HP Client Catalog for SMS
Technical White Paper

Abstract

This document describes the HP software update catalog for Microsoft System Management Server (SMS) 2003 Release 2 (R2). It also provides an overview of the SMS custom update process, explains the benefits of using the HP Client Catalog for SMS, and gives some insight into how the catalog leverages Windows Management Instrumentation (WMI) and the HP Client Management Interface (HP CMI). Finally, this paper describes the steps that should be followed to import the catalog into SMS and deploy HP software updates to HP client systems.

Introduction

Update management—the ability to identify and selectively deploy updates in a timely and automated manner—is an important function of maintaining any set of computers, from a single PC to an enterprise datacenter. Update management can help maintain security and productivity for the managed organization. HP now offers a mechanism to streamline updates for HP systems within an SMS management infrastructure. The HP Client Catalog for SMS contains software driver and patch information for desktops, notebooks, and workstations. Using the Custom Updates Publishing Tool (CUPT) and Inventory Tool for Custom Updates (ITCU) features of Microsoft SMS 2003 R2, organizations can integrate and deploy HP software updates quickly and easily. The HP Client Catalog for SMS provides detailed platform information for software updates in order to target appropriate client systems within the managed enterprise.

Benefits

- The HP Client Catalog for SMS provides detailed platform information for software updates, with applicability and installed rules to determine whether an update is appropriate for target clients within the managed enterprise and, if so, whether it is already installed. SMS administrators do not have to manually define software updates from HP as SMS custom updates in the Custom Updates Publishing Tool (CUPT).
- If SMS can connect to ftp.hp.com, corporate IT can use the default setting of an SMS package to automatically download HP software updates from the ftp site.

HP Client Catalog for SMS Overview

HP Client Catalog for SMS:

- Contains information about HP software updates (also known as Softpaqs), such as title, description, supported languages, download URL, applicability rules, installed rules, etc. (does not contain the binary code of a software update)
- Includes only software with a self-contained executable setup program that can be silently installed (does not include updates that cannot be silently installed or updates that do not run in Windows)
- Includes only update information for commercial desktops, notebooks, and workstation platforms (does not contain update information for servers)
- Is digitally signed by HP
- Is available at ftp://ftp.hp.com/pub/softlib/software/sms_catalog/HpCatalogForSms.latest.cab

Overview of SMS Custom Updates & the HP Client Catalog

SMS 2003 R2 contains two components to allow custom software updates: Custom Updates Publishing Tool (CUPT) and Inventory Tool for Custom Updates (ITCU). The publishing tool can be installed on a workstation in an office or on an SMS site server. CUPT allows SMS administrators to design and select custom updates to publish to SMS. The inventory tool needs to be installed on an SMS site server. ITCU adds custom updates collections, a new package with the client scan program and scheduled jobs for clients to scan for custom updates to the SMS site server. The inventory tool needs to be installed on an SMS site server.

ITCU consists of two components:

- An Integrated Scanner to evaluate target clients for software update compliance.
- A Publishing Tool that lets HP and others create software update catalogs that can be imported into SMS. SMS use these catalogs to determine whether available software updates are applicable to target client hardware, and automatically performs scheduled updates as necessary.

The SMS custom software update process includes three phases:

1. Enabling custom updates
2. Scanning clients for update applicability
3. Deploying updates

Enabling Custom Updates

HP customers can download the HP Client Catalog for SMS from the HP ftp site and import it into CUPT. The HP Client Catalog defines all of the available updates. The administrator then selects and publishes the catalog to the SMS site server. SMS sends the updates catalog and the scan program to the appropriate distribution points.

Scanning for Custom Updates

Once the custom updates are enabled, they are targeted to specific client collections. Clients within these collections retrieve the policy/advertisement from the management point in their scheduled policy update cycle. Clients then download the updates catalog and the scan program from the distribution point. The scan program executes and checks the machine against applicability and installed rules in the updates catalog. HP updates have rules to check WMI and HP Client Management Interface (HP CMI) for applicability. Clients then send inventory information back to the SMS site database. Based on the scan results, the SMS administrator can see which updates are needed by the clients and can then decide which of the updates to distribute.

NOTE:
The SMS client scan tool requires MS XML 6.0 to work properly. See the section "**MS XML Parser 6.0**" under "**Issues and Limitations**" on page **22**.

Deploying Custom Updates
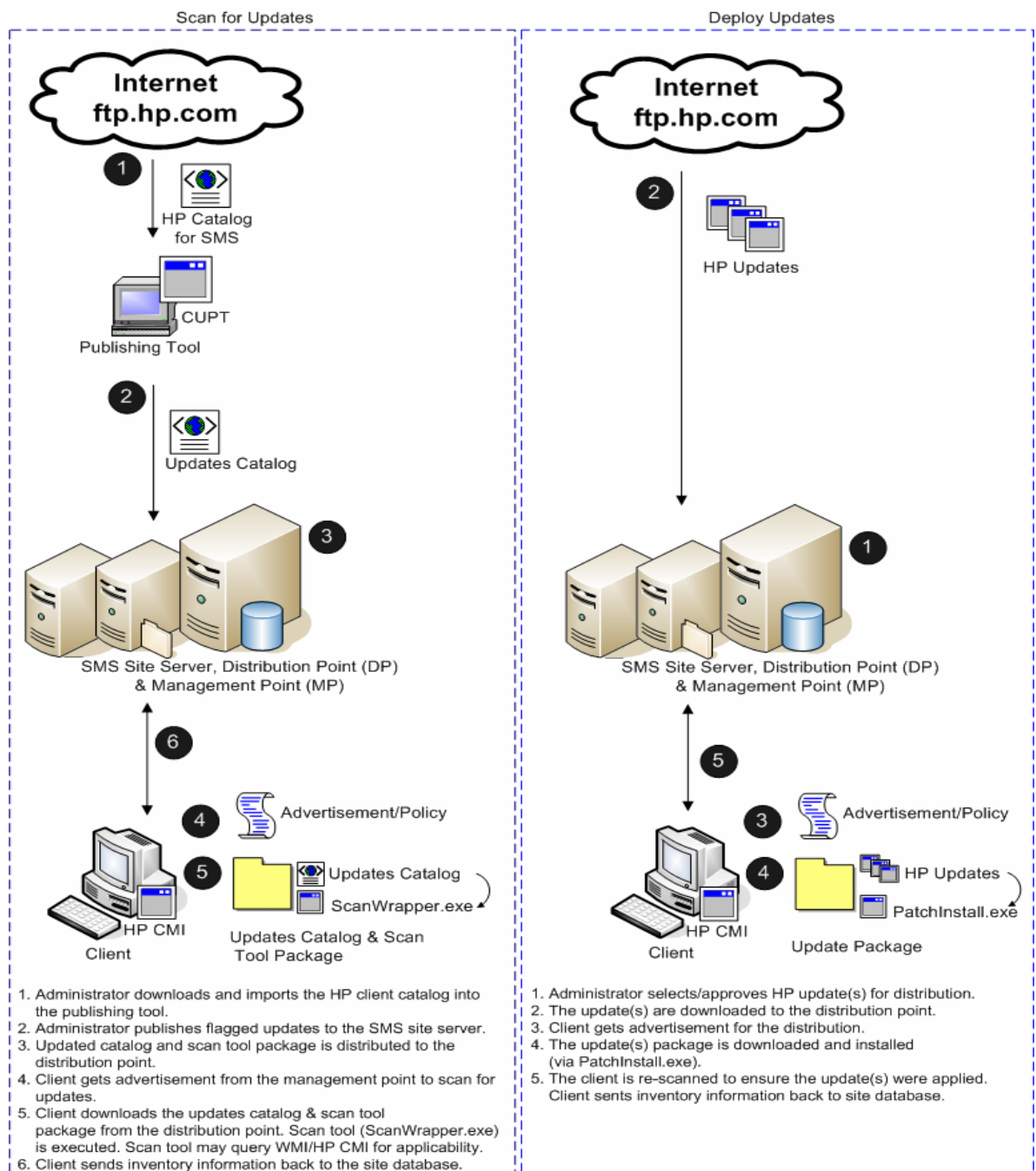
Once the SMS administrator determines which updates need to be distributed, the administrator selects the software updates and distributes them to clients by creating packages and advertisements for targeted collections using the wizard (Note: advertisements of HP software updates should be configured to be downloaded to clients instead of running directly from the distribution point).

