

HP Client Automation Enterprise Application Manager and Application Self-Service Manager

For the Windows®, Linux, and Macintosh operating systems

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Reference Guide

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Chapter 1

Introduction

The HP Client Automation (HPCA) agent is installed on end-user computers and enables an HPCA administrator to:

- Automate deployment
- Update, repair, and delete applications
- Inspect hardware and software
- Ensure security of the data

The HPCA agent has several sub-features that perform a variety of functions. The following table lists and describes the HPCA agent's sub-features.

HPCA Agent sub-features

HPCA Agent sub-feature	Description
HPCA Application Manager	Use this sub-feature to distribute mandatory applications throughout the enterprise. This sub-feature is described in this guide.
HPCA Application Self-Service Manager	With this sub-feature, users can install, remove, and update optional applications that are available to them in a service list. This sub-feature is described in this guide.
HPCA Inventory Manager	This sub-feature enables you to collect hardware information and send it to HPCA Inventory Manager for collection and reporting. For more information, see <i>HP Client Automation Enterprise Inventory Manager Reference Guide</i> .
Local AIP Extension	For information on this sub-feature, see " Local AIP Support for the MSI Redirector " on page 119.
HPCA OS Manager	This sub-feature controls the provisioning of operating systems. For more information, see <i>HP Client Automation Enterprise OS Management Reference Guide</i> .
HPCA Patch Manager	This sub-feature analyzes and manages security patches. For more information, see <i>HP Client Automation Enterprise Patch Management Reference Guide</i> .
PlusHP	This sub-feature is used for hardware device monitoring specific to HP hardware devices. When enabled, it installs HP System Software Manager (HP SSM) and

HPCA Agent sub-feature	Description
	HP Client Management Interface (HP CMI) components on the target device. It provides Self-Monitoring, Analysis, and Reporting Technology (S.M.A.R.T.) Drive Alert Monitoring and HP CMI based HP Hardware Alert Monitoring. S.M.A.R.T. and HP CMI are used to monitor and gather hardware related alerts and events for reporting. This includes events such as overheating of the processor, fan stall, any hardware related changes, and so on. For information on the HP CMI alerts, see <i>HP Client Automation Enterprise User Guide</i> .
HPCA Agent Lockdown Mode	This sub-feature prevents non-privileged users from tampering with critical system-level content or breaching confidentiality by viewing content they should not have access to.

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

Note: The Windows Terminal Server agent component of HPCA was formerly a selectable feature—as part of the Server Management Agent—during this installation program. The Server Management Agent has been retired, and the Windows Terminal Server agent component has been incorporated into the Application Manager agent installation. If you want to use HPCA to deploy applications to Windows Terminal Servers, see *HP Client Automation Enterprise Windows Terminal and Citrix Server Management User Guide*.

Terminology

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

HPCA agent

The software—such as HPCA Application Manager and HPCA Application Self-Service Manager—that runs on a managed device and communicates with the HPCA Configuration Server.

HPCA agent connect

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

desired state

The condition of a device as defined by the configuration parameters that are set in the HPCA Configuration Server Database (CSDB).

device

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 Client Automation solutions.

target device

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

resolution

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

user

In HPCA solutions, the identity of the device or subscriber being managed.

policy

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

Abbreviations and Variables

Abbreviations Used in this Guide

Abbreviation	Definition
HPCA	HP Client Automation
Core and Satellite	HPCA Enterprise environment consisting of one Core server and one or more Satellite servers.
CSDB	Configuration Server Database
Portal	HPCA Portal

Variables Used in this Guide

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

Chapter 2

HPCA Agent Directories, Objects, and Logs: Windows

This chapter provides details on the HPCA agent directories, objects, and log files on a Windows computer.

HPCA Agent Directories

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

Note: In an HPCA agent lockdown enabled environment, the `NVD.INI` file is moved from `IDMROOT` to `IDMSYS`.

NOVAEDM Parameters

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

HPCA Agent Version

Some of the objects that are described in this guide apply to HPCA agents, version 3.1 and later only. To verify or query an HPCA 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.

HPCA Agent Objects

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

HPCA agent objects can be used to:

- determine the hardware configuration of the HPCA agent computer
- check the status of a service, for example, check if the service is successfully installed
- determine when the service was installed
- determine the HPCA agent computer’s name and the most recently logged on user
- determine the possible data sources for the HPCA agent computer

While there are multiple HPCA objects on an HPCA agent computer at any time, there is a core group of five HPCA agent objects that supply information about the status of the current HPCA agent connect. These core objects listed below are described in "HPCA Agent Objects" above, and then detailed in their respective sections following the table.

- ZCONFIG
- SYNOPSIS
- SAPSTATS
- PREFACE
- SMINFO

The following table includes information about when the object is created and updated, and a brief summary of what the object includes.

HPCA agent objects

Object	Description
ZCONFIG	This object is created at the start of the HPCA agent connect process and contains basic hardware information such as processor, operating system, and drives. Note: a connect is the HPCA agent connecting to a Configuration Server in order to perform resolution and achieve its desired state , see "desired state" on page 10. For more information, see "ZCONFIG (Hardware Configuration Information)" on next page.
SYNOPSIS	This object contains a job summary and is transferred to the Configuration Server at the end of the HPCA 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.

Object	Description
	<p>Note: Client Operations Profiles must be enabled for this object to be present.</p> <p>For more information, see "SYNOPSIS (Client Operations Profile Summary)" on page 19.</p>
SAPSTATS	<p>This object is updated by any network-bound modules (such as RADCONCT, RADSTGRQ, and RADSTGMS) that need to access the Server Access Profile (SAP). It has one instance for each HPCA 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. Note: Client Operations Profiles must be enabled for this object to be present. For more information, see "SAPSTATS (Service Access Profile Status)" on page 20.</p>
PREFACE	<p>This object contains core information about each invocation of RADSKMAN and is sent to the Configuration Server at every phase of a RADSKMAN process. For more information, see "PREFACE (RADSKMAN Execution)" on page 22.</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. For more information, see "SMINFO (Systems Management Information)" on page 23.</p>

Using HPCA Administrator Agent Explorer to View HPCA Agent Objects

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

To view an object using HPCA Administrator Agent Explorer:

1. Navigate to **Start > Programs > HP Client Automation Administrator > HP Client Automation Administrator Agent Explorer**. The HPCA Administrator Agent Explorer opens.
2. If necessary, from the **File** menu, select **Change Directory** to navigate to the HPCA agent computer's `IDMLIB` directory or to the directory in which the object is stored.
3. Double-click the object's name in the list view. The HPCA Administrator Agent Explorer displays the selected object.
4. Click **Save/Exit** to close the dialog box.

ZCONFIG (Hardware Configuration Information)

The ZCONFIG object stores hardware configuration information from the HPCA agent computer. Use the HPCA Administrator 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 HPCA agent computer.

Note: The ZCONFIG object is sent to the Configuration Server automatically for viewing with HPCA Administrator CSDB Editor. If you do not want this object sent to the 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 HPCA agent computer.

ZCONFIG Attributes

Attribute	Description
BOOTDRV	The boot drive.
BOOTDRVI	The type of boot drive, such as IDE.
DHCPSR0 <i>n</i>	The IP address of the DHCP Server of the LADAPT0 <i>n</i> 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 HPCA agent computer for the LADAPT0 <i>n</i> adapter.
DNSDOMN	The name of the domain that is currently being used.
DNSHNM01	The host name that is used by the HPCA agent computer for the LADAPT0 <i>n</i> 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
LASTUSER	The most recent user to have logged on to the system.

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Attribute	Description
REBOOTD	The reboot date.
REBOOTT	The reboot time.
SCANTYPE	The type of hardware scan.
SUBNET01	The Subnet Mask for LADAPT01.
ZGATEWAY	The Gateway Address.
ZGATEWAY	The Gateway Address.
ZHDWARCH	The operating system architecture.
ZHDWBIOS	The BIOS type.
ZHDWCDDR	The CD-ROM drive letter.
ZHDWCOMP	The computer name.
ZHDWCPU	The CPU type.
ZHDWCPU	The number of CPUs that are installed.
ZHDWCPU	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.

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Attribute	Description
ZHDWIPAD	The IP address.
ZHDWKYBD	The keyboard type.
ZHDWLANA	The LAN Adapter.
ZHDWLANG	Language
ZHDWMEM	The total physical memory (RAM).
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.
ZHDWPSE	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?

Attribute	Description
ZOBJRRC	Resolution return code
ZOBJRSTY	Resolution type
ZUSERID	User ID or computer name

SYNOPSIS (Client Operations Profile Summary)

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

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 "HPCA Agent: Messages and Codes" on page 71.
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).
ADDDONE	The number of installs processed.

Attribute	Description
ADDFAIL	The number of installs that failed.
DELNUM	The number of deletes found in the service list.
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 using notify.
ZUSERID	The user ID for this job.
ZCONTEXT	The (machine or user) context of this job.
DNAME	The HPCA Configuration Server Database domain.
MNAME	The name of the HPCA Configuration Server.
MACHNAME	The machine name of the HPCA agent computer from which this was run.
STARTDIR	Specifies the IDMLIB starting directory
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 HPCA agents that are using Client Operation Profiles, and is used to report the Server Access Profile (SAP) status and usage statistics from the HPCA agent. The SAPSTATS object contains all the variables that are defined in the SAP Class in the CSDB along with the following usage related variables.

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 HPCA agent will connect to the SAP. This value is maintained by the HPCA agent.
ROLE	The role of the SAP. The valid values are: <ul style="list-style-type: none"> • O: Client Operations Profiles • M: Self-maintenance • S: Services • R: Reporting • P: Patch Manager Gateway • D: Data • A: All roles
SPEED	The speed to the SAP from the HPCA 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 HPCA agent setting in

Attribute	Description
	ZMASTER.ZNORSPNS.
THROTYPE	The type of bandwidth throttling used. The valid values are NONE , ADAPTIVE , and RESERVED .
TIMEOUT	The communications timeout, in seconds.
TYPE	The type of SAP. The valid values are: <ul style="list-style-type: none"> • RCS: Configuration Server • DATA: 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 Configuration Server at every phase of a RADSKMAN process.

At each new phase of the HPCA 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 HPCA agent connect, as well as the type and context of the connect.

PREFACE Object Attributes

Attribute	Description
CMDLINE	The RADSKMAN command-line parameters that were used for the current HPCA 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 HPCA agent. The valid values are: <ul style="list-style-type: none"> • RSM: HPCA Application Self-Service Manager • RAM: HPCA Application Manager • RPS: Proxy Server or Staging Server (for preloading application resources)
JOBID	The job ID that was specified on the command line for this connect
LOCALUID	The starting directory under IDMROOT on the HPCA agent computer. The value is derived from the STARTDIR RADSKMAN parameter. So, if STARTDIR = \$USER, LOCALUID would contain the user's ID. If STARTDIR = SYSTEM, LOCALUID would contain SYSTEM. Note: UID stands for <i>user's initial directory</i> ; not user's identification.

Attribute	Description
MACHNAME	The HPCA agent computer's machine name.
USEREXEC	The user who is currently logged on and who executed the command. For Notify and Timers, this would be SYSTEM. For logon scripts, this would be the subscriber's network account name.
ZCONTEXT	The value of ZCONTEXT as passed on the RADSKMAN command line. <ul style="list-style-type: none"> • M indicates that RADSKMAN was run in a machine context. • U indicates that RADSKMAN was run in a user context. • A blank indicates that no context was specified on the RADSKMAN command line; the context will default to the context in which the HPCA agent connect was launched.
ZDOMNAME	The CSDB domain that is specified in the DNAME parameter of the RADSKMAN command line. The default is SOFTWARE .
ZMGRNAME	The Configuration Server name that is specified in the MNAME parameter of the RADSKMAN command line.
ZPKGRELI	This field contains the same value that is found in the HPCA agent's ZMASTER.ZPKGRELI. The ZMASTER.ZPKGRELI value is set during Agent install process and updated during the deployment of self-maintenance process to indicate the current level of an Agent installation. HPCA Core console uses this value to report the version of the Agent corresponding to a connection from a managed device. The value found in this field is used as the key for policy resolution to determine whether an Agent upgrade service is applicable to an Agent or not.
ZUSERID	This field contains the same value that is found in the HPCA agent's ZMASTER.ZUSERID. In most scenarios, it represents the machine name of the HPCA 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 UID RADSKMAN parameter sets this value.

SMINFO (Systems Management Information)

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

Note: Unlike the other objects that are discussed in this section, this object is one level lower, under RADSETUP.

SMINFO Attributes

Attribute	Description
ASSETTAG	The Unique Asset Tag number of the HPCA agent computer from the BIOS.
BIOSDATE	The date of the computer's BIOS.
BIOSVEND	The vendor of the computer's BIOS.
BIOSVERS	The version of the computer's BIOS.
COMPDOMN	The computer domain.
COMPNAME	The computer name.
FLASHMEM	The amount of flash memory on the machine.
IPADDR	The HPCA agent computer's IP address.
MACADDR	The HPCA 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).

HPCA Agent Logs

The HPCA 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).

Note: The default location of `connect.log` is `C:\Program Files\Hewlett-Packard\HPCA\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 "HPCA Agent Logs" above.

Each of the three primary HPCA agent modules can be instructed to use a specific log file by simply adding the **log** parameter to its command line. The three primary HPCA 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
```

Parameters for Log Files

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

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.

RADSTATE (Diagnostic Module)

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

Usage

The following is a sample of the RADSTATE syntax.

```
RADSTATE
mode=<abcdeimoprsv>, USERNAME=UserJoe, UID=UserID, MNAME=
<ConfigServer>, DNAME=<DB_domain>, SNAME=<service>
```

- **IDMROOT**: use to set `IDMROOT` (optional; defaults to the current `IDMROOT` setting)
- **Mode**: the mode of RADSTATE module.
- **USERNAME**: the user name; used for reporting
- **UID**: the user ID (optional)
- **MNAME**: the name of the HPCA Configuration Server (optional)
- **DNAME**: the HPCA Configuration Server Database domain (optional)
- **SNAME**: the name of the service (optional)

The following table lists and describes the valid values for the mode parameter.

RADSTATE Modes

Mode	Description
a	Display the ZVERLIST object
b	Verify instance data (temporarily disabled)
c	Check for duplicates and conflicts in FILE objects
d	Display an output log in the native editor
e	Check for EDM duplicates and conflicts (valid only with c mode)
i	User/Machine context report
m	Show module information
o	Create objects
p	Display Patch data (by default, this mode is skipped)
r	Display all resources
s	Display service detail
u	Display service user summary
v	Verbose mode
?	Print this help message

When RADSTATE is run in the **verbose** mode, it provides a great deal of basic information regarding the HPCA agent environment, including: global object statistics, current date and time, environment, emulator, and timeout settings, trace levels, service status, and locations of the `IDMSYS`, `IDMLIB`, and `IDMLOG` directories.

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

RADSTATE should be run:

- Whenever HPCA 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`, that is written to the `IDMLOG` directory and which contains the current state of the services and resources that are installed on the HPCA 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\HPCA\Agent\Lib
```

Method Dispatching

When the client-connect module (RADCONCT) dispatches methods, it creates an object called **ZDSPM000**, which contains the information for the instance that is being instantiated. The methods then read the information that is stored in ZDSPM000 and do their work. When the methods need to convey the results to RADCONCT, they create a **ZMRESULT** object with two variables, **ZMRC** and **ZMMSG**.

- ZMRC contains the extended error information that is found in the subscriber error codes.
- ZMMSG contains a corresponding message.

When the method exits, it will do so with one of the exit codes described in the following table.

Method Exit Codes

Exit Code	Description
0	No errors
4	Warning; continue the process
8	Failure; abort process
16	Fatal error; abort process

Exit Code 4: RADCONCT logs the information that is contained in ZMRC and ZMMSG.

Exit Codes 8 and 16: RADCONCT creates a ZERROR object with ZMRC and ZMMSG.

Chapter 3

HPCA Agent Directories, Objects and Logs: Linux and Macintosh

This chapter provides details on the HPCA agent directories, objects, and log files on a Linux and a Macintosh computer.

HPCA Agent Directories

The initialization settings for the HPCA Application Self-Service Manager for Linux and Mac OS are located in the `.nvdr` file on the agent device. This is located, by default, in the home directory of the account used to install the agent.

Parameter	Description
IDMDATA	When HPCA installs software, the agent temporarily stores compressed files received from the Configuration Server in this folder. After the files are decompressed and installed on the agent device, the compressed files are erased. Default: <code>/opt/HP/CM/Agent/lib/Data/</code>
IDMLIB	Dynamic directory that stores the objects for the service currently being managed. Default: <code>/opt/HP/CM/Agent/lib/</code>
IDMSYS	Stores the agent executables, such as <code>.EXE</code> and <code>.DLL</code> files. Default: <code>/opt/HP/CM/Agent/</code>
IDMROOT	The base directory for <code>IDMLIB</code> . This is a static path. Default: <code>/opt/HP/CM/Agent/lib/</code>
IDMLOG	Stores the agent logs. Default: <code>/opt/HP/CM/Agent/log/</code>

The following table explains the directory structure. The directories are preceded with `/opt/HP/CM/Agent/`.

Agent directories

Directory (<code>/opt/HP/CM/Agent/..</code>)	Description
<code>/CACertificates</code>	SSL Certificates
<code>/lib/MAINT</code>	Maintenance Storage Directory
<code>/lib/BACKUP</code>	Upgrade Maintenance Backup folder
<code>/lib/SYSTEM</code>	Starting Directory (<code>startdir</code>) created during connect (Name will vary).
<code>/lib/SYSTEM/CM-CS</code>	Configuration Server name (<code>mname</code>)

Directory (/opt/HP/CM/Agent/..)	Description
/lib/SYSTEM/CM-CS/SOFTWARE	Directory Name (dname)
/lib/SYSTEM/CM-CS/SOFTWARE/ZSERVICE	ZSERVICE Class
/lib/SYSTEM/CM-CS/SOFTWARE/ZSERVICE/DRAGVIEW	Sample application directory

HPCA Agent Objects

When an agent device connects to the Configuration Server, information is exchanged between the agent and the Configuration Server. This exchange is called resolution. During resolution, HPCA checks the status of services, and updates the Configuration Server with information from objects stored on the agent device.

Agent objects are stored in the `IDMLIB` directory on the agent device. After installing the agent and connecting to the Configuration Server, you can use agent objects to:

- determine the hardware configuration of the agent device
- Check if status of a service, for example, check if the service is successfully installed
- determine when was the service was installed
- determine the agent computer's name and the most recently logged on user
- determine the possible data sources for the agent device

While there are multiple HPCA objects on an agent device at any time, there is a core group of objects that supply information about and the status of the current agent connect. "HPCA Agent Objects" above these core objects. The table includes information on when the object is created or updated, and a brief summary of what the object includes. Each object listed has its own section in this chapter including a table listing its attributes. There are other objects created during the agent connect, but only the most commonly used ones are noted here. Check the HP support web site for information on other agent objects.

