



System Update Solution Deployment Guide

Note: Before using this information and the product it supports, read the general information in Appendix B “Notices” on page 81.

Seventh Edition (July 2017)

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Preface

Information presented in this guide is to support computers worked with the ThinkVantage® System Update program (hereafter refer to as System Update), the Update Retriever program (hereafter refer to as Update Retriever), or the Thin Installer program (hereafter refer to as Thin Installer).

System Update is a program that you can use to help keep your system up-to-date. Update Retriever is an administrative program that you can use to customize the update process for your enterprise. Thin Installer is a lighter version of System Update, and it does not require installation, does not create any registry keys, and does not have any services.

This guide is intended for IT administrators or those who are responsible for deploying updates on computers in their organizations. If you have suggestions or comments, communicate with your Lenovo® authorized representative. This guide is updated periodically, and you can check the latest publication on the Lenovo Web site at:

<http://www.lenovo.com/thinkvantage>

Chapter 1. Overview

The programs documented in this deployment guide are System Update, Update Retriever, and Thin Installer. This deployment guide defines each program, explains the update process, and explains how each program can be configured to fit your needs. In this deployment guide, you also will find installation procedures, application configurations, and best practices on how to use these programs in different environments.

System Update

System Update is a program that helps you keep the software on your system up-to-date. Using System Update, the update packages that are stored on Lenovo servers can be downloaded from the Lenovo Help Center Web site. Update packages can be applications, device drivers, BIOS flashes, and software updates. When System Update connects to the repository folder, System Update automatically recognizes your computer machine type, model number, and other system information to determine whether your system needs the available updates. System Update will display a pick list of update packages where you can select update packages to download and install. System Update can be configured to install packages either manually or automatically. System Update also provides a method to defer the installation of update packages. System Update can be configured to search for and download update packages from any combination of the following locations:

- The Lenovo Help Center Web site
- The Repository folder on a local system
- The Repository folder on a network share

Update Retriever

Update Retriever is a program that enables you to search for and download updates from the Lenovo Help Center Web site to a repository folder on a network share. You can configure System Update to search for update packages from a repository folder on a network share instead of searching the Lenovo Help Center Web site. Update Retriever can help you with the following:

- Downloading updates for specific Lenovo systems according to machine types, languages, and operating systems
- Downloading update packages for more than one machine type
- Importing update packages

Thin Installer

Thin Installer is a lighter version of System Update. Unlike System Update, Thin Installer does not require installation, does not create any registry keys, and does not have any services. Thin Installer can search for update packages from the repository folder on a local hard disk drive, a network share, a Web share, or external media such as a CD, DVD, or USB hard disk drive.

Managing the update process

The update process is a method to obtain, configure, and install update packages.

To complete the update process, use one of the following options:

- System Update

If you use only System Update, System Update will connect to the Lenovo Help Center Web site through an Internet connection, search for update packages, and generate a list of update packages for further installation.

- **System Update and Update Retriever**

If you use System Update and Update Retriever in an enterprise environment, Update Retriever will search the Lenovo Help Center Web site for update packages, download those packages to the network share folder, and enable you to customize the update content relevant to your enterprise; System Update can be configured to obtain updates from the shared folder and complete the installation of updates on a client computer.

- **Thin Installer and Update Retriever**

If you use Thin Installer and Update Retriever in an enterprise environment, Update Retriever will search the Lenovo Help Center Web site for update packages, download those packages to the network share folder, and enable you to customize the update content relevant to your enterprise; Thin Installer will search for updates on the shared folder and complete the installation of updates on a client computer.

System Update

The following illustration shows the communication path of update packages from the Lenovo Help Center to a client computer using only System Update.

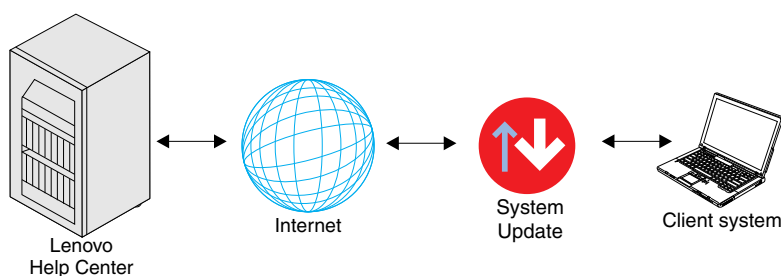


Figure 1. Update process using only System Update

System Update and Update Retriever

In an enterprise environment with multiple systems, you can use Update Retriever on an administrative system to download update packages from the Lenovo Help Center to a repository folder on your network share or a local system. System Update on a client computer can be configured to obtain updates from the repository folder on a network share or a local system. The repository folder provides the storage for update packages. This provides greater control of the updates that are available over your network.

Downloading update packages to the administrator system

The following illustration provides the communication path of update packages from the Lenovo Help Center to your administrator system using Update Retriever.

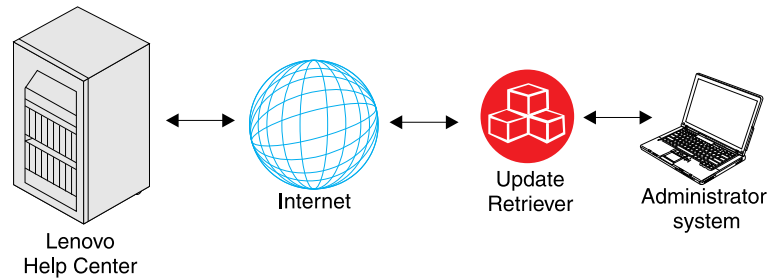


Figure 2. Communication path between Lenovo Help Center and the administrator system

Obtaining updates from the repository folder on a network share

The following illustration provides the communication path of update packages from an administrator system with Update Retriever to client computers with System Update:

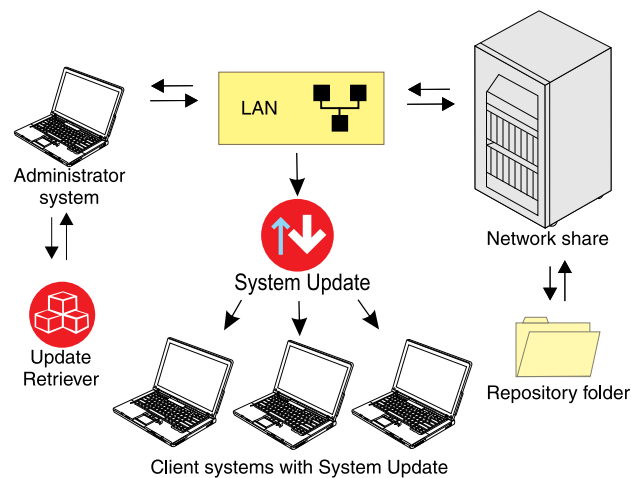


Figure 3. Communication path of update packages on a local area network

For more information on configuring repository locations for package storage, see Chapter 3 “Configurations” on page 13.

Deploying update packages to client computers

Instead of using a network share on a local area network (LAN), you can use a local system such as the administrator system to store update packages. Once you have created a repository folder, you can deploy the folder to client computers. The deployment of repository folder enables you to use Update Retriever on an administrator system to download update packages to a repository folder and deploy the folder containing the update packages to client computers. When the client computer runs System Update, System Update will obtain updates directly from the folder you deployed to the client computer.

The following illustration provides the communication path of update packages from an administrator system to client computers.

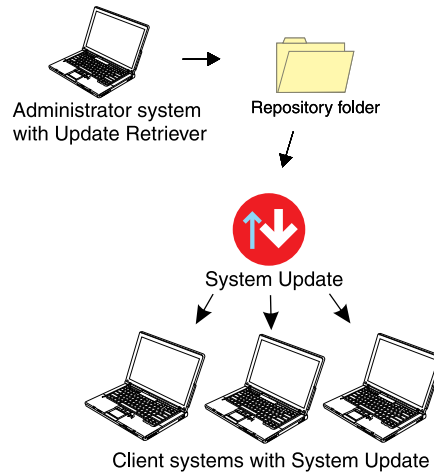


Figure 4. Communication path of update packages from the repository folder to client computers

Customizing update packages for client computers

For enterprises that need to create custom update packages for client computers, use both System Update and Update Retriever to manage the update process. As an administrator, you can use Update Retriever to download selected update packages from the Lenovo Help Center to a repository folder on a network share. You can use Update Retriever to edit an existing package or create a new package in the repository folder. Update Retriever uses an XML descriptor file to define when an update package is relevant and how to install the update package. For example, you can create an XML descriptor file that enables a specific update to be downloaded and installed on a client computer depending on the version of the software already installed or existing hardware devices found in the system. After using Update Retriever to customize update packages to fit the needs of your enterprise, import the update packages into the repository folder on the network share using Update Retriever.

On client computers, use System Update to search the network share repository folder for update packages. System Update can then download and install relevant packages from the network share repository folder to client computers.

The following illustration shows the communication path among the Lenovo Help Center, System Update, and Update Retriever when using Update Retriever to manage the update process:

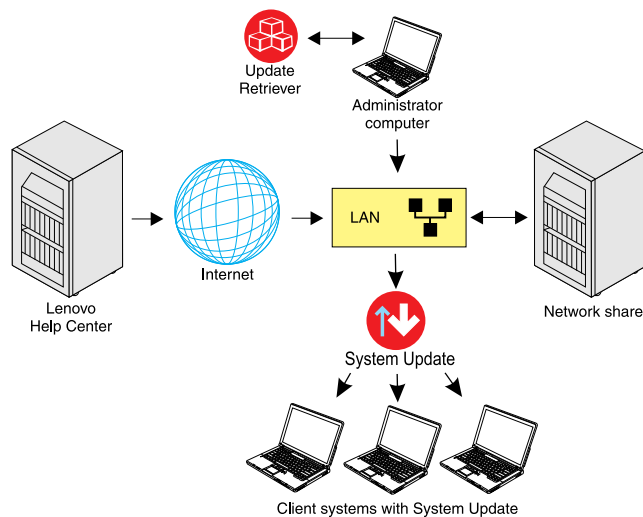


Figure 5. Update process for client computers managed by administrators using Update Retriever

Using System Update and Update Retriever on non-Lenovo systems

By design, System Update and Update Retriever can be leveraged with non-Lenovo systems. Non-Lenovo systems are not configured to utilize the Lenovo Help Center Web site to download and install packages. If you are using a non-Lenovo system with System Update installed, use Update Retriever to download update packages to a repository folder on your network or your local system, and use System Update to search for update packages from your network.

Chapter 2. Installation

This chapter provides the installation instructions, installation requirements, components, and considerations for System Update and Update Retriever. You can download System Update and Update Retriever from the following Web site:

<http://www.lenovo.com/support/site.wss/document.do?Indocid=TVAN-ADMIN#tvsu>

You can also download Thin Installer from the Lenovo Support Web site and then use it directly. It requires no installation. For information about Thin Installer, see Chapter 6 “Working with Thin Installer” on page 51.

Installation requirements

System Update 5.x is supported on the following operating systems:

- Microsoft® Windows® 7
- Windows 8
- Windows 8.1
- Windows 10

Update Retriever is supported on the following operating systems:

- Windows 7
- Windows 8
- Windows 8.1
- Windows 10
- Windows Server® 2008
- Windows Server 2012

Note: Unless otherwise stated, the supported operating systems refer to both the 32-bit version and the 64-bit version.

.Net

System Update requires Microsoft.NET Framework 4.5.2 or a later version. Update Retriever requires Microsoft.NET Framework 4.5.2 or a later version. You can download a compatible version of .NET Framework from the following Microsoft Web site:

<http://update.microsoft.com/windowsupdate>

Note: When performing a silent installation of Update Retriever on a system without Microsoft.Net Framework 4.5.2 or a later version, the following message will be written to the %temp%\Setup Log Y-M-D.txt file:

“Before installing Update Retriever silently, you need to download and install Microsoft .Net Framework 4.5.2 or a later version. To download and manually install Microsoft .Net Framework 4.5.2 or a later version, go to the Microsoft Web site at <http://www.microsoft.com/net/download.aspx>.”

Installation components

This section provides information on installation components for System Update and Update Retriever. These programs are installed with the InstallShield software tool.

System Update languages

The following table presents the languages and the corresponding language override codes for System Update.

Table 1. System Update language codes

Language	Identifier	Language override code
Danish	1030	DA
Dutch (Standard)	1043	NL
English	1033	EN
Finnish	1035	FI
French	1036	FR
German	1031	DE
Italian	1040	IT
Japanese	1041	JP
Korean	1042	KO
Norwegian (Bokmal)	1044	NO
Portuguese (Brazilian)	1046	PT
Spanish	1034	ES
Swedish	1053	SV
Simplified Chinese	2052	CHS
Traditional Chinese	1028	CHT

System Update supports all NLS (National Language Support) language packs. In normal cases, System Update loads the language pack set in the **LanguageOverride** field. That is, at startup, System Update checks the Windows registry for a valid language override code in the **LanguageOverride** field. If the language override code in the **LanguageOverride** field is valid and the language pack is available on the system, System Update will load the language pack corresponding to the language override code specified in the **LanguageOverride** field, and display the rest of the session in that language.

The registry location for the **LanguageOverride** field is:

HKEY_LOCAL_MACHINE\SOFTWARE\Lenovo\System Update\LanguageOverride

The following are scenarios in which System Update will load the substitute NLS language pack.

- **Loading the language pack set in the Windows Regional and Language Options settings:**

If the **LanguageOverride** field is empty or with an invalid value, or the value specified in the **LanguageOverride** field is not installed on the system, System Update will get the language override code of the operating system set in the **Regional and Language Options** settings. If System Update successfully loads the language pack corresponding to the language set in the **Regional and Language Options** settings, System Update will display the rest of the session in that language.

- **Loading the language pack set in the DefaultLanguage field:**

If the language pack corresponding to the language set in the **Regional and Language Options** settings is not available on the system, System Update will attempt to get the default language that has been set in the **DefaultLanguage** field when the end user used the System Update installer and selected a language during the installation. System Update will load the language pack corresponding to the default language set in the **DefaultLanguage** field, and display the rest of the session in that language. If the

language pack corresponding to the default language set in the **DefaultLanguage** field is on the system, System Update will load the default language pack and display the rest of the session.

The registry location for the **DefaultLanguage** field is:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Lenovo\System Update\DefaultLanguage
```

- **Loading the US English language pack:**

If the **DefaultLanguage** field is empty or with an invalid value, or if the language pack corresponding to the default language set in the **DefaultLanguage** field is not on the system, the default language will not be used. System Update will attempt to load the US English language pack. If the US English language pack is not on the system, an error message will be displayed, saying "System Update has found a critical problem and must close." This error message is in the US English language.

Update Retriever languages

The following table presents the languages and the corresponding language override codes for Update Retriever.

Table 2. Update Retriever language codes

Language	Identifier	Language override code
English	1033	EN
French	1036	FR
German	1031	DE
Japanese	1041	JP
Simplified Chinese	2052	CHS

The registry location for the **LanguageOverride** field is:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Lenovo\Update Retriever\LanguageOverride
```

Installation considerations

System Update and Update Retriever are installed as standalone applications and deployed with default preferences for all configuration options. The installation scenarios listed below are supported:

- **Clean installation:** System Update and Update Retriever are installed with default preferences for their respective configurable options.
- **Upgrade or over-installation (current version already exists):** The Windows Installer will remove the old version of System Update or Update Retriever and install the new version. Your network share repository folder and contents will be preserved.

