

Using HP System Software Manager for the mass deployment of software updates to client PCs



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Introduction

At a time when management and support costs can account for as much as 80% of the Total Cost of Ownership (TCO) of a business PC, IT managers are faced with shrinking budgets, a shortage of skilled IT staff, and the necessity to do more with less. In response, HP has introduced a wide selection of manageability solutions to reduce the support burden – by automating repetitive tasks like deployment, backup, and security, for example. In this way, the TCO can be significantly reduced and IT staff freed up for more productive activities.

This White Paper outlines a variety of HP manageability solutions and provides more information on the capabilities and requirements of HP System Software Manager (SSM), a utility for deploying system software updates.

More detailed information on SSM is available at <http://www.hp.com/go/ssm> (including a user guide provided with the SSM download).

HP client management solutions

HP offers client management solutions to meet a wide variety of customer needs. These solutions include:

- **HP System Software Manager**, the subject of this White Paper, is a free utility¹ that helps streamline the mass deployment of system software updates to client PCs. SSM reduces the complexity of system software management by delivering the following capabilities:
 - Deploying system software updates (for drivers and BIOS, for example) from a centralized file store to multiple client PCs – simultaneously and automatically
 - Deploying customer-created update packages
 - Enforcing BIOS configurations and passwords
 - Logging the changes made to each computer
- **HP Client Manager Software**, a joint HP and Altiris solution, allows IT staff to track, monitor and manage HP business systems throughout the network from a centralized web console. Capabilities include:
 - Tracking HP client hardware
 - Collecting valuable information such as processor, memory, video, and security settings
 - Monitoring system health so that issues can be addressed before performance is impacted
 - Installing drivers and BIOS updates
 - Remotely configuring BIOS settings

These client management solutions are available at no charge.

¹ SSM is available online at <http://www.hp.com/go/ssm>.

³ If the target system currently has a F10 setup password, this password must be provided to SSM to authorize a system ROM update.

SSM overview

SSM can simplify and automate the updating of BIOS images, device drivers, BIOS settings, and more. Features include:

- **Automated updates**
 - SSM automatically detects older versions – or the absence of – system software and, if necessary, supplies the latest versions from a central file store.
SSM can deploy system utilities, system ROM³, drivers for PCI and Plug-and-Play cards, or F10 setup parameters⁴ (such as security settings or the device boot order).
SSM can easily integrate with login scripts or other package deployment systems to simultaneously update multiple client PCs – there is no need for IT staff to physically visit the PCs.
 - If specified, SSM can automatically replicate master BIOS settings from a file store to all supported desktop and workstation clients with Replicated Setup capability.
- **Ease of use and flexibility**
 - From a simple wizard, IT staff can create and share a central file store, and configure execution options for client PCs.
 - Updates are initiated through a SSM command line that is delivered to the client PC by a logon script, batch file, or third party package delivery system such as Microsoft SMS.
- **Stability and consistency**
 - By controlling and standardizing software deployed on client PCs, system performance can be optimized and support costs reduced.

Software updates

HP regularly issues software updates (also known as SoftPaks) for client PCs on the [HP website](#) or on Support Software CD-ROMs. To facilitate management and deployment, HP and third-party suppliers enable many of these SoftPaks for use with SSM.

SSM requires each SoftPak to include an information file, which has a **.CVA** extension. This file specifies the name and version of the update with the devices, platforms, and languages supported. The file also contains a single command that can be executed on the client PC – typically to run the set up executable for that SoftPak.

To add flexibility, SSM allows SoftPaks to be customized to extend their capabilities. For example, to extend the support of a particular SoftPak to a new desktop model, IT staff must simply customize the SoftPak's CVA file to include the name of the new model.

⁴ For supported desktops and workstations

A SSM-enabled update is easily identified by its SSM icon, as shown in Figure 1.