HPCA Agent Objects

Object	Description
ZCONFIG	ZCONFIG is created at start of agent connect process. Contains basic hardware information for the agent device such as processor, operating system, and drives. For more information, see " ZCONFIG (Hardware Configuration Information) " on next page.
SYNOPSIS	This object is transferred to the Configuration Server at the end of the agent connect. Note: Client Operations Profiles must be enabled for this object to be present. RADSKMAN stores a job summary in the SYNOPSIS object. It reports some of the parameters from the RADSKMAN command line and information on the number of files and bytes added, removed, and repaired. For more information, see " SYNOPSIS (Client Operations Profile Summary) " on page 32.
SAPSTATS	Updated by any network bound modules that need to access the Server Access

Object	Description
	Profile (SAP) such as RADCONCT, RADSTGRQ, and RADSTGMS. RADSKMAN deletes the SAPSTATS object at the beginning of the job. Note: Client Operations Profiles must be enabled for this object to be present. The SAPSTATS object has one instance for each of the agent device's Server Access Profiles (SAP). It summarizes information for each SAP such as speed, number of files sent and received, and the role of the SAP. For more information, see "SAPSTATS (Service Access Profile Status)" on page 34.
PREFACE	PREFACE is sent to the Configuration Server at every phase of a radskman process including: <ul style="list-style-type: none"> • Client Operations Profile resolution • Self Maintenance resolution • Catalog resolution • Single service resolution (This can happen multiple times depending on what services are processed.) • Outbox flush For more information, see "PREFACE (RADSKMAN Execution)" on page 35.
SMINFO	(Linux Only) SMINFO is created at the start of the agent connect process. SMINFO collects information that is independent of the hardware and software installed on the device, and some network information. For more information, see "SMINFO (Systems Management Information)" on page 37.

Using HPCA Administrator Agent Explorer to View HPCA Agent Objects

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

To view an object using HPCA Administrator Agent Explorer:

1. From the directory where you installed HPCA Administrator, run `radobjed` to start HPCA Administrator Agent Explorer.
2. Navigate to the agent device's `IDMLIB` directory, or to the directory where the object is stored.
3. Double-click the object's name in the list view.
4. The HPCA Administrator Agent Explorer displays the selected object.
5. Click **Save/Exit** to close the dialog box.

ZCONFIG (Hardware Configuration Information)

The ZCONFIG object stores hardware configuration information from the agent device. Use HPCA Administrator Agent Explorer to view the ZCONFIG object. The following table describes the

attributes of ZCONFIG arranged in alphabetical order. These attributes may vary depending on the configuration of the agent device.

The ZCONFIG object is sent to the Configuration Server automatically for viewing with the Admin CSDB Editor. If you do not want this object sent to the 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 agent device.

ZCONFIG attributes

Attribute	Description	Example
RUNLEVEL	Current run level at time of scan	5
ZHDWCOMP	Computer Name	qalinux
ZHDWCPU	CPU type	I686
ZHDWD00	Drive name for drive 00	/dev/hda2
ZHDWD00F	Current free space on drive 00	26913026048
ZHDWD00M	Mount Point for Drive 00	/
ZHDWD00T	Total space for drive 00	35152932864
ZHDWDNUM	Number of drive letters assigned	3
ZHDWMACH	Machine Type	I686
ZHDWMEM	Total physical memory (RAM)	133,619,712
ZHDWOS	Operating system	Linux
ZHDWSVCP	Service pack applied	2.4.20-8
ZHDWXHID	Host ID (output of hosted command)	771039E4
ZHDWXHN	Host Name	qalinux
ZOBJNAME	Name of Object	HARDWARE_SCAN
ZOSMAJOR	Major Component of OS version	2
ZOSMINOR	Minor Component of OS version	4
ZOSREV	OS revision (output of uname -v)	#1 Thu Mar 13 17:54:28 EST 2003
ZOSVER	OS version (output of uname -r)	2.4.20-8
ZUSERID	User ID or computer name	LINUXUSER

SYNOPSIS (Client Operations Profile Summary)

- The SYNOPSIS object is created on agents using Client Operations Profiles. The SYNOPSIS object summarizes the most recent agent connect. Use the SYNOPSIS object to confirm the

success or failures of the agent connect process. For more information on implementing Client Operations Profiles, see Chapter 5, Configuring Client Operations Profiles.

SYNOPSIS object attributes

Attribute	Description
STARTIME	Start time in ISO8601 time format. For example, 1997-08-15T11:12:00-0400
ENDTIME	End time in ISO8601 time format
EXITCODE	Exit code from the job
ERRORMSG	Text message corresponding to the EXITCODE
PRIORAPP	Total number of applications that existed in the service list (installed/not installed) before this job started
PRIORINS	Total number of installed applications that existed in the service list before this job was started
PRIORERR	Total number of applications in the service list that have errors before this job started
CURRAPP	Number of applications in the service list after the job completed
CURRINS	Number of applications in the service list that have been installed
UPDNUM	Number of updates found in the service list
UPDSKIP	Number of updates skipped
UPDDONE	Number of updates processed
UPDFAIL	Number of updated that failed
ADDNUM	Number of new applications found in the service list
ADDSKIP	Number of installs skipped (possibly optional applications)
ADDDONE	Number of installs processed
ADDFAIL	Number of installs that failed
DELNUM	Number of deletes found in the service list
DELSKIP	Number of deletes skipped
DELDONE	Number of deletes processed
DELFAIL	Number of deletes that failed
VERNUM	Number of applications that were verified
VERSKIP	Number of verifications skipped

Attribute	Description
VERDONE	Number of verifications processed
VERFAIL	Number of verifications that failed
REPNUM	Number of applications that were repaired
REPSKIP	Number of repairs skipped
REPDONE	Number of repairs processed
REPFAIL	Number of repairs that failed
CREFRESH	Catalog Refreshed (Y/N)
JOBID	Jobid passed in on the command line using notify
ZUSERID	Userid for this job
ZCONTEXT	Context of this job (M – Machine or U – User)
MACHNAME	Machine name of the agent device from where this was run
USEREXEC	User that executed the job
CMDLINE	Command line parameters used to execute this job

SAPSTATS (Service Access Profile Status)

The SAPSTATS object is generated on agents using Client Operation Profiles, and is used to report the Server Access Profile (SAP) status and usage statistics from the agent. The SAPSTATS object contains all the variables defined in the SAP class in the Configuration Server database along with the following usage related variables. For more information on the SAP class, see Chapter 5, Configuring Client Operations Profiles.

SAPSTATS object attributes

Attribute	Description
BANDWDTH	Percentage of bandwidth to use between 1 and 99.
BYTERCVD	Bytes received
BYTESENT	Bytes sent
ENABLED	Specifies if this SAP is enabled. Y for enabled, N for disabled.
ERRCOUNT	Number of errors
FILEMISS	Number of files not found
FILERCVD	Number of files received

Attribute	Description
FILESENT	Number of files sent
LASTAXSD	Last Date/Time Accessed in ISO format
NAME	Friendly name of the SAP.
OBJRCVD	Number of objects received
OBJSEND	Number of objects sent
PRIORITY	Priority for this SAP obtained from the CLIENT.LOCATION Class instance.
PROXY	The Internet proxy URI through which the agent will connect to the SAP. Maintained by agent.
ROLE	Role of the SAP. Possible values are: O : Client Operations Profiles M : Self Maintenance S : Services D : Data R : Reporting A : All of the above roles
SPEED	Speed to the SAP from the agent device measured in Bytes per second
STATUS	Status of this SAP <ul style="list-style-type: none"> • 000= SAP was accessed successfully • 920 = SAP could not be accessed • 999 = SAP was not used
STREAM	Specifies if streaming is used. Y for enabled. This overrides the agent setting in ZMASTER.ZNORSPNS.
THROTYPE	Type of bandwidth throttling used. Possible values are NONE, ADAPTIVE, and RESERVED.
TIMEOUT	Communications timeout in seconds.
TYPE	Type of SAP. Possible values are: <ul style="list-style-type: none"> • RCS: Configuration Server • DATA: Proxy Servers or a CD-ROM.
URI	Universal Resource Identifier for the SAP

PREFACE (RADSKMAN Execution)

The PREFACE object contains information about each execution of radskman. PREFACE object is sent to the Configuration Server at every phase of a radskman process including:

- Client Operations Profile resolution
- Self Maintenance resolution
- Catalog resolution

- Single service resolution (This can happen multiple times depending on what services are processed.)
- Outbox flush

At each new phase of the 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, for symbolic substitution, and for dispatching messages. For reporting, you can combine MACHNAME, ZUSERID, ZCONTEXT, JOBID, and CTYPE to know which user ran the agent connect, the type of connect, and the context.

PREFACE Object Attributes

Attribute	Description
CMDLINE	The RADSKMAN command line parameters used for the current 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=asdfods, DC=com
CTYPE	Type of agent. The possible values are: <ul style="list-style-type: none"> • RSM: HPCA Application Self-Service Manager • RAM: HPCA Application Manager • RPS: Proxy Server (for preloading application resources)
JOBID	The jobid specified on the command line for this connect (client versions 3.0 and above).
LOCALUID	The starting directory under IDMROOT on the agent device. LOCALUID contains the value derived from the STARTDIR radskman parameter. For example, if STARTDIR = \$USER then LOCALUID would contain the user's ID. If STARTDIR = SYSTEM then LOCALUID would contain 'SYSTEM'. UID stands for user's initial directory not the user's identification.
MACHNAME	HPCA Agent device's machine name.
USEREXEC	The user who is currently logged on and who executed the command. For Notify and Timers, this would be SYSTEM. For logon scripts, this would be the subscriber's network account name.
ZCONTEXT	The value of ZCONTEXT as passed on the RADSKMAN command line. <ul style="list-style-type: none"> • M indicates that RADSKMAN was run in a machine context. • U indicates that RADSKMAN was run in a user context. • A blank indicates that no context was specified on the RADSKMAN command line; the context will default to the context in which the agent connect was launched.
ZDOMNAME	The Configuration Server Database's domain specified in the DNAME parameter of the radskman command line. If DNAME is not specified in the command line, the default is SOFTWARE .

Attribute	Description
ZMGRNAME	The Configuration Server's name specified in the MNAME parameter of the radskman command line.
ZUSERID	The ZUSERID field contains the same value found in ZMASTER.ZUSERID of the agent. In most scenarios, this represents the machine name of the agent device, but may 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 UID radskman parameter sets this value.

SMINFO (Systems Management Information)

The Systems Management Information (SMINFO) object is created on all agent devices. The SMINFO object summarizes hardware specific information that is independent of what operating system or software is installed on the agent device. HPCA uses SMBIOS standards to access data about the BIOS. SMINFO also includes some network and user ID information.

SMINFO object attributes

Attribute	Description
ASSETTAG	Unique Asset Tag number of the agent device from the BIOS.
COMPDOMN	Computer Domain
COMPNAME	Computer Name
IPADDR	Agent device's IP address
MACADDR	Agent device's MAC address
MACHUUID	Unique machine user ID.
SNENCLOS	Serial Numbers for the system enclose structures from the BIOS.
SNSYSTEM	Serial Numbers for the system structures from the BIOS.
SUBMASK	Subnet Mask
SUBNET	Subnet
SYSMANUF	System manufacturer from the BIOS.
SYSPROD	System manufacturer product information from the BIOS.

Controlling Default Permissions for Directories and Objects

Directories, objects, and log files created by HPCA are assigned permissions based on current umask settings and execute permissions on objects and log files are removed. In order to change the default permissions assigned when new directories, objects, and log files are created by HPCA

within `IDMLIB`, you can use environment variables or you can create a `DEFAULTS.EDM` file in `IDMROOT`.

Note that environment variables will always take precedence. If the environment variables are set and a `DEFAULTS.EDM` file exists, values defined using the environment variables are used.

These methods for controlling permissions apply only to newly created, service-related directories and objects within `IDMLIB`. For example,
`/opt/HP/CM/Agent/lib/SYSTEM/CMCS/SOFTWARE/ZSERVICE/SAMP_
APP/00000000.000.`

To control permissions using environment variables:

Set the following environment variables with the permissions you want assigned by default:

- For directories: `IDMLIBPERM`
- For objects: `IDMOBJPERM`
- For log files: `IDMLOGPERM`

To control permissions using `DEFAULTS.EDM`:

1. In `IDMROOT` directory, create an object, `DEFAULTS.EDM`.
2. Add the following variables with the permission value to be used when new objects, log files, or directories are created by HPCA.
 - For directories: `LIBPERM`
 - For objects: `OBJPERM`
 - For log files: `LOGPERM`

For example, to exclude write permissions for objects for group and other, create a `DEFAULTS.EDM` file with the following:

```
OBJPERM 0644
```

To exclude write permissions for logs for group and other, create a `DEFAULTS.EDM` file with the following:

```
LOGPERM 0644
```

To set the default permissions of directories to read and write for everybody, create a `DEFAULTS.EDM` file with the following:

```
LIBPERM 0777
```

HPCA Agent Logs

The 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).

Note: The default location of `connect.log` is `/opt/HP/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 "HPCA Agent Logs" on previous page.

Each of the three primary agent modules can be instructed to use a specific log file by simply adding the `log` parameter to its command line. The three primary 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
```

Parameters for Log Files

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

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.

RADSTATE (Diagnostic Module)

RADSTATE is a diagnostic module designed to give an overview of the current state of the agent. The information in the `radstate` output is based on data retrieved from numerous agent objects.

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

- 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 including instance totals and byte totals.
- Timer Information

Use radstate at anytime to check agent configurations. For example, run radstate at the end of each agent connect. After radstate is run using mode option o, the ZRSTATE and ZRSTATES objects are built and can be sent to the Configuration Server as needed.

Radstate should be run:

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

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