During installation, a shortcut is added to the following **Start** menu folder on ThinkPad® systems:

```
Start Menu\Programs\ThinkVantage
```

For Lenovo systems, the following shortcut is added to the **Start** menu folder:

```
Start Menu\Programs\Lenovo Care
```

Preferences are stored as settings in the following Windows registry keys:

- For System Update:

HKLM\Software\Lenovo\System Update

- For Update Retriever:

HKLM\Software\Lenovo\Update Retriever

The default folders where application files are installed are the following:

- For System Update:

%PROGRAMFILES%\Lenovo\System Update

- For Update Retriever:

%PROGRAMFILES%\Lenovo\Update Retriever

Installation procedures and command-line parameters

System Update and Update Retriever can use the same command line parameters for installation. The following example starts a non-silent command line installation for System Update or Update Retriever.

```
c:\>[System Update installation file name].exe
```

To do a silent command line extraction followed by an installation, use the /VERYSILENT parameter. The extract defaults to the Windows Temp folder, for example:

```
c:\>[System Update installation file name].exe/VERYSILENT /NORESTART
```

To silently extract to a specific folder followed by an installation, use the DIR parameter, for example:

```
[System Update installation file name].exe/VERYSILENT /NORESTART/DIR="C:\TVT\tvsut"
```

The /DIR parameter causes the files to be extracted to the c:\tvt\tvsut folder.

Installation log file

The installation log file contains information that can be used to debug installation problems. For System Update, the log file name is tvsusetup.log; for Update Retriever, the log file name is tvursetup.log.

If you install the program by double-clicking the setup.exe file, the log file will be automatically generated and stored in the %temp% directory.

If you want to install the program silently and generate installation log files, use the following commands:

- For System Update:

```
[System Update installation file name].exe/VERYSILENT /NORESTART/LOG=c:\tvsu.log
```

To specify the detailed log directory, use the /LOG command.

- For Update Retriever:

```
[TVUR name].exe/VERYSILENT /NORESTART/LOG=c:\tvur.log
```

To specify the detailed log directory, use the /LOG command.

Windows 7 and later operating systems considerations

With considerations for Windows 7 and later operating systems, the System Update silent installation prompts a User Account Control (UAC) message. You can find information on disabling and enabling the User Account Control message on the following Web site:
<http://www.microsoft.com>

Note: If the UAC is active, a silent uninstall will not work with Windows 7 and later operating systems.

A scenario of installing System Update and Update Retriever in an enterprise environment

Complete the following steps to install System Update and Update Retriever using a silent command:

1. Download Update Retriever to an administrator system from the following Lenovo Web site:
<http://www.lenovo.com/support/site.wss/document.do?Indocid=TVAN-ADMIN#tvsu>
2. Download System Update to client computers from the following Lenovo Web site:
<http://www.lenovo.com/support/site.wss/document.do?Indocid=TVAN-ADMIN#tvsu>
3. Perform a silent installation of System Update on client computers by using the following command at the command prompt:

```
setup.exe/VERYSILENT /NORESTART
```

Uninstall

System Update and Update Retriever can be uninstalled by using the **Add or Remove Programs** applet in Windows operating systems. After the uninstall is complete, all program files and settings are deleted.

Alternatively, you can use command lines to perform a silent uninstall.

To silently uninstall System Update or Update Retriever, do the following:

- For System Update, use the following command:

```
[Your install dir]\unins000.exe /verysilent /norestart
```

- For Update Retriever, use the following command:

```
[Your install dir]\unins000.exe /verysilent /norestart
```

Silent uninstall on Windows 7 and later operating systems

The User Account Control (UAC) function on Windows 7 or later operating systems is turned on by default to prevent unauthorized changes to the computer. You need to disable the UAC function before performing a silent uninstall.

To perform a silent uninstall of System Update on a Windows 7 or later operating system, do the following:

1. Navigate to **Control Panel → User Accounts → Change User Account Control settings**. The User Account Control Settings window is displayed.
2. Move the slider to **Never notify**, and then click **OK**.
3. Restart the computer.
4. Open the command prompt window and type the following command line:

```
[Your install dir]\unins000.exe /verysilent /norestart
```

5. Press Enter. System Update will be uninstalled.

Chapter 3. Configurations

This chapter provides you with conceptual information and procedures to configure connectivity settings, repository locations, and the user interface.

Connection configurations

System Update and Update Retriever support three types of connectivity configuration: direct connection, static proxy connection, and automatic configuration script.

- **Direct connection**

This type of configuration is used when no proxy is required to connect to the Internet. It means the application can connect directly to the Lenovo Help Center servers.

- **Static proxy connection**

System Update and Update Retriever support two types of proxies, HTTP (Hypertext Transfer Protocol) proxy and SOCKS (Socket Security) proxy.

- **Connection through HTTP proxy**

In this type of configuration, System Update and Update Retriever connect to an HTTP proxy server to access the Internet. The proxy server connects to the Lenovo Help Center.

Note: HTTP basic and NTLM (NT LAN Manager) authentications are supported.

The following elements are obtained from the system configuration:

- Proxy server name or IP address
 - Proxy server port

The proxy server might require to authenticate each client before it can be granted access to the Internet. In that case, the end user must additionally provide a user name and password. The user name and password values can be set for the end user by the administrator.

The HTTP proxy authenticator, an integrated component in System Update, displays a logon dialog whenever System Update detects that the HTTP proxy server needs the end user to provide a user name and password in order to successfully connect to the proxy server. After providing the correct user name and password, the end user will be authenticated to connect to the HTTP proxy server. SOCKS authentication is not supported.

- **Connection through a SOCKS proxy**

In this type of configuration, System Update and Update Retriever connect to a SOCKS server and then the SOCKS server connects to the Lenovo Help Center.

The following elements must be configured:

- Server name or IP address
 - Server port

Note: Only SOCKS 4 without authentication is supported.

- **Automatic configuration script**

By enabling **Use automatic configuration script** in the Internet Explorer® Web browser, System Update and Update Retriever can access the Internet according to the automatic configuration script file.

Configuring System Update

Configurations for System Update can be done through the registry or Active Directory®. If you are configuring just one system, you can use the registry to configure System Update. If you are configuring

multiple systems, you can use Active Directory to configure policies for System Update. For additional information about each configuration method, see the following sections:

- “Configuring System Update with the registry” on page 14
- “Configuring System Update with Active Directory” on page 27

Configuring System Update with the registry

Attention: To edit registry configurations, exit System Update. If System Update is running while changes are made in the registry, the old registry entries will be recovered.

The following table lists the configurable and modifiable items for System Update and their registry locations, after the first launch of System Update.

Table 3. Registry locations

Setting	Registry location
Disable the System Update billboard. See “UCSettings configurable items” on page 15.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UCSettings\General
Disable registration on billboard	HKLM\Software\Lenovo\Registration\RegStatus
Disable System Update user interface. See “UCSettings configurable items” on page 15.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UCSettings\General
RetryLimit for HTTPSHelloSettings. See “\UCSettings\HTTPSHelloSettings” on page 16.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UCSettings\HTTPSHelloSettings
RetryWaitTime for HTTPSHelloSettings. See “\UCSettings\HTTPSHelloSettings” on page 16.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UCSettings\HTTPSHelloSettings
Disable System Update Web upgrade (Update Thyself). See “\UCSettings\HTTPSHelloSettings” on page 16.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UCSettings\HTTPSHelloSettings
RetryLimit for HTTPSPackageSettings. See “\UCSettings\HTTPSPackageSettings” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UCSettings\HTTPSPackageSettings
RetryWaitTime for HTTPSPackageSettings. See “\UCSettings\HTTPSPackageSettings” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UCSettings\HTTPSPackageSettings
Proxy server connection. See “\UserSettings\Connection” on page 17.	HKLM\Software\Lenovo\System Update\Preferences\UserSettings\Connection
DebugEnable. See “UserSettings configurable items” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General
DisplayInformationScreen. See “UserSettings configurable items” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General
DisplayLicenseNotice. See “UserSettings configurable items” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General
DisplayLicenseNoticeSU. See “UserSettings configurable items” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General
ExtrasTab. See “UserSettings configurable items” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General
IgnoreLocalLicense. See “UserSettings configurable items” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General
IgnoreRMLicCRCSIZE. See “UserSettings configurable items” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General
NotifyInterval. See “UserSettings configurable items” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General

Table 3. Registry locations (continued)

Setting	Registry location
RepositoryLocation1. See “UserSettings configurable items” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General
UNCMaxAttempts. See “UserSettings configurable items” on page 17.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General
Scheduler Frequency. See “\UserSettings\Scheduler” on page 21.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\Scheduler
Scheduler Notify Options. See “\UserSettings\Scheduler” on page 21.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\Scheduler
Scheduler RunAt. See “\UserSettings\Scheduler” on page 21.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\Scheduler
Scheduler RunOn. See “\UserSettings\Scheduler” on page 21.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\Scheduler
SchedulerAbility. See “\UserSettings\Scheduler” on page 21.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\Scheduler
SchedulerLock. See “\UserSettings\Scheduler” on page 21.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\Scheduler
SearchMode. See “\UserSettings\Scheduler” on page 21.	HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\Scheduler

UCSettings configurable items

This section provides descriptions for the configurable items available in the UCSettings key.

\UCSettings\Billboard

The following table and example provides the setting and values for the Billboard key.

Table 4. \UCSettings\Billboard

Configurable item	Description	Value	Action
LiveFeed	Disables the live feed to the System Update billboard.	Default: Lenovo Live Feed	- If Default, the live feed image will be displayed on the System Update user interface. - If Blank, the default billboard image will not be displayed on the System Update user interface.
		Possible values: - Default - Blank	

Example:

```
\Billboard
  \LiveFeed = Blank
```

\UCSettings\General

The following table and example provides the setting and values for the General key.

Table 5. \UCSettings\General

Configurable item	Description	Value	Action
Disable	Disables the System Update user interface. Use this setting when you want to configure System Update using the command prompt.	Default value: NO	- If YES, the System Update user interface will not be displayed. - If NO, the System Update user interface will be displayed.
		Possible values: - YES - NO	

Example:

```
\GENERAL
\Disable = NO
```

\UCSettings\HTTPSHelloSettings

The following table and example provides the settings and values for the HTTPSHelloSettings key.

Table 6. \UCSettings\HTTPSHelloSettings

Configurable item	Description	Value	Action
RetryLimit	Specifies the maximum number of times that System Update will try to connect to the Lenovo Help Center Web site.	Default value: 0	System Update will stop trying to connect to the Lenovo Help Center Web site after the connection attempts reach the maximum number of tries.
		Possible values: Any valid integer	
RetryWaitTime	Specifies the maximum amount of time (in seconds) that System Update will wait before it tries to connect to the Lenovo Help Center Web site for another time after the previous attempt fails.	Default value: 0	System Update will wait the number of seconds when attempting to connect to the Lenovo Help Center Web site after the previous attempt fails.
		Possible values: Any valid integer	
ServerName	Specifies the server name that System Update will search for updates for itself. Changing the default value will disable the Update Thyself function of System Update.	The default value is pre-configured. By default, System Update will connect to the Lenovo Help Center Web site to search for updates for itself.	System Update searches the Lenovo Help Center Web site for updates for itself, even if it is connected to a local system or network share repository. You can disable the Web upgrade for System Update by clearing this value.
		Possible values: Server name or empty	

Example:

```
\HTTPSHelloSettings
\RetryLimit = 2
\RetryWaitTime = 2
\ServerName = https://
```

Note: When System Update connects to the Lenovo Help Center Web site, it communicates with different servers. The **RetryLimit** and **RetryWaitTime** settings under the HTTPSHelloSettings key control the

connection between System Update and the server from which System Update downloads the self-update package (If a new version exists).

\UCSettings\HTTPSPackageSettings

The following table and example provides the settings and values for the HTTPSPackageSettings key.

Table 7. \UCSettings\HTTPSPackageSettings

Configurable item	Description	Value	Action
RetryLimit	Specifies the maximum number of times that System Update will try to connect to the Lenovo Help Center Web site.	Default value: 0	System Update will stop trying to connect to the Lenovo Help Center Web site after the connection attempts reach the maximum number of tries.
		Possible values: Any valid integer	
RetryWaitTime	Specifies the maximum amount of time (in seconds) that System Update will wait before it tries to connect to the Lenovo Help Center Web site for another time after the previous attempt fails.	Default value: 0	System Update will wait the number of seconds when attempting to connect to the Lenovo Help Center Web site after the previous attempt fails.
		Possible values: Any valid integer	

Example:

```
\HTTPSPackageSettings
  \RetryLimit = 2
  \RetryWaitTime = 2
```

Note: The **RetryLimit** and **RetryWaitTime** settings under the HTTPSPackageSettings key control the connection between System Update and the server from which System Update downloads update packages.

UserSettings configurable items

This section provides descriptions for the configurable items available in the UserSettings key.

\UserSettings\Connection

The following table and example provides the settings and values for the Connections key. Those configurable items are for proxy server connections.

Table 8. \UserSettings\Connection

Configurable item	Description	Value	Action
User	Specifies the user name to use for the connection.	Default value: None	This setting is used for authentication to access the HTTP proxy server.
		This setting is only used for the connection type of proxy, the HTTP proxy, when the proxy server requires authentication. Possible values: Any string	

Table 8. \UserSettings\Connection (continued)

Configurable item	Description	Value	Action
Password	Specifies the password to use for the connection.	Default value: None	This setting is used for authentication to access the HTTP proxy server. System Update will connect to the HTTP proxy server defined in ServerName using the user name defined in User. The end user is prompted for this information when the information is needed.
		Possible values: Any string	

Example:

```
\Connection\
\User = Billek
\Password = *****
```

\UserSettings\General

The following table and example provides the settings and values for the General key.

