

# HP Client Automation Enterprise

For the Windows, Linux, and Macintosh ® operating system

Software Version: 9.00

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## Installation and Upgrade Guide

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# Chapter 1

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## Introduction

HP Client Automation Enterprise is a real-time, policy-based, desired state management client management solution that automates the administrative tasks for the physical and virtual clients in highly complex and ever changing environments.

The desired state approach ensures that all client devices in your infrastructure are in adherence with the state information stored for the device in a central database. To achieve the desired state, HPCA enforces policies and delivers the required configurations or data files to the client device without any manual intervention.

## About this Guide

This guide provides a general understanding of HPCA as well as instructions for installation and basic configuration of the HPCA infrastructure. This guide also provides information to help you understand how HPCA fits into an existing enterprise environment by introducing, at a high-level, the HPCA components, their capabilities, and how they relate to one another.

This guide provides information on how to upgrade HPCA from a supported older version to the latest HPCA version.

## Terminology

The following terms are used frequently in this publication:

### **Administrator**

The system administrator who uses the HPCA Core Console, HPCA Satellite Console, and HP Client Automation Administrator tools to configure and maintain the HPCA environment.

### **Agent computer**

A computer (workstation or server) that has the HPCA agent software installed on it. It can also be referred to as a device.

### **Current computer**

A device that is currently in use or is active in the network.

### **Desired state**

The state of a device as defined by the configuration parameters you set in the HPCA Configuration Server Database (CSDB). These parameters include policy for software and patches.

### **Device**

A piece of hardware, such as a computer or ATM, that can be either a managed device or a target device.

#### **HP Client Automation Administrator**

A set of HP Client Automation Administrator tools (including the Agent Explorer, Packager, Publisher, CSDB Editor, and the AMP Editor) that you use to manage the HPCA environment.

#### **HPCA agent**

The agent software (such as the HPCA Application Manager, HPCA Patch Manager, HPCA Inventory Manager, and HPCA OS Manager agents) that runs on the managed device and communicates with the HPCA Core and Satellite server.

#### **HPCA agent connect**

The process by which a managed device communicates with the HPCA Core and Satellite server.

#### **HPCA Configuration server (Configuration server)**

A server that configures and maintains the desired state for your enterprise devices and agent computers. In conjunction with HPCA Configuration Server Database, Configuration server stores application data and HPCA agent-device information, and distributes application packages based on the policies that are established by an administrator. The Configuration server can manage an HPCA agent's desired state, deliver and maintain HPCA policies, contact devices causing them to initiate data requests and desired-state requests.

#### **HPCA Configuration Server Database (CSDB)**

An object-oriented database that stores all the information needed to manage assets on a device, including software, patches, OS images, and data that HPCA distributes. The database also stores policies that determine which users are entitled to which resources, and security and access rules for administrators. CSDB contains data organized in a hierarchical structure with four levels: files, domains, classes, and instances.

#### **HPCA Core server**

A central server that maintains the authoritative data repository, policy entitlements, and desired state configuration parameters for all resources being managed on clients. The Core server includes a complete set of HPCA infrastructure necessary for authentication, centralized administration, reporting, configuration, resource deployment, and Satellite server communications.

#### **HPCA Satellite server**

A server that acts as an access point for HPCA agent communications and resources. The Satellite server is an intermediary between the Core server and the HPCA agents. In a typical corporate computing environment, numerous Satellite servers are located in "network proximity" to the HPCA agents that they serve to enhance the performance. Satellite servers synchronize with an upstream server that enables Satellite servers to provide the resources requested by HPCA agents.

#### **Managed device**

A computer, ATM, or other piece of hardware, that is managed by HPCA.

#### **Non-current computer**

A device which no longer exists in the network for various reasons, such as, the device has been removed from the network or it has been renamed.

**Package**

A unit of software or data that can be published to the CSDB.

**Policy**

A rule that defines the services that are entitled to a subscriber, an agent computer, or a managed device.

**Resolution**

The process by which a managed device achieves its desired state.

**Service**

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

**Target device**

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

**User or subscriber**

The person who uses managed applications on a managed device.

## 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:

## HPCA Documentation

The HPCA documentation is available on the media at the following location : <media\_root>\Documentation. After installing the Core server, you can access the documentation using the Windows **Start** menu or the Client Automation Enterprise Documentation shortcut link on the desktop. You can also access the documentation using any computer that has access to the Core server computer using the following URL: [http://<HPCA\\_HOST>:3466/docs](http://<HPCA_HOST>:3466/docs) where, *HPCA\_HOST* is the name of the server where HPCA Core server is installed.

## Documentation Map

The following table lists all documents available for HP Client Automation 9.00

### HPCA 9.00 Documentation Set

Guide Name	Description
HPCA Enterprise Administrator User Guide	Describes the HPCA Administrator tools for the Windows, Linux, and Macintosh operating systems and how to use these tools to administer the HP Client Automation environment. The details of using HPCA Administrator CSDB Editor are explained in the HPCA Enterprise CSDB Editor Online Help.
HPCA Enterprise Application Management Profiles User Guide	Describes how to enable the deployment and management of complex software products that are typically required on the managed clients and servers in a Client Automation environment. For example, Symantec Antivirus, Microsoft® Office 2007, Microsoft SQL Server, Oracle, Apache, and Internet Information Server.
HPCA Enterprise Application Manager and Application Self-Service Manager Reference Guide	Describes the reference information for HPCA Application Manager and Application Self-Service Manager. For example, using HPCAagent in lockdown mode and understanding various message codes generated in HPCAenvironment.
HPCA Enterprise Application Manager and Configuration Server REXX Programming Guide	Describes how to create HPCA REXX methods to customize processing for your HPCA-managed computing environment.
HPCA Enterprise Application Self-Service Manager Online Help (Linux and Macintosh)	Describes how to use the Application Self-Service Manager on Linux and Macintosh platforms.
HPCA Enterprise Application Self-Service Manager Online Help	Describes how to use the Application Self-Service Manager on Windows platform.

(Windows)	
HPCA Enterprise Application Usage Manager Reference Guide	Describes how to assess and obtain reports on software usage in your HPCA environment. For example, you can know who is using what applications, and how often.
HPCA Enterprise Configuration Server Database Reference Guide	Describes all domains and classes used in HPCA.
HPCA Enterprise Configuration Server Messages Guide	Describes informational, warning, and error messages, grouped numerically and by Configuration server tasks. It lists Configuration server return codes and reason codes.
HPCA Enterprise Configuration Server Reference Guide	Describes the reference information about Configuration server. For example, Configuration server directories, tuning the Configuration server, and customizing the Configuration server processing.
HPCA Enterprise CSDB Editor Online Help	Describes how to use the HPCA CSDB Editor.
HPCA Enterprise Distributed Configuration Server Reference Guide	Describes how to manage multiple Configuration Server Databases (CSDBs) in a networked environment.
HPCA Enterprise Installation and Upgrade Guide	Describes step-by-step installation and upgrade procedures for all HPCA components. It also describes the features of HPCA.
HPCA Enterprise Inventory Manager Reference Guide (Unix)	Describes different types of auditing and how to configure the auditing process on UNIX platform.
HPCA Enterprise Inventory Manager Reference Guide (Windows)	Describes different types of auditing and how to configure the auditing process on Windows platform.
HPCA Enterprise Messaging Server Reference Guide	Describes how to configure and tune Messaging server in your HPCA environment.
HPCA Enterprise Multicast Server Reference Guide	Describes how to configure and customize the Multicast server processing in your HPCA environment.
HPCA Enterprise Online Help	Describes all HPCA tasks that you can perform through HPCA Core Console.

## Installation and Upgrade Guide

### Chapter 1: Introduction

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HPCA Enterprise OS Management Reference Guide (SUSE AutoYaST and Red Hat Kickstart)	Describes how to configure OS Management on Suse and RedHat operating systems.
HPCA Enterprise OS Management Reference Guide (Windows)	Describes how to configure OS Management on Windows operating systems.
HPCA Enterprise OS Manager Hardware Configuration Management User Guide	Describes how to manage hardware configuration on managed devices before installing the operating systems.
HPCA Enterprise Out of Band Management Online Help	Describes how to use out of band management features in HPCA.
HPCA Enterprise Out of Band Management User Guide	Describes how to configure out of band management in your HPCA environment.
HPCA Enterprise Patch Management Reference Guide	Describes how to discover, analyze, and deploy patches in your HPCA environment.
HPCA Enterprise Policy Server Reference Guide	Describes the reference information about Policy server. For example, how to connect to LDAP.
HPCA Enterprise Portal Reference Guide	Describes the reference information about Portal, a back-end component in HPCA environment. The guide explains the Portal zones and Portal zones containers.
HPCA Enterprise Proxy Server Reference Guide	Describes reference information about Proxy server. For example, when to use a Proxy server and how to enhance performance of a Proxy server.
HPCA Enterprise Release Notes	Describes what is new in the HPCA current release.
HPCA Enterprise Reporting Server Reference Guide	Describes the advance features of the Reporting server and how to customize the reports.
HPCA Enterprise	Describes how to set up and use SSL in HPCA environment.



SSL Implementation Guide	
HPCA Enterprise Troubleshooting Guide	Describes various problems that you may encounter in your HPCA environment and their solutions. This guide also describes how to enable trace levels for various HPCA components and respective log files.
HPCA Enterprise User Guide	Describes various features of HPCA and how to perform various HPCA tasks to manage the HPCA environment.
HPCA Enterprise Virtual Application Management User Guide	Describes how to publish, update, and deploy virtual applications—VMware ThinApp and Microsoft Application Virtualization (Microsoft App-V)—in HPCA environment.
HPCA Enterprise Windows Terminal and Citrix Server Management User Guide	Describes how to manage Windows Terminal Server and Citrix applications in HPCA environment.

For information on migrating HPCA Classic installation to HPCA Core and Satellite installation, see the *HP Client Automation Enterprise Migration Planning and Best Practices Guide* from HP Live Network at [https://hpln.hp.com/system/files/HPCA\\_Classic\\_to\\_Core-Sat\\_Migration\\_Planning\\_and\\_Best\\_Practices.pdf](https://hpln.hp.com/system/files/HPCA_Classic_to_Core-Sat_Migration_Planning_and_Best_Practices.pdf).



# Chapter 2

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## HPCA Features

HPCA provides a suite of features that perform administrative tasks for the physical and virtual clients in highly complex and ever changing environments. These features are designed to replace ad hoc, error-prone, manual processes. HPCA automates the deployment, configuration, and management for software, patches, and operating systems. For example, by using Operating System management, you can install or replace operating systems on a device and maintain the device according to policy. By using Patch management, you can automate the process to acquire, install, and maintain patches in your environment. By using Software management, you can manage and deploy packaged software to the managed devices in the environment. By using Security and Compliance management, you can monitor and manage security vulnerabilities and assess which devices are out of compliance across your environment.

HPCA provides the following capabilities:

- ["Inventory Management "](#) below
- ["Software Management"](#) on next page
- ["Application Usage Metric Collection"](#) on next page
- ["Patch Management"](#) on next page
- ["Security and Compliance Management"](#) on page 21
- ["Out of Band Management "](#) on page 21
- ["Operating System Management"](#) on page 22
- ["Remote Management"](#) on page 22
- ["Settings Management"](#) on page 23
- ["Application Management Profiles"](#) on page 23
- ["Mobile Device Management"](#) on page 23
- ["Internet Clients Management"](#) on page 23

## Inventory Management

HPCA enables you to collect device hardware and software information for reporting. The feature is available for managed HP devices and includes BIOS configuration information. You can use a central console to view the inventory information collected on devices. Built-in reporting tools present the data in detailed or graphic views that can be filtered to show devices matching specific criteria.

Administrators can specify what inventory management data is to be collected. An inventory connect is then run on the target computer to retrieve the desired , which is then sent to the HPCA server for reporting.

Inventory management enables you to:

- Automatically gather information about software and hardware configurations and consolidates the results into web-based reports.
- Increase manageability of enterprise data by maintaining current inventory information collected across LAN, Internet, and dial-up links, and across a wide array of heterogeneous devices and operating systems.

#### Hardware Alert Reporting

HPCA enables you to configure managed devices centrally to monitor and gather hardware related alerts and events for reporting. The alerts include events such as overheating of the processor, fan stall, memory CRC errors, and hard disk smart errors.

## Software Management

HPCA enables you to manage and deploy packaged software to the managed devices in your environment. Software management enables:

- Policy-driven distribution of software.
- HPCA administrators to automatically deploy required software.
- End users to install the authorized *elective* software.

## Virtual Application Management

HPCA enables you to publish and update virtual applications in HPCA environment. The following two types of virtual applications can be published, deployed, and managed in HPCA environment:

- VMware ThinApp
- Microsoft Application Virtualization (Microsoft App-V)

## Application Usage Metric Collection

HPCA enables you to assess patterns of application usage in your environment. Application usage metric collection enables you to:

- Ensure license compliance within your enterprise.
- Implement license tracking, giving you the ability to purchase and maintain only those licenses that are required.
- Enable OS migration support by prioritizing software distribution based on actual usage.
- View the actual use of application resources using reports.

## Patch Management

HPCA enables you to discover, analyze, and deploy patches in your environment. Patch management enables you to:

- Acquire patches from vendor web sites.
- Determine the vulnerabilities on the managed devices.
- Deploy applicable patches to managed devices.
- Verify applied patches on managed devices to ensure compliance and security.
- Generate reports that provide information on which acquired and applicable patches have or have not yet been applied to a managed device.

## Security and Compliance Management

HPCA enables you to detect security and compliance problems on managed devices in your enterprise and quickly assess the severity and scope of the related risk. You can then take steps to remediate these problems. Security and compliance management enables you to monitor and manage the following across your environment:

- **Security vulnerabilities:** Identifies software security and vulnerability issues in the enterprise.
- **Configuration compliance:** Identifies software configuration problems on managed devices in the enterprise.
- **Security tools management:** Identifies what type of security tools are present and enabled on managed devices in the enterprise.

HP Live Network is integrated with HPCA. HP Live Network is a subscription service that delivers content updates for Client Automation Enterprise. You can configure HPCA to automatically download new security and compliance management content from the HP Live Network on a periodic basis, rather than depend on a manual process. This content includes scanners for clients and detailed information about security vulnerabilities, compliance benchmarks, and security tools—including suggested remediation solutions.

## Out of Band Management

HPCA enables you to perform out of band management operations on a device when the device is in one of the following states:

- The computer is plugged in but not actively running (off, standby, hibernating).
- The operating system is running.
- The operating system is not loaded (software or boot failure).
- The software-based management agent is not available.

HPCA supports Out of Band management (OOBM) for Intel vPro devices and DASH-enabled devices.

OOBM enables you to:

- **Discover**  
OOBM enables you to identify hardware and software assets in your environment. This helps you determine specifications for the hardware on devices, identify applications on devices, and compatibility issues.

- **Heal**  
OOBM uses KVM (Keyboard, Video, and Mouse) remoting to diagnose and repair software, operating system, and hardware failures.
- **Protect**  
OOBM helps you protect vPro devices from malicious software and worm proliferation.

## Operating System Management

HPCA enables you to configure and deploy operating systems based on the target device's capabilities. You can deploy operating systems to bare metal devices (no existing operating system) or to devices currently running an existing operating system. Operating system management enables you to:

- Reduce the learning curve for administrators because it is a fully integrated component of HPCA.
- Improve speed and reliability of operating system deployment.
- Maintain operating systems in the desired configuration and increases service levels.
- Reduce IT costs by simplifying and streamlining the OS management process across multiple platforms.

Using the operating system management features in HPCA, you can also perform pre-operating system provisioning tasks that include applying configuration settings to hardware on your target device. You can update the BIOS firmware, configure a disk array controller, or configure the non-volatile RAM of a target device.

### Personality Backup and Restore

HPCA enables you to migrate individual user settings and data. The details of user files and settings for applications and operating system on individual managed devices are saved on the server before migration. These details are then restored to the original device or a new device after completing the migration.

### Thin Client Management

HPCA enables you to deploy operating systems and software to HP thin clients, such as HP t5550 Thin Client and HP t5565 Thin Client, running Windows XPE, Windows CE, and embedded Linux.

## Remote Management

HPCA enables administrators to access and manage devices remotely. Remote management enables you to:

- Take control of problem devices with integrated remote control capabilities in the console.
- Use additional power management capabilities, such as:
  - Power down devices.
  - Reboot devices.
  - Wake-on-LAN.

- Access devices remotely in either the internal or external repository using one of the following connection types:
  - Windows Remote Desktop Connection
  - Virtual Network Computing (VNC)
  - Windows Remote Assistance

## Settings Management

HPCA enables you to create, modify, and delete settings profiles. The settings profile consists of customized configuration settings for devices, which include settings related to applications, operating systems, and hardware. By creating or modifying a settings profile, you can analyze and parameterize configuration control data for target softwares. Settings management enables you to:

- Create groups of configuration settings for software installed on the managed devices in your environment.
- View reports about the run-time data of the software.

## Application Management Profiles

HPCA enables you to create and modify application management profiles. These profiles enable you to deploy and manage complex software products (such as Microsoft Office 2007, Symantec Antivirus, and Citrix Presentation Agent) in an HPCA environment.

## Mobile Device Management

You can manage mobile devices in your enterprise using HPCA. A mobile device can either be a smartphone or a tablet running on Android or iOS operating systems. Using HPCA, you can entitle software applications, perform audits (collect inventory), and deploy security profiles to these mobile devices. For more information on the supported operating system versions, see the HP Client Automation Support Matrix available at [http://h20230.www2.hp.com/sc/support\\_matrices.jsp](http://h20230.www2.hp.com/sc/support_matrices.jsp).

## Internet Clients Management

Using HPCA, you can manage the devices that are outside your corporate network (VPN) similar to the devices inside corporate network. The devices are managed to comply with their desired state. You can manage inventory, software, patching, and vulnerabilities for the devices. OS management is not supported on Internet clients. For more information, see the Managing Internet Clients section in the HP Client Automation *Enterprise User Guide*.





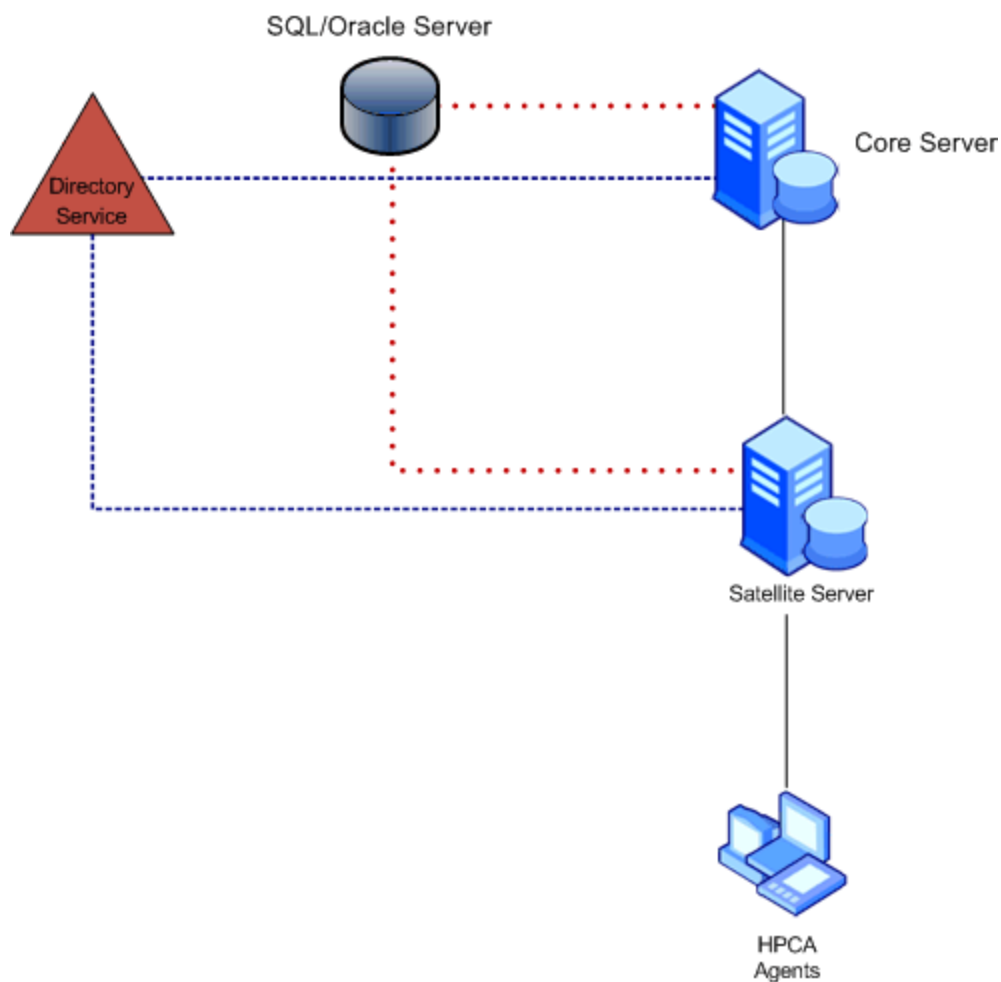
# Chapter 3

## HPCA Components

This chapter explains the components that work together to frame an HPCA environment. HPCA uses client-server architecture, in which the individual client devices are connected to a central computer known as Core server. You can implement Satellite servers to enhance the performance of your HPCA infrastructure. The Satellite servers act as access point to the HPCA infrastructure for all HPCA client devices. There are three main components required to build your HPCA environment:

- Core server
- Satellite server
- Agents

The following image shows how these components are arranged in HPCA environment:



HP Client Automation supports **IP version 4 (IPv4)** and **IP version 6 (IPv6)**. You can use IPv4 or IPv6 for external communication among HPCA Core server, Satellite server, and HPCA Agents.

## HP Client Automation Core Server

The **HP Client Automation Core (Core) server** is the critical *authoritative repository* of data for an HP Client Automation environment. It is the authoritative source for all configuration information and managed content. The Core server maintains all configuration parameters, policy entitlements, and data resources, such as, applications, patches, and OS images, used to manage your clients. The Core server contains all content acquisition sub-systems, such as Patch management, Compliance management, Security Tools management, Settings management, and Vulnerability management. The Core server is also the point of integration with any third-party systems from HP, ISV's, or a customer's own environment.

The Core server provides a central administration point for all of its subservient ("downstream") components, and offers reporting information on their configuration and status. The **HPCA Core Console** is the web interface that an administrator uses to centrally manage devices, software, operating systems, and patches, as well as create and view reports based on those managed devices. For example, the HPCA Console provides Security and Compliance Management dashboards that show the status of your enterprise at a glance. You can view the aggregated regulatory compliance and security tools information for each managed client device in your enterprise. The features available on the console depend on the privileges assigned to the console user.

The **HPCA Administrator (Administrator)** tools are installed as part of Core server installation. These tools provide centralized control of HPCA objects and policies. Administrators use these tools to manage the CSDB, prepare applications for management, view HPCA agent objects, package and publish software into the CSDB, and customize their environments. You can also publish applications through command line using **HPCA Batch Publisher**. Note that HPCA Batch Publisher is available as a separate installer and is not installed with HPCA Administrator tools. For more information, see "[Installing Batch Publisher](#)" on page 66.

The Core server communicates with either Satellite servers or managed devices. The purpose of these communications is to:

- Synchronize data caches with downstream servers.
- Synchronize CSDB with downstream servers.
- Request for policy resolution.
- Send informational messages that provide the status of activities among the servers and managed devices.

## Functions of the Core Server

The Core server contains several built-in components that perform various functions to enable you to discover client devices in your network and add these client devices as managed devices to your HPCA environment. You can then monitor, configure, audit, and maintain these devices.

By default, the components described in the following table are installed with the HPCA Core server installation. These components are pre-configured; minimal information is required during or after the installation.

**HPCA Core Server Components and Essential Function**

<b>Core Server Component</b>	<b>Enabled by Default</b>	<b>Function</b>
Application Usage Manager Administrator *	No	Provides interface to create rules that define the data that is used to create usage reports for the managed devices.
Boot server (PXE)	No	Windows-based Pre-execution Environment (PXE) server for the OS Manager environment.
Boot server (TFTP)	No	Windows-based Trivial File Transfer Protocol (TFTP) server for the OS Manager environment.
Configuration server	Yes	Configures and maintains desired-state information for your managed devices.
Configuration Server Database (authoritative repository)	Yes	Stores the desired-state configuration in a hierarchical structure. The master CSDB on a Core server is the authoritative repository for the replicated CSDB on a Satellite server.
Distributed Configuration server (DCS) (Source)	Yes	Provides support for CSDB synchronization with the downstream server. On a Core server, defines the source for downstream replications of the CSDB to a target Satellite server CSDB.
HPCA Core Console*	Yes	A web-based, agent-management interface that enables you to view the status of your enterprise. You can also manage software, patches, and inventory and administer policy for devices in your environment.
Knowledge Base server*	No	Routes the managed device usage data to the database. The Knowledge Base (KB) server monitors a pre-defined location configured by the administrator for managed device usage data and posts this data to the database.
Messaging server	Yes	Routes and posts data that is reported by HPCA agents to the appropriate reporting database or server (such as Inventory, Portal, Patch management, Security and Compliance management, Inventory and Application management profile data).
Mobile server	Yes	Routes the configuration data to the Android and iOS mobile devices.
Multicast server	No	Simultaneously sends a single data stream to multiple HPCA agents.
OS Manager server	No	Provision and manage operating systems on HPCA agent devices.

Core Server Component	Enabled by Default	Function
Patch Management server*	No	Acquires, publishes, and deploys vendors' security patches and bulletins.
Policy server	Yes	Enables administrators to entitle policies to users and devices defined in an existing LDAP data structure. The policy server enables single point of control to authenticate user, access policies, and entitle subscriber. You can use your existing Directory Services also.
Portal*	Yes	A set of web-services that are used to deploy agents and manage HPCA infrastructure using a web browser. Provides job-engine support for certain classes of jobs, such as HPCA agent deployment.
Reporting server*	Yes	A web-based reporting engine that accesses data from multiple SQL databases for consolidated reporting. It is used to provide reports for Patch management, Usage management, Inventory management, Application management profiles, and Security and Compliance management.
Thin Client server	No	Manage agents on Windows CE thin clients.
Virtualization Management Server (VMS)	Yes	Enables you to manage Microsoft App-V applications. It also imports settings content, and security and compliance content from HP Live Network. Security and Compliance content includes vulnerability content, Security Tools Management (STM) scanner content, and Compliance content.

\* These components are unique to Core server; they are not installed on Satellite servers.

## HP Client Automation Satellite Server

The **HP Client Automation Satellite (Satellite) server** acts as an access point to the HPCA infrastructure for all HPCA agents. The Satellite servers contain *recoverable* information only because their content is always replicated from the CSDB on the Core server. The Satellite servers can, therefore, be rebuilt or recovered at any time by synchronizing the Satellite server with the Core server or upstream Satellite server.

The Satellite server is an intermediary between the Core server and the HPCA agents. In a typical corporate computing environment, numerous Satellite servers are located in “network proximity” to the HPCA agents that they serve to enhance their performance. There are no restrictions or limitations on how many Satellite servers can be used. The use of Satellite servers is determined by an administrator and should be based on necessity—the size, scope, and topology of the infrastructure.

Satellite servers synchronize with an upstream Core server. The synchronization enables Satellite servers to provide the resources requested by HPCA agents.

HP recommends that administrators *do not* make changes to the Satellite server CSDB. A Satellite server's CSDB is a replication of its upstream server's metadata (either a Core server or another Satellite server) and any database changes at this level are lost on the next synchronization with that upstream server.

Satellite servers are configured to enable the appropriate infrastructure services (for example, Configuration services, Messaging services, Proxy services). You can enable a service either by configuring the installation or by making changes in the Satellite Console. You can configure the Satellite servers in the following modes:

- **Full-service mode:** Typically a data center back-end server with support enabled for Configuration and Messaging services. Full-service Satellite servers can handle nearly all HPCA agent requests on their own, without having to forward the request to an upstream Core server. The table [HPCA Satellite Server Components and Essential Functions](#) lists the services that are enabled on a full-service Satellite server.
- **Streamlined mode:** Typically a server that services proxy file services to managed devices. Only proxy services and messaging services are enabled on a streamlined Satellite server. Streamlined Satellite servers have limited functionality. The agent requests that cannot be fulfilled by streamline Satellite server are directed to an upstream full-service Satellite server or Core server. For example, streamlined Satellite servers:
  - May be primarily used to cache and deploy software and patch content to the HPCA agents.
  - May have configuration services disabled. Without a local Configuration service enabled, the Satellite servers forward agent requests for desired-state resolution to an upstream full-service Satellite server or Core server.
- **Custom mode:** The Satellite servers in custom mode enables you to select specific services to enable on the Satellite server. You can also enable configuration services on the Satellite servers in the custom mode.

The **HP Client Automation Satellite Console** is the web interface that makes it easy to customize or reconfigure the component services. For example, you can designate specific Satellite servers as dedicated OS Manager servers, and disable unnecessary services on those Satellite servers. The features available on the console depend on the privileges assigned to the console user.

The Satellite server provides the following services to its HPCA agents:

- Agent Maintenance
- Data Delivery
- Service Catalog
- Service Delivery
- Service Reporting

The Satellite server communicates with either Core server or other Satellite servers. The purpose of these communications is to:

- Synchronize resources.
- Synchronize metadata.
- Request for policy resolution.

- Exchange informational messages between Core server and Satellite servers. These information messages provide the status of activities between the Satellite server and managed devices.

## Functions of the Satellite Server

The Satellite server contains several built-in components that perform various functions to enable you to monitor, configure, audit, and maintain managed devices. You can use web interface to customize or reconfigure the component services. The Satellite server components are enabled based on the deployment mode for the Satellite server.

By default, the components described in the following table are installed with the HPCA Satellite server installation. These components are pre-configured; minimal configuration is required during or after the installation.

### HPCA Satellite Server Components and Essential Functions

Satellite Server Component	Function
Boot server (PXE)	Windows-based PXE server for the OS Manager environment.
Boot server (TFTP)	Windows-based TFTP server for the OS Manager environment.
Configuration server	Configuration server that configures and maintains the desired state for client devices in your enterprise.
Configuration Server Database (CSDB) (replicated)	Replicated CSDB that stores the desired state configuration in a hierarchical structure and enables the Satellite servers to resolve the desired state of agents that connect to them.
Distributed Configuration server (DCS) (Source and Destination)	As a target, replicates the Core server CSDB to this Satellite server CSDB. As a source, replicates this Satellite server CSDB to a downstream Satellite server CSDB.
Messaging server	Automatically routes and posts data that is reported by HPCA agents to the appropriate reporting database or Core server (such as Inventory, Portal, Patch management, Security and Compliance management, Inventory and Application management profile data). The Messaging server service is always enabled and cannot be disabled.
Mobile server	Routes the configuration data to the Android and iOS mobile devices.
Mobile Device Management	Performs the mobile device management tasks for iOS devices.

Satellite Server Component	Function
server	
Multicast server	Simultaneously sends a single data stream to multiple HPCA agents.
OS Manager server	Provisions and manages operating systems on HPCA agent devices. OS Manager services store local caches of OS images for deployment to managed devices.
Patch Gateway server	Downloads the patch binary data from vendor websites when requested by the agent and caches it for other agents to use.
Policy server	Uses existing, non-HPCA directory services to store and implement HPCA policy entitlements. Policy Services enables an external policy directory, such as an Active Directory, to be accessed directly from the Satellite server, for Agent resolution.
Proxy server	Use cache management over HTTP to store and dynamically transmit application data. Proxy server stores local caches of software, patch, and OS image resource data for content delivery to agents. The data is distributed using unicast or multicast. Multicast requires Multicast service to be enabled.  HPCA Satellite server consists of Apache server data cache and Integration server-based Proxy server components. The Apache server data cache is used to store Patch Manager Gateway (Patch MGR) binaries. The Integration server-based Proxy server data cache is used to store CSDB resource data, such as software, OS Manager, audit, and security data.
Satellite Console	A web-interface using which various administrative and configuration tasks can be performed.
Thin Client server	Manage agents on Windows CE thin clients.

## HP Client Automation Agent

The HPCA agent is a software that runs on a client device and communicates with the Core server. The HPCA agent consists of HPCA Application Manager, HPCA Inventory Manager, HPCA Patch Manager, and HPCA OS Manager agents. If you install HPCA Application Manager, you get the sub-features, such as HPCA Application Self-Service Manager, PlusHP, and Personality Backup and Restore.