```
radstate mode=vo, IDMROOT=/opt/HP/CM/Agent/lib
```

For a technical document with additional information, see the HP support web site.

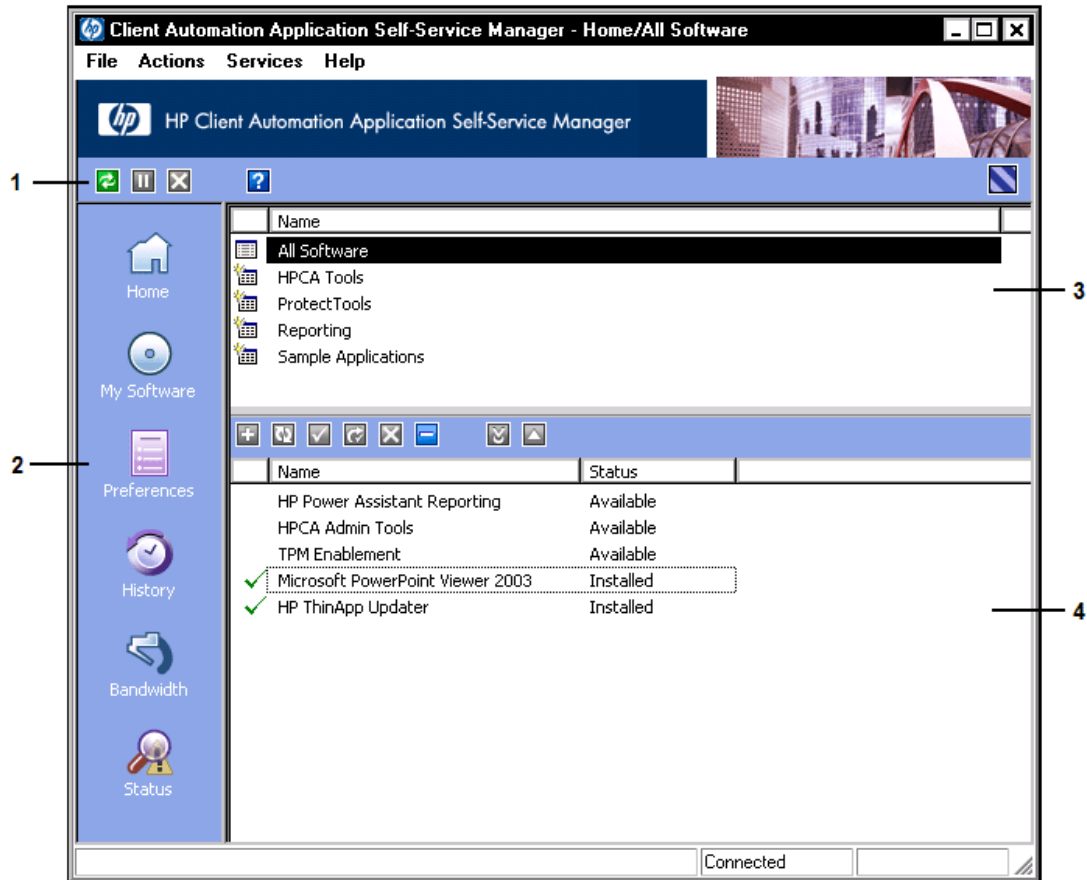
Chapter 4

HPCA Application Self-Service Manager Interface

The HP Client Automation Application Self-Service Manager (Application Self-Service Manager) is the client-resident product with which users can install, remove, and update optional applications that have been made available to them. The applications have to be entitled to the users by an HPCA administrator. The Application Self-Service Manager presents users with a catalog of the applications to which they are entitled, and they can self-manage the installation, removal, and updating of the applications. The Self-service Manager gets installed on client devices when the Application Management Agent is deployed to those devices.

Note: The display language for HPCA agent user interface is same as the display language set for the OS. You can change the OS display language to view the HPCA agent in the updated language. After changing the OS display language, if the HPCA agent user interface is not updated in the new display language, reboot your computer, and then log on to the HPCA agent.

The Application Self-service Manager interface has four main sections that allow users to manage available applications, view information and status for software in their catalog, and customize the user interface display.



1. **Global Toolbar:** Enables you to refresh the catalog and pause or cancel the current action.
2. **Option Bar:** Displays various menu choices available while using the Application Self-Service Manager.
3. **Catalog List:** Lists the different software catalogs available.
4. **Service List:** Lists the applications to which you are entitled in the selected software catalog.

Note: The options available in your Application Self-Service Manager window depend on the access provided to you by the HPCA administrator.


Global Toolbar


The Global Toolbar enables 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 disabled.

To refresh the catalog, click **Refresh**  on the Global Toolbar.

To pause the current action, click **Pause**  on the Global Toolbar.

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

To cancel the current action, click **Cancel**  on the Global Toolbar to cancel the current action.

Option Bar

Use the Option Bar to configure and customize your HPCA Application Self-Service Manager.

The icons displayed on the Option Bar are:

- **Home:** Displays the main Service List with all available services in the Configuration Server Database (CSDB).
- **My Software:** Displays only services that you have installed.
- **Preferences:** Enables you to access various [display options](#), [service list options](#), and [connection options](#) for the HPCA Application Self-Service Manager. At any point you can click OK, Apply, or Cancel in the top right corner of the Preferences section to save or discard any changes you make.
- **History:** Lists the activities done in the current and previous sessions of Application Self-Service Manager.
- **Bandwidth:** Displays the bandwidth slider. Changing this value dynamically changes the throttling value. You can drag the bandwidth slider to increase or decrease the amount of bandwidth throttling desired. You can also adjust bandwidth throttling from within the [Preferences](#), [Connection options](#).
- **Status:** Displays the status of the current action including the size, estimated time, progress, and available bandwidth in the Status window. You can dock and undock the Status window by selecting the toggle Docked option from the shortcut menu when you right-click the Status window. By default, the Status window is docked.

Catalog List

The Catalog List section lists the available software catalogs and any virtual catalogs. Virtual catalogs are subsets of the default catalog.










To select a catalog:

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

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 "[Service List Options](#)" on page 45.

Buttons in the 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	Expands the selected service.
	Collapse	Collapses the selected service
	Download Only (Advanced)	Downloads 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.
	Reconfigure (Advanced)	Reconfigures the installation of the selected service. This button will be available only if you have selected Show advanced operations in the Service List Options of Preference.

Note: The buttons in the Service List section will appear dimmed when they are not available for the selected application.

General Options

You can use the General options window to modify the appearance of the HPCA Application Self-Service Manager.

To view the General options window:

1. Click **Preferences** on the Option Bar of the HPCA Application Self-Service Manager.
2. Click **General options**, to display the General Options window.

Modifying the Display

To modify the display:

- To display the menu, select **Show menu** check box.
- To display the catalog list, select **Show catalog list** check box.
- To be prompted to use the HPCA Application Self-Service Manager in offline mode at the beginning of each session, select **Prompt for offline mode** check box.
- To automatically hide the Option Bar, select **Auto-Hide Option bar** check box.

- To change the start-up parameters file, click **Browse**, and navigate to the path where the start-up parameters file exists.

Modifying the Color Settings

- To use the system colors, click **Use system colors**.
- To use your own custom colors, click **Customize colors**. After selecting **Customize colors**, you can choose the following:
 - **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 work area color.

Service List Options

You can use the Service list options window to modify the appearance of the Service List.

To view the Service list options window:

1. Click **Preferences** on the Option Bar of the HPCA Application Self-Service Manager.
2. Click **Service list options** to display the Service List Options window.

Customizing the Column Names in the Service List

Use the Columns area to customize the columns that appear in your service list. The Columns to show section lists the column names currently displayed in your service list.

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.

Available column names and description

Name	Description
AdaptiveBandwidth	Adaptive minimum percentage of bandwidth used when using bandwidth throttling.
AlertMessage	Allows longer application description or instruction message to the end user. (Optional service text field as part of Alert/Defer configuration).

Name	Description
Author	The author of the service.
Avis	Service status flags for internal use only.
CompressedSize	The size of the compressed service (bytes).
Description	A short description of the service.
ErrorCode	Current Service status. Example: Initial = 999. Method Failure = 709.
InstalledDate	The date the service was installed on your computer.
LocalRepair	If data is repairable locally (cached on your computer).
Mandatory	The Mandatory or Optional flags are displayed.
Name	The name of the application.
OwnerCatalog	The originating application domain name.
Price	Price of the service.
PublishedDate	The date the service was published to the catalog.
Reboot	Service reboot settings (for internal use).
RepublishedDate	The date the service was republished to the catalog.
ReservedBandwidth	Reserved maximum percentage of bandwidth used when using bandwidth throttling.
ScheduleAllowed	Specifies whether end users are allowed to change the update schedule for the application, locally.
Size	The size of the service (bytes). Note: You need this amount of free space on your computer to successfully install the service.
Status	Current status of the software <ul style="list-style-type: none"> • Available • Broken • Download Canceled • Downloaded • Installed • Update Available
SystemInstall	Displays if application will be installed using System account.
ThrottlingType	Type of Bandwidth throttling to use. Possible values: ADAPTIVE,

Name	Description
	RESERVED or NONE.
UIOption	Determines whether the status window is displayed.
Upgraded Date	The date the service was upgraded.
URL	The software vendor's URL.
Vendor	The software vendor who supplied the service.
Verified Date	The date the service was last verified.
Version	The version of the service.

Customizing the Display

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

Connection Options

You can use Connection options to select the type of bandwidth throttling to use or to specify the settings required for using a proxy server.

To view the Connection options window:

1. Click **Preferences** on the Option Bar of the HPCA Application Self-Service Manager.
2. Click **Connection options**, to display the Service List Options window.

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 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 Settings

- Select **Use a proxy server** checkbox if you want to use a specified Internet proxy server to connect your agent to the upstream host server.

- Select **Discover proxy address** to enable the agent to discover the Internet proxy server. Specify the address and port of the Internet proxy server to be discovered in the **Address of the proxy server** and **Port** text boxes respectively.


Using HPCA Application Self-Service Manager Interface

You can use the user interface to install and remove software, refresh the catalog of available applications, and view information about the applications. The Option Bar contains buttons for viewing session history, adjusting bandwidth, and viewing the current status of an application.

Installing Software using HPCA Application Self-Service Manager 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, select the software that you want to install.
2. Click the **Install**  button. Some installations might display a set of dialog boxes. If so, follow the instructions. Otherwise, the installation begins immediately.

Note: 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 HPCA Application Self-Service Manager Service Catalog


The catalog is refreshed whenever you log on to the HPCA Application Self-Service Manager interface. Click the **Refresh Catalog**  button in the Global Toolbar to retrieve the updated list of applications.

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

Removing Software

Use the Remove option to remove software from your computer.

To remove software:


1. Select the software that you want to remove.
2. Click the **Remove**  button.
3. Click **Yes** if you are asked to confirm that you want to remove the application.

Note: Alternatively, right-click the name of the installed software and select **Remove** from the shortcut menu that opens.

Reconfiguring Software


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

To reconfigure software:

1. Select the software you would like to reconfigure.
2. Click the **Reconfigure**  button.
3. Some installations might display a set of dialog boxes. If so, follow the instructions. Otherwise, the installation begins immediately.

Repairing Software


To repair an application:

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 the **Repair**  button. HPCA retrieves the files needed to fix the application.

Scheduling Timed Events

You can 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 HPCA Application Self-Service Manager interface, select an installed application.
2. Click the **Schedule Timed Events**  button in the expanded service box. 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 at a specified time. Use the up and down arrows next to the Every option button to select the frequency of updates.
 - **Each**
Updates occur on selected weekdays every week. You can select more than one day weekday.
 - **Once on**
Updates occur on selected weekdays only once. You can select more than one day weekday.
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 save 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.
2. Click the **Verify**  button.

Note: 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.

Viewing Information in HPCA Application Self-Service Manager Interface

You might want to view more information about an application than the Service List provides. To view information such as vendor, version, size, and date the application was installed:

1. In the Service List, select the appropriate software, and click the **Show Extended Information**  button in the selected service details.

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

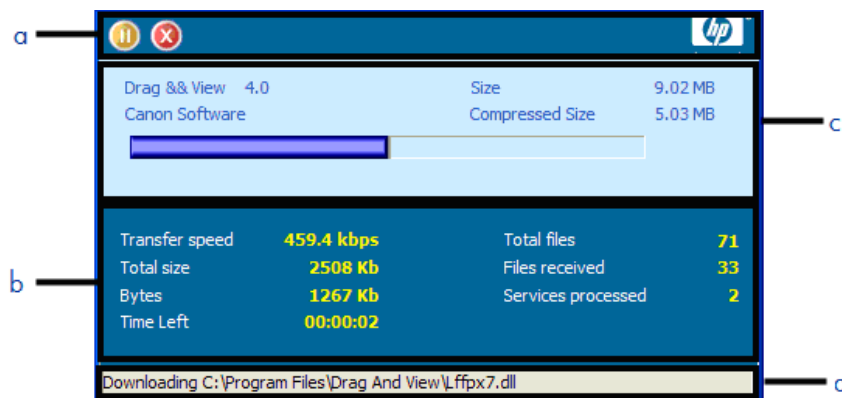
2. Click the link provided to view more information from the manufacturer in the dialog box that displays.
3. Click the corresponding **Cancel**  button to return to the Service List.

HPCA System Tray

The HPCA System Tray icon provides status and statistics information, as well as pause and cancel mechanisms for the application that is being installed on your computer. The System Tray icon sits in listen mode, and accepts requests from the server for the display of dialog boxes when user interaction is required and provides the status information that will be displayed in the Console view. The System Tray enables you to control the bandwidth throttling value to make appropriate use of your network bandwidth.

An icon shows in the System Tray area of the Task Bar. By moving your cursor over the icon, you can see one of the three states depending on the HPCA agent's activity.

- **Idle:** When no actions are in process and no user intervention is required, the icon is static. When the system tray icon is idle, it may be hidden.
- **Active:** The icon becomes active when the HPCA agent is working or when user intervention is required. The icon animates and an informational bubble will appear when you move the cursor over the icon. The bubble provides information on the type of activity that is occurring. If a critical update occurs, the bubble automatically pops up.
- **Console View:** The Console View can be launched by the shortcut menu that is available when you right-click the icon, or by double-clicking the icon. The Console view appears as shown in the following figure.



Legend

a - Button Bar

b - Status Area

c - Information Panel

d - Status Message Area

The Console View contains the following parts:

- **Button Bar:** Contains buttons for Pause and Cancel, and a logo that animates when HPCA is actively working.

- **Status Area:** Contains statistics about the current process, 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.
- **Information Panel:** Contains information about the service that is currently being processed, as well as a progress bar that shows the percentage finished. The Bandwidth Control slider appears in the Information Panel only when configured by your HPCA Administrator.
- **Status Message Area:** The Status Message Area shows a message about the current process.

Bandwidth Control: If bandwidth throttling for the application is set on the HPCA Core server, and you click the bandwidth toggle button in the System Tray Console, a slider for bandwidth control appears. Adjust the slider to change the bandwidth throttle value.

Chapter 5

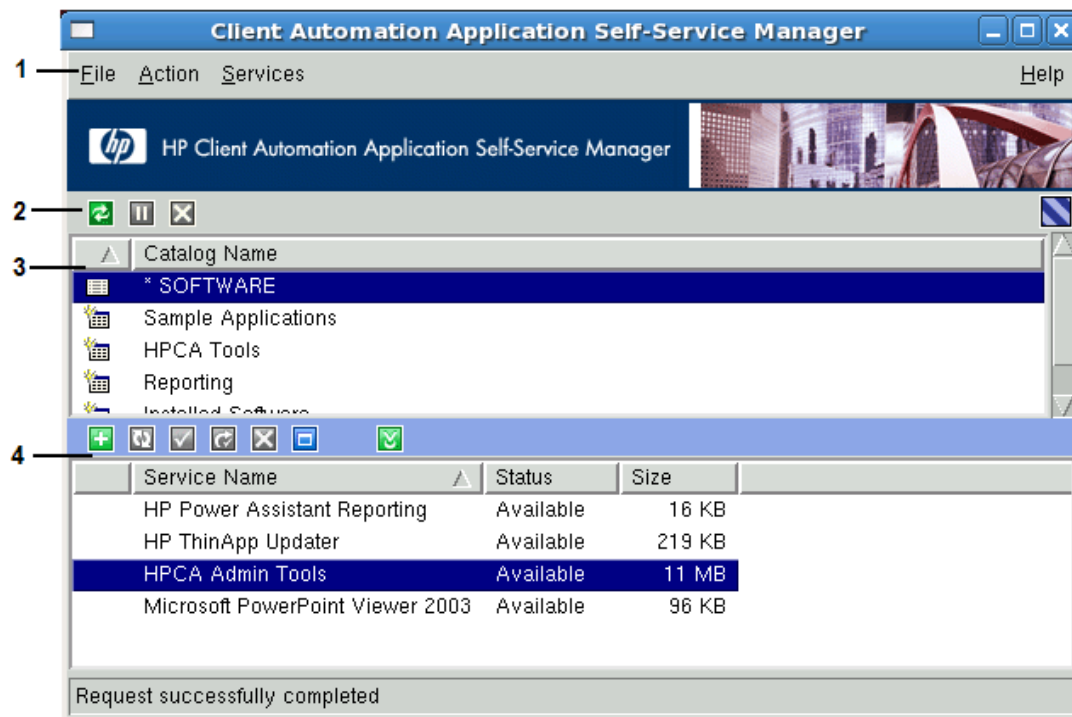
HPCA Application Self-Service Manager Interface: Linux and Macintosh

Application Self-Service Manager is a part of HPCA Agent and is installed automatically when you install HPCA Agent on a target device. With Application Self-Service Manager, you can install, remove, and update optional applications that are available in the Service List of your Application Self-Service Manager user interface.

Note: The display language for HPCA agent user interface is same as the display language set for the OS. You can change the OS display language to view the HPCA agent in the updated language. After changing the OS display language, if the HPCA agent user interface is not updated in the new display language, reboot your computer, and then log on to the HPCA agent.

This section describes how to use the HPCA Application Self-Service Manager interface.

The following figure shows the Application Self-Service Manager Interface on a Linux system.



1. **Application Self-Service Manager menu options:** Each menu contains specific Application Self-Service Manager options. The Application Self-Service Manager menu options are displayed in the default menu bar on a Macintosh system.

2. **Global Toolbar:** Enables you to refresh the catalog, pause the current action, or cancel the current action.
3. **Catalog List:** Lists the different software catalogs available.
4. **Service List:** Lists the applications that you are entitled to.


Note: The Options available in your Application Self-Service Manager window depend on the access provided to you by the HPCA administrator.

Global Toolbar

The Global Toolbar enables you to refresh the catalog, pause the current action, or cancel the current action. After 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 paused action by clicking the **Cancel** button.

Any time one of the buttons in the Global Toolbar is not available for the current action, they will appear dimmed.

To Refresh the Catalog, click **Refresh Catalog**  on the Global Toolbar.

To Pause the Current Action, click **Pause**  on the Global Toolbar to pause the current action.


To Resume the Current Action, click **Resume**  to resume a paused action. The **Pause** button is replaced with this button after you pause an action.

To Cancel the Current Action, click **Cancel**  on the Global Toolbar to cancel the current action.

Catalog List

The Catalog List section lists the available software catalogs and any virtual catalogs. The virtual catalogs are subsets of the default catalog.

To select a catalog:








1. In the Catalog List, click the catalog you would like to view in the Service List section.
2. Refresh the catalog at any time by clicking the **Refresh**  button in the Global Toolbar.

Service List

The Service List section lists the applications available to you. A check mark appears next to software that is already installed. The column headings displayed can be changed to suit your needs. For more information, see *Preferences* in "HPCA Application Self-Service Manager Menu Options" on next page.

The following table lists the buttons available in the Service Name list.

Buttons in the Service Name list

Button	Action	Description
	Install	Installs the selected service on your computer.
	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 Data	Displays or hides the selected service information at the bottom of the Service List area.
	Download Only	Downloads the selected service from catalog into local cache without installing.

Note: The buttons in the Service List section will be dim when they are not available for the selected application.

HPCA Application Self-Service Manager Menu Options

Use HPCA Application Self-Service Manager menu options to configure and customize the HPCA Application Self-Service Manager.

The following sections explain each option in the HPCA Application Self-Service Manager menu in detail.

- **File:** Enables you to exit the HPCA Application Self-Service Manager.
- **Action:** Enables you to navigate between software catalogs, refresh the catalog, view history or modify preference options.
 - **Home:** Displays the main Service List with all available services.
 - **My Software:** Displays only the services that you have installed.
 - **Refresh Catalog:** Refreshes the catalog, and checks for updates to any available Services.
 - **Preferences:** Enables you to access various General options, Service List options, and Connection options for the Application Self-Service Manager.

Configuration Options	Description
Startup parameter file	Specifies the name and location of your Startup parameter file, by default: <code>/opt/HP/CM/Agent/lib/args.xml</code> . Click Browse button to manually

Configuration Options	Description
	locate the file.
Show transfer status window	Displays the transfer status window at the bottom of the Service List section.
Expand service info on startup	Displays the Service info at the bottom of the service list for the selected service.
Prompt for offline mode	Configures the prompt to work offline if a connection to the upstream host is not available.
Maximum log detail level	Enables you to set the Log detail level to ERROR, WARNING, INFO, DEBUG, or TRACE.
Maximum log file size	Enables you to configure the maximum log file size .
Configure Service List columns	Enables you to modify the appearance of the Service List.

- **Event History:** Lists the activities done in the current and previous sessions of Application Self-Service Manager.
- **Services:** Enables you to install, update, verify, repair, remove, or schedule a selected service. You can alternatively use the Service List buttons to perform these actions.

Using HPCA Application Self-Service Manager Interface

You can use the user interface to install and remove software, refresh the catalog of available applications, and view information about the applications. The Menu bar contains options for viewing session history, adjusting bandwidth, and viewing the current status of an application.

Customizing the Column Names in the Service List

You can customize the columns that appear in your service list. The right-hand column lists the column names currently displayed in your service list.

To add columns to the Service List:

1. Click **Preferences** under the **Actions** menu option. The Client Automation Application Self-Service Manager Preferences dialog box displays.
2. Click the **Configure Service List Columns...** button. The Select Catalog Columns dialog box displays.

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Chapter 5: HPCA Application Self-Service Manager Interface: Linux and Macintosh

3. In the **Available Columns** list box, select the column name you would like to add.
4. Click **Add**. The selected column is listed in the **Selected Columns** list box.
5. To change the order of the columns in the **Selected Columns** list, use the Move Up and Move Down buttons.
6. To set the default order of Services in the Service List, use the Sort Column and Direction buttons.
7. Click **OK** to return to the **Preferences** menu.
8. Click **Save** to keep your changes and return to the HPCA Application Self-Service Manager.

To remove columns from the Service List:

1. In the **Selected Columns** list box, select the column you would like to remove.
2. Click **Remove**. The selected column is removed from the **Selected Columns** list box and returned to Available Columns.
3. Click **OK** to return to the **Preferences** menu.
4. Click **Save** to keep your changes and return to the HPCA Application Self-Service Manager.

Available column names and description

Name	Description
Alert Message	Allows longer application description or instruction message to the end user. (Optional service text field as part of Alert/Defer configuration).
Author	The author of the service.
AVIS	Service status flags for internal use only.
Catalog	
Can Schedule	
Compressed Size	The size of the compressed service (bytes).
Description	A short description of the service.
Graphical Status	
In Catalog	
Installed Date	The date the service was installed on your computer.
Local Repair	If data is repairable locally (cached on your computer).
Mandatory	The Mandatory or Optional flags are displayed.
Object ID	


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Name	Description
Object Name	
PID	
Price	Price of the service.
Published Date	The date the service was published to the catalog.
Reboot	Service reboot settings (for internal use).
Reconfigure	
Service Group	
Service Name	Name of the Service (cannot be removed from the column display).
Size	The size of the service (bytes). Note: You need this amount of free space on your computer to successfully install the service.
Status	Current status of the software <ul style="list-style-type: none">• Available• Broken• Installed• Download Canceled• Downloaded• Update Available
System Install	Displays if application will be installed using System account.
Throttle Type	Type of Bandwidth throttling to use. Possible values: ADAPTIVE, RESERVED or NONE.
Upgraded Date	The date the service was upgraded.
URL	The software vendor's URL.
Vendor	The software vendor who supplied the service.
Verified Date	The date the service was last verified.
Version	The version of the service.

Installing Software Using HPCA Application Self-Service Manager 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**  in the Service List toolbar.

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

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 HPCA Application Self-Service Manager Interface Catalog

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


Verifying Software

To check the installation of an application:

1. In the Service List, select the installed service that you would like to verify.
2. Click **Verify**  in the Service List toolbar.
 - 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, a Verification Failed window will open displaying the problem with the application. The status appears as Broken in the Status column in the Service List.

Repairing Software


To repair an application:

1. Select an application that needs to be repaired (This is designated by an **X** in the first column).
2. Click **Repair**  in the Service List toolbar. HPCA retrieves the files needed to fix the application.

Removing Software

Use the **Remove** button to remove software from your computer.

To remove software:

1. Select the software that you want to remove.
2. Click **Remove**  in the Service List toolbar.
3. Click **Yes** if you are asked to confirm that you want to remove the application.

Viewing Information in HPCA Application Self-Service Manager Interface

You may want more information about an application than the Service List provides. Double-click a service to see the details in the Service Information window. If you would like to know the vendor, version, size, and date the application was installed, see "[Customizing the Column Names in the Service List](#)" on page 56.

Scheduling Timed Events

After selecting an installed service, select **Schedule** from the Services menu 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 non-business hours, when you are not using your computer and network traffic is slower.

To schedule updates for an installed application:

1. In HPCA Application Self-Service Manager interface, select an installed application.
2. Select **Schedule** from the **Services** menu. The **Scheduling** 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 may select more than one day.

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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.

Chapter 6

HPCA Agent Lockdown Mode

The goal of the HPCA agent lockdown mode is to ensure the integrity, confidentiality, and availability of the content and methods that are stored and used by the management agent. This prevents non-privileged users from tampering with critical system-level content or breaching confidentiality by viewing content they should not have access to.

In Windows, the operating system enables you to define HOME directories for each user. The administrator configures the user data store to use the HOME directory style approach. The HPCA processing methods and other objects are owned by the SYSTEM user. This was done intentionally so that migration to Lockdown mode is less disruptive to the SYSTEM mode.

To solve the “What to trust” issue, the HPCA agent does not trust any parameters that are passed in from a USER request (for example, RADSKMAN command). The SYSTEM mode is predefined with trusted and secured objects either at install time or by performing a priming connection after installation to the Configuration Server to get the default parameters.

The HPCA agent has a machine (SYSTEM) mode and user mode. The machine mode is controlled by the administrator and has elevated privileges, whereas the user mode managed by end user runs with potentially limited privileges. Typically, an administrator deploys all the standard applications to a device using the machine mode. A user who logs into the system might deploy optional software that has been entitled to him/her by the site administrator.

To install applications on a system, the install process must run with elevated privileges. Since the end user can decide which entitled applications to deploy, the SYSTEM side needs to be available to the user and the site administrator. The HPCA agent uses an object model retrieved from the Configuration Server and stored on the target device to manage software on the systems. These objects are accessed using SYSTEM or end user privileges.

Note: For an application, with ZSERVICE.ZSYSACCT=Y, to work successfully in lockdown mode it must be entitled to both, the USER and MACHINE.

Implementations that choose not to secure their HPCA managed devices folders may be exposed to a variety of issues, including:

- **Local Tampering of Data Store:** The user can influence the machine mode to do unauthorized operations by tampering with the objects stored in `IDMROOT`. The Agent Lockdown Mode segregates the user and machine data stores so that each is only accessible in its authorized processing context. This independently secures the SYSTEM and USER objects.
- **Secure Environment Trust Issues:** HPCA agent in Lockdown Mode only trusts IP addresses that are specified in secured locations, for example, SAP object, and cannot be modified by a non-privileged user. Once a Client Operations Profile (COP) connect has run, there is a secure list of servers that the HPCA agent is allowed to contact.

Administrators may have a variety of reasons for choosing not to deploy security lockdown restrictions on end users:

- Users may all be machine administrators.
- Users may all be trusted users. Another means of security may be employed.

Entitlement Settings for Agent Lockdown Mode

In general, the HPCA Administrators would have the following entitlement scenarios for deploying software into target systems:

- **Machine Only Entitlements:** These are applications, which will only be deployed by using SYSTEM context and the application is owned by the machine level.
- **User Only Entitlements:** These are the applications, which will only be deployed by user context. Hence, entitlements are done in per use per user based policy, and the application is owned by the end-user of the target machine.
- **Machine/User (Hybrid) Entitlements:** These are the kind of applications, which are partly deployed by SYSTEM and partly deployed by USER. Machine Side has to be run first, before running the first user connect. This is called **Priming Connect**. To facilitate the Priming Connects, there is a `MACHDEF.EDM` file, which will be created by collecting the Connect parameters from the Administrator during the install time.

Machine Defaults (MACHDEF.EDM)

MACHDEF is an abbreviation for Machine Defaults. The `MACHDEF.EDM` file carries the Machine default parameters. You can create the `MACHDEF.EDM` file by adding the MACHDEF variables in the `[objects]` section of the `install.ini`. The following table lists the variables of `MACHDEF.EDM` along with their description and values.

MACHDEF Variables

Variable	Description	Value
STARTDIR	The directory under machine <code>IDMLIB</code>	SYSTEM, \$MACHINE, or \$USER
UID	The value to use for entitlement	\$MACHINE or \$USER
IP	The IP address of the Configuration Server	A valid IP address or IP name
COP	Client Operation Profile resolution enabled	Y or N
ASK	Prompt user	Y or N

When the customer environment has Software Manager with differing user entitlements and no machine entitlement, they should specify the values of MACHDEF variables as follows:

STARTDIR	\$USER
UID	\$USER

Similarly, when you want to entitle applications to machine and user and machine has all the user applications entitled, you should specify the values of MACHDEF variables as follows:

STARTDIR	SYSTEM
UID	\$MACHINE

Suppose a customer always runs a Priming Connect for the machine side after the product is installed, where the machine has all the entitlements. In this scenario, you will not need a `MACHDEF.EDM` value to get all the default parameters.

User Defaults (USERDEF.EDM)

USERDEF is an abbreviation for User Defaults. The `USERDEF.EDM` file carries the User default parameters. You can create the `USERDEF.EDM` file by adding the USERDEF variables in the `[objects]` section of the `install.ini`. The following table lists the variables of `USERDEF.EDM` along with their description and values.

USERDEF Variables

Variable	Description	Value
UID	The value to use for entitlement	\$MACHINE or \$USER
IP	The IP address of the Configuration Server	A valid IP address or IP name
COP	Client Operation Profile resolution enabled	Y or N
ASK	Prompt user	Y or N

When your environment has Software Manager with differing user entitlements, you should specify the values of USERDEF variables as follows:

UID	\$USER
-----	--------

Similarly, when you want to entitle applications to machine and user and machine has all the user applications entitled, you should specify the values of USERDEF variables as follows:

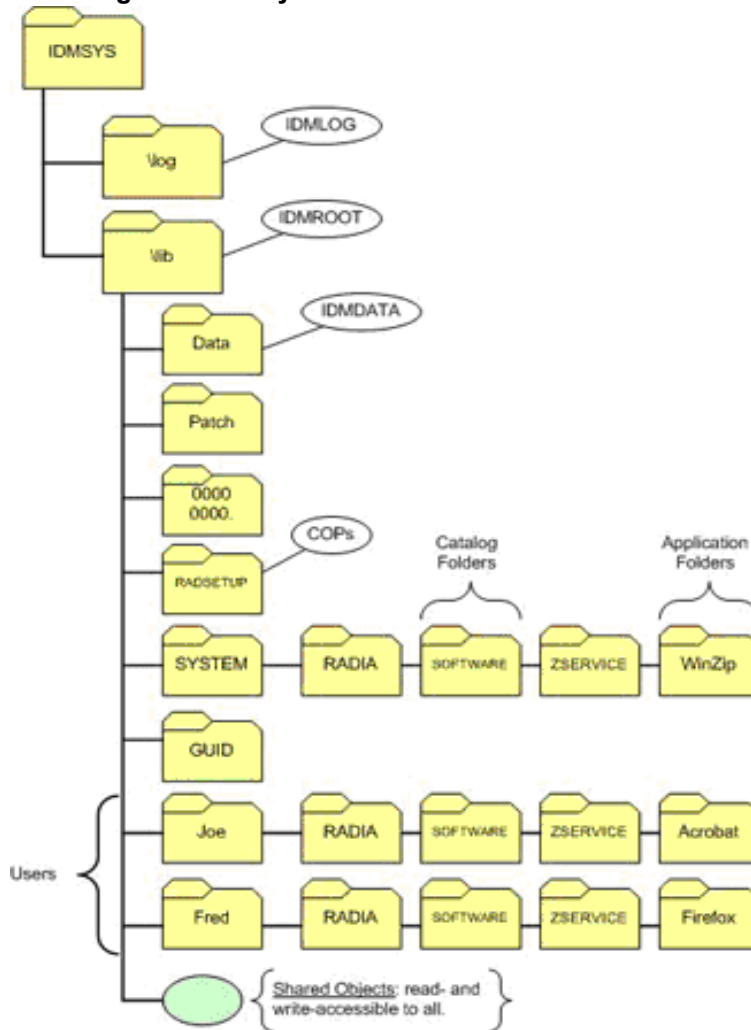
UID	\$MACHINE
-----	-----------

Directory Structure

Directory Structure in Non-Lockdown Mode

The following figure illustrates the directory structure in a non-Lockdown Mode. It is clear that SYSTEM directories are not isolated from USER directories. If the Machine-mode Lockdown is not enabled, they may be accessible to any user of the machine. Also, various USER directories would be susceptible to unauthorized access, as well as unauthorized modifications.

HPCA Agent Directory Structure in non-Lockdown Mode



Directory Structure in Lockdown Mode

For administrators who are enabling HPCA Agent Lockdown mode there are choices to be made on where to isolate and store USER data. In Windows, the operating system defines “home” directories for each user and inherently prevents unauthorized access to these directories.

There are several locations that could be used to separate user data, but a typical implementation would have the HPCA administrator configure the user data store to use the home-directory approach, resulting in an existing managed device’s data stores being solely owned and accessible by the SYSTEM. This approach facilitates the migration of an existing environment to Lockdown enabled environment.

If, in your environment, the applicable directory is hidden, use the operating system-specific “view hidden folders” procedure to access and view it.

On the supported Windows operating systems, the home directories are:

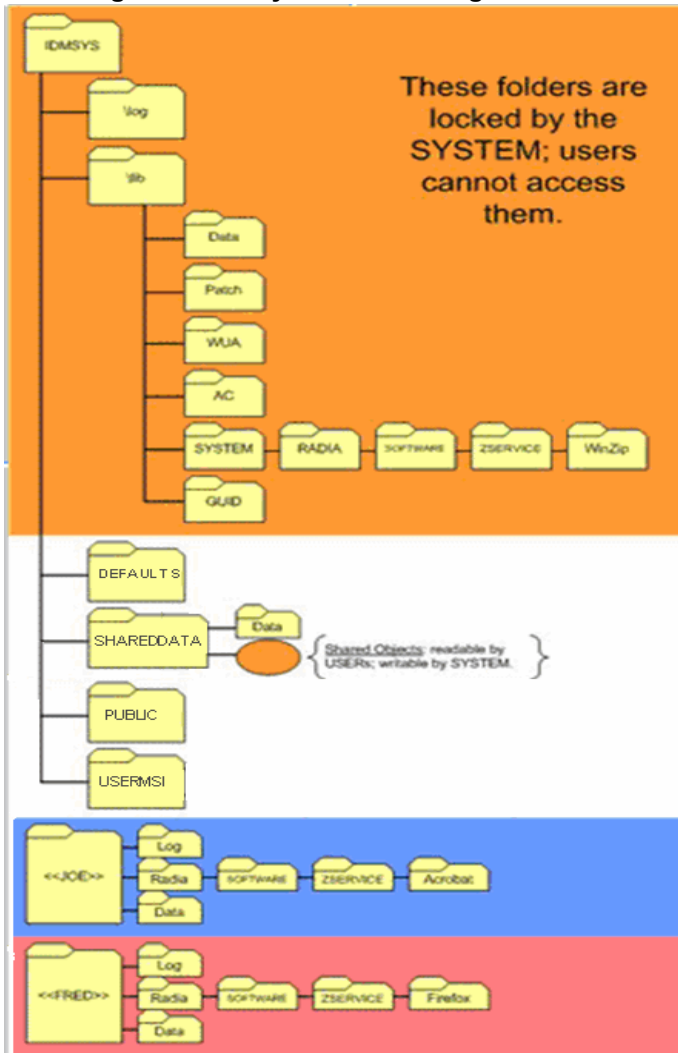
- Windows XP and Windows 2003 Server:
`C:\Documents and Settings\\Local Settings\Application`

Data\HPCA\Agent

- Windows Vista®, Windows 7 and Windows 2008 Server:
C:\Users\\Appdata\Local\HPCA\Agent

The following figure illustrates the HPCA agent directory structure in Lockdown Mode. The SYSTEM-based directories are no longer on the same “branch” as the USER directories. Therefore, can be secured and are no longer be accessible to any user of the machine — they are accessible to authorized administrators only. Also, each user has its own (USER-specific) directory, which again, is not on the same “branch” as another user. Hence, it is not susceptible to unauthorized access and modifications.

HPCA Agent Directory Structure in Agent Lockdown Mode



The location of the USER folders (JOE, FRED, and others) is determined at run time. It is based on the user that is logged in and by the value in `nvd.ini` file of `IDMUSR=CSIDL_LOCAL_APPDATA\HPCA\Agent`. For example, for user JOE, this location would be:

- On Windows XP and Windows 2003 Server:
CSIDL_LOCAL_APPDATA is replaced with `C:\Documents and Settings\Joe\Local Settings\Application Data\HPCA Agent`.

- On Windows Vista, Windows 7, and Windows 2008 Server:
C:\Users\Joe\AppData\Local\HPCA\Agent

Features

- HPCA agent runs using the existing HPCA infrastructure. There are no changes required for the HPCA infrastructure with the exception of policy entitlements.
- USER directories are moved from the `IDMROOT` directory to `CSIDL_LOCAL_APPDATA\HPCA\Agent`.
- SYSTEM privately owns all of `IDMROOT`. No read or write access by USERS.
- USERS get private `Log` and `Data` directories specific to each user.
- USERS can add a custom directory with their own script to access permissions. USERS can use the sample script, `setacls.bat`, to create a customized script. The customized script can be used to set access permissions after installation of the HPCA agent.
- SYSTEM's `Log` and `Data` directories cannot be accessed by USERS.
- `IDMSYS\DEFAULTS` stores the priming objects that are needed to run an HPCA agent.
- `ZSYSACCT=Y` applications will be owned by SYSTEM; USERS cannot access the objects for the specified application.
- USERS have access to execute some files from `IDMSYS`, however SYSTEM methods such as `daemons`, `upgrdmaint`, and `radtimeq` will be executed by SYSTEM only.
- USERS cannot create `TIMER` instances.
- SYSTEM side implementations like Patch Manager and OS Manager, that are entirely owned by the SYSTEM, will keep working without any changes.
- USER MSI files will be stored in a separate directory.
- SYSTEM MSI files will not be accessible to USER.

Known Limitations

Following are the known limitations of Lockdown Mode.

Note: Some of these are intentional limitations to ensure the security aspect of the HPCA agent.

- Agent Lockdown Mode does not support FAT16 or FAT32 file systems because these do not support ACLs.
- USER connects cannot create `TIMER` instances. This is achieved by locking out `ZTIMEQ` as well as removing execute permissions to `radtimeq.exe`.
- Maintenance is entitled to SYSTEM only; USERS cannot initiate HPCA agent maintenance.

Chapter 7

HPCA Windows Management Instrumentation Provider

The HPCA WMI (Windows Management Instrumentation) Provider provides all the necessary methods to create, delete, read, and update HPCA objects as well as query HPCA path settings and the number of instances in an object. Through WMI's use of DCOM (Distributed-COM), a program can easily access objects on a remote machine as well as a local machine. The primary goal of the HPCA WMI Provider is to allow administrators to write scripts in any language to access HPCA objects. For example, a person who is comfortable using VB Script can continue writing scripts to perform methods in VB Script rather than having to learn REXX. The WMI provider interface is available to any language that can create WMI objects

VBScript Example - How to retrieve HPCA Agent root path using HPCA WMI provider

