKMAN command line. RCSURI should be in the same format as the Universal Resource Identifier. For the syntax of this parameter, see [Table 20](#) on page 105.

Creating the Universal Resource Identifier

For each instance of the SAP Class, you will need to identify a URI (Universal Resource Identifier) for the Server Access Profile (SAP). RFC 1630 proposes the following format:

```
<scheme>:<scheme specific format>
```

where the scheme is usually the network protocol, such as HTTP or TCP. If the scheme-specific format has slashes, it indicates a hierarchical path.

Universal Resource Locator (URL) is a form of URI where the scheme-specific format is defined as:

```
//<user>:<password>@<host>:<port>/<url path>
```

Details on how to access the specified resource are defined in the URL path. The most prevalent form is: *//host:port/url path*. Examples for specifying the URI are shown in Table 20:

Table 20 URI Example

SAP Type	Settings for URI and TYPE attributes
CM Configuration Server over TCP/IP using default port of 3464	URI = tcp://ovcmcs:3464 TYPE = RCS
CM Configuration Server over TCP/IP using port 7800	URI = tcp://ovcmcs:7800 TYPE = RCS
Configuration Server using SSL on port 443	URI = tcps://ovcmcssl:443 TYPE = RCS
CM Proxy Server using HTTP	URI = http://ovcmps:3466 TYPE = DATA
CD-ROM	URI = file://&(ZCONFIG.ZHDWCDDR) /DATA/ TYPE = DATA

Task 3 Set Criteria for each SAP Instance

After creating your SAP instances, you must decide how you are going to segment your enterprise. You could assign a SAP to an agent computer based on its subnet. If so, use CM Admin CSDB Editor to create one LOCATION instance for each subnet. In the sample database, there are two locations, Sample_Location East and Sample_Location West.

The ZCONFIG object for an agent computer includes an attribute called NETLOC. The ZCONFIG.NETLOC variable identifies the agent computer's subnet using underscores instead of periods. You may want to name the LOCATION instance based on possible subnets of your agent computers so that you can easily connect a user to their appropriate LOCATION Instance based on their subnet. For example, if you have a subnet of 10.10.10.1, create a LOCATION instance called 10_10_10_0. Enable Client Operations Profiles on page 108 shows you how to connect the subscribers to the appropriate LOCATION Class using the agent computer's ZCONFIG.NETLOC variable.

Task 4 Set Priority for each SAP for each Location

Use instances in the LOCATION Class to define the priorities of your Server Access Profile based on location criteria. The priority for a Server Access Profile is defined directly above the connection to that SAP instance in the SAPPRI attribute.

Lower numbers have a higher priority. Therefore, if the Instance SAP.SAMPLE_RCS_EAST has a priority of 10 and the Instance SAP.SAMPLE_DATA_RPS_EAST has a priority of 40, SAP.SAMPLE_RCS_EAST will be used before SAP.SAMPLE_DATA_RPS_EAST.



The SAPPRI can be any whole number from 01 to 99. The SAPs do not need to be listed in the LOCATION instance in their priority order.

Table 21 below describes the attributes of an instance in the LOCATION Class.

Table 21 Attributes of the LOCATION Class

Attribute	Description
COPLNAME	The friendly name of the instance.
ALWAYS	Specify an instance in the SETTINGS class. The default connection is SETTINGS.DEFAULT_SETTINGS.
ALWAYS	Specify an instance in the DIAGS Class. The default connection is DIAGS.DEFAULT_DIAGS.
ALWAYS	Specify an instance in the RADUICFG Class.
ALWAYS	Specify an instance in the RADHWCFG Class.
ALWAYS	Specify an instance in any class to connect to this LOCATION instance.
SAPPRI	Specify the priority of the SAP instance that is referenced in the _ALWAYS_ class connection below this attribute. The default is the SAP that is referenced in the connection below this instance has a priority of 10.
ALWAYS	Specify a SAP instance for the priority entered into SAPPRI above this attribute. The default priority is 10 .

Attribute	Description
SAPPRI	Specify the priority of the SAP instance that is referenced in the <code>_ALWAYS_</code> class connection below this attribute. The default is the SAP that is referenced in the connection below this instance has a priority of 20.
<code>_ALWAYS_</code>	Specify a SAP instance for the priority entered into SAPPRI above this attribute. The default priority is 20 .
SAPPRI	Specify the priority of the SAP instance that is referenced in the <code>_ALWAYS_</code> class connection below this attribute. The default is the SAP that is referenced in the connection below this instance has a priority of 30.
<code>_ALWAYS_</code>	Specify a SAP instance for the priority entered into SAPPRI above this attribute. The default priority is 30 .
SAPPRI	Specify the priority of the SAP instance that is referenced in the <code>_ALWAYS_</code> class connection below this attribute. The default is the SAP that is referenced in the connection below this instance has a priority of 40.
<code>_ALWAYS_</code>	Specify a SAP instance for the priority entered into SAPPRI above this attribute. The default priority is 40 .
SAPPRI	Specify the priority of the SAP instance that is referenced in the <code>_ALWAYS_</code> class connection below this attribute. The default is the SAP that is referenced in the connection below this instance has a priority of 50.
<code>_ALWAYS_</code>	Specify a SAP instance for the priority entered into SAPPRI above this attribute. The default priority is 50 .
SAPPRI	Specify the priority of the SAP instance that is referenced in the <code>_ALWAYS_</code> class connection below this attribute. The default is the SAP that is referenced in the connection below this instance has a priority of 60.
<code>_ALWAYS_</code>	Specify a SAP instance for the priority entered into SAPPRI above this attribute. The default priority is 60 .
SAPPRI	Specify the priority of the SAP instance that is referenced in the <code>_ALWAYS_</code> class connection below this attribute. The default is the SAP that is referenced in the connection below this instance has a priority of 70.

Attribute	Description
ALWAYS	Specify a SAP instance for the priority entered into SAPPRI above this attribute. The default priority is 70 .

Task 5 Enable Client Operations Profiles

There are two phases to this step. First, you will need to create a process on the CM Configuration Server so that the objects associated with Client Operations Profiles are resolved. Second, you will need to enable the agent computer to use Client Operations Profiles.

Enable COPs on the CM Configuration Server

To enable Client Operations Profiles, use the RADSETUP Instance in the PROCESS Class in the SYSTEM Domain. This instance should already be in the CM Configuration Server Database.

Make a class connection to CLIENT.LOCATION.&(ZCONFIG.ZNETLOC). This will map the user to its appropriate LOCATION instance based on the ZNETLOC attribute in the CM agent computer's ZCONFIG object. The ZNETLOC attribute identifies the CM agent computer's subnet using underscores instead of periods to separate the four octets. Instances of the LOCATION Class must be defined to match each of the subnets in your environment to be able to dynamically assign Client Operations Profiles configuration settings based on locations within your network.

Enable COPs on the CM Agent

By default, Client Operations Profiles are disabled on CM agent computers for backwards compatibility with older version of CM. There are three ways to enable Client Operations Profiles on the agent computer. Choose your method based on whether the CM agent has already been installed, and the method that suits your needs best.

If you have not already installed the CM agent:

- You can customize the `install.ini` so that the COP variable is added to the RADSETUP object. Do this by adding a line (shown in bold below) to the [Objects] section of the `install.ini`. For more information, see [OBJECTS] Section of INSTALL.INI on page 42.

```
[Objects]
; Set CM object attribute values
```

```

; A value of _NONE_ will set the attribute to blank
;
RADSETUP_COP=Y
;ZMASTER_ZDSTSOCK=
;ZMASTER_ZIPADDR=
;ZMASTER_ZNTFPORT=3465

```

If you want to enable Client Operations Profiles on existing CM agents:

- You can use a REXX method, `initmeth.rex` to add and set the COP variable in the RADSETUP object. `initmeth.rex` runs each time a First Refresh Catalog is called and can build the RADSETUP object with COP=Y to enable Client Operations Profiles.

Add the following lines to the `initmeth.rex`:

```

/* Sample INITMETH.REX to Enable the COP */
call edmget('RADSETUP',0)
RADSETUP.COP = 'Y'
call edmset 'RADSETUP'

```

Be sure to deploy the updated `initmeth.rex`.

- You can use the COP parameter of RADSKMAN to enable or disable Client Operations Profiles. To enable, add **COP=Y** to your list of parameters for RADSKMAN. *This will enable or disable Client Operations Profiles for this CM agent connect only.* Use `initmeth.rex` as shown above to enable COP for all agent connects or create a variable in CLIENT.SETTINGS called COP, and set the value to Y. Ultimately, both of these methods will create a COP attribute in the RADSETUP object with a value of Y. Alternatively, if you need to disable Client Operations Profiles after enabling it, run RADSKMAN with COP=N to disable for *that* agent connect only.

Additional Classes in the CLIENT Domain

There are two additional classes in the CLIENT Domain used for customizations and diagnosis. Define your own scripts to be used during the agent connect with the Core Settings (SETTINGS) Class. Set tracing levels and use other diagnostic tools by configuring the attributes in the Diagnostics (DIAGS) Class.

Core Settings (SETTINGS)

Use an instance in the SETTINGS Class to define how to use your Server Access Profile, define scripts you want to use in pre-configuration processing, and set other global parameters.



If similar attributes exist in both the SETTINGS and SAP Classes, the attribute in the SAP Class will be used.

Table 22 Attributes of the SETTINGS Class

Attributes	Description
COPSNAME	The friendly name of the instance.
SAPPING	Set to Y to have the CM agent ping all of the SAPs. If EQUISORT is S , this must be Y . A result reflecting the speed of the connection will be returned and stored in the SPEED attribute in the SAPSTATS object. The default is N .
PUSHBACK	Specify a numeral from 0 to 999 for the number of times the CM agent should retry connecting to a CM Configuration Server if the CM Configuration Server pushes back on the initial CM agent connect. Set to 0 (the default) to skip a CM Configuration Server it pushes back on the CM agent connect.
EQUISORT	Specify the action to take if several SAP instances have the same priority. <ul style="list-style-type: none">• Set to S to use the SAP with fastest network speed. SAPPING=Y is required.• Set to R (the default) to randomly select which SAP instance to use. This is recommended for workload balancing.
USELSAP	During a CM agent connect, if a service has to use a lower-priority SAP to complete the data download, specify whether the remaining services should continue from this SAP by specifying Y , the default. If USELSAP=N , the CM agent will go through the SAPs in priority for each service.
RCSDATA	If all the required data has not been downloaded after using all of the TYPE=DATA SAPs, specify Y to use the SAPs with TYPE=RCS . To prevent the CM agent computers from using CM Configuration Servers, specify N . The default is Y .

Attributes	Description
ADINFO	Specify Y (the default) if you want to collect the CM agent computer's Active Directory information, which will then be stored in the ADINFO object in the RADSETUP directory (default: <i>System Drive:\Program Files\Hewlett-Packard\CM\Agent\Lib\RADSETUP</i>). This information will be sent to the CM Configuration Server for all resolution processes.
ZGRPINFO	Specify Y (the default) if you want to collect the CM agent computer's User Group information, which will then be stored in the NTGROUPS object in the RADSETUP directory (default: <i>System Drive:\Program Files\Hewlett-Packard\CM\Agent\Lib\RADSETUP</i>). This information will be sent to the CM Configuration Server for all resolution processes.
LSCRIPT	<p>If you have set a service to perform an immediate reboot and you run RADSKMAN from a login script, specify Y (the default).</p> <p>If you have set a service to perform an immediate reboot, and you want RADSKMAN to be restarted in the user context when a user logs on, specify N.</p> <p>For more information on reboot options, see the section Restarting the CM Agent Computer on page 138.</p>
ALWAYS D	Specify Y (the default) to download pre-configuration objects always. Doing so guarantees that your SAP or persistent objects are downloaded even if nothing has changed. If your SAP client object is corrupted for any reason, it will be re-downloaded even if the desired state didn't change. In addition, if one of the variables is a substitution, you will download the object with the new values because a variable change by substitution doesn't change the desired state.
ALWAYS S	Specify Y (the default) to always upload all of the objects that are in the RADSETUP directory to the CM Configuration Server.
EXBSETUP	Specify a script to run before pre-configuration processing. This script must be in the CM agent computer's IDMSYS directory. The default script is PRESETUP.REX .
EXASETUP	Specify a script to run after pre-configuration processing. This script must be in the CM agent computer's IDMSYS directory.
CMETHOD	Specify a script to run after catalog resolution but before service processing.

Attributes	Description
EXBOUTBX	Specify a script to run after service processing but before the objects in the outbox are flushed to the CM Configuration Server.
EXBEXIT	<p>Specify a script to execute before RADSKMAN ends. If you are doing a customized reboot process, specify it here. This script must be in the CM agent computer's IDMSYS directory. The default location is <i>System Drive:\Program Files\Hewlett-Packard\CM\Agent</i>.</p> <p>Note: Client Operations Profiles must be enabled on the CM agent for the EXBEXIT to be used.</p>
TIMEOUT	<p>Specify the timeout (in seconds) for the Server Access Profile (SAP).</p> <ul style="list-style-type: none"> • If this contains a valid numeric value (0 to 3200) it will override the CM agent timeout (ZMASTER.ZTIMEO). • If this is blank, the CM agent will use the value of ZMASTER.ZTIMEO.
THROTYPE	<p>Specify the type of bandwidth throttling to use.</p> <ul style="list-style-type: none"> • Specify ADAPTIVE to yield to other services that are using the network. • Specify RESERVED to allow for a specific reservation of the bandwidth. It is the maximum percentage of network bandwidth to use. • Specify NONE for no bandwidth throttling, and use the maximum available bandwidth. NONE is the default.
BANDWDTH	Specify the percentage of bandwidth (between 1 and 99) to use. If this is blank or the variable does not exist, then all of the bandwidth will be used.
RADTRAY	<p>Specify command-line arguments to be used for the CM System Tray. The first argument must be Y in order to enable the CM System Tray, then the following parameters (comma-separated) can be specified.</p> <p>/C = Show the CM System Tray in console mode when it starts.</p> <p>/NOCANCEL = Hide the Cancel button.</p> <p>/NOPAUSE = Hide the Pause button.</p> <p>/D = Add debug message to the log for troubleshooting.</p> <p>Example: RADTRAY=Y, /C, /NOPAUSE enables the CM System Tray in console mode but does not display the PAUSE button.</p>
USEDEFS	Specify Y to default to the CM Configuration Server that is set on the command line if a SAP cannot be found for the needed ROLE.

Attributes	Description
DEFROLE	<p>Specify roles for the CM Configuration Server that is specified on the command line. The default ROLE is A (All); the CM Configuration Server will be able to perform any ROLE.</p> <p>Note: To use DEFROLE, USEDEFS must be set to Y.</p>
RAD2XUI	<p>Specify Y to view the vintage Radia user interface dialog boxes. Use this if you are not using the CM System Tray or if you want a message to pop up on the screen in addition to it.</p>
RSTROPT	<p>Specify when a file is eligible for checkpoint restart based on calculated network bandwidth. This will apply to all files that are to be downloaded during this CM agent connect. The format is <i>Below Threshold Limit, Network Threshold Value, Above Threshold Limit</i>.</p> <p>Therefore, if RSTROPT = 100KB, 86KB, 10MB, the CM agent will first calculate the network bandwidth, then either of two scenarios will apply:</p> <ul style="list-style-type: none"> • If the network bandwidth is under 86KB, the file size is compared to 100KB. If the file size is over 100KB, checkpoint restart is enabled for that file. • If the network bandwidth is over 86KB, the file size is compared to 10MB. If the file size is over 10MB, checkpoint restart is enabled for that file.
DISKFREE	<p>Specify a minimum amount of free disk space for CM to maintain. If a service is over the limit, it will not be installed.</p>
REMUNINS	<p>Specify Y to stop notifies from remote machines from un-installing a service. This does not stop applications from being un-installed as part of a policy change if a standard CM agent connect is started from a remote notify. The remove notify string must contain the text req="Un-install".</p>
DETPROXY	<p>Specify N to skip running Internet proxy detection at the beginning of the CM agent connect.</p>

Attributes	Description
ACTMAINT	<p>The CM maintenance module, UPGRDMAINT, processes all maintenance activities. It can be launched by RADSKMAN immediately after the maintenance is staged or on an independent schedule.</p> <p>Note: The <code>mnt</code> parameter of RADSKMAN must be set to <code>Y</code> for maintenance to be processed.</p> <ul style="list-style-type: none"> • Specify <code>I</code> (the default) to download maintenance files and immediately activate them. <p>Note: CM Application Self-service Manager users will receive a “needs to be updated” dialog box offering an OK button only. CM Application Self-service Manager will close, install maintenance, and then restart.</p> • Specify <code>D</code> to defer maintenance activation. Maintenance files are downloaded, but not activated. To activate maintenance, call <code>radskman req="Self Maintenance"</code> or call UPGRDMAINT directly using a timer or other method. • Specify <code>P</code> to prompt CM Application Self-service Manager users (only). A dialog box will display stating that maintenance is available and giving the user the option to cancel. The files are downloaded, but not activated. The user will be prompted again at the next check for maintenance by the CM Application Self-service Manager interface. <p>Note: This is the same as <code>I</code> for CM Application Manager users.</p>
SENDRPT	<p>Specify whether to send reporting objects to the CM Configuration Server at the end of the CM agent connect. Usually, the reporting objects for each service, such as APPEVENT, CLISTATS, and ZSVCSTAT, are sent to the CM Configuration Server immediately after they are created. This requires multiple disconnects and reconnects to the CM Configuration Server.</p> <ul style="list-style-type: none"> • Specify <code>D</code> to defer sending all reporting objects. • Specify <code>I</code> (the default) to immediately send the reporting objects.
NETTTL	<p>Specify the number of “hops” (0–999) for the CM agent computer to use for ICMP speed checks. The default is <code>3</code>.</p>

Diagnostics (DIAGS)

Use this class to override default trace settings on the CM agent computer. You can also set parameters for running the RADSTATE program. RADSTATE is a diagnostic module that is designed to give an overview of the current state of the CM agent. The information in the RADSTATE output is based on data that has been retrieved from numerous CM agent objects. For additional information on RADSTATE, check the HP support site.



Instances of this class allow you to easily set tracing levels as well as RADSTATE parameters for a user, a machine, or a group of users. These attributes were intentionally put into their own transient class for this purpose. To do this, set the `_ALWAYS_Diagnostics Class` connection in `LOCATION._BASE_INSTANCE_` to `DIAGS . & (ZCONFIG.ZHDWCOMP)`. Then, create an instance in the DIAGS Class with the computer name of the CM agent computer for which you want to set the tracing. If the machine name does not exist in the DIAGS Class, the `DEFAULT_DIAGS Instance` settings will be used.

Table 23 Attributes of the DIAGS Class

Attribute	Description
COPDNAME	The friendly name of the instance.
RADSTATE	Specify the parameters for RADSTATE to run. If no parameters are specified, RADSTATE will not run. Note: RADSTATE must exist in the <code>IDMSYS</code> directory. The <code>_BASE_INSTANCE_</code> of the DIAGS Class is set to VO , which will run RADSTATE in verbose mode, building the <code>ZRSTATE</code> and <code>ZRSTATES</code> objects. You need to specify the parameters for RADSTATE only, not the RADSTATE executable.

Attribute	Description
ZTRACE	<p>Specify whether communications tracing should be recorded to the CM agent log file.</p> <ul style="list-style-type: none"> • N (the default) turns off communication buffer tracing. • S provides summary communication buffer information to the CM agent log. This includes the number of records read and written, and the type of records processed. • Y provides full communication buffer information to the CM agent log. All data that has been transmitted and received will be echoed to the CM agent log file. <p>Caution: ZTRACE=Y could result in a large amount of data being written to the CM agent log and could severely impact CM agent performance. Do not specify this setting unless instructed to do so by HP Technical Support.</p>
ZTRACEL	<p>Specify the level of tracing (as 000, 040, or 999) that will be recorded to the CM agent log file. If blank, use existing value.</p> <p>Caution: Setting ZTRACEL to a high number could result in a large amount of data being written to the CM agent log and could severely impact CM agent performance. Do not specify this setting unless instructed to do so by HP Technical Support.</p>

Hardware Scan Options (RADHWCFG)

Use instances in the RADHWCFG Class of the CLIENT Domain to specify the type of hardware scans you want performed on the agent device. Hardware scan information is reported in the ZCONFIG object. To implement the hardware scan options, connect an instance of the RADHWCFG Class to an instance in the LOCATION Class.



Client Operations Profiles must be enabled in order to use the RADHWCFG Class. For testing, consider creating a RADHWCFG object on the agent device with all the attributes in the RADHWCFG Class, and then change the attributes to Y or N to see the result in the ZCONFIG object.

HP provides four sample instances in RADHWCFG.

- **Base Instance**
Create copies of the `_BASE_INSTANCE_` to create your own hardware scans.
- **Default Hardware Scan**
This instance scans for the most commonly requested information.
- **Hardware Configuration (Network Only)**
This instance scans for network information only.
- **Sample Dynamic Scan**
This instance provides samples using the Dynamic Scan variables.

The table below details each of the possible hardware scans. Examples of the ZCONFIG attributes that might be returned are provided.


 The attributes that are returned will depend on the hardware configuration. For example, if the agent device has only one printer connected, only one ZHDWPA0*n* attribute will be reported in ZCONFIG.