Table 9. \UserSettings\General

Configurable item	Description	Value	Action
ContentMode	Refers to the status of the update packages that System Update will search for in the Update Retriever repository.	Default value: Active	- If Active, System Update will search the Update Retriever repository for the update packages in active status. - If Test, System Update will search the Update Retriever repository for the update packages in test status. Note: If there is no database.xml file in the Update Retriever repository folder, System Update will ignore the value of ContentMode and search for all the update packages.
		Possible values: - Active - Test	
DebugEnable	Enables you to log process results to the log file named ApplicabilityRulesTrace.log.	Default value: NO	- If YES, System Update will log the process results to the log file. - If NO, System Update will not log the process results.
		Possible values: - YES - NO	
DisplayInformationScreen	Enables you to skip the User Information panel of System Update.	Default value: YES	- If YES, the User Information panel will be displayed. - If NO, the User Information panel will not be displayed.
		Possible values: - YES - NO	

Table 9. \UserSettings\General (continued)

Configurable item	Description	Value	Action
DisplayLicenseNotice	Enables you to skip the license agreement that will be displayed before the update packages pick list is populated.	Default value: YES	• If YES, the license agreement screen will be displayed prior to the update packages pick list. • If NO, the license agreement screen will not be displayed.
		Possible values: • YES • NO	
DisplayLicenseNoticeSU	Enables you to skip the license agreement that is displayed in the Schedule updates panel of System Update.	Default value: YES	• If YES, the license agreement will be displayed prior to saving the changes in the Schedule updates panel. • If NO, the license agreement will be displayed and the changes will be saved directly to the Windows Registry subkey.
		Possible values: • YES • NO	
ExtrasTab	Enables you to show or hide the Extras tab in the System Update workspace.	Default value: YES	• If YES, the Extras tab will be displayed in the System Update workspace. • If NO, the Extras tab will not be displayed in the System Update workspace.
		Possible values: • YES • NO	
IgnoreLocalLicense Note: By implementing this setting, you are accepting the End User License Agreement and the Terms and Conditions on behalf of the end user for each package to be installed. Do not use this setting if you do not have the authority to accept the End User License Agreement and the Terms and Conditions on behalf of the end user.	Enables you to show or hide the license dialog when System Update is downloading and installing an update package located in a repository folder such as the network share repository.	Default value: NO	• If YES, the license dialog will not be displayed when a repository is used to store update packages. Note: If you obtain packages directly from the Lenovo Help Center and do not use a repository to store update packages, the IgnoreLocalLicense value will be ignored and the license dialog will be displayed. • If NO, the license dialog will be displayed when a repository is used to store update packages.
		Possible values: • YES • NO	

Table 9. \UserSettings\General (continued)

Configurable item	Description	Value	Action
IgnoreRMLicCRCSize	Enables you to enable or disable the following functions when System Update downloads update packages from the Lenovo Help Center Web site: • CRC (Cyclic Redundancy Check): checks for file corruption of readme and license agreement files when you download update packages from the Lenovo Help Center Web site. • File size: checks the file size of readme and license agreement files.	Default value: YES	• If YES, System Update will ignore these files and will not check for the file corruption and file size. • If NO, System Update will check for the file corruption and file size. Note: System Update does not check file size and corruption of readme files and license agreement files when you download update packages from a local repository even if you set this value to NO.
		Possible values: • YES • NO	
NotifyInterval	Specifies the amount of time between restart notifications when you download and install update packages that require a reboot.	Default value: 300 (seconds)	You can specify any value between 60 seconds and 86 400 seconds. By default, you will be prompted with a restart notification every 300 seconds when you begin to download and install an update package that forces a reboot or defer the download and installation process. System Update will use the default value when an invalid value is set. For example, if you set a value greater than 86 400 seconds (24 hours), System Update will use the default value of 300 seconds.
		Possible values: Any value between 60 seconds and 86 400 seconds	
RepositoryLocation1	Specifies the repository folder path. The key value name should be Repository Location%N% where N is a number between 1 and 20, including 1 and 20.	Default value: SUPPORTCENTER	System Update will search for update packages in the specified repository folder.
		Possible values: • SUPPORTCENTER • A folder path	
UNCMaxAttempts	Specifies the maximum number of tries that System Update will attempt when connecting to a network share folder before it completely fails.	Default value: 2	System Update will attempt the number of tries when connecting to a network share folder.
		Possible values: Any valid integer	

Example:

```
\GENERAL
\CheckLocalCRC = YES
```

```

\DebugEnable = NO
\DisplayInformationScreen = YES
\DisplayLicenseNotice = YES
\DisplayLicenseNoticeSU = YES
\ExtrasTab = NO
\IgnoreLocalLicense = NO
\IgnoreRMLicCRCSIZE = NO
\NotifyInterval = 300
\RepositoryLocation1 = SUPPORTCENTER
\UNCMaxAttempts = 2

```

\UserSettings\Scheduler

Using the scheduler function, you can configure System Update to search for update packages at designated intervals. To increase the speed of downloading update packages from Lenovo servers, change the **Run On** setting to a day that fits the needs of your enterprise. Do this when you install System Update.

Note: System Update for Windows 7 and later operating systems provides a weekly scheduler setting. However, you also can use the Task Scheduler tool on Windows 7 and later operating systems to create a customized scheduler for System Update to provide more scheduler options to achieve the best scheduling practice. To configure the scheduler function through the Task Scheduler tool on the Windows 7 operating system, do the following:

1. Navigate to **Control Panel → Administrative tools → Run task scheduler**. The Task Scheduler program is launched and the Task Scheduler window is displayed.
2. Right-click **Task Scheduler (Local)** in the left pane of the window and select **Create Basic Task**. The Create Basic Task Wizard is displayed.
3. Type a name for the new task in the **Name** field, for example, "TVSU." You can also add descriptions for the task in the **Description** field (optional). Then click **Next**.
4. Select the desired frequency to run the scheduled update and click **Next**. It is recommended to select **Monthly** or **Weekly**.
5. Configure the detailed settings of the frequency you selected on the previous screen to specify when you wish System Update will run to get updates.
Take **Monthly** as an example, if you select **Select all months** from the **Months** drop-down list box, System Update will run once every month. Then from the **Days** drop-down list box, select one day on which you wish to run the scheduled update. You can also select one day from the **On** drop-down list box, and then System Update will run on the designated day of the month(s) you specified. Click **Next**.
6. Select **Start a program**, and then click **Next**.
7. Type the installation directory of System Update in the **Program/script** field, or click **Browse** to locate the folder where System Update is installed. You can also type desired scheduler settings and values in the **Add arguments** field (optional) and the **Start in** field (optional). For detailed information about settings and values for the System Update scheduler, see Table 10 "UserSettings\Scheduler" on page 22.

Note: The installation directories of System Update are different on computers with the 32-bit Windows 7 operating system and computers with the 64-bit Windows 7 operating system.

8. Click **Next** to view the summary of your configuration.
9. Click **Finish** to confirm and complete your configuration.

The default settings and values for the System Update scheduler are provided in the following table.

Table 10. \UserSettings\Scheduler

Configurable item	Description	Value	Action
SchedulerAbility	Enables you to activate or inactivate the scheduler.	Default value: YES	- If YES, System Update will run on the specified schedule. - If NO, System Update will not run on a schedule.
		Possible values: - YES - NO	
SchedulerLock	Enables you to show, hide, disable, or lock the Schedule updates option in the System Update user interface.	Default value: SHOW	- If SHOW, the Schedule updates option is available in the left navigation pane. - If HIDE, the Schedule updates option is not visible to the end user. - If DISABLE, the Schedule updates option in the left navigation pane is displayed but appears dimmed. - If LOCK, the Schedule updates panel can be opened, but the settings in it are disabled and cannot be changed.
		Possible values: - SHOW - HIDE - DISABLE - LOCK	
SearchMode	Specifies the type of updates that System Update will be scheduled to search for.	Default value: RECOMMENDED	- If CRITICAL, System Update will search for only critical updates. - If RECOMMENDED, System Update will search for both critical and recommended updates. - If ALL, System Update will search for all updates, and all updates will be retrieved.
		Possible values: - CRITICAL - RECOMMENDED - ALL	
NotifyOptions	Enables you to choose the notification options that you want to receive from the System Update scheduler.	Default value: NOTIFY	- If DOWNLOADANDINSTALL, the scheduler will download and install the updates without end user intervention. - If DOWNLOAD, the scheduler downloads the updates and notifies the end user when the updates are ready to install. - If NOTIFY, the scheduler will search for new updates and notify the end user when new updates are available for download and installation. - If DOWNLOADANDINSTALL -INCLUDEREBOOT, System Update will download and install update packages and then prompt the end user to restart the system. Note: Make sure that no space separates those values.
		Possible values: - DOWNLOAD ANDINSTALL - DOWNLOAD - NOTIFY - DOWNLOAD ANDINSTALL -INCLUDEREBOOT Note: If you set SearchMode to RECOMMENDED, NOTIFY is the only value available for NotifyOptions. System Update cannot run if you select any of the other values for NotifyOptions.	

Table 10. \UserSettings\Scheduler (continued)

Configurable item	Description	Value	Action
Frequency	Specifies the interval at which the scheduler is to run weekly or monthly.	Default value: MONTHLY	- If WEEKLY, the interval will be calculated in weeks. - If MONTHLY, the interval will be calculated in months. Note: This setting and the SchedulerRunEvery setting are used to set how often System Update will run.
		Possible values: - MONTHLY - WEEKLY	
RunOn	Specifies the day when the System Update scheduler will run.	Default value: 1	System Update runs on the specified day. When the frequency is Weekly, the possible values for this setting are: SUNDAY , MONDAY , ... SATURDAY . When the frequency is Monthly , the possible values for this setting are from 1 to 28 .
		Possible values: 1 to 28	
RunAt	Specifies the time when the System Update scheduler will run. This value is specified at hourly intervals.	Default value: 11	System Update runs at the specified time.
		Possible values: Any number from 0 to 23 (0 indicates 12AM and 23 indicates 11PM)	

Example:

```

\SCHEDULER\
\SchedulerAbility = NO
\SchedulerLock = SHOW
\SearchMode = CRITICAL
\NotifyOptions = NOTIFY
\Frequency = WEEKLY
\RunOn = MONDAY
\RunAt = 12
    
```

Repository configurations

By default, System Update obtains update packages from the Lenovo Help Center Web site. You can change the setting to enable System Update to search and download update packages from a repository folder on a local system or a network share respectively. You can also configure System Update to search multiple locations for update packages from the Lenovo Help Center Web site, a local system repository folder, and a network share repository folder.

Creating a local system repository

System Update has the capability to search for update packages that are stored locally on a client or an administrator system, or external media.

Using %ANYDRV%

The %ANYDRV% variable can be used to create a local system repository folder instead of specifying a drive letter when setting the repository path.

To create a local system repository folder using %ANYDRV%, do the following:

1. Create a new folder on a local hard disk drive to use as the repository, for example:

%ANYDRV%\SystemUpdate3_x\

2. Navigate to the following registry entry:

HKLM\SOFTWARE\Lenovo\System Update\Preferences\
UserSettings\General\RepositoryLocation1

3. Replace the default value, **SUPPORTCENTER**, with the file path of the repository that you created in step 1, for example:

ANYDRV%\SystemUpdate3_x\

Using %XMEDIA%

The %XMEDIA% variable can be used to detect the repository location path on external media connected to the system, such as a CD, DVD, USB storage device, hard disk drive, or diskette. To create a local system repository folder using %XMEDIA%, do the following:

1. Create a new folder on a local hard disk drive to use as the repository, for example:

%XMEDIA%\SystemUpdate3_x\

2. Navigate to the following registry entry:

KLM\SOFTWARE\Lenovo\System Update\Preferences\
UserSettings\General\RepositoryLocation1

3. Replace the default value, **SUPPORTCENTER**, with the file path of the repository that you created in step 1, for example:

%XMEDIA%\SystemUpdate3_x\

Creating a network share repository

To create a network share repository folder that will be used to store update packages on a network share, do the following:

1. Create a new folder on a network share to use as the repository.
2. Share the new repository folder using the UNC (Universal Naming Convention) path. The UNC path provides connectivity to all computers that have been mapped to the repository. The format for a UNC path is:

\\Server\Share\

for example:

\\Server_X\TVSU_repository\

3. Set the access permissions of the new repository folder to read-only access for end users. Administrator functions will require read and write access.
4. On client computers, navigate to the following registry entry:

HKLM\SOFTWARE\Lenovo\System Update\Preferences\
UserSettings\General\RepositoryLocation1

Note: The default for this registry entry is **SUPPORTCENTER**. This default setting enables System Update to search for update packages on the Lenovo Help Center Web site. When you change this setting to a network share repository folder that you have created on your network, client computers with System Update will be able to search for update packages on your network.

5. Replace the default value, **SUPPORTCENTER**, with your server and share name, for example:

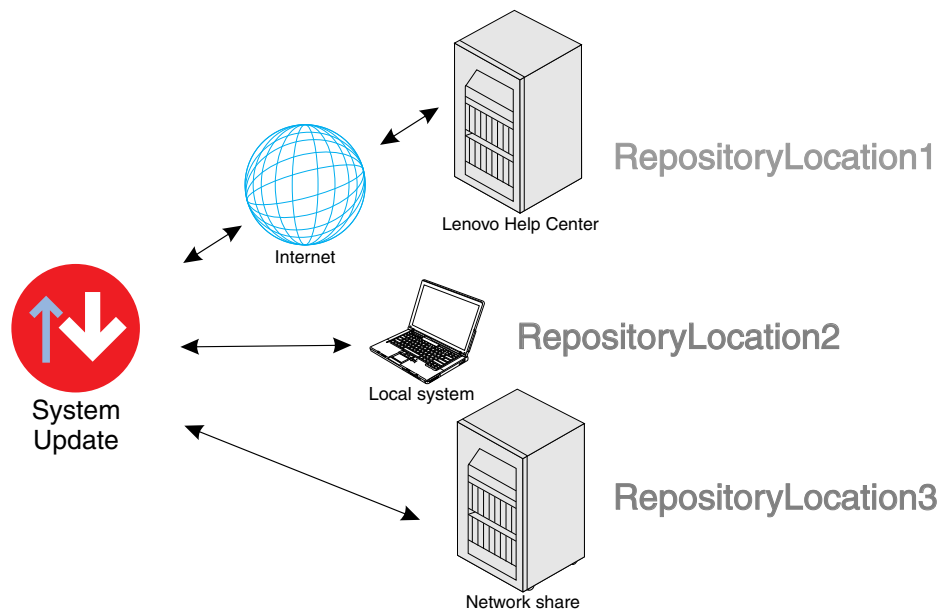
```
\\Server_X\\TVSU_repository\\
```

Note: Distributed File System (DFS), a storage management solution, can be used to configure the network share repository.

Working with multiple repositories

This multiple repository capability ensures that you are getting the latest version of an update package while being offered with greater flexibility of package storage. When using multiple repositories, System Update searches for update packages in the order of the repositories defined in the registry. System Update searches each repository location and retrieves the latest version of an update package. Packages on the Lenovo Help Center Web site will be the most current version. If a repository location is not found, System Update will search the next numerical repository location. For example, if you remove the folder that points to RepositoryLocation1, System Update will search RepositoryLocation2, and then RepositoryLocation3.

The following illustration shows the relationship among the Lenovo Help Center, a local system, a network share, and System Update when using multiple repositories:



In this example, System Update will search the Lenovo Help Center Web site first, followed by the repository folder on the local system, and then the repository folder on the network share:

- RepositoryLocation1 - Lenovo Help Center Web site
- RepositoryLocation2 - Local system
- RepositoryLocation3 - Network share

Creating and configuring multiple repositories with the registry

To create and configure multiple repository locations, do the following:

1. Create a new folder on a local hard disk drive to use as the repository, for example:

%ANYDRV%\SystemUpdate3_x\

2. Create a new folder on a network share to use as the repository.
3. Share the new repository folder using the UNC path. The UNC path provides connectivity to all computers that have been mapped to the repository. The format for the System Update UNC path is:

\\Server\Share\

for example:

\\Server_X\TVSU_repository\

4. Set the access permissions of the new repository folder to read-only access for end users. Administrator functions will require read and write access.
5. Navigate to the following registry location:

HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General\

Note: There will be a default key for the RepositoryLocation1 entry.