SMS downloads HP updates from the HP ftp site and sends the packages to the distribution point. Clients of the targeted collections retrieve the policy/advertisement from the management point. Clients download the update package and execute the patch install program. The patch install program spawns HP software update executable(s). Finally, client machines are scanned again to make sure the updates installed and the inventory information is sent back to the site database for reporting.

The following figure illustrates the scanning and deployment of custom updates.

Figure 1 – Scanning and Deploying HP Custom Updates

Scan for Updates

1. Administrator downloads and imports the HP client catalog into the publishing tool.
2. Administrator publishes flagged updates to the SMS site server.
3. Updated catalog and scan tool package is distributed to the distribution point.
4. Client gets advertisement from the management point to scan for updates.
5. Client downloads the updates catalog & scan tool package from the distribution point. Scan tool (ScanWrapper.exe) is executed. Scan tool may query WMI/HP CMI for applicability.
6. Client sends inventory information back to the site database.

Deploy Updates

1. Administrator selects/approves HP update(s) for distribution.
2. The update(s) are downloaded to the distribution point.
3. Client gets advertisement for the distribution.
4. The update(s) package is downloaded and installed (via PatchInstall.exe).
5. The client is re-scanned to ensure the update(s) were applied. Client sents inventory information back to site database.

HP Software Update Applicability Rules in CUPT

Each HP software update included in the catalog has three sets of rules:

- Prerequisite rules: high-level rules for the ITCU client scan tool to check if the software update is applicable to an SMS client
- Applicability rules: low-level rules for the scan tool to check if the software update is applicable to a client
- Installed rules: rules for the scan tool to detect if the software update is already installed on a client

Prerequisites Rules

- Must be an HP machine*
- Supported operating systems of the software update

Applicability Rules

- Supported languages of the software update
- Supported platforms*
- Supported devices* (if the software update is device specific)

Installed Rules

- For a system BIOS update, BIOS release date* >= release date of the software update
- In case of a non- system BIOS update, the significant file of the software update exists on the machine.

If the SMS scan tool finds that all prerequisite rules and applicability rules evaluate to **true** and installed rules evaluate to **false** (not installed yet), the software update is **applicable** to the client and will be installed during the next scheduled update to the client.

* These checks are done by calling WMI and the extended HP Client Management Interface (HP CMI) detailed in the next section.

How HP software updates leverage Windows Management Instrumentation (WMI) and HP Client Management Interface (HP CMI)

HP software update definitions in the catalog provide applicability rules to the ITCU client scan tool. Many of those rules query WMI to determine whether a software update is applicable to a target client system. The table below shows the namespace and the query of the WMI rules.

Rule	WMI Namespace	Query
HP machine	Root\CIMV2	select * from Win32_ComputerSystem where Manufacturer='Hewlett-Packard'
BIOS release date	Root\CIMV2	select * from Win32_BIOS where ReleaseDate<='<software update BIOS release date>'
Supported platforms	Root\CIMV2	select * from Win32_BaseBoard where Product LIKE '<system ID>'
Supported devices	Root\CIMV2	select * from Win32_PnpEntity where DeviceID LIKE '<device ID>'
	Root\HP\InstrumentedBIOS	select * from HP_PNPDevices where DeviceID LIKE '<device ID>'

Root\HP\InstrumentedBIOS is the namespace provided by HP Client Management Interface (HP CMI). This interface passes hardware and system BIOS information to WMI for manageability applications.

CUPT and ITCU Installation

CUPT and ITCU need to be installed and configured properly before importing the HP Client Catalog for SMS. If you are an MSDN subscriber, you can go to the MSDN subscriber downloads site, log in, and download SMS 2003 R2. The site is http://msdn2.microsoft.com/en-us/subscriptions/.

If you are not an MSDN subscriber and would like to try CUPT and ITCU, you can download the evaluation version at http://www.microsoft.com/technet/sms/2003/evaluate/r2.mspx.

Follow the instructions in the SMS 2003 R2 Documentation to install CUPT and ITCU.

How to Import the HP Client Catalog for SMS

After installing SMS 2003 R2's CUPT and ITCU on your SMS site server, you can use the following steps to import the HP Client Catalog and publish HP software updates to SMS.
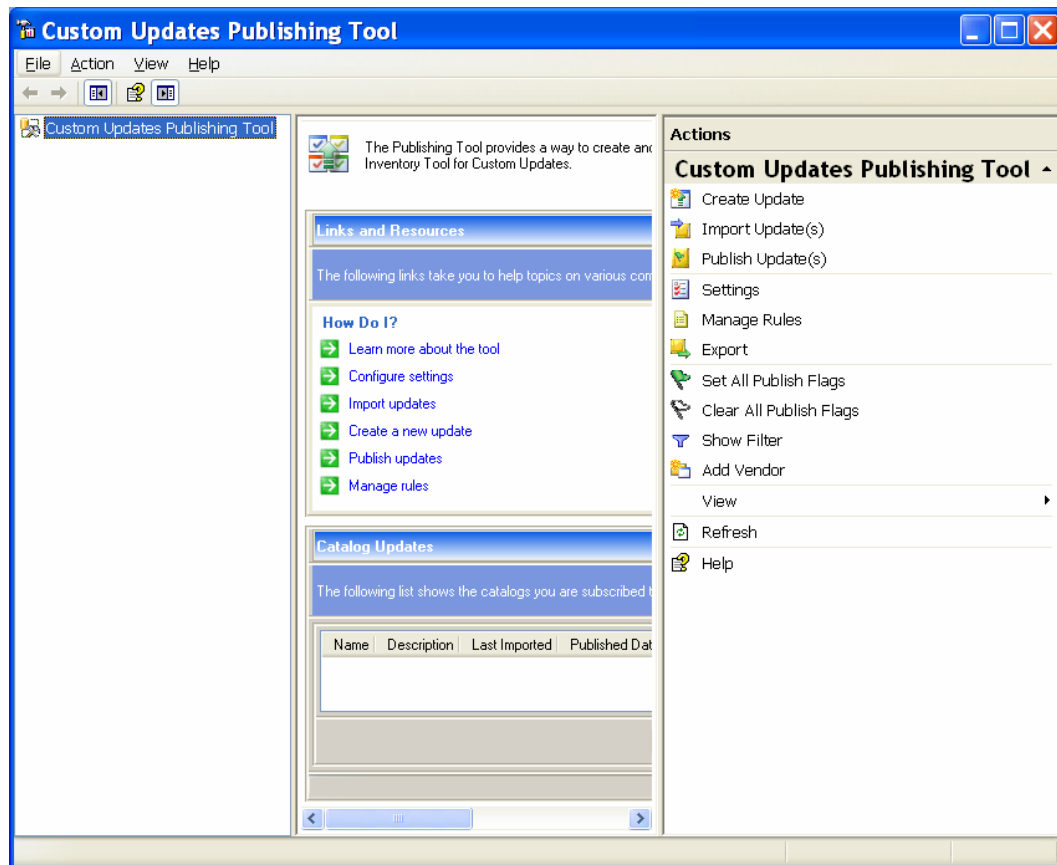
NOTE
We recommend that you try these updates in a test environment before rolling them out to the production environment.
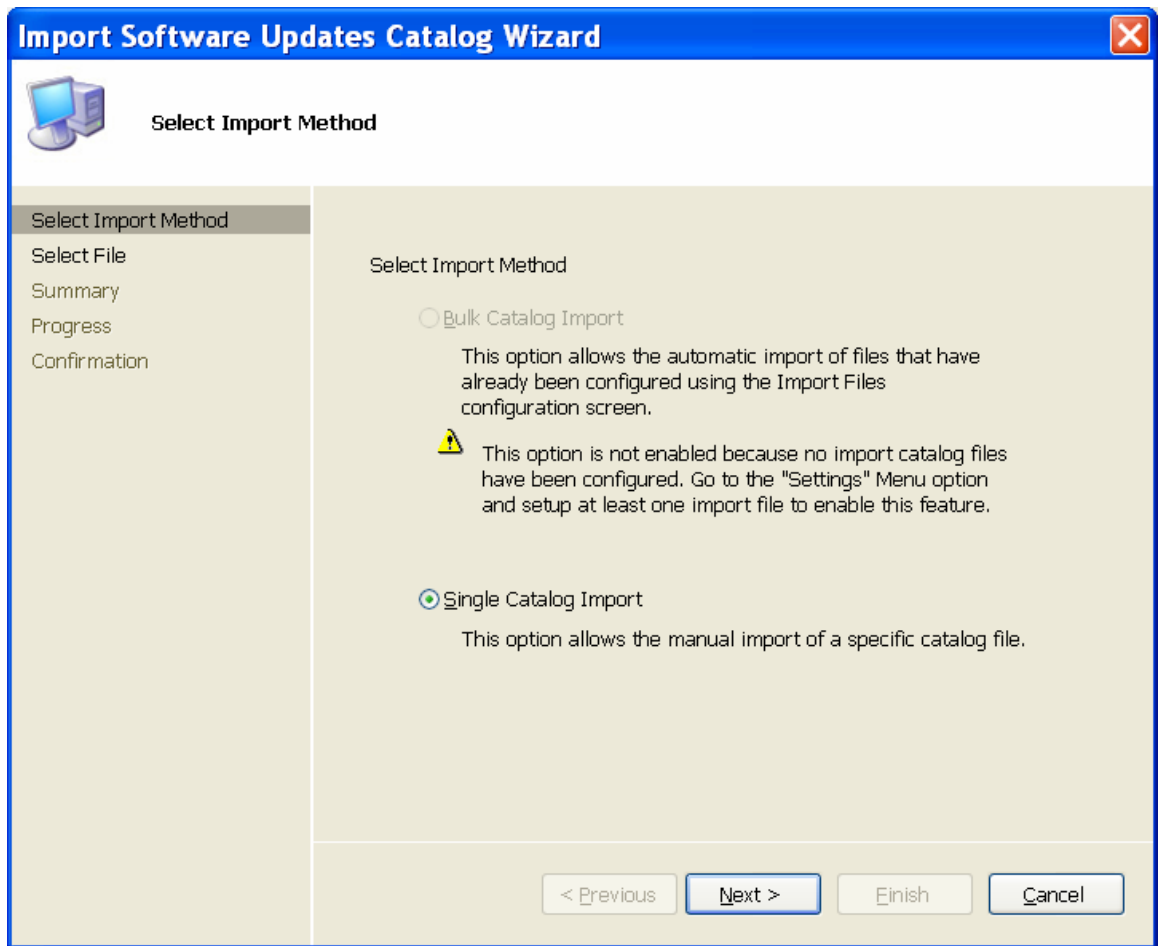
Import the HP Client Catalog for SMS into CUPT