Table 24 Attributes in the RADHWCFG Class

Attribute	Description
NAME	The friendly name of the instance.
CPU	Specify Y to scan for CPU information. ZCONFIG attributes: ZHDWBIOS, ZHDWCOMP, ZHDWCPU, ZHDWCPUN, ZHDWCPUS, ZHDWFPU, ZHDWXPAG, ZHWCPU01, ZHDFPU01
OS	Specify Y to scan for operating system information. ZCONFIG attributes: REBOOTD, REBOOTT, WTSSRVR, ZHDWLANG, ZHDWOS, ZHDWOSDB, ZHDWOSOG, ZHDWOSOW, ZHDWSVCP
MEMORY	Specify Y to scan for memory information. ZCONFIG attributes: ZHDWMEM, ZHDWMEMF
HDLOCAL	Specify Y to scan for internal hard drives. ZCONFIG attributes: ZHDWCDDR, ZHDWD00, ZHDW00C, ZHDWD00F, ZHDWD00S, ZHDW00T, ZHDWD01, ZHDW01C, ZHDWDF_A, ZHDWDLST, ZHDWDNUM

Attribute	Description
HDREMOTE	Specify Y to scan for external hard drives. ZCONFIG attributes: ZHDW00, ZHDWD00C, ZHDWD00F, ZHDW00S, ZHDW00T, ZHDWDLST, ZHDWDNUM
NETWORK	Specify Y to scan for network information. ZCONFIG attributes: GATEWY01, IPADDR01, LADAPT01, NETLOC01, SUBNET01, ZGATEWAY, ZHDWIPAD, ZHDWLANA, ZHDWNET1, ZHDWNNET, ZNETLOC, ZSUBNET
PERIPHER	Specify Y to scan for peripherals such as keyboard and mouse. ZCONFIG attributes: ZHDWKYBD, ZHDWMOUS, ZHDWPPAR, ZHDWPSE, ZHDWVIDO, ZHDWVRES
PRINTER	Specify Y to scan for printers. ZCONFIG attributes: ZHDWPA00, ZHDWPA01, ZHDWPPRN
HAL_VER	Specify Y to scan for the HAL (Hardware Abstraction Layer) version. ZCONFIG attributes: HALCOMP, HALDATE, HALFNAME, HALFVER, HALINAME, HALLANG, HALPNAME, HALPVER, HALSIZE
APP_VER	Specify Y to scan for versions of MSI (ZHDWVMSI) and IE (ZHDWVIE).
WMISCAN	Specify Y to perform the scan using WMI (Windows Management Instrumentation).
DSCAN00n	Specify Y to use the dynamic scan variable. See Dynamic Scanning below.
ZCFGOBJ	Specify the name of an object created to receive the results of any dynamic scans that are defined in the RADHWCFG class. The default is the ZCONFIG object. The new object will be created in the RADSETUP directory and will be sent to the CM Configuration Server as part of the CM agent connect.

Dynamic Scanning

In addition to the built in scans, create your own scans using the Dynamic Scan (DSCAN00n) Instances. There are three types of dynamic scan instances WMI, Registry, and File. The format for a dynamic scan is: VariableName = Type(Parm1, Parm2, ...) where VariableName is the

attribute in ZCONFIG where you want the information to be reported, Type is WMI, Registry or File, and Parmn is the query for the information. See the examples below.

Example 1: WMI

A WMI scan would use the following format: VariableName = WMI(WQL Statement, Property, Default). To collect the Model of an agent device using WMI, create a DSCAN000 variable similar to:

```
HWMODEL=WMI("Select * from Win32_ComputerSystem"; Model; NONE)
```

This scan would create the variable ZCONFIG.HWMODEL, and populate it with the agent device's model.

Example 2: Registry

To scan a registry key to determine where Adobe 5.0 is installed, create a DSCAN001 variable similar to:

```
ADOBEPH=REG(HKLM\SOFTWARE\Adobe\Acrobat_Reader\5.0\InstallPath)
```

The result will be reported in ZCONFIG.ADOBEPH.



When scanning for a default registry value, the path to the registry key must end with a backslash. For example, to read the default value of the Installer key type **ADOBEPH=REG("HKLM\SOFTWARE\Adobe\Acrobat Reader\6.0\Installer\")**

To read the Path value of the Installer key, type **ADOBEPH=REG("HKLM\SOFTWARE\Adobe\Acrobat Reader\6.0\Installer\Path")**

Example 3: File

Dynamic File scanning can return size (SIZE), date stamp (DATE), file version (FVER), product version (PVER), and time (TIME) stamp of a specified file. You can request any combination of these properties. To scan for the file C:\temp\test.exe, create a DSCAN002 similar to:

```
TEST####=FILE(c:\Temp\Test.exe;SIZE,DATE,FVER,PVER,TIME)
```

The #### will be replaced by the corresponding file property name. One attribute will be created in the ZCONFIG object for each file property for which you scanned. In this example, five variables will be created based on the information collected on the C:\temp\test.exe file, ZCONFIG.TESTSIZE, ZCONFIG.TESTDATE, ZCONFIG.TESTFVER, ZCONFIG.TESTPVER, and ZCONFIG.TESTTIME.

Setting User Interface Properties (RADUICFG)

Use the RADUICFG Class to specify settings for the CM Application Self-service Manager user interface. To implement the hardware scan options, connect an instance of the RADUICFG Class to an instance in the LOCATION Class.

▶ You must be licensed for the CM Application Self-service Manager to use this Class.

Figure 4 CM Application Self-service Manager user interface

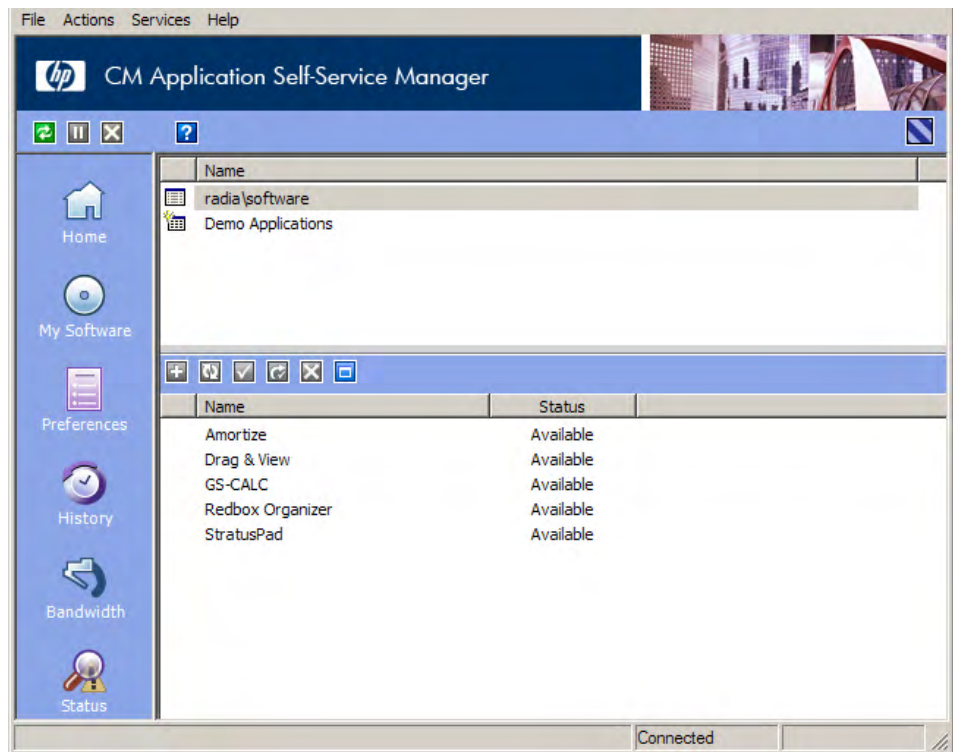


Table 25 Attributes of the RADUICFG Class

Attribute	Description
PNLOUTBR	Specify Y to display the Side Bar, which is located on the left side of the panel and provides navigation throughout the interface.
BNHOME	Specify Y to display the Home button on the Side Bar.
BNMYSOFT	Specify Y to display the My Software button on the Side Bar.
BNPREFER	Specify Y to display the Preferences button on the Side Bar.
BNBNDWTH	Specify Y to display the Bandwidth button on the Side Bar.
BNHISTORY	Specify Y to display the History button on the Side Bar.
BNSTATUS	Specify Y to display the Status button on the Side Bar.
SHWMENUS	Specify U to allow the user to control appearance of the Menu bar. Specify Y or N to turn on/off the Menu bar and not allow the user to control its appearance.
SHWCATLG	Specify U to allow the user to control appearance of the catalog list. Specify Y or N to turn on/off the catalog list and not allow the user to control its appearance.
STRTCHNG	Specify Y to allow the user to modify the startup parameters in General Options in Preferences. Specify N to disallow this permission.
STRTFILE	Specify the filename for the startup parameters found in the General Options in Preferences.
STRUPMSG	Specify Y to warn the user if the startup parameter file has changed.
ASKOFFL	Specify U to allow the user to control prompting for offline use of CM Application Self-service Manager. Specify Y or N to turn on/off the prompt and not allow the user to control the prompt.
BWSTRTUP	Set to A to automatically display the bandwidth control when processing a service that has bandwidth settings. Set to Y to always display regardless of whether the service has bandwidth settings; set to N to never display the bandwidth control.

Attribute	Description
COLORSET	<p>Select SYSTEM to use the operating system colors.</p> <p>Select DEFAULT to use the CM default color scheme.</p> <p>Select CUSTOM to use COLORSEL, COLORBAK, COLORBTN, and COLORWK.</p> <p>Note: The user will not be able to change the colors if either of the above three options is selected.</p> <p>Select USER to allow the user to control the colors.</p> <hr/> <ul style="list-style-type: none"> • COLORSEL: Specify a color for the selection areas. • COLORBAK: Specify a color for the interface background. • COLORBTN: Specify the color for the buttons. • COLORWK: Specify the color for the work area. <p>Note: Check the Microsoft web site for available colors.</p>
STATSTRT	Specify Y to show the status window on start up.
CUSTIMG	Specify a custom image file or banner. Acceptable file types are JPG/JPEG, GIF, TIF, and BMP. The size limitations in pixels are approximately height of 60 and a width of 250. If no location is specified for the file, the default is <code>IDMLIB (System Drive:\Program Files\Hewlett-Packard\CM\Agent\Lib)</code> .
CUSTURL	Specify a URL that the CM agent computers default Internet browser will open to if the subscriber clicks on the CUSTIMG.
CUSTTEXT	Specify the text to display when the CM agent computers mouse hovers over the CUSTIMG.
CUSTTITLE	Specify the text to display in the CM Application Self-service Manager title bar.
COLTYPE	<p>Set to Forced if you want only the columns that are specified in COLNAMES to appear.</p> <p>Set to Required if at least the columns specified in COLNAMES should appear. Name and Status are always displayed.</p>
COLNAMES	Specify the columns you want displayed. Separate the columns with a comma.
EXPSITEM	<p>Specify U to allow the user to control the expansion of the active Service List item.</p> <p>Specify Y or N to allow/disallow the user to expand the active item in the Service List.</p>

Attribute	Description
EXPCITEM	Specify U to allow the user to control the expansion of the active catalog item. Specify Y or N to allow/disallow the user to expand the active catalog item.
SHWGRID	Specify U to allow the user to control the display of grid lines. Specify Y or N to turn on/off the display of grid lines.
SHWADVOP	Specify U to allow the user to control the display of Advanced Options. Specify Y or N to turn on/off the display of Advanced Options such as the Download Only, Reconfigure, and Undo buttons.
PROXYUSE	Specify U to allow the user to control the use of an Internet proxy. Specify Y or N to allow/disallow the user to control the use of an Internet proxy.
PROXYDSC	Specify U to allow the user to control Internet proxy discovery. Specify Y or N to turn on/off the proxy discovery.
PROXYADD	Specify the Internet proxy server's address.
PROXYPRT	Specify the Internet proxy server's port.
BTNINST	Specify Y to enable the Install button.
BTNUPDT	Specify Y to enable the Update button.
BTNDWLD	Specify Y to enable the Download button.
BTNRECFG	Specify Y to enable the Reconfigure button.
BTNUNDO	Specify Y to enable the Undo button.
BTNVRFY	Specify Y to enable the Verify button.
BTNREPR	Specify Y to enable the Repair button.
BTNDEL	Specify Y to enable the Delete button.
BTNCANCL	Specify Y to enable the Cancel button.
BTNPAUSE	Specify Y to enable the Pause button.
SHWCOLEX	Specify Y to show the Install button.
SHWINFO	Specify Y to show the Extended Info button when a service item is expanded.

Attribute	Description
SHWSCHEV	Specify Y to show the Scheduled Event button when a service item is expanded. This button looks like a clock.
TMNUTXT0 n	Create a custom menu for the CM System Tray. This menu will be available when you right-click the CM System Tray icon. To create a separator bar, type SEPARATOR as the menu text.
TCMDTXT0 n	Create a custom menu item for the CM System Tray. Specify a command to run when TMNUTXT0 n is clicked in the CM System Tray. The command must be available from the IDMSYS directory.
NAME	Friendly name of the instance.

Client Operations Profiles Example

This section provides a simple example of how to configure a Client Operations Profiles. The driving force is to have your CM agent computers connect with the most appropriate CM Configuration Server. Usually, you will want to assign your CM agent computers to a CM Configuration Server based on network address.

Scenario

Suppose you divide your enterprise into two regions, EAST and WEST. All agent computers in the EAST region are in the 192.111.111.0 network, and all agent computers in the WEST region are in the 193.111.111.0 network. In addition, suppose you have two CM Configuration Servers, one called RCS_EAST as the primary CM server for the EAST region, and one called RCS_WEST as the primary CM server for the WEST region.

To configure the sample scenario

- 1 Build two Server Access Profile (SAP) instances, one for RCS_EAST and one for RCS_WEST.

In the Server Access Profile (SAP) Class use the TYPE attribute to specify a server as type DATA or RCS. In this example, we will be

configuring only CM Configuration Servers. Therefore, all servers will have SAP.TYPE set to RCS.

For each Server Access Profile instance, you must also identify a role. Again, for simplicity, we will set SAP.ROLE to A for all. This means that the CM Configuration Server can provide client operations profiles, service resolution, maintenance, data, and reporting.

At a minimum, you will need to specify the Universal Resource Identifier (URI) attribute. Customize other variables as needed.

- 2 Build two location instances, one for the EAST region, and one for the WEST region.

Create a location instance called 192_111_111_0 with a friendly name of Sample_Location East, and a location instance called 193_111_111_0 with a friendly name of Sample_Location West.

- 3 Connect the LOCATION instance to the appropriate Server Access Profile (SAP) instance.
 - In the LOCATION.Sample_Location East instance define a connection to the SAP.Sample_RCS EAST.
 - In the LOCATION.Sample_Location West instance define a connection to the SAP.Sample_RCS WEST.
- 4 Now, consider what you want to happen in the following cases:
 - Suppose you are a client in the EAST Region and the RCS_EAST is unavailable. Your options are:
 - Abortor
 - Go to RCS_WEST as a second choice.
 - Suppose you are an agent in the EAST region and the RCS_EAST is busy. In other words, the task limit defined in your CM Configuration Server settings file has been reached. Your options are:
 - Continue to retry the RCS_EAST until a connection is availableor
 - Go to RCS_WEST as a second choice.

Once you understand the concepts involved, and feel comfortable with this process, you can begin to add other components to the Client Operations Profile. After you finish with TYPE=RCS, configure your servers with

TYPE=DATA. In addition, you can identify particular servers of TYPE=RCS to use different ROLES.

Summary

- You must *enable Client Operations Profiles* (COPs) in the CM Configuration Server Database and on the CM agent computer.
- You must select which servers will perform which *COPs roles*.
- You can *assign CM agent computers* to specific servers based on various criteria.


6 Preparing Services

At the end of this chapter, you will:

- Know how to install services with machine and user components, and under the system account.
- Know how to restart the CM agent computer.
- Be aware of service options.

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 only the CM Application Manager agents.


In order to complete the installation of a multi-context service, the CM agent computer will need to connect to the CM 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.

- 1 Use CM Admin Publisher to specify whether a package component is to be installed in the User or Machine context, or use CM Admin CSDB Editor to specify a the context.
- 2 Use CM Admin CSDB Editor to configure your service to deploy under either the system or user account.
- 3 Use CM Admin CSDB Editor to set the deployment methods for the service.

Setting the Context of Components (ZCONTEXT)

Use the CM Admin Publisher to select machine and user components separately. Set the context of a component using either the CM Admin Publisher during the publishing process, or using the CM Admin CSDB Editor after the publishing process.

 To take advantage of the Machine/User context, previously packaged applications must be repackaged.

To set the context of a component in CM Admin 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 the CM Admin CSDB Editor to set the ZCONTEXT attribute in the component's instance.

To set the context in CM Admin CSDB Editor

- 1 Go to **Start → Programs → HP OVCM Administrator → CM Admin CSDB Editor**.

The CM Admin CSDB Editor Security Information dialog box opens.



The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation.

You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

- 2 If necessary, type a User ID and Password, and then click **OK**.
The CM Admin 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 Table 26.

Table 26 Component Context (ZCONTEXT) options

Setting	Explanation
blank	Leave ZCONTEXT blank if the component is independent of context. This component is installed during machine and user connects.
U	Type U to indicate that this component will be deployed only to the subscriber logged on when the application is initially deployed.
M	Type M 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 the CM Admin 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.



We recommend that you back up the CM Configuration Server Database prior to making class template changes.

Table 27 Values for ZSVCMODE in the ZSERVICE Class

Value	Explanation
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 CM 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 the CM Application Self-service Manager.
EMU:AD=N	Enhanced Machine/User service: If the CM 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, the user connect is initiated to install the user components. Use this for optional applications on a shared computer that the user controls through the CM 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: AI = application install AD = application delete AU = application update AR = application repair VA = version activation VD = version deactivation The default for each event is Y. Separate multiple events with a comma.
M	Machine service only Set ZSVCMODE to M if the service has only machine components. This service will be ignored if context is set to u on the RADSKMAN command line.

Value	Explanation
MU	Machine/User service Set ZSVCMODE to MU 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.

To set ZSVCMODE in ZSERVICE

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Configuration Server Database Editor Security Information dialog box opens.



The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation.

You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

- 2 If necessary, type a User ID and Password, and then click **OK**.
- 3 The CM Configuration Server Database Editor window opens.
- 4 Double-click **PRIMARY**.
- 5 Double-click **SOFTWARE**.
- 6 Double-click **Application (ZSERVICE)**.
- 7 Double-click the appropriate service.
- 8 Double-click **ZSVCMODE** in the list view.
- 9 Type the appropriate values based on the values show in Table 27 on page 133.
- 10 Click **OK** to complete the changes.
- 11 Click **Yes** to confirm the changes and return to the CM Configuration Server Database Editor.

Enhanced Machine/User Services for CM Application Self-service Manager

When an application has machine and user components, the CM Application Self-service Manager agent needs elevated privileges on the CM 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 subscriber 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 subscriber selects the application to install, the client will check to see if the machine components are already installed. If they are not, CM Application Self-service Manager will install the machine components *for that service only*, and, then, install the user components. In other words, two separate CM agent connects will run, one in machine context and one in the 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, when the CM Application Self-service Manager client 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/User Service

The client will need to connect to the CM 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 of 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 the context=U parameter added. If ZSVCMODE is MU, the user components will *only* be installed if the machine connect has finished successfully.

Service Groups

CM 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.

The CM Application Self-service Manager user interface will display only the master service.

For detailed information on creating Service Groups, refer to the *HP Configuration Management Administrator User Guide*.

Installing Services with the System Account (ZSYSACCT)

For computers running Windows NT, Windows 2000 or Windows XP, you can specify whether to install the service under the system account or the user's account. To do this, modify the ZSYSACCT attribute in the Application (ZSERVICE) instance. This attribute controls whether to use the system account for installation on a per service basis.

Table 28 ZSERVICE Attribute: ZSYSACCT

Attribute	Description
ZSYSACCT	<ul style="list-style-type: none">• Set to Y to install the application under the system rights. The type of connect is ignored.• Set to N or blank to install the application under the user who is currently logged on. The type of connect is ignored.• Set to M to install the application under the System Account if the current connect is in the machine context (context=m).• Set to U to install the application under the System Account if the current connect is in the user context (context=u). <p>Default: N</p>

To edit the ZSYSACCT attribute in the Application instance

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Configuration Server Database Editor Security Information dialog box opens.



The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation.

You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

- 2 If necessary, enter a User ID and Password, and then click **OK**.
The CM Configuration Server Database Editor window opens.
- 3 Double-click **PRIMARY**.
- 4 Double-click **SOFTWARE**.
- 5 Double-click **Application (ZSERVICE)**.
- 6 Double-click the appropriate application instance, such as Amortize. The attributes appear in the list view on the right side.
- 7 Double-click **ZSYSACCT**.

The Editing Instance dialog box opens.

- 8 Select **Install under System Account** to use system rights, or clear the check box to install under the rights of the user who is logged on.
- 9 Click **OK** to close the Editing Instance dialog box.
- 10 Click **Yes** to confirm your changes.

Local Catalog Processing

Local catalog processing reduces the network bandwidth and the number of connects required to the CM 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 CM Configuration Server for both 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 a agent computer has two or more users with distinct entitlements, then you will need to create policies for each machine so that all components for all of the services for all users of that agent computer will be downloaded. Contact Professional Services for implementation.

Restarting the CM Agent Computer

You might need to restart a CM 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
- and 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 you set hreboot to p, the agent computer will power down, regardless of whether or not there is a service requiring a reboot.

First, specify the application event that needs the reboot. Table 29 below 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 the ZSERVICE.REBOOT variable to AI=HQI, AR=HQI.



The parameters for the reboot attribute are not case-sensitive.

Table 29 Reboot Events and Codes

Application Events	Code	Description
Install	AI	Use AI to specify a reboot behavior for application installations. The default is no reboot.
Deinstall	AD	Use AD to specify a reboot behavior for application removals. The default is no reboot.
Locked File	AL	Use AL to specify 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	Use AU to specify a reboot behavior for application updates. The default is no reboot.
Repair	AR	Use AR to specify a reboot behavior for application repairs. The default is no reboot.
Version Activation	VA	Use VA to specify a reboot behavior for application version activations. The default is no reboot.

Reboot Types

After deciding which application events need a computer reboot, you will need to choose the type of reboot. CM 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, then 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 the CM Application Self-service Manager and for CM Application Manager used with the CM 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 subscriber 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 CM client to wait before continuing with the reboot process.