### HPCA Agent Sub-Features

HPCA Agent Feature	Description
HPCA Application Manager	This feature enables you to distribute mandatory applications throughout the enterprise.
HPCA Application Self-Service Manager	This sub-feature enables users to install, remove, and update optional applications that are available to them in a service list.
HPCA Inventory Manager	This feature enables you to collect hardware information and send it to HPCA Inventory Manager for collection and reporting.
HPCA OS Manager	This feature controls the provisioning of operating systems.
HPCA Patch Manager	This feature analyzes and manages patches.
Personality Backup and Restore	This sub-feature enables you to migrate individual user settings and data.
PlusHP	This sub-feature provides Self Monitoring, Analysis, and Reporting Technology (SMART) Drive Alert Monitoring and HP Hardware Alert Monitoring based on HP CMI for HP hardware devices.
HPCA Usage Manager	This feature enables you to assess and obtain reports on software usage throughout the enterprise. This feature is not available by default.

The HPCA agent is installed on client devices that an HPCA administrator wants to manage using HPCA. The installation brings the target device under the control of the HPCA environment, thereby making it a **managed device**. An administrator deploys the HPCA agent to a device, entitles, and then installs software and patches directly to that device or to the group that this device is part of.

The HPCA agent enables an administrator to:

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

### HPCA Agent Lockdown Mode

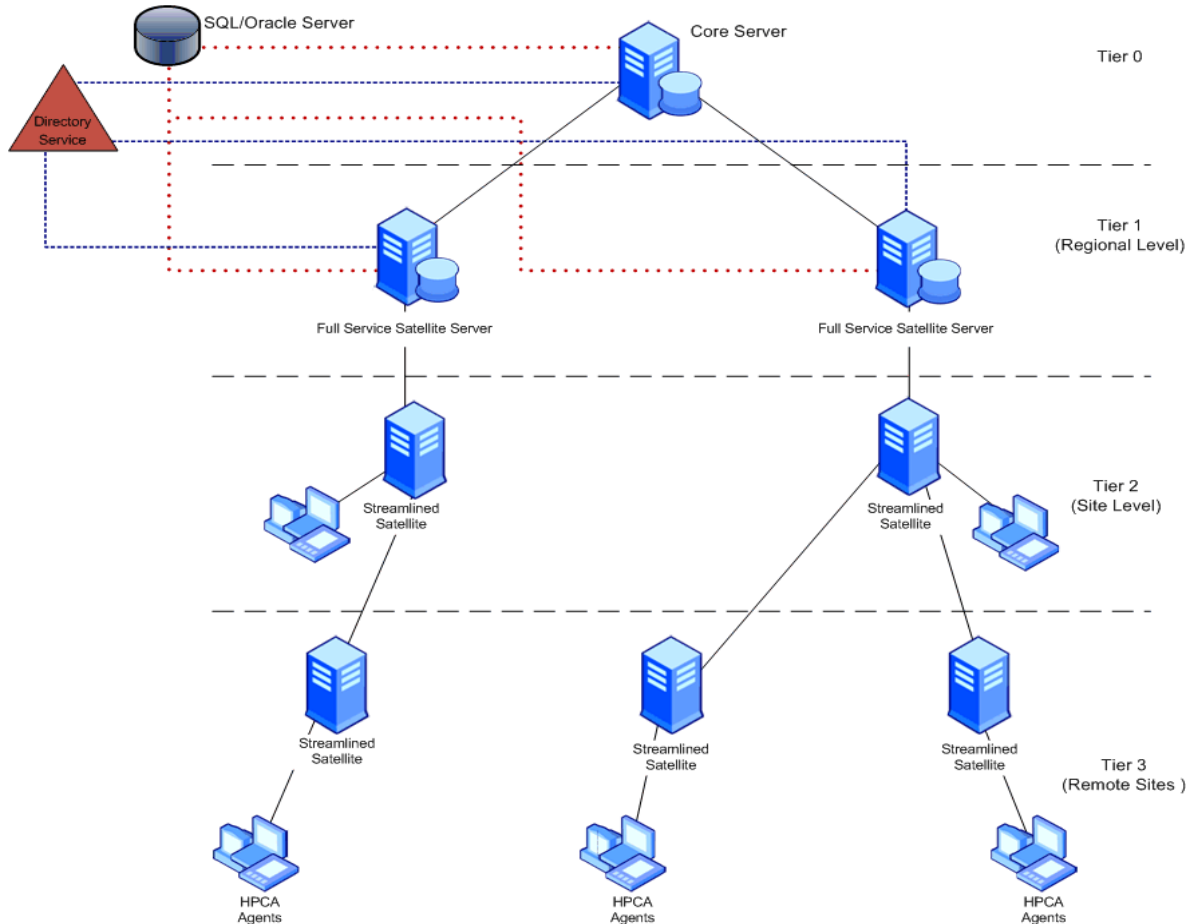
The HPCA agent lockdown mode ensures the integrity, confidentiality, and availability of the content and methods that are stored and used by the management agent. This prevents non-



privileged users from tampering with critical system-level content or breaching confidentiality by viewing content they should not have access to. For more information, see the *HP Client Automation Application Manager and Application Self-Service Manager Installation and Configuration Guide*.

The following figure illustrates how you can deploy HPCA components in a distributed and tiered environment.

### HPCA Core and Satellite Deployment



A typical environment includes a Core server at tier-0 that serves as the upstream host for full-service Satellite servers at tier-1. The Satellite servers configured with tier-1 Satellite server as the upstream host are designated as tier-2 Satellite servers (Streamlined Satellite servers, but can be another set of full-service Satellite servers). You can add more tiers based on your requirement. Streamlined Satellite servers that are at the remote site are the lowest tier of Satellite servers.

You can customize your default HPCA environment to improve the overall performance by modifying the default behavior of Satellite servers as described in the appendix "Planning HPCA Deployment" on page 157.



# Chapter 4

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## Installing HPCA Core Server

The chapter contains installation requirements to install HPCA Core server, and guides you through the process of installing and configuring HPCA Core server.

### Hardware and Software Requirements

**Caution:** The Core server should be installed on a clean computer. If the Core server is installed on a computer that already hosts an HPCA Satellite server, you receive an error message and the installation ends.

#### System Requirements for Core Server

The following are the minimum system requirements for installing Core server:

**Caution:** Some of these requirements are for initial HPCA-environment setups. As your HPCA environment grows, the space requirements will inherently grow as well, in order to accommodate database expansion and caching.

- 4 GB RAM
- Dedicated server with dual-core processor
- 2 GHz CPU speed
- 8 GB free hard disk space

#### Platform Support

For the operating system requirements for this release, see the *HP Client Automation Support Matrix* available at the URL: [http://h20230.www2.hp.com/sc/support\\_matrices.jsp](http://h20230.www2.hp.com/sc/support_matrices.jsp).

You must have an HP passport ID to access this web site.

The *HP Client Automation Support Matrix* is also located on the distribution media for this product in the `\Documentation` directory.

You can use HP Client Automation Enterprise in a Microsoft Direct Access enabled environment. For more information on Microsoft Direct Access, see Microsoft documentation.

### Installation Prerequisites

The following prerequisites should be met before installing HPCA Core server:

- **Communication Ports**

HPCA Core server has default listening ports that *must* be enabled before starting the installation process. For more information on Core server communication ports, see "[Core Communication Ports](#)" below.

- **HPCA Database**

Before installing the Core server, you must create an ODBC-compliant database to be used by HPCA for management-reporting objects. This database can be either a Microsoft SQL Server Database or an Oracle® Database. For information on how to create databases specifically for the Core server, see "[Create the HPCA Database](#)" on page 38.

- **Windows AIK Installation**

If you plan to use HPCA for OS provisioning, you should install the Windows AIK on the computer that hosts the HPCA Core server and ensure that copies of these utilities are placed at the appropriate location.

You can download the Windows AIK from the Microsoft Download Center (<http://www.microsoft.com/downloads>).

- **Microsoft Data Access Components (MDAC)**

You must install MDAC on the Core server to use Patch management and Usage management. The minimum required version is 2.8. The media for this (MDAC\_TYP.EXE) is available in the Microsoft folder of the Setup-Core directory.

## Core Communication Ports

Ports **3464** and **3466** are the primary ports used for Core server communications when SSL is not enabled. When SSL is enabled on a Satellite server, SSL is used for all inbound communications. If a firewall is in place on the HPCA server's host computer, these ports *must* be added to the firewall "exceptions" list.

To verify if the port is enabled and listening, open the command prompt and type `netstat -a`.

The default ports on which the Core server communicates within HPCA environment are listed in the following table:

### HPCA Core Server Communication Ports

Port	Port Type	Description
127.0.0.1:3461	TCP	HPCA Messaging server (nvdkit-hpca-ms.exe)
0.0.0.0:3464	TCP	Default port for HPCA Configuration server (ZTOPTASK.exe). It must be available for Core servers.
0.0.0.0:3466	TCP	HPCA Apache server (httpd.exe) Main HTTP port that Core server uses for communications with Satellite servers and HPCA agents. All unicast data downloads are handled on this port.
127.0.0.1:3467	TCP	HPCA Patch Manager server (nvdkit-hpca-patch.exe)
127.0.0.1:3468	TCP	HPCA Policy server (nvdkit-hpca-pm.exe)

Port	Port Type	Description
127.0.0.1:3469	TCP	HPCA OS Manager ( <code>nvdkit-hpca-osm.exe</code> )
0.0.0.0:3466	UDP	HPCA OS Manager ( <code>nvdkit-hpca-osm.exe</code> ) Port required only when the HPCA OS Manager is enabled on a Satellite server (by default, it is disabled). It is used by the low-level PXE BootLoader to determine whether a device should be provisioned or re-provisioned.
127.0.0.1:3470	TCP	HPCA Thin Client management server ( <code>nvdkit-hpca-mms.exe</code> )
127.0.0.1:3471	TCP	HPCA Portal ( <code>nvdkit-hpca-rmp.exe</code> )
127.0.0.1:3472	TCP	HPCA Multicast server ( <code>nvdkit-hpca-mcast.exe</code> )
127.0.0.1:3482	TCP/UDP	HPCA Mobile server ( <code>nvdkit-hpca-mdm.exe</code> )
2xx.0.0.0:9100	UDP	Default port for HPCA Multicast server ( <code>nvdkit-hpca-mcast.exe</code> )
127.0.0.1:3473	TCP	HPCA DCS ( <code>nvdkit-hpca-dcs.exe</code> )
127.0.0.1:3474	TCP	HPCA Directory Service ( <code>slapd.exe</code> )
127.0.0.1:3476	TCP	HPCA ( <code>hpca.exe</code> )
127.0.0.1:3477	TCP	HPCA Tomcat ( <code>tomcat.exe</code> )
127.0.0.1:3478	TCP	HPCA Tomcat ( <code>tomcat.exe</code> )
127.0.0.1:3479	TCP	HPCA Database ( <code>mysqld-nt.exe</code> )
443	SSL	Port used for “secure HTTP” (HTTPS) communications.
444	SSL	Port used for “secure TCP” (TCPS) communications for HPCA Configuration server.
5228, 5229, 5230	TCP/UDP	This port is required to enable communication with the Google Cloud Messaging (GCM) service. HPCA uses GCM to send notification messages to the Android mobile devices.
<b>For OOB Management Console-to-vPro Device Communications</b>		

Port	Port Type	Description
162	SNMP	Port for alert management. Port 162 is a standard SNMP port. Alert management conflicts if you are already running an SNMP receiver on the HPCA Core server.
9999		Default starting port for communication between the SOL display applet and the server's web application. This can be configured by editing the <code>&lt;Install Dir&gt;\OOEM\conf\config.properties</code> file.

## Create the HPCA Database

**Note:** If you do not know how to create an ODBC-compliant database, contact your database administrator. You must also define an ODBC DSN for each database you create. If you do not know how to create an ODBC DSN, contact your database administrator.

The following sections provide information on the prerequisites and procedures for creating Microsoft SQL Server and Oracle databases.

- ["Create a Microsoft SQL Server Database for the HPCA Core" below](#)
- ["Create an Oracle Database for the HPCA Core" on page 40](#)

### HPCA Patch and Usage Management

If HPCA Patch management or HPCA Usage management is enabled, you can create an additional Patch management-specific database or Usage management-specific database to store Patch management data or Usage management data respectively.

HP recommends that you define additional Patch management-specific database or Usage management-specific database to keep Patch management data or Usage management data separate from device, inventory, and application information. To define additional Patch management database, use the Patch Management section in the Configuration tab of the Console, after you install the Core server. To define additional Usage management database, use the Usage Management section in the Configuration tab of the Console, after you install the Core server.

## Create a Microsoft SQL Server Database for the HPCA Core

Follow the instructions in this section to create a Microsoft SQL Server database for the reporting objects for the Core server. If you do not have security rights to create the database, contact your Microsoft SQL Server database administrator.

### Prerequisites

The following prerequisites should be met before you create a Microsoft SQL Server database:

- Microsoft SQL Server *must* be locally installed or remotely accessible from the HPCA server.
- If Microsoft SQL Server is installed on a server other than the HPCA server, firewall rules may be added to enable communications between them. For more information on opening required ports for Microsoft SQL Server, see the Microsoft Knowledge Base article **841251** at <http://support.microsoft.com/kb>.
- Microsoft SQL Server *must* be configured to use static ports. For information on how to use static ports, refer to your Microsoft SQL Server documentation.
- Microsoft SQL Server *must* be configured to use **mixed-mode authentication** and *must* have TCP/IP support enabled.
- Windows 32-bit ODBC DSNs: When using ODBC drivers on a Windows 64-bit operating system, create the ODBC System DSN for the database using 32-bit drivers. On a 64-bit operating system, you can access the 32-bit ODBC Data Source Administrator by running `C:\Windows\SysWOW64\odbcad32.exe` to create or modify the System DSNs that are required for HPCA.
- The “storage” sizes that are documented in this section are recommendations only.

## Creating a Microsoft SQL Server Database for the HPCA Core

To create a Microsoft SQL Server database for the HPCA Core server:

1. On the Microsoft SQL Server, create a database with the following recommended settings:

General tab	Name: Specify name for database. Do not use space or underscore (for example, HPCACORE).
Data Files tab	Initial Size: 500 MB Select Autogrow by 20%
Transaction Log tab	Change initial size: 100 MB

2. Use SQL Server Authentication.
3. Change the default database to the database name that you used in step 1.  
**Note:** The SQL Server name, admin user ID, and password are required during HPCA installation.
4. Provide the user with the minimum role membership of db\_datareader, db\_datawriter, and db\_ddladmin for the Microsoft SQL Server database.
5. Create an ODBC System DSN with a name of your choice (for example, **HPCAODBC**) on the computer that hosts the Core server. Point the ODBC System DSN to the new Core server database you created in step 1 on the Microsoft SQL Server.

The database is now connected. Install HPCA Core server as described in "[Installing HPCA Core Server](#)" on page 35.

## Create an Oracle Database for the HPCA Core

Follow the instructions in this section to create an Oracle database for the reporting objects for the Core server. If you do not have security rights to create the database, contact your Oracle database administrator.

### Prerequisites

The following prerequisites should be met before you create an Oracle database:

- HP recommends that you use the latest available patch set for Oracle when using an Oracle database.
- You *must* use the Oracle Corporation's ODBC drivers that are specific to the Oracle version in your environment—not those that are supplied by Microsoft.
- Make sure that your Oracle server ODBC driver versions exactly match your Core server; the connection to an Oracle database can fail if ODBC driver versions are mismatched. For more information, contact your Oracle database administrator.
- You *must* install 32-bit Oracle client on the Core server to interact with Oracle database on 32-bit computers.
- The “storage” sizes that are documented in this section are recommendations only.
- Windows 32-bit ODBC DSNs: When using ODBC drivers on a Windows 64-bit operating system, create the ODBC System DSN for the database using 32-bit drivers. On a Windows 64-bit operating system, access the 32-bit ODBC Data Source Administrator by running `C:\Windows\SysWOW64\odbcad32.exe` to create or modify the System DSNs that are required by HPCA products.

### Creating an Oracle database for the HPCA Core

To create an Oracle Server database for the HPCA Core server:



1. On the Oracle server, create a data tablespace with the following recommended settings.

Tablespace Name	Specify name for data tablespace (for example, <b>HPCACOREDATA</b> ).
Status	Online
Type	Permanent
Datafile	Fully qualified path and name of the data file, such as <b>HPCACOREDATA.dbf</b>
Storage	Minimum Size 200 MB and Max size unlimited
Extent Management	Locally managed with automatic allocation
Segment Space Management	Automatic
Logging	No

2. Create a temporary tablespace with the following recommended settings.

Tablespace Name	Specify name for temporary tablespace (for example, <b>HPCACORETEMP</b> ).
Status	Online
Type	Temporary
Datafile	Fully qualified path and name of the datafile, such as <b>HPCACORETEMP.dbf</b>
Storage	Size 1000 MB
Extent Management	Locally managed with automatic allocation
Segment Space Management	Automatic
Logging	No

3. Create a user; associate the data and temporary tablespaces with the user with a default profile.

Username	Specify name for user (for example, <b>HPCACORE</b> ).
Password	Create a password based on your enterprise's security recommendations
Default tablespace	HPCACOREDATA
Temporary tablespace	HPCACORETEMP

Profile	DEFAULT or a PROFILE NAME used for this schema
Roles	CONNECT and RESOURCE
System Privileges	CREATE ANY VIEW SELECT ANY TABLE UNLIMITED TABLESPACE UPDATE ANY TABLE

4. On the computer that hosts the Core server, create an ODBC System DSN with a name of your choice (such as, **HPCAODBC**) that points to the new Core server database on the Oracle server.

The database is now connected. Install the HPCA Core server as described in the next section.

## Installing Core

Install the HPCA Core server to a dedicated server in your environment. HP recommends that you do not modify configuration of the Core server or its components other than those specifically documented in this guide. For security reasons, HP also recommends to enable SSL in your HPCA environment.

**Note:** You can install HPCA Core server in a High Availability (HA) Cluster environment. This reduces disruptions in Core server availability to the minimum because of the failover mechanism of cluster environment. To implement this, install the Core server with same hostname on two or more nodes of a cluster with the Core server data directory or the complete install directory on a shared cluster drive. You may also install the Satellite servers in a clustered environment.

If `setup.exe` is used to run the installation, the default installation location can be altered in `setup.ini` (with the `log.filename` entry in the options section) before the installation.

**Note:** HP recommends that you always specify the fully qualified domain name when prompted for HPCA Core server name. This practice ensures the proper mapping to the Core servers when “downstream” Satellite servers and HPCA agents are installed.

To install HPCA Core server:

1. Log on as a user with Administrative privileges on the computer where you plan to install the HPCA Core server.
2. Navigate to the `Setup-Core` directory to access the Core server installation files.
3. Double-click the **setup.exe** file. The HP Client Automation Core Installer window opens.
4. Click **Next**. The HP Client Automation Software License Agreement page opens.
5. Review the HP Client Automation Core license terms, select **I accept the license agreement** and click **Next**. The HP Client Automation Installation Folder page opens.

6. The Installation Folder page displays the default installation directory for the HPCA Core server. Accept the default location, or click **Browse** to select a different location, and then click **Next**. The HP Client Automation Data Folder page opens.
7. The Data Folder page displays the default directory for the HPCA Core server data files. Accept the default location, or click **Browse** to select a different location, and then click **Next**. The HP Client Automation Host Name page opens.
8. Select a name for this HPCA server and click **Next**. The HP Client Automation Server Ports window opens.
9. Accept the default ports, or specify Web Server and Configuration Server ports, and then click **Next**. The HP Client Automation Installation Confirmation page opens. You can also select **Modify Windows Firewall** to enable communications by using these ports if you want to automatically enable ports 3464 and 3466. For more information, see "[Core Communication Ports](#)" on page 36.
10. Click **Next** to start the installation. The installation process initiates the different configuration scripts that can run for several minutes.
11. Click **Finish** to complete the HP Client Automation Core server installation.

After installing HPCA Core server, run the First Time Setup Wizard to set up the Core server as described in the next section.

## Post Installation Configuration

After installing HPCA Core server, the HPCA Core Console automatically opens. The login window opens in your default browser.

1. On the login window, specify the default user name, password, and directory source.
  - The default user name is **admin** and the password is **secret**.

**Note:** HP recommends that you change the default user name and password. To change the default user name and password, click **Configuration** tab > **Access Control** > **Users**, and then click the **Create New User** icon in the Users area.

- **Zone: HP** is the HPCA internal directory store in which internal users are stored.
2. Click **Sign In**. The First Time Setup Wizard opens and prompts you for initial configuration settings for your HPCA environment. You can modify these settings in the various panels of the HPCA Console also.
  3. Click **Next** on the Introduction page to begin the wizard.
  4. On the License page, copy and paste the contents of your HP-issued, product-specific license file into the License Data box and click **Next**. If you do not have a license at this point, a temporary HPCA Enterprise edition evaluation license is generated that is valid for 30 days after you install HPCA. This license provides limited functionality within the Console.
  5. On the Database Source page, click one of the following options for an ODBC connection based on your database and click **Next**.
    - *For SQL Users:* SQL Server database users can select either **Use an existing ODBC connection already on the server** or **Create and configure a new database**.

- *For Oracle Users:* Oracle database users must select **Use an existing ODBC connection already on the server**.
6. On the Database Settings page, specify the appropriate values in the following mandatory fields:
    - DSN: Name of the database.
    - Server Host: Hostname of the database server.
    - Server Port: Port number used by the database server.
    - User ID: User ID to access to the database.
    - Password: Password to access the database.
  7. Click **Next**.
  8. On the Services page, select the HPCA services that this HPCA server should provide and click **Next**. The configuration selections are saved.
  9. On the Complete page, click **Finish** to complete the configuration tasks.

For more information on configuring these services in the HPCA Console, see the *Configuration* chapter in the *HP Client Automation Enterprise User Guide*.

#### Default Installation Directories

The HPCA Core server installation creates the following directories by default; alternative directories for the server and data files can be selected during the installation.

- The Core server files are installed to `Hewlett-Packard\HPCA` in the default 32-bit Program Files directory.
- The Core server data files are installed to `Hewlett-Packard\HPCA\Data` in the default 32-bit Program Files directory.

**Caution:** Make sure that you exclude all the HPCA directories when running an anti-virus scan, anti-spyware scan, or anti-malware scan. Including HPCA directories during these scans may affect the HPCA functioning.

#### Installation Log Files

The HPCA Core server installation creates two log files, which are placed in the `Local Settings\Temp` directory of the user who ran the installation:

- The file, `hpca-install.log`, is always created.
- A server-specific log file (`HPCACore_setup.log`) is also created—regardless of whether the installation was run using the `.msi` or `.exe` file.

## Installing Core in Silent Mode

This section details the silent installation of the HPCA Core server using `msiexec.exe` and `setup.exe`.

**Note:** Silent installation is supported for Core server only.

## Installing Core Using msiexec.exe

The syntax to install Core server in silent mode using `msiexec.exe` is:

```
msiexec.exe /I "fully qualified path to Core MSI file" /lv* "fully  
qualified path to installation log repository" INSTALLDIR="fully  
qualified path to installation directory" DATADIR="fully qualified  
path to data directory" /qn
```

**Note:** If the installation is run in the silent mode by using the `.msi` file, the name and location of the log file can be altered by using the `/l msiexec` command-line option.

### Syntax Notes

- The keywords and values for this syntax are case-sensitive. Make sure that you specify the keywords in UPPERCASE (as shown), and the values in the appropriate case.
- The directory paths to the Core server installation media and the installation log repository must be fully qualified. If there are any spaces in the directory path, the entire path must be enclosed in quotation marks.
- The installation fails, if a non-existent installation-log directory path is specified.
- The `qn` in the syntax is the instruction for a silent installation. To initiate the GUI installation from a command line, replace `qn` with `qb` in the syntax.

### Syntax Parameters Descriptions

The following are the silent installation syntax parameters:

- `INSTALLDIR` (optional): By default, the Core server is installed to 32-bit Program Files directory. If `INSTALLDIR` is not specified, default value is used.
- `DATADIR` (optional): By default, the Core server data files (Proxy server cache and CSDB) are installed to `Hewlett-Packard\HPCA\Data` in the default 32-bit Program Files directory. You can also specify an alternate installation directory path.

### Example

The following is a sample command to install Core server silently:

```
msiexec.exe /i "Setup-Core\HPCACore.msi" /lv* "C:\Program  
Files\Hewlett-Packard\HPCA\install.log" DATADIR="C:\Program  
Files\Hewlett-Packard\HPCA\Data" /qn
```

The path to the Satellite server installation (MSI) file is: `Setup-Satellite\HPCASatellite.msi`

### Results

The silent installation command that is presented in the Example section installs:

- The Core server to the default location, `C:\Program Files\Hewlett-Packard\HPCA`.
- The data files to `C:\Program Files\Hewlett-Packard\HPCA\Data`.
- The installation log to `C:\Program Files\Hewlett-Packard\HPCA`.

## Installing Core Using setup.exe File

You can also install the Core server silently by using the `setup.exe` file. The `setup.exe` file can be customized and run as described in this section.

To install the Core server using `setup.exe` file:

1. Copy all of the HPCA installation files from the HPCA media to your hard drive.
2. Open, edit, and save the `setup.ini` file.
3. Run `setup.exe`.

## Windows Services

After you install the Core server, it runs as a Windows service - **HPCA Core**.

The start mode of the HPCA Core service is set to "Automatic." As this service is an internal part of the HPCA Core server, do not stop the service when Core server is running.

In addition to the HPCA services, several sub-services are automatically installed with the HPCA Core server. These are easily identified in Windows services because they are prefixed with "HPCA." The start mode for these sub-services is "Manual."

HP recommends that you use only the Console to stop and start these sub-services because of cross-service dependencies. If the HPCA Core service is stopped, the sub-services automatically stop along with the HPCA Core service.

# Chapter 5

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## Installing HPCA Satellite Server

Before you start the Satellite server installation, you must consider the following factors that help you determine the positioning of Satellite servers in your environment:

- Capacity – Add Satellite server to support more numbers of agents.
- Availability – Add Satellite servers to ensure high availability of service and data.
- Network Proximity – Add Satellite servers for network optimization.

This chapter contains installation requirements to install HPCA Satellite server. This chapter also guides you through the process of installing and configuring HPCA Satellite server.

## Hardware and Software Requirements

**Caution:** The Satellite server should be installed on a computer with only operating system installed.

The following are the minimum system requirements for installing Satellite servers:

### Full-service Mode

- 2 GB RAM
- Dual-core processor
- 2 GHz CPU speed
- 2 GB free disk space

### Streamlined Mode

- 1 GB RAM
- Dual-core processor
- 1.6 GHz CPU speed
- 2 GB free disk space

### Platform Support

For the operating system requirements for this release, see the *HP Client Automation Support Matrix* available at the URL: [http://h20230.www2.hp.com/sc/support\\_matrices.jsp](http://h20230.www2.hp.com/sc/support_matrices.jsp).

You must have an HP passport ID to access this web site.

The *HP Client Automation Support Matrix* is also located on the distribution media for this product in the \Documentation directory.

## Installation Prerequisites

HPCA Satellite server has default listening ports that *must* be enabled before starting the installation process. Ports **3464** and **3466** are the primary ports used for Satellite server communications when SSL is not enabled. When SSL is enabled on a satellite, SSL is used for all inbound communications. If a firewall is in place on the HPCA server's host computer, the primary ports *must* be added to the firewall "exceptions" list.

The default ports on which the Satellite server communicate within HPCA environment are listed in the following table:

### HPCA Satellite Server Communication Ports

Port	Port Type	Description
127.0.0.1:3461	TCP	HPCA Messaging server ( <code>nvdkit-hpca-ms.exe</code> )
0.0.0.0:3464	TCP	Default port for HPCA Configuration server ( <code>ZTOPTASK.exe</code> ) It must be available on Satellite servers that are set to the full-service mode.
0.0.0.0:3466	TCP	HPCA Apache server ( <code>httpd.exe</code> ) Main HTTP port that Satellite server uses for communications with Core server and HPCA agents.
127.0.0.1:3468	TCP	HPCA Policy server ( <code>nvdkit-hpca-pm.exe</code> ) It must be available on Satellite servers that are set to the full-service mode.
127.0.0.1:3470	TCP	HPCA Thin Client management server ( <code>nvdkit-hpca-mms.exe</code> ) It must be available on Satellite servers that are set to the full-service mode.
127.0.0.1:3472	TCP	HPCA Multicast server ( <code>nvdkit-hpca-mcast.exe</code> ) It must be available on Satellite servers that are set to the full-service mode.
127.0.0.1:3482	TCP/UDP	Mobile server ( <code>nvdkit-hpca-mdm.exe</code> ) It must be available on Satellite servers that are set to the full-service mode.
2xx.0.0.0:9100	UDP	Default port for HPCA Multicast server ( <code>nvdkit-hpca-mcast.exe</code> ) It must be available on Satellite servers that are set to the full-service mode.
127.0.0.1:3473	TCP	HPCA DCS ( <code>nvdkit-hpca-dcs.exe</code> )



Port	Port Type	Description
127.0.0.1:3481	TCP	HPCA Proxy server ( <code>nvdkit-hpca-ps.exe</code> )
443	SSL	Port used for “secure HTTP” (HTTPS) communications.
444	SSL	Port used for “secure TCP” (TCPS) communications for HPCA Configuration server.
2195	TCP/UDP	Enable access to this port on the address block 17.0.0.0/8. The access can be either through a SOCKS proxy or directly from the Satellite server. This port is required to enable communications between Mobile Device Management (MDM) server and Apple Push Notification Service (APNS).

## Installing HPCA Satellite Server

You can install a Satellite server manually on a device or deploy the Satellite server from the Console. For information about deploying a Satellite server from the Console, see the *HP Client Automation Enterprise User Guide*. Silent installation is not supported for Satellite servers. For security reasons, HP recommends to enable SSL in your HPCA environment.

**Caution:** HP recommends that you do not modify configuration of the Satellite server or its components other than those specifically documented in this guide.

To install Satellite server manually on a device:

1. Log on as a user with administrative privileges on the computer where you plan to install the Satellite server.
2. Insert the installation media and navigate to the `Setup-Satellite` directory to access the Satellite server installation files.
3. Double-click **setup.exe**. The HP Client Automation Satellite Installer window opens.
4. Click **Next**. The HP Client Automation Software License Agreement page opens.
5. Review the HP Client Automation Satellite license terms, select **I accept the license agreement** and click **Next**. The HP Client Automation Installation Folder page opens.
6. The Installation Folder page displays the default installation directory for the Satellite server. Accept the default location, or click **Browse** to select a different location, and then click **Next**. The HP Client Automation Data Folder window opens.
7. The Data Folder page displays the default directory for the HPCA Satellite server data files. Accept the default location, or click **Browse** to select a different location, and then click **Next**. The HP Client Automation Host Name page opens.
8. Type a name for this Satellite server and click **Next**. The HP Client Automation Server Ports page opens.

9. Accept the default ports, or specify Web Server and Configuration Server ports. You can also select **Modify Windows Firewall** to enable communications by using these ports if you want to automatically enable ports 3464 and 3466.
10. Click **Next** to start the installation. The installation process initiates the different configuration scripts that can run for several minutes.
11. Click **Finish** to complete the HP Client Automation Satellite server installation.

After installing HPCA Satellite server, run the First Time Setup Wizard to set up the Satellite server as described in the next section.

**Note:** After installation, you may see some errors in the log file. These errors self-correct after you run the First Time Setup Wizard, and setup of the product is complete.

## Post Installation Configuration

After installing HPCA Satellite server, the HPCA Satellite Console automatically opens. The login window opens in your default browser.

1. On the login window, specify the default user name and password. The default user name is `admin` and the password is `secret`.

**Note:** HP recommends that you change the default user name and password. To change the default user name and password, click **Configuration** tab > **Access Control** > **Users**, and then click the **Create New User** icon in the Users area.

2. Click **OK**. The First Time Setup Wizard opens and prompts you for initial configuration settings for your HPCA environment. You can modify these settings in the various panels of the Satellite Console also.
3. Click **Next** on the Introduction page to begin the wizard. The Upstream Server page opens.
4. Specify a valid upstream host and click **Next**. The License page opens, which is pre-populated with license information from the Satellite server's upstream server.
5. Click **Next** to continue to the Services page.
6. Select the HPCA services that this HPCA server should provide and click **Next**. The configuration selections are saved.

**Note:** The services that are presented in this window are recommended for HPCA environments but they do not have to be enabled here. They can subsequently be enabled on the **Configuration** tab of the Satellite Console.

7. Click **Next**. The configuration selections are saved.
8. On the Complete page, click **Finish** to complete the configuration tasks.