6. Create your local system repository as RepositoryLocation2 by doing the following:
 - a. From the Registry Editor main menu, click **Edit** and then click **New**.
 - b. Rename the string value as **RepositoryLocation2**.
 - c. Double-click the **RepositoryLocation2** string.
 - d. Type the file path for the local system repository, for example:

%ANYDRV%\SystemUpdate3_x\

7. Create your network share repository as RepositoryLocation3 by doing the following:
 - a. From the Registry Editor main menu, click **Edit** and then click **New**.
 - b. Rename the string value as **RepositoryLocation3**.
 - c. Double-click the **RepositoryLocation3** string.
 - d. Type the network share repository path of your server and share, for example:

\\Server_X\TVSU_repository\

UNC

The user name and password used by System Update and Update Retriever to access a network share should only be used by System Update and Update Retriever. If you map the repository location or log on to it using the same user name and password that is used by System Update or Update Retriever, the MapDrv utility used to connect to the network share will not be able to access the network share repository. If this occurs, System Update and Update Retriever will fail in the attempt to access the network share repository.

For more information, see “Using the MapDrv utility” on page 80.

Version control for System Update

When a newer version of System Update is available, System Update connects to the Lenovo Help Center Web site, detects and downloads the newer version, and then installs that version. This process is done automatically, without user interaction, but can be disabled. For information about disabling the upgrade, see “UCSettings\HTTPSHelloSettings” on page 16.

If you want to control the version of System Update available to your users, you can use your network repository to store specific versions of System Update. Storing packages locally will enable the System Update application to search for upgrades within your network repository.

Note: This version control function is compatible with System Update 3.02 and later versions.

To configure the registry for System Update version control, do the following:

1. Download the SSClientCommon.zip file from the following Lenovo Web site:
<http://www.lenovo.com/support/site.wss/document.do?Indocid=TVAN-ADMIN#tvsu>
2. Create a folder to use as a repository that will store update packages, for example:

```
\\Server_X\TVSU_repository\
```

3. Extract the files from the SSClientCommon.zip file to your repository folder, for example:

```
\\Server_X\TVSU_repository\SSClientCommon\
```

4. Install System Update on the client computer.
5. Configure the registry keys on the client computer by doing the following:
 - a. Navigate to the following registry entry:

```
HKLM\SOFTWARE\Lenovo\System Update\Preferences\UCSettings\HTTPSHelloSettings
```

- b. Double-click **ServerName**.
 - c. In the **Value Data** field in the **Edit String** dialog box, replace the HTTP server address with the UNC path of your repository, for example:

```
\\Server_X\TVSU_repository\
```

- d. Click **OK**.
 - e. Navigate to the following registry entry:

```
HKLM\SOFTWARE\Lenovo\System Update\Preferences\UserSettings\General
```

- f. Double-click **RepositoryLocation1**.
 - g. In the **Value Data** field in the **Edit String** dialog box, replace the http server address with the UNC path of your repository, for example:

```
\\Server_X\TVSU_repository\
```

- h. Click **OK**.

Configuring System Update with Active Directory

Active Directory is a directory service. The directory is where information about end users and resources is stored. The directory service allows access so that you can manipulate those resources. Active Directory provides a mechanism that gives administrators the ability to manage computers, groups, end users, domains, security policies, and any type of user-defined objects. The mechanism used by Active Directory to accomplish this is known as Group Policy. With Group Policy, administrators define settings that can be applied to computers or users in the domain.

The following examples are settings that Active Directory can manage for System Update:

- Scheduler settings
- Mapped Network Drive settings

Administrative template files

The administrative template file (ADM file) defines policy settings used by applications on the client computers. Policies are specific settings that govern the operation of applications. Policy settings also define whether the end user will be allowed to set specific settings through an application.

Settings defined by an administrator on the server are defined as policies. Settings defined by an end user on the client computer for an application are defined as preferences. As defined by Microsoft, policy settings take precedence over preferences. When System Update checks for a setting, it will look for the setting in the following order:

1. Computer policies
2. Computer preferences

As described previously, computer and user policies are defined by the administrator. These settings can be initialized through a Group Policy in Active Directory. Computer preferences are set by the end user on the client computer through options in the application's interface.

Note: If you are using an ADM file and the Group Policy Editor to set policy settings for System Update, make sure that you are using the ADM file released specifically for each version. For example, if you are customizing policies for System Update 3.2, you must use the ADM file designed for System Update 3.2.

Adding administrative templates

To add an ADM file to the Group Policy Editor, do the following:

1. On your server, launch Active Directory.
2. Click **servername.com** and then click **Properties**.
3. On the **Group Policy** tab, highlight **New Group Policy Object** and click **Edit**.

Note: You can also type `gpedit.msc` in the **Open** or **Start Search** box to launch the Group Policy Editor.

4. Under **Computer Configuration**, right-click **Administrative Templates**.
5. Click **Add** and then select the ADM file for System Update.
6. Click **Close** in the **Add/Remove Templates** dialog box.
7. Under **Computer Configuration**, click **Administrative Templates**. A new tab named **System Update** is present. Then, you will be able to configure all the available settings.

Note: For Windows 2000 operating systems, if the policies under **User Configuration** are not visible in the Group Policy Editor when you add a new ADM file, close and then reopen the Group Policy Editor. For Windows XP and Windows Vista operating systems, if the ThinkVantage policies for System Update are duplicated when you add a new ADM file, close and then reopen the Group Policy Editor.

Defining manageable settings

The following example shows settings in the Group Policy Editor using the following hierarchy:

Computer Configuration > Administrative Templates > ThinkVantage >
System Update > UserSettings > General > RepositoryLocation1

The ADM files indicate where in the registry the settings will be reflected. These settings will be in the following registry locations:

- HKLM\Software\Lenovo\System Update
- HKLM\Software\Lenovo\Update Retriever

Applying group policy immediately

To apply policy settings immediately after you configure the settings for the ADM file, do the following:

1. From the Windows **Start** menu, click **Run**.
2. Type `gpedit.msc /force` and then click **OK**.

Group Policy settings

The following tables provide policy settings for System Update.

User Settings

This table provides the settings for the User Settings policies.

Table 11. Computer Configuration > Administrative Templates > ThinkVantage > System Update > User Settings

Policy	Setting	Description
Connection	User Name	This setting specifies the user name for connection.
	User Password	This setting specifies the password for connection. It stores the encrypted password of proxy.
	Proxy/*/AutoConfigURL Note: * refers to the amount of proxy servers. The amount must not exceed five.	This setting stores the automatic configuration Uniform Resource Locator (URL) path such as <code>file://c:/Proxy1.pac</code> or <code>http://10.10.1.1/Proxy1.pac</code> .
	Proxy/*/ProxyServer Note: * refers to the amount of proxy servers. The amount must not exceed five.	This setting stores the proxy server location such as <code>http=10.10.1.1:8080</code> or <code>socks=10.10.1.1:1080</code> .
	Proxy/*/ProxyEnable Note: * refers to the amount of proxy servers. The amount must not exceed five.	This setting specifies whether proxy is enabled. “0” stands for the disabled status and “1” stands for the enabled status.
General	Repository Location	This setting specifies the repository location that update packages will be downloaded from and installed. The default setting is SUPPORTCENTER and enables System Update to download updates from the Lenovo Help Center. You can also specify a repository path on a network share drive, and this will enable System Update to search for update packages in the network share repository folder. For more information on setting up repositories, see “Repository configurations” on page 23.
	UNC Max Attempts	This setting specifies the maximum number of local repository authentication attempts allowed.
General	Ignore Local License	This setting enables you to show or hide the license dialog when System Update is downloading and installing an update package located in a repository folder such as the network share repository. • If YES, the license dialog will not be displayed when a repository is used to store update packages. Note: If you obtain packages directly from the Lenovo Help Center and do not use a repository for update package storage, the IgnoreLocalLicense value will be ignored and the license dialog will be displayed.

Table 11. Computer Configuration > Administrative Templates > ThinkVantage > System Update > User Settings
(continued)

		If NO, the license dialog will be displayed when a repository is used to store update packages.
	IgnoreRMLicCRCSize	This setting enables you to enable or disable the following functions when System Update downloads update packages from the Lenovo Help Center Web site: CRC: checks for file corruption of readme and license agreement files when you download update packages from the Lenovo Help Center Web site. File size: checks the file size of readme and license agreement files. You can set the value to YES or NO: - If YES, System Update will ignore these files and will not check for the file corruption and file size. - If NO, System Update will check for the file corruption and file size. Note: System Update does not check file size and corruption of readme files and license agreement files when you download packages from a local repository even if you set this value to NO.
	NotifyInterval	This setting specifies the amount of time between restart notifications when you download and install update packages that require a reboot. You can specify any value between 60 seconds and 86 400 seconds. By default, you will be prompted with a restart notification every 300 seconds when you begin to download and install an update package that forces a reboot or defer the download and installation process. System Update will use the default value when an invalid value is set. For example, if you set a value greater than 86 400 seconds (24 hours), System Update will use the default value of 300 seconds.
	Metrics Enabled	This setting enables or disables the Metrics collection.
	Administrator Command Line	This setting enables the administrator to specify the desired command line when launching the tvsu.exe file with the parameter /CM.
Scheduler Note: System Update for Windows 7 and later operating systems provides a weekly scheduler setting. However, you also can use the Task Scheduler tool on Windows 7 and later operating systems to create a customized scheduler for System Update to provide more scheduler options to achieve the best scheduling practice. For detailed information	Scheduler Lock	This setting enables you to show, hide, disable, or lock the Schedule updates option in the System Update user interface. - If SHOW, the Schedule updates option is available in the left navigation pane. - If HIDE, the Schedule updates option is not visible to the end user. - If DISABLE, the Schedule updates option in the left navigation pane is displayed but appears dimmed. - If LOCK, the Schedule updates panel can be opened, but the settings in it are disabled and cannot be changed.

Table 11. Computer Configuration > Administrative Templates > ThinkVantage > System Update > User Settings (continued)

about using the Task Scheduler tool on Windows 7 operating systems, see “\UserSettings\Scheduler” on page 21.		
Mapped Network Drive	UNC	This setting specifies the UNC location for the mapped network drive (format: \\server\share). The default value is none.
	User	This setting enables you to use the mapdrv.exe /view command to create an encrypted value for this field. The default value is none.
	Password	This setting enables you to use the mapdrv.exe /view command to create an encrypted value for this field. The default value is none.

UCSettings

This table provides the settings for the General policy of System Update.

Table 12. Computer Configuration > Administrative Templates > ThinkVantage > System Update > UCSettings > General

Policy	Setting	Description
Billboard	LiveFeed	This setting enables you to disable or enable System Update to check the Live Feed to get the billboard setting. You can remove the billboard function from System Update by clearing this value.
General	Disable	This setting is used to determine if System Update should ignore requests to run System Update. • If NO, System Update will run normally. • If YES, System Update will not run.
General	Extras Tab	The Extras tab enables you to easily find the right software, hardware, and solutions to help you keep your system up-to-date and have your system to perform to its full capacity. System Update analyzes your system and then recommends solutions that can be used to enhance your system. This setting enables you to show or hide the Extras tab on the System Update user interface. • If YES, the Extras tab will be displayed in the System Update workspace. • If NO, the Extras tab will not be displayed in the System Update workspace. The default value is YES.

This table provides the policy setting for the Update Thyself function of System Update.

Table 13. Computer Configuration > Administrative Templates > ThinkVantage > System Update > UCSettings > HTTPSHelloSettings

Policy	Setting	Description
HTTPSHelloSettings	Update Thyself	System Update checks the Lenovo Help Center Web site for updates for itself, even if it is connecting to a network share repository. This setting is to enable or disable the Update Thyself function. You can remove the Update Thyself function from System Update by clearing this value.

Managing network share repositories with Active Directory

This section provides a description of the policy settings for the network share repository. Setting these policies will prompt an end user for a user name and password when the System Update end user interface is launched or when a scheduled update runs. When an end user authenticates into a domain and has appropriate rights to access the network share repository, then no prompt for the user name and password is displayed on the System Update end user interface.

Active Directory enables you to edit policy settings with the Group Policy Editor. To customize the settings for network share repository folder, add the ADM file for System Update to the Group Policy Editor.

To add the ADM file and customize the settings, do the following:

1. Download the System Update ADM file from the Lenovo Web site at:
<http://www.lenovo.com/support/site.wss/document.do?Indocid=TVAN-ADMIN#tvsu>

Note: If you are using an ADM file and the Group Policy Editor to set policy settings for System Update, make sure that you are using the ADM file released specifically for each version. For example, if you are customizing policies for System Update 3.2, you must use the ADM file designed for System Update 3.2.

2. On your server, launch Active Directory.
3. Click **servername.com** and then click **Properties**.
4. On the **Group Policy** tab, highlight **New Group Policy Object** and click **Edit**.

Note: You can also type gpedit.msc in the **Open** or **Start Search** box to launch the Group Policy Editor.

5. Right-click **Administrative Templates**.
6. Select **Add/Remove Templates**.
7. Click **Add** and then select the tvsu.adm file.
8. Click **Close** in the **Add/Remove Template** dialog box. The **ThinkVantage** tab is created.

Note: Under the **ThinkVantage** tab, there is a **System Update** tab. If you do not see the applicable policy, make sure that your Group Policy Editor is set to display all policy settings.

9. Navigate the Group Policy Editor to the following location:

Computer Configuration\Administrative Templates\ThinkVantage
System Update\User Settings\General\Repository Location

10. Double-click **Repository Location**.
11. In the **Local Repository Location 1** field, change the value from **SUPPORTCENTER** to your network repository share, for example:

\\Server_X\TVSU_repository\

12. Click **Apply**.

Setting policies for multiple repositories

To set policies in the Group Policy Editor for multiple repositories, refer to the following example:

1. After adding the Administrative Template for System Update, navigate the Group Policy Editor to the following location:

```
Computer Configuration\Administrative Templates\ThinkVantage  
\System Update\User Settings\General\Repository Location
```

2. Double-click **Repository Location**.
3. In the **Local Repository 2** field, type the file path for your local system repository, for example:

```
%ANYDRV%\SystemUpdate3_x\
```

4. In the **Local Repository 3** field, type the network share repository path of your server and share, for example:

```
\\Server_X\TVSU_repository\
```

5. Click **Apply**.

System Update version control using Active Directory

If you want to control the version of System Update available to your users, you can use your network repository to store specific versions of System Update. Storing packages locally will enable System Update to search for upgrades within your network repository.