1. Download the latest HP Client Catalog for SMS from the HP FTP site at ftp://ftp.hp.com/pub/softlib/software/sms_catalog/HpCatalogForSms.latest.cab

2. Click **Start** > **All Programs** > **Systems Management Server** > **Custom Updates** > **Publishing Tool** to launch the Custom Updates Publishing Tool console.
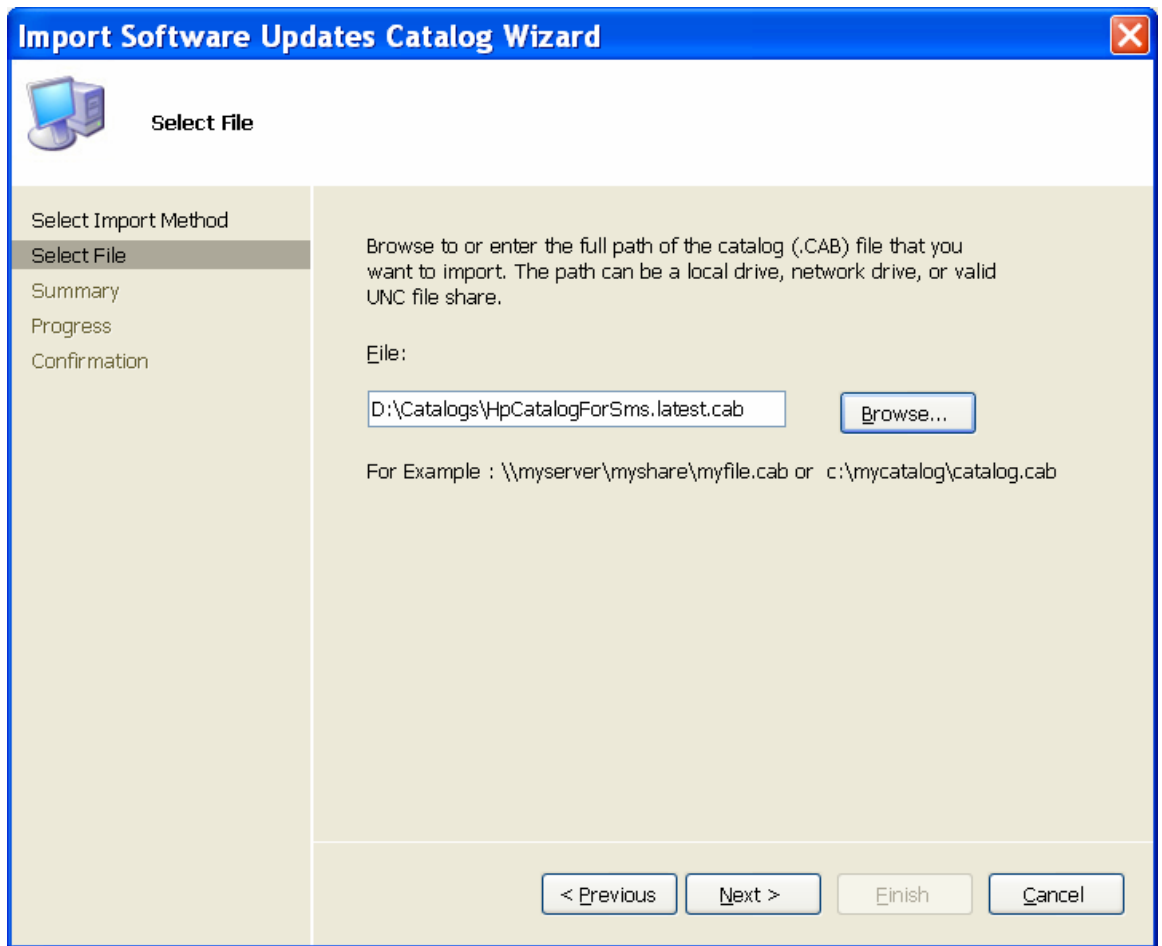

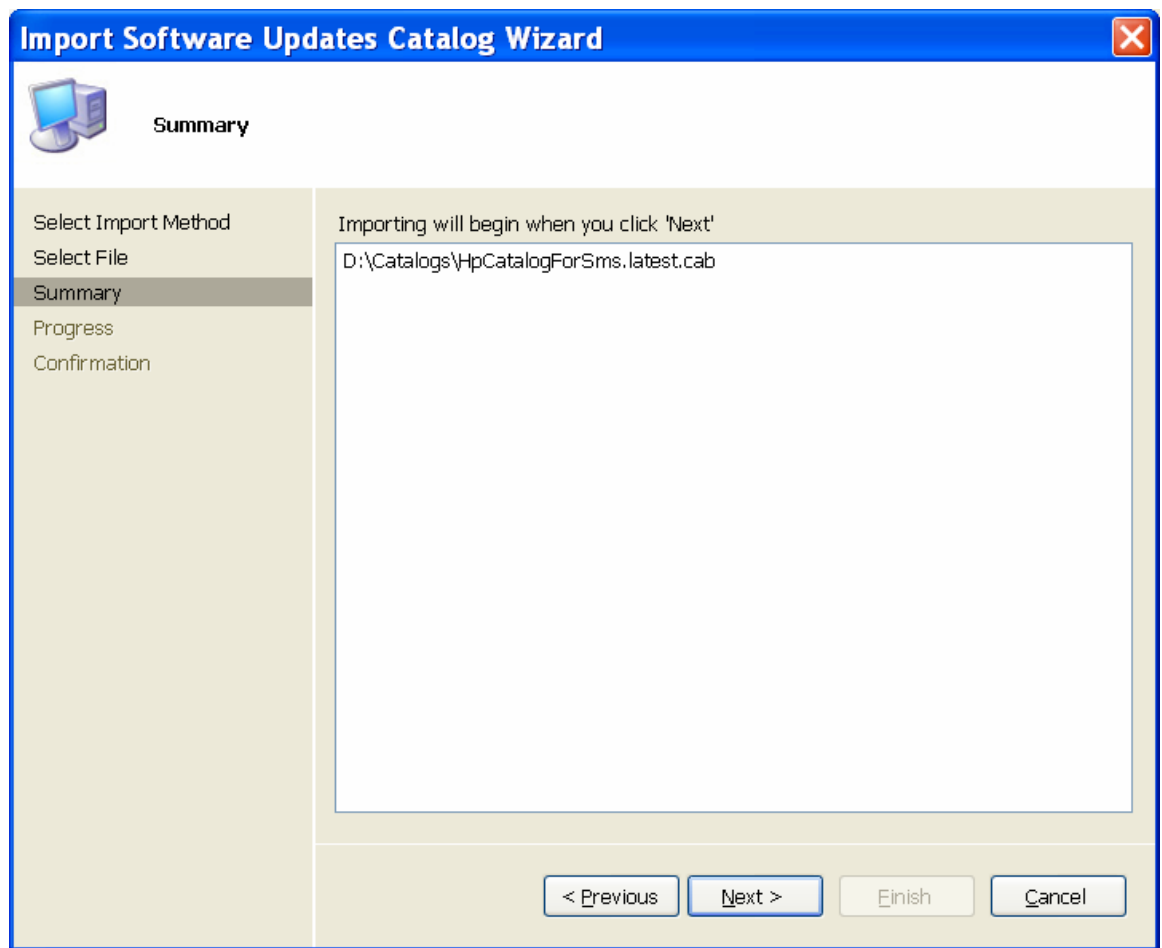3. In the Actions pane, click **Import Update(s)**.