```
set WshShell = CreateObject("Wscript.Shell")
set wshenv = WshShell.Environment("Process")
set process = GetObject("winmgmts://./root/novadigm:NVD_Agent")
set method = process.Methods_ ("GetLocation")
set inParameters = method.inParameters.SpawnInstance_()
inParameters.Properties_.Item("Location").Value = "System"
set OutParameters = process.ExecMethod_ ("GetLocation", inParameters)
valueLocation = outparameters.Path
WScript.StdOut.Write "HPCA Agent root path is " & valueLocation.
```

Note: In the lockdown mode, a user will be provided with the appropriate folder paths only - based on the context of the calling user.

HPCA WMI Provider Functions

Function	Description
Sint32 AddInstance Add an instance to an object.	[IN] string Path, [OUT] sint32 Index, [OUT] sint32 InstanceCount, [OUT] string ReturnMessage
Sint32 DeleteInstance Remove specified	[IN] string Path, [IN] stint32 Index (Default= - 1) [OUT] sint32 InstanceCount, [OUT] string ReturnMessage

Function	Description
instance from an object.	
Sint32 DeleteProperty version 3.1 only	Delete a property from an object [IN] string Path[IN] string Property[OUT] string ReturnMessage
Sint32 DeleteProperties version 3.1 only	Delete an array of properties from an object [IN] string Path[IN] string Property[][OUT] string ReturnMessage
Sint32 GetLocation Get path to specified location.	[IN] string Location, [OUT] string Path, [OUT] string ReturnMessage
Sint32 GetValue Get specified value from object	[IN] string Path (Default = ZMASTER), [IN] sint32 Index (Default = 0), [IN] string Property, [OUT] string Value, [OUT] string ReturnMessage
Sint32 GetValue Get all variables and values from object	[IN] string Path (Default = ZMASTER), [IN] sint32 Index (Default = 0), [OUT] string Property[], [OUT] string Value[], [OUT] string ReturnMessage
Sint32 NumberOfInstances Returns number of instances in object	[IN] string Path, [OUT] sint32 InstanceCount, [OUT] string ReturnMessage
Sint32 SetValue Sets value in object	[IN] string Path, [IN] sint32 Index (Default = 0), [IN] string Property, [IN] string Value, [OUT] string ReturnMessage
Sint32 SetValues Sets and array of properties	[IN] string Path, [IN] sint32 Index (Default = 0), [IN] string Property[], [IN] string Value[], [OUT] string ReturnMess

Result on a Windows 2003 server machine with 'joe' logged in:

HPCA Agent root path is C:\Documents and Settings\joe\Local Settings\Application Data\HPCA\Agent\

Results on the same Windows 2003 server machine when the script is run in system context:

HPCA Agent root path is C:\Program Files\Hewlett-Packard\HPCA\Agent\Lib\

Appendix A

HPCA Agent: Messages and Codes

This section is aimed to increase an administrator's understanding of the messages that might be generated by the HP Client Automation (HPCA) agent connect process. It also offers some probable causes for errors, as well as remedial actions that can be taken.

This section contains the following information:

- Numbers and descriptions of the HPCA messages and codes that are produced during the connect process.
- Possible causes of an error, and the steps that you need to take to troubleshoot and correct a problem.

HPCA Agent Connect

A connection between the HPCA agent and the Configuration Server—which houses the HP Client Automation Configuration Server Database (Configuration Server Database, CSDB)—can be initiated in either of the following ways:

- **Manual Connect**
The subscriber visits the HP web page.
- **Notify**
The HPCA Console sends a message to the HPCA agent, which initiates a connect.
- **Timed Connection**
A timer running on the HPCA agent host machine expires and initiates a connect.

The connect process consists of a number of steps. Each of these steps executes one or more programs on the HPCA agent. These programs exchange information with the Configuration Server over a communications link.

Conditions

For the connect process to complete, the following conditions must be met:

- The Configuration Server must be running.
- The Configuration Server Database must be configured for the user and for managing the user's software applications.
- On the user's computer there must be sufficient available resources for the programs that are associated with the connect process, and for the management of the subscriber's software applications.
- Hardware and communications links must be properly operating.

Even with these conditions met during the connect process, other conditions can exist or events (such as the inadvertent deletion of needed files) can arise that prevent a successful completion.

When this happens, HPCA produces informational messages. These messages are enumerated and described in the sections that follow.

Message Categories

The messages that HPCA can produce during the connect process are organized into the following categories:

- API Errors
- Catalog Processing
- Client Processing
- External Data Download Codes
- Client Automation Internal Errors
- Invalid Data Errors
- Method Execution Errors
- SAP Errors
- Server Errors
- SSL Errors
- Transmission Errors
- User Exceptions
- User Interface Errors
- Verification Errors

These categories are high-level indicators of which part of the connect process is active when the message is produced.

Message Types

There are two types of messages:

- **Note messages** provide information about a condition that allows the connect process to continue.
- **Error messages** describe a condition that prevents the connect process from proceeding to a successful completion.

Message Details

The connect process issues messages in dialog boxes. The appearance of the dialog boxes will vary slightly, depending on whether the message is a **Note** or an **Error**.

- **Note messages** have a button, **Details**, which you can click in order to view additional information for the condition that triggered the message.

- **Error messages** also have a **Details** button. When it is selected, the message box expands to display the message number or the error code, the severity code, and the logs that should be checked for additional information.

Message Logs

When a message is issued, its number and text are recorded in the appropriate log on the user's computer. The log files are located in the **log** subdirectory of the directory in which the HPCA agent was installed. The default directories for log files are listed below.

- For Windows: `C:\Program Files\Hewlett-Packard\HPCA\Agent\log`
- For Linux and Macintosh: `opt/HP/HPCA/Agent/log`

The messages are written in the following three files:

- `RADPINIT.LOG`
- `RADCONCT.LOG`
- `RADAPI.LOG`

If the cause of an error is not immediately apparent, note the steps that were taken immediately before the message appeared.

Caution: Do not do anything with HPCA until the log files are copied to a backup location. This will preserve information that might prove valuable in resolving the issue.

Messages and Codes

Receiving a Message

All HPCA messages are numbered. The numbering is divided into groups, each of which is associated with a different phase in the connect process.

This section contains the HPCA messages in tables based on the connect-process phases.

Catalog Processing Messages

Catalog-processing messages can be produced as the HPCA agent attempts to create and populate the Service List, from which the user can select applications to install, verify, and uninstall. Except as noted in the following table "Catalog processing messages", the probable cause is corruption of the Service List either on the subscriber's desktop or in the Configuration Server Database.

Consult your Configuration Server Database administrator.

Catalog processing messages

Number	Text	Type	Additional Information
100	Error obtaining catalog from manager. Verify UserID and	Error	Select Refresh Catalog and verify the user ID.

Number	Text	Type	Additional Information
	retry request.		
101	Unique Identifier missing from this item in catalog.	Error	
102	Name missing from this item in catalog.	Error	An application that lacks a name is configured in the software catalog.
103	Description missing from this item in catalog.	Error	
104	Unable to create a directory to store catalogs from this Manager.	Error	Possible problem with security rights.
105	Unable to create a directory for this catalog.	Error	Contact your system administrator for assistance.
106	Unable to locate directory where catalogs are stored for this Manager.	Error	
107	Unable to locate directory for this catalog.	Error	
108	Unable to locate catalog	Error	Contact your system administrator for assistance.
109	No services available, empty catalog	Note	Probable CSDB configuration problem. There are no software applications configured for this subscriber in the CSDB.
110	Force service to be displayed in catalog.	Error	
111	The requested application does not exist in the catalog.	Error	

Transmission Error Messages

Transmission errors indicate that there is a problem establishing or maintaining the communications link with the Configuration Server. The Configuration Server might not be running, or there could be a problem with its host. Contact the operator of the Configuration Server computer to determine if it is running.

Another potential cause is lack of connectivity to the Configuration Server computer. Verify that the HPCA agent has connectivity to it by running the PING program from an MS-DOS session. Type