Reboot Modifier: Machine and User Options

The CM 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. CM will resolve the rest of the subscriber's services after the computer re-starts. 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 CM 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 subscriber is assigned an application that needs a soft reboot with just an OK button on installation, AI=SA. The subscriber 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

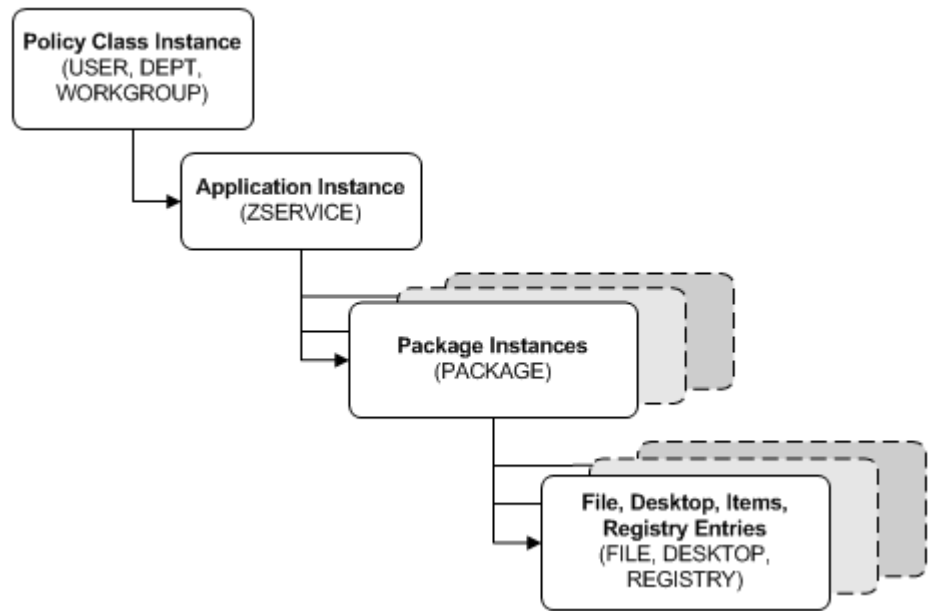
Typically, when you deploy an application to a CM agent computer, via either the CM Scheduler or the CM Notify, it is activated immediately. There is another option, Version Groups, which enables you to roll out a new version of an application to subscribers; it gives you the options of having it activate upon delivery or at a pre-determined time. If the installation of the new version fails, CM 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, subscribers.

After versioning is configured, the compressed files are stored on the CM 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 CM Configuration Server Database. For non-versioned applications, one Application instance connects to one or more package instances.

Figure 5 CM-CS Database path for non-versioned application deployments

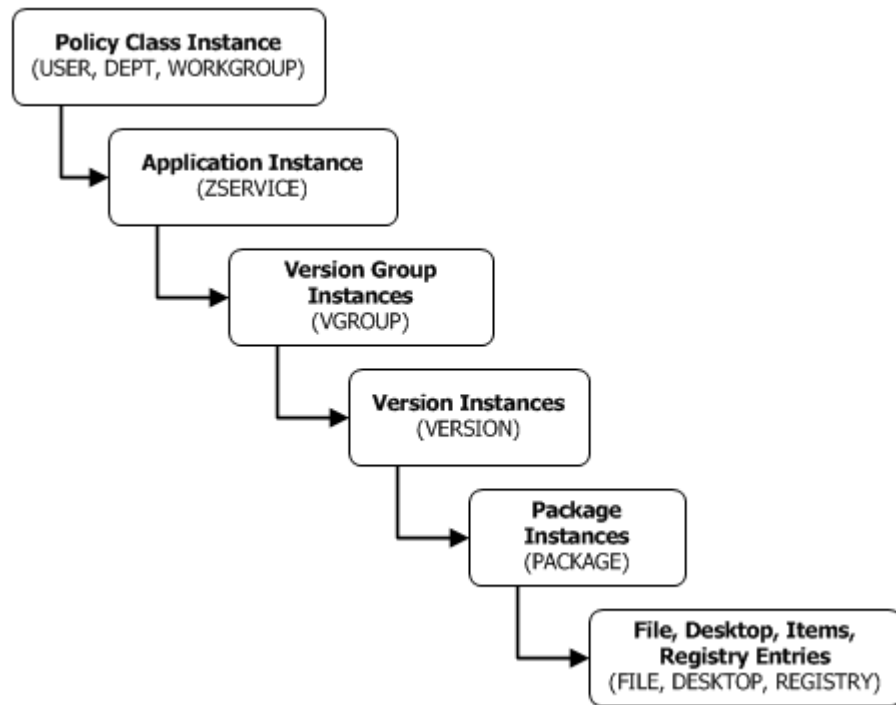


Versioned applications adhere to a different connection model than non-versioned applications. For versioned applications, an Application instance (ZSERVICE) connects to a single Version Group (VGROUP) instance.

► 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 CM package. Each CM package is represented in the CM Configuration Server Database by an instance of the PACKAGE Class.

Figure 6 CM-CS Database path for deployments of versioned application.



To prepare versioned applications

- 1 Use the CM Admin Publisher to package the application.
- 2 Right-click the **ZSERVICE** Class and select **New Instance**.
- 3 In the Create Instance dialog box, type a display name and an instance name, and click **OK**.

See [The Version Group Editor](#) below to finish creating the Version Group.

The Version Group Editor

Use the Version Group Editor, in the CM Admin 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 the CM Admin CSDB Editor to create a new instance in the Version Group (VGROUP) class.

To create a Version Group

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Admin CSDB Editor Security Information dialog box opens.



The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation.

You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

- 2 If necessary, type a User ID and Password, and then click **OK**.

The CM Admin CSDB Editor window opens.

- 3 Navigate to the **SOFTWARE** Domain of the **PRIMARY** File, and right-click **Version Group (VGROUP)**.

- 4 Select **New Instance**.

The Create Instance dialog box opens.

- 5 in the text field in 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 CM 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 subscriber to control the version to be deployed.

This is used with the CM Application Self-service Manager only.



If you want the ability to schedule the version deployments (with the CM 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 CM agent computer the next time the subscriber connects to the CM 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 CM Configuration Server knows when to activate the next version.

Editing Amortize Version Group

Version Group Information

Versioning Controlled By: **MANAGER**

Initially Active: Version 1

Next Version to Activate: Version 2

Activate On or After: Time (hh/mm): 00:00

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Mon	Tue	Wed	Thu	Fri	Sat	Sun
28	29	30	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

Version Group Layout

- Amortize
 - Version 1
 - Version 2
 - <no assigned version>
 - <no assigned version>
 - <no assigned version>

Unassigned Versions

* Use drag and drop to arrange and assign versions in the version group

Add Edit Delete

OK Cancel

- 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 CM 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 CM 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, CM 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 the CM Admin 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 the CM Admin 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 CM agent connects to the CM Configuration Server, the initial version of the application is activated and the compressed files for the next version will be stored on the CM 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 the CM Admin 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.

The 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. Table 30 on page 151 describes the VGROUP Class attributes.

Table 30 Version Group (VGROUP) Class Attributes

Attribute	Description
ZSTOP00 _n	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 the CM Admin CSDB Editor to set this attribute.
CONTROL	Indicates whether the CM administrator (MANAGER) or the subscriber (CLIENT) controls which version to activate on the CM agent computer. Use the Versioning Controlled By drop-down list in the Version Group Editor to set this option. Note: CM agents support CM administrator-controlled version activation, but do not support subscriber-controlled activation.
INITIAL	Indicates which version to activate on the CM agent computer. Use the Initially Active 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 Y .
REQACTDT	The earliest date on which a version in this Version Group will be activated on any CM agent computer. If this attribute is blank, the version identified by the INITIAL attribute will be activated at the end of the CM agent connect that causes the version to be transferred to the CM 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 CM agent computer. The version identified by the INITIAL attribute will be activated during the next CM agent connect. Use the Time (hh/mm) 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 the CM Admin CSDB Editor.
ACTDATE	This data is set and maintained, by the CM agent, in the VGROUP object on the CM agent computer. Do not alter its value.
STATUS	This data is set and maintained, by the CM agent, in the VGROUP object on the CM agent computer. Do not alter its value.

Attribute	Description
CURVERS	This data is set and maintained, by the CM agent, in the VGROUP object on the CM agent computer. Do not alter its value.
NEXTVERS	This data is set and maintained, by the CM agent, in the VGROUP object on the CM agent computer. Do not alter its value.
SOURCE	This data is set and maintained, by the CM agent, in the VGROUP object on the CM agent computer. Do not alter its value.
TIMERCON	If you specify a “next version to activate,” the CM Admin CSDB Editor automatically creates a timer and stores the connection to that timer in this attribute.
VERCON0 _n	Connects to each version in the Version Group. Each VERCON0 _n 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.

The Versions (VERSION) Class

Each instance of the VERSION Class defines one version of an application to be deployed and managed by CM. Use the Version Group Editor to create VERSION Class instances and assign them to a Version Group. Table 30 on page 151 describes the VERSION Class attributes.

Table 31 Versions (VERSION) Class Attributes

Attribute	Description
ZSTOP00 _n	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 the CM Admin CSDB Editor to set this attribute.
NAME	The friendly name for the VERSION instance. This is set when you create the instance using the CM Admin 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 that you will see if you open an Application (ZSERVICE) instance in the CM Configuration Server Database Editor (CM-CSDB Editor). Many of the values for these attributes are set when using the CM Administrator, such as the CM Administrator Packager or the New Application Wizard in the CM-CSDB Editor. You can also use the CM-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 the CM-CSDB Editor. The CM agent uses these attributes. For example, the INSTDATE attribute is used to record the date the on which the service was installed on the CM agent computer. The value for this attribute is stored in the PROFILE File for the CM agent computer in the CM Configuration Server Database.

Table 32 Modifiable SOFTWARE.ZSERVICE Attributes

Attribute	Description
ZSTOP _{nnn}	<p>Stops resolution if the expression evaluates to TRUE.</p> <p>Example: WORDPOS (EDMGETV (ZMASTER, ZOS) , 'WINXP WIN2K NT') =0</p> <p>This example expression will stop resolution (the application will not be installed) on the instance if the CM agent's operating system is neither Windows XP, Windows 2000, or Windows NT.</p>
ZSVCNAME	<p>Use this attribute to set the name of the service that will display in the CM Application Self-service Manager user interface. This value is initially set in the Short Description field in the New Application Wizard.</p>
ZSVCTTYP	<p>This indicates for which CM agent this application was packaged.</p> <ul style="list-style-type: none">• Specify A for CM Application Manager.• Specify S for CM Application Self-service Manager. <p>This value is initially set in the New Application Wizard.</p>
ZSVCMO	<p>Use this attribute to designate a service as <i>mandatory</i> or <i>optional</i>.</p> <ul style="list-style-type: none">• When using the CM Application Manager, services are typically designated as mandatory (M);• When using the CM Application Self-service Manager, services

Attribute	Description
	<p>are typically designated as optional (O).</p> <p>If both CM agents are being used you could also specify mandatory then optional (ZSVCMO=MO), or optional then mandatory (ZSVCMO=OM).</p> <ul style="list-style-type: none"> • The first character indicates how the application should be handled before installation. • The second character indicates how the application should be handled after installation. <p>Note: You might need to edit the ZSERVICE class template to allow the ZSVCMO=OM setting. Refer to the <i>CM Configuration Management Administrator User Guide</i> for more information on editing a class template.</p> <p>To process mandatory applications using CM Application Self-service Manager, add enterprisemanagement=auto 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"> • A service with ZSVCPRI=01 would have the highest priority. • A service with ZSVCPRI=99 would have the lowest priority.
ALWAYS	<p>Any method that you specify for this attribute is unconditionally executed when this instance is resolved.</p>
ZCREATE	<p>A method that runs when the service is installed.</p>
ZINIT	<p>A method that runs when the service is initialized.</p>
ZDELETE	<p>A method that runs when the service is deleted.</p>
ZUPDATE	<p>A method that runs when the service is updated.</p>
ZVERIFY	<p>A method that runs when the service is verified.</p>
ZREPAIR	<p>A method that runs when the service is repaired.</p>
PUBDATE	<p><i>Reserved for future use.</i></p>
UPDDDATE	<p><i>Reserved for future use.</i></p>

Attribute	Description
AUTHOR	The name of the author of the service. This appears in the extended information area in the CM Application Self-service Manager user interface. This value is initially set in the Author 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 Long Description field in the New Application Wizard.
VENDOR	The name of the vendor of the service. This appears in the CM Application Self-service Manager user interface. This value is initially set in the Vendor 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 the CM Application Self-service Manager user interface. This value is initially set in the Web URL 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 the CM Application Self-service Manager user interface.
PRICE	Specify the price of an application. This will be displayed to subscribers in the extended information area in the CM Application Self-service Manager user interface.
SCHEDOK	<i>For CM Application Self-service Manager only.</i> <ul style="list-style-type: none"> • Specify Y to allow the subscriber to locally change the update schedule. • Specify N to retain control on the CM Configuration Server.
VERSION	The version of the software. This appears in the properties for the service in CM Application Self-service Manager user interface. The value is initially set in the Version field in the New Application Wizard.
NAME	This name appears in the properties for the service in the CM Application Self-service Manager user interface. The value is initially set in the Short Description field in the New Application Wizard.
OWNER	<i>Reserved for future use.</i>
RUNDLG	Specify Y to enable the processing of DIALOG Class instances during the installation of the service; specify N (the default) to disable this processing.
REBOOT	This attribute is used to restart the CM agent computer based on an

Attribute	Description
	<p>application event. Specify the action by equating an application event to a reboot type, panel, or connect.</p> <p>Event on which to Restart: AI = Install; AD = Deinstall; AU = Update; AR = Repair; AV = Verify</p> <p>Type of Panel: Q = No panel; A = OK button only; Y = OK and Cancel buttons.</p> <p>Type of Reboot: S = Soft reboot (default of type Y panel); H = Hard reboot (default of type A panel); N = No reboot</p> <p>Type of Connect: None specified = Reboot on machine connect (context=m); U = reboot on user connect (context=u); MU = 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>AI=Application Install; AD=Application Deinstall; AU=Application Update; AR=Application Repair; AV=Application Verify; VA=Version Activation; VD=Version Deactivation</p> <p>What to Report on: S=Success; F=Failure; B=Both (success and failure); N=None</p> <p>The default is AI=B,AD=B,AU=F,AR=N,VA=F,VD=F</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 CM agent settings that must be monitored periodically.</p> <ul style="list-style-type: none"> • Specify Y for Yes. • Specify N for No. <p>If the settings change, the CM agent must reconnect to the CM Configuration Server to get new or different components.</p>
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"> • Specify Y for Yes. • Specify N (the default) for No.

Attribute	Description
REMOVAL	<p>This attribute controls how the application is managed when a service is removed.</p> <ul style="list-style-type: none"> • REMOVAL=A (Abandon) will delete the service's objects on the CM agent, but leave its components. The service will no longer be managed by CM. • REMOVAL=D (Delete) will delete the service's objects and components. The service will still be managed by CM. <ul style="list-style-type: none"> — This is the default. • REMOVAL=U (Unmanage) will stop management of the service by CM. Neither the objects nor the components will be deleted. This applies only to optional applications (ZVSCMO=O) that are removed based on entitlement policy. <p>Note: If a subscriber 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"> • Specify Y for Yes. • Specify N for No.
ZSVCCAT	<p>Set this attribute to indicate whether the service is visible in the CM Application Self-service Manager catalog. For optional applications, the default is Y; for mandatory applications, the default is N. 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"> • UIOPTION=NONE: No interface displayed. • UIOPTION=FULL: Interface displayed; Cancel button is available. • UIOPTION=INFO: Interface displayed; no Cancel option.
CACHE	<p>This attribute enables element caching.</p> <ul style="list-style-type: none"> • Specify Y for Yes. • Specify N (the default) for No.

Attribute	Description
CACHELOC	<p><i>For Windows Installer applications only.</i></p> <p>Specify the location of the folder, on the CM agent computer, that is used to cache the compressed application files that are needed for the product. The default is _UNDEF_.</p> <p>CM support for Windows Installer tags the PRODGUID value to this value in order to create the folder. For example, if CACHELOC=C:\progra~1\Hewlett-Packard\CM\Agent and PRODGUID=12345_XXXX the cache folder would be C:\progra~1\Hewlett-Packard\CM\Agent\12345_XXXX\cache.</p> <p>Note: The folder <code>\cache</code> 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 000 and 100 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>
ZDISCONN	<p>Set this attribute to indicate whether the CM agent is allowed to disconnect from the CM Configuration Server if there is an open session with the CM Configuration Server.</p> <ul style="list-style-type: none"> • Specify Y to disconnect the CM agent from the CM Configuration Server. • Specify N (the default) to keep the CM agent connected to the CM Configuration Server.
ZSYSACCT	<p>Set this attribute to indicate whether to install the service under the system account or the user’s account.</p> <ul style="list-style-type: none"> • Specify Y to install the application using the system rights. • Specify N (the default) to install the application using the rights of the user that is logged on.
MCELIGBL	<p>Indicates whether the application is eligible for multicasting.</p> <ul style="list-style-type: none"> • Specify Y (the default) for Yes. • Specify N for No.

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"> • M if the service has machine components only. This service will be ignored if context=u on the RADSKMAN command line. • U if the service has user components only. This service will be installed if context=u 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. • MU 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 context=m and one with context=u. • EMU if the CM 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 the CM Application Self-service Manager. <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"> • Set to 32 to deploy to 32-bit architectures. • Set to 64 to deploy to 64-bit architectures. • Leave blank to deploy to all architectures.

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 CM agent computer's service objects.



These attributes should not be modified using CM Configuration Server Database Editor.

Table 33 Calculated ZSERVICE Attributes – DO NOT MODIFY

Attribute	Description
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 subscribers in the extended information area in the CM Application Self-service Manager user interface.</p> <p>This “calculated” field is the cumulative value of the SIZE that is defined in the PACKAGE class; do not modify it.</p>
COMPSIZE	<p>The compressed size of the application that is displayed to the subscribers in the extended information area in the CM Application Self-service Manager user interface.</p> <p>This “calculated” field is the cumulative value of the COMPSIZE that is defined in the PACKAGE class; do not modify it.</p>
ZAVIS	<p>The CM 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">• Available indicates whether a service is available from the CM Configuration Server.• Verified indicates whether a service has been verified.• Installed indicates whether the service has been installed.• Synchronized indicates whether the installed service has all of the latest changes from the CM Configuration Server. <p>The valid values for each state are: Y (Yes), N (No), and X (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 CM agent computer. This is displayed to the subscribers in the extended information area in the CM Application Self-service Manager user interface. The CM agent manages this attribute.
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 CM agent computer. This is displayed to the subscribers in the extended information area in the CM Application Self-service Manager user interface. The CM agent manages this attribute.

Attribute	Description
INSTDATE	This attribute indicates (in local time, in the format of MMM DD,YYYY HH:MM:SS) when the application was installed on the CM agent computer. This is displayed to the subscribers in the extended information area in the CM Application Self-service Manager user interface. The CM 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 CM agent computer. The CM agent manages this attribute.

Summary

- You can use the CM Admin Publisher and the CM Admin CSDB Editor to configure the *context* (*machine* vs. *user*) of services.
- You can use *Service Groups* for an application that requires other service-packages or has dependencies on other services.
- You can use the ZSYSACCT attribute to specify whether a service gets installed the under the *system account* or the *user account*.
- If a service requires a reboot of the CM agent computer after an application event, you can use the REBOOT attribute in the Application (ZSERVICE) Class to specify *whether to reboot* (and if so, *hard reboot* or *soft reboot*), and *whether to notify a user* of the pending reboot.
- You can deploy *versioned* and *non-versioned applications* to a CM agent computer.

7 Deploying Services

At the end of this chapter, you will:

- Understand the deployment methods available in CM.
- Be able to use a timer to deploy a service at a pre-determined time.
- Know how to use the Notify function to update an application, remove an application, or send an e-mail message to a subscriber.
- Be able to deploy versioned applications.
- Understand how CM supports Windows Installer applications.

Deployment Methods

After publishing packages and creating services using the CM Administrator, and deciding which users and groups will receive the services (see Chapter 4, Implementing Entitlement Policy), you are ready to deploy the services to your subscribers.



If you have used other systems-management software, you might be familiar with the term **job**. A job is used to distribute a package. It includes a set of instructions that must be performed, a package containing the files or software, the targets for the job, and the schedule for carrying out the job.

In CM, you do not need to use a job. You can perform each of the steps—creating the package, defining targets (assigning users), and selecting a deployment method—individually. This provides flexibility because you can use multiple deployment methods to distribute a single package.

Configuration Management offers two deployment methods.

- **Scheduler**
Installs the service at a specific time or sets any command line to run at an interval.
- **Notify**
Forces one or more agent computers to connect to the CM Configuration Server to install, update, or remove an application, or sends an e-mail to the subscribers of a particular service.

Before selecting a deployment method, consider the following questions.

- *Does the application need to be deployed at a certain time?*
If so, use Scheduler.
- *Do you want to notify the users via e-mail when you are deploying the application?*
If so, use Notify.
- *Do you want to install a new application, update an application, or remove an application?*
If so, use Notify.
- *Are there multiple versions of the application?*
If so, use Version Groups. See Chapter 6, Preparing Services.

In addition to the Scheduler and Notify methods, applications can be deployed using the CM Application Self-Service Manager user interface in which some of the download and installation control is given to the user. This is described in the next chapter, CM Application Self-service Manager User Interface.



Concurrent CM agent connects from separate remote terminal sessions to the same machine are not supported.

This support is available only when running under Windows Terminal Services and when using the CM Windows Terminal Server extensions.

Testing Deployments

To ensure successful deployments, thoroughly test your implementation.

- Publish and deploy software in a test environment before making the software available for live deployment.
- Test deployments to all target operating systems.
- Test all major capabilities of the deployment, including updates to the application, removing the application from the subscriber's desktop, customized installations, and variations in hardware configurations—such as shortages of disk space and physical memory—that might affect the deployment.

Connection Parameters (RADSKMAN)


Regardless of which deployment method you choose, you will need to create a RADSKMAN command line. You can specify a RADSKMAN command line from a command prompt, a Scheduler (TIMER) instance, and a Notify command. Use RADSKMAN to:

- Check the status of all existing mandatory applications.
- Add new mandatory applications.
- Remove any mandatory applications that are no longer assigned to the subscriber.

Before using RADSKMAN in a production environment, test the command-line parameters. The RADSKMAN parameters can be divided into five categories:

- Core (see page 166)
- Operations (see page 168)
- Machine/User (see page 169)
- Client Operations Profiles (see page 172)
- Process (see page 173)

The five tables that follow describe the RADSKMAN parameters. After the tables, on page 174, are sample RADSKMAN lines for common situations.