To configure Active Directory for System Update version control, do the following:

1. Download the SSClientCommon.zip file from the following Lenovo Web site:
<http://www.lenovo.com/support/site.wss/document.do?Indocid=TVAN-ADMIN#tvsu>
2. Extract the SSClientCommon.zip file to your repository folder.
3. After adding the Administrative Template for System Update, navigate the Group Policy Editor to the following location:

```
Computer Configuration\Administrative Templates\ThinkVantage  
\System Update\UCSettings\HTTPSHelloSettings
```

4. Double-click **Update Thyself**.
5. Click **Enabled**.
6. In the **Update Thyself** text box, type the UNC path of your repository, for example:

```
\\Server_X\TVSU_repository\
```

Note: If your repository folder requires authentication, set the policies for the Mapped Network Drive. For information about the Mapped Network Drive policies, see “Group Policy settings” on page 29.

7. Click **OK**.
8. Deploy these settings to client computers.

Note: System Update version control is compatible with System Update 3.02 and later versions.

Chapter 4. Working with System Update

This chapter provides information on working with update packages, using System Update, and downloading the Web upgrade for System Update.

About System Update

When you search for updates using System Update, the request goes to a repository or the Lenovo Help Center, depending on how System Update is configured. In response, System Update provides a list of new candidate updates. Then System Update verifies which of the candidate updates are applicable to the hardware and software on your computer and displays a list of applicable updates. System Update will also display update packages in order of severity that are related to other update packages. Once you select updates of interest, System Update downloads the updates from the repository or the Lenovo Help Center, and then provides an installation method. If two or more update packages are related, System Update downloads and installs all update packages.

Designed to help you keep your system up-to-date, System Update provides the following functions:

- Get new updates
- Install deferred updates
- Schedule updates

Extras tab

As a feature of System Update, the **Extras** tab enables you to easily identify the applicable software, hardware, and solution offerings to help you keep your entire system performing to its full capacity.

System Update analyzes your system, and then recommends solutions that can be used to enhance your system performance. Examples of what the **Extras** tab may recommend include:

- Memory upgrades
- Printer recommendations
- Warranty recommendations

System Update billboard

In various panels of the System Update user interface, there is a live feed billboard image provided by Lenovo for customer registration. If you click this image, the registration process will begin. If you register, you will receive important information about your system from Lenovo. You can turn this live feed off by clearing the value in the registry. For more information on configuring this setting with the registry or the ADM file, see Chapter 3 “Configurations” on page 13.

Note: The registration function is available to users in United States only.

Working with update packages

An update package is made by bundling several files together. An updates package consists of a self-extracting installer program, an XML descriptor file that defines the update, one or more NLS readme files, any package license file, and any optional detection modules.

Applicable update packages must match the triplet of a client computer. A *triplet* is the combination of the operating system, machine type (MT), and operating system language. An example of a triplet value is:

Note: If you have multiple machine type/model numbers selected in the Update Retriever main window, all packages common to the multiple systems that you select in the Applicable Updates window will result in a check mark next to each system. Clearing the check box for one system will clear the check boxes for all of the systems.

Downloading and installing updates

You can download and install update packages from the following different locations:

- The Lenovo Help Center Web site
- The repository folder on a local system
- The repository folder on a network share

The following sections explain each location in detail, so that you can provide the best configuration for your organization.

Using the Lenovo Help Center Web site

You can manually initiate a search for new updates using System Update. System Update notifies you that the following information is communicated to determine the applicable update packages for your system:

- Operating system
- Machine type
- Operating system language

System Update will then provide a selectable list of updates. You will have the option to defer updates, so you can download the update package and install it at a later time, or you can download the update package and install it immediately. Once you select the updates to download and confirm the selections, the updates will be downloaded and installed to your system.

Using the repository folder on a local system

You can set up your computer to store update packages locally. Do this by creating a folder on your computer to use as the repository, and then change the repository path in the registry that points to that repository on your local computer.

Using the repository folder on a network share

You can download and install new updates from a repository that resides on a network share. System Update will retrieve the end user credentials (user name and password) needed for authentication from the application properties as encrypted strings. If a user name and password does not exist, System Update will still attempt to connect to the network share but will prompt the user to provide a user name and password.

Note: The user name and password properties can be managed by Active Directory. As the user name and password must be encrypted when used as an application property, an administrator can use the Lenovo supplied utility called MapDrv to generate encrypted strings for the user name and password using a software key. For additional information about the MapDrv utility, see “MapDrv utility” on page 78.

The following keys are used to store the user name and password:

- HKLM\Software\Lenovo\MND\TVSUAPPLICATION\UNC=<network share>
- HKLM\Software\Policies\Lenovo\MND\TVSUAPPLICATION\UNC=<network share>
- HKLM\Software\Lenovo\MND\TVSUAPPLICATION\Pwd=<encrypted password>

If an Active Directory policy is used, these values are stored at:

- HKLM\Software\Policies\Lenovo\MND\TVSUAPPLICATION\UNC=
<network share>
- HKLM\Software\Policies\Lenovo\MND\TVSUAPPLICATION\User=
<encrypted username>
- HKLM\Software\Policies\Lenovo\MND\TVSUAPPLICATION\Pwd=
<encrypted password>