Import Software Updates Catalog Wizard

Select Import Method

- Select Import Method
- Select File
- Summary
- Progress
- Confirmation

Select Import Method

○ Bulk Catalog Import

This option allows the automatic import of files that have already been configured using the Import Files configuration screen.

⚠ This option is not enabled because no import catalog files have been configured. Go to the "Settings" Menu option and setup at least one import file to enable this feature.

◉ Single Catalog Import

This option allows the manual import of a specific catalog file.

[< Previous] [Next >] [Finish] [Cancel]

4. Click **Next** to accept the default **Single Catalog Import** option.

Import Software Updates Catalog Wizard

Select File

- Select Import Method
- Select File
- Summary
- Progress
- Confirmation

Browse to or enter the full path of the catalog (.CAB) file that you want to import. The path can be a local drive, network drive, or valid UNC file share.

File:

D:\Catalogs\HpCatalogForSms.latest.cab   Browse...

For Example : \\myserver\myshare\myfile.cab or c:\mycatalog\catalog.cab

< Previous   Next >   Finish   Cancel

5. Click **Browse** to locate and select the latest HP Client Catalog for SMS downloaded in step 1, then click **Next**.

Import Software Updates Catalog Wizard

Summary

- Select Import Method
- Select File
- Summary
- Progress
- Confirmation

Importing will begin when you click 'Next'

D:\Catalogs\HpCatalogForSms.latest.cab

[< Previous] [Next >] [Finish] [Cancel]

6. Click **Next**.

CUPT validates the catalog and displays the Security Warning to confirm that you would like to accept this catalog signed and published by Hewlett-Packard.
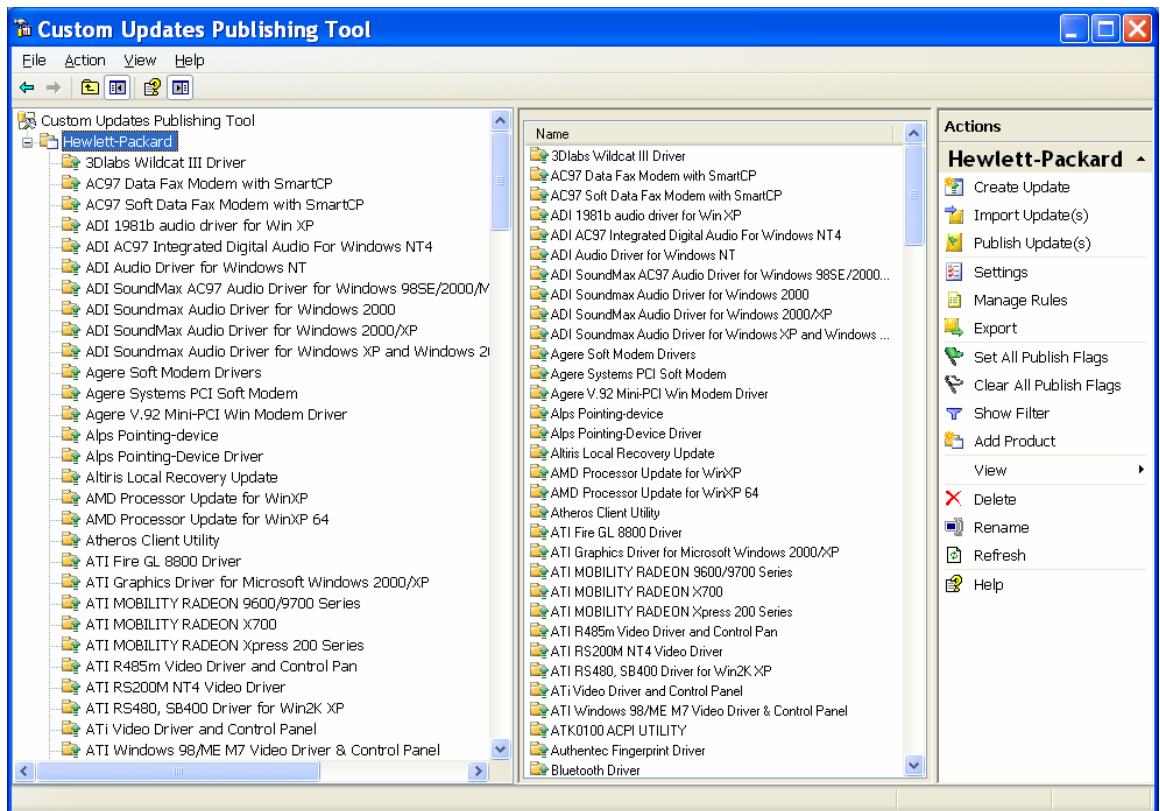
Catalog Validation - Security Warning

Do you want to accept this catalog?

Name :   HpCatalogForSms.latest.cab

Publisher :   Hewlett-Packard Company

○ Always accept catalog from "Hewlett-Packard Company"
⊙ Ask me every time

[Accept] [Don't Accept]

Catalog files from untrusted publishers can potentially harm client computers when scanning for updates. Only accept catalogs from publishers you trust.
Tell Me More