### Default Installation Directories

The Satellite server installation creates the following directories by default. You can select alternate directories for the server and data files during the installation.

- The Satellite server files are installed to `Hewlett-Packard\HPCA` in the default 32-bit `Program Files` directory.
- The Satellite server data files are installed to `Hewlett-Packard\HPCA\Data` in the default 32-bit `Program Files` directory.

### Installation Log Files

The Satellite server installations create two log files, which are placed in the `Local Settings\Temp` directory of the user who ran the installation:

- The file, `hpc-install.log`, is always created.
- A server-specific log file (`HPCASatellite_setup.log`) is also created—regardless of whether the installation was run using the `.msi` or `.exe` file.

## Unattended Configuration of HPCA Satellite Server

In a multi-tier HPCA environment, you can replicate the settings applied to one Satellite server to multiple Satellite servers. The “unattended” configuration feature enables an HPCA administrator to capture configuration settings from a Satellite server installation and apply them to subsequent Satellite server installations. The administrator does not have to specify identical settings multiple times for multiple Satellite servers. This enables an HPCA administrator to:

- Replicate configuration settings to multiple Satellite servers, rather than having to specify identical settings multiple times for multiple Satellite servers.
- Make minor changes that are targeted at specific Satellite servers without the changes affecting all Satellite server installations.

The unattended Satellite server configuration is done in an XML file, and it enables an administrator to specify various settings that will be applied to the server as part of its installation. With the XML file, an HPCA administrator can:

- Enable and disable HPCA services on the Satellite.
- Configure LDAP settings for HPCA Policy Servers.
- Configure upstream host and port settings.
- Configure SSL server settings.
- Increase the speed of installations.

### The XML File

The Satellite server installation and configuration settings are captured in a pre-configured XML file, `unattended.xml` file that can be used to set up more Satellite servers in your environment. You can perform the following actions:

- Customize the settings in the `unattended.xml` file by using a three step (obtain-customize-apply) procedure as described in ["Using the Customized XML File" on next page](#). This method enables you to customize the XML file and create multiple copies that can be used for different

Satellite server installations.

- Automatically retrieve and apply the default settings in the `unattended.xml` file by using the command line procedure as described in ["Using the Default unattended.xml File" on page 54](#). This method prevents any customizations to the settings in the file. It automatically retrieves all of the configuration settings in the file, and applies them to the Satellite server as part of its installation.

## Using the Customized XML File

You *must* perform the following tasks to customize the settings for the unattended configuration of Satellite server installations contained in the pre-configured `unattended.xml` file:

1. Obtain the XML file.
2. Customize the XML file.
3. Apply the XML file.

### Obtain the XML File

The `unattended.xml` file is not included on the HPCA media. It *must* be downloaded from a Satellite server after it has been installed.

To obtain the `unattended.xml` file from the HPCA Satellite server:

1. Install the HPCA Satellite server (see ["Installing HPCA Satellite Server" on page 49](#)).
2. Complete the First Time Setup Wizard as described in ["Post Installation Configuration" on page 50](#).
3. Open an Internet browser and in the Address field, specify:
  - `localhost:3466/sm/config`, if you are on a Satellite server.
  - `http://servername:3466/sm/config`, if you are not on a Satellite server, where, *servername* is the IP address of the Satellite server from where you are downloading the `unattended.xml` file.

Use your preferred download utility, such as Wget, to download the `unattended.xml` file. This provides a customizable XML output of the configuration for the current Satellite server that can be copied and customized as required.

**Note:** If you use the `unattended.xml` file for Satellite server installations, you can bypass the First Time Setup Wizard because all the required settings are already specified in the configuration file. This ability, however, must be set in the configuration file with the `servermanager` service name. For an example, see ["unattended.xml File Parameters" on next page](#).

### Customize the XML File

You can copy and customize the `unattended.xml` file to specify varying configuration parameters for the Satellite servers in your environment. For example, you can create multiple copies of the `unattended.xml` file (with different names) that can be used for different Satellite server installations.

To customize the `unattended.xml` file for the Satellite server installation:

1. Copy and paste the `unattended.xml` file to a different location.
2. Rename the copied file.
3. Open the renamed file and customize the various configuration settings that are to be applied to subsequent Satellite server installations.
4. Save and close the file.

### Apply the XML File

The customized XML file can be referenced to apply specific configuration options to the Satellite server installation. Make sure that you reference the correct XML file (with the `UNATTENDEDFILE` property in `setup.ini`) when you run the Satellite server installation.

To apply the customized XML file to the Satellite server installation:

1. Copy the `\Setup-Satellite` folder from HPCA installation media and paste it to a temporary location on the computer where you want to install the Satellite server. For example, `C:\temp`.
2. Navigate to the `C:\temp\Setup-Satellite` folder and open the `setup.ini` file.
3. Locate the `UNATTENDEDFILE` property.
4. Specify the name of the XML file that contains the configuration parameters for the Satellite server.

**Note:** If the XML file is not in the same directory as `setup.exe`, specify the fully qualified path and file name.

5. Save and close the file.
6. Run `setup.exe` to trigger the installation.  
The installation uses the configurations defined in the `setup.ini` file. The upstream server and configured services details added in the customized XML file are automatically applied to this Satellite server.

After running the Satellite server installation using the unattended configuration method, the `config.log` file in `Console\logs` can be used to troubleshoot any unexpected issues.

## unattended.xml File Parameters

The following table describes the settings of the `unattended.xml` file:

### unattended.xml Parameters

Parameter	Description
<code>attr name</code>	Specifies any additional configuration settings. These additional settings do not apply to other areas of this XML file.
<code>certificates</code>	Indicates the area in which this Satellite server's SSL certificates information (server, private, and cacertificate) is listed. For more information on the various types of certificates and their function, see the <i>HP Client Automation SSL Implementation Guide</i> .

Parameter	Description
<code>config</code>	Indicates the start of a general container area to specify configuration settings that are not covered by a parent type.
<code>configuration</code>	Indicates the start of the customizable configuration settings.
<code>data</code>	The license string text as read in from the HPCA Configuration server <code>edmprof</code> file.
<code>database</code>	Indicates the start of the area to specify database settings.
<code>enable</code>	Enables or disables the service under which this parameter is listed. Valid values are <b>true</b> and <b>false</b> .
<code>license</code>	Indicates the start of the area to specify HPCA product license settings.
<code>password</code>	The password that is associated with the user ID ( <code>user</code> parameter).
<code>port</code>	The port on which this Satellite server communicates with its upstream HPCA server.
<code>server</code>	This Satellite server's upstream HPCA server on which the CSDB resides.
<code>service name</code>	The name of an HPCA service. Use the <code>servermanager</code> service with an <code>attr name</code> of <code>already.configured</code> and a value of <b>1</b> to bypass the First Time Setup Wizard in unattended Satellite server installations.
<code>services</code>	Indicates the start of the area to specify and enable or disable additional HPCA services.
<code>ssl</code>	Indicates the start of SSL-based communications with this Satellite server's upstream HPCA server. Valid values are <b>true</b> and <b>false</b> . This parameter also indicates the start of the area in which SSL configuration options are set.
<code>type</code>	The type of database. Valid values are <b>sql</b> and <b>ldap</b> .
<code>upstream</code>	Indicates the start of the area to specify configuration settings for this Satellite server's upstream server that houses the CSDB.
<code>user</code>	The name of the user that has access to the upstream server.

## Using the Default `unattended.xml` File

Use the following TCL command to automatically capture the current settings of the Satellite server and apply them to the `unattended.xml` file.

**Note:** You cannot customize the configuration settings using this method.

```
exec ./nvdkit.exe "C:/Program Files/Hewlett-
Packard/HPCA/ApacheServer/apps/console/sm.kit/bin/config.tcl"
%XMLFILEPATH%
```

The XML input (`%XMLFILEPATH%`, in the above-listed command) is optional. You can remove this parameter for a GET request of the server configuration. However, you must include this parameter if you also want to SET the server configuration.

## Proxy Server on Linux

Proxy server is the primary repository for HPCA agent data. After the HPCA agent determines the resources required based on its desired state, it can request these resources from the Proxy server. The Proxy server has the ability to service multiple, concurrent HPCA agent requests.

Proxy server for Windows is installed by default with the Satellite server installation. However, you have to use a separate installer to install Proxy server on a Linux computer.

## Installation Prerequisites

To install the Proxy server on a Linux operating system, you must log on as `root`, and should have adequate rights to create and update the target installation directory.

### System Requirements

To install Proxy server on Linux, you should have a connection to the computer running the upstream server.

### Platform Support

For the operating system requirements for this release, see the *HP Client Automation Support Matrix* available at the URL: [http://h20230.www2.hp.com/sc/support\\_matrices.jsp](http://h20230.www2.hp.com/sc/support_matrices.jsp).

You must have an HP passport ID to access this web site.

The *HP Client Automation Support Matrix* is also located on the distribution media for this product in the `\Documentation` directory.

## Installing Proxy Server on Linux

To install the Proxy server to a local computer for Linux operating system:

1. From the HPCA installation media, navigate to the `Media/extended_infrastructure/proxy_server/linux` directory to locate the Proxy server media for Linux. You can also access the Proxy server media for Linux, after installing HPCA Core server, from the following location:  
`<InstallDir>\Media\extended_infrastructure\proxy_server\linux`
2. Copy the `linux` folder to a temporary directory on the computer where you want to install Proxy server for Linux.
3. Open the command prompt and change your current directory to the temporary directory where you copied the `linux` folder.
4. Type `chmod -R +x *` and press **Enter**.
5. Type `./setup` and press **Enter**. The Welcome window for the Proxy server Setup program opens.

6. Click **Next**. The End-User License Agreement window opens. You *must* accept the terms before the Proxy server can be installed.
7. Click **Accept** to agree to the terms of the software license and continue with the installation. The installation directory window opens for you to select or type the base directory for the Proxy server install.

The default Proxy server install directory is:

```
/opt/HP/CM/IntegrationServer
```

8. Accept the default Proxy server location. You can also type or browse to an alternate directory where you want to install the Proxy server. This Proxy server base directory specifies the location of the Integration server component, installed with the product.
9. Click **Next**. The License File window opens.
10. Type the location and name of your License File or click **Browse** to select the file from the Browse dialog box.
11. Click **Next**. The HPCA Configuration Server IP Address window opens.
12. Type the IP Address or hostname of the host upstream server, that the Proxy server should connect to during a preload to obtain its static cache resolution and static cache files (resource data).

**Note:** The Proxy server preload process must always connect to the upstream host server specified in the Server IP Address field for its static cache resolution. However, you can configure the Proxy server to obtain the static cache files from another Proxy server, if required. For more information, see the *Preloading Using HTTP* section in the *HP Client Automation Enterprise Proxy Server Installation and Configuration Guide*.

13. Click **Next**. The HPCA Configuration Server Port window opens.
14. Accept or type the TCP port number of the upstream server to be used to connect to the Proxy server for the static cache preload resolution. The default port number is 3464.
15. Click **Next**. The HPCA Configuration Server User ID window opens.
16. Type the user ID that the Proxy server should use to connect to the upstream server to obtain its static cache preload resolution. The default is RPS.

**Note:** The user ID entered must correspond to an instance in the Primary.Policy.User class of the CSDB, where the static cache desired state policy for this Proxy server is defined. For more information, see the *Configuring the CSDB for the Static Cache Preload* section in the *HP Client Automation Enterprise Proxy Server Installation and Configuration Guide*.

17. Click **Next**. The Installation Settings window opens.
18. Review the installation settings. To change the settings, click **Back** to get to the appropriate window. After modifying, click **Next** to return to the Installation Setting windows again.
19. Click **Install** to begin the Proxy server installation. The Installation Progress window opens.
20. When the installation is complete, the Successful Installation window opens.



21. Click **Finish** to exit the installation program.

By default, the Proxy server for Linux is installed into the following folder:

```
/opt/HP/CM/IntegrationServer
```

Installing the Proxy server for Linux adds the `static` and `dynamic` subdirectories to the `IntegrationServer/data` folder, which stores the Proxy server's static and dynamic cache.

After installation, the HPCA Proxy Server service does not start automatically on the Linux platforms. To start or stop the Proxy server for Linux, use the commands described in the next section.

## Starting and Stopping the Proxy Server for Linux

To start the Proxy server for Linux:

1. Change your current directory to the directory where you installed the Proxy server (`/opt/HP/CM/IntegrationServer` by default).
2. Type `./nvdkit httpd.tkd`
3. Press **Enter**.

The Proxy Server service starts on your computer.

To stop the Proxy server for Linux:

**Note:** The following are general guidelines and the commands are examples that can vary slightly depending on the Linux type you are using.

1. Obtain the process ID for the Proxy server by listing all the Linux processes and extracting the process ID for `nvdkit`.

```
ps -f | grep nvdkit | sed /grep/d | awk '{ print $2 }'
```

  - a. Run the following command:

```
kill <PID>
```

where, `<PID>` is the process identification number for `nvdkit` that you received as output in step 1.

The Proxy Server service stops on your computer.

## Windows Services

After you install the HPCA Satellite server, it runs as a Windows service - **HPCA Satellite**.

The start mode of the HPCA Satellite service is set to "Automatic". As this service is an internal part of the HPCA Satellite server, do not stop the service when Satellite server is running.

In addition to the HPCA services, several sub-services are automatically installed with the HPCA Satellite server. These are easily identified in Windows services because they are prefixed with "HPCA". The start mode for these sub-services is "Manual".

HP recommends that you use only the Console to stop and start these sub-services because of cross-service dependencies. If the HPCA Satellite service is stopped, the sub-services automatically stop along with the HPCA Satellite service.

# Chapter 6

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## Installing HPCA Administrator Tools

The HPCA Administrator tools are automatically installed as part of the Core server installation on Windows operating system. You can install the Administrator tools to another computer by deploying the Administrator service or by using the installation file included on the HPCA media. HPCA administrator tools can be installed on a Windows, Linux, or Macintosh operating system.

HP recommends that you do not install HPCA Administrator tools and HPCA agent on the same computer.

## Installing HPCA Administrator Tools on Windows

To install the HPCA Administrator tools on a computer other than that which hosts the Core server, you should install it manually. You can install HPCA Administrator tools manually for Windows by using one of the following methods:

- "Installing HPCA Administrator Tools Using Wizard" on next page
- "Installing HPCA Administrator Tools using Command Line" on page 61

## Installation Prerequisites

The following are the minimum system requirements to install Administrator tools:

- A computer with only the target device's operating system installed.
- TCP/IP connection to the HPCA Core server.
- Administrative rights to the computer.

### Platform Support

For the operating system requirements for this release, see the *HP Client Automation Support Matrix* available at the URL: [http://h20230.www2.hp.com/sc/support\\_matrices.jsp](http://h20230.www2.hp.com/sc/support_matrices.jsp).

You must have an HP passport ID to access this web site.

The *HP Client Automation Support Matrix* is also located on the distribution media for this product in the `\Documentation` directory.

### Installation Files

The following files are used for installing Administrator tools:

- `setup.exe`

The `setup.exe` is located in the HPCA installation media folder, `\Setup-Core\Media\admin\default\win32`. It accepts command line parameters and passes them to Windows Installer.

You can also create a Windows Installer Administrative Installation Point (AIP) for network installations. The AIP starts the Windows Installer and passes command line parameters to it.

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


To create the Windows Installer Administrative Installation Point (AIP) in a specified target directory:


- a. Open the command prompt and navigate to the `\Setup-Core\Media\admin\default\win32` directory.
  - b. Type `SETUP.EXE /a TARGETDIR=drive:\targetdirectory /qb` where, `targetdirectory` is the directory where you want to create Windows Installer AIP. The target directory contains `HPCAE-ADMIN.MSI`, the installation folders, and `setup.exe`.
- `HPCAE-ADMIN.MSI`  
`HPCAE-ADMIN.MSI` is the MSI file that contains the default configuration information for the installation. This file is stored on the HPCA installation media folder, `\Setup-Core\Media\admin\default\win32`.

## Installing HPCA Administrator Tools Using Wizard

To install HPCA Administrator tools on Windows using the wizard:

1. From the Core server installation media, navigate to the `\Setup-Core\Media\admin\default\win32` directory, and run `setup.exe` file. HPCA Administrator Installation Wizard opens.  
You can also copy the files from the installation media to a temporary directory and start the installation procedure.
2. Click **Next** to begin the installation. The End-User License Agreement window opens.
3. Read and accept the License Agreement and click **Next**. The Destination Folder window opens. If you want to select a different destination for HPCA Administrator tools, click **Browse**. Navigate to the appropriate destination folder and click **OK** to continue.
4. Click **Next**. The HPCA Configuration Server window opens.
5. In the IP Address text box, type the IP address of the HPCA Configuration server.
6. In the Port text box, type the port number (default is 3464) of the HPCA Configuration server.
7. Click **Next**. The License window opens.
8. Click **Browse** to select the license file for HPCA.
9. Click **Next**. The Select Features window opens.

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

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

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

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

**Feature Settings for the Administrator Tools**

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

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

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

## Installing HPCA Administrator Tools using Command Line

Open the command prompt and navigate to the directory that contains HPCA Administrator tools installation files. Type the following command:

```
SETUP.EXE NVDOBJZMASTER_ZIPADDR=<IP Address of the Core server>  
FeatureStateArgument=Feature1,Feature2,FeatureN [AdditionalParameter]
```

where,

*FeatureStateArgument* is one of the arguments listed in the table [HPCA Administrator Tools Feature State Arguments](#).

*Feature1, Feature2, FeatureN* can be any of the arguments listed in the table [HPCA Administrator Tools Features Arguments](#).

*[AdditionalParameter]* can be any of the arguments listed in the table [Command Line Arguments](#).

#### Examples

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

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

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

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

#### HPCA Administrator Tools Feature State Arguments

Arguments	Description
ADDLOCAL	Type a comma-delimited list of features that you want to set to "Will be installed on local hard drive".
ADDSOURCE	Type a comma-delimited list of features that you want to set to "Will be installed to run from network".
ADVERTISE	Type a comma-delimited list of features that you want to set to "Feature will be installed when required".
REMOVE	Type a comma-delimited list of features that you want to set to "Entire feature will be unavailable". This removes the features only, not the entire product. Therefore, if you use the REMOVE property and type each of the feature names, the HPCA Administrator product is stored on your computer. If you want to remove the entire product, type REMOVE=ALL.

#### HPCA Administrator Tools Features Arguments

Administrator Tools Feature	Feature Argument
Agent Explorer	NVDINSTALLCLIENTEXPLORER
Packager	NVDINSTALLPACKAGER
Publisher	NVDINSTALLPUBLISHER
Screen Painter	NVDINSTALLSCREENPAINTER
CSDB Editor	NVDINSTALLSYSTEMEXPLORER
AMP Editor	NVDINSTALLAMPEDITOR

## Command Line Arguments

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

## Installing HPCA Administrator Tools on Linux and Macintosh

HPCA Administrator for Linux and Macintosh contains two tools: HPCA Administrator Publisher and HPCA Administrator Agent Explorer. You can install HPCA Administrator tools manually for Linux and Macintosh using one of the following methods:

- "Installing HPCA Administrator Tools Using Graphical User Interface" on next page
- "Installing HPCA Administrator Tools Using Command Line" on page 65

## Installation Prerequisites

The following prerequisites should be met before you install HPCA Administrator tools on Linux or Macintosh operating system:

- TCP/IP connection to a computer running the HPCA Core server.
- HP recommends that you install and run HPCA Administrator tools as **root** (or as a Mac OS X administrator user ID capable of issuing **sudo** commands). Root authority is required to apply owner and group designators to managed resources.

- Install the HPCA Administrator tools on a local file system.
- To install HPCA Administrator tools using GUI mode, set the Linux environment variable, DISPLAY. Set this variable to indicate the host name or IP address of the device to which you want to redirect the graphical display.  
To set the variable DISPLAY:
  - In C shell, type `setenv DISPLAY <IP address or hostname>:0.0`
  - In Bourne, Bash, or Korn shell,
    - i. Type `DISPLAY=<IP address or hostname>:0.0` and press **Enter**.
    - ii. Type `export DISPLAY`

**Note:** If the DISPLAY environment variable is not set in your environment, the installation defaults to a non-graphical installation.

## Installing HPCA Administrator Tools Using Graphical User Interface

To install HPCA Administrator tools on Linux or Macintosh using a GUI:

1. Open the command prompt and change your current working directory to the Administrator tools platform subdirectory on the installation media.  
For example:  
  
In Linux operating system, change your working directory to:  
`/Setup-Core/Media/admin/default/linux`  
  
In Macintosh operating system, change your working directory to:  
`/Setup-Core/Media/admin/default/macx86`
2. Type `./install` (for Mac OS X, type `sudo ./install`) and press **Enter**. The Welcome window opens.
3. Click **Next**. The HP Software License terms window opens.
4. Read the software license terms and click **Accept**. HPCA Administrator Location window opens.
5. Type the name of the directory where you are installing HPCA Administrator tools or click **Browse** to navigate to it.
6. Click **Next**. If the specified directory already exists you are prompted to verify this location.
  - a. If you want to update the existing directory, click **OK**.
  - b. If you want to change the directory location, click **Cancel**.The Lib Directory window opens.
7. Type the name of the directory where you want to store proprietary information created by HPCA (the `lib` directory) or click **Browse** to navigate to it.
8. Click **Next**. The Log Directory window opens.



9. Type the name of the directory where you want to store the log files generated by HPCA or click **Browse** to navigate to it.
10. Click **Next**. The HPCA Configuration Server IP Address window opens.
11. Type the IP address (format: xxx.xxx.xxx.xxx) or host name of the Configuration server where you want to publish the applications.
12. Click **Next**. The HPCA Configuration Server Port Number window opens.
13. Type the port number of your HPCA Configuration server (default is 3464).
14. Click **Next**. The Package Settings window opens.
15. Review the settings displayed in the Package Settings window. To change the settings, click back to get to the appropriate window.
16. When you are ready to proceed, click **Install**. HPCA Administrator tools are installed.

## Installing HPCA Administrator Tools Using Command Line

To install HPCA Administrator tools on Linux or Macintosh using command line:

1. Open the command prompt and change your current working directory to the Administrator tools platform subdirectory on the installation media.  
For example:  
  
In Linux operating system, change your working directory to:  
`/Setup-Core/Media/admin/default/linux`  
  
In Macintosh operating system, change your working directory to:  
`/Setup-Core/Media/admin/default/macx86`
2. Type `./install -mode text` (for Mac OS X, type `sudo ./install -mode text`) and press **Enter**. HPCA Administrator tools installation begins.
3. Type `C` and press **Enter**.
4. Specify the installation location for HPCA Administrator tools and press **Enter**.
5. Specify the location for the HPCA proprietary objects (`IDMLIB`) and press **Enter**.
6. Specify the location for the log files created by HPCA (`IDMLOG`) and press **Enter**.
7. Specify the IP address of the HPCA Core server and press **Enter**.
8. Specify the port number of the HPCA Core server and press **Enter**.
9. Review the installation settings you have chosen. If you want to install HPCA Administrator tools with these settings, press **Enter** to accept the default (Y) and begin the installation. You can type `N` to re-enter your installation information.
10. To complete the configured installation process, press **Enter**. The HPCA Administrator tools are installed.

## Installing Batch Publisher

HPCA Batch Publisher dynamically creates package instances and names them (with date and sequence number) to accommodate multiple publishing sessions.

The HPCA Batch Publisher can be installed on Windows and Linux operating systems.

## Installation Prerequisites

The minimum system requirements for HPCA Batch Publisher are:

- Network connectivity to HPCA Core server.
- A minimum of 2 MB of hard disk space.
- Access to directories from which you want to publish.
- Administrative rights to the computer.

HP recommends that you stop any programs that are running before installing the HPCA Batch Publisher.

### Platform Support

For the operating system requirements for this release, see the *HP Client Automation Support Matrix* available at the URL: [http://h20230.www2.hp.com/sc/support\\_matrices.jsp](http://h20230.www2.hp.com/sc/support_matrices.jsp).

You must have an HP passport ID to access this web site.

The *HP Client Automation Support Matrix* is also located on the distribution media for this product in the `\Documentation` directory.

## Installing HPCA Batch Publisher for Windows

To install the HPCA Batch Publisher for Windows:

1. From the Core server installation media, navigate to the `\Media\extended_infrastructure\publishing_adapter\publisher\win32` folder, and run `setup.exe`. The Welcome window opens.
2. Click **Next**. The HP Software License Terms window opens.
3. Read the license terms and click **Accept**. The Directory Location window opens.
4. Type the name of the directory where you want to install the HPCA Batch Publisher or click **Browse** to navigate to it. By default, HPCA Batch publisher is installed in the `C:\Program Files\Hewlett-Packard\CM\BatchPublisher` directory.
5. Click **Next**. If the directory you specified already exists, you are prompted to replace it. If the directory you specified already exists, you are prompted to overwrite the existing directory. To specify a new directory, click **Cancel** to return to the previous step or click **OK** to proceed. The Installation Settings window opens.
6. Click **Install**.
7. When the installation is complete, click **Finish**.

You have successfully installed the Batch Publisher for Windows.

## Installing HPCA Batch Publisher for Linux

If you are installing the HPCA Batch Publisher on a Linux operating system that supports graphics, the graphical installation automatically begins after you initiates the installation program.

For Linux operating systems that support graphics, see ["Installing Batch Publisher on Linux using Graphical User Interface"](#) below.

For Linux operating systems that do not support graphics, the non-graphical installation program automatically starts when you initiate the installation program. If you are installing the HPCA Batch Publisher on a Linux operating system that supports graphics, but you want to use the non-graphical mode instead, change your directory to the location of the installation program on the installation media, and then type: `./install -mode text`. This starts the non-graphical installation of the HPCA Batch Publisher. For more information, see ["Installing Batch Publisher on Linux using non-Graphical Method"](#) on next page.

## Installing Batch Publisher on Linux using Graphical User Interface

To install the HPCA Batch Publisher using the graphical interface:

1. Open the command prompt and change your current working directory to the `/Media/extended_infrastructure/publishing_adapter/publisher/linux` subdirectory on the installation media.
2. Type `./install` and press **Enter**. The Welcome window opens.
3. Click **Next**. The HP Software License Terms window opens.
4. Read the agreement and click **Accept**. The Directory Location window opens.
5. Type the name of the directory where you want to install the Batch Publisher or click **Browse** to select a location. By default, HPCA Batch publisher is installed in the `/opt/HP/CM/BatchPublisher` directory.
6. Click **Next**.
7. If the directory you specified already exists, you are prompted to overwrite the existing directory. To specify a new directory, click **Cancel** to return to the previous step or click **OK** to proceed. The Installation Settings window opens.
8. Click **Install**.
9. When the installation is complete, click **Finish**.

You have successfully installed the Batch Publisher for Linux. Before using the HPCA Batch Publisher in a Linux environment, you should modify the `filters all` parameter in the configuration file as described in the section ["Post Installation Task"](#) on next page. This is specific to the configuration file-based publishing method (`promote.cfg`).

## Installing Batch Publisher on Linux using non-Graphical Method

To install the HPCA Batch Publisher using the non-graphical method:

1. Open the command prompt and change your current working directory to the `/Media/extended_infrastructure/publishing_adapter/publisher/linux` subdirectory on the installation media.
2. Type `./install -mode text` and press **Enter**. The HPCA Batch Publisher installation begins.
3. Type `C` and press **Enter**.
4. Press a key to view the End User License Agreement. After you read the agreement, type `Accept` and press **Enter**.
5. Press **Enter** to accept the default location for the HPCA Batch Publisher (`/opt/HP/CM/BatchPublisher`), or specify a different location. If the directory you specify already exists, you are prompted to overwrite the existing directory. If the directory does not exist, the installation program displays the Installation Settings.
6. Type `Y` and press **Enter** to start the installation. If you do not want to start the installation, type `N` and press **Enter**.
7. To complete the configured installation process, press **Enter**.

You have successfully installed the HPCA Batch Publisher for Linux. Before using the HPCA Batch Publisher in a Linux environment, you should modify the `filters all` parameter in the configuration file as described in the section "[Post Installation Task](#)" below. This is specific to the configuration file-based publishing method (`promote.cfg`).

## Post Installation Task

### Modifying the `filters all` parameter in the configuration file

The default values are:

```
filters all {  
  
  typefile  
  classfile  
  exclude "*.log *.bak"  
  include "*"   
  distroot{ }  
  
}
```

To modify the `filters all` parameter, change the `class` parameter from its default of `file` to `unixfile`.

```
filters all {  
  
  typefile  
  classunixfile  
  exclude "*.log *.bak"
```

```
include"*"  
distroot{  
  
}
```

## Installing Application Usage Manager Administrator

The Application Usage Manager (AUM) Administrator Provides interface to create rules that define the data that is used to create usage reports for the managed devices. Install this component on the computer where Core server is installed.

To install the AUM Administrator, complete the following steps :

1. Navigate to the `<InstallDir>\Media\usage` directory.
2. Double-click **UsageManagerAdministrator.msi** to start the installation.
3. Click **Next**. The end-user license agreement dialog box opens.
4. Read and accept the HP Software License terms and click **Next**. The installation location dialog box opens, showing the default location.
5. If you want to install the AUM Administrator at a different location, click **Browse** to navigate to the location.
6. Click **Next**. The Ready to Install dialog box opens.
7. Click **Install**.
8. When the installation is complete, click **Finish**.

The AUM Administrator is installed and a shortcut is created in the **Start** menu as HPCA Usage Manager Administrator. After an ODBC connection to a database is established, use the **Start** menu shortcut or the `RADPIMGR.exe` file to access the AUM Administrator. By default, `RADPIMGR.exe` is located in the following directory:

```
[ProgramFilesPath]\Hewlett-Packard\CM\Usage Manager Administrator\bin\.
```



# Chapter 7

---

## Installing HPCA Agent

The HPCA agent is installed on end-user computers that an HPCA administrator wants to manage using HPCA. You can install agent software on the Windows, Linux, and Macintosh operating systems. You can also deploy the HPCA agent to Windows and Linux based HP thin client devices.

HP recommends that you do not install HPCA Administrator tools and HPCA agent on the same computer.

## Installing HPCA Agent on Windows

You can install HPCA agent on Windows using one of the following methods:

- "Installing HPCA Agent using Wizard" on page 83
- "Installing HPCA Agent Using Command Line" on page 85
- "Installing HPCA Agent using Logon Script" on page 87

You can also deploy HPCA agents by using Core Console. For more information, see the *HP Client Automation Enterprise User Guide*. You can deploy HPCA Usage Manager agent by using Core Console as described in *Deploying the Usage Collection Agent* section in the *HP Client Automation Enterprise User Guide*.

You can install HPCA agent in lockdown mode to ensure non-privileged users are not able to access critical system-level confidential content. For more information, see "Installing HPCA Agent in Lockdown Mode" on page 87.

## Hardware and Software Requirements

The following are the minimum system requirements for the computer where you want to install HPCA agents:

- 1 GB free disk space.
- Microsoft .NET runtime 1.1 (required for HPCA Application Self-Service Manager only). The .NET installation program is available in the `Media\client\default\win32\dotnet` folder on the HPCA Core media. If .NET does not exist on the HPCA agent computer, the .NET installation program runs automatically during installation. Microsoft .NET requires Microsoft Internet Explorer 5.01 or later.
- TCP/IP connection to a computer running the HPCA Core server.
- Windows NTFS-based file system with Access Control Lists (ACLs) support to install HPCA agent in Lockdown mode.
- Administrative rights to the computer to install the HPCA agents.

#### Platform Support

For the operating system requirements for this release, see the *HP Client Automation Support Matrix* available at the URL: [http://h20230.www2.hp.com/sc/support\\_matrices.jsp](http://h20230.www2.hp.com/sc/support_matrices.jsp).

You must have an HP passport ID to access this web site.

The *HP Client Automation Support Matrix* is also located on the distribution media for this product in the `\Documentation` directory.

## Installation Prerequisites

The following prerequisites should be met before installing HPCA agent:

- **Communication Ports**

HPCA agents communicate with HPCA Core and Satellite servers using ports listed in the "Agent Communication Ports " below section. These ports should be enabled on the agent computer.

- **Internet Proxies**

You must enable the HPCA agent to discover and use Internet proxies by setting the following properties in the `Install.ini` file:

```
USEPROXY=Y and DISCOVER=Y
```

**Note:** You can also set the Internet proxies after installing HPCA agents. For more information, see *HP Client Automation Enterprise Administrator User Guide*.

The next HPCA agent connect to the Core server uses the Internet proxy that is specified.