Figure 1: SSM-enabled SoftPaqs are easily identified by an icon

BIOS - System ROM » top of page		
name	current version	previous version
HPQFlash Utility for Evo (686O2 ROM)	» 2.21 12 Jun 03	» 2.20 A 17 Jan 03
HPQFlash Utility for Evo D310/D320/D510 and W4000 SFF DDR (686O2 ROM)	» 3.18 12 Jun 03	
Remote ROM Flash Utilities for Evo (686O2 ROM)	» 2.21 12 Jun 03	» 2.20 A 17 Jan 03
Remote ROM Flash Utilities for Evo D310/D320/D510 and W4000 SFF DDR (686O2 ROM)	» 3.18 12 Jun 03	
ROM Image for Evo (686O2 ROM)	» 2.21  12 Jun 03	» 2.20 A  17 Jan 03
ROM Image for Evo D310/D320/D510 and W4000 SFF DDR (686O2 ROM)	» 3.18  12 Jun 03	
ROMPaq for Evo (686O2 ROM)	» 2.21 12 Jun 03	» 2.20 A 17 Jan 03
ROMPaq for Evo D310/D320/D510 and W4000 SFF DDR (686O2 ROM)	» 3.18 12 Jun 03	» 3.16 A 7 Apr 03
Driver - Audio » top of page		
name	current version	previous version
ADI SoundMax AC97 Audio Driver for Windows 98SE/2000/ME/XP	» 5.12.01.3620 A  23 Jul 03	
Driver - Display » top of page		
name	current version	previous version
Intel Extreme Graphics Driver for Windows 2000/XP	» 6.13.01.3510 A  18 Jul 03	» 6.13.01.3460 A  14 Mar 03
Matrox Display Driver for Windows 2000/XP	» 5.75.025 A  18 Nov 02	

Icon denoting an update enabled for SSM

SSM-enabled software updates for a Compaq Evo D510 (Convertible Minitower) running Microsoft Windows XP Professional

Why not SSM-enabled?

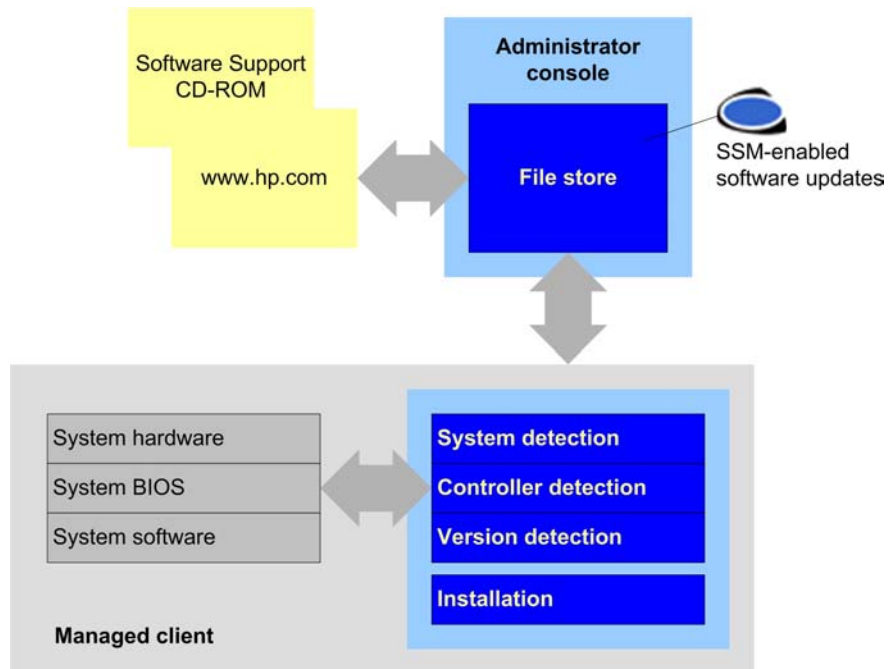
Reasons for not enabling a particular SoftPaq for SSM include:

- The SoftPaq does not offer a self-contained executable setup program.
- The SoftPaq is vendor-created; the vendor is unable to create a CVA file.
- SSM does not support SoftPaqs for USB devices.
- SSM does not support ROM updates for the DOS environment.

Using SSM

Figure 2 shows the SSM architecture, with an administrator console maintaining software updates in a file store for distribution to one or more managed clients.

Figure 2: SSM architecture showing the administrator and a single managed client



File store

- The file store may be nested to any depth to best organize updates.
- The file store may be deployed on a network share, the local machine, or a CD-ROM.
- There may be multiple file stores to support different workgroups or installation-order dependencies.