 In the RADSKMAN-parameters tables, **CM-AM** is used to reference CM Application Manager and **CM-ASM** is used to reference CM Application Self-service Manager.

Core

Core parameters are used in most RADSKMAN command lines. These parameters include the location of your CM Configuration Server, and how to identify the CM agent computer for policy.

Table 34 RADSKMAN Core Parameters

Parameter	Explanation
cat	<ul style="list-style-type: none"> • Set cat=prompt to run self-maintenance, display the logon panel, and check the status of other services. • Set cat=y to check the status of services only. • Set cat=m to use the local machine catalog for resolving the user's service list. This is used with context=u. Usually, this is also used with local=y. <p>The CM-AM default is prompt. The CM-ASM default is dependent on the request type.</p>

Parameter	Explanation
dtype	<p>The CM Configuration Server Database domain name for the services. This is the directory in which the service catalog (ASERVICE.EDM) is stored. For example, dtype=SOFTWARE.</p> <p>The default for both CM agents is SOFTWARE. However, if preload=y, the default is RADSTAGE.</p>
IP	<p>The IP address of the CM Configuration Server.</p> <p>Note: If you do not specify the IP address, CM uses the IP address that is specified in the ZMASTER object stored in IDMLIB (by default, <i>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\LIB\</i>).</p> <p>The default for both CM agents is NOVARCS.</p>
mname	<p>The name of the CM Configuration Server. For example, mname=RADSVR01.</p> <p>The default for both CM agents is RADSTAGE.</p>
port	<p>The CM Configuration Server port.</p> <p>Note: If this is not specified, CM uses the port that is specified in the ZMASTER object stored in IDMLIB (by default, <i>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\LIB\</i>).</p> <p>The default for both CM agents is 3464.</p>
sname	<p>Specifies the name of the service that you want to process. If you do not specify a service, all mandatory services are processed.</p>
startdir	<p>Specifies the IDMLIB starting directory.</p> <p>Note: HP recommends specifying startdir on the command line if uid has been specified on the command line. If startdir is not specified, it will be set to the same value as uid.</p> <ul style="list-style-type: none"> • Specify startdir=\$MACHINE to use the computer name. • Specify startdir=\$USER to use the currently logged on user. • Specify startdir=value to specify a custom starting directory. If <i>value</i> contains embedded spaces, enclose the entire name in quotation marks. <p>The defaults for both CM agents are: \$USER (if started in a user context, context=u); SYSTEM (if started in machine context, context=m).</p> <p>Note: CM Application Self-service Manager does not pass a context by default.</p>

Parameter	Explanation
uid	<p>The identification that is used to identify the current session.</p> <p>Note: HP recommends specifying startdir on the command line if uid has been specified on the command line. If startdir is not specified, it will be set to the same value as uid.</p> <ul style="list-style-type: none"> • uid=\$MACHINE identifies the current session by the name of the computer. • uid=\$USER identifies the current session by the name of the currently logged on user. • uid=custom is used to identify the current session by a custom value that you specify. <p>The defaults for both CM agents are: \$USER (if started in a user context, context=u); SYSTEM (if started in machine context, context=m).</p> <p>Note: If you do not specify a context for CM Application Self-service Manager, the LOCALUID—as specified in the ZMASTER object stored in IDMLIB (by default, <i>SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\LIB\</i>)—will be used.</p>

Operations

These parameters influence how the CM agent will connect. Its features include computer restart handling, log specifications, and the display options for the user.

Table 35 RADSKMAN Operations Parameters

Parameter	Explanation
ask	<ul style="list-style-type: none"> • Set ask=y to prompt the subscriber before restarting the computer, which gives them a chance to save their work and close applications. • Set ask=n to restart the computer without prompting the subscriber. This is useful for unattended computers. <p>The default for CM-AM is Y if CM System Tray is running; N if CM System Tray is not running or there are no users logged on.</p> <p>The default for CM-ASM is Y.</p>

Parameter	Explanation
hreboot	<ul style="list-style-type: none"> • Specifying hreboot=y will allow RADSKMAN to handle a computer restart if it is required by the service. • Specify hreboot=p to power off the computer. The CM agent computer will shut down regardless of the service's reboot settings. <p>Note: This replaces handle_reboot. The default for CM-AM is Y. The default for CM-ASM is N.</p>
ind	<ul style="list-style-type: none"> • Specify ind=n to hide the status indicator for each service. • Specify ind=y to show the status indicator for each service. <p>The default for both CM agents is Y.</p>
jobid	<p>Use jobid to further describe the source of this command line. It shows up in the APPEVENT, IDENTITY, PREFACE, and SYNOPSIS objects as JOBID.</p> <p>The defaults for both CM agents are: UserConnect (if started in a user context); MachineConnect (if started in machine context).</p>
log	<p>Create a name for the log that is stored in the IDMLOG directory.</p>
logsize	<p>Specify the maximum size (in bytes) of the log file. When the log size is reached, a backup file (.BAK) is created (by default, connect.bak). If a backup file exists, it will be overwritten.</p> <p>The default for both CM agents is 1000000.</p>
rtimeout	<p>Specify the number of seconds to wait—before rebooting the CM agent computer—if a reboot panel has been requested for a service. This timeout will allow a user to save and close applications before a reboot.</p>

Machine/User

These parameters are beneficial when there are multiple users on the same CM agent computer, and with applications with machine and user components. These parameters control the frequency of connections to the CM Configuration Server, the display of the user logon panel, and when to send objects to the CM Configuration Server.

Table 36 RADSKMAN Machine/User Parameters

Parameter	Explanation
cat	<ul style="list-style-type: none">• Set cat=prompt to display the logon panel and check the status of other services.• Set cat=y to check the status of services only.• Set cat=m to use the local machine catalog for resolving the user's service list. This is used with context=u. Usually, this is also used with local=y. <p>The CM-AM default is prompt. The CM-ASM default is dependent on the request type.</p>
catexp	<p>Use this parameter (in the format <i><attribute name>:<value></i>) to process applications based on a specific attribute in the ZSERVICE Class.</p> <p>Note: Specify multiple "or" conditions with a forward slash (/).</p>
context	<p>Set context=m when installing an application in the machine context; context=u when installing an application in the user context.</p> <ul style="list-style-type: none">• If context=m the following defaults are assumed.<ul style="list-style-type: none">— uid=\$machine— startdir=system— cat=prompt— ulogon=n• If context=u the following defaults are assumed.<ul style="list-style-type: none">— uid=\$user— startdir=\$user— cat=prompt— ulogon=y <p>The CM-AM defaults are: u if started with a user logged on; m if no user is logged on.</p> <p>There is no default for CM Application Self-service Manager; all components are processed.</p>

Parameter	Explanation
flushu	<p>If local=y (see next parameter in this table):</p> <ul style="list-style-type: none"> Specify Y on user connects in order to send reporting objects to the CM Configuration Server at the end of the local connect for immediate feedback. This is the default behavior on user connects. Specify flushu=n to prevent the reporting objects being sent to the CM Configuration Server. Be aware that the user's objects will continue to grow until they are sent to the CM Configuration Server. <p>On a machine connect, set flushu=a to send all reporting objects to the CM Configuration Server.</p> <p>The default for both CM agents is Y.</p>
local	<p>Specify Y to install resources, from the local CM agent computer, for the user's services. Use this only with context=u. Usually, this is used with cat=m.</p>
machfreq	<p>This parameter specifies whether and how frequently CM will run. It can be used to prevent CM from running every time a CM agent computer reboots.</p> <p>If set to an integer (<i>n</i>) a machine connect will run only if it has been <i>n</i> hours since the most recent machine connect. This will reduce the number of CM OS Manager commits on a thin agent computer by ensuring that the CM agent will not run more than once within the specified number of hours.</p> <p>If machfreq=0, the machine connect will run on every reboot of the thin client.</p>
mnt	<p>Specify (Y N) whether to process CM agent self-maintenance on this connect.</p> <p>The default for both CM agents is N.</p>
ulogon	<p>This parameter display/hide the logon panel; it is valid only if cat=prompt.</p> <p>Note: If using the CM System Tray, specify ulogon=n to display the CM logon panel, which is not supported by CM System Tray.</p> <p>The CM-AM default is N.</p> <p>The CM-ASM default is Y.</p>

Parameter	Explanation
userfreq	<p>Use this variable to prevent CM from running every time a user logs into the CM agent computer. It is valid only if context=u.</p> <p>If set to an integer (<i>n</i>) a user connect will run only if it has been <i>n</i> hours since the most recent user connect or if a machine connect has run.</p> <ul style="list-style-type: none"> • If machfreq=0, a user connect will run only if a machine connect has run since the last user connect. • If the value of userfreq is blank or not supplied, a user connect will run every time a CM agent connect is run with context=u.

Client Operations Profiles

These parameters are used for specifying how to use Client Operations Profiles. For more information, see Chapter 5, Configuring Client Operations Profiles, starting on page 97.

Table 37 RADSKMAN Client Operations Profiles Parameters

Parameter	Explanation
cop	<ul style="list-style-type: none"> • Specify Y to enable Client Operations Profile resolution for this CM agent connect only. • Specify N to disable Client Operations Profiles resolution for this CM agent connect only. <p>The default for both CM agents is N.</p>
datauri	Add datauri (in the Universal Resource Identifier format) to the RADSKMAN command line to override the use of the SAP object for the DATA type.
product	If you used the SAP.PRODUCT attribute to identify that a SAP can be used with a specific product only, specify that product using this parameter. Multiple product filters must be separated by a comma.
rcsuri	Add rcsuri (in the URI format) to the RADSKMAN command line to override the use of the SAP object for the RCS type. See Creating the Universal Resource Identifier on page 104 for more information on this parameter.

Process

Process parameters involve service processing such as whether to repair or add applications on the current CM agent connect. These parameters also allow you to specify criteria for: service processing, sending application data to a CM Proxy Server, and handling SSL security for your CM agents.

Table 38 RADSKMAN Process Parameters

Parameter	Explanation
Add	Specify (Y N) whether to install applications during this CM agent connect. The default for both CM agents is Y .
autofix	Specify (Y N) whether to automatically repair broken applications. The default for both CM agents is Y .
catexp	Use this parameter (in the format <i><attribute name>:<value></i>) to process applications based on a specific attribute in the ZSERVICE Class. Note: Specify multiple “or” conditions with a forward slash (/).
del	Specify (Y N) whether to delete applications during this CM agent connect. The default for both CM agents is Y .
merge	Specify an object name to have all variables in that object included in the ZMASTER object, and sent to the CM Configuration Server.
mnt	Specify (Y N) whether to process CM agent self-maintenance on this connect. The default for both CM agents is N .
preload	Used for CM Staging Server preloading. Specify Y to use the the IDMDATA directory that is specified in NVD.INI. Otherwise, specify the location of a directory into which the files will be copied.
rep	Specify (Y N) whether to repair applications during this CM agent connect. The default for both CM agents is Y .

Parameter	Explanation
sendcat	Specify Y to send the service list, stored in the CM agent computer's ASERVICE object, to the CM Configuration Server at the end of the connect so that additional analysis can be done on it.
sslmgr	Specify the hostname or IP address of the CM Configuration Server. Note: To perform CM agent self-maintenance over a secure channel (SSL), add the flag <code>:sm</code> to the end of the SSL Manager IP address.
sslport	Specify the SSL communications port (normally, 443).
upd	Specify (Y N) whether to update applications during this CM agent connect. The default for both CM agents is Y .
ver	Specify (Y N) whether to verify applications during this CM agent connect. The default for both CM agents is Y .

RADSKMAN Examples

The following examples are provided to illustrate common uses of RADSKMAN.

Perform a first catalog refresh that brings down the catalog (`aservice.edm`), runs self-maintenance, does not display the user logon panel if using CM Application Manager, and processes all mandatory applications:

```
radskman ip=10.10.10.15,port=3464,mname=radia,  
dname=software,cat=prompt
```

Perform a silent, full connect for user `<machine name>` with no user logon or progress indicator panels. This is a typical command used by a daily timer. Note that the value of `ip=` can be either a DNS name or an IP address:

```
radskman ip=test.corp.com,port=3464,mname=radia,  
dname=software,cat=prompt,uid=$machine,ulogon=n,ind=n
```

Verify mandatory applications without updating the catalog, running self-maintenance, or repairing broken applications. Note that, prior to using `cat=n`, the machine must perform a first refresh catalog using `cat=prompt` at least once to bring down the catalog:

```
radskman ip=10.10.10.15,port=3464,mname=radia,  
dname=software,cat=n,autofix=n
```

Install an application (WINZIP) while updating only the catalog. Note that the CM Configuration Server uses a custom port number:

```
radskman ip=10.10.10.15,port=5004,mname=radia,  
dname=software,cat=y,sname=WINZIP
```

Process all mandatory applications, handle reboot requests, and prompt the user with a panel to confirm the reboot request:

```
radskman ip=10.10.10.15,port=3464,mname=radia,  
dname=software,cat=prompt,hreboot=Y,ask=Y
```

Silently preload a CM Staging Server using the default location of RADSTAGE. (This syntax is often run by a daily or weekly timer instance that is deployed to a CM agent that is co-located with the CM Staging Server.) Note that the `preload` parameter automatically suppresses the user logon and progress indicator panels. It also does not run any methods (ZCREATE, ZVERIFY, etc.) or evaluate any expressions on the CM Configuration Server:

```
radskman ip=10.10.10.15,port=3464,uid=STAGER,preload=Y
```

Preload a stager using a location of `d:\stager` and display the progress indicator panels. Note that if the CM System Tray feature is enabled, the progress indicator will be displayed in the CM System Tray information bubble. If the CM System Tray is disabled, the progress indicator will be displayed in a separate panel:

```
radskman ip=10.10.10.15,port=3464,uid=STAGER,  
preload=d:\stager,ind=Y
```

Perform a machine connect:

```
radskman context=m
```

- Note that because `context=m` and no other parameters were passed, the following default values are assumed:

```
ip=NOVARCS, port=3464, uid=$machine, startdir=system,  
cat=prompt, ulogon=n, mname=Radia, dname=software
```

Perform a user connect:

```
radskman context=u
```

- Note that because `context=u` and no other parameters were passed, the following default values are assumed:

```
ip=NOVARCS, port=3464, uid=$user, startdir=$user,  
cat=prompt, ulogon=y, mname=Radia, dname=software
```

Perform a user connect only if: a machine connect has occurred *and* at least 12 hours have passed since the most recent user connect:

```
radskman context=u,userfreq=12
```

Deployment Methods

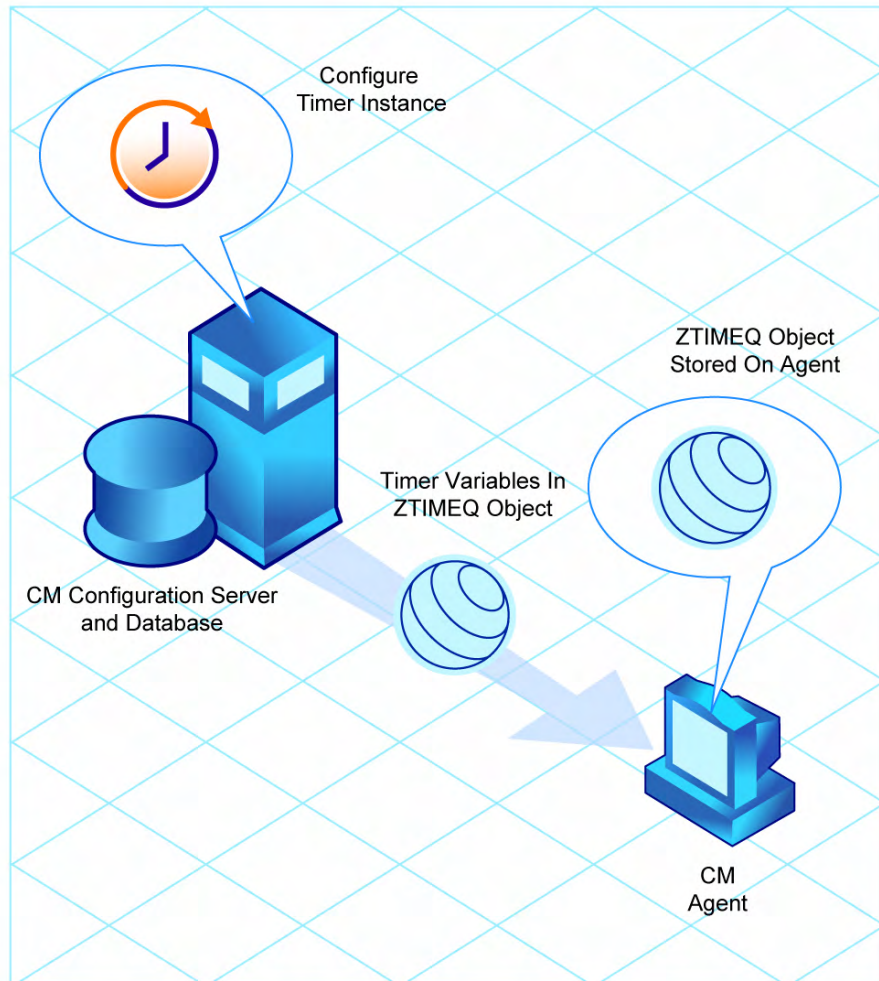
This section details the CM Scheduler (starting below) and CM Notify (starting on page 194) deployment methods. You can use multiple methods to deploy a service.

CM Scheduler

The CM Scheduler service, RADSCHEM, is installed with the CM Application Manager on the CM agent computer and allows you to deploy a service at a pre-determined time. The CM Scheduler runs as a system service that starts automatically.

To schedule the deployment of a service, configure a timer in the CM Configuration Server Database. When the CM agent computer connects to the CM Configuration Server, the timer information is transferred to the CM agent computer in the ZTIMEQ object.

Figure 7 Transferring the timer instance



This section describes how to create and configure a timer instance and then connect it to a service. Before creating and configuring a timer, consider the following.

- What time of day should the timer expire? Be sure to consider network traffic.
- How often should the timer to expire? Daily? Weekly? Hourly?

- Does the timer need to expire more than once? Is this timer for a one-time installation of an application or one that will periodically check for mandatory applications?
- What should happen when the timer expires? Do you want to install, remove, or update an application?

Scheduled Deployment Strategy

One of the suggested strategies for implementing the CM Application Manager agent is *scheduled deployment*. This strategy installs a set of mandatory applications when you install the CM Application Manager, and transfers to the CM agent computer a timer that periodically checks for new mandatory applications.

Use the following exercise to create a sample timer that updates all mandatory services on a weekly basis and which randomly expires between 5:00 PM and 7:00 PM in order to alleviate network congestion. Use the information in this section to configure timers for your CM environment.


Creating a Timer

Use the CM Admin CSDB Editor to create a Scheduling (TIMER) instance in the SOFTWARE Domain.

To create a TIMER instance in the SOFTWARE Domain

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Admin CSDB Editor Security Information dialog box opens.

 The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation. You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

- 2 If necessary, type a User ID and Password, and then click **OK**.

The CM Admin CSDB Editor window opens.

- 3 Navigate down through the **PRIMARY** File and **SOFTWARE** Domain, and right-click the **Scheduling (TIMER)** Instance.
- 4 Select **New Instance**.

The Create Instance dialog box opens.

- 5 Type a name (such as **Mandatory Apps Timer**) for the timer instance, and click **OK**.

The TIMER instance appears in the **Scheduling (TIMER)** Class.

Scheduling (TIMER) Class Attributes

The TIMER instance attributes (described in Table 39) contain the information that is needed to execute the timer on the CM agent computer.

Table 39 Scheduling (TIMER) Class Attributes

Attribute	Usage
<code>_ALWAYS_</code>	Stores connections to other instances.
NAME	The friendly name for this instance.
PINGDLAY	If <code>ZNOPING=N</code> , PINGDLAY specifies the time (in milliseconds) between pings. The default is 2000 .
PINGCNT	If <code>ZNOPING=N</code> , PINGCNT specifies number of ping attempts. The default is 3 .
RETRYINT	Specify the number of minutes to wait between command executions. Note: This is ignored if <code>RETRYFLG=N</code> .
RETRYLMT	Specify the number of times to retry the command. <ul style="list-style-type: none">• Specify 0 to retry until the command succeeds. Note: This will be ignored if <code>RETRYFLG=N</code> .
NETAVAIL	Use to check the availability of the network. <ul style="list-style-type: none">• Specify Y to check for network availability before executing the TIMER instance. If the network is not available, network availability will be checked every time the timer wakes up until the network is available.• Specify N (the default) and the TIMER instance will be executed without checking for network availability.• Specify W to check for network availability before executing the TIMER 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.