## Agent Communication Ports

You must enable the following port on the HPCA agents in the HPCA environment to enable communication with Core and Satellite servers:

#### HPCA Agent Communication Port

Port	Port Type	Description
3465	TCP	Required to receive incoming notify requests from Core server and to communicate with the Satellite servers.
3460	TCP	Required when you deploy MSI-based applications that are published in Advanced mode.
3463	TCP	Required when you plan to deploy HPCA agent remotely. For example, deploying agent through HPCA Core server.

For Out of Band Management, enable the following additional ports on the HPCA agents (vPro device or DASH device) to allow inbound and outbound traffic:



**Out of Band Management Ports**

Port	Description
<b>vPro Device</b>	
16992	Port for web service traffic over TCP.
16993	Port for web service traffic over TLS (with client authentication).
16994	Port for SOL/IDE-R over TCP.
16995	Port for SOL/IDE-R over TLS (with client authentication).
9998	Port for communications between the OOB management Console and the agent during Remote Configuration of vPro devices.
9999	Port that must be available on the client browser computer for applet-to-server socket communications for SOL.
<b>DASH Devices</b>	
623	Port for communications with DASH devices.
9999	Port that must be available on the client browser computer for applet-to-server socket communications for SOL.

## Preparing for HPCA Agent Installation

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

- **setup.exe**: Stored in the `\Setup-Core\Media\client\default\win32` directory on the HPCA Core media. It accepts standard Windows Installer command-line parameters and passes them to the Windows Installer service. You can also create an AIP for network installations. An Administrative Installation Point is also known as an **Administrative Control Point** (ACP).

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

- Open the command prompt and navigate to the `\Setup-Core\Media\client\default\win32` directory.
- Type `setup.exe /a TARGETDIR=drive:\targetdirectory /qb` where, `targetdirectory` is the directory where you want to create Windows Installer AIP. The target directory contains `HPCAE-MgmtApps.msi`, the installation folders, `setup.exe`, and files such as, `Install.ini` or Visual Basic scripts stored in the same directory as `setup.exe`.

After you create the AIP, you can copy the contents of the target directory to the target device to install the HPCA agent. You can then run the `setup.exe` and pass the command-line parameters. This starts the Windows Installer and passes the specified parameters to it.

- **HPCAE-MgmtApps.msi**

This MSI file is stored in the `\Setup-Core\Media\client\default\win32` directory on the HPCA Core media and contains the default configuration information for the installation.

- **args.xml**

The HPCA Application Self-Service Manager arguments file created from information stored in the [ARGS] section of `Install.ini`. This file is stored in `IDMLIB` directory, `<InstallDir>\Agent\Lib\`, on the HPCA agent computer and controls the behavior of the HPCA Application Self-Service Manager.

- **Customized scripts**

You can use pre-install scripts to customize the installation and post-install scripts to run the processes after installing HPCA agents as described in "Using Customized Scripts" on page 81.

- **Install.ini**

Use `Install.ini` to customize the installation or the HPCA agent arguments file, or to create or set attributes for HPCA objects that are created after installing HPCA agent. You can also control folder access for users. Settings in `Install.ini` override the defaults stored in `HPCAE-MgmtApps.msi`. You can create your own customized `install.ini` file.

**Note:** New objects or properties must be defined in `Install.ini`. You can use a pre-install script to override a value for the object or property, but any attempt to specify a new object or property in the pre-install script is ignored.

A sample `Install.ini` is available in the `\Setup-Core\Media\client\default\win32` directory on the HPCA Core media.

**Note:** When you modify the `Install.ini` file sections, make sure that all the `Install.ini` files located in the following folders are modified:

- `<InstallDir>\Media\client\default\win32`
- `<InstallDir>\ManagementPortal\media\default\win32`

The following sections describe the three `Install.ini` file sections:

- "[Properties] Section in Install.ini" below
- "[Args] Section of Install.ini" on page 77
- "[Objects] Section of Install.ini" on page 80

## [Properties] Section in Install.ini

Use the [Properties] section to modify agent installer properties or HP-specific properties to customize the behavior of the installation program. The values that you set in this section override the default values stored in the `HPCAE-MgmtApps.msi` file.

**Note:** All properties such as `INSTALLDIR` must be typed in uppercase.

**[Properties] Section in Install.ini**

Argument	Description
ADDDLOCAL	Specify the HPCA agent sub-features that you want to install on the local hard drive. There is no default for this argument.
ARPNOREMOVE	<p>Set to 1 to disable the ability to remove the HPCA agent from the computer using Add/Remove Programs in the Control Panel.</p> <ul style="list-style-type: none"> <li>For Windows 2003 and supported operating systems above Windows 2003, the <b>Remove</b> button is disabled.</li> <li>For supported operating systems before Windows 2003, the HPCA agent is not listed in Add/Remove Programs in the Control Panel.</li> </ul> <p>Setting to 0 does not disable this option because of a Windows Installer issue. If you want to enable your subscribers to remove the HPCA agent from the computer using Add/Remove Programs, place a semi-colon (;) in front of the ARPNOREMOVE argument in <code>Install.ini</code>.</p>
INSTALLDIR	<p>Specify the directory in which to install the HPCA agent. The default is <code>C:\ProgramFiles\Hewlett-Packard\HPCA\Agent</code>.</p> <p>This value is overridden if a new directory is specified in the Destination Folder window in the HPCA Agent Installation Wizard.</p>
NVDENABLEUSER	<p>Indicate whether to show or hide the Set User window in the Installation Wizard.</p> <ul style="list-style-type: none"> <li>Specify <code>Y</code> (the default) to show the window.</li> <li>Specify <code>N</code> to hide the window. If you hide the window, the <b>Create HPCA Application Self-Service Manager icon on the desktop</b> check box will no longer be available to your subscribers.</li> <li>Specify <code>D</code> to show the window, but disable the User Name field. The <b>Create HPCA Application Self-Service Manager icon on the desktop</b> check box is still available.</li> </ul>
NVDENABLEIP	Indicate whether to show or hide the Configuration Server window in the Installation Wizard. The default is

Argument	Description
	Y.
NVDENABLEPROXY	<p>Indicate whether to show or hide the Proxy Information window in the Installation Wizard. The default is <b>N</b>.</p> <p>If you want to use a Proxy server during the HPCA agent connect, show this window.</p> <p>The information that is specified in the Proxy Information window is stored, by default, in the PROXYINF object in the HPCA agent computer's IDMLIB directory.</p>
NVDENABLESHORTCUT	<p>Indicate whether to show the <b>Create HPCA Application Self-Service Manager icon on the desktop</b> check box in the Set User window. The default is <b>Y</b>.</p> <p>Selecting this check box installs a shortcut on the subscriber's desktop for HPCA Application Self-Service Manager.</p>
NVDSHORTCUT	<p>Indicate whether to install a desktop shortcut for the HPCA Application Self-Service Manager on the subscriber's computer. The default is <b>Y</b>.</p>
NVDSTARTMENUICON	<p>Indicate whether to install an icon in the <b>Start</b> Menu for the HPCA Application Self-Service Manager on the subscriber's computer. The default is <b>Y</b>.</p>
NVDSTARTWMICFGMGR	<p>Indicates whether to install the shortcuts for Windows Management Instrumentation (WMI) provider. The default is <b>Y</b>.</p>
NVDRAMSHORTCUT	<p>Indicate whether to install a desktop shortcut for the HPCA Application Manager on the subscriber's computer. The default is <b>N</b>. When you double-click the shortcut, HPCA System Tray icon appears in the System Tray area of the Task Bar.</p>
NVDRAMSTARTMENUSHORTCUT	<p>Indicate whether to install an icon in the <b>Start</b> Menu for the HPCA Application Manager on the subscriber's computer. The default is <b>N</b>.</p>
NVDRAMCONNECT	<p>Specify the command line to run when the HPCA Application Manager is opened. The default value is <code>radntfyc localhost radskman dname=SOFTWARE</code>.</p>
NVDMAINTDIR	<p>Specify a directory where you want to store the HPCA agent maintenance files. The default is the MAINT sub-directory of the folder that contains <code>setup.exe</code>.</p>

Argument	Description
	<p>Specify a value only if you want to store maintenance files in a directory other than the default. If files in this directory are more recent than the installation files, they are copied into the HPCA agent's <code>IDMSYS</code> directory. <code>IDMSYS</code> is specified in <code>NVD.INI</code>. The default location of <code>NVD.INI</code> is <code>&lt;InstallDir&gt;\Agent\Lib</code>.</p> <p>If you are using a post-install script, you <i>must</i> place the script in the <code>\maint</code> folder of the HPCA agent install.</p>
NVDLOCALNOTIFYONLY	<p>If set to <code>Y</code>, the HPCA agent enables HPCA Notices from the local host only. The default is <code>N</code>.</p>
NVDTRAYSTART	<p>Set to <code>Y</code> to display the HPCA System Tray icon automatically if the HPCA Application Manager is selected during the HPCA agent installation process. The default is <code>N</code>.</p>
NVDNOTIFYINTERACT	<p>Set to <code>Y</code> to enable the HPCA Notify Daemon to interact with the desktop. The default is <code>N</code>.</p>
NVDREDIRECTORINTERACT	<p>Set to <code>Y</code> to enable the MSI Redirector to interact with the desktop. The default is <code>N</code>.</p>
NVDSCHEDULERINTERACT	<p>Set to <code>Y</code> to enable the HPCA Scheduler to interact with the desktop. The default is <code>N</code>.</p>
NVDPRECAPATH	<p>Specify the fully qualified path and filename of a custom Visual Basic pre-install script. There is no default for this argument.</p>
NVDPOSTCAPATH	<p>Specify the fully qualified path and filename of a custom Visual Basic or REXX post-install script. There is no default for this argument.</p> <p>For more information, see <a href="#">"Using Customized Scripts"</a> on page 81.</p>

## [Args] Section of Install.ini

Use the [Args] section to control the behavior of the HPCA Application Self-Service Manager. The information in this section is used to build the HPCA Application Self-Service Manager arguments file, `args.xml`, which is stored in `IDMLIB` on the HPCA agent computer. The default directory for `IDMLIB` is `<InstallDir>\Agent\Lib\`.

**Note:** The XML tags (arguments) that are described in this section are not case-sensitive when you type them in `Install.ini`. However, they are automatically converted to uppercase in `args.xml`. If you are using the HPCA Application Manager, any of the parameters in the [Args] section can be added to the `RADSKMAN` command line.

**[Args] section of Install.ini**

Argument	Mandatory or Optional	Description
askconfirm	Optional	Controls the display of a confirmation message to your subscribers. For example, some instances in which a confirmation message might display are: <ul style="list-style-type: none"> <li>• A restart is required.</li> <li>• There is insufficient disk space during deployment.</li> <li>• A data download is interrupted.</li> </ul> The default is <b>Y</b> .
channelname	Mandatory	The CSDB domain from which applications are retrieved. The default is <b>SOFTWARE</b> .
default_catalog	Optional	Add the parameter to set the default catalog that is selected when the HPCA Application Self-Service Manager starts. There is no default for this argument.
default_catalog_only	Optional	Add the parameter and set to <b>Y</b> to make only the default_catalog available when the HPCA Application Self-Service Manager starts. The default is <b>N</b> .
identification	Optional	Identifies the HPCA agent to the Configuration server by defining the value for the ZUSERID variable in the ZMASTER object. The default is <b>\$MACHINE</b> .  This value is overridden if a different User Name is specified in the Set User window in the HPCA Agent Installation Wizard. If you do not want this value to be modified, set <code>NVDENABLEUSER=N</code> in the [PROPERTIES] section of <code>Install.ini</code> .  Valid values are: <ul style="list-style-type: none"> <li>• <b>\$MACHINE</b>: Name of the subscriber's computer.</li> <li>• <b>\$USER</b>: Logon ID for the subscriber currently logged on.</li> </ul>
CUSTOM		Literal custom specification
log	Optional	Specifies the name of the log stored in <code>IDMLOG</code> . <code>IDMLOG</code> is specified in <code>NVD.INI</code> . The default is <code>connect.log</code> .  The default location of <code>NVD.INI</code> is <code>&lt;InstallDir&gt;\Agent\Lib</code> .
logsize	Optional	Specifies (in bytes) the size of the log file. The default is <b>1000000</b> .  When the size of the log file reaches 1000000 bytes, a backup

Argument	Mandatory or Optional	Description
		file (.bak) is created. By default, this file is <code>connect.bak</code> . If a backup file already exists, it is overwritten.
logonpanel	Optional	Controls the display of the logon panel. The default is <b>N</b> .
managerurl	Optional	Specifies the address as <code>http://hostname:port/nvdurl</code> for the Configuration server to be used for HTTP object transfer. There is no default for this argument.
providername	Mandatory	The name of the Configuration server, as set during its installation. The default is <b>radia</b> .  This is used to name the folder below the STARTDIR on the HPCA agent computer. For information on STARTDIR, see " <a href="#">startdir</a> " on next page.
redirect	Optional	Specifies an alternate start-up file, <code>filename.xml</code> that can be accessed using a network path or URL. There is no default for this argument.  If the redirect tag is set in <code>args.xml</code> , the HPCA Application Self-Service Manager uses the properties that are specified in the alternate file.
resolutionmanager	Mandatory	The IP address of the Configuration server. You can also use the Configuration server hostname. There is no default for this argument.  This value is overridden if a different IP address is specified in the Configuration server window in the HPCA Agent Installation Wizard.  To prevent this value from being modified, set <code>NVDENABLEIP=N</code> in the [PROPERTIES] section of <code>Install.ini</code> .
resolutionport	Mandatory	The port for the Configuration server. There is no default for this argument.  This value is overridden if a different port is specified in the Configuration server window in the HPCA Agent Installation Wizard.  To prevent this value from being modified, set <code>NVDENABLEIP=N</code> in the [PROPERTIES] section of <code>Install.ini</code> .
root_catalog_name	Mandatory	Use this to customize the name of the root catalog display name. The default is <b>All Software</b> .
sslmanager	Optional	The address of the Configuration server that is used for SSL.

Argument	Mandatory or Optional	Description
		<p>communications. There is no default for this argument.</p> <p>If you want self-maintenance to use SSL communications, append <code>: : SM</code> to the end of the specified IP address or host name, as in <code>sslmanager=hostname: : SM</code>.</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p><b>Caution:</b> Consider the following when using the <code>: : SM</code> switch:                      The file (<code>cacert.pem</code>) that contains the CA root certificates cannot be maintained. If the corresponding CA root certificate for the certificate in use by the Configuration server should ever become expired, revoked, or corrupt, it results in disabling SSL communications to the Configuration server.</p> </div>
sslport	Optional	The TCP/IP port (usually 444) on which the SSL Manager task is listening. There is no default for this argument. The sslport specification takes the form <code>sslport=port</code> .
startdir	Optional	Specify a directory where you want to store the HPCA agent objects. The default is the <code>SYSTEM</code> . Type <code>startdir=foldername</code> . If the folder name contains spaces, enclose the entire name in quotation marks (“ ”).
uioption	Optional	Controls the display of the status window. The default is <b>N</b> .
uioptmsi	Optional	Controls the display of the MSI status window. The default is <b>N</b> .

## [Objects] Section of Install.ini

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

### [Objects] section of Install.ini

Argument	Description
ZMASTER_ZDSTSOCK	The port setting for the Configuration server. The default is <b>3464</b> .
ZMASTER_ZIPADDR	The IP address for the Configuration server. There is no default for this argument.
ZMASTER_ZNTFPORT	The port on which the HPCA agent’s Notify daemon is “listening.” The default is <b>3465</b> .



Argument	Description
ZMASTER_ZNTFYSEC	This attribute enables a Notify operation to run programs from the <b>IDMSYS</b> directory only. This is used for security during Notify operations. The default is <b>Y</b> .
ZMASTER_ZTIMEO	The duration (in seconds) that the HPCA agent waits for a response from the Configuration server before it times out. The default is <b>240</b> .  Valid values are numerals from 0 through 3200.
ZMASTER_ZTRACE	Indicates whether communication buffer information is included in the log; also generates unique logs for create methods. The default is <b>N</b> . <ul style="list-style-type: none"> <li>• <b>Y</b> enables Communication and Method Tracing.</li> <li>• <b>S</b> enables Communication summary information; Method Tracing is not enabled.</li> <li>• <b>N</b> disables Communication Tracing and Method Tracing.</li> </ul>
ZMASTER_ZTRACEL	The level of tracing that is generated in the HPCA agent log files. The default value is <b>040</b> . The syntax is xxx. The valid values are numerals from 0 through 999, where 0 = minimal tracing, 40 is acceptable for most activity, and 999 = maximum tracing.
ZMASTER_ZUSERID	The user ID. The default is the name of the user that is currently logged on to the computer.
ZMASTER_ZVRFYUID	Specify <b>Y</b> to verify the user ID that was sent by the Configuration server's Notify command. This verification uses the ZUSERID field from the HPCA agent's ZMASTER object. The default is <b>N</b> .
PROXYINF_USEPROXY	Specify <b>Y</b> or <b>N</b> to indicate whether a Proxy server should be used when connecting to the Configuration server. The default is <b>N</b> .
PROXYINF_DISCOVER	<i>Applicable to Microsoft Internet Explorer only.</i> Specify <b>Y</b> to discover Internet Explorer's proxy settings. The default is <b>N</b> .
PROXYINF_PROXADDR	The IP address and port number of your proxy server. The default is <b>xxx.xxx.xxx.xxx:1080</b> .
RADSETUP_COP	Set to <b>Y</b> to enable Client Operations Profiles. The default is <b>N</b> .

## Using Customized Scripts

You can use customized scripts to customize properties that affect the installation or run processes after installing HPCA agents. This section details the pre-install scripts and post-install scripts.

**Caution:** HP recommends that only experienced users use the customized scripts.

### Using a Pre-Install Script

Use Visual Basic scripts to customize MSI properties that affect the installation. The following is a very simple Visual Basic script example.

You *must* use the NVDPRECAPATH argument to specify the fully qualified path and file name of a custom Visual Basic pre-install script in `Install.ini` or on the command line. For information on NVDPRECAPATH, see "[Properties] Section in Install.ini" on page 74.

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

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

```
Option Explicit  
msgbox Session.Property("ALLUSERS")  
Session.Property("ALLUSERS") = "1"  
msgbox Session.Property("ALLUSERS")
```

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

To override property settings or attributes for objects:

**Caution:** Make sure that you type the name of the property or the object and its attribute such as NVDOBJMASTER\_ZDSTSOCK in uppercase letters.

- Use the prefix **NVDARG** to override property settings.  
For example, to override the value set for the identification property, which identifies the subscriber session to the Configuration server, type:

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

- Use the prefix **NVDOBJ** to override object attributes.  
For example, if you want to override the value set for the ZDSTSOCK attribute of the ZMASTER object, which is the port setting for the Configuration server, type:

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

#### Using a Post-Install Script

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

You *must* use the NVDPSTCAPATH argument to specify the fully qualified path and filename of the custom Visual Basic or REXX post-install script in `Install.ini` or on the command line. For information on NVDPSTCAPATH, see "[Properties] Section in Install.ini" on page 75. For example, if you want to run a script named `radstart.rex`, uncomment NVDPSTCAPATH argument, and set the value as `NVDPSTCAPATH=C:\Progra~1\Hewlett-Packard\HPCA\Agent\radstart.rex`.

**Note:** In HPCA, REXX is an interpreted language that provides a simple way to customize various aspects of HPCA processing. For more information on using REXX in HPCA

environment, see *HP Client Automation Application Manager and Configuration Server REXX Programming Guide*.



Place the script in the `\maint` folder of the HPCA agent install. It is automatically copied into `IDMSYS`.

## Installing HPCA Agent using Wizard

The following steps describe the standard installation procedure. These steps can vary based on `Install.ini` or any arguments passed during the installation.

1. From the Core server installation media, navigate to the `\Setup-Core\Media\client\default\win32` directory, and run `setup.exe`. The HPCA Agent Installation Wizard opens.

**Note:** You can initiate `setup.exe` from a command line or a logon script. For more information, see "Installing HPCA Agent on Windows" on page 71.


2. Click **Next**. The End-User License Agreement window opens.
3. After reading and accepting the license agreement, click **Next**. The Destination Folder window opens.  
The default location for the HPCA agents is `<InstallDir>\Agent`.  
If you want to select a different destination for the HPCA agent, click **Browse** and navigate to the appropriate destination folder. This overrides the value set for `INSTALLDIR` in `Install.ini`.
4. Click **OK** to continue.
5. Click **Next**. The Set User window opens.
6. In the User Name text box, type the name of the subscriber for whom you are installing the HPCA agents. This overrides the value set for `IDENTIFICATION` in `Install.ini`.
7. Select **Create HPCA Application Self-Service Manager icon on the desktop** check box.
8. Click **Next**. The Configuration Server window opens.
9. In the IP Address or Hostname text box, type the IP address or hostname of the Configuration server. This overrides the value set for `RESOLUTIONMANAGER` in `Install.ini`.
10. In the Port text box, type the port number of the Configuration server. This overrides the value set for `RESOLUTIONPORT` in `Install.ini`.
11. Click **Next**. The Select Features window opens.
12. Click  to select the sub-features that you want to install. Each time you click , a shortcut menu for that sub-feature opens.

**Note:** Install only the HPCA agent sub-features for which you are licensed.

13. From the shortcut menu, select an installation option. These options are described in the following table.

**HPCA Agent Sub-Feature Selection**

Option	Description
Will be installed on local hard drive	Installs the selected sub-feature only.
Entire feature will be installed on local hard drive	Installs the entire feature, including all sub-features.  <div style="background-color: #f0f0f0; padding: 5px;"> <p><b>Note:</b> To install all HPCA agent sub-features, select <b>HPCA Agent</b> at the top of the Select Features window.</p> </div> Selecting the option "Entire feature will be installed on local hard drive" or the "Will be installed on local hard drive" option for the HPCA Application Self-Service Manager, HPCA Application Manager, or HPCA Inventory Manager results in the same installation.
Entire feature will be unavailable	The sub-feature will not be installed. If previously installed, this sub-feature will be removed.

**Note:** If you want to set the same options for all of the sub-features, you can click  HPCA Agent and select the appropriate option. Click **Disk Cost** to see an overview of the disk space required for the installation.

14. Click **Next**.  
 If .NET is not installed on the target computer and you select the option to install the HPCA Application Self-Service Manager, .NET is installed during the HPCA agent installation. However, if you copied the installation program to your computer and did not include the \dotnet folder, the DotNet Settings message opens.  
  
 If Microsoft .NET Framework is not installed, Microsoft .NET will be installed message appears. Complete the following steps to install Microsoft .NET Framework:
  - a. Click **Install**. The Microsoft .NET Framework 1.1 Setup window opens.
  - b. After reading and accepting the license agreement, click **Install**. When the installation is complete Microsoft .NET Framework 1.1 is installed message appears.
15. Click **OK**.
16. Click **Install** to begin the installation.
17. Click **Finish** to close the Installation Wizard.

## Installing HPCA Agent on Standalone Device

You can manually install the HPCA agent to manage client devices that are not always connected to the network. For this, a separate installation file is included with the HPCA media.

1. On the target device, insert the HPCA media.
2. Use a command line and navigate to `\Setup-Core\Media\client\default\win32` directory on the media.
3. Type `setup-standard.cmd host`, where *host* is the host name or IP address of your HPCA Core server.
4. Press **Enter**.

The HPCA agent is installed and the device is ready to be managed by HPCA.

## Installing HPCA Agent Using Command Line

Before performing an installation from command line, determine:

- Which HPCA agents you want to install. For more information, see the table [HPCA Agent Sub-Feature Command-Line Mnemonics](#).
- How the user can access the HPCA agent installation program. The user can access the HPCA agent installation program using a web page, an FTP site, a mapped drive, a CD-ROM, or an e-mail.

Navigate to the directory that contains HPCA Agent installation files. Open the command prompt and type the following command:

```
SETUP.EXE Sub-FeatureStateArgument=Sub-Feature1, Sub-Feature2, Sub-FeatureN [AdditionalParameter]
```

where,

*Sub-FeatureStateArgument* is one of the arguments listed in the table [HPCA Agent Sub-Feature State Arguments](#).

*Sub-Feature1, Sub-Feature2, Sub-FeatureN* can be any of the arguments listed in the table [HPCA Agent Sub-Feature Command-Line Mnemonics](#).

*[AdditionalParameter]* can be any of the arguments listed in the table [Command Line Arguments](#).

### Examples

- The following is an example of a command line that silently installs the HPCA Application Self-Service Manager and creates a detailed Windows Installer log.  

```
SETUP.EXE ADDLOCAL=NVDINSTALLRSM /qn /L*v C:\Hewlett-Packard\HPCA\Agent\install.log
```
- The following is an example of a command line that installs the HPCA Application Manager and HPCA Application Self-Service Manager.  

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

### HPCA Agent Sub-Feature State Arguments

Argument	Action
ADDLOCAL	Type a comma-delimited list of sub-features that you want to set as “Will be installed on local hard drive.”
REMOVE	Type a comma-delimited list of sub-features that you want to set as “Entire feature will be unavailable.”  This removes the sub-features only, not the entire product. Therefore, if you use the REMOVE property and type each of the sub-feature names, only the sub-features are removed. The HPCA agent product is still stored on the computer.  To remove the HPCA agent product, type REMOVE=ALL.

### HPCA Agent Sub-Feature Command-Line Mnemonics

Sub-Feature	Mnemonic
Application Manager	NVDINSTALLRAM
Application Self-Service Manager	NVDINSTALLRSM
Inventory Manager	NVDINSTALLRIM
Local AIP Extension	NVDINSTALLRLAE
OS Manager	NVDINSTALLROM
Patch Manager	NVDINSTALLPATCH
Personality Backup and Restore Utility	NVDINSTALLPBR
PlusHP	NVDINSTALLPLUSHP

### Command Line Arguments

Argument	Action
/qn	Performs a silent installation.
/qb	Displays the progress bar during the installation.
/L*v SystemDrive:\install.log	Creates a detailed Windows Installer log.  <b>Note:</b> Using this option may affect the performance of the installation.
/a TARGETDIR=SystemDrive:\ <i>targetdirectory</i>	Creates a Windows Installer AIP in the specified target directory.
NVDINIFILE= <i>path\INIfilename</i>	To rename the installation INI file, pass this parameter to the command line. Make sure that you include the fully qualified path.

Argument	Action
	By default, the installation program refers to <code>Install.ini</code> , which is located in the <code>&lt;InstallDir&gt;\Media</code> directory and contains <code>setup.exe</code> .
<code>INSTALLDIR=</code>	Specify the installation directory. Use quotation marks if the path contains spaces.

## Installing HPCA Agent using Logon Script

You can use logon script on a Windows computer to automate the HPCA agent installation.

**Note:** To automatically install HPCA agent on a subscriber's Windows computer, subscribers must have administrator rights on their local computers, and a domain controller must authenticate each subscriber's logon.

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

### Sample Logon Script

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

To determine if the HPCA agent already exists, the script checks for the ZMASTER object (ZMASTER.EDM) in its default location on the computer. If ZMASTER:

- Exists, the script skips the installation.
- Does not exist, the HPCA agent installation program launches.

**Note:** The ZMASTER object begins the resolution process. The ZMASTER object is the first object that is exchanged during the HPCA agent connect.

In the sample logon script, the command, `start setup.exe /qn` instructs the program to perform a silent installation of the HPCA agents.

## Installing HPCA Agent in Lockdown Mode

Lockdown Mode is supported on Windows operating system only.

To install the HPCA agent in Lockdown Mode, complete the following tasks:

1. Add the Lockdown properties to the [Properties] section of the `Install.ini` file.
2. Add the [SecurityFolders] section in the `Install.ini` file. This is an optional step. You can add [Security Folders] section if you want to modify or override the default directories.
3. Set the ACL permissions.

## Adding Lockdown Properties

To install the HPCA agent in Lockdown Mode, add the following Lockdown properties to the [Properties] section of `Install.ini` file:

```
LOCKDOWN=Y
```

```
LOCKDOWNSCRIPT=<Customized script>
```

*Customized script* is the script you create using the sample `setaccls.bat` file.

### Lockdown Properties

Properties	Description
LOCKDOWN	Specify <code>Y</code> to install the HPCA agent in Lockdown Mode. Specify <code>N</code> , to disable the Lockdown Mode. This is the default option.
LOCKDOWNSCRIPT	The sample <code>setaccls.bat</code> file is used to add directory permissions that isolate USER from SYSTEM content.  You can customize this sample file. Make sure that the customized file is in the same directory as <code>Install.ini</code> and <code>setup.exe</code> .

## Adding [SecurityFolders] Section in Install.ini

Add the [SecurityFolders] section in the `Install.ini` file to control the folder access for the users. These folder settings control the isolation of SYSTEM and USER access, therefore, you must maintain separate USER and SYSTEM access to ensure security.

Add the following lines of code in the `Install.ini` file:

```
[SecurityFolders]
IDMUSRMSI="<InstallDir>\Agent\usermsi"
IDMSHRDATA="<InstallDir>\Agent\shareddata"
IDMPUBLIC="<InstallDir>\Agent\public"
IDMUSR=CSIDL_LOCAL_APPDATA\HPCA\Agent
```

**Note:** If you change the paths for these parameters, make sure that you end the directory path with the name of the directory only; *do not include a closing backslash*. If the directory path is closed with an ending backslash, the `setaccls.bat` run fails and the directories are not



secured. USER-based parameters that are prefixed with `IDMUSR...` create subdirectories in a folder for each user of the managed device.

The HPCA agent installation program does not prompt for the locations of these directories. They should be specified in the `Install.ini` file before running the installation program.

#### [SecurityFolders] Parameters

Parameter	Description
IDMUSRMSI	A directory that contains MSI installations and related MSI content for each USER.
IDMSHRDATA	A directory from which MACHINE and USER share information. Using the default permission settings, the MACHINE context writes SYSTEM objects into this directory and the USER context reads from it to fulfill software update requirements.
IDMPUBLIC	A directory for USER to write files. For example, the System Tray or <code>radtray</code> , writes its configuration file ( <code>uiconfig.xml</code> ) into the <code>IDMPUBLIC</code> folder for others to use.
IDMUSR	A directory for USER objects.

## Setting Access Control Lists (ACLs)

To enable Lockdown Mode, an Administrator must set the required ACL permissions so that certain directories are not accessible by Windows “Standard Users”.

The implementation of security permissions is the responsibility of the HPCA administrator. Sample processing script `setaccls.bat` file can be used to create a customized script to set ACLs that isolate USERS from the SYSTEM and other USERS.

The ACLs should be customized based on the environment. For example, if multiple users are included in an Administrators group on the devices, but you do not want all of these users to have access to the secured folders, you must do one of the following:

- Revise the memberships of the Administrators group to include only the users that are authorized to access the secured folders.
- Remove access for the Administrators group and specify which users can access the secured folders.

The sample `setaccls.bat` file contains statements that you can use to create a new script. If you do not customize the `setaccls.bat` file, ACLs are set using the sample statements provided in the `setaccls.bat` file.

The HPCA agent installer creates temporary environment variables, so that the batch script can access them. These variables are created for the exclusive use by the batch script; they are automatically deleted at the conclusion of the installation process.

- `MSI_NVD_IDMSYS`
- `MSI_NVD_IDMUSRMSI`

- MSI\_NVD\_IDMPUBLIC
- MSI\_NVD\_IDMSHRDATA

The script blocks access to the following services by standard users, who are not authorized to run these service. Only the MACHINE can access these modules.

- Radexecd: This is the HPCA Notify Daemon.
- Radsched: This is the HPCA Scheduler Daemon.
- Radstgms: This is the HPCA MSI Redirector.

The script also blocks access to the following two standalone applications for standard users, who are not authorized to run these applications. Only the MACHINE can access these modules.

- Radtimeq: This is the create method that runs when the application to which the timer is attached is created, updated, verified, or deleted.
- Upgrdmaint: This is the HPCA maintenance module that processes all maintenance activities.

The following table describes the access levels for the new directories, along with the applicable mnemonic from `Nvd.ini` file.

- SYSTEM access is read-write for all these directories.
- USER access values are: read-only (**R**), read-write (**RW**), no access (**N**).