7. If you accept the catalog, click **Accept**.

Import Software Updates Catalog Wizard

Progress

Select Import Method
Select File
Summary
Progress
Confirmation

Status: Importing 32 out of 274 from HpCatalogForSms.latest.cab

To Stop Import click Cancel

[< Previous] [Next >] [Finish] [Cancel]
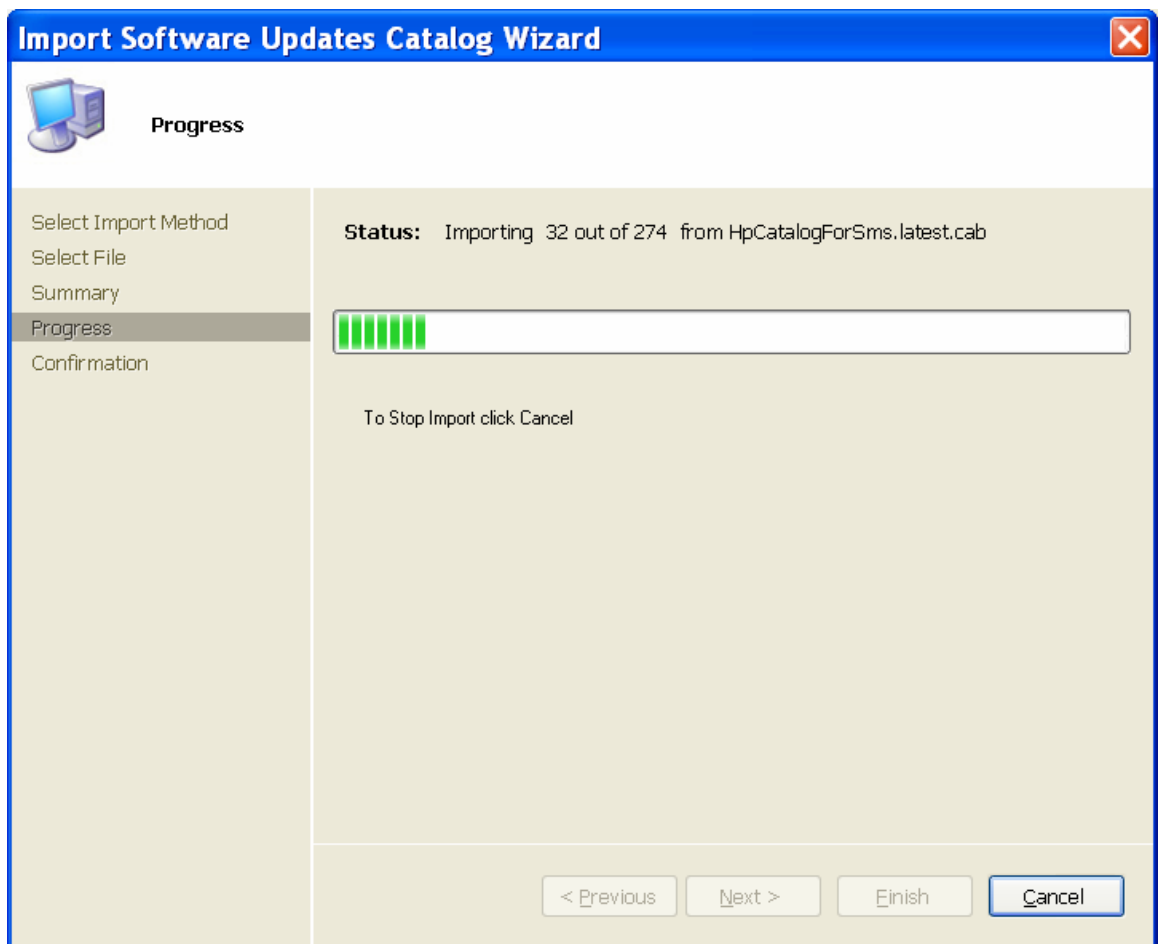
When the import is done, the **Import Software Catalog Wizard** confirmation dialog box shows the number of updates imported.

Import Software Updates Catalog Wizard

Confirmation

Select Import Method
Select File
Summary
Progress
Confirmation

You have successfully imported a software updates catalog from the following location:

Location: D:\Catalogs
Imported File: HpCatalogForSms.latest.cab
Number of Updates Imported: 274

< Previous   Next >   Finish   Close
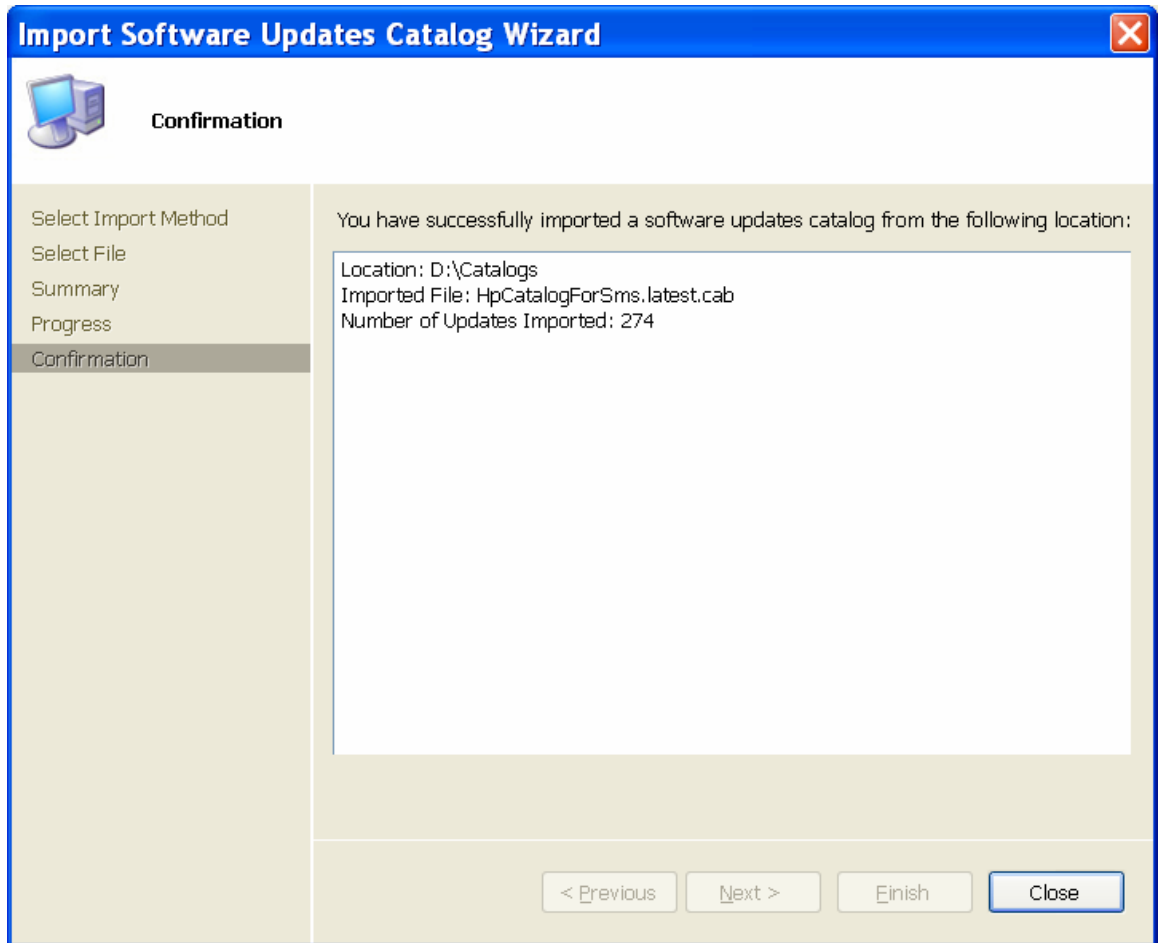
8. Click **Close**.

9. To display HP software updates, click the Hewlett-Packard node under Custom Updates Publishing Tool.

Publish HP updates to SMS

You choose which updates to publish to SMS.

1. In the tree pane of the CUPT console, select a software name under the **Hewlett-Packard** node. The result pane shows the custom update software (Note: there can be more than one version available). All custom updates are not initially flagged in the Publish column.

2. Select the desired software version in the result pane and click **Set Publish Flag** in the Actions pane. The flag should turn to green.

3. Double click a software version in the Result pane to see details about each software version. Please DO NOT CHANGE the software package properties, or the update may not work properly.

4. Repeat step 2 as many times as needed to flag the desired number of software updates to publish to SMS.

5. Since HP software updates are defined with appropriate operating system, language, platform and device rules, you can also click to select the Hewlett-Packard node in the tree pane and click **Set All Publish Flags** in the Action pane to select all HP software updates to publish to SMS.

6. Once you get the desired updates flagged for publishing to SMS, select the Hewlett-Packard node on the tree pane.

7. In the Actions pane, click **Publish Updates** to publish only the flagged HP software updates to SMS. The Publish Wizard displays.