Attribute	Usage
RETRYFLG	<p>Use to specify the retry activity.</p> <ul style="list-style-type: none"> • Specify Y to retry the command up to <RETRYLMT>, ignoring the end time for the timer. • Specify w to retry the command up to up to <RETRYLMT>, but stop retrying after the specified limit time has passed. • Specify N to not retry. <p>Note: A return code other than 200 will indicate success, and stop the retries.</p>
RETRYRC	<p>Specify return codes that qualify for the retry logic.</p> <p>If this variable does not exist or is blank, RETRYRC will default to 200 which means there was a fatal error due to a network connection failure with the CM 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.</p> <p>Example: RETRY=200 , 202 , 209</p>
ZNOPING	<p>Use this attribute to control automatic sensing of a network connection between the CM agent computer and the CM Configuration Server. The default is Y.</p> <ul style="list-style-type: none"> • Specify Y to prevent the Scheduler service from pinging the CM Configuration Server. This is especially useful for mobile users. • Specify N to have the Scheduler service to ping the CM Configuration Server. • Specify w if you are specifying an end limit in the ZCHDEF attribute. The Scheduler will ping the CM Configuration Server before executing the command. If the CM Configuration Server is unavailable, the ZPENDING flag will be set to W. If the ZSCHEDEF has a limit time, then, when that time passes, the ZPENDING flag will be set to N and the Scheduler will not attempt to execute the command until its next scheduled time. <p>An expired timer continually evaluates whether communications with the CM 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 CM Configuration Server.</p>

Attribute	Usage
	<p>If the CM Configuration Server is successfully pinged, the command in ZRSCCMDL executes and the ZPENDING attribute—in the CM agent’s ZTIMEQ object—is set to N, to indicate that the Scheduler service does not need to ping the CM Configuration Server again.</p> <p>If the CM Configuration Server is not successfully pinged, the timer is not processed any further, and the ZPENDING attribute value remains Y, to indicate that the next time the Scheduler service “pops,” it should ping the CM Configuration Server again.</p>
ZRSCCMDL	<p>Use this attribute to specify the command line that is executed on the CM agent computer when the timer expires.</p> <p>Use RADSKMAN to verify and update CM-managed mandatory applications. See Connection Parameters (RADSKMAN) on page 165 for a list of the parameters and examples.</p>
ZSCHDEF	<p>Use this attribute to specify when the timer expires. The syntax for this attribute varies depending on the frequency, which can be DAILY, HOURLY, WEEKLY, MONTHLY, INTERVAL, MONTHDAY, NUMDAY, WEEKDAY, or STARTUP.</p> <p>See Specifying the Timer Expiration on page 183 for instructions on how to set ZSCHDEF.</p>
ZSCHFREQ	<p>Use this attribute to specify how often the timer should expire.</p> <ul style="list-style-type: none"> • Specify ONCE to have the timer to expire one time. • Specify PERIODIC to have the timer to expire repeatedly. • Specify RANDOM to have the timer to expire in random intervals. <p>See Deploying Applications over a Period of Time on page 189 for more information.</p>
ZSCHTYPE	<p>This attribute is valid only when ZSCHFREQ=PERIODIC. Valid values are IMMEDIATE and DEFERRED.</p> <p>Specify DEFERRED 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>Example 1</p> <p>Assume a timer with ZSCHDEF=DAILY (&ZSYSDATE , 04 : 00 : 00).</p> <ul style="list-style-type: none"> • If ZSCHTYPE=IMMEDIATE and it is: <ul style="list-style-type: none"> — Earlier than 4:00 a.m., the command in the instance will be

Attribute	Usage
	<p>executed the same day at 4:00 a.m.</p> <ul style="list-style-type: none"> — Later than 4:00 a.m., the command in the instance will be executed immediately. • If ZSCHTYPE=DEFERRED and it is: <ul style="list-style-type: none"> — Earlier than 4:00 a.m., the command in the instance will be executed the same day at 4:00 a.m. — Later than 4:00 a.m., the command in the instance will be executed the next day at 4:00 a.m. <p>Example 2</p> <p>Assume a timer with ZSCHDEF=WEEKDAY (FRIDAY , 04 : 00 : 00).</p> <ul style="list-style-type: none"> • If ZSCHTYPE=IMMEDIATE and it is: <ul style="list-style-type: none"> — 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. — Later than 4:00 a.m. on Friday, the command in the instance will be executed immediately. • If ZSCHTYPE=DEFERRED and it is: <ul style="list-style-type: none"> — Not Friday, the command in the instance will be executed on the next occurring Friday, at 4:00 a.m. — 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. — 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.
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>
<p><i>The values for the following attributes are inherited from the _BASE_INSTANCE_ of the TIMER Class; they should not be edited.</i></p>	
RUNSYNC	<p>Specifies whether synchronous timer execution will take place. The default value is Y.</p>
ZOBJPRI	<p>The deployment priority level (relative to the other elements being deployed during the CM agent connect) of the ZTIMEQ object. A value of 90 is inherited from the _BASE_INSTANCE_.</p> <p>Note: Elements with priority levels that are lower than this value will be deployed before this ZTIMEQ object.</p>

Attribute	Usage
ZSCHMODE	The timer owner. Leave as Default.
ZSVCOID	The object ID of the Application instance to which this Scheduling instance is connected.
ZCHNNAME	The CM-CSDB domain that contains the Application instance to which this Scheduling instance is connected.
ZPRVNAME	The name of the CM 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 CM agent computer. The value is inherited from the <code>_BASE_INSTANCE_</code> .
ZVERIFY	The Scheduler “verify” method that runs on the CM agent computer. The value is inherited from the <code>_BASE_INSTANCE_</code> .
ZUPDATE	The Scheduler “update” method that runs on the CM agent computer. The value is inherited from the <code>_BASE_INSTANCE_</code> .
ZDELETE	The Scheduler “delete” method that runs on the CM 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*, 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 the `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 40 on page 185 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**.

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, 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 40 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>&SYSDATE,time[,limit time]</code></p> <p>Example: <code>ZSCHDEF=HOURLY (&ZSYSDATE,04:30:00)</code></p> <p>Note: If <code>ZSCHFREQ=RANDOM</code>, the <i>start time</i> and <i>end time</i> parameters are activated.</p> <p>Syntax: <code>&SYSDATE,start time,end time[,limit time]</code></p> <p>Example: <code>ZSCHDEF=HOURLY (&ZSYSDATE,04:30:00,09:00:00)</code></p> <p>For more information, see the section Specifying the Timer Expiration on page 183.</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>&SYSDATE,time[,limit time]</code></p> <p>Example: <code>ZSCHDEF=DAILY (&ZSYSDATE,12:00:00)</code></p> <p>Note: If <code>ZSCHFREQ=RANDOM</code>, the <i>start time</i> and <i>end time</i> parameters are activated.</p> <p>Syntax: <code>&SYSDATE,start time,end time[,limit time]</code></p> <p>Example: <code>ZSCHDEF=DAILY (&ZSYSDATE,12:00:00,14:00:00,18:00:00)</code></p> <p>For more information, see the section Specifying the Timer Expiration on page 183.</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>&SYSDATE,time[,limit time]</code></p> <p>Example: <code>ZSCHDEF=WEEKLY (&ZSYSDATE,08:00:00)</code></p>

Attribute	Description
	<p>Note: If <code>ZSCHFREQ=RANDOM</code>, the <i>start time</i> and <i>end time</i> parameters are activated.</p> <p>Syntax: <code>&SYSDATE, start time, end time[, limit time]</code></p> <p>Example: <code>ZSCHDEF=WEEKLY (&ZSYSDATE, 08:00:00, 12:00:00, 14:00:00)</code></p> <p>For more information, see the section <i>Specifying the Timer Expiration</i> on page 183.</p>
INTERVAL	<p>The timer will expire and run every <i>n</i> minutes starting at the specified time (but not later that the specified limit time), based on the system's date.</p> <p>Syntax: <code>&SYSDATE, time, [limit time], interval</code></p> <p>Example: <code>ZSCHDEF=INTERVAL (&ZSYSDATE, 04:00:00, 06:00:00, 30)</code></p> <p>Notes: INTERVAL must be specified in minutes.</p> <p>The third comma is required regardless of whether a third argument is specified.</p> <p>If <code>ZSCHFREQ=RANDOM</code>, the <i>time</i> parameter is automatically replaced with two parameters, <i>start time</i> and <i>end time</i>.</p> <p>Syntax: <code>&SYSDATE, start time, end time, [limit time], interval</code></p> <p>Example: <code>ZSCHDEF=INTERVAL (&ZSYSDATE, 04:00:00, 23:00:00, 06:00:00, 30)</code></p> <p>For more information, see the section <i>Specifying the Timer Expiration</i> on page 183.</p>
WEEKDAY	<p>The timer will expire and run at the specified time (but not later that the specified limit time) on the specified weekday, every week.</p> <p>Syntax: <code>WEEKDAY, time[, limit time]</code></p> <p>Example: <code>ZSCHDEF=WEEKDAY (TUESDAY, 01:00:00)</code></p> <p>Note: If <code>ZSCHFREQ=RANDOM</code>, the <i>time</i> parameter is automatically replaced with two parameters, <i>start time</i> and <i>end time</i>.</p> <p>Syntax: <code>WEEKDAY, start time, end time[, limit time]</code></p> <p>Example: <code>ZSCHDEF=INTERVAL (TUESDAY, 04:00:00, 06:00:00, 10:00:00)</code></p> <p>For more information, see the section <i>Specifying the Timer Expiration</i> on page 183.</p>

Attribute	Description
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: <i>WEEKDAY, time, [limit time], week of the month</i></p> <p>Example: <code>ZSCHDEF=MONTHDAY (TUESDAY, 01:00:00, , 2)</code></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. The third comma is required regardless of whether a third argument is specified.</p> <p>If <code>ZSCHFREQ=RANDOM</code>, the <i>time</i> parameter is automatically replaced with two parameters, <i>start time</i> and <i>end time</i>.</p> <p>Syntax: <i>WEEKDAY, start time, end time, [limit time], week of the month</i></p> <p>Example: <code>ZSCHDEF=MONTHDAY (TUESDAY, 01:00:00, 04:00:00, , 2)</code></p> <p>Important Note: Consider the consequences of specifying an <i>end time</i> that spans midnight (occurs on the following day). For more information, see the section, Specifying the Timer Expiration on page 183.</p>
MONTHLY	<p>The timer will expire and run at the specified time (but not later than the specified limit time) on the <i>n</i>th of every month, starting in the specified month and year.</p> <p>Syntax: <i>date, time[, limit time]</i></p> <p>Example: <code>ZSCHDEF=MONTHLY (20040215, 01:00:00, 05:30:00)</code></p>

Attribute	Description
	<p>Note: If <code>ZSCHFREQ=RANDOM</code>, the <i>time</i> parameter is automatically replaced with two parameters, <i>start time</i> and <i>end time</i>. See the section, Specifying the Timer Expiration on page 183, for more information.</p> <p>Syntax: <i>date,start time,end time[,limit time]</i></p> <p>Example: <code>ZSCHDEF=MONTHLY (20040215,01:00:00,05:30:00,07:00:00)</code></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 <code>ZSCHDEF=MONTHLY (20040116,05:30:00)</code> and that the CM 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 <code>MONTHLY (20040216,05:30:00)</code> rather than <code>MONTHLY (20040218,05:30:00)</code>.</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 <i>n</i>th day (as specified by the 4th parameter).</p> <p>Syntax: <i>date,time,[limit time],number of days</i></p> <p>Example: <code>ZSCHDEF=NUMDAYS (20040803,18:00:00,21:30:00,14)</code></p> <p>Notes: The third comma is required regardless of whether a third argument is specified.</p> <p>If <code>ZSCHFREQ=RANDOM</code>, the <i>time</i> parameter is automatically replaced with two parameters, <i>start time</i> and <i>end time</i>.</p> <p>Syntax: <i>date,start time,end time,[limit time],number of days</i></p> <p>Example: <code>ZSCHDEF=NUMDAYS (20040803,18:00:00,21:30:00,22:00:00,14)</code></p> <p>For more information, see the section, Specifying the Timer Expiration on page 183.</p>

Attribute	Description
STARTUP	<p>When the CM Scheduler starts on the CM agent device, it will immediately execute all Timer instances that have ZSCHDEF=STARTUP specified.</p> <p>It will check for special conditions such as NETAVAIL, ZNOPING, and RETRYFLG.</p> <p>After executing all the STARTUP instances, RADSCHED will return to its regular timer loop. It will execute STARTUP instances in the regular timer loop only if the ZPENDING flag on that instance was set (because NETAVAIL or ZNOPING could not get through or RETRYFLG 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 CM 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 40 starting on page 185.

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 Navigate the CM Admin CSDB Editor 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 CM 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 CM agent computer, the Notepad application opens.

To specify a command line


- 1 Navigate the CM Admin CSDB Editor 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 CM agent connects to the CM 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 the CM Admin CSDB Editor, navigate down through the **PRIMARY** File, **SOFTWARE** Domain, and **Application (ZSERVICE)** Class, 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 a CM agent computer connects to the CM Configuration Server after the timer has been created, the timer information is transferred to the CM agent computer in the ZTIMEQ object, ZTIMEQ.EDM.

In the exercise that follows, you will force the CM agent computer to connect to the CM Configuration Server so that you can view the ZTIMEQ object.

To connect to the CM Configuration Server

- 1 On the CM agent computer, go to a command prompt and change the directory to the location of RADSKMAN (by default, *SystemDrive:\Program Files\Hewlett-Packard\CM\Agent*).
- 2 Type `radskman ip=manager_ip,port=mgr_port`.

Be sure to specify a valid IP address and port for the CM Configuration Server.



See [Connection Parameters \(RADSKMAN\)](#) on page 165 for information about RADSKMAN and the above parameters.

3 Press **Enter**.

After the CM agent connect completes, you can view the ZTIMEQ object on the CM 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 *SystemDrive:\Program Files\Hewlett-Packard\CM\Agent*) on the CM agent computer. Then, create a shortcut on the desktop of the CM agent computer.

Removing the Timer Object

After the timer expires, the ZTIMEQ object will be removed from the CM agent computer during its next connect to the CM 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 CM agent connect to the CM 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 CM agent connect to the CM Configuration Server.

Viewing the Timer Object

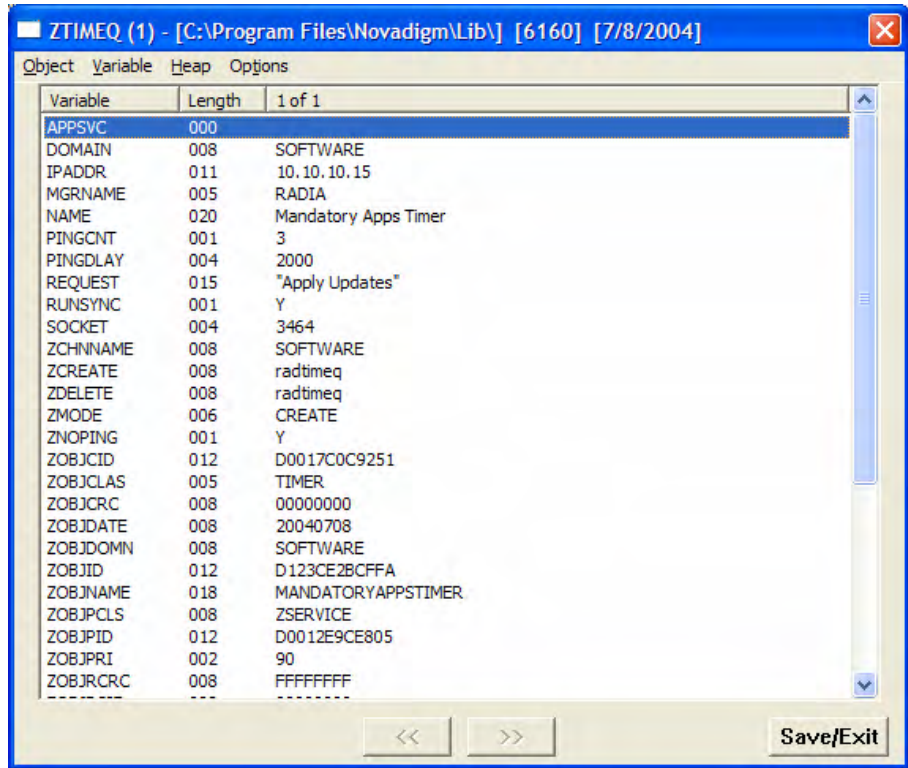
After having forced the CM agent to connect to the CM Configuration Server and retrieve the ZTIMEQ object, it can be viewed (and modified) via the CM Admin Agent Explorer, which was installed as part of the CM Administrator.

The ZTIMEQ object contains one instance for each Scheduling (TIMER) instance in the CM 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 CM agent computer

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin Agent Explorer**.
- 2 Double-click the **ZTIMEQ** object.

The ZTIMEQ object opens.



To modify a variable in the ZTIMEQ object, see the next section.

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 CM agent to see what happens in various situations.

To edit a variable in ZTIMEQ

- 1 Double-click the variable that you want to edit.
The Change Variable dialog box opens.
- 2 Type the new value.
- 3 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, `SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\Log`).

Table 41 describes the timer logs.

Table 41 **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>

CM Notify

CM Notify is used to force one or more CM agent computers to connect to the CM Configuration Server in order to install, update, or remove an application.

The CM Notify service runs in the background on each CM agent computer and waits to receive a Notify message from the CM Configuration Server. When a message is received, the CM agent computer connects to the CM

Configuration Server and performs the action that is indicated by the Notify operation.

CM Notify can also send e-mail notification to CM agent computers.

▶ If you are using the HP Configuration Management Portal, you can use the Notify Task. Refer to the *HP Configuration Management Portal Installation and Configuration Guide (CM Portal Guide)* for details.

You can initiate a Notify by:

- Selecting **Notify Subscribers** from the shortcut menu for an Application (ZSERVICE) instance. Use this option to update and remove applications only. You cannot use this type of Notify to install an application because it notifies existing subscribers.
- Creating a Drag-and-Drop Notify command. Use this option to install, update, and remove applications. The benefit of this type of Notify is that the application does not have to be installed on the CM agent computer to perform the Notify.

▶ Drag-and-Drop Notify is intended for environments with one CM Configuration Server. If your environment has multiple CM Configuration Servers, consider using the CM Portal.

Requirements for Using Notify

To use Notify

- The CM agent computer must connect to the CM Configuration Server prior to the notification. This populates the PROFILE File, which contains the CM agent computer's network address that is used by Notify.
 - ▶ Notify is designed to notify only subscribers whose information is in the PROFILE File in the CM Configuration Server Database.
- Confirm that the CM Configuration Server Notify task (**znfytmgr**) is properly configured in the CM-CS settings file, `edmprof.dat`, as shown below. The `edmprof` file and the relevant lines are created when the CM Configuration Server is installed.

```

[MGR_ATTACH_LIST]
ATTACH_LIST_SLOTS = 15
RESTART_LIMIT = 7
VERIFY_INTERVAL = 5
CMD_LINE=(zutilmgr) RESTART=YES
CMD_LINE=(zrexmgr) RESTART=YES
CMD_LINE=(ztcpmgr PORT=3464,NAME=tcpmgr_3464) RESTART=YES
CMD_LINE=(znfytmgr NAME=NotifyManager) RESTART=YES
CMD_LINE=(zrtrymgr) RESTART=YES

```

- If you are using Drag-and-Drop Notify to run a command, store the program that you want to execute in the `IDMSYS` directory (by default `SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\`).
- If you are using e-mail to notify subscribers, be sure that the subscriber's correct e-mail address is stored in the `EMAIL` attribute of the `USER` instance in the `USER` Class of the `POLICY` Domain.
- If you are using e-mail to notify subscribers, be sure that the `CM` Configuration Server is properly configured for e-mail.

Initiating a Notify from a ZSERVICE Instance

To update or remove a service, initiate the Notify from the shortcut menu for the Application (`ZSERVICE`) instance.

Notify communicates with `CM` agent computers that are members of an **audience list**. A `CM` agent computer is added to the audience list when `CM` installs an application onto that computer.

To initiate a Notify from a ZSERVICE Instance

- 1 Right-click the **Application (ZSERVICE)** instance, such as `ProDraw`.
A shortcut menu opens.
- 2 Select **Notify Subscribers**.
The Notify retrieves the list of subscribers from the `POLICY` Domain.
 - If the application does not have any subscribers, a warning message appears.
 - If the selected application does have subscribers, a message appears to confirm that you want to build an audience list.
- 3 Click **Yes** to confirm that you want to build an audience list.
The `CM` Notify Manager opens.

A list of subscribers to the application appears in the Audience List Details area.

- By default, the entire audience will be notified.
- To select individual subscribers, click **Remove All**. Then, select the appropriate subscribers and click **Select**.
- To remove an individual subscriber, select the appropriate subscriber and click **Remove**.

The total number of CM agent computers in the audience list and the number of selected CM agent computers are displayed at the bottom of the dialog box.

- 4 Click **Next** when you have finished selecting CM agent computers.
- 5 Select the **Notification Type** for all members of the audience list.

- **Send an Email**

Select this option to inform subscribers of an application's status.

The subscriber's e-mail attribute (EMAIL) in the user instance must contain a valid entry. Be sure to complete the Subject and Message fields.

- **Update the Application on the target machine(s)**

Select this option in order to install updates or new versions of an application on the CM agent computers.

- **Remove the Application on the target machine(s)**

Select this option in order to remove an application from the CM agent computers.

Typically, Notify removes the application without requesting permission from the CM agent. This allows removal of applications from unattended CM agent computers.

If you want to require the subscriber to give permission to remove an application, select the **Prompt for deletion on client** check box.

- 6 Click **Next** to continue.

The Notification Details dialog box opens.

By default, the Notify occurs immediately and generates an object in the NOTIFY File in the CM Configuration Server Database. The object is named according to the date and time of the Notify action in the following format: YYYY_MM_DD_HH_MM_SS.

Use this dialog box to create a custom domain in which to store the object or to defer the notify action to a later time or date.

- Select **Use Custom Notify Domain** and type a name for the new domain—located in the NOTIFY File of the CM-CSDB.
 - Select **Deferred Notify** and use the Time (hh/mm) drop-down lists and the calendar controls to schedule the Notify.
- 7 Click **Next**.

The Notification Summary dialog box opens.
 - 8 Click **Finish** to begin the Notify.


A message asks if you want to start the status monitor.
 - 9 Click **Yes** to view the status of the Notify.

A dialog box opens with a list of the subscribers and the status of the notification.
 - 10 Click **Refresh** to update the Status Monitor.
 - 11 Click **Close** when you have finished.

Creating a Drag-and-Drop Notify Command

Use a Drag-and-Drop Notify command to initiate an immediate Notify to one or more subscribers. The benefit of this is that the application does not have to be installed on the CM agent computer in order to perform the Notify. You might use this type of notify to install software, update all mandatory services, or even run an executable on the CM agent computer.

The Drag-and-Drop Notify works only if the CM agent computer has connected to the CM Configuration Server prior to the notification. This populates the PROFILE File, which contains the CM agent computer's network address.

-  The Drag-and-Drop Notify is intended for use in environments with one CM Configuration Server.

If you are working in an environment with multiple CM Configuration Servers, consider using the Push Manager.

In the following example, we will create a command that will update all mandatory services that are on your CM agent computers.

To create a Drag-and-Drop Notify

- ▶ To use a Drag-and-Drop Notify to run a command, the program that you want to execute must be stored in the `IDMSYS` directory (by default `SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\`).

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Admin CSDB Editor Security Information dialog box opens.