```
PING <ip address>
```

on the command line, where *ip address* is the IP address of the Configuration Server host machine. If the connectivity is good, a line will be displayed in the MS-DOS session window indicating the transmission time for each successful packet that was exchanged.

Transmission error messages

Number	Text	Type	
200	Unable to perform request - connection to manager failed.	Error	Configuration Server not running or stopped running during the connect process.
201	Invalid record received from Manager.	Error	
202	Template not received from Manager.	Error	
203	Instance not received from Manager.	Error	
204	Data not received from Manager.	Error	
205	Requested object not found.	Error	
206	Error sending data to server.	Error	Contact your system administrator for assistance.
207	Error receiving data from server.	Error	
208	Received patch from Manager instead of full file.	Error	
209	Error transferring physical application files from server.	Error	HPCA agent failed to get files. Contact your system administrator for assistance.
210	Expected files not found on server.	Error	
211	HPCA could not connect through the proxy server.	Error	

External Data-Download Return Codes (Multicast and Staging Requestor)

External data-download return codes

Number	Text	Type
240	No error, all data files successfully downloaded from the requested source.	Note
241	Not all data files could be downloaded from the requested source.	Error
242	Not all data files found at the requested source, do not try alternate sources.	Error
243	The data files will be downloaded at a later time using multicast.	Note
244	The Internet Explorer is set to work offline.	Error

User Exception Messages

User exception messages

Number	Text	Type	Additional Information
319	Sign-on failed - invalid user ID-password combination.	Error	Verify user ID and password. Click Refresh to retry.
320	Sign-on panel cancelled.	Note	User clicked Cancel in the Logon dialog box.
321	Cancelled at user's request.	Note	Cancels the entire process.
322	Versioning not available.	Note	Versioning is a feature of HPCA Application Manager; it is not installed on the computer.
323	User could not be authenticated on the proxy server.	Error	
324	Cancelled service at user's request.	Note	Cancels only this service, but will continue the installation of additional services.
325	Bootstrap method has decided to abort the connect process.	Error	
326	The user opted to defer the current request.	Note	

Invalid Data Errors

Invalid data errors indicate probable corruption in the Configuration Server Database.

Contact your CSDB administrator and preserve the log files for further analysis.

Invalid data error messages

Number	Text
450	Missing ZRSCSIZE variable.
451	Invalid object id.
452	Missing ZOBJID variable.
453	Missing ZOBJDATE variable.
454	Missing ZOBJTIME variable.
455	Missing ZOBJCRC variable.
456	Error fetching path information.
457	Missing ZRSCCFIL variable.
458	Variable is empty.
459	Local object instance name missing.
460	'More Info' URL missing from service.
461	Catalog is either incompatible or corrupted.
462	Missing variable.
463	Invalid ownership specified in database.
464	The application package contains path that cannot be resolved.
465	Missing COMPxxx for product.
466	Attempted invalid operation on service group.

HPCA Agent Processing Error Messages

HPCA agent processing errors are usually caused by a malfunction, incorrect configuration, or misuse of the user's desktop. Possibilities include:

- Incomplete HPCA agent self-maintenance that has resulted in HPCA modules of different release levels attempting to interact on the desktop;
- Lack of necessary system resources or available memory on the desktop;
- Conflicting concurrent processes, such as deleting files or running a disk re-organization program, on the desktop.

HPCA agent processing error messages

Number	Text	Type	Additional Information
500	Error opening file.	Error	
501	Error writing data	Error	

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Number	Text	Type	Additional Information
	to file.		
502	This application could not be repaired locally; connect to the Manager to fix it.	Error	
503	Error reopening file, for checkpoint restart.	Error	
505	Error decompressing data.	Error	
506	Insufficient disk space to install application.	Error	Free up additional disk space and re-try the connect.
507	Error creating directory.	Error	
508	Incomplete file path.	Error	The location for a file to be deployed on the user's desktop is incorrectly configured in the CSDB, or was incorrectly specified by the user in the Set Installation Directory dialog box.
509	Error getting drive statistics.	Error	
510	Missing file from temp directory.	Error	A file that was downloaded from the Configuration Server was deleted before it could be deployed to the proper location on the user's desktop.
511	Error deleting file.	Error	
512	Error deleting directory.	Error	
513	Error applying patch.	Error	
514	Error setting file date/time.	Error	
515	Error setting file attributes.	Error	

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Number	Text	Type	Additional Information
516	Error in versioning.	Error	Error activating a version either because a method failed or there is insufficient disk space.
517	Agent not authorized to change versions.	Note	See the CONTROL variable in the VGROUP class, which indicates whether the Configuration Server or the HPCA agent controls version activation. The user is attempting to activate a version, which is under control of the Configuration Server, or the reverse.
518	Error deactivating version.	Error	The active version could not be deactivated because one of the methods to delete a file or link is missing.
519	Error setting file ownership.	Error	
520	Application cannot be installed because drive/file system cannot be accessed.	Error	

User Interface Errors

User interface error messages

Number	Text
550	Invalid message header received.
551	Error receiving response to a dialog from UI.
552	Error in XML Parser.
553	Error in building UI message.
554	Error sending message to UI.
555	Error receiving message from UI.
556	Error connecting to UI Server.
557	Error connect process still has not finished.
558	Error connecting to remote notify daemon.
559	Error sending data to remote notify daemon.
560	Error executing program from HPCA UI Agent.
561	Entity not supported.
562	Entity not opened.
563	Error creating UI socket.
564	End of entity, no more data.
565	Error reading entity.
566	Error writing entity.

Verification Error Messages

Verification errors occur when the user attempts to verify files on the user's desktop, according to the verification settings configured for those files in the Configuration Server Database. These errors can indicate damage to the file on the subscriber's desktop or incorrect configuration of the verification option settings for the file in the CSDB.

You can correct the former by having HPCA repair the software application. To correct the latter, consult your CSDB administrator.

Verification error messages

Number	Text	Type
600	Verification of resources failed for one or more Applications.	Error

Number	Text	Type
601	Resource CRC does not match.	Error
602	Resource size does not match.	Error
603	Desktop file is newer.	Error
604	Desktop file is older.	Error
605	Missing file.	Error
606	Missing directory.	Error
607	Environment has changed. Application needs to be updated.	Note
608	Environment has changed and some resources failed verification. Application needs to be updated.	Error
609	Some of the data files are missing from temporary storage.	Error
610	Resource internal version does not match.	Error
611	File is maintained by the Windows File Protection system.	Error
612	Desktop file has wrong UID.	Error
613	Desktop file has wrong GID.	Error
614	Desktop file has wrong permissions.	Error
615	Missing link.	Error
616	File is maintained by the Desktop DNA.	Note

Server Errors

Server error messages

Number	Text
650	Server stopped application configuration.
651	Server does not contain a license for Agent's operating system.
652	Server is at task limit and will not accept connections.
653	Server is down for maintenance, updating database.
654	Server has disabled Agent connections.

Method Execution Errors

Methods are programs that run on the subscriber's desktop as part of the connect process. The methods can be supplied by HP or by the subscriber. Method-execution errors indicate that a problem occurred while running one of these methods. Typical problems include misspelling the

method name, resulting in a “File not found” condition, coding invalid parameters on the method’s command line, and lack of needed system resources or memory to run the method. Usually, the cause is incorrect configuration of an instance in the Configuration Server Database.

Contact the CSDB administrator for assistance and preserve the logs for further analysis.

Note: If the error occurred in a method that was not supplied by HP, contact HP support.

Method execution error messages

Number	Text
701	Lock method failed.
702	Init method failed.
703	Create method failed.
704	Delete method failed.
705	Update method failed.
706	Unable to install downloaded resources. The programs/methods that are used to install the resources could not be found.
707	Internal error in method.
708	Unable to install downloaded resources. The programs/methods that are used to install the resources could not be executed.
709	Installation of a component failed. The program/method used to install the component returned an error.

SSL Errors

SSL error messages

Number	Text
750	Unable to get CA certificate from server.
751	Unable to get certificate from server.
752	Not yet valid CA certificate.
753	Not yet valid certificate.
754	Expired CA certificate.
755	Expired certificate.
756	Missing certificate revocation list.
757	Error decrypting CA certificate.
758	Error decrypting CA certificate
759	Error decrypting CRL.
760	Error decoding CA public key.
761	Error decoding public key.
762	Error in CA certificate signature.
763	Error in certificate signature.
764	Error in certificate revocation list signature.
765	Expired CRL.
766	Time stamp error in CRL.
767	Self-signed certificate found at depth 0.
768	Self-signed certificate found in certificate chain.
769	Missing local CA certificate.
770	Missing local certificate.
771	Error verifying leaf certificate signature.
772	Verify chain too long.
773	CA certificate has been revoked.
774	Certificate has been revoked.
775	Invalid or corrupt local CA certificate.

Number	Text
776	Invalid or corrupt local certificate.
777	Expired CA Certificate
778	Expired Certificate
779	Internal error in Secure Sockets Layer interface.
780	Missing Private Key file.
781	Password not supplied for private key
782	Bad password supplied for private key
783	Invalid private key.
784	Certificate required to connect to server.

HPCA Internal Error Messages

Internal errors occur when HPCA encounters an unexpected condition. Possible causes include corruption of HPCA desktop objects, incompletely applied HPCA self-maintenance, and conflicting processes running concurrently on the desktop. HPCA desktop objects can be inspected and modified, if necessary, using the HPCA Administrator Agent Explorer. For more information on HPCA Administrator Agent Explorer, see *HP Client Automation Enterprise Administrator User Guide*.

Preserve the logs for further analysis and contact technical support.

HPCA internal error messages

Number	Text	Type	Additional Information
800	Internal error	Error	
801	Error allocating RAM.	Error	
802	Null object pointer.	Error	
803	Invalid arguments to function.	Error	
804	Error getting template.	Error	
805	Error getting instance.	Error	
806	Insufficient buffer size.	Error	
807	Empty object.	Error	
808	Invalid heap number	Error	
809	Invalid password.	Error	

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Number	Text	Type	Additional Information
810	Reboot required to complete request.	Note	
811	Machine is being rebooted to complete request.	Note	The user confirmed the restart request to complete the installation.
812	No configuration changes required.	Note	
813	Invalid template.	Error	
814	Failed to start graphical progress indicator	Note	
815	Error occurred trying to save local information	Error	
816	Error adding heap to local object.	Error	
817	Unable to process request - could not read local information.	Error	
818	Null pointer.	Error	
819	Unable to find folder containing local objects (IDMLIB). Check settings.	Error	
820	Unable to find folder containing executable files (IDMSYS). Check settings.	Error	
821	Buffer too small.	Error	
822	Serialization error occurred. Process aborted?	Error	
823	Serialization error occurred. Process aborted?	Error	
824	Invalid operation.	Note	
825	Unable to create directory for Service information. Installation cannot continue.	Error	
826	Invalid mode	Error	

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Appendix A: HPCA Agent: Messages and Codes

Number	Text	Type	Additional Information
827	Version mismatch between RADAPI.DLL & RADIA.DLL. Incompatible HPCA subscriber components found on desktop.	Error	Probable incomplete HPCA agent self-maintenance. Install HPCA agent again from installation media and retry to connect to the Configuration Server.
828	Invalid Request.	Error	
829	Error copying self-maintenance.	Note	
831	Error creating directory for this user.	Error	
832	Unable to determine User ID.	Error	
833	Error uninstalling service	Error	
834	Error sending previous error information to Administrator.	Error	
835	Error occurred during configuration determination; configuration information may be missing or inaccurate.	Error	
836	Failed to select service version	Error	
837	Failed to activate service	Error	
838	Client failed to execute program, after application installation.	Error	
839	Unsupported operating system	Error	
840	Dialog REXX method failed	Error	
841	Missing reference object.	Error	
842	Error loading reference object.	Error	
843	Error opening HPCA object.	Error	
844	Missing instance.	Error	
845	Unregistered HPCA agent.	Note	
846	Missing version group instance.	Error	A non-existent version group instance was specified to the version-activation function.

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Appendix A: HPCA Agent: Messages and Codes

Number	Text	Type	Additional Information
847	Missing version instance.	Error	The specification of the version to activate within a version group is invalid. Likely, the INITIAL field in the VGROUP instance indicates a non-existent VERSION instance.
848	Error copying file	Error	
849	Error getting a variable value from instance	Error	
850	Error setting a variable value	Error	
851	Error saving an object. Check disk space.	Error	
852	Instance is corrupted, may be missing key variables.	Error	
853	Remote Execution Failure	Error	Contact your system administrator for assistance.
854	Failed to create a backup of a file that was to be updated.	Error	
855	Invalid Variable Name.	Error	
856	Invalid Variable Value.	Error	
857	Application wasn't installed completely.	Error	
858	Application wasn't installed completely. Reboot needed.	Error	
859	Installation is not complete (phased install process).	Error	
860	Current process has timed out	Error	
861	Server rejected Agent identity (Invalid license).	Error	
880	Client is ready to apply maintenance immediately.	Error	
881	RADIA_ERROR_INSTALL_INPROGRESS_AND_	Error	Restart pending for the application's installation

Number	Text	Type	Additional Information
	REBOOT		

API Errors

API error messages

Number	Text
901	Missing the registry settings.
902	Update engine has already been installed.
903	SDK settings could not be initialized.
904	Incompatible version of HPCA Application Management SDK.

SAP Error Messages

SAP error messages

Number	Text	Type
000	Request successfully completed.	Note
920	SAP is not accessible.	Error
940	System is shutting down.	Error
996	Application has been skipped as part of processing.	Error
997	Application should be ignored as part of processing.	Error

Appendix B

HPCA Agent Settings Classes in CLIENT Domain (Client Operations Profiles)

The following classes in the CLIENT Domain can be used for various configurations and diagnostic purposes as described within.

- "Alert Management (RADALERT)" below
- "Connect Deferral Configuration (CDFCFG)" on next page
- "Core Settings (SETTINGS)" on page 92
- "Diagnostics (DIAGS)" on page 97
- "Hardware Scan Options (RADHWCFG)" on page 98
- "Notify Security (NTFYSEC)" on page 101
- "Reboot Deferral Configuration (RBOOTCFG)" on page 103
- "Setting User Interface Properties (RADUICFG)" on page 103

These classes are described in detail in the sections that follow.

Note: Server Access Profiles (SAPs) which reside in the CLIENT domain are configured using the satellite management capabilities in the main HPCA console. For more information on Satellite Management and SAPs, see the *HP Client Automation Enterprise User Guide*.

Alert Management (RADALERT)

Use this class to configure the displaying and reporting of alert events.

Attributes of the RADALERT Class

Attribute	Description
WMIALRT	Specify \mathcal{Y} to monitor WMI BIOS events.
ALRTDISP	Specify \mathcal{Y} to locally display WMI events.
DISPSEV	Specify a minimum alert-severity level to display.
DISPCTG	Specify which CSV event categories to display.
REPSEV	Specify a minimum alert-severity level to report.
REPCTG	Specify which CSV event categories to report.
TIMEOUT	Specify a timeout for local events to display.
SMRTMON	Specify \mathcal{Y} to monitor SMART events.

Attribute	Description
SMRTDISP	Specify <i>Y</i> to locally display SMART events.
SMRTREP	Specify <i>Y</i> to report SMART events.

Connect Deferral Configuration (CDFCFG)

An administrator can use the Connect deferral function to configure options for downloading and installing mandatory service-related actions. It gives you control to defer the service-related actions. Use the CDFCFG class in the HPCA Administrator CSDB Editor to configure the user-facing Connect Deferral dialog box. For more information on Connect Deferral, see the *HP Client Automation Enterprise User Guide*

Attributes of the CDFCFG Class

Attribute	Description
NAME	The friendly name of the instance.
ENABLE	Specify <i>Y</i> (the default) to enable the connect-deferral function. Note: RADSKMAN has been updated to include a new command line option, <code>cdf=y/n</code> , which enables/disables this function. The RADSKMAN setting will supersede this CDFCFG setting.
ABORT	Specify <i>Y</i> (the default) to enable the Cancel button. If <i>N</i> is specified, the Cancel button will be disabled and the text that describes the cancel feature ("Click Cancel to cancel this process without rescheduling.") will be hidden.
DESCTEXT and DESCTXT2	Specify customized replacement text for the descriptive text that is at the top of the Connect Deferral dialog. <ul style="list-style-type: none"> DESCTEXT will replace the first two sentences of text. DESCTXT2 will replace the text "To continue with these actions..."
DOMAINS	The Domains attribute uses a comma-delimited list of domains for Connect Deferral. The default value is <code>SOFTWARE,PATCHMGR,OS</code> . For example, if <code>SOFTWARE,OS</code> is specified, the <code>PATCHMGR</code> connects are not deferred. You can also add custom domains to the Domains attribute. This enables you to defer services in the custom domains and associate them to a single display name. For example, if you have custom domain names such as, <code>CUS_DOMAIN1</code> , <code>CUS_DOMAIN2</code> , <code>PATCH1</code> , and so on, you can categorize and associate these to any domain and define the Domains attribute value as: <code>SOFTWARE (CUS_DOMAIN1, CUS_DOMAIN2), PATCHMGR (PATCH1), OS</code> . The display name for any service deferred from the <code>CUS_DOMAIN1</code> will be <code>SOFTWARE</code> . You can also add filters to the domain names. For example, if the specified Domains attribute value is <code>SOFTWARE (CUS*), PATCHMGR (PATCH*), OS</code> , the display name for all domains starting with <code>CUS</code> and <code>PATCH</code> will be <code>SOFTWARE</code> and <code>PATCHMGR</code> respectively. Formatting rules for the Domains attribute are:

Attribute	Description
	<ul style="list-style-type: none"> • Every opening parenthesis must have a matching closing parenthesis and also in the reverse order. For example, <code>SOFTWARE (CUS_DOMAIN1, CUS_DOMAIN2) , PATCHMGR (PATCH1</code> is invalid. • Use filters for domain names inside the parenthesis. You cannot use filters for domain display names. For example, <code>SOFTWARE (CUS_*) , PATCHMGR (PATCH1) , OS</code> is valid, <code>SOFT* (CUS_DOMAIN1, CUS_DOMAIN2) , PATCHMGR (PATCH1) , OS (OS1, OS2)</code> is invalid. • Domain names must be comma-delimited and all mapping of domains must be done within parenthesis. • The maximum character length of the Domains attribute is 255. • The Domains attribute is case insensitive. <p>Valid usage example for the Domains attribute is, <code>SOFTWARE (CUS_DOMAIN1, CUS_DOMAIN2) , PATCHMGR (PATCH1) , OS.</code></p> <div style="background-color: #f0f0f0; padding: 5px;"> <p>Note: Make sure you follow the formatting rules for the Domains attribute. If an incorrect value is used, Connect Deferral may not function in the desired way.</p> </div>
TIMEOUT	Specify the length of time (in minutes) for the Connect Deferral dialog to wait before automatically triggering the pending action.
SOFTWARE, PATCHMGR, and OS attributes	<p>Specify the maximum number of days that a user can defer a connect for each of the supported domains. For example, if SOFTWARE is set to 5, the user can defer a SOFTWARE connect for a maximum of 5 days; after that, the pending action will be forced on the user's machine. PATCHMGR and OS are for specifying the maximum days that a connect for those domains can be deferred. A local value is saved in the CDFDEFER object in <code>IDMROOT</code> to determine when the user started deferring. (If the user clicks Allow, this date is reset to 0.) On the next connect, this value is queried in order to determine how many "deferral" days remain. For example, if the action is deferred on Monday and SOFTWARE is set to 5, on Tuesday the message will indicate 4 "deferral" days remaining, and so on, until the number of days reaches zero. When there are no remaining "deferral" days, Cancel and Defer will be disabled and the user will have to allow the connect. Notes:</p> <p>These values will affect the "Defer for" list; intervals that are greater than this setting will not be available in the drop-down list.</p> <p>On the right side of the window, a message will indicate the remaining number of days that the user can defer the actions.</p> <p>Connect Deferral looks at <code>dname=</code> to figure out which value in CDFCFG to use.</p> <p>Custom domains in an HPCA Configuration Server Database can be added to this list so that users can defer services in these domains also. The default value is SOFTWARE if <code>dname</code> is not specified.</p>

Attribute	Description
VERFYONLY	Specify Y to display the connect deferral dialog on verify only connect. The default value of this variable is N .
DEFAULT	Specify the maximum number of days that a user can defer a connect for domains not specified in the CDFCFG class. For example, when a connect is run for any domain that is not specified in the CDFCFG class, Connect Deferral reads the DEFAULT attribute value as the number of days for deferral.
ABTNTXT	Specifies an alternative text for the Allow button. By default, this button is labeled 'Allow'. This option should only be used for the special case where prior customized dialogs used different verbiage for connect deferral actions.
CBTNTXT	Specifies an alternative text for the Cancel button. By default, this button is labeled 'Cancel'. This option should only be used for the special case where prior customized dialogs used different verbiage for connect deferral actions.
DBTNTXT	Specifies an alternative text for the Defer button. By default, this button is labeled 'Defer'. This option should only be used for the special case where prior customized dialogs used different verbiage for connect deferral actions.

Core Settings (SETTINGS)

Use an instance in the SETTINGS Class to define defaults for Server Access Profiles defined as part of satellite management. These defaults could be overwritten based on configuration defined as part of Satellite management in the Core console. SETTINGS can also define scripts you want to use in pre-configuration processing, and to set other global parameters.

Attributes of the SETTINGS Class

Attribute	Description
NAME	The friendly name of the instance.
SAPPING	Set to Y to have the HPCA 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 HPCA agent should retry connecting to a Configuration Server if the Configuration Server pushes back on the initial HPCA agent connect. Set to 0 (the default) to skip a Configuration Server if it pushes back on the HPCA 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 an HPCA 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 HPCA agent will go through the SAPs in priority for each service.

Attribute	Description
RCSDATA	If all the required data has not been downloaded after using all of the <code>TYPE=DATA</code> SAPS, specify <code>Y</code> to use the SAPs with <code>TYPE=RCS</code> . To prevent the HPCA agent computers from using Configuration Servers, specify <code>N</code> . The default is <code>Y</code> .
ADINFO	Specify <code>Y</code> (the default) to collect the HPCA agent computer's Active Directory information, which will then be stored in the <code>ADINFO</code> object in the <code>RADSETUP</code> directory which, by default, is located in <code>C:\Program Files\Hewlett-Packard\HPCA\Agent\Lib</code> . This information will be sent to the Configuration Server for all resolution processes. This attribute applies to Windows only.
ZGRPINFO	Specify <code>Y</code> (the default) to collect the HPCA agent computer's User Group information, which will then be stored in the <code>NTGROUPS</code> object in the <code>RADSETUP</code> directory which, by default, is located in <code>C:\Program Files\Hewlett-Packard\HPCA\Agent\Lib</code> . This information will be sent to the Configuration Server for all resolution processes.
LSCRIPT	If you have set a service to perform an immediate reboot and you run <code>RADSKMAN</code> from a login script, specify <code>Y</code> (the default). If you have set a service to perform an immediate reboot and you want <code>RADSKMAN</code> to be restarted in the user context when a user logs on, specify <code>N</code> . For more information on reboot options, see <i>HP Client Automation Enterprise Administrator User Guide</i> , Appendix D, <i>Creating Services Using Advanced Capabilities</i> .
ALWAYS	Specify <code>Y</code> (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, it will download the object with the new values because a variable change by substitution doesn't change the desired state.
ALWAYSS	Specify <code>Y</code> (the default) to always upload all of the objects that are in the <code>RADSETUP</code> directory to the Configuration Server.
EXBSETUP	Specify a script to run before pre-configuration processing. This script must be in the HPCA agent computer's <code>IDMSYS</code> directory. The default script is <code>PRESETUP.REX</code> .
EXASETUP	Specify a script to run after pre-configuration processing. This script must be in the HPCA agent computer's <code>IDMSYS</code> directory.
CMETHOD	Specify a script to run after catalog resolution but before service processing.
EXBOUTBX	Specify a script to run after service processing but before the objects in the outbox are flushed to the Configuration Server.
EXBEXIT	Specify a script to execute before <code>RADSKMAN</code> ends. If you are doing a customized reboot process, specify it here. This script must be in the HPCA agent computer's <code>IDMSYS</code> directory. The default location is <code>C:\Program Files\Hewlett-Packard\HPCA\Agent</code> .

Attribute	Description
	<p>Note: Client Operations Profiles must be enabled on the HPCA 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 HPCA agent timeout (ZMASTER.ZTIMEO). • If this is blank, the HPCA 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 <code>ADAPTIVE</code> to yield to other services that are using the network. • Specify <code>RESERVED</code> to allow for a specific reservation of the bandwidth. It is the maximum percentage of network bandwidth to use. • Specify <code>NONE</code> for no bandwidth throttling, and use the maximum available bandwidth. This is the default.
BANDWDTH	<p>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.</p>
RADTRAY	<p>Specify command-line arguments to be used for the HPCA System Tray. The first argument must be <code>Y</code> in order to enable the System Tray, then the following parameters (comma-separated) can be specified. <code>/C</code> = Show the HPCA System Tray in console mode when it starts. <code>/NOCANCEL</code> = Hide the Cancel button. <code>/NOPAUSE</code> = Hide the Pause button. <code>/D</code> = Add debug message to the log for troubleshooting. Example: <code>RADTRAY=Y, /C, /NOPAUSE</code> enables the System Tray in console mode but does not display the PAUSE button.</p>
USEDEFS	<p>Specify <code>Y</code> to default to the Configuration Server that is set on the command line if a SAP cannot be found for the needed ROLE.</p>
DEFROLE	<p>Specify roles for the Configuration Server that is specified on the command line. The default ROLE is <code>A</code> (All); the Configuration Server will be able to perform any ROLE.</p> <p>Note: To use DEFROLE, USEDEFS must be set to <code>Y</code>.</p>
RAD2XUI	<p>Specify <code>Y</code> to view the vintage HPCA user interface dialog boxes. Use this if you are not using the HPCA 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 HPCA agent connect. The format is <code>Below Threshold Limit, Network Threshold Value, Above Threshold Limit</code>. Therefore, if <code>RSTROPT = 100KB, 86KB, 10MB</code>, the HPCA agent will first calculate the network bandwidth, then either of two scenarios will apply:</p>

Attribute	Description
	<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	Specify a minimum amount of free disk space for HPCA to maintain. If a service is over the limit, it will not be installed.
REMUNINS	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 HPCA agent connect is started from a remote notify. The remove notify string must contain the text <code>req="Un-install"</code> .
DETPROXY	Specify N to skip running Internet proxy detection at the beginning of the HPCA agent connect.
ACTMAINT	<p>The HPCA 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 Y for maintenance to be processed.</p> <ul style="list-style-type: none"> Specify I (the default) to download maintenance files and immediately activate them. <p>Note: HPCA Application Self-Service Manager users will receive a Needs To Be Updated dialog box offering an OK button only. HPCA Application Self-Service Manager will close, install maintenance, and then restart.</p> <ul style="list-style-type: none"> Specify D to defer maintenance activation. Maintenance files are downloaded, but not activated. To activate maintenance, run <code>radskman req="Self Maintenance"</code> or run UPGRDMAINT directly using a timer or other method.
	<ul style="list-style-type: none"> Specify P to prompt HPCA 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 HPCA Application Self-Service Manager interface. <p>Note: This is the same as I for HPCA Application Manager users.</p>
SENDERPT	Specify whether to send reporting objects to the Configuration Server at the end of the HPCA agent connect. Usually, the reporting objects for each service, such as APPEVENT, CLISTATS, and ZSVCSTAT, are sent to the Configuration Server immediately after they are created. This requires multiple

Attribute	Description
	disconnects and reconnects to the Configuration Server.
	<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.
NETSPEED	<p>Specify the method to be used to check the speed of the HPCA agent's Internet Control Message Protocol (ICMP) connection to the Configuration Server or Proxy Server.</p> <ul style="list-style-type: none"> Specify <code>C</code> (the default) in order to run the ICMP check. Specify <code>M</code> in order to run the ICMP check and get the speed of the network card; returns the greater of the two values (for use when ICMP is disabled in the environment). Specify <code>H</code> in order to run the ICMP check with a high-performance counter in order to enable the check to differentiate between servers that have <2ms response times. Specify <code>N</code> in order to turn off the network speed check.
NETTTL	Specify the number of "hops" (0–999) for the HPCA agent computer to use for ICMP speed checks. The default is 3 .
FLUSHU	<p>Specify whether to flush the reporting objects (from users' outbox folders) during HPCA agent connects or to save the objects locally (on the HPCA agent machine) for transfer at a later time.</p> <ul style="list-style-type: none"> A value of <code>A</code> will result in user-connect reporting objects being saved off, then sent up during the next machine connect. Specify <code>Y</code> (the default) in order to have the reporting objects always sent up—regardless of the context of the HPCA agent connect. Specify <code>N</code> in order to never flush users' outbox folders. <code>FLUSHU=N</code> is applicable only for user connects. <p>Note: Some reporting objects will be deleted and regenerated for each connect; others will accumulate new information for each connect and be sent up when reporting is enabled.</p> <p>Examples: Specify <code>FLUSHU=N</code> on user connects to build up reporting objects in each user's outbox folder. During a machine connect, specify <code>FLUSHU=A</code> to transfer all objects. <code>FLUSHU=Y</code> will always send the current connecting HPCA agent's reporting objects from the outbox folder.</p>

Attribute	Description
NATVHTTP	<p>Specify this attribute to enable the HPCA Agent to use Windows WinHTTP library for HTTP communication. Specify Y to use Windows WinHTTP library. Specify N (the default) to use HPCA HTTP library.</p> <p>Note: If NATVHTTP is set to Y (Enable WinHTTP) and SSL is enabled, make sure that a valid certificate is deployed into Microsoft Certificate Store on the local computer.</p>
SALVAGE	<p>Allows the agent to restamp and reuse resources that have the same signature but different date and time stamp. The <code>checksig=Y</code> parameter added to the RADSKMAN command line instructs the agent to verify the resources' signatures. The packages do not need to be published in a special way to use this flag. This flag is for the agent only, the salvage is always on for staging clients. This will provide savings for packages that have resources with the same signature but different date/time stamps. The salvage flag can only be set in the CSDB Editor.</p>

Diagnostics (DIAGS)

Use this class to override default trace settings on the HPCA 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 HPCA agent. The information in the RADSTATE output is based on data that has been retrieved from numerous HPCA agent objects. For additional information on RADSTATE, see the section, "[RADSTATE \(Diagnostic Module\)](#)" on page 25.

Note: 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 HPCA 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.

Attributes of the DIAGS Class

Attribute	Description
NAME	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 ZRSTATE and ZRSTATES 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 HPCA 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 HPCA 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 HPCA agent log. All data that has been transmitted and received will be echoed to the HPCA agent log file. <p>Caution: ZTRACE=Y could result in a large amount of data being written to the HPCA agent log and could severely impact HPCA agent performance. <i>Do not specify this setting unless instructed to do so by HP Technical Support.</i></p>
ZTRACEL	<p>Specify the level of tracing (as 000, 040, or 999) that will be recorded to the HPCA agent log file. If blank, use existing value. Caution: Setting ZTRACEL to a high number could result in a large amount of data being written to the HPCA agent log and could severely impact HPCA agent performance. <i>Do not specify this setting unless instructed to do so by HP Technical Support.</i></p>

Hardware Scan Options (RADHWCFG)

Use instances in the RADHWCFG Class 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.

Note: 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.

Note: The attributes that are returned will depend on the hardware configuration. For example, if the agent device has only one printer connected, only one ZHDWPA0n attribute will be reported in ZCONFIG.

Attributes of the RADHWCFG Class

Attribute	Description
NAME	The friendly name of the instance.
CPU	Specify \mathbb{Y} to scan for CPU information. ZCONFIG attributes: ZHDWBIOS, ZHDWCOMP, ZHDWCPU, ZHDWCPUN, ZHDWCPUS, ZHDWFPU, ZHDWXPAG, ZHWCPU01, ZHDFPU01.
OS	Specify \mathbb{Y} to scan for operating system information. ZCONFIG attributes: REBOOTD, REBOOTT, WTSSRVR, ZHDWLANG, ZHDWOS, ZHDWOSDB, ZHDWOSOG, ZHDWOSOW, ZHDWSVCP.
MEMORY	Specify \mathbb{Y} to scan for memory information. ZCONFIG attributes: ZHDWMEM, ZHDWMEMF.
HDLOCAL	Specify \mathbb{Y} to scan for internal hard drives. ZCONFIG attributes: ZHDWCDDR, ZHDWD00, ZHDW00C, ZHDWD00F, ZHDWD00S, ZHDW00T, ZHDWD01, ZHDW01C, ZHDWDF_A, ZHDWDLST, ZHDWDNUM.
HDREMOTE	Specify \mathbb{Y} to scan for external hard drives. ZCONFIG attributes: ZHDW00, ZHDWD00C, ZHDWD00F, ZHDW00S, ZHDW00T, ZHDWDLST, ZHDWDNUM.
NETWORK	Specify \mathbb{Y} to scan for network information. ZCONFIG attributes: GATEWY01, IPADDR01, LADAPT01, NETLOC01, SUBNET01, ZGATEWAY, ZHDWIPAD, ZHDWLANA, ZHDWNET1, ZHDWNNET, ZNETLOC, ZSUBNET.
PERIPHER	Specify \mathbb{Y} to scan for peripherals such as keyboard and mouse. ZCONFIG attributes: ZHDWKYBD, ZHDWMOUS, ZHDWPPAR, ZHDWPSE, ZHDWVIDO, ZHDWVRES.
PRINTER	Specify \mathbb{Y} to scan for printers. ZCONFIG attributes: ZHDWPA00, ZHDWPA01, ZHDWPPRN.
HAL_VER	Specify \mathbb{Y} to scan for the Hardware Abstraction Layer (HAL) version. ZCONFIG attributes: HALCOMP, HALDATE, HALFNAME, HALFVER, HALINAME, HALLANG, HALPNAME, HALPVER, HALSIZE.
APP_VER	Specify \mathbb{Y} to scan for versions of MSI (ZHDWVMSI) and IE (ZHDWVIE).
WMISCAN	Specify \mathbb{Y} to perform the scan using Windows Management Instrumentation (WMI).
DSCAN00n	Specify \mathbb{Y} to use the dynamic scan variable. See "Dynamic Scanning" on next page .

Attribute	Description
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 Configuration Server as part of the HPCA 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.
- *Parmn* is the query for the information.

Listed below are some examples.

Note: The Dynamic Scan for ZCONFIG is restricted to the `root\cimv2` namespace only.

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:

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

The result will be reported in ZCONFIG.ADOBEPATH.

Note: 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