13
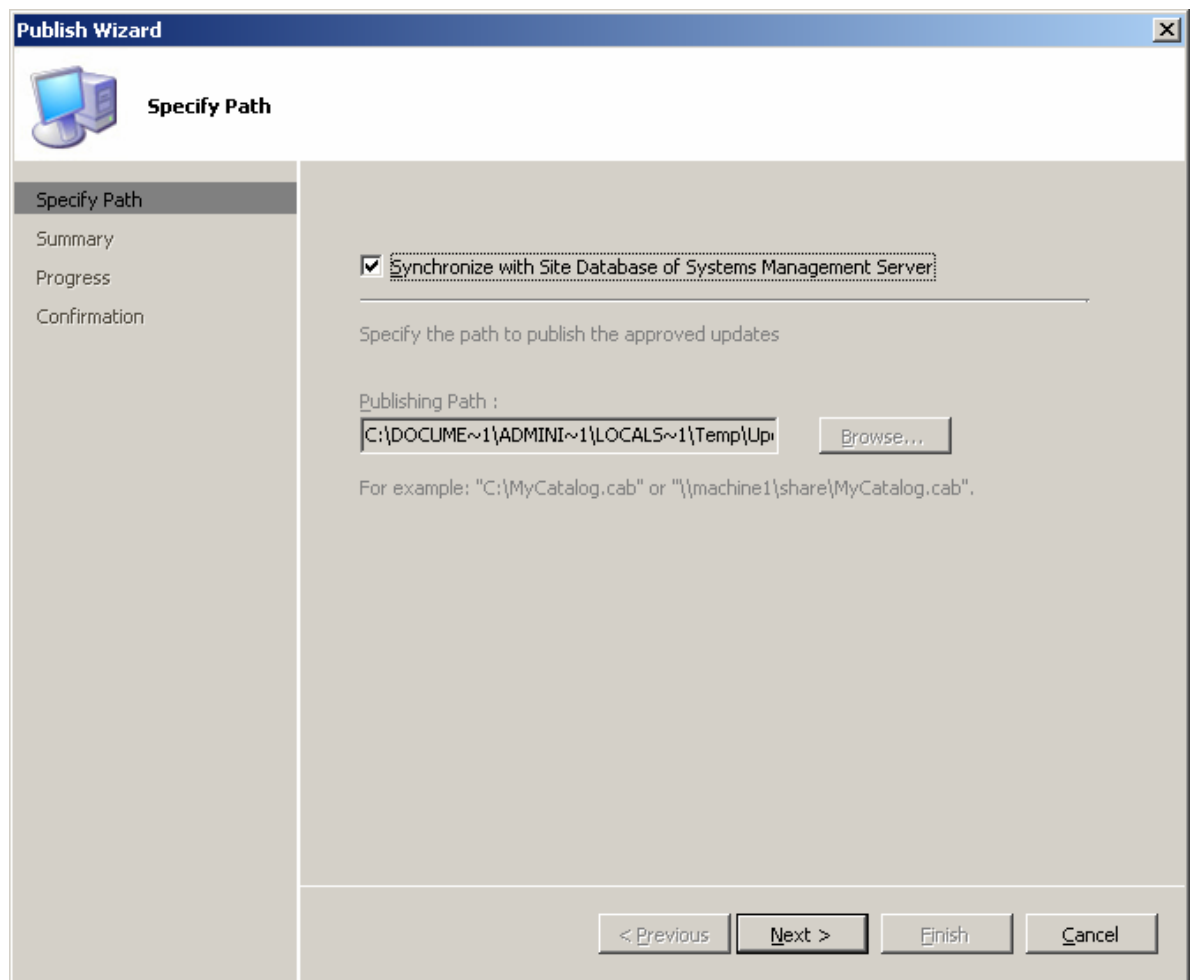
8. Click to check the box **Synchronize with Site Database of Systems Management Server**, then click **Next**. The **Publish Wizard** summary dialog box appears indicating it is ready to publish the update.
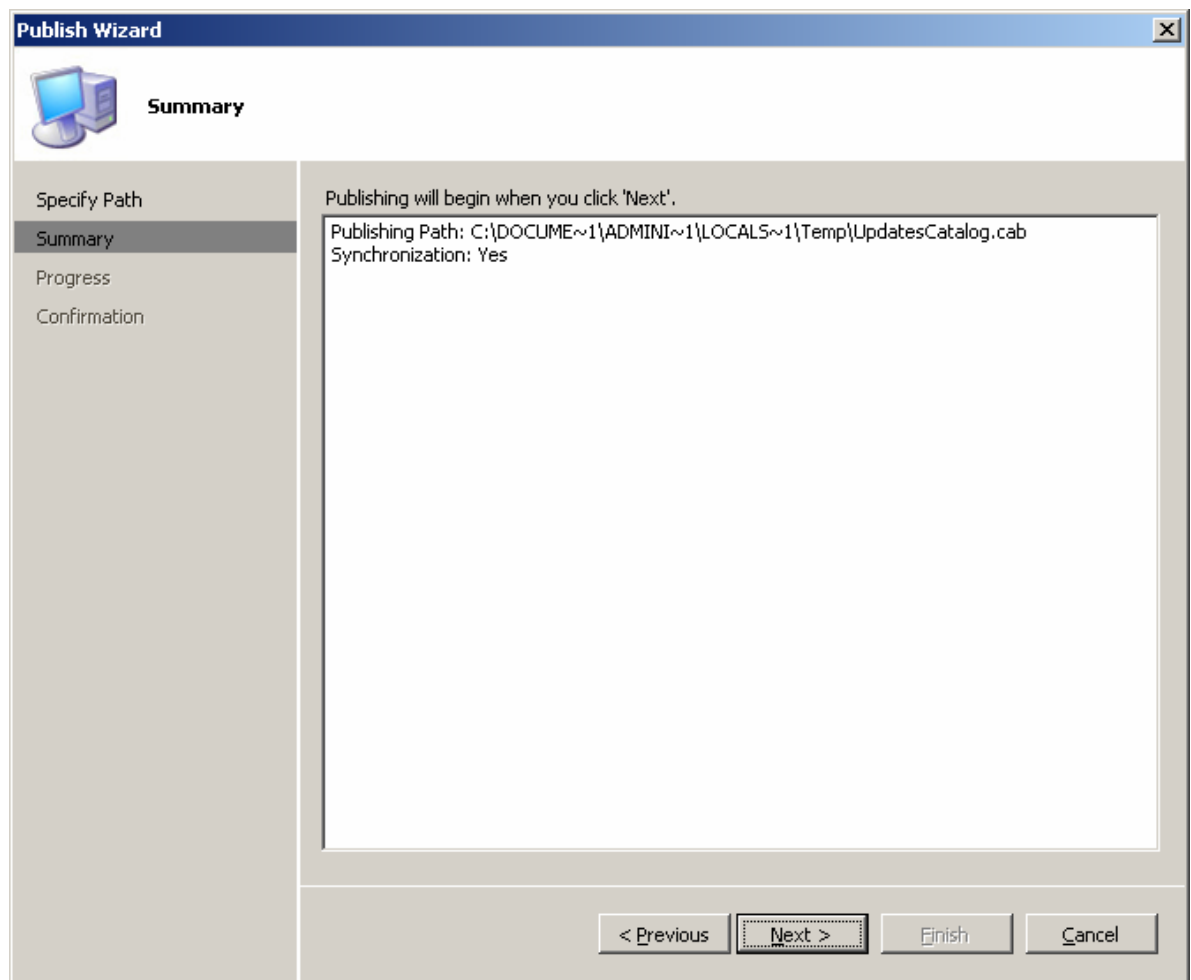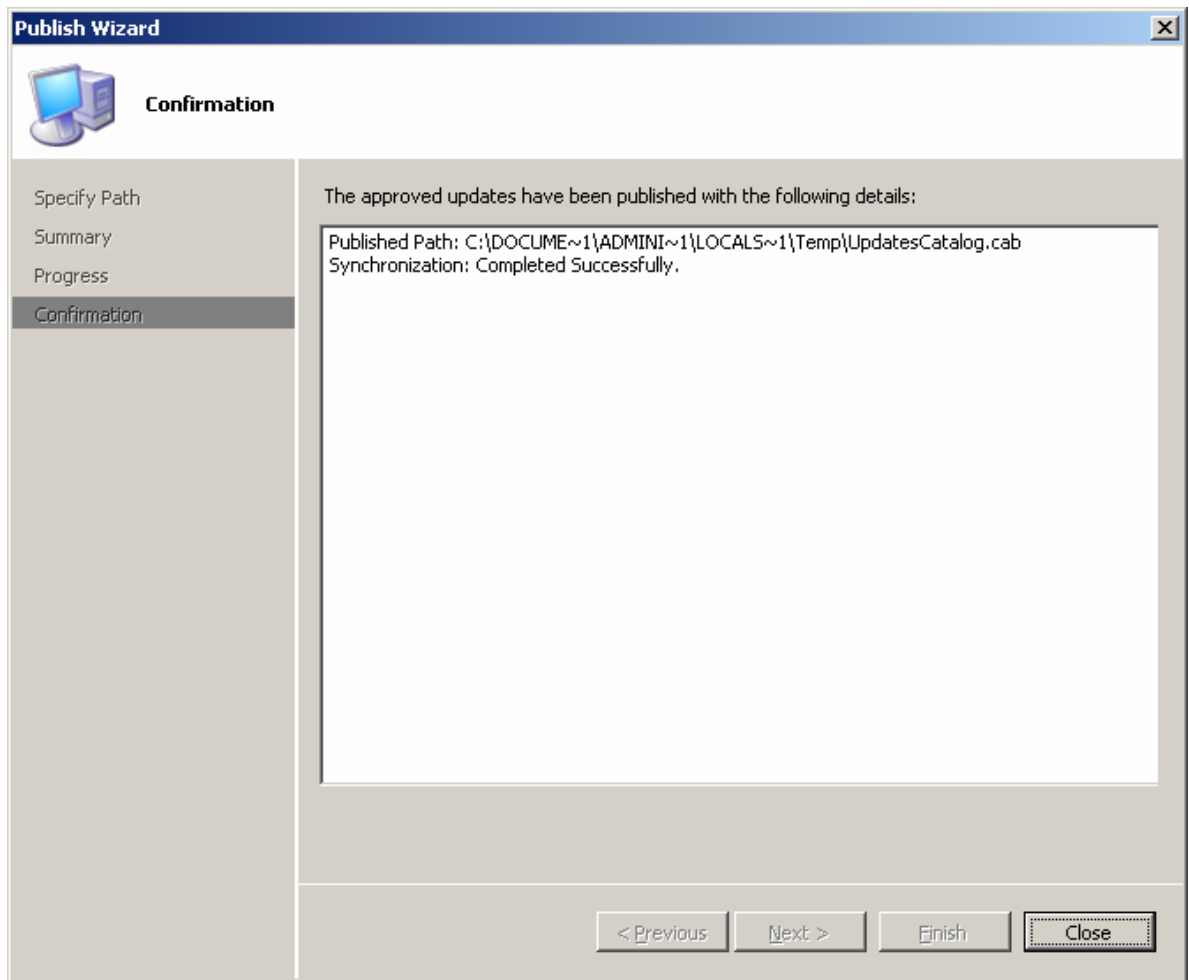
9. Click **Next**. The update(s) are published to SMS. The progress dialog box may show if there are several updates.
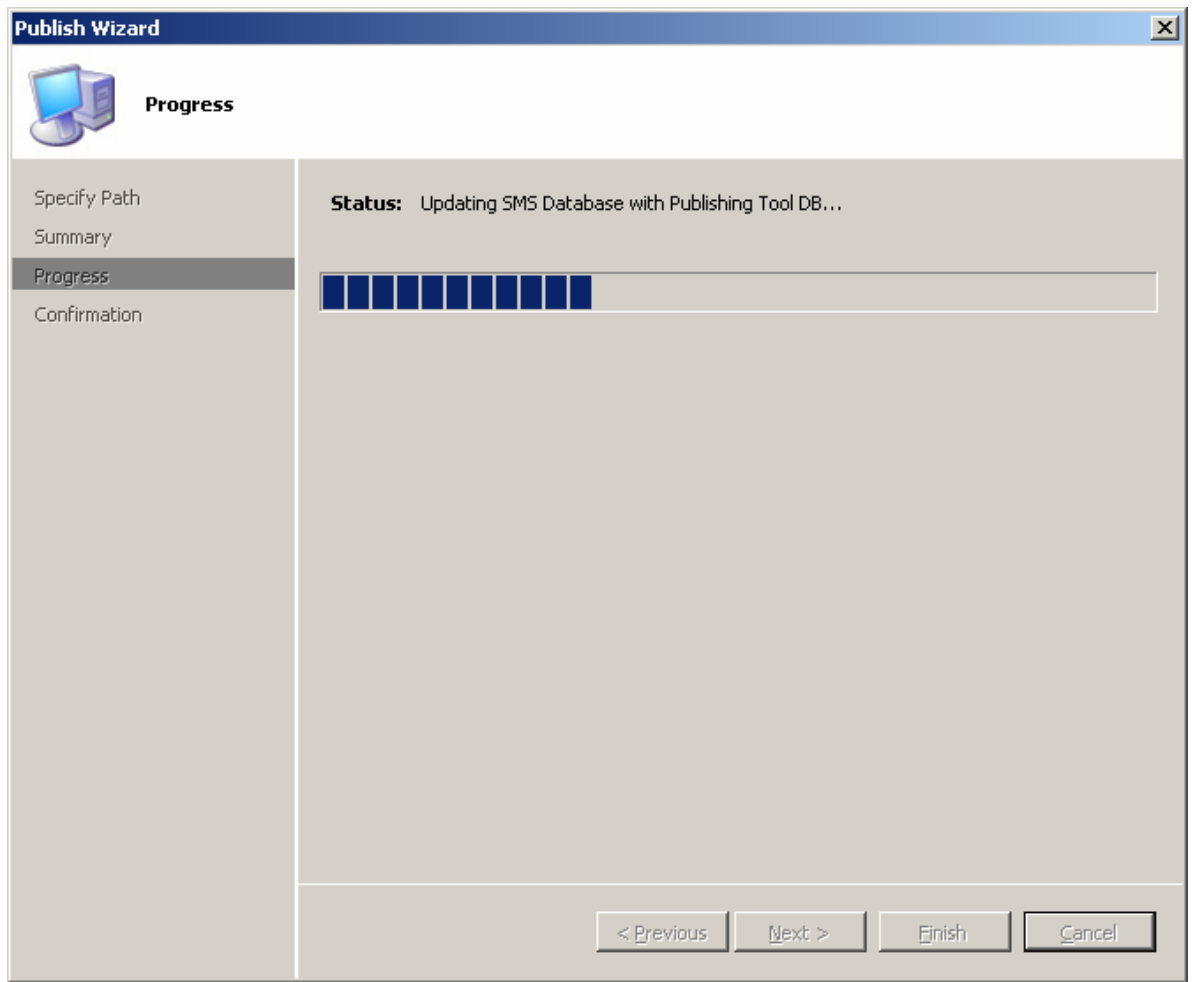
10. When it completes, the **Publish Wizard** confirmation dialog box appears indicating the synchronization is successful.