- ▶ The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation. You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

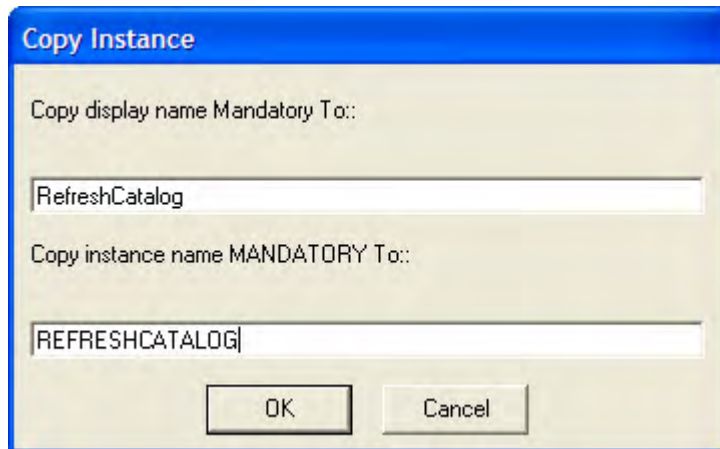
- 2 If necessary, type a User ID and Password, and then click **OK**.

The CM Admin CSDB Editor window opens.

- 3 In the CM Admin CSDB Editor, navigate down through the **PRIMARY** File, **SYSTEM** Domain, and **Application Manager (ZCOMMAND)** Class.

- 4 Right-click the **Mandatory** Instance, and select **Copy Instance**.

The Copy Instance dialog box opens.



Copy Instance

Copy display name Mandatory To:.

Copy instance name MANDATORY To:.

OK Cancel

- 5 Type a display name (such as RefreshCatalog) and name for the instance in the appropriate text boxes, and click **OK**.

The **RefreshCatalog** Instance appears in the list of ZCOMMAND Class instances.

- 6 Double-click the instance in the tree view.

The attributes appear in the list view.

- 7 Double-click the **ZCMDPRMS** attribute.

The Edit Instance dialog box opens.

- 8 Type the command line that you want to execute on the CM agent computer. For example:

```
radskman ip=mgr_ip,port=mgr_port
```

This command line updates/installs all new and old mandatory applications. See [Specifying the Command Line](#) on page 190 for more information.

- 9 Click **OK**.

- 10 Click **Yes** to confirm that you want to save your changes.

- 11 From the POLICY Domain, select a User, Workgroup, or Department instance and drag it to the RefreshCatalog command.

- 12 When the cursor changes to a wand, release the mouse button.

The Notify is immediately sent to the specified subscribers and the command line in ZCMDPRMS is executed.

Retrying a Notify

Sometimes a subscriber cannot be notified. This could occur for one of the following reasons:

- The CM agent computer is powered off.
- The subscriber does not have a valid e-mail address listed in the CM Configuration Server Database.
- The CM agent computer is not running the CM Notify service.
- The CM agent computer is not accessible via the standard communications channel.

An unsuccessful Notify attempt creates an instance in the RETRY Domain of the NOTIFY File. The RETRY Domain is created the first time a Notify fails.

By default, CM automatically retries the Notify. To do this, the CM Configuration Server is started with the Notify Retry Manager (ZRTRYMGR

task), as indicated in the following excerpt from the CM Configuration Server settings `edmprof` file, located in the `bin` directory of the CM Configuration Server installation directory.

```
[MGR_ATTACH_LIST]
ATTACH_LIST_SLOTS = 15
RESTART_LIMIT = 7
VERIFY_INTERVAL = 5
CMD_LINE=(zutilmgr) RESTART=YES
CMD_LINE=(zrexmgr) RESTART=YES
CMD_LINE=(ztcpmgr PORT=3464,NAME=tcpmgr_3464) RESTART=YES
CMD_LINE=(znfytmgr NAME=NotifyManager) RESTART=YES
CMD_LINE=(zrtrymgr) RESTART=YES
```



After modifying the `edmprof` file, restart the CM Configuration Server service in order to ensure that the changes take effect.

For more information on editing the CM Configuration Server Settings file, refer to the *HP Configuration Management Configuration Server User Guide (CM Configuration Server Guide)*.

By default (check the value of `VERIFY_INTERVAL` in the `edmprof` file excerpt above), every five minutes the Notify Retry Manager will examine the NOTIFY File's RETRY Domain. The Notify Retry Manager will attempt the Notify operation for each instance it finds in the RETRY Domain.

Viewing the Results of a Notify

You can find information about a Notify:

- In the CM Admin CSDB Editor, in the NOTIFY File. See *Viewing an Instance in the NOTIFY File*, starting below.
- In the Status Monitor accessed from the NOTIFY File in the CM Admin CSDB Editor. See *Viewing Results of a Notify or Retry in the Status Monitor*, starting on page 203.
- In the CM Configuration Server log. The log file is stored on the CM Configuration Server in the `LOG` directory (by default, `SystemDrive:\Program Files\Hewlett-Packard\CM\ConfigurationServer\log`).

Viewing an Instance in the NOTIFY File

The NOTIFY File is created in the CM-CSDB after the first Notify is initiated. Each Notify operation creates one object in the NOTIFY File. The

objects are named in the format, YYYY_MM_DD_HH_MM_SS, according to the date and time of the Notify action. In each object there is an instance for each subscriber that was notified. Each instance contains important information about the subscriber and the notify operation.

To view an Instance in the NOTIFY File

- 1 In the CM Admin CSDB Editor, double-click **NOTIFY**.

Notice that there are several default Notify objects; each represents a single Notify operation. The objects are named according to the date and time of the Notify action in the following format:
YYYY_MM_DD_HH_MM_SS.

The custom NOTIFY Domain, REDBOX, is also a Notify object. However, this Notify was given a custom domain name in the Notification Details dialog box.

Finally, notice the RETRY Domain. The first unsuccessful Notify creates the RETRY Domain and an instance in it.

- 2 Double-click the Notify object that you want to review.
- 3 Double-click **NOTIFY**.

The NOTIFY File is divided into domains, with each domain representing one Notify operation. The name of the domain is in the form YYYY_MM_DD_HH_MM_SS, representing the date and time when the Notify operation was initiated.

Each NOTIFY Domain has one NOTIFY Class. Each NOTIFY Class contains an Instance for each subscriber that was notified. The instances are named with eight-digit numbers, starting with 00000001 and running sequentially up to the total number of notified subscribers.

Each Instance contains attributes that identify the subscriber, the kind of Notify operation, and the results of the Notify operation for that subscriber.

- 4 Review the attributes in the list view.

The following table describes the Notify Instance's attributes.

Table 42 Attributes in the NOTIFY Instance

Attribute	Description
ZUSERID	The USER, WORKGRP or DEPT that was notified.

Attribute	Description
ZCIPADDR	The IP address of the CM agent computer.
EMAIL	The subscriber's e-mail address (if using e-mail notification).
NTFYTYPE	The type of notify, such as E for e-mail notification.
NTFYDATE	The date of the Notify.
NTFYTIME	The time of the Notify.
NTFYMSG	A message indicating the status of the Notify, such as "Successfully notified."
NTFYRC	The return code that was generated for a Notify.
NTFYCMDL	The command line that the Notify executed.
NTFYSUBJ	The subject of the e-mail that is sent (if using e-mail notification).
LOCALUID	The user ID for the subscriber that is currently logged on to the computer.
NTFYRTIM	The time at which the notification should execute.
NTFYRNUM	The number of times to retry the Notify.
NTFYDOMN	The name of the domain in which this instance is stored.
NTFYINS	The name of this instance.
NTFYPORT	The registered port for Notify.
NTFYPWD	The encrypted password for the Notify.
NTFYUINF	The user information passed to the Notify operation from the Notify Manager.
NTFYRMAX	The maximum number of times to retry the Notify.
NTFYDLAY	The amount of time (in seconds) to wait before retrying the Notify.
NTFYMAC	The physical address of the CM agent computer. This is used for Wake-on-LAN.
NTFYMASK	The network mask. This is used for Wake-on-LAN.

Viewing Results of a Notify or Retry in the Status Monitor

Use the Status Monitor to review the results of a Notify or Retry operation for all of your subscribers.


To see the status of a Notify or Retry

- 1 In the CM Admin CSDB Editor, double-click **NOTIFY**.
- 2 Right-click the appropriate Notify Domain or the **RETRY Domain** for which you want to see the status.
- 3 Click **Status Delete** to delete the status information.
or
Click **Status Display** to display the Status Monitor.
- 4 Click **Refresh** if you think the status might have changed.
or
Click **Close** to close the Status Monitor.

Drag-and-Drop Notify for Wake-On-LAN Clients

CM can issue a wake-up packet to remotely power-on CM agent computers that have been configured for Wake-On-LAN (WOL).

The CM Admin CSDB Editor facilitates the configuring of the WOL agent computers to which you want to assign Drag-and-Drop Notify eligibility (DDN).

-  In order to perform Drag-and-Drop Notify for Wake-On-LAN agents, two settings must be added to the CM Configuration Server Settings file. Refer to the *CM Configuration Server Guide* for more information.

Assigning CM Agents using DDN

The ease and straight-forwardness of the drag-and-drop functionality dramatically simplifies assigning DDN-eligibility to WOL agents. Use the CM Admin CSDB Editor to connect Notify instances to a USER, WRKGRP, DEPT, and SERVICE.

In order to take advantage of the drag-and-drop feature to assign CM agents for WOL Notify, use the CM Admin CSDB Editor. When you have accessed the CM Admin CSDB Editor, you can click and hold a Notify instance, drag it to the instance to which you want it connected, and release (drop) it onto it, thereby creating the connection. Refer to the *HP Configuration Management Administrator User Guide* for information about performing drag-and-drop connections.

Overview of CM Admin CSDB Editor Steps


The agent computer's MAC (Media Access Control) address and sub-net value must be reported in the ZCONFIG object of the PROFILE File. (These values are LADAPT01 and SUBNET01, respectively, in the ZCONFIG object.)

This section outlines the steps you must take once you have accessed the CM Configuration Server Database with the CM Admin CSDB Editor.

To configure a WOL client for DDN

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Admin CSDB Editor Security Information dialog box opens.


 The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation. You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

- 2 If necessary, type a User ID and Password, and then click **OK**.

The CM Admin CSDB Editor window opens.

- 3 Double-click **PRIMARY**.
- 4 Navigate to the **POLICY** Domain.
- 5 Within the POLICY Domain, create a new USER instance, for example, USER1.
- 6 Perform a CM agent connect to the CM Configuration Server with the user ID, USER1.

This will populate the database with the necessary agent information.

 In order to perform DDN, the user must exist, with the ZCONFIG and ZMASTER objects, in the CM Configuration Server PROFILE File.

Next, you will need to verify the values in the **HARDWARE_SCAN**.

- 7 Open the **HARDWARE_SCAN** object under PROFILE.USER1.ZCONFIG, and check that the **LADAPT01** and **SUBNET01** attributes are present.



In order to perform the DDN for WOL to wake up this machine you will need to shut down the CM agent machine (USER1).

Next, you will need to create and configure a new instance for the Drag-and-Drop Notify in the CM Configuration Server Database.

- 8 Use the CM Admin CSDB Editor to create a new instance (for example, DDN_WOL) under PRIMARY.SYSTEM.ZCOMMAND.
- 9 Specify the following parameters:

ZCMDPRMS: **radskman ip=manager_ip, port=mgr_port**

Note: For more information on RADSKMAN, see [Specifying the Command Line](#) starting on page 190.

ZCMDTYPE: **EXE**

ZCMDNAME: **NOTIFY**

- 10 Set up the POLICY.USER1 Instance for DDN by dragging the instance to the ZCOMMAND.DDN_WOL Instance and dropping it on to it.

You have successfully configured a new WOL user for Drag-and-Drop Notify.

To verify the success of the configuration

On the CM agent machine:

- 1 Wait approximately ten minutes before checking the CM agent log.
- 2 Access C:\Program Files\Hewlett-Packard\CM\Agent\Log and check the RADNTFYD.log and verify the times of the following entries.

These times should match the time at which you did the Notification.

```
SyncObjFrmDisk  EDM009461 01.254 13:40:30 Total [0001] pools restored (v161)
EDMNTFYD        EDM000001 01.254 13:40:30 Password verification has not been requested
EDMNTFYD        EDM000001 01.254 13:40:30 Path restricted to EDMSYS subdirectory
EDMNTFYD        EDM000001 01.254 13:40:30 Userid verification has been disabled
Pooltab_replace EDM009453 01.254 13:40:30 Pool [C:\PROGRAM~1\HEWLETT-PACKARD\CM\AGENT\
LIB\ZLOCAL.EDM] has [5] variables and [1] heaps of size [1024] each (v153)
Edm_ObjPtr_Save EDM009443 01.254 13:40:30 Object [ZLOCAL  ] being saved (v143)
EDMNTFYD        EDM000001 01.254 13:40:30 UID: user1
EDMNTFYD        EDM000001 01.254 13:40:30 CMD: radskman mame=rad_manager,dname=software,
ip=208.244.231.61,port=3464,startdir=$machine,ulogon=n,hreboot=y
nvd_exec        EDM000512 01.254 13:40:30 Module Information: Rev 1.105 Oct 30 2000 11:18:08
nvd_exec        EDM000010 01.254 13:40:30 NVD_EXEC CALLED: Program [C:\PROGRA~1\HEWLETT-
PACKARD\CM\AGENT \radskman] PARAMETERS[mname=rad_manager,dname=software,
ip=208.244.231.61,port=3464,Zstartdir=$MACHINE,u_logon=n,hreboot=y]
```

EDMNTFYD EDM000001 01.254 13:40:31 Closing socket #44

CloseLogFile EDM000001 01.254 13:40:31 Closing log file on [Tues Sep 11 13:40:31 2001]

On the CM Configuration Server machine:

- 1 From the CM Admin CSDB Editor, right click the Notify Domain.
- 2 Select **Refresh**.
- 3 Note that a new file, NOTIFY has been created.



The NOTIFY File will be created on the first notification event only.

- 4 Verify the notification event.

Summary

- You can use the CM Scheduler and the CM Notify to *deploy applications*.
- A *RADSKMAN command line* is necessary for application deployment. RADSKMAN's parameters can be divided into five categories.
- The CM Scheduler service is installed with the CM Application Manager and allows you to *deploy a service at a pre-determined time*.
- CM Notify runs in the background on each CM agent computer and is used to *force CM agent computers to connect to the CM Configuration Server* in order to install, update, and remove applications. It can also be used to *send e-mail notifications* to CM agent computers.
- You can use a *Drag-and-Drop Notify command* to initiate a Notify to subscribers. Drag-and-Drop Notify is not dependent on an application being installed on the CM agent computer.

8 CM Application Self-service Manager User Interface

At the end of this chapter, you will:


- Know how to customize the CM Application Self-service Manager user interface.
- Understand how your subscribers can access the CM Application Self-service Manager user interface, and grant subscribers the ability to manage (install, update, verify, and remove) applications on their computers.
- Be able to use the CM Application Self-service Manager user interface from a subscriber's perspective.

The CM Application Self-service Manager User Interface

This section describes how to access and use the CM Application Self-service Manager user interface.

Accessing the User Interface

Depending on the installation, you will access the user interface through the Windows **Start** menu, or by double-clicking the CM Application Self-service Manager user interface icon on your desktop.

 A CM administrator can use the RADUICFG Class, in the CLIENT Domain, to control the display of the CM Application Self-service Manager user interface. For more information, see Table 25 on page 121.

To access the user interface

- 1 Go to **Start** → **Programs** → **HP OVCM Agent** → **CM Application Self-service Manager**.

The CM Subscriber Security Information dialog box opens.

- 2 If necessary, type your User ID and Password. If you do not know what these are, contact your network administrator.
- 3 Click **OK**.

The user interface opens.

Using the User Interface

The CM Application Self-service Manager user interface has four main sections.

- **Global Toolbar**
Allows you to refresh the catalog and pause or cancel the current action.

- **Side Bar**
Displays various menu choices available while using the CM Application Self-service Manager.
- **Catalog List**
Lists the different software catalogs available.
- **Service List**
Lists the applications to which you are entitled.

Global Toolbar

The Global Toolbar allows you to refresh the catalog, pause the current action, and cancel the current action. Once an action has been paused, no other action can take place until you either resume the action (by clicking the **Pause** button again), or cancel the action by clicking the **Cancel** button.

When one of the buttons in the Global Toolbar is not available for the current action it will appear grayed-out.

To refresh the catalog

- To refresh the selected catalog using the Global Toolbar, click **Refresh**.

To pause or resume the current action

- To pause the current action using the Global Toolbar, click **Pause**.
- To resume a paused action, click **Resume**. (The **Pause** button is replaced with this button after you pause an action).

To cancel the current action

- To cancel the current action using the Global Toolbar, click **Cancel**.

Side Bar

Use the Side Bar to configure and customize your CM Application Self-service Manager.

The following sections detail the icons on the Side Bar.

Home

Click this button to access your home catalog.

My Software

Click this button to display only services that you have installed. Click the button again to display all available software from the selected catalog.

Preferences

Click this button to access various display options, service list options, and connection options for the CM Application Self-service Manager.

At any point you can click on **OK**, **Apply**, or **Cancel** in the top right corner of the Preferences section to keep or disregard any changes you make.

Catalog List

The Catalog List section lists the available software catalogs and any virtual catalogs.

To select a catalog

- In the Catalog List, click on the CM Configuration Server catalog you would like to view in the Service List section. Refresh the catalog at any time by right-clicking on the name of the catalog and selecting Refresh from the shortcut menu.

Virtual Catalogs

Virtual catalogs are subsets of the default catalog defined by specifying a name in the CATGROUP value for a service. Any services with the same CATGROUP value will be grouped together in a virtual catalog.

To set the CATGROUP attribute

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Configuration Server Database Editor Security Information dialog box opens.



The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation.








You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.



- 4 If necessary, type a User ID and Password, and then click **OK**.
The CM Configuration Server Database Editor window opens.
- 5 Double-click **PRIMARY**.
- 6 Double-click **SOFTWARE**.
- 7 Double-click the name of the service you would like to add to a virtual catalog.
- 8 Double click the **CATGROUP** attribute and type the name of the virtual catalog to which you would like to add the service.
- 9 Click **OK**.

Service List

The Service List section lists the available applications. A check mark appears next to software that is already installed. The column headings can be customized, as described in Table 44 starting on page 217.

Table 43 Buttons in the CM Service List section

Button	Action	Description
	Install	Installs the selected service on your machine.
	Update	Updates the selected service.
	Verify	Verifies the files for the selected service.
	Repair	Repairs the selected service.
	Remove	Removes the selected service from your machine.
	Expand/Collapse	Expands and collapses the selected service.
	Download Only (Advanced)	Download the selected service from the catalog into local cache without installing. This button will be available only if you have selected Show advanced operations in the Service List Options of Preference. See “Preferences” on page 212 for more information.

Button	Action	Description
	Reconfigure (Advanced)	Reconfigures the installation of the selected service. This button is available only when the selected application is installed and the RECONFIG variable is set to Y in the ZSERVICE instance for the application. This button will be available only if you have selected Show advanced operations in the Service List Options of Preference. See “Preferences” on page 212 for more information.
	Undo (Advanced)	Undo the last action. This button will be available only if you have selected Show advanced operations in the Service List Options of Preference. See “Preferences” on page 212 for more information..

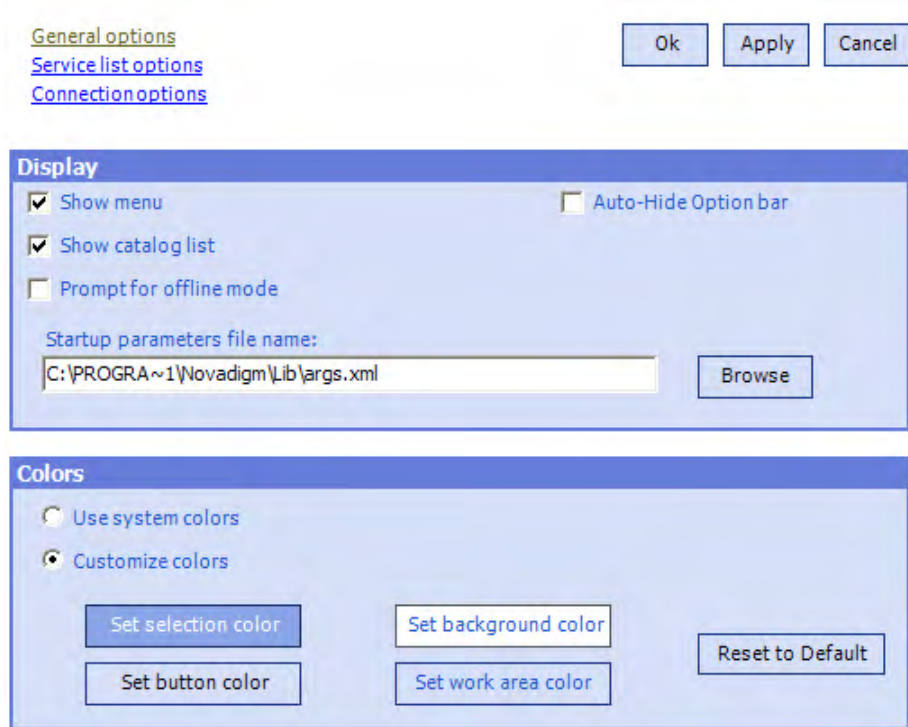


The buttons in the CM Service List section will be gray when they are not available for the selected application.

General Options

Use the **General options** window, as shown in the next figure, to modify the appearance of the CM Application Self-service Manager.

Figure 8 General Options



To modify the display

- To display the menu, click **Show menu**.
- To display the catalog list, check **Show catalog list**.
- To be prompted to use the CM Application Self-service Manager in offline mode at the beginning of each session, check **Prompt for offline mode**.
- To automatically hide the option bar, check **Auto-Hide Option bar**.
- To change the start-up parameters file, type the name in the text box provided, or click **Browse**, and specify the path where your start-up parameters file exists.