```
ADOBEPATH=REG("HKLM\SOFTWARE\Adobe\Acrobat Reader\6.0\Installer\")
```

To read the Path value of the Installer key, type

```
ADOBEPATH=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.

Notify Security (NTFYSEC)

Notify is a protocol used to remotely run an HPCA agent connect. The administrator can use HPCA Console to initiate a Notify job from HPCA Configuration Server. The agent computer's Notify Daemon, RADEXECD, receives the notify request and initiates the agent connect. If the user ID and password is defined for the agent computer, the verification of these credentials is done before any action is performed.

The administrator can configure additional security options to control the actions performed using Notify. These options are defined in the Notify Security (NTFYSEC) configuration class as part of Client Operations Profile (COP).

Attributes of the NTFYSEC _BASE_INSTANCE_

Attribute	Description
ZNTFYSEC	Enables notify security. Valid values are Y (Yes), N (No), and L (Lock). The default is Y . Set Y to restrict execution of the notify request to programs residing in the agent's <code>IDMSYS</code> directory. Set L to further limit execution to the agent's main execution modules <code>RADSKMAN</code> , <code>RADPINIT</code> , <code>RADCONCT</code> , and <code>UPGRDMAINT</code> . Set N , to issue the notify request from wherever it resides.
ZVRFYUID	Enables user ID verification. Valid values are Y (Yes) and N (No). The default is N . Set Y to verify that the user ID sent by the Notify command matches the <code>ZUSERID</code> field found in an agent's <code>ZMASTER</code> object.
ZVRFYPWD	Enables password verification. Valid values are Y (Yes) and N (No). The default is N . Set Y to verify that the password sent by the Notify command matches the <code>ZPWD</code> field found in an agent's <code>ZMASTER</code> object. Note: The <code>ZPWD</code> attribute is encrypted and is not visible in clear text.
ZEXTSEC	Enables extended security. Valid values are Y (Yes) and N (No). The default is N . For more information, see " HPCA Extended Security " on next page.
ZIGNRURI	This anti-spoofing attribute lets you to enable <code>RCSURI</code> stripping (the notify daemon strips out the value before the command is run). Valid values are Y (Yes) and N (No). The default is N .
ZIGNDURI	This anti-spoofing attribute lets you to enable <code>DATAURI</code> stripping (the notify daemon strips out the value before the command is run). Valid values are Y (Yes) and N (No). The default is N .