#### New Directory Access Levels

Mnemonic	User Access	Example
IDMSHRDATA	R	C:\PROGRA~1\HEWLET~1\HPCA\Agent\SHAREDATA\
IDMPUBLIC	RW	C:\PROGRA~1\HEWLET~1\HPCA\Agent\PUBLIC\
IDMUSR	RW	CSIDL_LOCAL_APPDATA\HPCA\Agent\
IDMUSRMSI	RW	C:\PROGRA~1\HEWLET~1\HPCA\Agent\USERMSI\
IDMSYS	R	C:\PROGRA~1\HEWLET~1\HPCA\Agent\
IDMLIB	N	C:\PROGRA~1\HEWLET~1\HPCA\Agent\Lib\
IDMLOG	N	C:\PROGRA~1\HEWLET~1\HPCA\Agent\Log\
IDMDATA	N	C:\PROGRA~1\HEWLET~1\HPCA\Agent\Lib\Data\
NONE-CACertificates	R	C:\PROGRA~1\HEWLET~1\HPCA\Agent\CACertificates\
NONE-DEFAULTS	R	C:\PROGRA~1\HEWLET~1\HPCA\Agent\DEFAULTS\
NONE-Language specific folders	R	<ul style="list-style-type: none"> <li>• C:\PROGRA~1\HEWLET~1\HPCA\Agent\de</li> <li>• C:\PROGRA~1\HEWLET~1\HPCA\Agent\es</li> </ul>

Mnemonic	User Access	Example
		<ul style="list-style-type: none"> <li>C:\PROGRA~1\HEWLET~1\HPCA\Agent\fr</li> <li>C:\PROGRA~1\HEWLET~1\HPCA\Agent\it</li> <li>C:\PROGRA~1\HEWLET~1\HPCA\Agent\ja</li> <li>C:\PROGRA~1\HEWLET~1\HPCA\Agent\pt</li> <li>C:\PROGRA~1\HEWLET~1\HPCA\Agent\zh-CHS</li> </ul>
NONE-Architecture based folders	R	<ul style="list-style-type: none"> <li>C:\PROGRA~1\HEWLET~1\HPCA\Agent\amd64</li> <li>C:\PROGRA~1\HEWLET~1\HPCA\Agent\x86</li> </ul>
NONE-Other folders	R	<ul style="list-style-type: none"> <li>C:\PROGRA~1\HEWLET~1\HPCA\Agent\etc</li> <li>C:\PROGRA~1\HEWLET~1\HPCA\Agent\Help</li> </ul>

## Installing HPCA Agent on Linux and Macintosh

**Caution:** Install only the HPCA agents for which you have licenses. If you do not have a license, the agent does not authenticate with the Configuration server.

This section describes both the graphical (using a GUI) and non-graphical (using a command line) installations of the HPCA agent.

### Including Maintenance Files with HPCA Agent Installation

If additional maintenance files are available, for example, service packs or hot fix, you can include these files with your HPCA agent installation by creating a maintenance tar file.

Within your HPCA agent installation media `/ram` directory, create a `maint.tar` file that includes all updated files. The HPCA agent installation checks for `maint.tar` and if found, the client installation extracts all updated files into the `IDMSYS` directory.

## Hardware and Software Requirements

The following are the system requirements for installing HPCA agent on Linux and Macintosh:

- TCP/IP connection to a computer running Core server.
- HPCA agent requires 1 GB free disk space.

### Platform Support

For the operating system requirements, see the *HP Client Automation Support Matrix* available at the URL: [http://h20230.www2.hp.com/sc/support\\_matrices.jsp](http://h20230.www2.hp.com/sc/support_matrices.jsp).

You must have an HP passport ID to access this web site.

The *HP Client Automation Support Matrix* is also located on the distribution media for this product in the `\Documentation` directory.

## Installation Prerequisites

The following prerequisites should be met to install HPCA Agent on Linux or Macintosh operating system:

- HPCA agents communicate with HPCA Core and Satellite servers using ports listed in the "[Agent Communication Ports](#)" on page 72 section. These ports should be enabled on the agent computer.
- HP recommends that you install HPCA agents as root (or with a Mac OS X user ID capable of issuing sudo commands). Root authority is required to apply owner and group designators to managed resources.
- Install the HPCA agent on a local file system.
- The installation program *must* be run from within Linux or Mac OS X. HP recommends that you do not perform other tasks and operations during the installation process.
- If you intend to run any graphical components of the agent software on a Linux operating system, make sure the Linux environment variable DISPLAY is set in your environment. If it is not, you should set this variable to indicate the host name or IP address to which you want to redirect the graphical display.  
To set the variable DISPLAY:

- In C shell, type `setenv DISPLAY <IP address or hostname>:0.0`
- In Bourne, Bash, or Korn shell,
  - i. Type `DISPLAY=<IP address or hostname>:0.0` and press **Enter**.
  - ii. Type `export DISPLAY`

**Caution:** If the agent is already installed in the current working directory, make sure you back up your existing agent installation files before beginning installation. If you choose to overwrite your existing HPCA agent, all your customized data is lost.

You *must* set the standard Linux environment variables after installing the agent. These environment variables should include the fully qualified path of the installed client exe files, the path to the operating system-specific Motif libraries, and the standard Linux operating system paths for operating system exe files and shared libraries. HP recommends that you include these as part of the logon scripts of the Linux user ID who installs and maintains the agents.

### Linux Environment Variable Example

```
LD_LIBRARY_PATH=/lib:/usr/lib:$IDMSYS:$LD_LIBRARY_PATH
```

where, `$IDMSYS` represents the fully-qualified path to the agent executables, often referred to as the `IDMSYS` location. Motif represents the fully-qualified path to the Motif libraries installed with the operating system.

**Note:** The Motif libraries are required to run HPCA agent or HPCA Administrator graphical tools such as HPCA Administrator Publisher, Administrator Agent Explorer, and the presentation of the agent logon panel.

After the agent is installed, the file `.nvdr` is placed in the `HOME` directory of the Linux user ID who performed the installation. This file enables you to set the required environment variables. HP recommends that you add a line to the appropriate logon scripts to invoke this shell script:

```
. $HOME/.nvdr
```

After you perform an installation, make sure the HPCA Application Manager is successfully connected to the Configuration server. You can verify the connection if the message 'CONNECTED TO THE CONFIGURATION SERVER' appears in the `connect.log` file located in the `\Agent\Log` folder on the client device.

## Prerequisites for running HPCA on 64-bit Red Hat Enterprise Linux

The following library files are required to run the HPCA agent on 64-bit Red Hat Enterprise Linux x86:

- `glibc`
- `libXau`
- `libXdmcp`
- `libX11`
- `zlib`

Install these library files using the appropriate package for your operating system. For example,

- For 64-bit Red Hat Enterprise Linux 5, the library files can be installed using the following packages:
  - `glibc-2.5-12.i686.rpm`
  - `libXau-1.0.1-3.1.i386.rpm`
  - `libXdmcp-1.0.1-2.1.i386.rpm`
  - `libX11-1.0.3-8.el5.i386.rpm`
  - `zlib-1.2.3-3.i386.rpm`
- For 64-bit Red Hat Enterprise Linux 6, the library files can be installed using the following packages:
  - `glibc-2.12-1.7.el6.i686.rpm`
  - `libX11-1.3-2.el6.i686.rpm`
  - `nss-softokn-freebl-3.12.7-1.1.el6.i686.rpm`
  - `zlib-1.2.3-25.el6.i686.rpm`

You must also install the dependent packages for the listed `rpm` files.

## Graphical Installation

This section describes how to install the agents both on a local and on a remote computer using a graphical user interface (GUI).

## Local Installation

This section describes how to install the agents on a local computer using a GUI.

1. Open the command prompt and change your current working directory to the agent subdirectory on the installation media.  
Agent subdirectory for Linux: `/Setup-Core/Media/client/default/linux`  
Agent subdirectory for Mac: `/Setup-Core/Media/client/default/macx86`
2. Type `./install`, (for Mac OS X, type `sudo ./install`) and press **Enter**. The Welcome window opens.  
You can also install the HPCA agent in the graphical mode with no animations. Type `./install -mode plain`, (for Mac OS X, type `sudo ./install -mode plain`). This is useful for remote installations when network bandwidth is low.
3. Click **Next**. The End User License Agreement window opens.
4. Read the agreement and click **Accept** to continue. The Select Components to Install window opens.
5. Select the check boxes for the agents you want to install.
6. Click **Next**. The Daemons window opens.
7. *For Linux Users:* Specify when you want the daemons to start. The daemons run on the client computer and perform HPCA management tasks. For more information, see "[HPCA Daemons](#)" on page 100.
  - Select **Start after installation** to start the daemons after the HPCA Agent installation is complete.
  - Select **Automatic start after reboot via init scripts** to configure the daemons to start automatically each time the device is restarted.
8. *For Linux Users:* Click **Next**. The WBEM Server (OpenPegasus) Libraries window opens.
9. *For Linux Users:* Select **Create Links to libraries** to create a link to existing WBEM server libraries. Type the location in the Library Search Path (s) text box. You can create links after the HPCA Agent is installed.
10. *For 64-bit Linux Users:* the CIM login dialog box opens.  
Enter the credentials for the CIM server in the Username and Password fields. CIM is a common information model for describing management properties that is not bound to a particular implementation. For more information on CIM, refer the CIMSERVER documentation on Linux.
11. Click **Next**. The Select Installation Type window opens.
12. Select **Local Install** to install the agent on a local computer.
13. Click **Next**. The Agent Location window opens.
14. Type the name of the directory where you want to install the agent, or click **Browse** to navigate to it.
15. Click **Next**.  
If the specified directory already exists, you will be prompted to verify this location.

- a. If you want to update the existing directory, click **OK**.
- b. If you want to specify a different location, click **Cancel**.

The Lib Directory window opens.

16. Type the name of the directory where you want to store proprietary information created by HPCA (the lib directory), or click **Browse** to navigate to it.
17. Click **Next**. The Log Directory window opens.
18. Type the name of the directory where you want to store the log files generated by HPCA, or click **Browse** to navigate to it.
19. Click **Next**. The Configuration Server IP Address window opens.
20. Type the IP address (format: xxx . xxx . xxx . xxx) of the Configuration server to which the agent should connect. Specify a valid IP address or hostname recognized by the agent workstation.
21. Click **Next**. The Configuration Server Port Number window opens.
22. Type the Configuration server's port number (default is **3464**).
23. Click **Next**. The Package Settings window opens.
24. Review the settings displayed in the Package Settings window. If you want to change any of the settings, click **Back** until you get to the appropriate window.
25. Click **Install** to install the agent with these settings.
26. After the installation is complete, click **Finish** to exit the program.

The HPCA Agent is installed successfully. The default installation location for the HPCA agent on Linux is `/opt/HP/CM/Agent`. The default installation location for the HPCA agent on Mac OS X is `/Applications/HP/CM/Agent`.

## Remote Installation

This section describes how to create an agent installation configuration file that can be used to install the HPCA agent in silent mode or to a remote computer.

Your HPCA system administrator can perform a Remote Installation Setup process that creates a remote installation package. This process stores the installation media in a selected directory path and a configuration file is saved in a directory you specify. You can use the installation media and configuration file to install the HPCA agent in silent mode or to a remote computer. Subsequent agent installations can be initiated from any number of intended agent workstations provided they can access the directory path selected during the Remote Installation Setup process.

The remote installation is identical to the local install with the exception of two additional steps required for creating the remote installation package. Follow the steps for a local installation as described in the previous section, and when prompted in step 12, select **Remote Install**, and then type the following information for creating the remote installation package:

1. In the Package Location text box, type the fully qualified path to a directory where you want to store the agent installation media for future client installations, or click **Browse** to navigate to it.
2. Click **Next**. The Package Configuration Name window opens.

3. In the Package Configuration Name text box, type the fully qualified path to a configuration file that you want to use for silent installations, or click **Browse** to navigate to it. The configuration file you specify contains the installation information you chose during the Remote Installation Setup.

4. After the remote installation package is created, you can install HPCA agent using the following syntax:

```
./install -cfg <install.cfg>
```

where *<install.cfg>* is the name of the configuration file that was created during Remote Installation Setup Process. The configuration file is used during the installation. For more information, see ["Customizing the Installation Configuration File" below](#).

## Silent Installation

The following prerequisites must be met before you start the silent installation process:

- Create a package using the Remote Installation Setup installation method.
- The workstation running the silent installation must have access to the directory path where the installation media is stored.

Use the following syntax to install HPCA agent in silent mode:

```
./install -mode silent -cfg <install.cfg>
```

This installs the agent in silent mode based on the parameters set in the configuration file. For information about configuration files, see ["Customizing the Installation Configuration File" below](#).

## Customizing the Installation Configuration File

Performing an installation from a customized configuration file provides the following benefits:

1. Replication of precise installation details on multiple clients.
2. Ability to use a pre-installation method that runs any script or executable before the agent installation.
3. Ability to use a post-installation method, which runs any script or executable after the agent is installed.
4. You can configure the installation to force a client connection to the Configuration server immediately after the installation.
5. You can pre-configure the IP address and port number of the Configuration server to which the agent connects.
6. Ability to use an object update text file that can be used to update objects after the installation.

A configuration file provides the default responses for silent agent installations.

The variables available in the configuration file are described in the following table.



**Configuration File Variables**

Variable	Sample Value	Description
REMOTE	0	0 designates a local installation. 1 designates a Remote Installation Setup.
INSTDIR	For Linux: /opt/HP/CM/Agent  For Macintosh: /Applications/HP/CM/Agent	The default installation directory.
IDMLOG	For Linux: /opt/HP/CM/Agent/log  For Macintosh: /Applications/HP/CM/Agent/log	This can be defined to designate a directory for IDMLOG other than the default INSTDIR/log.
IDMLIB	For Linux: /opt/HP/CM/Agent/lib  For Macintosh: /Applications/HP/CM/Agent/lib	This can be defined to designate a directory or IDMLIB other than the default INSTDIR/lib.
PREPROC		The fully qualified name of a script or executable to be run before installation.
PREPARAM		Parameters that are required by the pre-installation method specified in the variable PREPROC.
POSTPROC		The fully qualified name of a script or executable to be run post-installation.
POSTPARAM		Parameters required by the post-installation method specified in the variable POSTPROC.
MGRIP	xxx . xxx . xxx . xxx	The default IP address for connection to the Configuration server.
MGRPORT	3464	The default port number for connection to the Configuration server.
NTFYPORT	3465	The default Notify port.
CONNECT	Y	Connects to the Configuration server immediately after the

Variable	Sample Value	Description
		installation. Default value is N. Set to Y if you want the agent to connect to the Configuration server automatically after the installation.
OBJECTS	<pre>./object.txt</pre> <p>The following is an example of a valid object file:</p> <pre>ZMASTER ZTRACEL 000</pre>	<p>The file used to create or update HPCA attributes after the installation. This file enables you to specify the fully qualified path to a filename that contains data in the form:</p> <pre>OBJECT_NAME VARIABLE_NAME VARIABLE_VALUE</pre> <p>When creating an object text file:</p> <ul style="list-style-type: none"> <li>• A pound sign (#) at the beginning of a line indicates a comment.</li> <li>• A pound sign (#) at any other part of a line is considered data.</li> <li>• The VARIABLE_VALUE text should not be enclosed by any special characters.</li> </ul>
DUAL	1	<p>0 designates Application Manager only selected.</p> <p>1 designates more than one component selected.</p>
SelectComponent	<p>0</p> <p>Example, <code>SelectComponent RAM 1.</code></p>	<p>0 signifies that the specified component is not installed or upgraded.</p> <p>1 signifies that the specified component is installed or upgraded.</p>

## Using Customized Scripts

You can create and run custom executables or shell scripts before or after the silent installation of an agent. For example, your post-installation script can initiate a connection to the Configuration server to process mandatory applications. The following example is part of a shell script that initiates the connection to the Configuration server and processes mandatory applications.

```
#!/bin/sh
#
```

```
cd /opt/HP/CM/Agent

# ZIPADDR is the IP address or hostname of the manager
ZIPADDR="xxx.xxx.xxx.xxx"
# ZDSTSOCK is the TCP port the manager is running on ZDSTSOCK="3464"

# To manage the machine
# 1. .edmprof must exist in root's home directory
# 2. The connect must be run as root

/opt/HP/CM/Agent/radskman mname=NVDM, dname=SOFTWARE, ip=$ZIPADDR,
port=$ZDSTSOCK, cat=prompt, ind=y, uid=$MACHINE, startdir=SYSTEM, ulogon=n
```

## Non Graphical Installation

The following instructions guide you through the local non-graphical installation of the agent:

1. Open the command prompt and change the current working directory to the agent subdirectory on the installation media.

Example:

Agent subdirectory for Linux: `/Setup-Core/Media/client/default/linux`

Agent subdirectory for Mac OS: `/Setup-Core/Media/client/default/macx86`

2. Type `./install -mode text` (for Mac OS X, type `sudo ./install -mode text`) and press **Enter**.
3. Type `C` and press **Enter** to view the License Agreement.
4. Read the license agreement, type `Accept` and press **Enter**.
5. In the next few steps, select which agents to install. Type `Y` or `N` and press **Enter** at each prompt.
  - Client Automation Enterprise Application Manager
  - Client Automation Enterprise Inventory Manager
  - Client Automation Enterprise Application Self-Service Manager
  - Client Automation Enterprise OS Manager
  - Client Automation Enterprise Patch Manager
  - Client Automation Enterprise Application Management Profiles Agent
6. *For Linux Users:* You are prompted to start the Daemons after installation. Press **Enter** to accept the default (`Y`) and start the Daemons after install or type `N` and press **Enter** to start them later.
7. *For Linux Users:* You are prompted to automatically start the Daemons after a restart using `init` scripts. Press **Enter** to accept the default (`N`) and *not* start the Daemons each time the device is restarted or type `Y` and press **Enter** to enable Daemons to automatically start when the device is restarted.

8. *For Linux Users:* You are prompted to create links to WBEM Server (OpenPegasus) Libraries. Press **Enter** to accept the default (Y) and create links to WBEM libraries or type N and press **Enter** if you do not want to create links to WBEM libraries.
9. *For Linux Users:* Select the type of installation. The default is 1, a local installation.
  - Type 1, and press **Enter** to install the agent locally.  
or
  - Type 2, and press **Enter** to set up remote installation media.
10. Specify the installation location for the agent, and press **Enter**.
11. Specify the location for the HPCA proprietary objects (`IDMLIB`), and press **Enter**.
12. Specify the location for the log files created by HPCA (`IDMLOG`), and press **Enter**.
13. Specify the IP address of the Configuration server, and press **Enter**.
14. Specify the port number for the Configuration server, and press **Enter**.
15. Review the installation settings.
16. If you want to install the agent with these parameters, press **Enter** to accept the default answer, **Y**.  
If you want to change any of these settings, type N to re-enter the installation information.
17. Press **Enter** to install the agent.

## HPCA Daemons

The agent installation program installs the following daemon executables:

- **Notify** (default port **3465**)  
Use Notify, **radexecd** to push updates to subscribers or to remove applications. A Notify message is sent from the Configuration server to this daemon. When the daemon receives the Notify message, HPCA Application Manager connects to the Configuration server and performs the action initiated by the Notify operation.
- **Scheduler**  
Use the Scheduler service, **radsched** to schedule timer-based deployments of applications.

The installation of **radexecd** and **radsched** as services on a Linux workstation is not automated within the context of the installation. The starting of services on Linux workstations depends on the operating system. For information about installing HPCA daemons as system services at boot time, contact your Linux system administrator or refer to your Linux operating system's manual.

The installation of **radexecd** and **radsched** as services under Mac OS X installs sample startup scripts under Mac OS X POSIX style path `/Library/StartupItems/Radexecd` and `/Library/StartupItems/Radsched`.

### Sample Shell Scripts

The installation of the agent includes a subdirectory named `sample`. It contains a sample shell script named `daemons.sh` that can be used to start, stop, and restart the **radexecd** and **radsched** daemons.

- To start the **radexecd** and **radsched** daemons, type `daemons.sh start`.
- To stop the **radexecd** and **radsched** daemons, type `daemons.sh stop`.

- To stop, and then restart the **radexec** and **radsched** daemons, type `daemons.sh restart`.

## Installing HPCA Agent on HP Thin Client Devices

You can deploy the HPCA agent to HP thin client devices with the HP Registration and Loading Facility (RALF) installed and registered with the HPCA infrastructure.

### HPCA Registration and Loading Facility

The HPCA Registration and Loading Facility (RALF) is an agent component that is available for thin client devices and is managed by HPCA infrastructure. RALF automatically registers the device with the HPCA infrastructure, and manages the HPCA agent installation initiated from the main console. Although RALF is part of the HPCA agent for some devices, it may be pre-installed on the HP thin client factory images so registration can occur on startup. If it is not on the factory image being used, RALF can be installed and configured on the gold image that is used for subsequent OS deployments.

### RALF Configuration and Operation

Depending on the HP thin client image, RALF may be pre-installed. In this case, it is configured using a default HPCA server hostname defined as "hpcaserver." For RALF installations, "hpcaserver" or the host name defined using the RALF installation parameters *must* be included in DNS. The host name of the HPCA server must also be included in DNS when the HPCA agent is installed from the HPCA Console. RALF can also be reconfigured to define a different hostname using the command line options that are described in this section. However, if you are installing the HPCA agent manually, you can use the files that are provided on the HPCA media to install RALF (if it is not present) before the HPCA agent installation.

After it has been installed, RALF runs as a daemon that periodically probes for the HPCA server. This probing continues for 24 hours, and then RALF shuts down. It starts this 24-hour probe again on reboot. After the server is contacted, RALF registers the device with the HPCA infrastructure and waits to accept the request to install the HPCA agent. After the agent is installed, RALF periodically contacts the server and verifies device registration attributes.

You can use additional command line parameters when configuring RALF as described in "[RALF Command Line Parameters](#)" on page 103. These parameters are applicable to the Windows and Linux based thin client devices.

## Installing HPCA Agent on Windows Thin Client Devices

The following prerequisites must be met before you install the HPCA agent on the Windows thin client devices:

- Install RALF before you install or deploy HPCA agent. If RALF is not present, install RALF on thin client devices as described in the section, "[Installing RALF](#)" on page 103.
- Minimum 7 MB free space.
- Enable port 3466 on HPCA agent in the HPCA environment to communicate with Core and Satellite servers.

## Installing HPCA Agent using Wizard

To install the HPCA Agent on Windows XPE and Windows Embedded Standard (WES):

1. Access the HPCA media from the Windows XPE thin client device.
2. Navigate to `\Setup-Core\Media\client\default\win32xpe`.
3. Run **setup.exe**.
4. Follow the installation steps.  
When prompted for the IP address and port number, specify the Core server details.
5. Reboot the device when the HPCA agent installation is complete.

To install the HPCA Agent on Windows CE:

1. Open the HPCA media from the Windows CE thin client device, and navigate to `\Setup-Core\Media\client\default\win32ce` directory.
2. Double-click **Standard.X86.CAB**.
3. Specify the hostname or IP address and Port number of the Configuration server.
4. Click **OK**.
5. Reboot the device when the HPCA agent installation is complete.

## Installing HPCA Agent in Silent Mode

**To install the HPCA agent on Windows XPE and WES in silent mode:**

Navigate to `\Setup-Core\Media\client\default\win32xpe` directory and open the command prompt. Type the following command:

```
Setup.exe NVDOBJZMASTER_ZIPADDR=<server_ip> NVDOBJZMASTER_ZDSTSOCK=<server_port> /qn
```

where, `<server_ip>` is the IP address of your Core server and `<server_port>` is the port number of your Core server.

The following optional logging parameter can be added:

```
/l*v <logfile>
```

where `<logfile>` is the complete path where Windows Installer log file is created.

**To install the HPCA agent on Windows CE 6.0 in silent mode:**

Navigate to `\Setup-Core\Media\client\default\win32ce` directory and open the command prompt. Type the following command:

```
Setup.exe NVDOBJZMASTER_ZIPADDR=<server_ip> NVDOBJZMASTER_ZDSTSOCK=<server_port> /qn
```

where, `<server_ip>` is the IP address of your Core server and `<server_port>` is the port number of your Core server.

## Installing RALF

To install RALF on Windows XPE and WES:

1. On the HPCA media, navigate to `\Setup-Core\Media\client\default\win32xpe\HPCARALF` directory.
2. Double-click `HPCARalf.msi` file to install RALF on Windows XPE devices.

To install RALF on Windows CE 6.0:

1. On the HPCA media, navigate to `\Setup-Core\Media\client\default\win32ce\HPCARALF` directory.
2. Double-click `ralf.X86.cab` file to install RALF on Windows CE devices.
3. Specify the IP address and port number (**hpcaserver** and **3466**, by default) of the Configuration server.

## Installing RALF in Silent Mode

**To install RALF on Windows XPE and Windows Embedded Standard (WES):**

Navigate to `\Setup-Core\Media\client\default\win32xpe\HPCARALF` directory and open the command prompt. Type the following command:

```
msiexec /i HPCARalf.msi RALF_HOST=<HOSTNAME> RALF_PORT=<portnumber> /qn
```

where `<HOSTNAME>` is the hostname of your Configuration server and `<portnumber>` is the port number of the Configuration server.

**To install RALF on Windows CE 6.0:**

Navigate to `\Setup-Core\Media\client\default\win32ce\HPCARALF` directory and open the command prompt. Type the following command:

```
msiexec /i HPCARalf.msi RALF_HOST=<HOSTNAME> RALF_PORT=<portnumber> /qn
```

where `<HOSTNAME>` is the hostname of your Configuration server and `<portnumber>` is the port number of the Configuration server.

## RALF Command Line Parameters

RALF supports the following command line options.

**Note:** These command line parameters are provided here for documentation purposes, as most are used internally.

**RALF Command Line Options**

Option	Description
probe	Triggers the HPCA server probe.
host <host>	Specifies optional HPCA server host for probing and registration.
port <port>	Specifies optional HPCA server port for probing and registration.
debug	Specifies debugging logging level.
trace	Specifies tracing logging level.
silent	Enables silent mode during -get, -instagent, and -uninstagent processes.
version	Displays version of <code>ralf.exe</code> .
reginit	Defines RALF application configuration file entries for test environments.
md5 <file>	Calculates the MD5 checksum of a file.
get <file>	Downloads a file or media from the HPCA server directory.
instagent <media>	Downloads and installs HPCA agent.
uninstagent	Uninstalls HPCA agent.
install	Installs HPCA-RALF service.
uninstall	Uninstalls HPCA-RALF service.
help	Displays RALF information.

## Installing HPCA Agent on a Linux Thin Client Devices

The following prerequisites must be met before you install the HPCA agent on the Linux thin client devices:

- Install RALF before you install or deploy HPCA agent. If RALF is not present, install RALF on thin client devices as described in the section, "[Installing RALF on Linux \(Debian or ThinPro\)](#)" on [next page](#)
- Minimum 7 MB free space on the `/opt` file system.
- Enable port 3461 on Linux clients to use `radsched` successfully.
- The BIOS must contain a valid serial number and device UUID to manage thin client devices. HP recommends that you set the asset tag .



## Installing HPCA Agent on Linux based Thin Client Devices

To install HPCA Agent on HP Thin Client Devices:

1. Login to the target HP thin client device as root. If you are using the ThinPro operating system, create a custom connection for xterm as follows:
  - a. From the HP menu in the lower left corner, select **Shutdown**.
  - b. From the **Thin Client Action** drop down, select **switch to admin mode** and specify the Administrator password (default password is **root**).

**Note:** Control Center background changes from blue to red.

- c. From the Control Center, click **Add** from the list and select the custom option.
- d. Set Name to `xterm`.
- e. Set Command to run to: `sudo xterm -e bash &`.
- f. Click **Finish**.

You now have a connection you can use to open an xterm session.

2. Create a new directory `/opt/hpca`.
3. Copy the install media from the appropriate Linux thin client sub-directory on the HPCA media to a temporary directory such as `/tmp`.
4. Change the working directory to the new temporary directory and run the installation by typing:  

```
./install -i HPCAS_Server
```

where `HPCAS_Server` is the hostname or IP address of the HPCA Configuration server.
5. Restart the device when the agent installation is complete.

## Installing RALF on Linux (Debian or ThinPro)

To install RALF on Linux (Debian or ThinPro):

**Note:** You must have root authority to install RALF to Linux devices.

1. On the HPCA Media, navigate to `Setup-Core/Media/client/default/linuxtc/hpcaralf` directory.
2. Copy the install media to `/tmp` on the Linux device.
3. Change the current directory to the `/tmp` directory.
4. On Debian devices, run `dpkg -i hpcaralf.deb`
5. On Thinpro devices (with read only root file system):
  - a. Run `fsunlock` (to mount the file system as read-write).
  - b. Run `/usr/share/hpkg/.hpkg_util -i hpcaralf.deb`

- c. Run `fslock` (to remount the file system as read-only).
6. After the installation is complete, either restart the device or run `/etc/init.d/hpcaralf` to start and initialize RALF.

You can use the script `/etc/init.d/hpcaralf` to start and stop the RALF daemon on the device.

## Chapter 8

---

# Uninstalling HPCA

This chapter details how to uninstall, repair, or modify various components in the HPCA infrastructure.

Do not use the Windows Control Panel applet **Add/Remove Programs** to remove HPCA Core or Satellite server. All the HPCA files are not removed using this option. Some files and folders (for example, the directory `C:\Program Files\Hewlett-Packard\HPCA` and any files that were added or changed since the initial installation) remain on the server and should be manually removed.

## Uninstalling HPCA Core Server

Use the HPCA installation program to uninstall HPCA Core server.

To uninstall HPCA Core server:

1. Log on as a user with Administrative privileges on the HPCA Core server.
2. Navigate to the `Setup-core` directory.
3. Double-click **HPCACore.msi**. The HP Client Automation Core window opens.
4. Select **Remove the HP Client Automation Core from this computer** and click **Next**.
5. At the Removal Confirmation message, click **Next**.
6. After HPCA Core server is removed, click **Finish**.

## Repairing HPCA Core

The Windows Installer installation program provides the ability to repair the HPCA Core server. You can use this option to repair the HPCA Core files, registry values, and shortcuts on HPCA Core server.

**Note:** Using this option might override the customizations to the registry.

To repair HPCA Core server using the HPCA installation program:

1. Log on as a user with Administrative privileges on the HPCA Core server.
2. Navigate to the `Setup-core` directory.
3. Double-click **HPCACore.msi**. The HP Client Automation Core window opens.
4. Select **Repair the HP Client Automation Core files, registry values, and shortcuts on this computer** and click **Next**.
5. At the Repair Confirmation message, click **Next**.
6. After HPCA Core server is repaired, click **Finish**.

## Uninstalling HPCA Satellite Server

You can use the HPCA installation program to uninstall HPCA Satellite server.

To uninstall HPCA Satellite:

1. Log on as a user with Administrative privileges on the HPCA Satellite server.
2. Navigate to the `Setup-satellite` directory.
3. Double-click **HPCASatellite.msi**. The HP Client Automation Satellite window opens.
4. Select **Remove the HP Client Automation Satellite from this computer** and click **Next**.
5. At the Removal Confirmation message, click **Next**.
6. After HPCA Satellite server is removed, click **Finish**.

## Repairing HPCA Satellite Server

The Windows Installer installation program provides the ability to repair your HPCA Satellite server. You can use this option to repair the HPCA Satellite files, registry values, and shortcuts on HPCA Core server.

**Note:** Using this option might override the customizations to the registry.

To repair HPCA Satellite server using the HPCA installation program:

1. Log on as a user with Administrative privileges on the HPCA Satellite server.
2. Navigate to the `Setup-satellite` directory.
3. Double-click **HPCASatellite.msi**. The HP Client Automation Satellite window opens.
4. Select **Repair the HP Client Automation Satellite files, registry values, and shortcuts on this computer** and click **Next**.
5. At the Repair Confirmation message, click **Next**.
6. After HPCA Satellite server is repaired, click **Finish**.

## Uninstalling HPCA Administrator Tools

This section describes how to uninstall HPCA Administrator tools for Windows, Linux, and Macintosh operating systems. The section also provides information on how to uninstall Batch Publisher for Windows and Linux operating systems.

### Uninstalling HPCA Administrator Tools on Windows

The Windows Installer installation program provides the ability to uninstall HPCA Administrator tools. This section describes how to uninstall the HPCA Administrator tools using the Installation

Wizard and using command line.

To use the Installation Wizard to uninstall the Administrator tools:

1. Navigate to the `<InstallDir>\setup-core\media\admin\default\win32` folder and double-click **setup.exe**. The HP Client Automation Administrator Application Maintenance window opens.
2. Select **Remove**.
3. Click **Next**.
4. Click **Remove**.
5. Click **Finish**.

To use a command line to uninstall the Administrator tools:

Navigate to the `\Setup-Core\Media\admin\default\win32` directory and type the following command:

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

where *FeatureStateArgument* is one of the arguments listed in the table [HPCA Administrator Tools Feature State Arguments](#) and *Feature1, Feature2* can be any of the arguments listed in the table [HPCA Administrator Tools Features Arguments](#).