Database

SSM creates a database to identify SoftPaq deliverables contained in the file store (based on information contained in CVA files). During an update operation, SSM uses the database to quickly identify the SoftPaqs available for a particular client PC.

To expedite the update, IT staff can maintain a pre-built database. The alternative is to allow SSM to scan the entire file store for CVA files, build a temporary database, then delete this database each time SSM is used to update a system.

A pre-built database must be re-built whenever a deliverable is added to or removed from the file store.

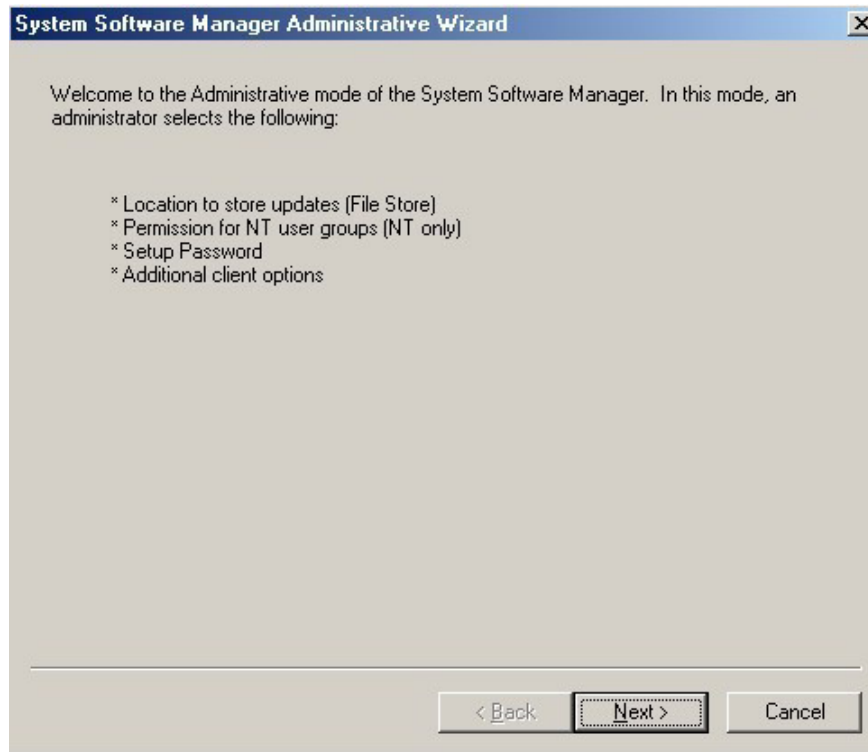
Modes of operation

SSM has two modes of operation: Administrative Mode and Update Mode.

Administrative Mode

Administrative Mode is wizard-driven (as shown in Figure 3), allowing IT staff to manage the SSM environment.

Figure 3: The Administrative Mode wizard, showing the management capabilities available to IT staff



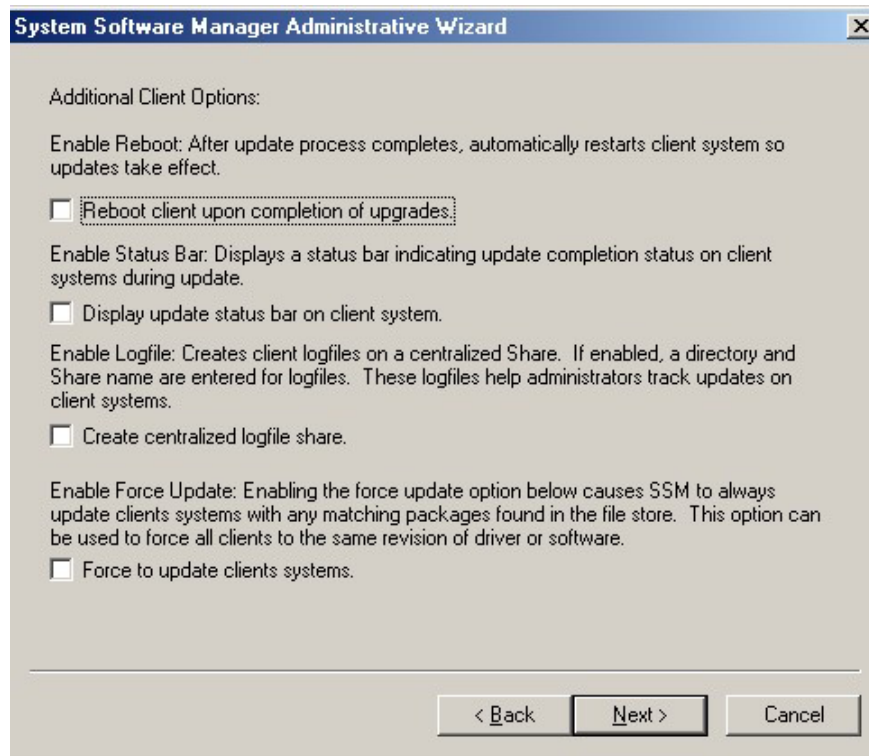
The capabilities of Administrative Mode include:

- Setting up a central file store to maintain the deliverables associated with each SoftPaq – the CVA file, a setup executable, and so on
- Managing the database
- Specifying the F10 setup password used for BIOS updates and settings
- Specifying Update Mode execution options (shown in Figure 4), which may include:
 - Rebooting the client machine so that an update takes immediate effect
 - Displaying a status bar so that the user can monitor progress
 - Copying the update summary report (log file)⁵ to a centralized share for later analysis

⁵ In this way, SSM can track updates supplied to individual client PCs, collecting these reports at a central location.

Figure 4 shows execution options that can be specified in Administrative Mode.

Figure 4: Update Mode execution options



Update Mode

Update Mode⁶ is the primary SSM operational mode. Easily invoked on a client PC (by a batch file or configuration utility), Update Mode automatically identifies and installs SoftPaqs.

If specified, the SSM **Replicated Setup** feature can configure the BIOS on a client machine⁷, allowing IT staff to standardize certain BIOS settings across the enterprise.

Any Update Mode execution options specified in Administrative Mode can be overridden by SSM command line parameters.

⁶ Update Mode combines the SSM Client and Local Modes implemented in earlier versions of SSM (before 1.50).

⁷ The BIOS on the client machine must support the Replicated Setup feature.

Deploying updates

The process for deploying SoftPaqs with SSM has two stages: set up and execution.

Set-up

IT staff are responsible for the following activities:

- Selecting appropriate SSM-enabled SoftPaqs from the HP website or a Support Software CD
- Creating a central file store
- Copying update deliverables to the file store
- If desired, pre-building the Update Information Database
- Specifying client PC execution options

Execution

1. IT staff deliver the appropriate SSM command line to the desired client PCs.
2. On each client, SSM compares installed software with the SoftPaqs available. If the following conditions apply, SSM selects the particular SoftPaq to be deployed:
 - Operating systems match
 - System IDs match
 - Device IDs match
 - Languages match
 - There is no installed version or the SoftPaq is more recent than the installed version
3. Using an appropriate delivery mechanism (such as logon script, batch file, or third-party package delivery system), SMS automatically installs the selected SoftPaqs updates on each client PC – no user intervention is required.
4. SSM creates a summary report that contains detailed information on the client and any updates performed.

Operating system support

SSM is supported by the following Microsoft® operating systems: Windows® 98, Windows NT 4.0 Professional Workstation, Windows 2000 Professional, and Windows XP Professional.

Customizing SoftPaqs

If the SoftPaqs available from HP do not meet your needs, existing SoftPaqs can be easily modified or new deliverables created.

Modifying a SoftPaq

A SoftPaq can be modified to meet particular needs by updating the associated CVA file – a text-based INI file that can be edited using Windows Notepad.

The most common reason for modifying an existing SoftPaq is that HP has released a new computer system and has not yet updated the CVA file in the appropriate SoftPaq to include support for this system. In this case, there is a need to override the current list of supported systems.

Another reason for modifying a SoftPaq would be to update silent install parameters to reflect company-specific configuration options.