To modify the colors

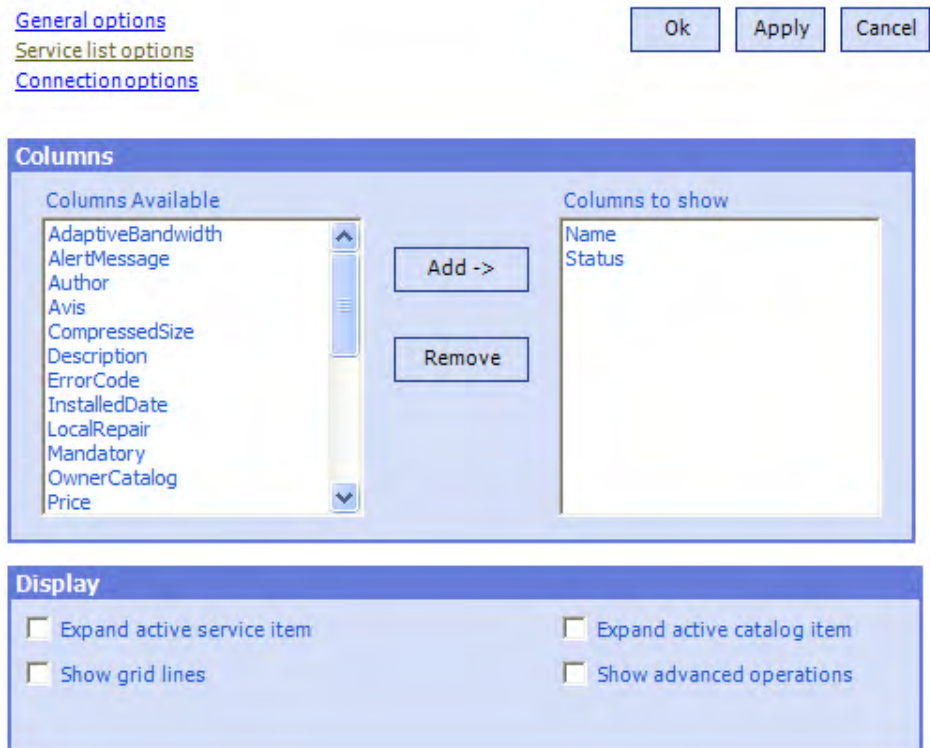
- If you would like to use the system colors, select **Use system colors**.
- If you decide to use your own custom colors, select **Customize colors**.

- After selecting **Customize colors**, click the box for the item you want to change.
- Set selection color to modify the color of selections.
- Set button color to modify the button colors.
- Set background color to modify the background color.
- Set work area color to modify the background color.

Service List Options

Use Service list options, as shown in the next figure, to modify the appearance of the Service List.

Figure 9 Service List Options



Customizing the Column Names in the Service List

Use the Columns area to customize the columns that appear in your service list. The right-hand column lists the column names currently displayed in your service list. For a description of each available column heading, see [Table 44](#) below.

To add columns to the Service List

- 1 In the Columns Available list box, select one or more names. Hold the **Shift** or **Ctrl** key on your keyboard to select multiple consecutive or non-consecutive column names, respectively.
- 2 Click **Add**. The selected columns are listed in the Columns to show list box.

To remove columns from the Service List

- 1 In the Columns to show list box, select one or more names. Hold the **Shift** or **Ctrl** key on your keyboard to select multiple consecutive or non-consecutive column names, respectively.
- 2 Click **Remove**. The selected columns are removed from the Columns to show list box and returned to Columns available.

Customizing the Display

- Select **Expand active service item** to expand the current service item in the Service List.
- Select **Show grid lines** to display the Service List with grid lines separating each service.
- Select **Expand active catalog item** to expand the current catalog selected.
- Select **Show advanced operations** to display the **Download**, **Reconfigure**, and **Undo** buttons in the CM Service List section.

Table 44 Column Headings Available for the Service List

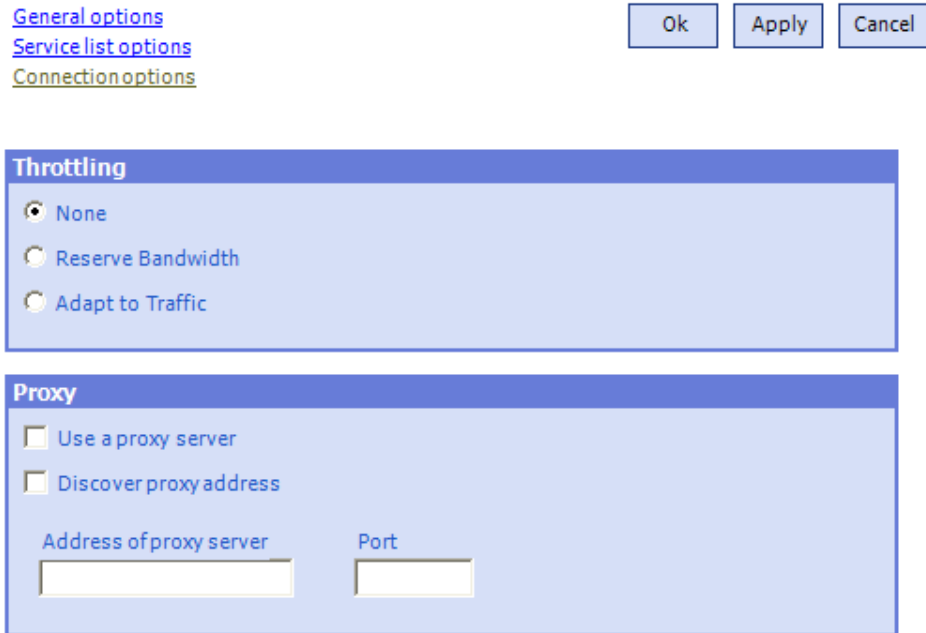
Column Heading	Description
Author	The author of the service.
CompressedSize	The size of the compressed service (bytes).
Description	A short description of the service.

Column Heading	Description
InstalledDate	The date on which the service was installed on your computer.
LocalRepair	If data is repairable locally (cached on your computer).
Name	The name of the service.
OwnerCatalog	The originating application Domain name.
Price	Price of the service.
PublishedDate	The date on which the service was published to the catalog.
RepublishedDate	The date on which the service was republished to the catalog.
Size	The size of the service (bytes). Note: You will need this amount of free space on your computer to install the service.
Status	Current status of the software <ul style="list-style-type: none"> • Available • Installed • Update Available • Broken
UpgradedDate	The date on which the service was upgraded.
Url	The software vendor's URL.
Vendor	The software vendor who supplied the service.
VerifiedDate	The date on which the service was last verified.
Version	The version of the service.

Connection Options

Use Connection options, as shown in the next figure, to select the type of bandwidth throttling to use or to specify the settings required for using a proxy server.

Figure 10 Connection Options



- **Throttling**

- Select **None** for no throttling.
- Select **Reserve Bandwidth** to select along the scale to indicate the maximum percentage of the network bandwidth to use. The reserve bandwidth can be changed in the user interface by the subscriber as the download is happening.
- Select **Adapt to traffic** to slide along the scale to indicate the minimum percentage of the network bandwidth to use. The adaptive bandwidth cannot be changed during a data download process. It can only be set before a job is dispatched.

- **Proxy**

CM has the ability to detect an Internet proxy when an Internet proxy is used. The Internet proxy's address is then stored in PROXYINF.EDM located in the agent computer's IDMLIB directory. The default location of IDMLIB is *SystemDrive:\Program Files\Hewlett-Packard\CM\Agent\Lib*. The next time the agent computer connects to the CM Configuration Server the specified Internet proxy will be used. To

use this feature, you must enable your CM agent to use and discover an Internet Proxy. If you are using the CM Application Self-service Manager, set the Proxy settings in the Connection section of Preferences.

History

Click **History** in the Side Bar to display a history of the current session.

Bandwidth

Click this button to display the bandwidth slider. Changing this value dynamically changes the throttling value.

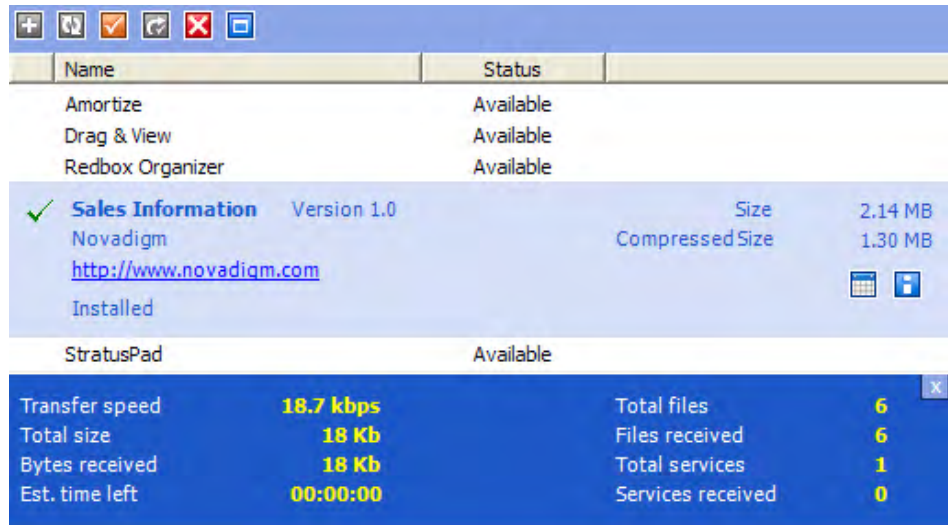
To adjust the bandwidth settings using the bandwidth slider

- Click and drag the slider to increase or decrease the amount of bandwidth throttling desired.
- You can also adjust bandwidth throttling from within the Preferences, Connection options section.

Status

Click **Status** in the Side Bar to display the status of the current action including the size, estimated time, progress, and available bandwidth.

Figure 11 Status



Docking and Un-Docking the Status Window

The Status window can be docked or un-docked from the CM Application Self-service Manager. This enables you to position the Status window anywhere on your screen. The Status window is docked by default.

To un-dock the Status window

- 1 Click **Status** in the Side Bar.
- 10 Right-click in the Status window that opens.
- 11 Select **Docked** from the shortcut menu.

The Status window will be released from the CM Application Self-service Manager, allowing you to position it anywhere on your screen.

To dock the Status window

- 1 Click **Status** in the Side Bar.
- 12 Right-click in the Status window that opens.
- 13 Select **Docked** from the shortcut menu (only if there is no check mark present).

When the Status window is docked, a check mark will appear next to the word **Docked** in the shortcut menu.

The Status window will be docked into the CM Application Self-service Manager.


Installing Software from the User Interface

The applications that are available to you are listed in the Service List. You can install one or more of these applications at any time.

To install software

- 1 In the Service List, click the name of the software that you want to install.
- 2 Click **Install**.

Some installations might display a set of dialog boxes. If so, follow the instructions. Otherwise, the installation begins immediately.


 You can also right-click the name of the software that you want to install, then select **Install** from the shortcut menu that opens.

A progress bar displays the installation progress.

- Click **Cancel** in the Global Toolbar to cancel the installation.
- Click **Pause** in the Global Toolbar to pause the installation. If you pause an action, you will not be able to perform any other actions until you either cancel or resume the currently paused action.

Refreshing the User Interface Catalog

The catalog is refreshed whenever you log on to the CM Application Self-service Manager user interface. While you are logged on, if you believe that the list of applications that you're authorized to use has changed, or that updates to your installed applications have become available, click **Refresh Catalog** in the Global Toolbar to retrieve the updated list of applications.

 You can also right-click any item in the Service List, then select **Refresh Catalog** from the shortcut menu that opens.

Viewing Information in the User Interface

You might want more information about an application than the Service List provides. If you would like to know the vendor, version, size, and date the application was installed, you can either add these columns to the Service List or click **Show Extended Information** in the expanded service box.

If you would like more information from the manufacturer, click on the link provided.

To view more information

- In the Service List, select the appropriate software, and click **Show Extended Information**.



You can also right-click the appropriate software, select **Properties**, then select **Information from the shortcut menu that opens**.

Click the corresponding **Cancel** button to return to the Service List.

Scheduling Timed Events

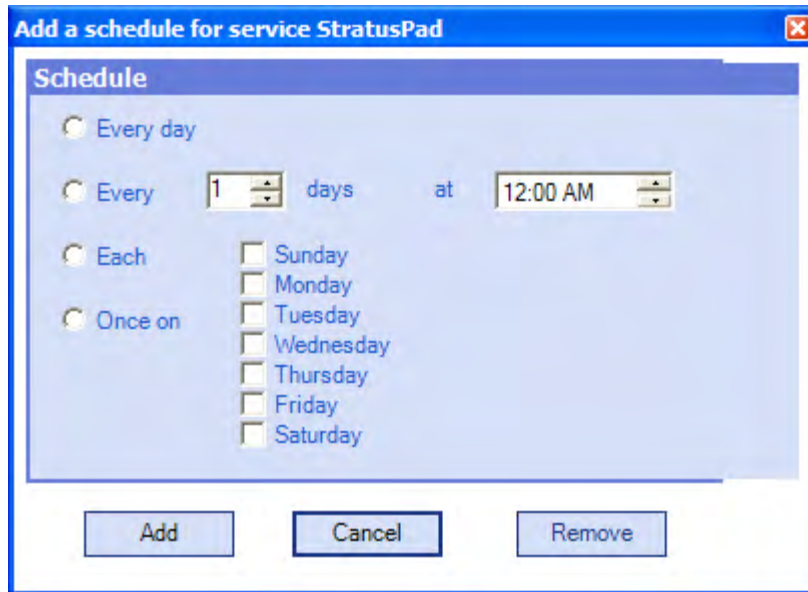
After selecting an installed service, in the expanded service box, click **Schedule Timed Events** to specify a schedule that will automatically update the applications that are installed on your computer. For example, you can schedule updates to occur during off-peak hours when there is less network traffic.

To schedule updates for an installed application

- 1 In the CM Application Self-service Manager user interface, select an installed application.

- 2 Click **Schedule Timed Events**.

The Schedule dialog box opens.



- 3 Select one of the following:
 - **Every day**
Updates occur every day at the specified time.
 - **Every n days**
Updates occur every n days. Use the up and down arrows next to the Every option button to select the frequency of updates.
 - **Each weekday**
Updates occur every weekday whose check box is selected. You can select more than one day.
- 4 Use the up and down arrows or type in the box labeled **at** to specify a specific time for the update.
- 5 Click **Add** to close the dialog box and accept the scheduled update.

Verifying Software

To check the installation of an application

- 1 In the Service List, select the installed service that you would like to verify.
- 6 Click **Verify**.



You can also right-click the name of the software, then select **Verify** from the shortcut menu that opens.

- If the application passes verification, the date and time of verification will appear in the Verified Date column for the application.
- If the application fails verification, Broken will appear in the Status column.

7 To repair the software, click **Repair**.

Repairing Software

If there is something wrong with an application, click **Repair** to fix it.

To repair software

- 1 Select an application that needs to be repaired (This is designated by an X in the first column, and Broken, in the Status column).
- 2 Click **Repair**. CM retrieves the files needed to fix the application.

Reconfiguring Software

Use the Reconfigure option in the Service List section to reconfigure the installation of software on your computer. The reconfigure option allows you to re-install the selected software to adjust different configurations, for example, the directory where the software was installed.



The Reconfigure button is available only if the application is installed and the RECONFIG variable is set to Y in the ZSERVICE instance for the application.

To reconfigure software

- 1 Select the software you would like to reconfigure.
- 2 Click **Reconfigure**.
- 3 Some installations might display a set of dialog boxes. If so, follow the instructions. Otherwise, the installation begins immediately.

Removing Software

Use the Remove option to remove software from your computer.

To remove software

- 1 Select the software that you want to remove.
- 4 Click **Remove**.
- 5 Click **Yes** if you are asked to confirm that you want to remove the application.



Alternatively, right-click the name of the installed software and select **Remove** from the shortcut menu that opens.

CM Agent Self-maintenance

Maintenance for the CM agents is available from HP Technical Support. The maintenance will include import decks for the CM Configuration Server Database. New instances are created in the PRDMAINT Class in the PRDMAINT Domain. There will be one PRDMAINT instance for each PRODUCT_PLATFORM_RELEASE combination. These instances will be connected based on the CM agent's platform and current product level. Once you have decided to roll out the maintenance to the CM agent computers, you can add the service to the user's entitlements.

To minimize the need for separate PRDMAINT bundles for different operating systems where the same maintenance, the ZMASTER.ZOSTYPE variables identify the Windows operating system type or family.

Usage Notes

- 1 All packages are disabled by default. This is accomplished by setting a ZSTOP expression to **1** to prevent deployment. Either remove this value for general deployment, or use this ZSTOP expression to restrict its deployment to certain groups.
- 2 The first REQUIRES connection is reserved for any possible hot fix, a fix sent to you directly by Technical Support is not yet available in a fix or service pack. This package, `_HOTFIX`, will be used to chain any required fixes (and/or enhancements) and will be maintained by the customer. The second connection is for any locally customized code to be included as part of maintenance.

- 6 Use the ACTMAINT attribute in the SETTINGS Class of the CLIENT Domain to specify how you want maintenance processed. You can choose to immediately download and install maintenance (**I**), download only and install later (**D**), or prompt users to install maintenance at another time (**P**). Maintenance runs only when the RADSKMAN parameter `mnt=Y`. See [ACTMAINT](#) on page 114 and the `mnt` parameter (Table 38 on page 173) for more information.

We will provide an updated PRDMAINT instance with each new maintenance pack. The customer is not required to apply all maintenance.


To deploy client maintenance packages

- 1 A maintenance package is made available on the HP support web site in the form of an export deck.
- 2 Download the files. There should be at least an `xpi` and `xpr` file.
- 3 Stop the CM Configuration Server service and copy the export files to the CM Configuration Server's `bin` directory.
- 4 Import the files using the ZEDMAMS utility. For detailed information on the use of this utility, refer to the *CM Configuration Server Guide*.


For example, if you were given two files, `MAINT_RAM_40_RC3.XPI` and `MAINT_RAM_40_RC3.XPR`, you might use the following command lines.

```
ZEDMAMS VERB=IMPORT_INSTANCE, FILE=MAINT_RAM_40_RC3.XPI,  
PREVIEW=NO
```

```
ZEDMAMS VERB=IMPORT_RESOURCE, FILE=MAINT_RAM_40_RC3.XPR,  
PREVIEW=NO
```

 Your command line could vary depending on a number of factors. For detailed information on the use of this utility, refer to the *CM Configuration Server Guide*.

- 5 Restart the CM Configuration Server.
- 6 Assign the Maintenance Server to the appropriate users in the POLICY Domain.

 To run the maintenance portion of a CM agent connect process, the `mnt` parameter of the RADSKMAN command line must be set to `Y`.

During catalog processing, the CM agent will process all services found in the PRDMAINT Domain, perform arbitration to determine appropriate maintenance, and deploy the maintenance to the maintenance staging

directory. The default location for this is `c:\Program Files\Hewlett-Packard\CM\Agent_Maint_`.

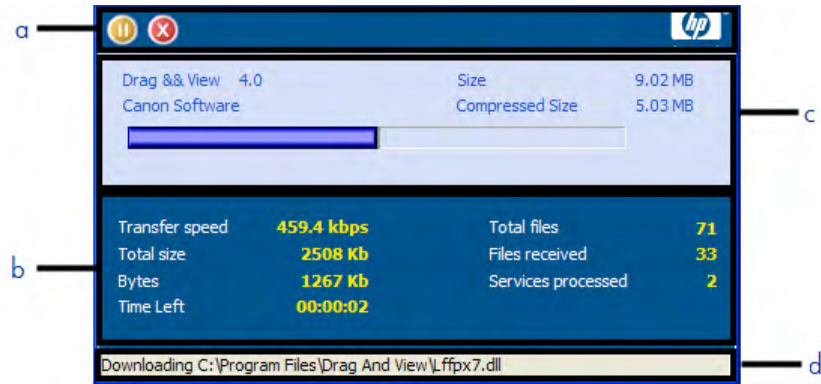
CM System Tray

The CM System Tray icon provides status and statistics information, as well as pause and cancel mechanisms to the subscriber. The CM System Tray icon sits in listen mode, and accepts requests for the display of dialog boxes and status information that will be displayed when the CM agent needs user interaction.

An icon shows in the CM System Tray area of the Task Bar. By moving your cursor over the icon, you can see one of three states depending on the CM agent's activity.

- **Idle**
When the CM System Tray is in listen mode, the icon is static.
- **Active**
The icon becomes active when the CM agent is working or when user intervention is required. The icon animates and an informational bubble will appear when you move your cursor over the icon. The bubble provides information on the type of activity that is occurring. If a critical notify occurs, the bubble will automatically pop up:
- **Console View**
The Console View can be launched by the shortcut menu that is available when you right-click on the icon, or by double-clicking on the icon. The Console view appears as shown in Figure 12 on page 229.

Figure 12 CM System Tray Console



Legend

- a** Button Bar
- b** Information Panel
- b** Status Area
- c** Status Message Area

The Console View contains the following parts:

- **Button Bar**
Contains buttons for Pause and Cancel, and a logo that animates when CM is actively working.
- **Information Panel**
Contains information about the service that is currently being processed, as well as a progress bar that shows the percentage finished.
- **Status Area**
Contains statistics about the current processes, including transfer speed, total size of transmission, bytes received, estimated time left of transmission, total files to be transmitted, number of files received, and number of services processed.
- **Status Message Area**
The Status Message Area shows a message about the current process.
- **Bandwidth Control**
If you set bandwidth throttling for the Service on the CM Configuration Server, and you click the bandwidth toggle button in the System Tray Console, a slider for bandwidth control appears. Adjusting the slider will result in the bandwidth throttling value being changed.



The bandwidth control shows when bandwidth throttling is available (based on the throttling type for the service, Adaptive or Reserved). In addition, the bandwidth slider will be displayed if the throttling type is valid and the UIOPTION attribute of the Application (ZSERVICE) instance is set to FULL. FULL is the default value. Set UIOPTION to INFO to show what is happening on the agent computer, but disable all the controls so that the subscriber cannot make any changes. Set the UIOPTION to NONE so that no dialog boxes are displayed. Set the UIOPTION using the CM Admin CSDB Editor.

Figure 13 Control the bandwidth from the System Tray Console



Applications: Alert Messages and Deferrals

Use the CM Admin CSDB Editor to show the subscriber that an application has a high priority or to display an additional message. An Application (ZSERVICE) Instance can be set to *normal* or *high* priority. An exclamation point (!) denotes that an application is high priority.