For example, type the following command to remove HPCA Administrator CSDB Editor and HPCA Administrator Agent Explorer silently:

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

## Uninstalling HPCA Administrator Tools on Linux and Macintosh

To uninstall the Administrator tools:

1. Navigate to the directory where HPCA Administrator tools is installed.
  - For Linux, the default installation directory is `/opt/HP/CM/Agent`.
  - For Macintosh, the default installation directory is `/Applications/HP/CM/Agent`.
2. Delete the folder `Agent` to uninstall Administrator tools.

## Uninstalling Batch Publisher

To uninstall the Batch Publisher:

1. Navigate to the directory where Batch Publisher is installed.
  - For Windows, the default installation directory is `C:\Program Files\Hewlett-Packard\CM\BatchPublisher`.
  - For Linux, the default installation directory is `/opt/HP/CM/BatchPublisher`.
2. Delete the folder `BatchPublisher` to uninstall Batch Publisher.

## Repairing HPCA Administrator Tools

This section describes how to repair HPCA Administrator tools for Windows, Linux, and Macintosh operating systems. You can use this option to repair the HPCA Administrator tools files, registry values, and shortcuts on HPCA Administrator tools. Using this option might override the customizations to the registry.

### Repairing HPCA Administrator Tools on Windows

The Windows Installer installation program provides the ability to repair HPCA Administrator. This section describes how to repair the HPCA Administrator tools using the Installation Wizard and using command line.

To use the Installation Wizard to repair the Administrator tools on Windows:

1. Navigate to the `<InstallDir>\setup-core\media\admin\default\win32` folder and double-click **setup.exe**. The HP Client Automation Administrator Application Maintenance window opens.
2. Select **Repair**.
3. Click **Next**. The HP Client Automation Administrator Ready to Repair the Application window opens.
4. Click **Install**.
5. Click **Finish**.

To use a command line to repair HPCA Administrator tools on Windows:

Navigate to the `\Setup-Core\Media\admin\default\win32` directory and type the following command line:

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

where *FeatureStateArgument* is one of the arguments in the table [HPCA Administrator Tools Feature State Arguments](#) and *Feature1* and *Feature2* are arguments in the table [HPCA Administrator Tools Features Arguments](#).

For example, type the following command to repair HPCA Administrator packager:

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

## Modifying HPCA Administrator Tools

This section describes how to modify HPCA Administrator tools for Windows, Linux, and Macintosh operating systems. You can use the Modify option to remove specific tools of HPCA Administrator tools. The section also provides information on how to modify Batch Publisher for Windows and Linux operating systems.

## Modifying HPCA Administrator Tools on Windows

The Windows Installer installation program provides the ability to modify HPCA Administrator. This section describes how to modify the HPCA Administrator tools using the Installation Wizard and using command line.

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

To use the Installation Wizard to modify the Administrator tools on Windows:

1. Navigate to the `<InstallDir>\setup-core\media\admin\default\win32` folder and double-click **setup.exe**. The HP Client Automation Administrator Application Maintenance window opens.
2. Select **Modify**.
3. Click **Next**. The HP Client Automation Administrator Select Features window opens.
4. Select the features that you want to modify and click **next**. The HP Client Automation Administrator Ready to Modify window opens.
5. Click **Install**. For information on feature settings, see "[Installing HPCA Administrator Tools Using Wizard](#)" on page 60.
6. Click **Finish**.

To use a command line to modify HPCA Administrator tools on Windows:

Navigate to the `\Setup-Core\Media\admin\default\win32` directory and type the following command line:

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

where, *FeatureStateArgument* is one of the arguments in the table [HPCA Administrator Tools Feature State Arguments](#) and *Feature1* and *Feature2* are arguments in the table [HPCA Administrator Tools Features Arguments](#).

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

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

## Uninstalling HPCA Agents

This section describes how to uninstall HPCA Agent for Windows, Linux, and Macintosh operating systems.

**Note:** In a Lockdown enabled environment, if you apply Access Control List (ACL) settings to the HPCA agent directories, make sure you revert the ACL settings before you perform the remove, repair, or modify operations for an HPCA agent installer.

## Uninstalling HPCA Agent from Windows

The Windows Installer installation program provides the ability to uninstall your HPCA agents. This section describes how to uninstall the HPCA agent using the Installation Wizard and using command line. You can also uninstall HPCA agents by using Core Console. For more information, see the *HP Client Automation Enterprise User Guide*.

To use the Installation Wizard to uninstall the Agent on Windows:

**Note:** To remove sub-features of the HPCA agent, use the Modify option on the Application Maintenance window. For more information, see "[Modifying HPCA Agent Installation](#)" on page 114.

1. Navigate to the `\Setup-Core\Media\client\default\win32` folder and double-click **setup.exe**. The Application Maintenance window opens.
2. Select **Remove**.
3. Click **Next**. The HPCA Agent Uninstall window opens.
4. Click **Remove**. The files for all HPCA agents are removed from the computer. The HPCA agent has been successfully uninstalled window opens.
5. Click **Finish**.

To use a command line to uninstall Agent on Windows:

Navigate to the `\Setup-Core\Media\client\default\win32` directory and type the following command line:

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

For additional arguments, see "[Installing HPCA Agent Using Command Line](#)" on page 85.

or

To remove a single HPCA agent, on the command line type a comma-delimited list of the sub-features that you want to remove.

For example, type the following command to remove HPCA Application Self-Service Manager and HPCA Application Manager silently:

```
SETUP.EXE REMOVE=NVDINSTALLLRSM,NVDINSTALLLRAM /qn
```

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

## Uninstalling HPCA Agent from Linux and Macintosh

To uninstall the HPCA agent:



1. Kill the following services:
  - `radsched`
  - `radexecd`
2. Navigate to the directory where HPCA agent is installed.
  - For Linux, the default installation directory is `/opt/HP/CM/Agent`.
  - For Macintosh, the default installation directory is `/Applications/HP/CM/Agent`.
3. Delete the folder `Agent` to uninstall HPCA agent.

## Uninstalling HPCA Agent on HP Thin Client Devices

This section describes how to uninstall the HPCA agent on Windows and Linux based thin client devices.

To uninstall the Agent from a Windows XPE and WES:

1. From `\Setup-Core\Media\client\default\win32xpe` folder, double-click **setup.exe**
2. Select **Remove**.
3. Click **OK**.

To uninstall the Agent from a Windows CE:

Use the Windows Control Panel applet **Add/Remove Programs** to remove HPCA agent from Windows CE.

To uninstall the Agent from a Linux-based HP Thin Client device:

1. Login to the target HP thin client device as **root**.
2. Change the current directory to `/opt/hpca/agent`.
3. Type `./uninstall` and press **Enter**.

## Repairing HPCA Agent

This section describes how to repair HPCA Agent for Windows, Linux, and Macintosh operating systems. You can use this option to repair the HPCA Agent files and registry values on HPCA Agents. Using this option might override the customizations to the registry.

## Repairing HPCA Agent on Windows

The Windows Installer installation program offers the ability to repair your HPCA agents. For example, if an HPCA agent module is not available, you can use this option to repair the installation. Using this option does not overwrite modules that exist on the agent computer if they are newer than the ones provided with the installation.

To use the Installation Wizard to repair the Agent on Windows:

1. Navigate to the `\Setup-Core\Media\client\default\win32` folder and double-click **setup.exe**. The HP Client Automation Application Manager Agent Application Maintenance window opens.
2. Select **Repair**.
3. Click **Next**. The HP Client Automation Application Manager Agent Ready to Repair the Application window opens.
4. Click **Next**. When the repair is complete, the HPCA agent has been successfully installed window opens.
5. Click **Finish**.

To use a command line to repair Agent on Windows:

Navigate to the `\Setup-Core\Media\client\default\win32` directory and type the following command:

```
msiexec /f HPCA-E-MgmtApps.msi
```

## Modifying HPCA Agent Installation

This section describes how to modify HPCA Agent for Windows, Linux, and Macintosh operating systems.

### Modifying HPCA Agent Installation on Windows

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

To use the Installation Wizard to modify the Agent on Windows:

1. Navigate to the `\Setup-Core\Media\client\default\win32` folder and double-click **setup.exe**. The Application Maintenance window opens.
2. Select **Modify**.
3. Click **Next**. The Select Features window opens. For information, see ["Installing HPCA Agent using Wizard" on page 83](#).
4. Click **Next**. The Ready to Modify the Application window opens.
5. Click **Next**. The HPCA agent has been successfully installed window opens.
6. Click **Finish** to close the installation program.

To use a command line to modify Agent on Windows:

Navigate to the `\Setup-Core\Media\client\default\win32` directory and type the following command line:

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

where *Sub-FeatureStateArgument* is one of the arguments listed in the table [HPCA Agent Sub-Feature State Arguments](#) and *Sub-Feature1*, *Sub-Feature2* can be any of the arguments listed in the table [HPCA Agent Sub-Feature Command-Line Mnemonics](#).

For example, type the following command to install HPCA Application Self-Service Manager and to make the HPCA Inventory Manager and HPCA Application Manager unavailable.

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

For additional arguments, see "[Installing HPCA Agent Using Command Line](#)" on page 85.



## Chapter 9

---

# Upgrading HPCA

This chapter explains how to upgrade your HP Client Automation Enterprise environment to HPCA version 9.00 while preserving your data. You must apply the latest patch available to your current HPCA version before starting the upgrade process.

You must contact HP Support to obtain a new license for accessing the mobile device management (MDM) feature.

**Note:** This chapter applies only to HPCA Enterprise Edition Core and Satellite installations; it does not apply to HPCA “classic” (component-based) installations. For information on migrating HPCA Classic installation to HPCA Core and Satellite installation, see the *HP Client Automation Enterprise Migration Planning and Best Practices Guide* from HP Live Network at [https://hpln.hp.com/system/files/HPCA\\_Classic\\_to\\_Core-Sat\\_Migration\\_Planning\\_and\\_Best\\_Practices.pdf](https://hpln.hp.com/system/files/HPCA_Classic_to_Core-Sat_Migration_Planning_and_Best_Practices.pdf).

Use procedures listed in this chapter to upgrade the following HPCA Core and Satellite versions to the latest version of HPCA Core and Satellite:

- HPCA Enterprise Edition Core and Satellite version 7.50
- HPCA Enterprise Edition Core and Satellite version 7.80
- HPCA Enterprise Edition Core and Satellite version 7.90
- HPCA Enterprise Edition Core and Satellite version 8.10

**Note:** To access the latest HPCA Core and Satellite 9.00 migration framework posted on HP Live Network, download the migrate\_CoreToCore\_9\_00.zip file from <https://hpln.hp.com/node/13815/attachment>.

## Upgrading HPCA Core Server

This section provides information on how you can upgrade the HPCA Core server.

Consider the following before upgrading HPCA Core server:

- If you have customized the RADISH Rexx script by replacing it with the RADISHSS Rexx script, you can use the out-of-the-box solution supplied with HPCA 9.00 to do the single service optimization.
- When upgrading HPCA Administrator Batch Publisher 9.00, the configuration files are not upgraded, which enables you to retain the previous customized publishing configurations to use with the updated software.
- The HPCA Administrator tools are automatically installed with the Core server. The existing HPCA Administrator tools on the same computer as Core server are automatically upgraded to

the latest version. To upgrade HPCA Administrator tools on another computer, see the "Upgrading HPCA Administrator Tools" on page 148.

- Any customizations done to the UMCOLLCT, UMCONFIG, UMDESTPT, UMINVENTclasses will not be migrated automatically during the upgrade process. You need to do the customizations again using the CSDB Editor after successful upgrade of HPCA.

## Hardware and Software Requirements

For the hardware and software requirements, see the "Hardware and Software Requirements" on page 35. The hardware requirements to upgrade HPCA Core server may vary based on the database size.

## Installation Prerequisites

The following prerequisites should be met before upgrading HPCA Core server:

- Make sure that the RDBMS version you use is supported by HPCA 9.00. For information on supported RDBMS, see the *HP Client Automation Support Matrix* available at the URL: [http://h10230.www2.hp.com/sc/support\\_matrices.jsp](http://h10230.www2.hp.com/sc/support_matrices.jsp). For more information on how to upgrade your Oracle or Microsoft SQL Server database, check the respective database documentation.
- You must block the access to the Core server communication ports until the upgrade and restoration of the Core server is complete. The agent and Satellite server connections to the Core server during the upgrade process can result in duplicate device entries.
- You must ensure that the drive contains adequate free space to store the backup before upgrading HPCA Core server.
- The upgrade process updates the existing HPCA database schema through the upgrade scripts automatically.
- If you are upgrading HPCA Core server and want to retain the OOBM configuration and data files for later use, you must manually copy and replace the configurations.
- After upgrade, all managed devices in the HPCA environment must be connected to the HPCA Core server once for Role-Based Access Control (RBAC) feature to work as expected.
- After upgrade, you must unentitle the previous existing DISCOVER\_SECTOOLS\_AV\_AS\_FW service; update HP Live Network to download new security templates; entitle the default DISCOVER\_SECTOOLS\_HP\_SECTOOLS\_MGMT\_ALL\_V001 or a new customized service and run a security connect for all managed devices.

## Upgrade Process

The HPCA Core server upgrade process includes the following tasks:

- "Task 1: Back up the Existing HPCA Core Server Installation" on next page
- "Task 2: Upgrade the Core Server" on page 120
- "Task 3: Restore HPCA Data" on page 121
- "Task 4: Upgrade the SQL/Oracle Database" on page 123

- "Task 5: Update HP Live Network Content" on page 124
- "Task 6: Set the Patch Management Options" on page 124
- "Task 7: Upgrading Deployed Components" on page 124

## Task 1: Back up the Existing HPCA Core Server Installation

Backup the existing Core server installation and database to prepare for the upgrade.

To back up the existing installation:

1. From the HPCA installation media, copy the `\Setup-Core\migrate` folder to a temporary location (for example, `C:\migrate`) on the existing Core server. You *must* copy this folder to a temporary location on the existing Core server since the upgrade scripts cannot be run directly from the HPCA media.

2. Open command prompt and change the directory to the newly copied `migrate` folder.

3. Type the following command:

```
hpcabackup drive
```

where, *drive* is the drive label for the drive where you want to store the backup files. Ensure that the drive contains free space to store the backup files. The script detects the available space and provides an estimate for the required space. The space required is approximately same as the currently installed size.

For example, to store the files on `C:` drive, enter the following command:

```
hpcabackup C
```

The current installed version of the Core server is detected and, if adequate space is available, the upgrade process begins to store the backup files in `C:\HPCABackup\HPCABackup` directory.

**Caution:** Do NOT move the `HPCABackup` folder to another drive. If you move this folder, the restore operation does not work.

4. After the script identifies the tasks that are to be completed to initiate the backup, the `HPCA-preview-report.html` opens in the default web browser. Review the preview report carefully before you continue with the backup process. If you are migrating from HPCA Core and Satellite version 7.90 or prior, the COP resolution process has changed. A few new classes have been added to the CLIENT domain to support the Satellite Management feature.
5. After reviewing the preview report, type `y` to start the backup process.
6. During migration, a new instance is created in the CLIENT.SUBNET class for each location in the CLIENT.LOCATION class. The CLIENT.SUBNET instance use the `LOCATIONNAME_SUBNETMASK` format. The value for LOCATIONNAME is retrieved from the CLIENT.LOCATION class in the CSDB and the value for SUBNETMASK is retrieved from the DeviceConfig table in RDBMS. If SUBNETMASK is not available in the DeviceConfig table, the backup process generates a warning that an inconsistency is identified in the CLIENT

domain, and prompts if you want to continue with the backup process. You can choose to continue or end the backup process. If all SUBNETMASKS are retrieved from the DeviceConfig table, backup process completes without any prompt.

- If you get a prompt for SUBNETMASK, browse to the CLIENT.LOCATION class in the CSDB Editor and verify if the LOCATION instance is valid. If the LOCATION instance is not required, delete the instance and run the backup process again. If you are not able to decide whether to keep or delete the location instance, contact HP Support.

**Note:** The subnet masks details are saved in the SUBNET\_CREATE\_INSTANCES.txt file located at

C:\HPCABackup\HPCABackup\rsc\database\CLIENT after the backup process is complete.

7. After the backup tasks are completed, the command prompt displays the following message:

```
Info: Action completed
Info: Backup Completed Successfully
Press [ENTER] to end
```

**Note:** If the backup script is run again, a new backup folder is created. The existing

C:\HPCABackup\HPCABackup folder is renamed to a timestamp folder (for example,

C:\HPCABackup\HPCABackup-1263495101) and a new

C:\HPCABackup\HPCABackup folder is created.

8. The `hpcabackup-report.html` file opens in the default browser. Verify this file to determine the tasks that were completed during the backup process. This file also directs you to the respective logs that you must refer to for an error or a warning message. You *must* review all error and warning messages in this file as these may indicate the need for manual intervention to ensure that settings are upgraded as per your requirement.

## Task 2: Upgrade the Core Server

After you back up the existing Core server installation and database, upgrade your Core server.

To upgrade the Core server:

1. Navigate to the `Setup-Core` directory on HPCA 9.00 installation media, and run the `HPCACore.msi`. The HP Client Automation Core Installer window opens.
2. Click **Next**. The installer detects an upgrade and prompts you to confirm that you have read the migration guide and completed the prerequisite backup steps before continuing.

**Caution:** Failure to complete the prerequisite backup task before running the upgrade results in data loss.

4. Click **Yes** to continue with the upgrade. The HP Client Automation Core Installer window opens.
5. Click **Next**. The HP Client Automation Software License Agreement page opens.



6. Review the HP Client Automation Core license terms, select **I accept the license agreement** and click **Next**. The HP Client Automation Installation Folder page opens.
7. The Installation Folder page displays the default installation directory for the HPCA Core server. Type the location where you installed previous version of the Core server and click **Next**. The HP Client Automation Data Folder page opens.
8. The Data Folder page displays the default directory for the HPCA Core server data files. Enter the location where you saved your `Data` folder for previous version of the Core server and click **Next**. The HP Client Automation Host Name page opens.
9. Enter the hostname of the previous version of the Core server and click **Next**. The HP Client Automation Server Ports page opens.
10. Enter the Web Server and Configuration Server ports used for previous version of the Core server and click **Next**. The HP Client Automation Installation Confirmation page opens.
11. Click **Next** to start the installation. The existing installation is removed, and a new version is installed.
12. Click **Finish** to complete the HPCA Core server installation. The HPCA Core Console automatically opens, and the login window is displayed in the default browser.
13. On the login window, specify the default user name, password, and directory source. The default user name is `admin` and the password is `secret`.

**Note:** During upgrade, the administrator password for user `admin` is reset to `secret`.

14. Click **Sign In**. The First Time Setup Wizard opens and prompts you for initial configuration settings for your HPCA environment.
15. Close this browser window. Do *not* run the First Time Setup Wizard. The settings are automatically applied during the upgrade process.
16. If you are prompted to reboot the server, click **Yes** to reboot.

**Caution:** You must reboot immediately when prompted. If you do not reboot when prompted, files marked for deletion are not deleted completely.

## Task 3: Restore HPCA Data

After you upgrade the Core server, restore the existing data into the new environment.

To restore HPCA data:

1. Open the command prompt and navigate to the `migrate` folder that you created in Task 1.
2. Run `hpcarestore.cmd` followed by the drive on which you stored the backup files in Task 1. For example, to restore the files from `C:`, type:  

```
hpcarestore C
```


  - a. After the script identifies the restore tasks to be completed, the file `HPCA-preview-report.html` opens in the default web browser. Review any `actionrequired` messages in the preview report carefully before you continue with the restore operation.

- You must review the changes required for the `rsc` module. The `rsc` migration logic detects any customizations you made to the CSDB class schema and attempts to merge these forward. If CSDB class schema customizations are identified, an `actionrequired` message is created for the `rsc` module. The `ZEDMAMS` script is generated to migrate these CSDB customizations forward. The scripts can be located in the `\HPCABackup\HPCABackup\rsc\database\CLIENT\` directory. Each such script should be manually reviewed and, if necessary, modified before continuing with the restore operation.
  - You must also review the information about the subnets that are being imported into the CLIENT domain.
  - The preview report contains an `actionrequired` message for the Policy server with the description "Policy Server processing and configuration settings has been changed since the version you are migrating from, please refer to the migration documentation for additional information on new policy server operation". The directory services configured in HPCA environment for policy management are automatically mounted on Policy server for policy resolution. During this process, a `.cfg` file is created for each directory service. These configuration files include parameters used to connect to the directory services and to perform policy resolution. If you have not applied any customization to these configuration files in your environment, ignore this message. However, if you have modified the default Policy server configurations manually, complete the following steps:
    - Compare the configuration files in the `<InstallDir>\PolicyServer\etc\ldap` directory to the configuration files backed up from the previous installation to identify the additional parameters for policy resolution on a specific directory service.
    - Manually add the additional parameters in the `overrides` section of the individual configuration file.
3. After reviewing the preview report, type `y` in the command prompt to continue with the restore operation.  
The data stored in the `HPCABackup` folder is upgrade into the new HPCA environment.
- In case of a failure, the restore operation is triggered again from where it was left off. To perform a fresh restore, you must remove the `HPCA-restore*` files from the `HPCABackup` folder.
4. The `hPCA-restore-report.html` file opens in the default web browser. Review the file to determine the changes during the restore process.  
It is important to review all warning messages, as these may indicate the need for manual intervention to ensure that settings are upgraded as per your requirement.

**Note:** If there are unhandled errors, take corrective actions, and start the restore operation again. You *must* review the actions taken in the preview report again, and then complete the restore operation.

It is common to receive warnings during execution of the "rms" component when upgrading from version 7.50. The problems indicated by these warnings are corrected when you run `sqlmigrate` in "Task 4: Upgrade the SQL/Oracle Database" on next page.

After a successful upgrade, you can verify the subnet details by clicking **Core Console -> Configuration -> Infrastructure Management -> Satellite Management -> Subnets**. A

caution  icon is displayed with each invalid subnet. If the subnet is not required, delete the instance. If you are not able to decide whether to keep or delete the subnet, contact HP Support.

## Task 4: Upgrade the SQL/Oracle Database

This task is required when upgrading from version 7.50 only. If you already have a FOREIGN KEY CONSTRAINT set to the DEVICECONFIG.DEVICE\_ID column on Inventory database tables, you can skip this step.

**Caution:** This step should only be performed by an experienced database administrator.

After you upgrade your HPCA Core server and restore your data, you must upgrade the HPCA database. HPCA uses `sqlmigrate` script to upgrade the database.

The `sqlmigrate` script performs the following tasks:

1. Export the contents of database tables listed in "[SQL Database Tables that must be Upgraded](#)" on page 150.
2. Drop these tables.
3. Re-create these tables.
4. Import the data into the updated table structure.

You can also perform these steps manually as described in "[Upgrading the HPCA SQL/Oracle Database Manually](#)" on page 149.

To upgrade the HPCA database:

1. Stop the HPCA Core service.
2. Open command prompt and navigate to the local copy of the `migrate` folder. Change your current directory to `sql` folder. For example: `cd C:\migrate\sql`

3. Run the following command:  
`sqlmigrate DriveLetter`

where, *DriveLetter* is the drive where the script stores exported data and any error information created during the subsequent import. Data is stored at the following location:

`DriveLetter:\HPCABackup\SQLMigrate`

For large databases, this upgrade step may take many hours.

**Note:** If the `sqlmigrate` script is run again, a new data folder is created. The `C:\HPCABackup\SQLMigrate` folder is renamed to a timestamp folder as `C:\HPCABackup\SQLMigrate-timestamp` where, *timestamp* indicates when the data folder was created.

4. Verify the contents of the `C:\HPCABackup\SQLMigrate\errors` folder to ensure that the upgrade was successful. If errors occurred during the upgrade of a particular table, the following files are created in this folder.
  - `tablename.log` contains the insert statement and any errors that occurred.
  - `tablename.tsv` contains the rows (if any) that failed to import.
  - `tablename.sql` is a SQL script for insert statement that failed, where, `tablename` corresponds to the name of the pertinent database table. You *must* run this script manually to fix the errors.

Verify these files to determine if you need to perform any manual restoration of data.

For a list of the tables upgraded by the `sqlmigrate` script, see "SQL Database Tables that must be Upgraded" on page 150.

5. Restart the HPCA Core service.

## Task 5: Update HP Live Network Content

To update your HP Live Network Content:

1. Open a web browser and log on the Core Console using the following URL:  
`http://HPCA_host:3466`  
Where `HPCA_host` is the Core server's host name.
2. Enable remote access to the Core server communication ports.
3. Validate your HP Live Network configurations and perform a full HP Live Network update to ensure that you have downloaded the latest service content.

## Task 6: Set the Patch Management Options

Set the following patch management options:

- During upgrade, the **Agent Updates Version** under **Core Console > Configuration > Patch Management > Agent Updates** is set to the newer version. If you do not plan to upgrade the Patch Agent to the newer version on the client devices, you must set the version to the previous version that was applied before upgrading.
- During upgrade, the **Enable Download of Patch Metadata only** option under **Core Console > Configuration > Patch Management > Distribution Settings** is set to enabled. You must disable the **Enable Download of Patch Metadata only** option after upgrading if you do not want to use the metadata model for Microsoft bulletins.

## Task 7: Upgrading Deployed Components

After upgrading the Core server, upgrade the following HPCA components deployed in your environment:

- "Upgrading HPCA Satellite Servers" on next page
- "Upgrading HPCA Agent" on page 131
- "Upgrading HPCA Administrator Tools" on page 148

## Upgrading HPCA Satellite Servers

This section provides information on how to upgrade the HPCA Satellite server.

### Hardware and Software Requirements

For the hardware and software requirements, see the "Hardware and Software Requirements" on page 47

### Installation Prerequisites

You must ensure that the drive contains adequate free space to store the backup before upgrading HPCA Satellite server.

### Upgrade Process

The HPCA Satellite server upgrade process includes four tasks:

- "Task 1: Back up the Existing Satellite Server Installation" below
- "Task 2: Upgrade the Satellite Server" on next page
- "Task 3: Restore HPCA Data" on page 127
- "Task 4: Synchronize Satellite" on page 128

You can also upgrade the Satellite servers by using HPCA Console as described in the section "Upgrading Satellite Server Using HPCA Console" on page 128.

### Task 1: Back up the Existing Satellite Server Installation

Backup the existing HPCA Satellite server installation to prepare for the upgrade.

To back up the existing HPCA Satellite server installation:

1. From the HPCA installation media, copy the `\Setup-Satellite\migrate` folder to a temporary location on the HPCA Satellite server (for example, `C:\migrate`). You *must* copy this folder to a temporary location since the migration scripts cannot be run directly from the HPCA media.

2. Open command prompt and change the directory to the newly copied `migrate` folder.

3. Type the following command:

```
hpcabackup drive
```

where, *drive* is the drive label for the drive where you want to store the backup files.

For example, to store the files on `C:` drive, enter the following command:

```
hpcabackup C
```

The current version of the Satellite server is detected and, if adequate space is available, the upgrade process begins to store the backup files in `C:\HPCABackup\HPCABackup`

4. After the script identifies the tasks that are to be completed to initiate the backup, the `HPCA-preview-report.html` opens in the default web browser. On the command prompt, type `y` to start the backup tasks.
5. After the backup tasks are completed, the command prompt displays the following message:  
Info: Action completed  
Info: Backup Completed Successfully  
Press [ENTER] to end

**Caution:** Do *not* move the `HPCABackup` folder to another drive. If you move this folder, the restore operation does not work.

**Note:** If the backup script is run again, a new backup folder is created. The `C:\HPCABackup\HPCABackup` folder is renamed to a timestamp folder (for example, `C:\HPCABackup\HPCABackup-1263495101`) and a new `C:\HPCABackup\HPCABackup` folder is created.

6. The `hpc-a-backup-report.html` file opens in the default browser. Verify this file to determine the tasks that were completed during the backup process. You *must* review all error and warning messages in this file, as these may indicate the need for manual intervention to ensure that settings are migrated properly.

## Task 2: Upgrade the Satellite Server

After you backup the existing Satellite server installation, upgrade your Satellite server.

To upgrade the Satellite server:

1. Navigate to the `Setup-Satellite` directory on HPCA 9.00 installation media, and run the `HPCASatellite.msi`. The HP Client Automation Satellite Installer window opens.
2. Click **Next**. The installer detects an upgrade and prompts you to confirm that you have read the migration guide and completed the backup task before continuing.
3. Click **Yes** to continue with the upgrade. The HP Client Automation Satellite Installer window opens.
4. Click **Next**. The HP Client Automation Software License Agreement page opens.
5. Review the HP Client Automation Satellite license terms, select **I accept the license agreement**, and then click **Next**. The HP Client Automation Installation Folder page opens.
6. The Installation Folder page displays the default installation directory for the HPCA Satellite server. Type the location where you installed previous version of the Satellite server and click **Next**. The HP Client Automation Data Folder page opens.
7. The Data Folder page displays the default directory for the HPCA Satellite server data files. Enter the location where you saved your `Data` folder for previous version of the Satellite server and click **Next**. The HP Client Automation Host Name page opens.
8. Enter the hostname of the previous version of the Satellite server and click **Next**. The HP Client Automation Server Ports page opens.

9. Enter the Web Server and Configuration Server ports used for previous version of the Satellite server and click **Next**. The HP Client Automation Installation Confirmation page opens.
10. Click **Next** to start the installation. The existing installation is removed, and the new version is installed.
11. Click **Finish** to complete the HPCA Satellite server installation. The Windows Security login window opens in your default browser.
12. On the login window, specify the default user name, password, and directory source. The default user name is `admin` and the password is `secret`.

**Note:** During upgrade, the administrator password for user `admin` is reset to `secret`.

13. Click **OK**. The First Time Setup Wizard opens, and prompts you for initial configuration settings for the HPCA environment.
14. Close this browser window. Do *not* run the First Time Setup Wizard. Your settings are automatically applied during the upgrade process.

If you are prompted to reboot the server, click **Yes** to reboot.

**Caution:** You must reboot immediately when prompted before continuing further. If you do not reboot, files marked for deletion are not deleted completely.

## Task 3: Restore HPCA Data

After you upgrade the Satellite server, restore your existing data into the new environment.

To restore HPCA data:

1. Open the command prompt and navigate to the `migrate` folder that you created in Task 1.
2. Run `hpcarestore.cmd` followed by the drive on which you stored the backup files in Task 1. For example, to restore the files from `C:`, type:  

```
hpcarestore C
```
3. After the script identifies the restore tasks to be completed, the file `HPCA-preview-report.html` opens in the default web browser. Review this preview report.
4. After reviewing the preview report, type `y` in the command prompt to continue with the restore operation.  
The data stored in the `HPCABackup` folder is migrated into the new HPCA environment.  
  
If a failure occurs during restore, subsequent restore attempts are triggered from where restore operation left off. To perform a fresh restore, you must remove the `HPCA-restore*` files from the `HPCABackup` folder.
5. The `hpcarestore-report.html` file opens in the default web browser. You must review all error and warning messages in this file, as these may indicate the need for manual intervention to ensure that settings are migrated as per your requirement.

**Note:** If there are unhandled errors, take corrective actions, and start the restore operation again. You *must* review the actions taken in the preview report again, and then complete the restore operation.

**Note:** HPCA resource data is converted from Apache format to the Integration-based Proxy server format and moved to the Proxy server Data location during the restore process for versions 7.50, 7.80, and 7.90. For example, after restore process is complete, the converted HPCA resource data is copied to the \Data directory. Default location of \Data directory is C:\Program Files\Hewlett-Packard\HPCA\Data\ProxyServer\static.

## Task 4: Synchronize Satellite

After you upgrade a Satellite server, you must synchronize it with its Core server.

To synchronize a Satellite server:

1. Open a web browser and browse to the following URL to open the Satellite Console :  
`http://<localhost>:3466`  
where, <localhost> is the IP address of the Satellite server.
2. Logon to the Satellite server using the default user name and password. The default user name is `admin` and the password is `secret`.
3. On the Operations tab, click **Server Status**.
4. Click **Synchronize satellite now**.

You have now successfully upgraded your Satellite server.

## Upgrading Satellite Server Using HPCA Console

To upgrade your existing Satellite server using HPCA Core Console, complete the following steps:

1. On the Core server, logon to the Core Console.
2. On the **Configuration** tab, go to the **Infrastructure Management > Satellite Management** area.
3. Click the **Servers** tab.
4. Select the device on which you want to upgrade the Satellite server in the Satellite Servers list.
5. Click the **Install the Satellite Server** toolbar button to launch the wizard.
6. Type the User ID and Password to be used for deployment. This account must have administrator-level access on the target device.
7. Click **Next**. The Properties window opens.
8. Select the Installation Drive, Data Drive, and Deployment Mode. You must select same settings as used for Satellite server before upgrading.
9. Click **Next**. The Schedule window opens.