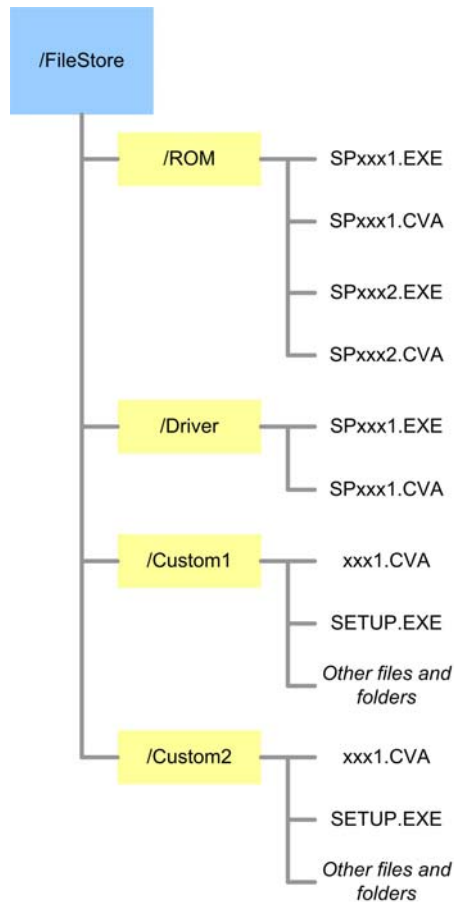
Creating a new deliverable

A custom deliverable consists of the following components:

- A customized CVA file, which contains specific information about the deliverable
- The install program and all other files and folders required by the deliverable

Each new deliverable is stored in a dedicated folder in the file store, as shown in Figure 5.

Figure 5: An example of a nested file store that includes two custom deliverables, each in dedicated folder



Note:

SSM automatically extracts the CVA file from each update.

Certain dependencies must be met by each new deliverable.

Dependencies

Table 1 lists dependencies that must be met by each deliverable (whether custom or not).

Table 1. Deliverable dependencies

Characteristic	Dependency
Setup	Since SSM is only capable of running a single command from the CVA file, the deliverable must include a self-contained executable setup program. The install process must be fully automated, requiring no user input.
Significant file	To allow SSM to determine if a specific deliverable has been installed on the client or is the latest version, each deliverable requires a so-called significant file . The header of the significant file identifies the particular version of the associated deliverable. The significant file may, for example, be the .EXE file, or a .DLL or .SYS file.
Controlled reboot	Each deliverable must support a controlled system reboot so that multiple deliverables can be installed with a single reboot. The deliverable must not reboot the system by default.
Recovery	The setup program must be able to recover gracefully from a failed install (through insufficient disk space, for example). Ideally, the setup program should be able to log errors.
Upgradeability	The setup program must be able to support an update of the deliverable to a new version.

Frequently asked questions

This section responds to a number of questions that are frequently asked about SSM.

What is SSM?

HP System Software Manager (SSM) is a utility that helps streamline the mass deployment of system software updates to client PCs. SSM reduces the complexity of system software management by delivering the following capabilities:

- Deploying system software updates (for drivers and BIOS, for example) from a centralized file store to multiple client PCs – simultaneously and automatically
- Deploying customer-created update packages
- Enforcing BIOS configurations and passwords
- Logging the changes made to each computer

How much does SSM cost?

SSM can be downloaded at no charge at <http://www.hp.com/go/ssm>.

What is a CVA file?

To be supported by SSM, an update must be associated with a CVA file that provides essential information about the update.

Does SSM support non-HP software?

SSM supports third-party updates if these are associated with CVA files.

Why are some updates not enabled for SSM?

There are numerous reasons for not enabling a particular update for SSM. For example:

- The update does not offer a self-contained executable setup program.
- The update is vendor-created; the vendor is unable to create a CVA file.
- SSM does not support updates for USB devices.
- SSM does not support ROM updates for the DOS environment

If I use SSM, do I need HP Client Manager Software?

SSM allows IT staff to keep clients current by automatically deploying software updates. However, this is just one of the capabilities offered by HP Client Manager Software; others include tracking hardware assets across the enterprise and proactive problem resolution.

For more information

HP System Software Manager (SSM)

<http://h18000.www1.hp.com/im/ssmwp.html>

SoftPaqs available from HP

<http://hp.com/support/files>

HP client management solutions

<http://www.hp.com/go/easydeploy>

HP Client Manager Software

http://h18000.www1.hp.com/im/client_mgr.html

Altiris partnership with HP

<http://www.altiris.com/partners/alliances/hp/>

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