HPCA Extended Security

Extended security runs pre-defined command tokens to additionally limit Notify. The command tokens are defined to represent a full command line that is run on the agent computer. To enable extended security set `ZEXTSEC=Y`. Once enabled, the Notify daemon requires an additional control object called ZNFYXSEC in the `IDMROOT` directory before any command is run. If the ZNFYXSEC object is not found in the directory no command is run on the agent computer. The ZNFYXSEC object contains a set of authorized command tokens and corresponding commands for an agent. The object contains one instance for each of the command tokens.

When the Notify daemon receives a Notify job request with extended security enabled, the first parameter in the command line is matched with the value of one of the ZNFYXSEC.NFYNAME variables in each of the ZNFYXSEC instances. If a matching ZNFYNAME is found, the daemon compares the received password with the value of ZNFYPWD attribute of that instance. If the password matches, the daemon initiates the command that is specified by the value of ZNFYCMDL of that instance. If ZNFOPTOK=Y, then any parameters received from the server are appended to the value of ZNFYCMDL before the command is run.

The following table describes the variables of the ZNFYXSEC object on HPCA agent computer.

Variables of ZNFYXSEC object

Variable	Description
ZNFYNAME	Specifies the key to locate or identify the heap. This will correspond to the user ID parameter on the sender's command line.
ZNFYPWD	This value is validated against the incoming password field.
ZNFYGRP	For future use in potential group-notification design.
ZNFYCMDL	Specifies the command line that is run on the agent computer.
ZNFOPTOK	Specify <code>Y</code> to indicate that a parameter can be appended to the command line found in ZNFYCMDL.

Restricting Notify to Self Notify Only

When HPCA agent connects in a System context, it uses a self notify process. The Notify Daemon accepts an optional command-line argument, `/L`. This argument restricts the daemon to self notify only and rejects any remote notify requests. It also restricts any requests to the main agent execution modules such as RADSKMAN, RADPINIT, RADCONCT, and UPGRDMAINT.

When the Notify daemon receives a new request and `/L` parameter is used, the daemon checks the IP address of the source and the command requested. If the source IP address is different from the localhost address, 127.0.0.1, the connection is rejected. Also, the request is rejected if the command is not one of the main agent execution modules. The date and time of the rejected request is logged in the daemon's log files.

Note: For Linux, the optional command line argument is `-L`. Also, `L` is case sensitive.

Usage Note

Changes to the notify-security settings will not be immediately effective; HPCA agent connect must be performed in order to enable the new settings. This differs from other COPs settings, which happen as part of a single connect.

Reboot Deferral Configuration (RBOOTCFG)

An administrator can use the Reboot deferral function to configure options for a reboot operation. It gives you control to defer a reboot. Use the RBOOTCFG class in the HPCA Administrator CSDB Editor to configure the user-facing Reboot Deferral (RDF) dialog box. For more information on Reboot Deferral, see the *HP Client Automation Enterprise User Guide*.

Attribute	Description
NAME	The friendly name of the instance.
ENABLE	Specify Y to enable the RDF function. The default value is N .
DESCTEXT and DESCTEXT2	Specify customized replacement text for the descriptive text that is at the top of the RDF dialog. <ul style="list-style-type: none"> DESCTEXT replaces the first two sentences of text. DESCTEXT2 replaces the text "To continue with these actions..."
TIMEOUT	Specify the length of time (in minutes) for the RDF dialog to wait before automatically triggering the reboot.
MAXDAYS	Specify the maximum number of days for which the reboot operation can be deferred. Reboot deferral is not allowed when the MAXDAYS value is zero or empty. Example, if MAXDAYS is set to 3, the user can defer a reboot for a maximum of 3 days; after that, the Defer button becomes inactive and reboot will be forced on the user's machine. Notes: <ul style="list-style-type: none"> These values will affect the "Defer for" list; intervals that are greater than this setting will not be available in the drop-down list. On the right side of the window, a message will indicate the remaining number of days that you can defer the reboot.
MAXCANCL	Specify the maximum number of times the reboot operation can be cancelled. Reboot cancel is not allowed when the MAXCANCL value is zero. MAXCANCL value -1 signifies that you can cancel the reboot any number of times. Notes: <ul style="list-style-type: none"> You cannot cancel the reboot if the maximum number of days (MAXDAYS) for reboot defer are exhausted. On the right side of the window, a message will indicate the remaining number of days that you can cancel the reboot.

Setting User Interface Properties (RADUICFG)

RADSKMAN Client Operations Profiles Parameters

Use the RADUICFG Class to specify settings for HPCA Application Self-Service Manager interface.

Note: You must be licensed for HPCA Application Self-Service Manager to use this class.

Attributes of the RADUICFG Class

Attribute	Description
PNLOUTBR	Specify Y to display the Option 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 Option Bar.
BNMYSOFT	Specify Y to display the My Software button on the Option Bar.
BNPREFER	Specify Y to display the Preferences button on the Option Bar.
BNBNDWTH	Specify Y to display the Bandwidth button on the Option Bar.
BNHISTORY	Specify Y to display the History button on the Option Bar.
BNSTATUS	Specify Y to display the Status button on the Option 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 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 HPCA Application Self-Service Manager. Specify Y or N to turn on/off the prompt and not allow the user to control the prompt.
BWSTARTUP	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 <code>SYSTEM</code> to use the operating system colors. Select <code>DEFAULT</code> to use the HPCA default color scheme. Note: The user will not be able to change the colors if either of the above two options are selected. Select <code>CUSTOM</code> to use <code>COLORSEL</code>, <code>COLORBAK</code>, <code>COLORBTN</code>, and <code>COLORWK</code>. Select <code>USER</code> to allow the user to control the colors.</p> <ul style="list-style-type: none"> • <code>COLORSEL</code>: Specify a color for the selection areas. • <code>COLORBAK</code>: Specify a color for the interface background. • <code>COLORBTN</code>: Specify the color for the buttons. • <code>COLORWK</code>: Specify the color for the work area. <p>You can change the color scheme of <code>COLORSEL</code>, <code>COLORBAK</code>, <code>COLORBTN</code>, and <code>COLORWK</code> by specifying a combination of RGB values or the name of the color. For example, to change the color of the selection area to color red, set the attribute value of <code>COLORSEL</code> to <code>RED</code> or set the RGB values as <code>R=255</code>, <code>G=0</code>, and <code>B=0</code>.</p> <p>Note: Check the Microsoft web site for available colors.</p>
STATSTR	Specify <code>Y</code> 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</code> which, by default, is located in <code>C:\Program Files\Hewlett-Packard\HPCA\Agent\Lib</code> .
CUSTURL	Specify a URL that the HPCA agent computer's default Internet browser will open to if the user clicks on the CUSTIMG .
CUSTTEXT	Specify the text to display when the HPCA agent computers mouse hovers over the CUSTIMG .
CUSTTITLE	Specify the text to display in the HPCA Application Self-Service Manager title bar.
COLTYPE	Set to <code>Forced</code> if you want only the columns that are specified in <code>COLNAMES</code> to appear. Set to <code>Required</code> if at least the columns specified in <code>COLNAMES</code> should appear. Name and Status are always displayed.
COLNAMES	Specify the columns you want displayed. Separate the columns with a comma.
EXPSITEM	Specify <code>U</code> to allow the user to control the expansion of the active Service List item. Specify <code>Y</code> or <code>N</code> to allow/disallow the user to expand the active item in the Service List.
EXPCITEM	Specify <code>U</code> to allow the user to control the expansion of the active catalog item. Specify <code>Y</code> or <code>N</code> to allow/disallow the user to expand the active catalog item.

Reference Guide

Appendix B: HPCA Agent Settings Classes in CLIENT Domain (Client Operations Profiles)

Attribute	Description
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 and Reconfigure 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.
PROXYPR	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.
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.
SHWSCHEV	Specify Y to show the Scheduled Event button when a service item is expanded. This button looks like a clock.
TMNUTXT <i>n</i>	Create a custom menu for the HPCA System Tray. This menu will be available when you right-click the System Tray icon. In the attribute name, <i>n</i> is any value ranging from 0 to 9. To create a separator bar, type SEPARATOR as the menu text.
TMNUCMD <i>n</i>	Create a custom menu item for the HPCA System Tray. In the attribute name, <i>n</i> is any value ranging from 0 to 9. Specify a command to run when TMNUTXT <i>n</i> is clicked in the System Tray. The command must be available from the IDMSYS directory.
NAME	Friendly name of the instance.

Appendix C

RADSKMAN Command Line Parameters

Regardless of which deployment method you choose, you will need to create and run 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 the following categories:

- "Core" below
- "Operations" on page 109
- "Machine/User" on page 111
- "Client Operations Profiles" on page 113
- "Process" on page 113

Core

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

RADSKMAN Core Parameters

Parameter	Explanation
cat	<ul style="list-style-type: none">• Set <code>cat=prompt</code> to run self-maintenance, display the logon panel, and check the status of other services.• Set <code>cat=y</code> to check the status of services only.• Set <code>cat=m</code> to use the local machine catalog for resolving the user's service list. This is used with <code>context=u</code>. Typically, this is also used with <code>local=y</code>. The default for HPCA Application Manager is prompt. The default for HPCA Application Self-Service Manager is dependent on the request type.
dname	The CSDB domain name for the services. This is the directory in which the service catalog (<code>ASERVICE.EDM</code>) is stored. For example, <code>dname=SOFTWARE</code> . The default for both HPCA agents is SOFTWARE . However, if <code>preload=y</code> , the default is RADSTAGE .

Parameter	Explanation
IP	<p>The IP address of the Configuration Server.</p> <p>Note: If you do not specify the IP address, HPCA uses the IP address that is specified in the ZMASTER object stored in IDMLIB (by default, C:\Program Files\Hewlett-Packard\HPCA\Agent\LIB\).</p> <p>The default for both HPCA agents is NOVARCS.</p>
IPVER	<p>IP version. Set IPVER to 4, 6, 46, or 64. IPVER overrides the IPVER value passed during the installation of the agent using the install.ini. If the command line argument is passed then the radskman.exe will validate and update the IPVER value of ZMASTER.EDM. If an invalid value (other than 4, 6, 46, or 64) is passed as the IP version, the ZMASTER.IPVER value is set to the default value, which is 46. The initial connect to the HPCA server happens based on the IPVER value in the ZMASTER.EDM. If the connect does the COP resolution, the subsequent connects happen based on the IPVER value set in SAP.EDM. IPVER is applicable for Windows systems only.</p>
mname	<p>The name of the Configuration Server. For example, mname=RADSVR01. The default for both HPCA agents is RADIA. However, if preload=y, the default is RADSTAGE."</p>
port	<p>The Configuration Server port.</p> <p>Note: If this is not specified, HPCA uses the port that is specified in the ZMASTER object stored in IDMLIB (by default, C:\Program Files\Hewlett-Packard\HPCA\Agent\LIB\).</p> <p>The default for both HPCA 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>

Parameter	Explanation
startdir	<p>Specifies the IDMLIB starting directory. Note: HP recommends specifying <code>startdir</code> on the command line if <code>uid</code> has been specified on the command line. If <code>startdir</code> is not specified, it will be set to the same value as <code>uid</code>.</p> <ul style="list-style-type: none"> Specify <code>startdir=\$MACHINE</code> to use the computer name. Specify <code>startdir=\$USER</code> to use the currently logged on user. Specify <code>startdir=value</code> to specify a custom starting directory. If <code>value</code> contains embedded spaces, enclose the entire name in quotation marks. During <code>notify</code>, you can also specify <code>value</code> to be retrieved from the EDM objects. For example, <code>startdir=&(ZMASTER.ZUSERID)</code> will retrieve value from <code>ZMASTER</code>. <p>The defaults for both HPCA agents are: \$USER (if started in a user context, <code>context=u</code>); SYSTEM (if started in machine context, <code>context=m</code>).</p> <p>Note: HPCA Application Self-Service Manager does not pass a context by default.</p>
uid	<p>The identification that is used to identify the current session. Note: HP recommends specifying <code>startdir</code> on the command line if <code>uid</code> has been specified on the command line. If <code>startdir</code> is not specified, it will be set to the same value as <code>uid</code>.</p> <ul style="list-style-type: none"> <code>uid=\$MACHINE</code> identifies the current session by the name of the computer. <code>uid=\$USER</code> identifies the current session by the name of the currently logged on user. <code>uid=custom</code> is used to identify the current session by a custom value that you specify. During <code>notify</code>, you can also specify <code>value</code> to be retrieved from the EDM objects. For example, <code>uid=&(ZMASTER.ZUSERID)</code> will retrieve value from <code>ZMASTER</code>. <p>The defaults for both HPCA agents are: \$USER (if started in a user context, <code>context=u</code>); SYSTEM (if started in machine context, <code>context=m</code>).</p> <p>Note: If you do not specify a context for Application Self-Service Manager, the LOCALUID—as specified in the ZMASTER object stored in IDMLIB (by default, <code>C:\Program Files\Hewlett-Packard\HPCA\Agent\Lib\</code>)—will be used.</p>

Operations

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

RADSKMAN Operations Parameters

Parameter	Explanation
ask	<ul style="list-style-type: none"> Set <code>ask=y</code> to prompt the user before restarting the computer, which gives them a chance to save their work and close applications. Set <code>ask=n</code> to restart the computer without prompting the subscriber. This is useful for unattended computers. <p>The default for HPCA Application Manager is <code>Y</code> if HPCA System Tray is running; <code>N</code> if System Tray is not running or there are no users logged on. The default for HPCA Application Self-Service Manager is <code>Y</code>.</p>
hreboot	<ul style="list-style-type: none"> Specifying <code>hreboot=y</code> will allow RADSKMAN to handle a computer restart if it is required by the service. Specify <code>hreboot=p</code> to power off the computer. The HPCA agent computer will shut down regardless of the service's reboot settings. Specify <code>hreboot=n</code> to override any reboot settings defined for a service. If <code>hreboot=p</code> is used, the system assumes a quiet mode and the user does not receive an alert on the screen. If an alert is required, an alert type needs to be passed as follows: <ul style="list-style-type: none"> Use <code>hreboot=py</code> to receive an Ok/Cancel alert on the screen. Use <code>hreboot=pa</code> to receive an OK alert on the screen. Use <code>hreboot=pq</code> or <code>hreboot=p</code> to suppress the alert. <p>The default for HPCA Application Manager and Application Self-Service Manager is <code>Y</code>.</p>
ind	<ul style="list-style-type: none"> Specify <code>ind=n</code> to hide the status indicator for each service. Specify <code>ind=y</code> to show the status indicator for each service. <p>The default for both HPCA agents is <code>Y</code>.</p>
jobid	Use <code>jobid</code> to further describe the source of this command line. It shows up in the APPEVENT, IDENTITY, PREFACE, and SYNOPSIS objects as <code>JOBID</code> . The defaults for both HPCA agents are: UserConnect (if started in a user context); MachineConnect (if started in machine context).
log	Create a name for the log that is stored in the <code>IDMLOG</code> directory.
logsize	Specify the maximum size (in bytes) of the log file. When the log size is reached, a backup file (<code>.bak</code>) is created (by default, <code>connect.bak</code>). If a backup file exists, it will be overwritten. The default for both HPCA agents is 1000000 .
rtimeout	Specify the number of seconds to wait—before rebooting the HPCA 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.
mcui	Set <code>mcui=y</code> to display the reboot dialog box. You must also select <code>ask=y</code> , <code>rtimeout=[>0]</code> , and <code>hreboot=y</code> to display reboot dialog box.

Machine/User

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

RADSKMAN Machine/User Parameters

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

Parameter	Explanation
flushu	<p>If <code>local=y</code> (see "local " below):</p> <ul style="list-style-type: none"> Specify <code>flushu=y</code> on user connects in order to send reporting objects to the Configuration Server at the end of the local connect for immediate feedback. This is the default behavior on user connects. Specify <code>flushu=n</code> to prevent the reporting objects being sent to the Configuration Server. Be aware that the user's objects will continue to grow until they are sent to the Configuration Server. <p>Note: <code>flushu=n</code> is applicable only for user connects and cannot be used for machine connect.</p> <p>On a machine connect, set <code>flushu=a</code> in order to send all reporting objects to the Configuration Server. The default for both HPCA agents is <code>Y</code>.</p>
local	Specify <code>Y</code> to install resources, from the local HPCA agent computer, for the user's services. Use this only with <code>context=u</code> . Usually, this is used with <code>cat=m</code> .
machfreq	This parameter can be used to limit the number of HPCA machine connects on an HPCA agent computer. This is a global setting and is valid only if <code>context=m</code> . If <code>machfreq=0</code> , the HPCA agent connect will run on every restart of the HPCA agent computer. If <code>machfreq</code> is set to an integer (<i>n</i>), a machine connect will run only if it has been <i>n</i> number of hours since the last connect. For example, if <code>machfreq=1</code> , the machine connect will run after one hour of the last agent connect. However, if a connect runs the installation of a service that requires a restart of the computer, followed by a connect to complete the installation, the <code>machfreq</code> value is ignored and the connect is run. Once the connect is completed, the <code>machfreq</code> value is taken into consideration for all subsequent connects. For example, this reduces the OS Manager commits on a Windows Thin Client agent computer by limiting the number of connects.
mnt	Specify (<code>Y N</code>) whether to process HPCA agent self-maintenance on this connect. The default for both HPCA agents is <code>N</code> .
ulogon	<p>This parameter display/hide the logon panel; it is valid only if <code>cat=prompt</code>.</p> <p>Note: If using the HPCA System Tray, specify <code>ulogon=n</code> to display the HPCA logon panel, which is not supported by the System Tray.</p> <p>The default for HPCA Application Manager is <code>N</code>. The default for HPCA Application Self-Service Manager is <code>Y</code>.</p>
userfreq	<p>Use this variable to prevent HPCA from running every time a user logs into the</p> <ul style="list-style-type: none"> If the value of <code>userfreq</code> is blank or not supplied, a user connect will run every time an HPCA agent connect is run with <code>context=u</code>. If <code>userfreq=0</code>, a user connect will run only if the previous connect was a system connect. Agent uses the <code>USEREXEC</code> and <code>USERSID</code> variables in <code>RADUSERS.EDM</code> object to analyze whether the previous connect was a user or system connect and the <code>ISOTIME</code> variable to determine how much time elapsed since the last connect.

Parameter	Explanation
	<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 the value of <code>userfreq</code> is blank or not supplied, a user connect will run every time an HPCA agent connect is run with <code>context=u</code>. • If <code>userfreq=0</code>, a user connect will run only if the previous connect was a system connect. Agent uses the <code>USEREXEC</code> and <code>USERSID</code> variables in <code>RADUSERS.EDM</code> object to analyze whether the previous connect was a user or system connect and the <code>ISOTIME</code> variable to determine how much time elapsed since the last connect. <p>System connect is run using Notify or Timer</p>

Client Operations Profiles

These parameters are used for specifying how to use Client Operations Profiles.