10. Specify the run schedule for the deployment job. Select **Run: Now** to deploy the Satellite server immediately after you complete the steps in the wizard, or select **Run: Later** to schedule a date and time for deployment.
11. Click **Next**. The Summary window opens.
12. Review the summary information.
13. Click **Submit**. A Satellite Server Deployment job is created. The deployment may take a long time with limited bandwidth. You can check the status of the job in the **Jobs Management** area on the **Management** tab.
14. Click **Close** to exit the wizard.

**Note:** After a successful Satellite server upgrade for versions 7.50, 7.80, and 7.90, HPCA resource data is converted from Apache format to Integration-based Proxy server format and moved to the Satellite server data location. The default Satellite server data location is `<InstallDir>\Data\ProxyServer\static`.

## Upgrading Proxy Servers

This section provides information on how to upgrade the classic Proxy server on Windows. You can upgrade classic Proxy server on Windows using the media or by using the Core server console as described in the next sections.

You cannot upgrade classic Proxy server on Linux. Install the Proxy server on Linux again to use the Proxy server on Linux with HPCA 9.00.

## Upgrading Proxy Server to Satellite Server

To upgrade the classic Proxy server (RPS) installed on Windows to the Satellite server:

1. Copy the `\Setup-Satellite` folder from HPCA installation media and paste it to a temporary location on Proxy server computer. For example, `C:\Temp`.
2. Navigate to the `C:\temp\Setup-Satellite` folder.
3. Open the command prompt and type the following command:  

```
migrate-satellite-unattended.cmd -proxyserver-cache-dir  
<proxyserver-cache-dir_path>[-logfile <logfile_path>]
```

where,

- `<proxyserver-cache-dir_path>` is the full path of the current target Proxy server cache directory. For example, `C:\Program Files\Hewlett-Packard\HPCA\Data\ProxyServer`.

- `logfile` is full path and file name of the log to which messages should be written. This parameter is optional. For example, `C:\temp\proxy-migration.log`.

Following is a sample command:

```
migrate-satellite-unattended.cmd -proxyserver-cache-dir "C:\Program Files\Hewlett-Packard\HPCA\Data\ProxyServer" -logfile "C:\temp\proxy-migration.log"
```

4. After you upgrade to the Satellite server, run the First Time Setup Wizard (see "Post Installation Configuration" on page 50) to apply post-install configurations to this Satellite server.
5. Synchronize the Satellite server with its upstream host. For more information, see "Task 4: Synchronize Satellite" on page 128.

**Note:** After a successful upgrade from Proxy server to Satellite server, HPCA resource data is moved to the Satellite server data location. Following are the default Satellite server data locations for static and dynamic cache:

```
<InstallDir>\Data\ProxyServer\static  
<InstallDir>\Data\ProxyServer\dynamic
```

## Upgrading Proxy Server to Satellite Server Using HPCA Console

Use the Satellite Server Deployment Wizard to upgrade the Classic Proxy server (RPS) and enable remote services, such as data caching.

To upgrade the Proxy server on Windows:

### Task 1: Add the Proxy server on Windows to the Core and Satellite servers group.

For information on how to add a device to the Core and Satellite group, see the *Add a Satellite Server* section in the *HP Client Automation Enterprise User Guide*.

### Task 2: Upgrade the Proxy server on Windows as follows:

1. On the **Configuration** tab, go to the **Infrastructure Management**, and then click **Satellite Management**.
2. Click the **Servers** tab.
3. Select the Proxy server computer that you added to the Core and Satellite servers group in Task 1.
4. Click the **Install the Satellite Server** toolbar button to launch the wizard.
5. Type the User ID and Password to be used for deployment. This account must have administrator-level access on the target device.
6. Click **Next**. The Properties window opens.
7. Select the Installation Drive, Data Drive, and Deployment Mode.
8. Click **Next**. The Schedule window opens.
9. Specify the run schedule for the deployment job. Select **Run: Now** to deploy the Satellite server immediately after you complete the steps in the wizard, or select **Run: Later** to schedule a date and time for deployment.
10. Click **Next**. The Summary window opens.

11. Review the summary information.
12. Click **Submit**. A Satellite Server Deployment job is created. The deployment may take a long time with limited bandwidth. You can check the status of the job in the **Jobs Management** area on the **Management** tab.
13. Click **Close** to exit the wizard.
14. After you upgrade to the Satellite server, run the First Time Setup Wizard (see "[Post Installation Configuration](#)" on page 50) to apply post-install configurations to this Satellite server.
15. Synchronize the Satellite server with its upstream host. For more information, see the "[Task 4: Synchronize Satellite](#)" on page 128.

**Note:** After a successful upgrade from Proxy server to Satellite server, HPCA resource data is moved to the Satellite server data location. Following is the default Satellite server data location:

```
<InstallDir>\Data\ProxyServer\static  
<InstallDir>\Data\ProxyServer\dynamic
```

**Note:** After successful Satellite server upgrade, the synchronization status fields on the **Configuration** tab > **Infrastructure Management** > **Servers** tab do not show any values. The synchronization status fields are populated after the Satellite servers are synchronized with upstream server.

## Upgrading HPCA Agent

The following sections describe how you can upgrade HPCA agent on a Windows, Linux, and Macintosh device.

Use the upgrade procedures described in this section to upgrade the HPCA agent from the following versions:

- HPCA Agent version 7.50
- HPCA Agent version 7.80
- HPCA Agent version 7.90
- HPCA Agent version 8.10

You can verify `upgrade.log` in the `%IDMLOG%` directory to check the status of the agent upgrade.

## Prerequisites

The following prerequisites must be met before you start the upgrade process:

- When scheduling the agent migration, ensure that the agent does not have other connects scheduled at the same time. The connects can be resumed after the agent upgrade is complete.
- Modify the `identification` and `startdir` parameters in the `[Args]` section of the `Install.ini` file, such that the device does not have a SYSTEM connect. If these values are

not modified, the `Install.ini` overwrites the default values in the existing `args.xml` file after the upgrade and the HPCA Application Self-Service Manager has a SYSTEM connect.

- Ensure that you meet all the requirements described in the sections "[Hardware and Software Requirements](#)" on page 71 and "[Installation Prerequisites](#)" on page 72.

## Upgrading HPCA Agent on Windows

When upgrading, the HPCA agent is installed in the existing agent installation directory. By default, the agent is installed in the following directory:

- HPCA 7.5x and above: `C:\Program Files\Hewlett-Packard\HPCA\Agent`

You can upgrade the HPCA Agent using the following methods:

- "[Upgrading Using HPCA Installation Service](#)" below
- "[Upgrading Agent Using HPCA Core Console](#)" on next page
- "[Upgrading Using Installation Media](#)" on page 134

HPCA supports direct upgrade, which means that you are not required to uninstall an earlier agent version from the managed device before upgrading.

## Upgrading Using HPCA Installation Service

This section describes how to use the HPCA agent installation service to perform the HPCA agent upgrade. The upgrade is a two-step process, where you must first import the HPCA agent installation service to the HPCA CSDB, and then configure this service for distribution.

### Task 1: Importing the Decks

Complete the following steps to import the decks:

1. Stop the HPCA Configuration Server service.
  - Using command prompt: Run the command `net stop ztoptask`.
  - Using Control Panel: Click **Start > Control Panel > Administrative Tools > Services**. From the list of services, select **HPCA Configuration Server** and click **Stop the service**.
2. Navigate to the `Setup-Core\Media\client\Migration` directory on the HPCA installation media folder. Copy the HPCA agent installation service files, `HPCA_AGENT_90_UPGRADE_WIN.XPI` and `HPCA_AGENT_90_UPGRADE_WIN.XPR` and paste them to the `\bin` directory of the HPCA Configuration server.
3. Open command prompt and change the directory path to:  
`<InstallDir>\ConfigurationServer\bin`.
4. Type the following command to import the instances and press **Enter**:  
`ZEDMAMS VERB=IMPORT_INSTANCE, FILE=HPCA_AGENT_90_UPGRADE_WIN.XPI, PREVIEW=NO`
5. Review the `ZEDMAMS.LOG` file created in the `\bin` directory to ensure that there are no errors and that the import completed successfully with Return Code (RC) 0.

6. Type the following command to import the resources and press **Enter**:  

```
ZEDMAMS VERB=IMPORT_RESOURCE, FILE=HPCA_AGENT_90_UPGRADE_
WIN.XPR, PREVIEW=NO
```
7. Review the ZEDMAMS.LOG file created in the  
`<InstallDir>\ConfigurationServer\bin` directory to ensure that there are no errors  
and that the import completed successfully with RC 0.
8. Close the command prompt window.
9. Start the HPCA Configuration Server service.
  - Using command prompt: Run the command `net start ztoptask`.
  - Using the Control Panel: Click **Start > Control Panel > Administrative Tools > Services**.  
From the list of services, select **HPCA Configuration Server** and click **Restart the service**.
10. Use the HPCA Administrator CSDB Editor to view the new service in  
PRIMARY.SOFTWARE.ZSERVICE.

## Task 2: Configuring the HPCA Agent Installation Service

Complete the following steps to configure the HPCA Agent installation service:

1. Open the HPCA Administrator CSDB Editor.
2. On the Options menu, click **Advanced tab** and select **Show Edit Replace and Add Component options for File type components**.
3. Navigate to the `Install.ini` resource of the HPCA 9.00 update service.
4. Right-click **Install.ini** in the tree view and select **Edit this Component** from the shortcut menu.
5. The Editor Selector for `Install.ini` dialog box opens. Use this dialog box to select the resident editor you want to use to make the changes to this file. For example, select **Notepad** to open the `Install.ini` file with `Notepad.exe`.
6. Save and close the `Install.ini` file.
7. Connect the service to the appropriate users for distribution.  
After the service is distributed to a user and the HPCA agent upgrade is complete, the service is not available to the user. This service is automatically removed from the HPCA agent desktop. There is a ZSTOP expression in the HPCA agent upgrade (ZSERVICE) instance that evaluates to TRUE after the HPCA agent is upgraded. After the expression evaluates to TRUE, the temporary service folder and the HPCA agent installation files are removed.
8. Reboot the agent device.

## Upgrading Agent Using HPCA Core Console

You can deploy the latest version of the Agent to the devices in your infrastructure by scheduling an agent deployment job in the HPCA Core Console.

Using the HP Client Automation Core Console, complete the following tasks to upgrade an existing agent version:

1. Click **Management** tab.
2. Under Directories area, click **Devices**.
3. Select the devices for which you want to upgrade the agent and click **Launch the HPCA Agent Deployment Wizard**. The Step 1 screen for Agent Deployment Wizard opens.
4. Specify the credentials that have administrative privileges to deploy the Agent.
5. Select **Silent Install** check box for silent installation and click **Next**. The Step 2 screen for Agent Deployment Wizard opens.
6. Type the schedule information for when the Agent Deployment job should run and click **Next**. The Step 3 screen for Agent Deployment Wizard opens.
7. Review the job summary and click **Submit**. The agent deployment job is created. You can check the status of the job using the **Jobs** area in the **Management** tab.

## Upgrading Using Installation Media

You can use the HPCA agent installer to upgrade your managed devices. You can find the HPCA agent installer in the HPCA DVD media in the `<media_root>\Setup-Core\Media\client\default\win32` directory. When you run the `setup.exe` file to initiate the agent upgrade, this file checks if a previous version of the agent is installed. If an earlier version is detected, the `setup.exe` file calls the `upgrdmaint.exe` file, which performs the HPCA agent upgrade. Thereafter, the HPCA Agent Installation Wizard opens and the normal installation process is followed. For more information on how to install an agent using the wizard, see the section "Installing HPCA Agent using Wizard" on page 83.

## Upgrade Scenarios: Lockdown and Non-Lockdown Mode

This section includes upgrade scenarios for:

- HPCA agent 7.80 or 7.90 Non-Lockdown to HPCA agent 9.00 Non-Lockdown mode.
- HPCA agent 7.80 or 7.90 Non-Lockdown to HPCA agent 9.00 Lockdown mode.
- HPCA agent 7.8.1 or 7.90 Lockdown to HPCA agent 9.00 Lockdown mode.
- HPCA agent 7.8.1 or 7.90 Lockdown to HPCA agent 9.00 Non-Lockdown mode.

## Upgrading from Non-Lockdown to Non-Lockdown Mode

The HPCA agent 7.80, 7.90, and 8.10 can be upgraded to HPCA agent 9.00 with Non-Lockdown mode by using a simple upgrade. For information on the upgrade steps, see "Upgrading HPCA Agent on Windows" on page 132.

## Upgrading from Non-Lockdown to Lockdown Mode

Complete the following tasks to upgrade HPCA agent in Lockdown enabled mode:

### Task 1: Update the install.ini file

Set the following Lockdown parameters in the [Properties] section of the `Install.ini` file:

```
[Properties]
```

```
LOCKDOWN=Y
```

```
LOCKDOWNSCRIPT=<Customized-Script>
```

where, customized script is the script you can use to set the Access Control Lists (ACLs) to the agent folders in the HPCA environment. HP provides a sample file, `setaccls.bat` that contains sample statements that you can use to create a customized script. Ensure that the customized script is in the same directory as the `Install.ini` and `setup.exe` files.

#### Task 2: Upgrade the agent

Upgrade the agent using the procedures listed in the section "[Upgrading HPCA Agent on Windows](#)" on page 132.

#### Task 3: Migrate the User Data to the User Profile

Transfer the user data to the respective user profiles. You can retain the user data in the respective user profiles by running the `secure_migrate.tcl` script. The `secure_migrate.tcl` script automatically reads all the data objects in the `IDMROOT` folder, `<InstallDir>\Agent\Lib`, for each user and moves the data objects to the user profile set in the script.

- On Windows XP and Windows 2003 Server, the Administrator user contents are moved to:  
C:\Documents and Settings\Administrator\Local Settings\Application Data\HPCA\Agent
- On Windows Vista, Windows 7, and Windows 2008 Server, the Administrator user contents are moved to:  
C:\Users\Administrator\AppData\Local\HPCA\Agent

**Note:** If you need to run the customized script for setting ACLs as well as the `secure_migrate.tcl` script, you can append the contents of the `secure_migrate.tcl` script to the customized script. Use this customized script in the `LOCKDOWNSCRIPT` parameter in the [Properties] section of the `Install.ini` file.

To migrate the user data to the respective user profiles, follow these steps:

1. Copy the `secure_migrate.tcl` file from `Setup-Core\Media\client\default\win32` folder to the `IDMSYS` folder.
2. Open command prompt and type the following command:  
`nvdkit secure_migrate.tcl -idmusr <User-Folder-path> -usrmsi <User-Msi-Folder-path>`  
On Windows Vista, Windows 7, and Windows 2008 Server, the *User-Folder-path* is:  
C:\Users\<username>\AppData\Local\HPCA\Agent  
  
On Windows XP and Windows 2003 Server, the *User-Folder-path* is:  
C:\Documents and Settings\<username>\Local Settings\Application Data\HPCA\Agent

**Tip:** You can move the data objects of all the users at the same time by replacing the `<username>` with the value `ZUSERID` in the above mentioned paths.

The *User-Msi-Folder-path* is the `IDMUSRMSI` path

```
IDMUSRMSI=" <InstallDir>\Agent\usermsi"
```

## Upgrading from Lockdown to Lockdown Mode

Complete the following tasks before upgrading to HPCA agent 9.00 in Lockdown enabled mode:

### Task 1: Retain ACL Settings:

In HPCA 7.8.1, the `setsecure.bat` file is used to enable the Lockdown mode and to set the Access Control Lists (ACLs) to the agent folders. Complete the following steps, to retain the ACL settings:

1. Copy the customized script you had previously created for HPCA 7.8.1, 7.90, and 8.10 to the folder `Setup-Core\Media\client\default\win32`. The contents of this folder are delivered to the target device during remote deployment.
2. Set `LOCKDOWN=Y` in `Install.ini` file of HPCA 9.00 to enable Lockdown.
3. Set `LOCKDOWNSCRIPT=<Customized-Script>`.

**Note:** HP recommends that when you upgrade to HPCA 9.00, do not use the default `setsecure.bat` and `setacls.bat` files in the `LOCKDOWNSCRIPT` parameter. Update these files based on your requirements.

### Task 2: Retain User Contents after Upgrade:

Modify the [Properties] section of `Install.ini` file of HPCA 9.00 for `IDMUSR` to retain the user contents after a successful upgrade. Set the `IDMUSR` value in the latest version to the `IDMUSR` value used in the previous version of agent installation.

### Task 3: Update the Registry for NVD.INI file Location:

In a Non-Lockdown enabled mode, the `NVD.INI` file resides in the `IDMROOT` folder, `<InstallDir>\Agent\Lib`. The `NVD.INI` file location saved in the registry file is `HKEY_LOCAL_MACHINE\Software\Novadigm\Radia\Settings\INIPath`.

When the Lockdown mode is enabled, the `NVD.INI` file is moved from the `IDMROOT` folder to the `IDMSYS` folder, `<InstallDir>\Agent`. After the `NVD.INI` file is moved, it is no longer available to the user.

After the Lockdown mode is enabled, the location of the `NVD.INI` file is changed to the `IDMSYS` folder, however, the path for `IDMROOT` folder is retained in the registry file. When upgrading to HPCA agent 9.00 in Lockdown enabled mode, update the registry file to reflect the new location of the `NVD.INI` file. This prevents a new installation of the HPCA agent.

Use one of the following methods to ensure that the registry contains the correct location of the `NVD.INI` file:

- Modify the registry using command line or batch mode (preferred method) as follows:
  - a. Create an `updateINIPath.txt` file with the following content, `HKEY_LOCAL_MACHINE\SOFTWARE\Novadigm\Radia\SettingsINIPath = REG_SZ "C:\PROGRA~1\HEWLET~1\HPCA\Agent\"`



- b. From the command line, run the command `regini updateINIpath.txt`. You can also run this command on all the target devices before the upgrade.
- Ensure that the `NVD.INI` file resides in both the `IDMSYS` and the `IDMROOT` folder. You can write a script to copy the `NVD.INI` file from the `IDMSYS` folder to `IDMROOT` folder.
- Uninstall the existing agent and install the HPCA agent 9.00 with Lockdown enabled mode. Only the SYSTEM or an Administrator user can uninstall the HPCA agent.

#### Task 4: Upgrade the agent

Use the simple upgrade process to upgrade the agent as described in "Upgrading HPCA Agent on Windows" on page 132.

## Upgrading from Lockdown to Non-Lockdown Mode

To upgrade to HPCA agent in Lockdown mode 9.00 with Non-Lockdown mode, complete the following steps:

1. Uninstall the existing agent from the target device.
2. Install the HPCA agent 9.00 without setting the Lockdown parameters in the [Properties] section of the `Install.ini` file.

**Note:** Upgrading Lockdown enabled HPCA 7.8.1 or 7.90 agent to HPCA agent 8.10 with Non-Lockdown mode is not supported.

## Upgrading HPCA Agent on Linux and Macintosh

Use the upgrade procedures described in this section to upgrade the Linux or Macintosh HPCA agents to version 9.00.

You can upgrade the HPCA agent using the following methods:

- "Upgrading Using HPCA Installation Service" on next page
- "Upgrading Using Installation Media" on page 146
- Upgrading using sample services:  
HP provides the following sample services that can be used to perform an agent upgrade to the current HPCA version:
  - **HPCA\_AGENT\_90\_UPGRADE\_LINUX**  
Installation of this service upgrades a pre-existing Red Hat Linux (Intel architecture) or SUSE agent to the current version.
  - **HPCA\_AGENT\_90\_UPGRADE\_MACX86**  
Installation of this service upgrades a pre-existing Macintosh x86 agent to the current version.

All of the parameters pertaining to the agent upgrade that can be configured are specified in the UPGRADE instance in the HPCA Core server entitlement model.

## Upgrading Using HPCA Installation Service

This section describes how to perform an agent upgrade using the export decks. These are included on the HPCA installation media in the `/Setup-Core/Media/client/Migration` directory.

- `UPGRADE.XPC`  
This is a class export of a new class required for the agent upgrade. It contains the definition of the `PRIMARY.SOFTWARE.UPGRADE` class.
- HPCA Agent installation service files
  - For **RedHat** and **SUSE Linux**:
    - `HPCA_AGENT_90_UPGRADE_LINUX.XPI`
    - `HPCA_AGENT_90_UPGRADE_LINUX.XPR`
  - For **Macintosh**:
    - `HPCA_AGENT_90_UPGRADE_MACX86.XPI`
    - `HPCA_AGENT_90_UPGRADE_MACX86.XPR`

### Task 1: Importing the Classes, Instances, and Resources

To distribute the HPCA agent as a HPCA service, you must import the agent **UPGRADE** class definition as well as upgrade service data into your HPCA CSDB.

**Note:** HPCA Core server is supported only on a Windows platform. However, the HPCA agent supports backward compatibility. Therefore, the export decks can be imported into the HPCA Core server running on a Linux platform.

To import the required classes, instances, and resources:

1. Stop the HPCA Configuration Server service.
  - For Microsoft Windows:
    - Open the command prompt and run the `net stop ztoptask` command.
    - Click **Start > Control Panel > Administrative Tools > Services**. From the list of services, select **HPCA Configuration Server** and click **Stop the service**.
  - For Linux:
    - Run the script `killmgr` located in the `/opt/HP/CM/ConfigurationServer/bin` directory.
2. Copy the appropriate export decks (as listed above) into the HPCA Configuration server `binary` or `executable` directory, `<InstallDir>\Configuration Server\bin`, if the HPCA Configuration server is running on a Microsoft Windows platform.

**Note:** Consider the following when transferring the XPI and XPR files from one device to another using FTP:

- XPR files are binary and should be transferred in binary mode.
- XPI files are ASCII and should be transferred in ASCII mode.

3. Open the command prompt and change your current working directory to the HPCA Configuration server `binary` or `executable` directory where you copied the export decks in step 2.
4. Import the UPGRADE class by running the following command:  

```
ZEDMAMS VERB=IMPORT_CLASS, FILE=UPGRADE.XPC, PREVIEW=NO.
```
5. Review the `zedmams.log` file created in the HPCA Configuration server `binary` or `executable` directory to ensure that there are no errors and that the import completed successfully with RC 0.
6. Import the required instances by running the following example command:  

```
ZEDMAMS VERB=IMPORT_INSTANCE, FILE=HPCA_AGENT_90_UPGRADE_LINUX.XPI,  
PREVIEW=NO
```

or

```
ZEDMAMS VERB=IMPORT_INSTANCE, FILE=HPCA_AGENT_90_UPGRADE_MACX86.XPI,  
PREVIEW=NO.
```
7. Review the `zedmams.log` to ensure that there are no errors and that the import completed successfully with RC 0.
8. Import the required resources by running the following example command:  

```
ZEDMAMS VERB=IMPORT_RESOURCE, FILE=HPCA_AGENT_90_UPGRADE_LINUX.XPR,  
PREVIEW=NO
```

or

```
ZEDMAMS VERB=IMPORT_RESOURCE, FILE=HPCA_AGENT_90_UPGRADE_MACX86.XPR,  
PREVIEW=NO.
```
9. Review the `zedmams.log` to ensure that there are no errors and that the import is completed successfully with RC 0.
10. Close the command prompt.
11. Start the HPCA Configuration Server service as follows:
  - Run the `net start ztoptask` command from the command prompt.
  - Click **Start > Control Panel > Administrative Tools > Services**. From the list of services, select **HPCA Configuration Server** and click **Restart the service**.

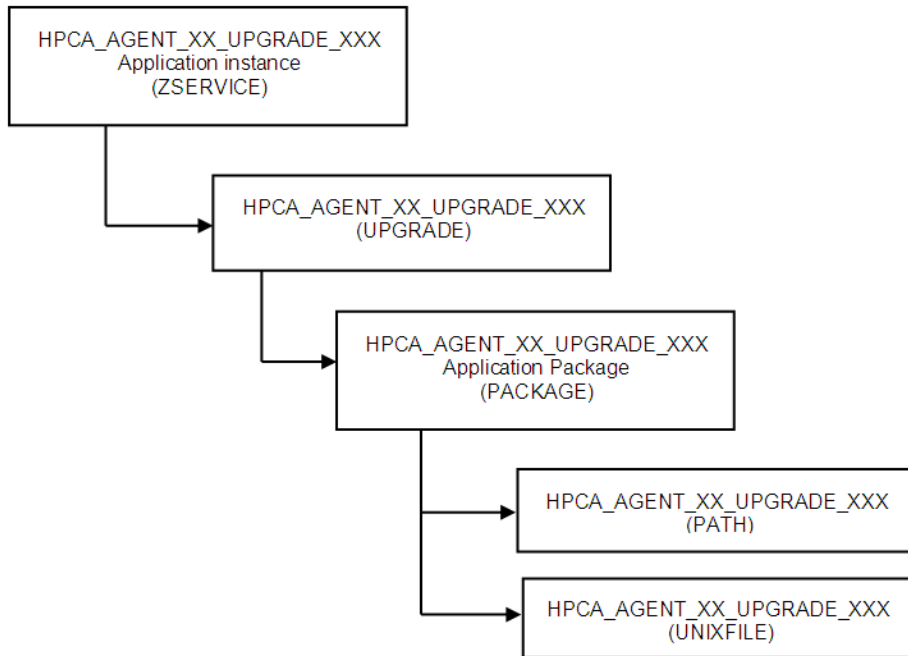
Use the HPCA Administrator CSDB Editor to view the new UPGRADE class and service specific data. After the successful completion of the above steps, you can find:

- A new class named **UPGRADE** within the PRIMARY.SOFTWARE domain.
- Sample HPCA agent upgrade Application Services within your SOFTWARE.ZSERVICE class.
- Sample UPGRADE instance data within the PRIMARY.SOFTWARE.UPGRADE class.
- Sample PACKAGEs within the PRIMARY.SOFTWARE domain.

These imported services are mandatory services distributed to HPCA agents by using the HPCA Application Manager.

The following figure displays the model for the supplied agent Upgrade Application Services.

### Model for the Agent Upgrade Service



## UPGRADE Class

The UPGRADE class instance is connected between the upgrade SERVICE and PACKAGE instances. It is responsible for the resolution of the agent upgrade decks as well as for launching the agent upgrade process. All upgrade configuration options are defined within the UPGRADE class instance.

## ZSTOP Expressions

The sample UPGRADE instances contain multiple ZSTOP expressions that identify the specific operating system for which the UPGRADE applies and for the HPCA Application Manager Agent version. The purpose of these expressions is to enable the resolution for a specific operating system and to prevent the resolution for an agent that has been upgraded already.

For example, in the SOFTWARE.UPGRADE.HPCA\_AGENT\_90\_UPGRADE\_LINUX instance, the first ZSTOP expression `WORDPOS (EDMGET (ZMASTER, ZOS) , ' UNIXLNUX' ) =0` causes the resolution to continue only if the agent operating system is Red Hat Linux or SuSE.

For Macintosh, in the SOFTWARE.UPGRADE.HPCA\_AGENT\_90\_UPGRADE\_MACX86 instance, the first ZSTOP expression `WORDPOS (EDMGET (ZMASTER, ZOS) , ' MACOSX' ) =0` causes the resolution to continue only if the agent operating system is Macintosh.

The other ZSTOP expressions cause the resolution to continue only if the ZPKGREL variable in the current HPCA Application Managers agent ZMASTER object contains a value less than the current version. This expression stops the deployment of the agent upgrade to agents that are already running the latest version.

You can find these same expressions in the sample SERVICE instances provided.

## Always Connection

The ALWAYS connection in the upgrade instance creates an association with the operating system-specific package that contains the agent upgrade decks. (For example, the SOFTWARE.UPGRADE.HPCA\_AGENT\_90\_UPGRADE\_LINUX instance has an Always Connection of: SOFTWARE.PACKAGE.HPCA\_AGENT\_90\_UPGRADE\_LINUX, the package that contains the Linux Agent upgrade decks). The value of this attribute in any UPGRADE instance should contain the name of the PACKAGE instance that is prefixed with the operating system-specific designator that matches the intended target operating system.

## Create Method (ZCREATE)

The sample UPGRADE instance contains a create method that causes the upgrade script to be launched with the values specified in the UPGRADE class instance attributes. This method is called only when the agent upgrade materials are initially installed on disk.

## Verify Method (ZVERIFY)

The sample UPGRADE instance contains a verify method that causes the upgrade script to be launched with the values specified in the UPGRADE class instance attributes. This method is called only after the verify method is successful. The upgrade process starts again if the agent upgrade fails when you install the upgrade decks. The agent upgrade may fail because of disk space or agent in use.

## Update Method (ZUPDATE)

The sample UPGRADE instance contains an update method value that launches the upgrade script with the values specified in the UPGRADE class instance attributes. This method is called only after the update method is successful. If the agent upgrade fails when you install the upgrade decks first, and updated agent upgrade decks are available in the connected HPCA Configuration server, the update method is launched after the successful installation of these updated materials, initiating the upgrade process again.

## Media Directory (MEDIADIR)

The media directory attribute MEDIADIR contains the value of `&(ZMASTER.ZSYSDIR)/ClientUpgrade`. This is the default location where the upgrade process expects to find the agent upgrade decks, when they are downloaded to the agent workstation.

## Retry Attributes (ATTEMPTS and INTERVAL)

When the agent upgrade service finds that the agent is in use, it attempts the upgrade a number of times at a specified interval. The ATTEMPTS attribute sets the number of times to retry the upgrade, although the INTERVAL attribute specifies the number of seconds the upgrade waits between retry attempts. The default value for both the ATTEMPTS and INTERVAL attributes is 60.

A value of zero in the ATTEMPTS attribute causes the upgrade process to retry indefinitely.

## Command Line (CMDLINE)

The command line attribute, `CMDLINE`, is used to specify the command line arguments to be passed to the agent upgrade process. As all arguments specified after the `-c` option are passed directly to the agent installer, any arguments that can be specified on the agent install command line can be specified here except for the `-mode` argument, which is automatically set by the upgrade script to perform a silent install or upgrade.

The leading text `-c` in the command line attribute named `CMDLINE` is required.

**Note:** The command line arguments following the `-c` option must be placed inside double quotes.

The `-installcomp` command line option is used to specify the specific features to be upgraded or installed on the agent computer.

Valid agent components include:

- `ram`- HPCA Application Manager
- `rim`- HPCA Inventory Manager
- `rsm`- HPCA Application Self-Service Manager
- `svr`- HPCA Applications Management Profiles (AMP) Agent
- `patch`- HPCA Patch Manager
- `rom`- HPCA OS Manager

For example, to upgrade or install your HPCA Application Manager, the HPCA Inventory Manager, and HPCA Application Self-Service Manager, you would specify `"-installcomp ram,rim,rsm"`.

**Note:** When multiple features are specified, the HPCA product acronyms must be comma separated.

The `-mgrip` and `-mgrport` command line options specify the HPCA Configuration server IP address and port that the upgraded agent uses for its ZMASTER object and sample shell scripts. When you upgrade or install the HPCA Application Self-Service Manager, the configuration file `args.xml` is populated with HPCA Configuration server IP address and port number specified with the `-mgrip` and `-mgrport` command line options. These parameter values do not have to be the same value as the HPCA Configuration server IP and port, from which the agent is receiving the upgrade service. The default value for `-mgrport` is `3464`.

**Note:** Sample UPGRADE instances specify a `CMDLINE` attribute value of: `-c "-instcomp ram,rim -mgrip rcs001 -mgrport 3464"` which upgrades Application Manager and Inventory Manager agent components and pre-configures the upgraded agent to receive new applications from the HPCA Configuration server named `rcs001` running on port `3464`. Make sure that you update the value of the UPGRADE instance `CMDLINE` attribute to reflect your preferred HPCA Configuration server IP address and port.

You can use symbolic substitution for the values passed by using the `-mgrip` and `-mgrport` command line arguments, when the HPCA Configuration server from which the agent receives the agent upgrade Service is the same as HPCA Configuration server from which you want the upgraded agent to receive future Application Services. For example, the `UPGRADE.CMDLINE` attribute can be configured to read:

```
-c "-instcomp ram,rim,rsm -mgrip &(ZMASTER.ZIPADDR) -mgrport  
&(ZMASTER.ZDSTSOCK)
```

This upgrades Application Manager, Inventory Manager, and Application Self-Service Manager on the agent receiving the service and pre-configures the upgraded agent to receive new applications from the HPCA Configuration server from which it installed the Agent Upgrade Service.