Publish Wizard

Confirmation

Specify Path

Summary

Progress

Confirmation

The approved updates have been published with the following details:

Published Path: C:\DOCUME~1\ADMINI~1\LOCALS~1\Temp\UpdatesCatalog.cab
Synchronization: Completed Successfully.

< Previous   Next >   Finish   Close

11. Click **Close**. The Custom Updates Publishing Tool window appears.
12. Run SMS Administrator Console on the SMS site. In the console tree, click **Software Updates**, select the **Action** menu, and click **Refresh**. The list of software updates in the details pane should contain the custom updates you published.

Notice that **Requested** and **Compliant** values are zero. When the next custom update scan occurs, client computers download the latest update catalog containing information about published software updates and scan for applicability. When the next hardware inventory occurs, clients report to the SMS site database whether each update is applicable or installed for each client. Then the SMS administrator can see the reported data and decide which updates need to be distributed. **Requested** displays the number of clients reporting that the update is applicable and not yet installed. **Compliant** displays the number of clients reporting that the update is already installed.

To check the custom update scan schedule, in the console tree of SMS Administrator Console, click **Advertisements**, right-click **Custom Updates Tool** in the result pane, then click **Properties**. Click the **Schedule** tab to view the custom update schedule. By default, it is every seven days from the time ITCU is installed. Members of the Custom Updates Tool collection perform a scan for custom updates every time one is scheduled.

How to Distribute HP Software Updates from SMS to HP Client Systems

To distribute a custom update to SMS clients:

1. In the SMS Administrator Console, click **Software Updates**.

   The list of inventoried software updates appears. Notice the number of updates listed and the various pieces of information available for each update, including the Requested and Compliant columns discussed in the previous section.

2. Click **Action** > **All Tasks** > **Distribute Software Updates**.

   The **Distribute Software Updates Wizard** dialog box appears.

3. Click **Next**. The Distribute Software Updates Wizard **Specify a Software Update Type** dialog box appears, prompting you for the type of update to distribute.

4. Click **Select an update type** > **Custom Update** > **Next**.

   The Distribute Software Updates Wizard **Create an SMS Package** or **Modify Packages and Updates** dialog box appears, prompting you to create a new package.

5. Click **Next** to create a new package.

   The Distribute Software Updates Wizard **Identify the SMS Package** dialog box appears, prompting you to name the new package.