RADSKMAN Client Operations Profiles Parameters

Parameter	Explanation
<code>cop</code>	<ul style="list-style-type: none"> • Specify <code>Y</code> to enable Client Operations Profile resolution for this HPCA agent connect only. • Specify <code>N</code> to disable Client Operations Profiles resolution for this HPCA agent connect only. <p>The default for both HPCA agents is <code>N</code>.</p>
<code>cdf</code>	<ul style="list-style-type: none"> • Specify <code>Y</code> to enable the Connect Deferral feature. • Specify <code>N</code> to disable the Connect Deferral feature. <p>For more information on the Connect Deferral feature, see <i>HP Client Automation Enterprise User Guide</i>.</p>
<code>datauri</code>	Add <code>datauri</code> (in the Universal Resource Identifier format) to the RADSKMAN command line to override the use of the SAP object for the DATA type.
<code>product</code>	If you used the <code>SAP.PRODUCT</code> 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.
<code>rcsuri</code>	Add <code>rcsuri</code> (in the URI format) to the RADSKMAN command line to override the use of the SAP object for the RCS type.

Process

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

RADSKMAN Process Parameters

Parameter	Explanation
Add	Specify (Y N) whether to install applications during this HPCA agent connect. The default for both HPCA agents is Y.
autofix	Specify (Y N) whether to automatically repair broken applications. The default for both HPCA agents is Y.
catexp	Use this parameter (in the format <attribute name>:<value>) 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 HPCA agent connect. The default for both HPCA agents is Y.
merge	Specify an object name to have all variables in that object included in the ZMASTER object, and sent to the Configuration Server.
mnt	Specify (Y N) whether to process HPCA agent self-maintenance on this connect. The default for both HPCA agents is N.
preload	Used for Proxy Server preloading. Specify Y to use the IDMDATA directory that is specified in NVD.INI. Otherwise, specify the location of a directory into which the files will be copied.
process	Used to run a specific process based on the command line argument called "process". This is called as staccato processing. If the process argument contains any of the following variables then the application will enable the staccato processing. COMMIT : commits the changes from the differencing which involves invoking the methods and moving the files from cache to live location. DIFF : enables tree differencing, where the client differences the local object with the new objects coming from the Configuration Server. REPT : sends reporting objects to finish the connect process. VER : verifies the objects. Acts as a precursor to DIFF and COMMIT. If it is used before commit, it validates if all data has been downloaded before activating the state machine. XFER : downloads data for all the objects that require data from different sources into IDMDATA.
rep	Specify (Y N) whether to repair applications during this HPCA agent connect. The default for both HPCA agents is Y.
sendcat	Specify Y to send the service list, stored in the HPCA agent computer's ASERVICE object, to the Configuration Server at the end of the connect so that additional analysis can be done on it.
sslmgr	Specify the host name or IP address of the Configuration Server. Note: To perform HPCA agent self-maintenance over a secure channel (SSL), add the flag : : sm to the end of the SSL Manager IP address.
sslport	Specify the SSL communications port (normally 444).

Parameter	Explanation
upd	Specify (Y N) whether to update applications during this HPCA agent connect. The default for both HPCA agents is Y.
ver	Specify (Y N) whether to verify applications during this HPCA agent connect. The default for both HPCA 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 Application Manager, and processes all mandatory applications:

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

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

```
radskman
ip=10.10.10.15,port=5004,mname=HPAgent,dname=software,cat=y,
sname=WinZip
```

- Install an application (WinZip) while updating only the catalog. Note that the Configuration Server uses IPv6:

```
radskman
ip=2001:db8:0:1:f8f3:a7bb:2bcb:6037,port=3464,mname=HPAgent,
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=HPAgent,dname=software,cat=prompt,
hreboot=Y,ask=Y
```

- Preload a stager using a location `d:\stager` and display the progress indicator panels. Note that if the HPCA System Tray feature is enabled, the progress indicator will be displayed in the System Tray information bubble. If the 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=HPAgent, 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=HPAgent, dname=software
```

- Perform the notify connect using IP version:

```
radntfyc <agent_host> -v <IP version> radskman ip=<configuration_
server_IP address>
```

In this instance,

- `agent_host` is the IP address or hostname of the agent computer. Note that if the agent is in dual stack, the communication occurs based on the IP address you specify, whether it is an IPv4 or IPv6 host. This IP version overrides the value you specify for the `-v` switch. For example, if you specify the address as 192.168.xx.xx, and set the value for IP version as 6, the notify communication will not work. However, if you specify 64 as IP version, the communication will failover to IPv4.
- `-v` specifies the ip version for notifying the HPCA agent. IP version can be 4, 6, 46, or 64.

- `configuration_server_IP` is the IP address of the HPCA Configuration server.

Example 1: `radntfyc <192.168.255.255> -v 64 radskman ip=NOVARCS`

In this example, although you have specified the IP version over which the communication should happen as 6, the communication happens over IPv4, because the agent IP address that you have specified is in IPv4 format.

Example 2: `radntfyc <foo.bar.hp.com> -v 64 radskman ip=NOVARCS`

In this example, the communication happens over IPv6, since the agent address is provided in host name format, and the IP version as 6.

- Perform a system connect:

System connect is used if elevated privileges are required during an Agent connect.

All connects launched via Notify or Timer are system connects.

On a local machine, the 'notify client' module `Radntfyc` can be used to invoke a System connect:

```
Radntfyc localhostradskman ip=10.10.10.15, port=3464, uid=$machine,
startdir=system, cat=prompt,ulogon=n, mname=HPAgent,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
```

- Perform verification, differencing and stop the connect.

```
RADSKMAN PROCESS="VER,DIFF",ip=NOVARCS, port=3464
```

Use comma (,) as the delimiter between the directives and enclose the directives in the double quotes (" ").

- Validate that all the data has been downloaded, run the state machine, and send the reporting object to the configuration server.

```
RADSKMAN PROCESS="VER,COMMIT,REPT",ip=NOVARCS, port=3464
```

Use comma (,) as the delimiter between the directives and enclose the directives in the double quotes (" ").

- Download data.

```
RADSKMAN PROCESS="XFER",ip=NOVARCS, port=3464
```

- Perform a connect to httpstcp protocol

```
Radskman rcsuri=httpstcp://<full-service  
satellite:443>,sname=<servicename>,uid=<uid>,log=connect.log,cop=y
```

Note: When you connect to the httpstcp protocol using the rcsuri parameter, the IP version is not read from the SAP.EDM object. Instead, it is read from the ZMASTER.EDM object. Therefore, the connect.log file stores the IP version mentioned in the ZMASTER.EDM object. To override the value of IPVER value in ZMASTER.EDM, you can run a connect using IPVER. For more information on IPVER, see parameter list in the section, "[Core](#)" on [page 107](#).

- Using RADSKMAN with IPVER.

```
radskman ip=10.10.10.15,port=3464,IPVER=46
```


Appendix D

Local AIP Support for the MSI Redirector

The HPCA 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 Configuration Server or 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 MSI Redirector.

In order to continue to use the MSI Redirector, a level of redirection exists at the local file-system level. When using this method, MSI is told that the **Application Installation Point (AIP)** is local, and requests the files directly from the file system. This request is captured and forwarded to the 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.

Local AIP support for MSI redirector provides the following advantages:

- Increased level of flexibility and performance.
- Ability to apply date or time stamps and support long file names.
- Ability to run Custom Actions that do not support http as an Install Point.

To enable using the Local AIP:

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

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

Note: 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, see *HP Client Automation Enterprise Administrator User Guide*.

5. Click **OK**.
6. Click **Yes** to confirm the changes.

7. Configure the SETTINGS.LOCALAIP attribute in COPs to control the destination of the local AIP folder on the HPCA agent desktop. For example, `C:\localaip`.

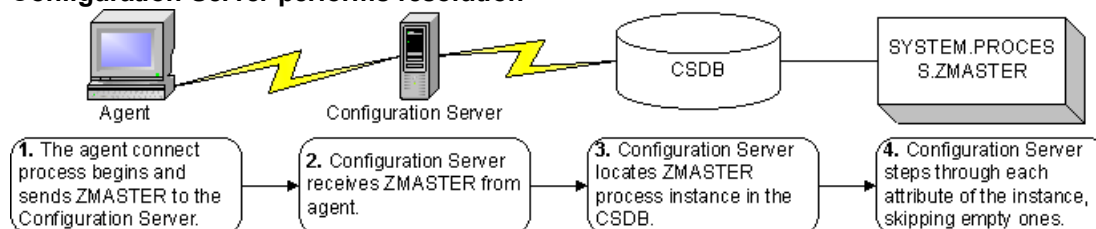
Note: By default, the LOCALAIP attribute is not available in PRIMARY.CLIENT.SETTINGS class. However, you can edit the SETTINGS class to create the LOCALAIP attribute by using HPCA Administrator CSDB Editor. Make sure that the attribute type is set to **Variable**. For information about how to edit a class to create an attribute, see the *HP Client Automation Enterprise CSDB Editor Online help*.

Appendix E

Resolution Process

The Configuration Server uses the **resolution process** to accomplish a unit of work in response to a service request. The unit of work is defined by the contents of the CSDB and parameters included in the request. In other words, what the Client Automation infrastructure does depends on what information is stored in its CSDB and what information accompanies the request for Client Automation to perform some action. For example, the agent connect submits service requests to the Configuration Server, and the Configuration Server performs a resolution in response to each request.

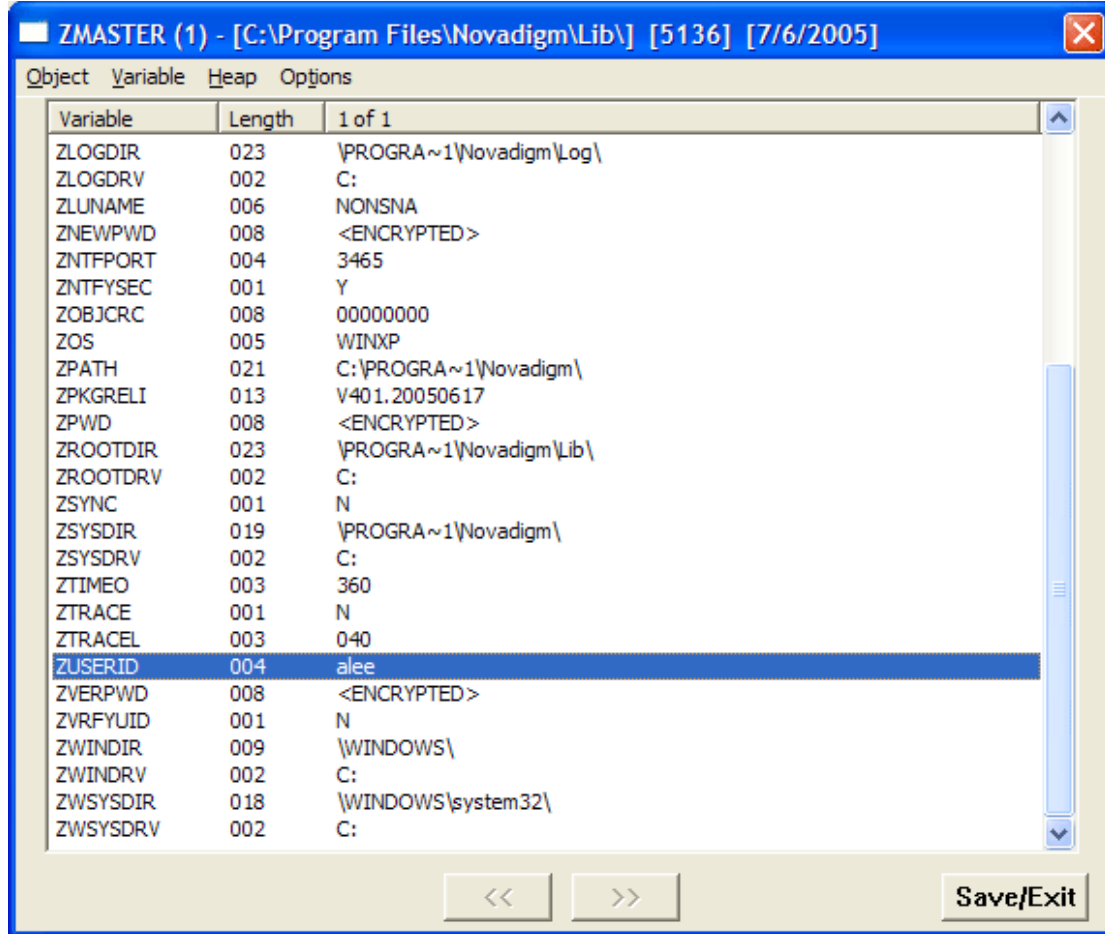
Configuration Server performs resolution



The ZMASTER object is sent to the Configuration Server during the agent connect. The ZMASTER object contains information about the agent computer that is needed to run Client Automation, such as the identity of the subscriber and the IP address of the agent computer.

The Configuration Server stores the ZMASTER object in **global memory**. Global memory is a temporary storage area in the Configuration Server. The Configuration Server maintains global memory's contents for the duration of the resolution process.

Subscriber's local ZMASTER object



After storing ZMASTER in global memory, the Configuration Server finds the Process instance for the ZMASTER. This is the **process entry point**. Its location is SYSTEM.PROCESS.ZMASTER.

The Configuration Server reads each attribute of SYSTEM.PROCESS.ZMASTER. Based on an attribute's value, the Configuration Server may:

- Set variable values.
- Evaluate an expression.
- Execute a method.
- Connect to other instances

If there is a connection to another instance, the Configuration Server processes the connected instance. Then the resolution process resumes in the referring instance at the next attribute after the connection attribute. For example, in the figure "PRIMARY.SYSTEM.PROCESS.ZMASTER instance" on next page, the first connection instance links to SYSTEM.ZINTENT.&(SESSION.INTENT). After processing this connection instance, the resolution process will return to PRIMARY.SYSTEM.PROCESS.ZMASTER.

PRIMARY.SYSTEM.PROCESS.ZMASTER instance

Radia Processes class ZMASTER Instance Attributes:		
Name	Attribute Description	Value
ALWAYS	Method	
ALWAYS	Method	
ALWAYS	Connect To	
ALWAYS	Connect To	SYSTEM.ZINTENT.&(SESSION.INTENT)
ALWAYS	Method	
ALWAYS	Method	
ALWAYS	Method	
ALWAYS	Method	
ALWAYS	Method	
ALWAYS	Method	
DESCRIPT	Process Description	Processing Client Request for &ZCUIOBJ
ZMAXOKRC	Max acceptable method Return Code	008

UTF-8 9/21/2011 5:46 PM

During resolution the Configuration Server performs symbolic substitution to set values and to connect to other instances. For example, in SYSTEM.PROCESS.ZMASTER there is a connection to SYSTEM.ZINTENT.&(SESSION.INTENT). The Configuration Server substitutes the value of the INTENT from the SESSION object that is in global memory. If the INTENT is CATALOG_RESO, the resolution process will connect to SYSTEM.ZINTENT.CATALOG_RESO and resolve that instance. In the SYSTEM.ZINTENT.CATALOG_RESO instance, there is a connection to SYSTEM.ZPRODUCT.&(PREFACE.ZDOMNAME). The Configuration Server substitutes the value of the ZDOMNAME from the PREFACE object that is in global memory. If the ZDOMNAME is SOFTWARE, the resolution process will connect to SYSTEM.ZPRODUCT.SOFTWARE and resolve that instance. In SYSTEM.ZPRODUCT.SOFTWARE there is a connection to POLICY.USER.&(ZMASTER.ZUSERID). The Configuration Server substitutes the value of the ZUSERID from the ZMASTER object that is in global memory.

In the figure "[Subscriber's local ZMASTER object](#)" on previous page, the value of ZUSERID is alee. Therefore, the resolution process will connect to POLICY.USER.ALEE, and resolve that instance.

POLICY.USER.ALEE instance

Name	Attribute Description	Value
UNAME	Name	
ZCONFIG	Collect Hardware Info [Y/N]	Y
ZSETMSGA	Send Message to Audit Resource	DAILY
ZDLIMIT	Maximum Disk Space	0
USERID	Enterprise User Id	
ZTIMEO	Client Timeout (Seconds)	240
ZTRACEL	Trace Log Level [0-999]	040
ZTRACE	Trace On or Off [Y/N]	N
ZPRIORIT	Exec. Priority	000
ZSHOW	Display Status Indicator [Y/N]	N
ic_ALWAYS_	Utility Method	
ic_ALWAYS_	Member of	SOFTWARE.ZSERVICE.AMORTIZE
ic_ALWAYS_	Member of	
ic_ALWAYS_	Member of	
ic_ALWAYS_	Member of	
ic_ALWAYS_	Member of	
ic_ALWAYS_	Member of	
ic_ALWAYS_	Member of	
ic_ALWAYS_	Member of	PRDMAINT.ZSERVICE.MAINT_40
NAME	Friendly name	ALEE
ZVERDT	Verify Desktop [Y/D/R/I]	Y
SELPIND	Self Maintenance Display [Y/N]	N
SLFINTVL	Self Maintenance Interval (hours)	0
TYPESEL	Type Selection - Calc. Pack Sizes	Typical
EMAIL	E-mail Address	
ZOBJPFUE	Free Unused Pool Elements	Y
MSITRACE	activates MSI verbose Trace:\vpath	
ZGRPINFO	Gather Group membership info[Y/N]	N
ZOBJPTCH	Perform Patching [Y/N]	N

In the figure "POLICY.USER.ALEE instance" above, after setting a number of variables, the first connection attribute is to SOFTWARE.ZSERVICE.AMORTIZE. In your implementation, the POLICY instance may connect to a workgroup that connects to a service.

ZSERVICE.AMORTIZE instance

Name	Attribute Description	Value
ZSTOP000	Expression Resolution Method	WORDPOS(EDMGETV(ZMASTER_ZO:
ZSTOP001	Expression Resolution Method - 001	
ZSTOP002	Expression Resolution Method - 002	
ZSTOP999	Stop Unless Radia Connect	
ZSVCNAME	Service Name/Description	Amortize
ZSVCTTYP	Application Target Type [A/S]	
ZSVCMO	Mandatory or Optional Service [M/O]	0
ZSVCCSTA	Service Status on Client (999)	999
ZSVCPRI	Service Create Ordering [01-99]	
ic_ALWAYS_	Contains	SOFTWARE.PACKAGE.AMORTIZE2_
ic_ALWAYS_	Contains	SOFTWARE.PACKAGE.AMORTIZE2_
ic_ALWAYS_	Contains	
ic_ALWAYS_	Contains	
ic_ALWAYS_	Contains	
ic_ALWAYS_	Contains	

A Service instance links to packages. The figure "ZSERVICE.AMORTIZE instance" above begins with a ZSTOP expression variable. An expression variable contains statements that, if evaluated to "true," stop the resolution of the current instance. An expression allows alternative paths to be taken

during resolution based on variable data. In this case, the expression checks to be sure that the operating system of the agent computer is authorized for the Amortize software.

If the agent computer's operating system is Windows 2003, Windows XP, or Windows Vista, the resolution process continues with this instance, connecting the file instances, registry entries, path instances, and shortcuts. If the agent has an operating system other than one of the four that were previously mentioned, resolution returns to SOFTWARE

.ZSERVICE.AMORTIZE, and to the next connection instance.

Eventually, the resolution process will return to the User instance, finish resolving it, and return to the process entry point, SYSTEM.ZPROCESS.ZMASTER.

After processing all attributes in the SYSTEM.PROCESS.ZMASTER instance, resolution terminates.

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Product name and version: HP Client Automation Enterprise Application Manager and Application Self-Service Manager, 9.00

Document title: Reference Guide

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