HP recommends minimal use of the following upgrade command line options: `-instcomp`, `-mgrip`, and `-mgrport`.

You can append the text `-loglevel 9` in the command line to set maximum logging for the agent upgrade or install. This command line option is typically used for diagnostic purposes.

You can specify a command line to use an agent install configuration file. For more information, see ["Remote Installation" on page 95](#).

If you have an installation configuration file already on the agent workstations, you can upgrade the agent using this configuration file. You can specify `-cfg<configfilename.cfg>` in the `CMDLINE` attribute, where `<configfilename.cfg>`, specifies a fully qualified path name to a configuration file.

**Note:** HP recommends that you do not specify both, configuration file and command line options `-installcomp`, `-mgrport`, or `-mgrip` because the command line options override the values specified in the configuration file.

For example, the command line specification of `-c " -loglevel 9 -cfg /tmp/myown.cfg"` relies exclusively on the variables set in the `/tmp/myown.cfg` configuration file to determine which HPCA components are to be upgraded or installed and which HPCA Configuration server IP address and port to use as well as other upgrade or install options.

## Task 2: Configuring the Agent Upgrade

To configure the agent upgrade:

1. In the HPCA Administrator CSDB Editor, navigate to the HP supplied Application Service applicable to the target operating system for which you intend to apply the agent upgrade. For example, `SOFTWARE.ZSERVICE.HPCA_AGENT_90_UPGRADE_LINUX`. The Service instance is connected to an `UPGRADE` class instance that contains the configuration options relevant to the agent upgrade.
2. Go to the `UPGRADE` instance (PRIMARY.SOFTWARE.UPGRADE) for example, `HPCA_AGENT_90_UPGRADE_LINUX`.
3. In the right-hand pane, double-click **CMDLINE**. This enables you to define specific agent upgrade options and behaviors. This attribute is used to specify the agent components you want to upgrade or install as well as the preferred Configuration server IP address and port number.

4. In the Editing Instance dialog box, edit the value to include all the agent components you want to upgrade as well as the preferred HPCA Configuration server IP address and port number. Valid agent components include:

- ram- HPCA Application Manager
- rim- HPCA Inventory Manager
- rsm- HPCA Application Self-Service Manager
- svr- HPCA AMP Agent
- patch- HPCA Patch Manager
- rom- HPCA OS Manager

**Note:** The command line arguments following the `-c` option must be placed inside double quotes. When multiple agent features are specified, the feature acronyms must be comma separated.

For example, to specify upgrades for the HPCA Application Manager and the HPCA Inventory Manager and also have these upgraded agent components configured to connect to a HPCA Configuration server named **rsc001** running on port **3464**, type the following sample command:

```
-c "installcomp ram,rim -mgrip rsc001 -mgrport 3464"
```

5. Click **OK** and click **Yes** to confirm your changes.
6. If you want to change the values for the number of times the HPCA agent attempts to install the agent upgrade as well as the time interval between attempts, change the values of the **ATTEMPTS** and **INTERVAL** attributes in the same manner. The remaining attributes should retain their default values for optimum performance.
7. Connect the OS specific sample service to the appropriate users or devices for distribution. For more information, see the *HP Client Automation Application Manager and Application Self-Service Manager Installation and Configuration Guide*.

**Note:** Before connecting an upgrade service to any agent instances, make sure any users and devices that are configured to receive the agent upgrade service are not connected to self-maintenance for version before the 5.1x agents. If self-maintenance is not disconnected, and the upgrade is installed and completed, you may run the risk of back-leveling the upgraded agent by the application of agent maintenance for earlier versions of the agents on the agent's next connect to the HPCA Configuration server.

To save disk space after a successful upgrade, remove the **ZSERVICE.UPGRADE** instance to uninstall the install media deployed at `$IDMSYS/ClientUpgrade`.

**Note:** The **ZSTOP** expressions in the sample Upgrade Application Service (**ZSERVICE**) instances as well as the supplied **UPGRADE** instances are OS-specific. These expressions are used to ensure that the appropriate agent upgrade materials are distributed to agents that match the OS identifier contained in the expression.



### Task 3: Customizing the Agent Upgrade Services

You can create your own agent upgrade Application Service (ZSERVICE instance and UPGRADE instance) to meet your enterprise requirements. HP recommends that you copy one of the supplied sample instances to a new name, and ensure that the instance prefix (used to denote the target operating system) used as the source of the copy matches the intended target operating system. This is to ensure that the new instance has the necessary ZSTOP expression applicable to the operating system to which the upgrade applies. By performing the copy instance function within the UPGRADE class, the custom UPGRADE instance should already have a connection to the appropriate SOFTWARE.PACKAGE instance for the intended target operating system. You should then, connect the custom UPGRADE instance to the custom ZSERVICE instance replacing the pre-existing UPGRADE instance connection in the Application Service instance.

Ensure that agent upgrade service has connections as depicted in the figure *Model for the Agent Upgrade Service* in section "Task 1: Importing the Classes, Instances, and Resources" on page 138.

### Task 4: Adding the UPGRADE Class to the Master Connection Rules

You can add new ZSERVICE/UPGRADE instances for the agent upgrade as per your enterprise requirements. You can use the HPCA Admin CSDB Editor to enable the connections list for the new UPGRADE class before adding the new instances.

Complete the following steps, such that the UPGRADE class appears as a connectable class from the ZSERVICE class, and the PACKAGE class appears as a connectable class from the UPGRADE class using the Show Connections feature of the HPCA Admin CSDB Editor.

To add the Upgrade class to the Master Connection Rules:

1. Use the HPCA Admin CSDB Editor and go to the PRIMARY.ADMIN.ZCONNECT class.
2. Right-click **Connection Rules (ZCONNECT)** and select **Edit class**.
3. In the Editing Class window, scroll to the bottom of the class list, select the last template entry, and then click **Add After**.
4. Add a new class connection field similar to the existing connection fields.
5. Name the new connection field UPGRADE and assign it a length of 50 and a description of UPGRADE Connect List.
6. Click **OK** and **Yes**.
7. Right-click the **PRIMARY.ADMIN.ZCONNECT.MASTER\_CONNECTION\_RULES** instance and select **Edit Instance**.
8. For the new UPGRADE attribute, add the value `ZLIST.CONNECT_UPGRADE_TO_RULES`.
9. Right-click the **PRIMARY.ADMIN.ZLIST.CONNECT\_ZSERVICE\_TO\_RULES** instance and select **Edit Instance**.
10. Add the value `UPGRADE` in the first empty variable slot.

11. Click **OK**.
12. To add a new instance name to the ZLIST class, right-click **Name Lists (8) (ZLIST)** and select **New Instance**.
13. Name the new instance `CONNECT_UPGRADE_TO_RULES`.
14. Right-click the new instance and select **Edit Instance**.
15. Add the value `PACKAGE` to the first empty variable entry.
16. Click **OK**.

## Agent Upgrade Process when applied as an HPCA Service

After a user or device's policy entitlement model is configured to include the agent upgrade decks, and the agent connects and receives one of the mandatory application services (for example, `HPCA_AGENT_90_UPGRADE_LINUX`) containing the agent upgrade materials, HPCA downloads all of the necessary materials to perform a agent upgrade.

The default location of the upgrade media, when downloaded using an agent connect is `&(ZMASTER.ZSYSDIR)/ClientUpgrade` (the location, as defined in `UPGRADE.MEDIADIR` attribute) in the device's entitlement model. The installation of the Upgrade Service runs a method named "install\_upgrade" (with additional command line parameters) which waits for agent processes to finish before upgrading the agent binaries. The `install_upgrade` method exits with a return code of 1, which results in a 709 radconct return code. This behavior tells the agent that the upgrade is not complete. For reporting purposes, an `APPEVENT` is sent that identifies the `ZSERVICE` with an `ERRORNUM` of 324 and `STATUS` of "Install/Upgrade is not complete." Depending on the level of radconct, `install_upgrade` may have to do a second connect to verify the upgrade status. The `install_upgrade` and upgrade logs can be found at `$IDMLOG` folder for troubleshooting purposes.

When the agent processes are complete, the actual agent upgrade begins. The upgrade process stops the agent daemons (`radsched` and `radexecd`) if they are running and upgrades the agent components specified by the `-installcomp` parameter of the `UPGRADE` class instance or the `SelectComponent` section of the specified configuration file. After upgrading, the agent process restarts the agent daemons that were running when the upgrade was initiated.

To save disk space after a successful upgrade, remove the `ZSERVICE.UPGRADE` instance to uninstall the media deployed at `$IDMSYS/ClientUpgrade`.

## Upgrading Using Installation Media

To upgrade the Agent using the local upgrade method:

1. Logon to the Linux or Macintosh workstation as root.
2. Navigate to `/Setup-Core/Media/client/default/<platform>` folder on the installation media, where `<platform>` is the operating system on which you are performing the agent upgrade.
3. Open the command prompt and run the following command:  

```
./upgrade -c "-installcomp <PARMS>-mgrip<IP>-mgrport<PORT>"
```

where:

- `<PARMS>` is either a single argument or a comma separated list of agent components that you want to upgrade.  
Valid agent components include:
  - ram- HPCA Application Manager
  - rim- HPCA Inventory Manager
  - rsm- HPCA Application Self-Service Manager
  - svr- HPCA AMP Agent
  - patch- HPCA Patch Manager
  - rom- HPCA OS Manager
- `<IP>` is the IP address of the HPCA Configuration server from which you want the upgraded agent to receive new applications.
- `<PORT>` is the port number on which the HPCA Configuration server is running.

The upgrade command line is used to specify the command line arguments to be passed to the agent upgrade process. All arguments specified after the `-c` option are passed directly to the agent installer, therefore, any arguments that can be specified on the agent install command line can be specified here except for the `-mode` argument, which is automatically set by the upgrade script to perform a silent install or upgrade.

**Note:** The command line arguments following the `-c` option must be placed inside double quotes.

The `-installcomp` command line option is used to specify the specific products to be upgraded or installed on the agent workstation. For example, to upgrade your Application Manager and also install the Inventory Manager and Application Self-Service Manager, you would specify "`-installcomp ram,rim,rsm`".

**Note:** When multiple features are specified in the command line arguments the product acronyms must be comma separated.

The `-mgrip` and `-mgrport` command line options specify the HPCA Configuration server IP address and port that the upgraded agent will use for its ZMASTER object and sample shell scripts. If you upgrade or install the Application Self-Service Manager, its configuration file, `args.xml` is populated with HPCA Configuration server IP address and port number specified with the `-mgrip` and `-mgrport` command line options. The default value for `-mgrport` is **3464**.

You can specify `-loglevel 9` in the command line to set maximum logging for the agent upgrade/install.

#### Upgrading using an Existing Configuration File

You can use the installation configuration file created by the Remote Installation Setup process of the agent installer to perform an agent upgrade.

To upgrade the agent using an installation configuration file:

1. Create a configuration file by running the agent installation. For instructions on running a remote installation setup, see the ["Remote Installation" on page 95](#).
2. Log on to the workstation as root.
3. Open the command prompt.
4. Navigate to `/Setup-Core/Media/client/default/<platform>` folder on the installation media, where `<platform>` denotes the operating system on which you are performing the HPCA agent upgrade.
5. Run the following:  

```
./upgrade -c "-cfg configfilename.cfg"
```

The `configfilename.cfg` specifies a fully qualified path name to an install configuration file that contains the components selection and desired configuration options.

For information about installer configuration files (created by the Remote Installation Setup process of the agent installer), see *HP Client Automation Application Manager and Application Self-Service Manager Installation and Configuration Guide* and *HP Client Automation Inventory Manager Reference Guide*.

**Note:** HP recommends that you do not specify both configuration file and command line options `-installcomp`, `-mgrport`, or `-mgrip` because the command line options override the values specified in the configuration file.

For example, the command line of `-c " -loglevel 9 -cfg /tmp/myown.cfg"` would rely exclusively on the variables set in the `/tmp/myown.cfg` configuration file to determine what HPCA components to upgrade or install and what HPCA Configuration server IP and port to use as well as other upgrade or install options.

## Upgrading HPCA Administrator Tools

**Caution:** The HPCA Agent upgrade removes a previous version of the HPCA Administrator tools if one is installed on the device.

The HPCA Administrator tools are automatically installed during the HPCA Core server version 9.00 installation. If existing HPCA Administrator tools are present during the HPCA Core server installation, they are updated during the installation process.

You can upgrade to the latest version of the HPCA Administrator tools in the following two ways:

- Using the installation files:
  - a. Remove the existing version of the HPCA Administrator tools installed on the computer to upgrade the HPCA Administrator tools on a computer other than the Core server.
  - b. Use the HPCA Administrator tools installation files for Windows, Linux, and Macintosh operating systems to upgrade the HPCA Administrator tools.
    - **For Windows:** Run `setup.exe`, the HPCA Administrator tools installation command located in the `\Setup-Core\Media\admin\default\win32` directory on the HPCA installation media.

- **For Linux:** Remove the existing HPCA Administrator tools and run the `./install` command from the `\Setup-Core\Media\admin\default\linux` directory.
- **For Macintosh:** Remove the existing HPCA Administrator tools and run the `sudo ./install` command from the `\Setup-Core\Media\admin\default\macx86` directory.
- Using the HPCA\_ADMINTOOLS service:  
Deploy the HPCA\_ADMINTOOLS service in SOFTWARE domain to the managed device from the HPCA Core Console.

**Caution:** If you are migrating from a version before 7.90, do not deploy the legacy CCM\_PUBLISHER service in a 9.00 environment. This service can be deleted from the CSDB as it is no longer required.

## Upgrading the HPCA SQL/Oracle Database Manually

This step is not required when upgrading from version 7.80, 7.90, or 8.10. It is required when upgrading from version 7.50. If you already have a FOREIGN KEY CONSTRAINT set to the DEVICECONFIG.DEVICE\_ID column on Inventory database tables, you can skip this step.

Instead of using the `sqlmigrate.cmd` script, you can upgrade the HPCA SQL database manually after restoring your data.

**Caution:** This process should be performed only by an experienced database administrator.

The database tables listed in "[SQL Database Tables that must be Upgraded](#)" on next page have schema changes that require the tables to be re-created to generate the correct primary and foreign keys. Data from these tables should be exported and stored in temporary tables before beginning the manual upgrade process.

To upgrade the HPCA SQL database manually:

1. On the computer hosting the HPCA Core server, stop the HPCA Core service.
2. Export (or store in temporary tables) the data in the tables listed in "[SQL Database Tables that must be Upgraded](#)" on next page.
3. Drop all the tables listed in the next section.

**Caution:** Ensure that you drop the tables in the same order as listed in the next section.

4. Restart the HPCA Messaging Server service (to re-create the table schema).
5. Re-import your data into the tables.

**Caution:** Ensure that you import the tables in the reverse order as listed in the next section.

During the import process, data that violates database integrity is not imported. Make sure that you review the data to determine if it is still valid and required.

6. Start the HPCA Core service.

## SQL Database Tables that must be Upgraded

The following tables have had schema changes that require the tables to be re-created to generate the correct primary and foreign keys for HPCA version 9.00. This process is performed automatically by the `sqlmigrate.cmd` script.

```
rWin32_WinSAT
rWin32_VideoController
rWin32_UserAccount
rWin32_USBController
rWin32_TimeZone
rWin32_SystemEnclosure
rWin32_SystemDriver
rWin32_StartupCommand
rWin32_SoundDevice
rWin32_SoftwareFeature
rWin32_SoftwareElement
rWin32_Share
rWin32_Service
rWin32_SerialPort
rwin32_quickfixengineering
rWin32_Product
rWin32_Processor
rWin32_Process
rWin32_Printer
rWin32_PortResource
rwin32_portablebattery
rWin32_PointingDevice
rWin32_PnPEntity
rWin32_PhysicalMemory
rWin32_ParallelPort
```

rWin32\_PageFileUsage  
rWin32\_PageFileSetting  
rWin32\_PageFile  
rWin32\_OperatingSystem  
rWin32\_NetworkLoginProfile  
rWin32\_NetworkConnection  
rWin32\_NetworkAdapterConf  
rWin32\_NetworkAdapter  
rWin32\_MotherboardDevice  
rWin32\_MemoryDevice  
rWin32\_MemoryArray  
rWin32\_LogicalProgramGroup  
rWin32\_LogicalMemoryConf  
rWin32\_LogicalDisk  
rWin32\_LoadOrderGroup  
rWin32\_Keyboard  
rWin32\_IRQResource  
rWin32\_IDEController  
rWin32\_Group  
rWin32\_FloppyDrive  
rWin32\_FloppyController  
rWin32\_Environment  
rWin32\_DMACHannel  
rWin32\_DisplayControllerConf  
rWin32\_DisplayConf  
rWin32\_DiskPartition  
rWin32\_DiskDrive  
rWin32\_DeviceMemoryAddress  
rWin32\_DesktopMonitor  
rWin32\_Desktop  
rWin32\_ComputerSystemProduct  
rWin32\_ComputerSystem  
rWin32\_CDROMDrive

rWin32\_CacheMemory  
rWin32\_Bus  
rWin32\_BootConf  
rWin32\_BIOS  
rwin32\_baseboard  
rWiFi\_NetworkAdapter  
rRegistry  
rNVD\_WBEMStatus  
rNVD\_UserAccount  
rNVD\_SolarisPatch  
rNVD\_Product  
rNVD\_PDASystem  
rNVD\_NISUserAccount  
rNVD\_NISGroupAccount  
rNVD\_MulticastStatistics  
rNVD\_INSTALLED\_UNINSTALL  
rNVD\_INSTALLED\_APPS  
rNVD\_GroupMember  
rNVD\_GroupAccount  
rNVD\_DownloadStatistics  
rMSSD\_FailurePredictStatus  
rMSSD\_AttributeData  
rhp\_biosstring  
rhp\_biossensor  
rhp\_biospassword  
rhp\_biosorderedlist  
rhp\_biosinteger  
rhp\_biosevent  
rhp\_biosenumeration  
rCIM\_UnixOperatingSystem  
rCIM\_UnixLocalFileSystem  
rCIM\_UnixComputerSystem  
rCIM\_StorageVolume



rCIM\_SoftwareFeatureElements  
rCIM\_SoftwareFeature  
rCIM\_SoftwareElement  
rCIM\_Service  
rCIM\_SCSIInterface  
rCIM\_SCSIController  
rCIM\_ResidesOnExtent  
rCIM\_ProductSoftwareFeatures  
rCIM\_Product  
rCIM\_Processor  
rCIM\_Process  
rCIM\_ParallelController  
rCIM\_OperatingSystem  
rCIM\_NFS  
rCIM\_MediaPresent  
rCIM\_LogicalDiskBasedOnVolume  
rCIM\_LogicalDisk  
rCIM\_IDEController  
rCIM\_HPUX\_SwBundles  
rCIM\_Export  
rCIM\_EthernetAdapter  
rCIM\_DVDDrive  
rCIM\_DiskDrive  
rCIM\_Directory  
rCIM\_ComputerSystem  
rCIM\_CDRomDrive  
DeviceUserGroup  
SMBiosInfo  
Query  
DeviceNotify  
FileAudit  
DeviceZRStates  
DeviceZRState

DeviceSynopsis

HDeviceStatus

DeviceStatus

HDeviceState

DeviceState

DeviceServices

DeviceMap

HDeviceErrors

DeviceErrors

Audit\_Type

Audit\_Attrs

Audit\_Event

Audit\_Cat

Audit\_AttrNames

HAppEvent

AppEvent

HAppRNPEvent

AppRNPEvent

HAppMSIEvent

AppMSIEvent

JOBTASK

HJOBSTAT

JOBSTAT

JOBPARM

ADInfo

HDeviceConfig

DeviceConfig

# Chapter 10

## Troubleshooting

This section covers troubleshooting tips for the issues that you may face during or after HPCA installation and upgrade.

### Upgrade Issues

Problem	Solution
<p>The following error message appears during restore.</p> <pre>"LDIF export failed. bdb_db_ open: unclean shutdown detected; attempting recovery. Recovery skipped in read-only mode"</pre>	<p>To resolve the error, perform the following steps:</p> <ol style="list-style-type: none"><li>1. Stop the HPCA Core service.</li><li>2. Open the command prompt.</li><li>3. Navigate to the HPCABackup/rmp/openldap directory where you have taken the backup.</li><li>4. Run the following command. <pre>slapd -h ldap://localhost:3474 -f slapd.conf -d 256</pre><p>Sample output of the above command:</p><pre>@(#) \$OpenLDAP: slapd 2.4.23 (Jul 25 2010 18:24:14) \$ @RIVER:/home/matth/sol_R_2_4_ 23/build/openldap.NT_i686/ servers/slapd bdb_db_open: database "cn=foobar,cn=hpca": unclean shutdown detected; attempting recovery. slapd starting</pre></li><li>5. Type CTRL + C to terminate the command prompt.</li><li>6. Restart the HPCA Core service.</li><li>7. Run the restore operation again.</li></ol>
<p>The following error message appears during database migration for ORACLE database.</p> <pre>MIG: SQL migrate script Error processing INSERT INTO DEVICECONFIG [Oracle] [ODBC] [Ora]ORA-00001:</pre>	<p>Ignore the error message as it does not affect the ORACLE database migration process. The error message appears because the unique constraint of some of the tables in the latest version of HPCA are different from that of the previous versions.</p>

Problem	Solution
unique constraint (CMDATAMIG78.SYS_C0019388) violated	

# Appendix A

---

## Planning HPCA Deployment

In an HPCA environment, the unavailability of the Core server is the only single point of failure, which can disrupt the functioning of configuration services and data services.

This appendix provides information on how you can configure your environment, such that there is no single point of failure, and the features are available when the Core server is down.

Before setting up your environment, consider the following options:

- Preload the Satellite server: Configure the Satellite servers for preload. The external policy for software and patches is available if the content is preloaded to the Satellite server. For more information on how to preload the Satellite server, see the *HP Client Automation Enterprise User Guide*.
- Distribute data messages load: Configure the tier-1 full-service Satellite server for directly posting the agent messages to the RDBMS, instead of forwarding the messages to the Core server. This configuration though reduces the load and the overall dependency on the Core server, it however, adds an additional load on the Satellite servers to direct the data to the RDBMS. To overcome the issue of additional load on Satellite servers, you can separate the messaging role and agent resolution role for the higher tier Satellite servers. For more information on how to setup your environment for distributing the messages load and dependency on the Core server, see the sections "[Distributing Messaging Load](#)" on next page and "[Separating Roles Among Satellites](#)" below.

## Separating Roles Among Satellites

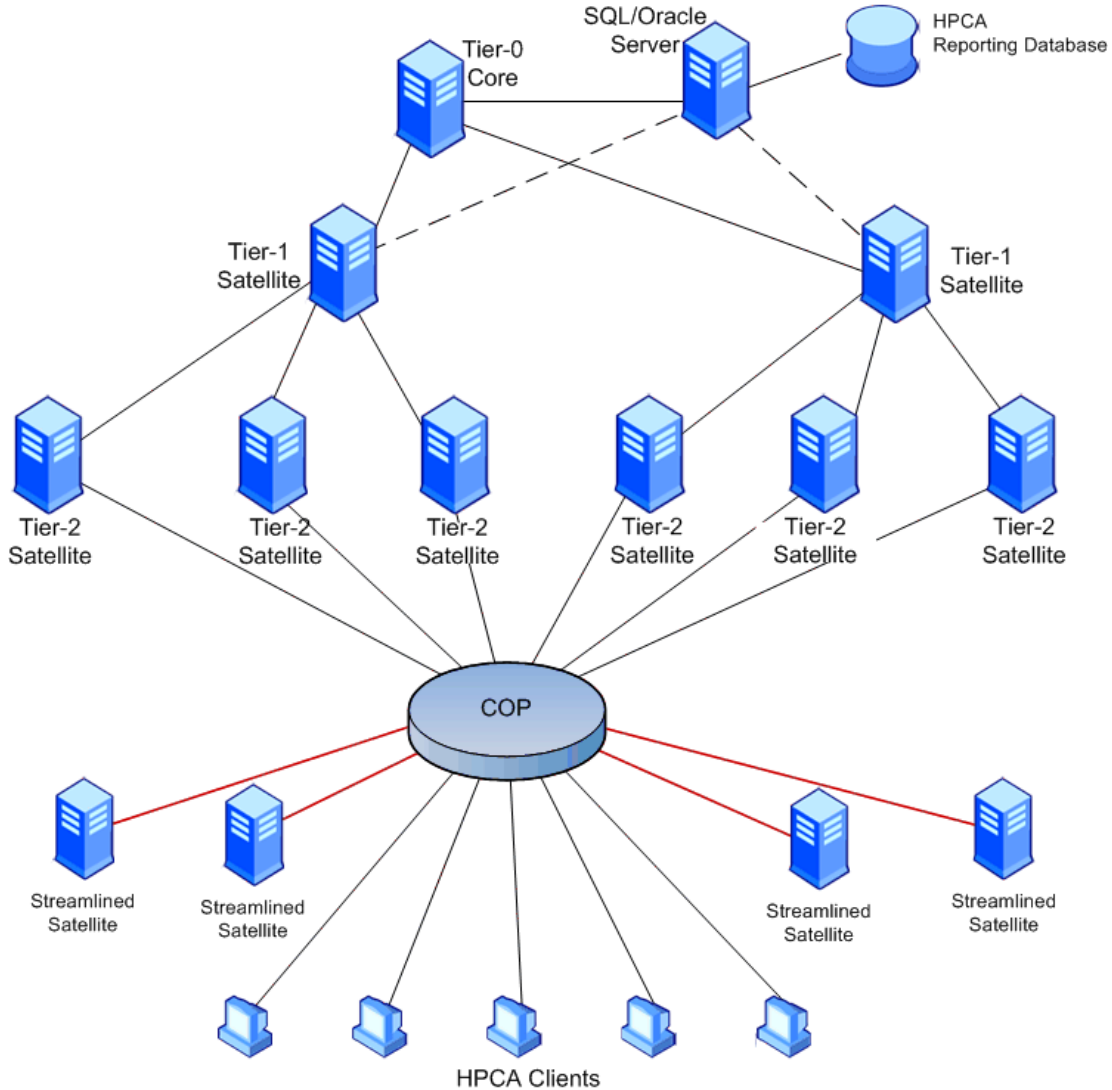
You can improve performance for data messaging and resolution services by separating the roles among higher tier Satellite servers. You can configure Satellite servers, such that the functions performed by the Core server and tier-1 Satellite servers in the default configuration are separated into two roles:

- A Satellite role dedicated to data posting functions.
- A Satellite role dedicated to client resolution services.

Tier-1 Satellite servers can be configured to post data and tier-2 Satellite server can be configured to handle client requests.

The following diagrams illustrate this configuration from the roles perspective:

## Separating Roles Among Satellites



The Core server at tier-0 performs administrative functions and is not directly involved in client resolution or message handling. This server uses the default Messaging server configuration.

The group of Satellite servers at tier-1 are dedicated to synchronize data and post messages to the relational database. The tier-1 Satellite servers do not service client requests directly, however, these servers serve as upstream hosts for tier-2 Satellite servers. This configuration reduces the load on the tier-2 Satellite servers responsible for client resolution services. The load is distributed evenly across tier-1 Satellite servers that reduces the backlog of message queues. The data synchronization for the Satellite servers should be performed in a phased manner, such that a few Satellite servers are available at all times.

## Distributing Messaging Load

To reduce the dependency on the Core server and to provide better load distribution for messaging traffic without increasing the server count, configure the full-service Satellite servers to directly post data to the RDBMS. You can configure tier-1 Satellite servers to post client messaging data directly to the reporting database. This reduces the load from the Core server, which can now primarily

focus on the administrative tasks. The tier-0 Core server uses default Messaging server configuration.

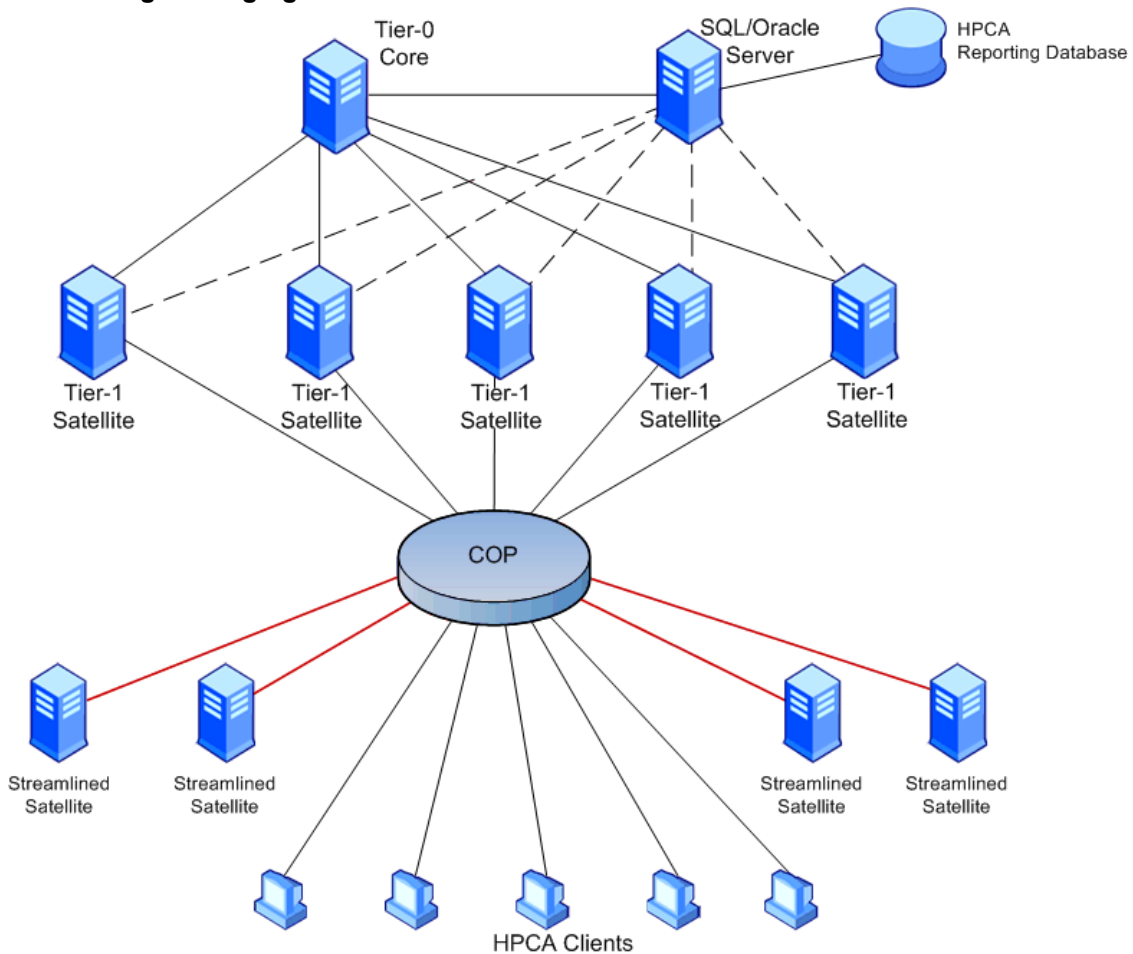
For more information on how to configure a Satellite server for directly posting the data to RDBMS, see the *HP Client Automation Enterprise User Guide*.

The primary benefit of this configuration model is to distribute the ODBC posting loads across multiple servers. This reduces the possibility of severe bottlenecks in the reporting data queues, especially if the Core server is either removed from service or experiences an outage.

You can extend the architecture by including remote full-service Satellite servers that should not post messaging data directly to the RDBMS. These servers use the default Messaging server configuration and forward their data to a tier-1 Satellite server for posting. The tier-2 Satellite servers also synchronize metadata and resources from the same upstream tier-1 host.

The following diagram illustrates the configuration from the messaging perspective:

### Distributing Messaging Load



The additional load on tier-1 can be addressed by appropriately scaling to the required number of servers based on the volume of management activity being performed on a routine or worst case basis. You can also separate the roles among Satellite servers to reduce the load on tier-1, as explained in the section "[Separating Roles Among Satellites](#)" on page 157.

In this scenario, the Client Operations Profile (COP) is configured for optimal distribution of client loads for resolution services and fail-over. You can define all tier-1 servers at equal priority using a wild-card naming strategy.

HP recommends that you perform data synchronization for the Satellite servers in a phased manner, such that a few Satellite servers are available at all times.



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**Document title:** Installation and Upgrade Guide

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