6. In the Package name box, type what you want to name the package (usually the application name) and then click **Next**.

   The Distribute Software Updates Wizard **Customize the Organization** dialog box appears, prompting you to specify the name of the organization or department that issues the custom updates to the client.

7. In the **Organization** box, type what you would like users to see as the organization to push the software update (for example, Corporate IT Support) and then click **Next**.

   The Distribute Software Updates Wizard **Select an Inventory Scanning Program** dialog box appears, prompting you for the package and program to verify has been run to ensure the software updates information has been reported through hardware inventory.

8. Click **Next** to accept the default values of the Custom Updates Tool program and package.

   The Distribute Software Updates Wizard **Add and Remove Updates** dialog box appears displaying the list of updates that are applicable for the site.

   Note: You can distribute more than one update in a single operation.

9. Select the custom update you would like to distribute, and then click **Next**.

   The Distribute Software Updates Wizard **Specify a Source Directory for Files** dialog box appears displaying the default directory to use for the source files to be used as the SMS package (\\SMSServer\C$\<package name>), as well as prompting for a method to download the required updates.

10. If the SMS server has Internet connection and can access the HP ftp site, you can leave the default option **Download any available update source files for me automatically** checked. Then click **Next**.

    The wizard tries to download the update(s) from the ftp link. After downloading successfully, the Distribute Software Updates Wizard **Software Updates Status** dialog box appears displaying the status of the update to be deployed. Under **Ready**, a value of **Yes** should be listed for all updates, indicating that the update file location has been designated. Skip to step 17.

    If you choose to download HP updates from the HP ftp site manually, click **I will download the source files myself**. Then click **Next**.

The Distribute Software Updates Wizard **Software Updates Status** dialog box appears displaying the status of the update to be deployed. If you are going to manually download the update, notice that under **Ready** a value of **No** is listed. This indicates that the update file location has not been designated yet.

11. Click **Properties**.

    The **Distribute Software Updates Wizard** dialog box appears, displaying properties for the selected software update. Notice that options are available to import the update; to specify command line parameters; and to perform a download from the Internet. Also if you are manually downloading the update, notice that the value for **Binary present** is **No**, indicating that the source file location has not been configured yet.

12. Click **Import**.

    The **Open** dialog box appears, prompting you for the source file.

13. Browse to where you have stored the HP update binary, and then click **Open**.

    The **Distribute Software Updates Wizard** dialog box appears, displaying properties for the selected software update. Notice that the **Binary present** value is now **Yes**.

    In the **Parameters** box, notice that there is default syntax that will perform an unattended update.

14. Click **OK**.

    The Distribute Software Updates Wizard **Software Updates Status** dialog box appears displaying the status of the update to be deployed. Notice that under **Ready** a value of **Yes** is now listed. This indicates that the source file is ready to be distributed. Also, notice that the total size of the SMS package is reported. If you have multiple updates in your package, this will indicate the accumulated size of all the selected updates.

15. Repeat steps 11 through 14 to import the binary for each update you are planning on deploying.

16. Click **Next**.

    The Distribute Software Updates Wizard **Update Distribution Points** dialog box appears, prompting you to select the SMS distribution points to use for client access of the updates.

17. Under **Name**, click to check the box with the SMS site server name, and then click **Next**.

    The Distribute Software Updates Wizard **Configure Installation Agent Settings** dialog box appears displaying the default values for status reporting and system reboots. The default values are to not collect hardware inventory information immediately after the update installation, and to postpone reboots for both servers and workstations.

18. You have the option to check **Collect inventory information immediately** to kick off an immediate inventory report back to the SMS server after the installation, but that can lead to a significant impact on the network and the site server. Click **Next**.

    The Distribute Software Updates Wizard **Configure Installation Agent Settings** dialog box appears displaying the default values for unattended installations and update enforcement. The default values are to perform unattended installations and to not include a maximum installation time. The default action is set to postpone restart after waiting five minutes for the user to respond to the installation request. The default time specified to complete the update installation is 30 minutes.

19. Click **Next** to perform an unattended update.

    The Distribute Software Updates Wizard **Configure Installation Agent Settings** dialog box appears displaying the default values for notifications and patch postponing. Notice that the default values are to use balloon notifications and to allow the user to postpone the update installation indefinitely.

20. Click **Next** to accept the default values.

    The Distribute Software Updates Wizard **Advertise Updates** dialog box appears, prompting you to advertise the software update through SMS. This would be beneficial in ensuring that all clients that require the update receive it, and any failed installation attempts would be retried every week.

21. Click **Advertise**, and then click **Browse**.

    The **Browse Collection** dialog box appears displaying the list of collections.

22. Click **Custom Updates Tool**, and then click **OK**.

    The Distribute Software Updates Wizard **Advertise Updates** dialog box appears displaying the advertisement name, collection to be advertised to, and the weekly recurrence schedule.

23. Click **Next**.

    The **Completing the Distribute Software Updates Wizard** dialog box appears, prompting you to complete the update deployment using the **Distribute Software Updates Wizard**.

24. Click **Finish**.

    The SMS Administrator Console window appears.

25. You must download HP custom update packages to client machines instead of running them directly from an SMS distribution point. Complete the following steps:

    – In the console tree, click **Advertisement**. The result pane shows the list of advertisements.

    – Right click on the HP custom update advertisement just created and click **Properties**.

    – Select the **Advanced Client** tab. Under **When a distribution point is available locally**, click **Download program from distribution point** and under **When no distribution point is available locally**, click **Do not run program**, then click **OK**. These options ensure that the package is downloaded from the distribution point to a client and the patch runs locally on the client machine.

How to deploy HP updates using HP System Software Manager (SSM) with Microsoft SMS

SMS administrators need to mindfully distribute software updates to clients by creating packages and notifications. One way to maximize the software update automation process is to use HP System Software Manager (SSM) combining with Microsoft SMS.

HP SSM is a free 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 to Combine Microsoft SMS and HP SSM for the Greatest Benefit

- Download HP SSM from http://www.hp.com/go/SSM
- Configure a network file share as the file store for SSM.
- Deploy SSM to clients and configure SSM to run on clients with the configured file store on a scheduled basis using SMS.
- Download HP updates from the HP ftp site to the SSM file store.
- Let SSM run on the clients and automatically figure out what updates the client need and install the updates needed.
- Import the HP Client Catalog for SMS to CUPT and publish HP updates in the catalog to SMS.

- View the compliancy in SMS after the custom update scan process and hardware inventory cycle run on clients. Since you let SSM install HP updates, you do not need to distribute the same updates using SMS and should not do so. You only take advantage of the SMS custom update process to scan for compliancy here.

Issues and Limitations

MS XML Parser 6.0

The SMS client scan tool requires MS XML 6.0 to work properly. Hence, SMS administrators need to distribute MS XML 6.0 to clients before trying to deploy HP updates using SMS custom update process. This issue has been confirmed by Microsoft. Refer to the Microsoft Help and Support article at http://support.microsoft.com/kb/933535 for more information.

On a client that does not have MS XML 6.0 installed, the scan tool logs the following error in ScanWrapper.log *Failed to execute the WMI query. IWbemServices::ExecQuery retu0x80041003.* Since any WMI query to check the manufacturer, platforms and devices will fail, the scan always yields not applicable for all updates to a client.

WMI

The HP Client Catalog leverages Windows Management Instrumentation (WMI) to check applicability rules. WMI service needs to run on clients and the SMS client scan tool needs to have adequate permission to query WMI.

HP Software Update Installation Must Be Downloaded to Clients

As specified in the instructions to distribute software updates from SMS to clients, SMS notifications for HP software updates must be configured to download to clients and run there, not running directly from the SMS distribution point.

For more information

www.microsoft.com/technet/prodtechnol/sms/sms2003/cpdg

Systems Management Server 2003 Concepts, Planning, and Deployment Guide

http://support.microsoft.com/kb/933535

The Inventory Tool for Custom Updates in SMS 2003 R2 does not run WMI queries on client computers that do not have MSXML 6.0 installed

www.hp.com/go/EasyDeploy

HP Client Management Solutions

www.hp.com/go/SSM

HP Client Management Solutions - HP System Software Manager

www.hp.com/go/hpcmi

HP Client Management Solutions – HP Client Management Interface

451290-001, 05/03/2007

hp invent