If you are using the CM Application Self-service Manager with the CM System Tray to manage a high priority service and an alert condition arises, the alert bubble will “pop” and the message will display in the status bubble of the CM System Tray icon.

When an application is deployed, an administrator can—based on the network threshold, the data-download size, a date setting, or a deferral count—have a deferral message display. When an application has data that needs to be downloaded to the CM agent computer, the CM agent will check whether the application is configured for deferral. If it is, the CM Application Self-service Manager will check the current bandwidth setting against the administrator-specified bandwidth threshold setting. A deferral message, asking the subscriber if s/he wants to defer the deployment, will be displayed if:

- the current network speed is slower than the Network Threshold (DT) value AND the size of the service is greater than the *below-threshold size* (DBT) value, or
- the current network speed is faster than the Network Threshold (DT) value AND the size of the service is greater than the *above-threshold size* (DAT) value.

A Configuration Management administrator can configure “number-of-occurrences” and “last-deferral-date” application-deferral limits. Then, if the number of deferrals or the deferral date is reached, the application will be installed/updated without a deferral message being displayed.

A CM administrator can also configure a “minimum-byte-count” limit on which to alert. If the size of the data is less than the minimum byte count, the alert panel will be skipped.

If an application has been configured for a deferral and all of the requirements that are listed below are met, the CM agent will display the deferral message.

- The Alert Mode (DM) is configured (=Install, Update, or Both) for the current operation.
- The current network speed is slower than the Network Threshold Speed (DT) and the data to be downloaded is greater than the below threshold size (DBT).
- The current network speed is faster than Network Threshold Speed (DT) and the data to be downloaded is greater than the above threshold size (DAT).
- The UIOPTION attribute in the ZSERVICE instance is set to something other than **NONE**.
- If specified, the deferral date, Allow Install Deferral up to (DI), or Allow Update Deferral up to (DU) has been reached.

or

- The number of deferrals allowed (DN) has been reached.

If these requirements are met and you are using the CM Application Self-service Manager, the deferral message will be displayed to the user, who can then choose to defer the action or continue with it.

If the user doesn't respond to the defer/continue, the action that is identified in the DA attribute (see DA on page 234) will be taken.

The following sections describe how to create and configure alert/deferral instances in the CM-CSDB.

Alert Message and Deferral Instances in the CM-CSDB

To implement an application alert or deferral, you must create an instance in the Alert/Defer (ALERTDEF) Class of the CM Configuration Server Database and connect it to the appropriate Application (ZSERVICE) Class instance.

Creating

The Alert/Defer (ALERTDEF) Class has been added to the SOFTWARE Domain in the CM-CSDB to facilitate the configuring of application alerts. In order to configure an alert, create an instance in the Alert/Defer (ALERTDEF) Class.

To create an instance of the Alert/Defer (ALERTDEF) Class

- 1 Go to **Start** → **Programs** → **HP OVCM Administrator** → **CM Admin CSDB Editor**.

The CM Admin CSDB Editor Security Information dialog box opens.



The User ID, as shipped from HP, is **RAD_MAST**. No password is necessary. This might have been changed during installation.

You can also change this by selecting **Change Password** and typing the new password in the New Password and Verify New Password text boxes.

- 2 If necessary, type a User ID and Password, and then click **OK**.

The CM Admin CSDB Editor window opens.

- 3 Navigate to the **SOFTWARE** Domain of the **PRIMARY** File, and right-click **Alert/Defer (ALERTDEF)**.

A shortcut menu opens.

- 4 Click **New Instance**.

The Create Instance dialog box opens.

- 5 Type a name (such as SalesAlert) for the new instance.

- 6 Click **OK**.

The new (SalesAlert) instance has been created.

Configuring

Once the instance is created, you need to configure it for your alert. The Alert/Deferral (ALERTDEF) Class includes two sample instances, Dial Up Sample Defer and LAN Sample Defer. In this exercise, we'll use the SalesAlert instance that was previously created.

To configure an Alert/Deferral (ALERTDEF) instance

- 1 Use the CM Admin CSDB Editor to navigate to the **SalesAlert** instance.
- 2 Double-click the **SalesAlert** instance.
- 3 Double-click the variable that you want to edit.

See [Table 45](#) below for information on the attributes for this class.

Table 45 Variables in the ALERTDEF Class

Variable	Description
ALERTMSG	An exclamation point (!) preceding "Service Alert Message" denotes a high priority message.
DM	Alert Mode The type of activity for which a deferral alert will be triggered. <ul style="list-style-type: none">• Set to I for Installations.• Set to U for Updates.• Set to B (the default) for Both (installations and updates).
DN	The maximum number of deferrals that will be allowed before the DA (Deferral Action) action will be taken. The default is 0 .
DT	The network bandwidth threshold, in bytes. The current network speed must be less than this value in order to meet the deferral requirement. The default is 86000 .

Variable	Description
DBT	<p>The minimum cumulative size (in bytes) of the files that are being downloaded on a slow network and which will trigger the deferral. The default is 50000.</p> <p>A deferral will be triggered if the network speed is slower than the Network Threshold (DT) value AND the cumulative size of the files that are being downloaded exceeds this value (DBT=n).</p> <p>If DBT=0, it is ignored (there will be no deferral if the speed of the network is below the Network Threshold (DT) value).</p>
DAT	<p>The minimum cumulative size (in bytes) of the files that are being downloaded a fast network and which will trigger the deferral. The default is 0.</p> <p>A deferral will be triggered if the network speed is faster than the Network Threshold (DT) value AND the cumulative size of the files that are being downloaded exceeds this value (DAT=n).</p> <p>If DAT=0, it is ignored (there will be no deferral if the speed of the network exceeds the Network Threshold (DT) value).</p>
DTO	<p>The duration (in seconds) for which the Defer Alert dialog box will display; the default is 120. After the timeout is reached, the DA (Action on timeout) action will be taken.</p>
DA	<p>The action that will be taken if the subscriber does not respond to the Defer Alert dialog box in the time that is allowed by the DTO (Alert Timeout) variable.</p> <ul style="list-style-type: none"> • Specify C (the default) to continue with the specified action. • Specify D to defer the specified action.
DI	<p>The threshold date (in YYYYMMDD format) after which the option to defer the application installation will no longer be available—the application will be installed.</p>
DU	<p>The threshold date (in YYYYMMDD format) after which the option to defer the application update will no longer be available—the application will be updated.</p>
Name	<p>The friendly name for the instance.</p>
DEFOPTNS	<p>This attribute is used to resolve the values of the other attributes of this class. The default is &(DM),&(DN),&(DT),&(DBT),&(DAT),&(DTO),&(DA),&(DI),&(DU).</p> <p>Do not modify this value.</p>

In this exercise, we'll add an alert message with high priority. To do this, double-click the **ALERTMSG** variable.

- 4 In the text field, type the message that you want to be displayed.
- 5 Click on the next attribute, and type in the appropriate value.
- 6 Click **OK** when you are finished editing the attributes.

The Instance Edit Confirmation dialog box opens.

- 7 Click **Yes** to confirm the changes.

The **SalesAlert** Instance has been configured with an alert message.

Connecting

Now that the Alert/Defer (ALERTDEF) Instance (SalesAlert) is created and configured, it must be connected to an Application (ZSERVICE) instance.

- Use the CM Admin CSDB Editor to click and drag the **SalesAlert** Instance to the Application (ZSERVICE) Instance with which you want the alert message to be associated.

For additional information on using the CM Admin CSDB Editor refer to the *HP Configuration Management CM Admin CSDB Guide*.

Summary

- The CM Application Self-service Manager user interface is the *graphics-based desktop catalog* with which subscribers can manage (install, update, verify, and remove) the applications on their computers.
- You can *access the user interface* via the Start menu and the CM Application Self-service Manager user interface desktop icon.
- The *CM System Tray* icon provides status and statistics information. It adopts a listen mode and accepts requests for the display of dialog boxes.
- Use the CM Admin CSDB Editor to *send alert messages* to subscribers. *Deferral messages* can also be created and sent.

A Product Name Changes

If you have used Radia in the past, and are not yet familiar with the newly rebranded HP terms and product names, Table 46 below will help you identify naming changes that have been applied to the Radia brand.

Table 46 Product Name and Term Changes

New Name/Term	Old Name/Term
CM Agent Installation Wizard	Radia Client Installation Wizard
CM agents	Radia clients
CM-MGMTAPPS50.MSI	Radadmin40.msi
HP Configuration Management Administrator	Radia Administrator Workstation
HP Configuration Management, CM	Radia
HP Configuration Management Admin Agent Explorer	Radia Client Explorer
HP Configuration Management Admin CSDB Editor	Radia System Explorer
HP Configuration Management Admin Packager	Radia Packager
HP Configuration Management Admin Screen Painter	Radia Screen Painter
HP Configuration Management Application Manager	Radia Application Manager, RAM
HP Configuration Management Application Self-service Manager	Radia Software Manager, RSM
HP Configuration Management Solutions for Servers	Server Management

Glossary

Administrative Installation Point (AIP)

Also called Administrative Control Point (ACP).

An AIP is a server share or local directory structure that contains all of the files that are needed to run setup for a Windows Installer-enabled application.

agent

The CM agent (CM Application Manager and CM Application Self-service Manager) runs on the agent computer. It communicates with the CM Configuration Server to receive information about the desired state of the agent computer, and compares that information to the actual state of the agent computer. Then, the CM agent makes adjustments in order to make the actual state match the desired state.

agent computer

An agent computer is a computer (workstation or server) on which the CM agent software has been installed.

agent object

An agent object is a file located on the agent computer that contains information about the configuration of services and hardware.

applications

Also called software, data, and services.

Applications are one type of content that CM can manage on subscriber computers. Use the CM Administrator Packager to create packages of data to be managed on your subscribers' computers.

attended

An attended computer is a computer that a user is logged on to and using.

attribute

Also called field, attribute, or property.

An attribute is a single, descriptive data item in a class. The class template contains a definition (e.g., the name, data type, description, and length) for each attribute that makes up the class. Class instances contain a set of attributes and each attribute contains a value.

attribute property

An attribute property controls some aspect of how an attribute is processed on the CM Configuration Server and agent computer. Each attribute defined in a class template has a set of CM Configuration Server properties and a set of client properties.

audience list

An audience list is a directory of the subscribers for an application used by HP OVCM Notify.

base instance

The base instance contains the default values for the attributes that make up a class. When you create a new instance in that class, the attributes in the new instance inherit the default values, as specified in the base instance.

byte level differencing

Byte level differencing is the process of packaging a patch containing updates or corrections to a resource. The patch is calculated by differencing an existing copy of the resources in the CM Configuration Server Database against the resources currently being packaged.

class

See instance.

class connection variable

A class connection variable determines the path of resolution for a client's distribution model during the CM agent connect process. It is a branch in the resolution process.

A class connection is resolved and resolution continues using the target instance identified in the class connection variable if the class connection variable attribute's name is `_ALWAYS_`, `INCLUDES`, `REQUIRES`, or if the name of the attribute matches the current value of the system message.

class instance

See instance.

clean computer

A clean computer is a computer on which the operating system has just been installed, and no further changes have been made.

Client Explorer

See CM Administrator Agent Explorer.

CM Admin Agent Explorer

The CM Administrator Agent Explorer, installed with the CM Administrator, can be used to view or edit local objects, or create new objects. You can also use the CM Administrator Agent Explorer to view objects located on a file server or on other computers to which you are connected via a local area network (LAN).

CM Admin CSDB Editor

The CM Admin Configuration Server Database Editor, installed with the CM Administrator, is used to manipulate the contents of the CM Configuration Server Database.

CM Admin Packager

The CM Administrator Packager is used to create packages of data and store them in (i.e., promote them to) the CM Configuration Server Database.

CM Admin Screen Painter

The CM Administrator Screen Painter, installed with the CM Administrator, is used to develop custom dialog boxes.

CM Application Manager

The CM Application Manager is the CM agent that manages mandatory services. The CM administrator uses the CM Configuration Server Database Editor to specify the services that the CM Application Manager manages on the agent computer. No user interface is available.

CM Application Self-service Manager

The CM Application Self-service Manager is the CM agent that is used to manage optional services. The CM administrator uses the CM Configuration Server Database Editor to specify the services that are available to the subscriber.

The subscriber installs and manages data that is available from the CM Application Self-service Manager user interface.

CM Configuration Server

Also called Manager.

The CM Configuration Server distributes applications to agent computers. It runs on the server and maintains the CM Configuration Server Database, which stores information that the CM Configuration Server needs to manage digital assets for distribution to agent computers.

CM Configuration Server Database

The CM Configuration Server Database stores all of the information necessary to manage digital assets on a agent computer, including:

- The software and data that CM distributes.
- The “desired state” of each agent computer with respect to the CM-managed content.
- The policies determining which subscribers can subscribe to which packages.
- Security and access rules for CM administrators.

Use the CM Configuration Server Database Editor to manipulate the CM Configuration Server Database.

CM Inventory Manager

The CM Inventory Manager is a policy-driven, inventory management tool that automatically discovers information about software and hardware, and consolidates the results into web-based reports. The CM Inventory Management client is a WbEM (Web-based Enterprise Management) consumer.

CM Proxy Server

When used in your environment, the CM Proxy Server can reduce the load on your CM Configuration Servers by distributing requested resources to agent computers. The CM Proxy Server maintains multiple data caches containing the resources needed for each agent computer’s desired state.

CM Scheduler

The HP OVCM Scheduler service (`radsched.exe`) that is installed with the CM Application Manager allows a CM administrator to deploy a service at a specific time.

CM Staging Server

The CM Staging Server is used to store data required for deploying applications on a computer other than the computer with the CM Configuration Server.

component class

A component class is a type of class used to identify the items (files, registry entries, links, icons, and so forth) that make up the content identified by a Configuration class instance. Typically, this class' instances have distributable data associated with them such as FILE, REGISTRY, or DESKTOP.

Use the CM Configuration Server Database Editor's Class Editor to set the class type to "Component."

configuration class

A configuration class identifies content to be managed on subscribers' computers by grouping together instances of component classes. Typically, a configuration class' instances do not have distributable data associated with them. They are connected to instances of one or more component classes, perhaps through an instance of another configuration class. Examples: ZSERVICE, PACKAGE, VGROUP, VERSION, and so forth.

Use the Class Editor in the CM Configuration Server Database Editor to set the class type to "Configuration."

desired state

The desired state embodies the content that CM manages for a specific agent computer. A model representing the desired state for each agent computer is stored in the CM Configuration Server Database. The desired state model is created and managed using the CM Configuration Server Database Editor.

domain

A domain logically partitions a file in the CM Configuration Server Database to group together "like" classes. Three examples are the POLICY Domain, the SOFTWARE Domain, and the SYSTEM Domain.

- The POLICY Domain contains the classes that identify users individually and by their association with groups of other users.
- The SOFTWARE Domain contains the classes needed to define and deploy applications. CM administrators will do most of their work in the POLICY and SOFTWARE Domains of the PRIMARY File.

- The SYSTEM Domain contains the classes that contain administrative and process control definitions.

expression variable

An expression variable contains a single line REXX command that is executed during resolution. If the expression evaluates to “true” in an attribute named ZSTOP, it causes resolution of the current instance to end. Resolution continues in the calling instance with the variable following the one that called the instance containing the expression variable.

file

A file is the highest level in the hierarchy of the CM Configuration Server Database and it groups similar domains together. The PRIMARY File is an example of this level.

The PRIMARY File is used to define and maintain the distribution model. This is one of the pre-configured files distributed with the CM Configuration Server and installed when you first install CM. Others are the NOTIFY File and the PROFILE File. CM administrators will do most of their work in the PRIMARY File.

instance

Also called class instance.

An instance is a CM Configuration Server Database object containing a specific occurrence of a class. This is analogous to a row in a relational data table or a record in a traditional flat file. The attributes of an instance contain the data describing one specific entity of that class.

Inventory Manager

See [CM Inventory Manager](#).

Manager

See [CM Configuration Server](#).

mandatory service

A mandatory service is a service that is required on the agent computer. Services are made mandatory by setting the ZSVCMO variable in the Application instance to M.

method

A method is a program that performs functions that are meaningful in the context from which they are called.

Methods can be written in REXX or in a language that produces an executable that can validly run on the platform where it is invoked. The HP-supplied REXX run-time environment interprets REXX methods.

Client methods run on the agent computer, while CM Configuration Server methods run on the CM Configuration Server computer.

method variable

The method variable identifies the method, or program, to be executed as part of the resolution process.

For CM Configuration Server methods, it contains a reference to an instance of the SYSTEM Domain PROCESS class that identifies the method to execute and the parameters to be passed to the method. CM Configuration Server methods are located in the CM Configuration Server BIN subfolder for .exe methods or in the Manager REXX subfolder for REXX methods.

For client methods, it contains the name of the method to execute on the agent computer. The name of a method variable that executes a client method identifies the event (such as installing or removing software) for which the method should be executed. Client methods are located in the IDMSYS location on the agent computer.

Notify

A notify forces one or more agent computers to connect to the CM Configuration Server to install, update, or remove an application, or send an e-mail to subscribers of a particular service.

null instance

The null instance of a class is used when an instance of that class that does not exist. During resolution, if a connection to a non-existent instance of a class is attempted, the null instance is used. This provides a resolution path that handles broken connections.

object

An object is a data structure containing variables stored in a file with an .EDM extension on the agent computer. An object can consist of one or more instances. Each instance contains the same set of variables. The values held in the variables can vary from instance to instance.

Use the CM Admin Agent Explorer to view, edit, or create objects.

optional service

An optional service is available to subscribers via the CM Application Self-service Manager user interface, and which each subscriber can decide to install based on need. Services are made optional by setting the ZSVCMO variable in the Application instance to O.

package

A package is the data that is packaged as an individual unit.

policy

A policy determines which subscribers (or computers) have access to what software. The POLICY Domain class instances identify users. Connections to the POLICY class instances identify the content to be managed for those subscribers.

promote

When you promote a package that was created with the CM Admin Packager, you are storing the package in the CM Configuration Server Database.

publish

To bundle a set of related data into a single unit that can be managed by CM.

resolution

Resolution occurs when the CM Configuration Server accomplishes a unit of work in response to a service request. The unit of work is defined by the contents of the CM Configuration Server Database and parameters included in the service request itself.

In other words, what CM does depends upon what information is stored in the CM Configuration Server Database and what information accompanies the request for CM to perform some action.

For example, the CM agent connect submits service requests by sending an object to the CM Configuration Server. The CM Configuration Server then performs resolution in response to each request. The parameters that control the processing of the service request are in the input object.

resource

Also called a file.

A resource is a single component that is bundled into a package. Examples of resources are files, desktop links, and sets of registry keys.

Scheduler

See [CM Scheduler](#).

Screen Painter

See [CM Admin Screen Painter](#).

service

Also called a software application, application, or software. A service represents a group of related packages that define the content to be managed by CM.

session

A session identifies a packaging exercise in CM Admin Packager that results in the creation of one CM package.

Software Manager

See [CM Application Self-service Manager](#).

Staging Server

See [CM Staging Server](#).

subscriber

A subscriber is the person who uses CM-managed applications on an agent computer.

symbol

A symbol is the name of a variable in global memory, preceded by an ampersand.

symbolic substitution

CM Configuration Server Database instances and CM agent objects consist of variables that contain values. The value of a variable can contain a specification that refers to the value of another variable. During the resolution process, CM can substitute the value of the second variable to replace the reference in the first variable.

References to be processed with symbolic substitution are specified using an initial ampersand.

For example, one of the `_ALWAYS_` connection variables in the `SYSTEM.PROCESS.ZMASTER` instance of the CM Configuration Server Database contains the value `POLICY.USER.&(ZMASTER.ZUSERID)`. The reference `&(ZMASTER.ZUSERID)` refers to the `ZMASTER` object's `ZUSERID` variable, which contains the user ID typed into the CM log-on dialog box on the CM client, when the subscriber visits the CM Software Management Web page. If the user typed in `JDOE` for the user ID, symbolic substitution would render the effective value of the `_ALWAYS_` connection variable as `POLICY.USER.JDOE`.

The substitution is not permanent; the value in the CM Configuration Server Database does not change. Only the value in the in-storage object derived from the CM Configuration Server Database instance for the current resolution process contains the substituted value.

The parentheses are required only if the reference is qualified—contains a period. If the reference is unqualified, the parentheses are optional.

For example, these symbolic substitution specifications are correct:

`&(ZMASTER.ZUSERID)`

`&(ZUSERID)`

`&ZUSERID`

and this is incorrect:

`&ZMASTER.ZUSERID`

[System Explorer](#)

See [CM Admin CSDB Editor](#).

[System File Protection \(SFP\)](#)

System File Protection prevents protected system files from being replaced. When a program attempts to replace or move a file that is protected, the file's digital signature is checked to determine whether the file is valid or not.

[Timer](#)

See [CM Scheduler](#).

[unattended](#)

An unattended computer is a computer that is not currently in use (attended) by a person.

variable

A variable is a piece of named storage that contains a changing value. The variable's value forms a part of the client's resolved distribution model and can influence the resolution process through messaging or symbolic substitution.

version group

A version group is a collection of one or more versions of one application that CM deploys and manages. Use version groups to roll out a new version of an application to the appropriate subscribers, and activate it upon delivery or at a predetermined time.

Web-based Enterprise Management (WbEM)

Web-based Enterprise Management (WbEM) is an initiative from the Distributed Management Task Force (DMTF) to develop standard technologies for accessing management information in an enterprise-computing environment.

Windows Management Instrumentation (WMI)

Windows Management Instrumentation (WMI) is the Microsoft implementation, for Windows platforms, of Web-based Enterprise Management (WbEM). WMI provides support for WbEM's Common Information Model (CIM).

ZCONFIG

The ZCONFIG object contains basic hardware information for the agent computer such as processor, operating system, and drives.

ZMASTER

The ZMASTER object contains information about the agent computer that is necessary to run the CM agent such as the identity of the subscriber and the IP address of the agent computer.

ZSTOP

A ZSTOP expression is used to stop the resolution of an instance based on certain criteria. For example, create a ZSTOP expression to deploy a ZSERVICE instance only to agent computers with a particular operations system.

ZTIMEQ

The ZTIMEQ object is created, based on information in the Scheduler (TIMER) instance, when a timer is deployed to the client.

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