Working with license agreements

Upon searching for update packages, System Update will provide update packages to download and install. Update packages can contain license agreements. If you store update packages in a repository, you can save time and effort by using silent command scripts and by configuring System Update to recognize these license agreements automatically. To configure System Update to recognize license agreements automatically, set the following registry value to **YES**:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Lenovo\System Update  
\Preferences\UserSettings\General\IgnoreLocalLicense
```

Note: Using silent command scripts to recognize license agreements works only if you use a repository to store update packages. If you obtain packages directly from the Lenovo Help Center Web site, silent command scripts will not be effective.

Using System Update

When using System Update to search for update packages, System Update will display search results in four categories: Critical, Recommended, Optional, and Extra. This categorization also defines the severity level of the package. For a description of each category, see the following:

- Critical packages are considered mandatory for your system to function properly. Failure to install these packages could result in data loss, system malfunction, or hardware failure. You can choose to have critical updates downloaded and installed automatically on a scheduled basis. A critical package can be, for example:
 - A hard disk drive firmware update that if not applied could result in hard disk drive failure.
 - A BIOS upgrade that if not applied will result in system lags.
 - A software patch to an application that if not applied could result in data loss on your system.
- Recommended packages are packages recommended by Lenovo to ensure your system working at optimal performance. This severity level should be the default for most drivers. A recommended package can be, for example:
 - A video driver that corrects an issue that may cause blue screen issues.
 - A BIOS update that contains minor fixes that may impact a small group of customers.
 - A power management driver that will allow a mobile system to get the most out of its battery life.
- Optional packages will improve your computing experience, but are not necessary. An optional package can be, for example:
 - A tool that enables you to migrate files from one system to another such as the ThinkVantage® Rescue and Recovery® program. The Rescue and Recovery program is not needed for your system to operate, but provides benefit if you choose to install it.
 - Any BIOS or driver upgrade that has been updated only to support newer systems and contains no fixes.

- Extra packages can consist of software, hardware, or solution offerings to help you keep your entire system performing to its full capacity. An extra package can be, for example:
 - Memory upgrades
 - Printer recommendations
 - Warranty recommendations

Scheduling the search for updates

You have the option to manually initiate the search for new updates or schedule an automatic search for new updates at a specified time interval when System Update is configured to search from custom repositories. When you enable the automatic search for updates, you can define the package type, the search frequency, and the time of day when System Update searches for new updates.

Using System Update, you will be enabled to do the following automatic searches on a scheduled basis:

- “Automatic searching for new updates” on page 38
- “Automatic searching for and downloading new updates” on page 39
- “Automatic searching for, downloading, and installing new updates” on page 39

Configuring an automatic search

When you configure System Update to search for new updates automatically on a scheduled basis, the following options are available:

- **Schedule:** You can choose to search for new updates weekly or monthly. For weekly checks, a day of the week and time must be selected. For monthly checks, a date in the month and time must be selected.
- **Notification:** For recommended and optional updates, you can be notified when new updates are found and have the choice to either download the updates or defer the download at a later time. For critical updates, you can configure the application to automatically download and notify you after the download is completed, or you can configure to download and install all new updates and to get notified after the download and installation is completed.

Configuring the notification option for an automatic search

If performing an automatic search, you can configure the application with one of the following notification options for critical, recommended, and optional updates:

- Provides notification when new updates are found so that you can manually initiate the download and installation.
- Downloads and installs the new updates and provides notification when completed.
- Automatically downloads updates and notifies you when the updates are ready to install.

The notification is in form of a balloon tooltip.

Automatic searching for new updates

You can configure System Update to only search for updates from a custom repository on a specified schedule. If new updates are found, you are notified with a balloon tooltip from the application icon in the notification area. When you click the balloon tooltip, System Update will display the new updates. You can also launch System Update by double-clicking the application icon.

If you right-click the application icon, two options are available: **Launch** and **Exit**. Selecting **Launch** will start System Update and display the new updates. Selecting **Exit** will remove the application icon, and you will no longer be notified when new updates are found until the next scheduled search for new updates.

Automatic searching for and downloading new updates

You can configure System Update to automatically search for and download new updates available to your system on a specified schedule. New updates will be found and automatically downloaded to the local cache of deferred updates. When the download is completed, you will be notified with a balloon tooltip from the application icon in the notification area. If you click the balloon tooltip, System Update will be launched and show the new updates that were downloaded and are ready to install. You can also launch System Update by double-clicking the application icon.

You can right-click and select **Launch** or **Exit**. Selecting **Launch** will launch System Update and display the new updates. Selecting **Exit** will remove the application icon, and you are no longer notified when new updates were downloaded until the next scheduled search for new updates.

Automatic searching for, downloading, and installing new updates

You can configure System Update to automatically search for, download, and install new updates available to your system on a specified schedule. New updates will be found and automatically downloaded and installed to your system. When the installation is completed, you will be notified with a balloon tooltip from the application icon in the notification area. If you click the balloon tooltip, System Update will be launched and show the updates that were installed and the results. You can also launch System Update by double-clicking the application icon.

You can right-click and select **Launch** or **Exit**. Selecting **Launch** will launch System Update and display the results screen. Selecting **Exit** will remove the application icon, and you are no longer notified when new updates were installed until the next scheduled search for new updates.

Viewing the download and installation history

You can view a history of updates that are downloaded and installed on your system. For each update, the results of the download and installation are noted as either successful or failed.

Hiding and restoring hidden updates

Updates can be hidden, which means those specific updates will not be displayed as applicable in the future. You can hide specific versions of an update.

Working with updates that force a reboot

When installing multiple updates and one of the updates forces a reboot, System Update will automatically continue the installation at the next update after the reboot.

Keyboard shortcuts

The following table provides the keyboard shortcuts for the main functions of System Update:

Table 14. Keyboard shortcuts

Function	Shortcut
Get new updates	CTRL+U
Install deferred updates	CTRL+D
Schedule updates	CTRL+S
View installation history	CTRL+H
Restore hidden updates	CTRL+R

Table 14. Keyboard shortcuts (continued)

Function	Shortcut
Close	CTRL+E
Context Help	F1

Chapter 5. Working with Update Retriever

This chapter provides information about setting up and using Update Retriever.

About Update Retriever

Update Retriever enables you to download update packages from the Lenovo Help Center Web site to a network share repository folder. Your repository folder provides the storage for update packages. Once configured, System Update can search your repository for update packages. This allows greater control of the updates that are available over your network.

You can manually initiate the search for updates or schedule an automatic search for new packages at a specified time interval. If performing an automatic search, you can configure Update Retriever to provide notification when new updates are found so you can manually initiate the download or to automatically download the new updates and provide notification when downloading is complete.

About update packages

Update Retriever enables you to modify or create update packages. An updates package consists of a self-extracting installer program, an XML descriptor file that defines the update, one or more NLS readme files, any package license file, and any optional detection modules. Each update package has an XML descriptor file that contains metadata used to describe the conditions that must exist on the client computer and how to install the update on the client computer. If an update meets the requirements you defined in the XML descriptor file, it is considered an applicable update for the targeted system. An XML descriptor file contains the necessary information for an update package to be recognized and handled by System Update.

Note: To modify an update package, you must use Update Retriever to edit the XML descriptor file. For more information, see the Update Retriever help system.

The following list provides the metadata of an update package that you can customize using Update Retriever:

- Package identity
 - Package ID
 - Name
 - Version
 - Vendor
 - Release date
 - Disk space needed to install the package
 - Title, description, summary, and language of a package
 - Version detection
 - Target applications
- Installation detection
 - Add/Remove programs
 - BIOS
 - BIOS date
 - CPU address width

- Driver
- Embedded controller version
- External detection
- File date
- File existence
- File version
- Hard disk drive (HDD)
- Operating system and operating system languages
 - OS
 - OSLang
 - OSNLang
- Plug-and-play adapter ID (PnPID)
- Registry key
- Registry key value
- Supported systems
- System vendor
- Assigning severity levels to update packages
 - Critical
 - Recommended
 - Optional
- Installation setup and details
 - Installation type
 - Command
 - Shell
 - INF file
 - One or more return codes indicating success or failure
 - Reboot types
 - Extract command
 - Default language
 - Manual installation details
 - Uninstall details
- Defining the files that make up the update package
 - Installer file
 - External file
 - Readme file
 - License file and other system specific files

Update Retriever first time setup

When you launch Update Retriever the first time, you need to set up Update Retriever. To do the first time setup of Update Retriever, do the following:

1. Launch Update Retriever.

Note: When you launch Update Retriever, you must be logged on as a user who belongs to a local administrator group.

2. On the Welcome screen, specify a repository folder and set the logon information by doing the following:

- a. Type or browse a repository path for the share drive used as the network share repository in the **Repository path** field.

Note: The Welcome screen will not open the next time you launch Update Retriever. However, you can change the repository path and default status of updates by using the **Modify settings** option in the Update Retriever navigation pane.

- b. Type a user name and password for the share drive used as the network share repository in the **user name** and **password** fields.

3. In the **Get new updates** panel, click **Add**.

4. In the Add new systems window, set the triplet information for a system by doing the following:

- a. Type the applicable machine type. You can find the machine type on the bottom of a notebook computer or on the rear of a desktop computer.
- b. Select the applicable operating system.
- c. Select the applicable language.
- d. Click **Add** and then click **Save**.

5. In the **Get new updates** panel, select the check box next to the applicable machine type you want to search for update packages.

Note: If you want to search for update packages for all machine types, select the **Select all** check box.

6. Click **Next** and then click **Finish** to search for the applicable update packages. Update Retriever will place the update packages in the designated repository folder.

Attention: If you find duplicate update packages in the network share repository, and these update packages have different package contents, you can select all packages with corresponding names for a given machine type when you are managing the contents of the network share repository.

Note: If you install Update Retriever on a notebook computer that is running the Windows 7 and later operating systems in one country and then download update packages in another country, the license files with those update packages may not be displayed correctly. To avoid this problem, do not download update packages in any country except the one where you installed Update Retriever.

Using Update Retriever

With Update Retriever, you can manually initiate the search for update packages, or schedule an automatic search for new update packages at a specified time interval.

The following sections provide information on using Update Retriever to search for update packages, schedule an automatic search, view download history, and restore hidden updates.

Manual searching for new updates

You can manually initiate a search for new updates using a wizard-like interface. Update packages are specific to the triplet value of each client computer. A *triplet* is the combination of the operating system, machine type (MT), and operating system language. An example of a triplet value is:

Windows XP, 2373, US English

For systems with various triplets, updates are assigned to matching machine types, operating systems, and language values. The triplet value for an update is saved in the repository when the update is downloaded from the Lenovo Help Center Web site by Update Retriever.

Once a triplet value is specified, Update Retriever searches the Lenovo Help Center Web site and displays a list of packages targeted to the specified triplet value. After you search for updates, there will be a brief time interval before you can select the applicable updates to download. Once you select the updates to download, you can review your selections. After you confirm the selections, the updates will be downloaded to a specified repository.

Scheduling the search for updates

You can configure Update Retriever to search for new updates automatically on a scheduled basis. The scheduler initiates a search for new updates. The administrator is notified depending on how Update Retriever was configured, in the form of an e-mail or a balloon tooltip from the application icon in the notification area.

Configuring an automatic search

When you configure Update Retriever to search for new updates automatically on a scheduled basis, the following options are available:

- **Schedule:** You can choose to search for new updates weekly or monthly. For weekly checks, a day of the week and time must be selected. For monthly checks, a date in the month and time must be selected.
- **Notification:** For recommended and optional updates, you can be notified when new updates are found and have the choice to either download the updates or defer the download at a later time. For critical updates, you can configure the application to automatically download and notify you after the download is completed, or you can configure to download and install all new updates and to get notified after the download and installation is completed.

Configuring the notification option for an automatic search

If performing an automatic search, you can configure the application with one of the following notification options for critical, recommended, and optional updates:

- Provides notification when new updates are found so that you can manually initiate the download and installation.
- Downloads and installs the new updates and provides notification when completed.
- Automatically downloads updates and notifies you when the updates are ready to install.

The notification can be in the form of a balloon tooltip from the application icon in the notification area or an e-mail. The e-mail notification includes the date and time of the check, the number of packages found, and a list of updates.

Automatic searching for new updates

If you are performing an automatic search for critical updates, you can configure the application to provide notification when new updates are found so that you can manually initiate the download later, or to automatically download the new updates and provide notification when the downloading is complete.

If you are performing an automatic search for recommended updates, you can configure the application to provide notification when new updates are found so that you can manually initiate the download later.

Note: System Update will only allow updates to be installed on systems for which the update was designated.

Managing the repository

Update Retriever enables you to manage the updates in your repository.

Viewing updates in a repository

You can view updates in the repository by choosing **Manage repository** and then selecting **Update view**.

You can view updates by filtering by operating system, language, machine type, severity, and status. In the **Update view** panel, you can sort the list of updates by update ID, title, version, reboot type, severity, license, or status. You can select one or more packages and modify or delete them. You can also select non-Lenovo packages and modify the triplets.

Modifying an update package

You can modify the reboot type, severity, license, and status of one or more update packages in the repository.

The following table provides the values that you can set for the selected update package(s).

Table 15. The values for an update package

Option	Possible value
Reboot type	• (Blank) • No reboot: reboot type 0 • Forces a reboot: reboot type 1 • Reserved • Requires a reboot: reboot type 3 • Shut down: reboot type 4
Severity	• (Blank) • Critical • Recommended • Optional
License	• (Blank) • Display • No display
Status	• (Blank) • Test • Active Attention: You must change the value to Active to indicate that the package is in production, so that System Update can recognize it.

Note: The default value was set in the first time setup of Update Retriever. You can set the default value by using the **Modify settings** option in the Update Retriever navigation pane. See “Modifying settings” on page 47.

Creating an update package

You can create an update package by clicking **Create an Update** in the **Update view** panel.

To create an update package, do the following:

1. Build a single executable for source files with an installer, such as 7zip, WinZip, WinRar, Package For The Web (PFTW), or MSI.
2. (Optional) Create a readme file that describes the update packages including the following:
 - Reports with version history
 - Minimum installation requirements
 - Steps to install and uninstall
 - Reports of changes from one version to a later version
 - Issues that need to be communicated to the end user

Note: If a readme file does not exist in the update package, the update cannot be imported with Update Retriever.

3. (Optional) Create a file that documents the license or End-User Licence Agreement (EULA) which the end user must agree to before the package can be installed. System Update will present the contents of this file to the end user before the package can be downloaded and installed.
4. Test the executable you created in step 1.
5. Create the XML descriptor file with Update Retriever. For more information, see the Update Retriever help system.
6. From the **Define files** panel, add the installer such as an executable, a license file, a readme file, and any optional or required files. Update Retriever automatically builds the package for you when you complete the XML descriptor.
7. Verify the package created in the Update Retriever repository.
8. Import the package to the network share repository using Update Retriever. See “Importing an update package into a network share repository” on page 46.

Note: For more information on creating an update package, see the Update Retriever help system.

Importing an update package into a network share repository

You can import custom updates that are built manually or customized with Update Retriever into a network share repository using Update Retriever. When an update is imported, it is not assigned to a triplet. The value for the triplet is listed as "Unassigned" for the machine type. You must assign custom updates to one or more systems before they will be recognized by System Update.

To import an update package into the network share repository and reassign the triplet information, do the following:

1. Launch Update Retriever.
2. Click **Manage repository** in the Update Retriever navigation pane.
3. Click **Import updates**.
4. Click **Browse** and navigate to your repository containing update packages.
5. Select your applicable update package and then click **OK**.
6. Select the check box to search subfolders (if the .xmls files are not in the root folder).
7. Click **Next**.
8. Review the updates that were found and then click **Import**.
9. Click **Update view**, and the imported updates are displayed as unassigned updates.
10. Select the check box for the updates and click **Assign systems**.
11. In the Assign system window, select the check box for the applicable triplets or select **Select all**.
12. Click **Save**.

Note: Each update must be in its own subfolder. If importing only one update, specify the folder that contains that update. If importing multiple updates, put each update subfolder under a wrapper folder and specify the wrapper folder during the import operation.

Assigning triplets to an update

You can assign custom updates to one or more systems. When viewing updates in the repository, you can select one or more updates and assign those updates to one or more systems by selecting the relevant triplets.

Generating a contents report of the network share repository

You can generate a report of the contents in the network share repository that will be in an Excel spreadsheet format (CSV file). In this report, you can choose to include active updates, archived updates, hidden updates, and test updates.

Modifying settings

You can set the default repository and the default update package status by using the **Modify settings** option in the Update Retriever navigation pane.

- **Update default status:** The status of updates will be set to a specified value when updates are retrieved from the Lenovo Help Center or imported to a local repository.
- **Repositories:** You can customize the location of the repository folder. If a network share is specified using the UNC path, you can provide a user name and password to authenticate without requiring a prompt when making the actual connection.

Viewing history

The **View history** function enables you to view the detailed information about the download history and export history.

The download history provides detailed information about all updates that the ThinkVantage Update Retriever has downloaded to the update repository, as well as updates that are hidden.

To view the download history, do the following:

1. Click **View history** in the left pane of the main window. The View History window opens.
2. Click the View download history link to view the following information:
 - **Title:** The title of the update.
 - **Version:** The version number of the update.
 - **Name:** The name of the update.
 - **Downloaded Time:** The date and time when the update was downloaded (not displayed for current results).

The export history provides detailed information about updates that have been exported to the target folder.

To view the export history, do the following:

1. Click **View history** in the left pane of the main window. The View History window opens.
2. Click the View export history link to view the following information:
 - **Exported Time:** The date and time when the update was exported.
 - **Status:** **Successful** or **Failed** (followed by the cause of failure).
 - **Source Location:** The directory where the driver update is saved in the repository.
 - **Target Location:** The directory where the exported driver update is saved.

- **Subfolder Name:** The name of subfolder where the exported driver update is saved. For the driver update that fails to be exported, the subfolder name just indicates its title and version number.

Hiding updates

You can hide updates, which means that the hidden updates including the current and future versions will not be displayed as relevant (from the Lenovo Help Center) in the future. You have two options:

- Hide just a specific version of an update
- Hide all future versions of an update

If in the future you want to have those updates displayed again, you can unhide them.

Exporting updates

The ThinkVantage Update Retriever enables you to export driver updates in your repository to a designated target folder. During the export process, Update Retriever will extract each driver update to a subfolder. Then, these extracted driver updates can be easily imported into common operating system deployment tools such as Microsoft System Center Configuration Manager or LANDesk Management Suite for easy integration and deployment.

Note: Before exporting updates, make sure you have downloaded the relevant driver updates for target systems from the Lenovo Help Center to your repository.

To export the driver updates, do the following:

1. Click **Manage repository** in the left pane of the main window. The menu expands to show several options for managing the repository.
2. Click **Export updates** to begin the process of exporting driver updates in the right pane of the main window.
3. Type the directory of the target folder in the **Folder** field, or click **Browse** to locate the target folder. You can create the target folder if it does not exist.
4. Click **Next**. Select a system from the Machine type/Operating system/Language list, and then select the driver update(s) assigned to the system you selected, or select **Select all** to include all the updates displayed.
5. Repeat step 4 for other systems if desired.
6. Click **Finish**. The export starts, and you can view the export progress in the right pane.
7. When the export completes, the results and the location link of the target folder are displayed. You can click the results link to view the export history, and click the location link to open the target folder that contains the extracted driver updates.

Note: When exporting updates from a repository located on the network instead of a repository on a local drive, an Open File - Security Warning dialog will be displayed for each update that is to be extracted during the export process. To prevent the dialog from being displayed, you can change the Local intranet settings in the Microsoft Internet Explorer Web browser, either temporarily or permanently as you need.

To change the Local intranet settings in the Microsoft Internet Explorer Web browser, do the following:

1. Open the Microsoft Internet Explorer Web browser.
2. Click **Tools** and select **Internet Options**.
3. Click the **Security** tab.
4. Click the **Local intranet** icon and click **Sites**.
5. The Local intranet dialog box is displayed. If the **Automatically detect intranet network** check box is selected, clear it and then select **Include all network paths (UNCs)**. It is recommended that you also select **Include all local (intranet) sites not listed in other zones** and **Include all sites that bypass the proxy server** unless otherwise instructed by your system administrator.

6. Click **OK** to save the Local intranet settings.
7. On the **Security** tab, click **Default level** to view the default security level. If the security level is set to **Medium-low** or **Low**, no other changes are necessary. Otherwise, go to step 8.
8. If the security level is set to **High**, **Medium-high**, **Medium**, or **Custom**, change the security level to **Medium-low** (the default setting) by moving the security level slider. However, you can keep the security level higher than **Medium-low** yet still be able to prevent the Open File - Security Warning dialog from being displayed by customizing the security setting. To customize the security setting, do the following:
 - a. Click **Custom level**. The Security Settings-Internet Zone dialog is displayed.
 - b. Locate the **Launching applications and unsafe files** option.
 - c. Select **Enable**.
 - d. Click **OK**. A dialog box for confirmation is displayed.
 - e. Click **Yes** to confirm your selection.
 - f. Click **OK** to exit the Internet Options dialog box.

Keyboard shortcuts

The following table provides the keyboard shortcuts for the main functions of Update Retriever:

Table 16. Keyboard shortcuts

Function	Shortcut
Get new updates	CTRL+G
Update view (Show updates)	CTRL+U
Create reports	CTRL+R
Import updates	CTRL+I
Schedule updates	CTRL+S
Update view (Restore hidden updates)	CTRL+H
Update view (Manage archive)	CTRL+A
Modify settings	CTRL+E
View download history	CTRL+T

Chapter 6. Working with Thin Installer

This chapter provides information about using Thin Installer and configuring it to fit your needs.

About Thin Installer

Thin Installer is designed to help IT administrators keep the systems in their environment up-to-date. The program searches for the updates from a repository created by the user. The repository can be on a local hard disk drive, a network share, a Web share (HTTP), or external media such as a CD, DVD, or USB hard disk drive. The program automatically recognizes the machine type of your computer, model number, and other system information to determine whether the system needs the available updates. If two or more updates are related, the program downloads and installs all updates. The program can be configured to install updates either manually or automatically.

Thin Installer is a lighter version of System Update. Unlike System Update, Thin Installer does not require installation, does not create any registry keys, and does not have any services. All the files related with Thin Installer are located in a single folder.

Thin Installer is available on the Lenovo Support Web site at:
<http://www.lenovo.com/support/site.wss/document.do?Indocid=TVAN-ADMIN#tvsu>

Thin Installer is supported on the following operating systems:

- Windows 10
- Windows 8
- Windows 8.1
- Windows 7

Note: Thin Installer requires Microsoft .NET Framework 3.5 or a later version.

Configuring Thin Installer

Thin Installer provides an XML file, `ThinInstaller.exe.configuration`, to configure settings. The XML file is located at the root of the Thin Installer folder.

The default configuration is shown as follows:

```
<Configuration>
  <RepositoryPath></RepositoryPath>
  <LogPath></LogPath>
  <LanguageOverride>EN</LanguageOverride>
  <BlockSize>4096</BlockSize>
  <AskBeforeClosing>NO</AskBeforeClosing>
  <DisplayLicenseNotice>NO</DisplayLicenseNotice>
  <IgnoreLocalLicense>YES</IgnoreLocalLicense>
  <IgnoreRMLicCRCSIZE>YES</IgnoreRMLicCRCSIZE>
  <DebugEnabled>NO</DebugEnabled>
  <ContentMode>Active</ContentMode>
</Configuration>
```

Table 17. Description of configurable items

Configurable item	Description	Value	Action
RepositoryPath	Specifies the repository path. By default, Thin Installer searches for updates in a subdirectory under the Thin Installer folder.	Default value: blank	If specified, Thin Installer searches for updates from the specified repository path.
LogPath	Specifies the log path. By default, the log is created in a subdirectory under the Thin Installer folder.	Default value: blank	If Thin Installer does not have write access to the specified log path, Thin Installer will create the log at the default location.
LanguageOverride	Specifies the language to be used.	Default value: EN Possible values: • DA • NL • EN • FI • FR • DE • IT • JP • KO • NO • PT • ES • SV • CHS • CHT	Changes the language to the specified one.
BlockSize	Specifies the number of bytes to be read each time data is downloaded.	Default value: 4096 Possible values: • 4096 • 8192	Sets the number of bytes to the specified one.
AskBeforeClosing	Prompts the user whether to close Thin Installer.	Default value: NO Possible values: • YES • NO	• If YES, a dialog box will prompt to ask whether to close Thin Installer. • If NO, no dialog box will prompt to ask whether to close Thin Installer, and Thin Installer will close directly.
DisplayLicenseNotice	Enables you to skip the license agreement that is displayed before the update package pick list is populated.	Default value: NO Possible values: • YES • NO	• If YES, the license agreement screen will be displayed prior to the update package pick list. • If NO, the license agreement screen will not be displayed.

Table 17. Description of configurable items (continued)

Configurable item	Description	Value	Action
IgnoreLocalLicense	Shows or hides the license dialog when Thin Installer is downloading and installing an update package.	Default value: YES Possible values: • YES • NO	• If YES, the license dialog will not be displayed when Thin Installer is downloading and installing an update package. • If NO, the license dialog will be displayed when Thin Installer is downloading and installing an update package. Note: Some Microsoft updates may require the end user to accept the license, and this cannot be disabled by the IgnoreLocalLicense configurable item.
IgnoreRMLicCRCSIZE	Use this setting to enable or disable the following functions when Thin Installer downloads packages: • CRC - checks the file corruption of readme and license agreement files when you download packages. • File size - checks the file size of readme and license agreement files.	Default value: YES Possible values: • YES • NO	• If YES, Thin Installer skips checking the corruption or the size of these files. • If NO, Thin Installer checks the corruption or the size of these files.
DebugEnable	Specifies whether Thin Installer should create the log file named ApplicabilityRulesTrace.log. See “ApplicabilityRulesTrace.log” on page 57.	Default value: NO Possible values: • YES • NO	• If YES, Thin Installer will create the log file. • If NO, Thin Installer will not create the log file.
ContentMode	Refers to the status of the update packages. Set the value depending on the status of update packages in the repository.	Default value: Active Possible values: • Active • Test	• If Active, Thin Installer will search the Update Retriever repository for update packages in active status. • If Test, Thin Installer will search the Update Retriever repository for update packages in test status. Note: If there is no database.xml file in the Update Retriever repository folder, Thin Installer will ignore the value of ContentMode and search for all the update packages.

Using Thin Installer

To use Thin Installer, extract the executable from the Lenovo Support Web site and configure the path of the repository. To create the repository, see Chapter 5 “Working with Update Retriever” on page 41. By default, the program searches for updates in a subdirectory under the Thin Installer folder.

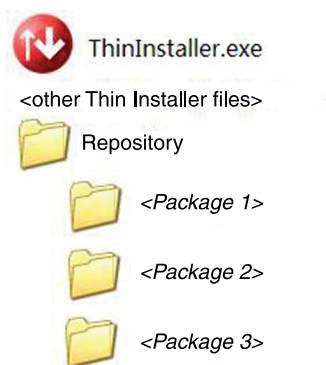


Figure 6. Default repository

To specify a different location, use the configuration file located in the Thin Installer folder or use the command line parameters.

Note: If the repository location is specified in both the configuration file and the command line, the command line will take higher precedence.

Thin Installer requires administrative privileges. If Thin Installer is invoked by a software distribution agent, Thin Installer will run with the same privileges as the software distribution agent, which usually has administrative privileges.

The following table provides the command line scripts for Thin Installer. %ANYPATH% denotes the directories where the Thin Installer files are located.

Table 18. Command line scripts

Scripts	Description
%ANYPATH%\Thininstaller.exe /CM -search C -action LIST	Searches the default repository for critical update packages and notifies you with a balloon tooltip from the application icon in the notification area prior to installation.
%ANYPATH%\Thininstaller.exe /CM -search R -action INSTALL	Searches the default repository for critical and recommended update packages and installs those that do not contain a license agreement. If you do not set the value in the DisplayLicenseNotice configurable item to NO, you will be prompted to agree to a license agreement before the update package pick list is displayed. You will be notified with a balloon tooltip from the application icon in the notification area after the update packages are installed.

Table 18. Command line scripts (continued)

Scripts	Description
%ANYPATH%\Thininstaller.exe /CM -search A -action INSTALL -noicon	Installs all critical, recommended, and optional packages that have no reboot requirement and suppresses the balloon tooltip from the notification area icon after the installation is completed.
%ANYPATH%\Thininstaller.exe /CM -search C -action INSTALL -noicon -includerebootpackages 1,3,4	Installs all critical packages with specified reboot types without displaying a balloon tooltip from the application icon in the notification area after the installation is completed. Packages with a reboot type will force the system to reboot or shut down.
%ANYPATH%\Thininstaller.exe /CM -search R -action INSTALL -noicon -includerebootpackages 1,3,4 -noreboot	Installs all critical and recommended packages with specified reboot types without displaying a balloon tooltip from the application icon in the notification area after the installation is completed, and suppresses the system reboot for packages with reboot type 3.
%ANYPATH%\Thininstaller.exe /CM -search A -action LIST -repository C:\MyRepository	Searches a repository for critical, recommended, and optional update packages and notifies you with a balloon tooltip from the application icon in the notification area prior to installation.
%ANYPATH%\Thininstaller.exe /CM -search C -action INSTALL -repository C:\MyRepository	Searches a repository for critical update packages and installs those that do not contain a license agreement. If you do not set the value in the DisplayLicenseNotice configurable item to NO, you will be prompted to agree to a license agreement before the update package pick list is displayed. You will be notified with a balloon tooltip from the application icon in the notification area after the update packages are installed.
%ANYPATH%\Thininstaller.exe /CM -search A -action INSTALL -repository C:\MyRepository -noicon -includerebootpackages 1,3,4 -noreboot	Searches a repository for critical, recommended, and optional update packages and then installs those with specified reboot types that do not contain a license agreement. If you do not set the value in the DisplayLicenseNotice configurable item to NO, you will be prompted to agree to a license agreement before the update package pick list is displayed. You will not be notified with a balloon tooltip from the application icon in the notification area after the update packages are installed. Reboot type 3 will suppress a system reboot.

Table 18. Command line scripts (continued)

Scripts	Description
%ANYPATH%\ThinInstaller.exe /CM -search C -action INSTALL -repository C:\MyRepository -log "C:\MyLogFolder\MyLogFile.txt"	Searches a repository for critical update packages and installs those that do not contain a license agreement. If you do not set the value in the DisplayLicenseNotice configurable item to NO, you will be prompted to agree to a license agreement before the update package pick list is displayed. You will be notified with a balloon tooltip from the application icon in the notification area after the update packages are installed. The log information is written into a specified log file.
%ANYPATH%\ThinInstaller.exe /CM -search R -action INSTALL -repository C:\MyRepository -noicon -includerebootpackages 1,3,4 -noreboot	Searches a repository for critical and recommended update packages and then installs those with specified reboot types that do not contain a license agreement. If you do not set the value in the DisplayLicenseNotice configurable item to NO, you will be prompted to agree to a license agreement before the update package pick list is displayed. You will not be notified with a balloon tooltip from the application icon in the notification area after the update packages are installed. Reboot type 3 will suppress a system reboot.
%ANYPATH%\ThinInstaller.exe /CM -search A -action INSTALL -repository C:\MyRepository -includerebootpackages 1,3,4 -showprogress -noreboot	Searches a repository for critical, recommended, and optional update packages and then installs those with specified reboot types that do not contain a license agreement. If you do not set the value in the DisplayLicenseNotice configurable item to NO, you will be prompted to agree to a license agreement after the search is completed. Progress bars will be displayed to indicate the installation progress for each update and the overall progress. Reboot type 3 will suppress a system reboot.
%ANYPATH%\ThinInstaller.exe /CM -search A -action LIST -repository C:\MyRepository -showprogress	Searches a repository for critical, recommended, and optional update packages and displays a progress bar while searching the repository for updates.

Notes:

1. The BIOS installation requires user's attention and cannot be deployed in unattended mode.
2. The BIOS installation forces the system to reboot and cannot be suppressed by the command line parameter `-noreboot`.
3. Thin Installer installs the BIOS updates after all other updates to reduce the number of reboots.

Return error codes

Thin Installer returns error code 0 for success and error code 1 for any of the following conditions during the deployment of the updates.

- The specified repository is not found.
- The XML schema validation fails for the update package.
- The CRC validation fails for the executable file of the update package.
- The update package installation fails.
- Thin Installer itself fails.

Example:

```
@echo off
CMD /C Exit 0
"%SystemDrive%\Program Files\Thininstaller\Thininstaller.exe" /CM -search A
-action install -includerebootpackages 1,3,4 -repository "C:\MyRepository"
-displayprogress -noreboot -noicon

if "%ERRORLEVEL%"=="1" @echo "Error Level 1...Fail"
if "%ERRORLEVEL%"=="0" @echo "Error Level 0...Successful"
```

Logs

Thin Installer creates the following logs during the deployment:

- %Temp%Setup Log Y-M-D.txt
- ApplicabilityRulesTrace.log
- Update_log_YYMMDDHHMMSS.txt

%Temp%Setup Log Y-M-D.txt

This log is created by default under the %temp% directory and maintains the history of Thin Installer's installation process.

ApplicabilityRulesTrace.log

This log is created when the **DebugEnable** configurable item in the configuration file is set to **Yes**. This log helps to find why a particular update is not applicable to the client computer. For each update, there are two entries in this log:

- DetectInstall: If **True**, this indicates that the update already exists on the client computer. If **False**, this indicates that the update does not exist and may be applicable to the client computer.
- Dependencies: If **True**, this indicates all dependencies are met. If **False**, this indicates one or more dependencies are not met. Dependencies can be the combination of the operating system, 32-bit or 64-bit, registry keys, the version, or any prerequisites. This log is created in the subdirectory under the Thin Installer folder.

Update_log_YYMMDDHHMMSS.txt

By default, this log is created in the subdirectory under the Thin Installer folder.

Windows 7 and later operating systems considerations

When Thin Installer finishes installing an update package with reboot type 1 or 4, the system reboots automatically. If there are any update packages remaining to be installed, the program continues to install these update packages automatically after the reboot.

With considerations for Windows 7 and later operating systems, after you log in to the Windows desktop, the UAC might stop the program from continuing to install the remaining update packages. To install the remaining update packages, you need to manually click the **Windows has blocked some startup programs** message on the system tray and select **Run blocked program** to run Thin Installer.

Note: If the **Windows has blocked some startup programs** message does not display on the system tray, you need to manually run Thin Installer, search for the remaining update packages, and install them.

Web server configuration

The IIS (Internet Information Server) 6.0 or above does not serve unknown MIME (Multipurpose Internet Mail Extensions) types. When Thin Installer requests a MIME type that is not defined on the Web server, for example, .sys, the MIME type needs to be added to the MIME type list on the Web server. To add the MIME type, refer to the detailed procedure available on the following Web site at:
[http://technet.microsoft.com/en-us/library/cc725608\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc725608(WS.10).aspx)

Best practices

For best practices of working with Thin Installer, see “Scenario 8 - Working with Thin Installer” on page 64 in Chapter 7 “Best practices” on page 59.

Uninstalling Thin Installer

No registry keys or temporary files relating to Thin Installer are created when the program finishes installing update packages. Therefore, to uninstall Thin Installer, you only need to delete the repository folder and all related files.

Chapter 7. Best practices

This chapter provides step-oriented scenarios to help you understand the update process. The scenarios provided in this chapter are:

“Scenario 1 - Managing the update process” on page 59

“Scenario 2 - Deploying specific update packages” on page 60

“Scenario 3 - Deploying to non-Lenovo systems” on page 62

“Scenario 4 - Disabling the Web upgrade for System Update” on page 62

“Scenario 5 - Installing specific update packages with the MSDOS prompt” on page 63

“Scenario 6 - Deploying update packages to client computer repositories” on page 63

“Scenario 7 - Working with firewalls and the scheduler function” on page 64

“Scenario 8 - Working with Thin Installer” on page 64

Scenario 1 - Managing the update process

The following steps provide the best practices for managing the update process using System Update and Update Retriever. For conceptual information about the update process, see “Managing the update process” on page 1 .

Step 1 - Installing the programs

Complete the following steps to install System Update and Update Retriever:

1. Create a new folder on the server to use as the repository.
2. Share the new repository folder using the UNC path. The UNC path provides connectivity to all computers that have been mapped to the repository. The format for a UNC path is:

```
\\server\share
```

for example:

```
\\Server_X\TVSU_repository\
```

3. Set the access permissions of the new repository folder to read-only access for end users.
4. Download Update Retriever to the administrator computer. Update Retriever can be downloaded from the following Lenovo Web site:
<http://www.lenovo.com/support/site.wss/document.do?Indocid=TVAN-ADMIN#tvsu>
5. Install Update Retriever silently by entering the following command for each program at the command prompt:

```
[Update Retriever installation file name].exe/VERYSILENT /NORESTART
```

When you launch Update Retriever, you must be logged on as a user who belongs to a local administrator group.

6. Download System Update from the following Lenovo Web site:
<http://www.lenovo.com/support/site.wss/document.do?Indocid=TVAN-ADMIN#tvsu>
7. Install System Update silently by entering the following command at the command prompt:

```
[System Update installation file name].exe/VERYSILENT /NORESTART
```

Note: System Update for Windows 7 and later operating systems provides a weekly scheduler setting. However, you also can use the Task Scheduler tool on Windows 7 and later operating systems to create a customized scheduler for System Update to provide more scheduler options to achieve the best scheduling practice. For detailed information about using the Task Scheduler tool on Windows 7 operating systems, see “\UserSettings\Scheduler” on page 21.

Step 2 - Customizing the programs

Customize the settings for System Update with Active Directory or the registry. For additional information about how to customize System Update with the registry, see “Configuring System Update with the registry” on page 14. For information about how to customize System Update using Active Directory, see “Configuring System Update with Active Directory” on page 27.

Step 3 - Working with the programs

Complete the following steps to download packages to your network, edit XML descriptor files using Update Retriever, and then download and install packages using System Update:

1. Get update packages with Update Retriever.
2. Edit the XML descriptor file of the update packages using Update Retriever.
3. Import the update packages back into the network share repository using Update Retriever.
4. Use System Update to search the network share repository for update packages.
5. Download and install update packages to client computers.

Scenario 2 - Deploying specific update packages

For enterprises that choose to deploy specific update packages to client computers, you can configure System Update, Update Retriever, and repository folders to deploy only the update packages that you have selected. The following step-by-step instructions provides you with procedures to create repository folders, configure System Update, and work with Update Retriever to deploy specific update packages.

Creating repository folders

To create repository folders to store update packages, do the following:

1. Create a new repository folder on a server that System Update will use to obtain specific update packages for client computers.
2. Share the repository folder using the UNC path. The UNC path provides connectivity to all computers that have been mapped to the repository, for example:

```
\\Server_X\SystemUpdate_repository\
```

3. Set the access permissions of the new repository folder to read-only access for end users.
4. Create another new folder on a server to use as a repository for update packages downloaded from the Lenovo Help Center Web site with Update Retriever.
5. Share the repository folder using the UNC path, for example:

\\Server_X\UpdateRetriever_repository\

Configuring System Update on client computers

To configure System Update to download specific update packages to client computers, do the following:

1. On client computers, navigate to the following registry entry:

```
HKLM\SOFTWARE\Lenovo\System Update\Preferences\  
UserSetting\General\RepositoryLocation1
```

2. Change this setting by replacing the default value, **SUPPORTCENTER**, with your server and share name of the System Update repository folder that you created in step 1 of “Creating repository folders” on page 60, for example:

```
\\Server_X\SystemUpdate_repository\
```

Note: You can also use Active Directory to deploy this registry change using Group Policy. For more information about working with Active Directory and Group Policy, see “Configuring System Update with Active Directory” on page 27.

Working with Update Retriever

Complete the following steps to use Update Retriever to download update packages from the Lenovo Help Center Web site to your Update Retriever repository that you created in step 4 under “Creating repository folders” on page 60:

1. Launch Update Retriever on an administrator system.
2. On the Welcome screen, complete the following **First time setup** requirements:
 - a. In the **Repository path** field, type the directory path for the new Update Retriever repository that you created in step 4.
 - b. In the **User name** and **Password** fields, type the user name and password for the network share drive used as Update Retriever repository.
3. In the **Get new updates** panel, click **Add**.
4. In the Add new systems window, complete the following steps for the triplet settings:
 - a. Type the applicable machine type. You can find the machine type on the bottom of a notebook computer or on the rear of a desktop machine.
 - b. Select the applicable operating system.
 - c. Select the applicable language.
 - d. Click **Add** and then click **Save**.
5. In the **Get New Updates** panel, select the check box for the applicable machine type. To import all machine type update packages, select the **Select all** check box.
6. Click **Next** and then click **Finish** to search for applicable update packages. Update Retriever will place the update packages in the designated repository folder.

Deploying the packages

After you have created your repository folders, configured System Update on client computers, and downloaded update packages with Update Retriever, complete the following steps to deploy specific update packages to client computers:

1. In the **Modify Settings** panel of Update Retriever, change the Repository path to the System Update repository path that you created in step 1 under “Creating repository folders” on page 60.

2. Using Update Retriever, import your update packages into the System Update repository.

Note: For additional information about how to import update packages into a repository folder, see “Importing an update package into a network share repository” on page 46.

3. Launch System Update on client computers.
4. Use System Update to search the System Update repository for update packages.

Note: Make sure that you assign machine types to update packages after you import the update packages into a repository folder. This enables System Update to search for update packages specific to the machine type. For more information about importing update packages, see “Importing an update package into a network share repository” on page 46.

5. Download and install update packages to client computers.

Scenario 3 - Deploying to non-Lenovo systems

Update packages originating from the Lenovo Web site cannot be deployed to a non-Lenovo system. Complete the following steps to create custom packages that can be deployed to non-Lenovo systems:

1. Install Update Retriever and System Update on an administrator computer.
2. Reboot the computer after installation.
3. Run the install.bat file to install the required hotfixes.
4. Launch System Update to get the machine type of the non-Lenovo systems, for example:

```
'Machine type' = 'Presario R3000'
```

5. Launch Update Retriever and set the repository path.

Note: Enter user name and password if required for the repository.

6. Add systems for assigning the updates and save the machine information of the non-Lenovo systems. Enter the machine family information consisting of the first four letters or the last four letters of the machine type and model.
7. Create a package for the non-Lenovo systems using Update Retriever.

Note: Add the **Supported Systems** method in the **Dependencies** section of the XML descriptor file to apply the updates to a particular model.

8. Save the XML descriptor.
9. Import the package to the Update Retriever repository and assign the updates to the triplets of the non-Lenovo systems. See “Importing an update package into a network share repository” on page 46.
10. Configure the System Update repository.

Scenario 4 - Disabling the Web upgrade for System Update

System Update checks the Lenovo Help Center Web site for upgrades of itself, even if it is connected to a local repository on either the local system or a network share. If there is no internet connectivity, System Update will not check for its application upgrade.

To disable this feature, do the following to clear the registry value:

1. Navigate to the following registry entry:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Lenovo\System Update  
\Preferences\UCSettings\HTTPSHelloSettings\ServerName
```

2. Delete the ServerName string value, for example:

```
https://download.lenovo.com/ibmdl/pub/pc/pchs/agent/
```

3. Click **OK**.

Scenario 5 - Installing specific update packages with the MSDOS prompt

You can install specific update packages for System Update using the MSDOS prompt. To install specific update packages, do the following:

1. Create a new folder named installtxt on your local hard disk drive, for example:

```
C:\installtxt
```

2. With Notepad, create a TXT file named installList.txt.
3. In the TXT file, type the package IDs for the target client computers, for example:

```
1rg807ww  
7ad123ww  
7bwc14ww  
bs09az00ibm  
css7upgrade2_ww  
kb896613tc
```

4. Save the TXT file in the C:\installtxt folder.
5. From the MSDOS prompt, go to the System Update installation path:
C:\Program Files\Lenovo\System Update\
6. Type the file path, the application executable file name, and the name of the TXT file, for example:

```
tv-su.exe /package "C:\installtxt\installList.txt"
```

7. Press Enter.

Scenario 6 - Deploying update packages to client computer repositories

An alternative to using a network share drive repository is to deploy packages to client computer repositories. Complete the following steps to deploy update packages to client computer repositories:

Step 1 - Setting up the administrator system

To set up your administrator system, do the following:

1. Create a new folder on a network share drive or your administrative system to use as a repository for storing update packages.
2. Launch Update Retriever and set the repository path.

Note: Enter user name and password if required for the repository.

3. Get new updates from the Lenovo Help Center Web site.
4. Create another folder to use as the client computer repository.
5. Using Update Retriever, import your update packages into your client computer repository.

Note: For additional information about how to import packages into a repository folder, see “Importing an update package into a network share repository” on page 46.

6. Deploy the folder being used as the client computer repository to client computers.

Step 2 - Configuring System Update on client computers

To configure System Update to download specific packages to client computers, do the following:

1. On client computers, navigate to the following registry entry:

```
HKLM\SOFTWARE\Lenovo\System Update\Preferences\  
UserSetting\General\RepositoryLocation1
```

2. Change this setting by replacing the default value, **SUPPORTCENTER**, with your client computer repository path, for example:

```
%ANYDRV%\SystemUpdate_repository\
```

Note: You can also use Active Directory to deploy this registry change using Group Policy. For more information about working with Active Directory and Group Policy, see “Configuring System Update with Active Directory” on page 27.

Scenario 7 - Working with firewalls and the scheduler function

When you utilize security programs with a firewall, make sure that the security application enables Internet access to the System Update scheduler function. To enable the Internet access to the System Update scheduler function, do the following:

1. Allow System Update to communicate through your firewall application.
2. Navigate to the following path: %PROGRAMFILES%\Lenovo\System Update
3. Enable the following programs:
 - TvsuCommandLauncher.exe
 - Tvsukernel.exe

Note: System Update for Windows 7 and later operating systems provides a weekly scheduler setting. However, you also can use the Task Scheduler tool on Windows 7 and later operating systems to create a customized scheduler for System Update to provide more scheduler options to achieve the best scheduling practice. For detailed information about using the Task Scheduler tool on Windows 7 operating systems, see “\UserSettings\Scheduler” on page 21.

Scenario 8 - Working with Thin Installer

Thin Installer always first checks for the database.xml file in the repository folder. If you have created a repository using Update Retriever, the database.xml file is created in the same folder. The database.xml file associates each machine type, operating system, and language with the update packages. In the absence of the database.xml file in the repository, Thin Installer assumes all update packages in the repository are candidate packages. Candidate packages are packages that may be applicable to client computers. Refer to Chapter 5 “Working with Update Retriever” on page 41 to learn more about Update Retriever.

Deploying the packages using USB, CD, or DVD media

This method is ideal for standalone installation of update packages by a system administrator.

1. Create a repository folder with update packages that need to be installed on the client computer.
2. Install Thin Installer as a parent folder of the repository folder as created in step 1.
3. Copy the folder structure to any external media such as a USB key, a CD, or a DVD.

4. Launch the ThinInstaller.exe file and select the update packages that need to be installed.

Deploying the update packages using a network share repository

This is a convenient way of managing different types of systems using a central repository. The client computer should have read access to the network share repository.

1. Create the repository folders and download the update packages with Update Retriever on the network share. For information about how to use Update Retriever, refer to “Step 1 - Installing the programs” on page 59.
2. Install Thin Installer on a client computer.
3. Push a command script to the client computers to run the ThinInstaller.exe file from the network share. For information about available options, refer to “Using Thin Installer” on page 54.

Deploying the update packages using a system management tool

This method is useful when the update packages for systems are already known.

1. Create a repository folder with system-specific update packages that need to be deployed.
2. Extract the Thin Installer executable as a parent folder of the repository folder as created in step 1.
3. Use the system management tool to build a module out of the above folder structure and deploy.

Note: The error code returned by Thin Installer can be used to track the status of the update packages on target systems.

Integrating Thin Installer with the ImageUltra Builder program

This is the ideal way to deploy common drivers and applications during an image rollout. The system administrator maintains one central repository and one image for different types of systems.

1. Create a network share repository and install Thin Installer. For information about how to create a repository folder on a network share, refer to “Creating repository folders” on page 60.
2. Create a batch file to run the Thin Installer executable file from the network share drive.
3. Create an ImageUltra Builder module, audit boot type, and use the batch file created in step 2.
4. Add the module to the ImageUltra Builder Base Map.
5. Deploy the image. Thin Installer will install the drivers and applications on the client computers.

Notes:

1. Network drivers still need to be installed before Thin Installer can access the network share repository.
2. You may be required to install some drivers using the ImageUltra Builder program.

The other option is to build the ImageUltra Builder module, audit boot type, use update packages and Thin Installer, and deploy with the image. In this case, update packages will be run locally instead of from the repository.

To learn more about the ImageUltra Builder program, go to the following Web site:
<http://www.lenovo.com/support/site.wss/document.do?Indocid=MIGR-61432#image>

Integrating Thin Installer with a Sysprep Image

This scenario is the same as integrating Thin Installer with the ImageUltra Builder program except that the image is rolled out without using the ImageUltra Builder program.

1. Create a network share repository and install Thin Installer. For information about how to create a network share repository, refer to “Creating repository folders” on page 60.

2. Create a batch file to run the Thin Installer executable file from the network share drive.
3. Deploy the image. Thin Installer will install the drivers and applications on the client computers.

Appendix A. Command line parameters

This chapter provides information about command line parameters, search modes, notification parameters, and the MapDrv utility.

Automatic search

The following table provides the registry entries and values that an automatic search can use to search for updates from a repository folder on a local system, a network share, a removable devices, or the Lenovo Help Center Web site.

Table 19. Repository location and command line

RepositoryLocation registry entry	Command line	Repository searched
RepositoryLocation<N> Where %N% is a number between 1 and 20.	SUPPORTCENTER	Lenovo Help Center Web site
RepositoryLocation<N> Where %N% is a number between 1 and 20.	\\Server_X\TVSU_repository\	Network share repository
RepositoryLocation<N> Where %N% is a number between 1 and 20.	%ANYDRV%\SystemUpdate3_x	Local system repository
RepositoryLocation<N> Where %N% is a number between 1 and 20.	%XMEDIA%\SystemUpdate3_x	Repository on any removable device

Note: When you download or install update packages that have individual package license agreements, those update packages are not processed because you are not able to approve the individual package license agreements. Further, if you have not previously indicated that you do not want to see the license agreement in the future, the license agreement will be displayed prior to the download.

Command line scripts

The following table provides the command line scripts supported by System Update when using the default repository location, **SUPPORTCENTER**.

Table 20. Command line scripts

Scripts	Description
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action DOWNLOAD	Searches the repository for critical updates and downloads those that do not contain a license agreement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been downloaded.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action LIST	Searches the repository for critical updates. You are notified with a balloon tooltip from the application icon in the notification area prior to downloading and installation.

Table 20. Command line scripts (continued)

Scripts	Description
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action INSTALL</pre>	Searches the repository for critical updates and installs those that do not contain a license agreement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been installed.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action LIST</pre>	Searches the repository for critical and recommended updates. You are notified with a balloon tooltip from the application icon in the notification area prior to downloading and installation.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action DOWNLOAD</pre>	Searches the repository for critical and recommended updates and downloads those that do not contain a license agreement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been downloaded.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action INSTALL</pre>	Searches the repository for critical and recommended updates and installs those that do not contain a license agreement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been installed.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action LIST</pre>	Searches the repository for critical, recommended, and optional updates. You are notified with a balloon tooltip from the application icon in the notification area prior to downloading and installation.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action DOWNLOAD</pre>	Searches the repository for critical, recommended, and optional updates and downloads those that do not contain a license agreement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been downloaded.

Table 20. Command line scripts (continued)

Scripts	Description
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action INSTALL	Searches the repository for critical, recommended, and optional updates and installs those that do not contain a license agreement and a reboot requirement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been installed.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action INSTALL -noicon	Installs all critical packages that have no reboot requirement and suppresses the balloon tooltip from the notification area icon after the installation has been completed.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action INSTALL -noicon	Installs all critical and recommended packages that have no reboot requirement and suppresses the balloon tooltip from the notification area icon after the installation has been completed.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action INSTALL -noicon	Installs all critical, recommended, and optional packages that have no reboot requirement and suppresses the balloon tooltip from the notification area icon after the installation has been completed.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action INSTALL -noicon -includerebootpackages 1,3,4	Installs all critical packages with specified reboot types and suppresses the balloon tooltip from the notification area icon after the installation has been completed. Packages with a reboot type will force the system to reboot or shut down.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action INSTALL -noicon -includerebootpackages 1,3,4	Installs all critical and recommended packages with specified reboot types and suppresses the balloon tooltip from the notification area icon after the installation has been completed. Packages with a reboot type will force the system to reboot or shut down.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action INSTALL -noicon -includerebootpackages 1,3,4	Installs all critical, recommended, and optional packages with specified reboot types and suppresses the balloon tooltip from the notification area icon after the installation has been completed. Packages with a reboot type will force the system to reboot or shut down.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action INSTALL -noicon -includerebootpackages 1,3,4 -noreboot	Installs all critical packages with specified reboot types, suppresses the balloon tooltip from the notification area icon after the installation has been completed, and suppresses the system reboot for packages with reboot type 3.

Table 20. Command line scripts (continued)

Scripts	Description
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action INSTALL -noicon -includerebootpackages 1,3,4 -noreboot	Installs all critical and recommended packages with specified reboot types, suppresses the balloon tooltip from the notification area icon after the installation has been completed, and suppresses the system reboot for packages with reboot type 3.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action INSTALL -noicon -includerebootpackages 1,3,4 -noreboot	Installs all critical, recommended, and optional packages with specified reboot types, suppresses the balloon tooltip from the notification area icon after the installation has completed, and suppresses the system reboot for packages with reboot type 3.

The following table provides the command line scripts supported by System Update when using a repository to store update packages. If you do not specify the repository, System Update will go to the default repository.

Table 21. Command line scripts

Scripts	Description
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action LIST -repository C:\MyRepository	Searches a repository for critical updates. You are notified with a balloon tooltip from the application icon in the notification area prior to downloading and installation.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action DOWNLOAD -repository C:\MyRepository	Searches a repository for critical updates and downloads those that do not contain a license agreement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been downloaded.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action INSTALL -repository C:\MyRepository	Searches a repository for critical updates and installs those that do not contain a license agreement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been installed.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action LIST -repository C:\MyRepository	Searches a repository for critical and recommended updates. You are notified with a balloon tooltip from the application icon in the notification area prior to downloading and installation.

Table 21. Command line scripts (continued)

Scripts	Description
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action DOWNLOAD -repository C:\MyRepository	Searches a repository for critical and recommended updates and downloads those that do not contain a license agreement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been downloaded.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action INSTALL -repository C:\MyRepository	Searches a repository for critical and recommended updates and installs those that do not contain a license agreement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been installed.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action LIST -repository C:\MyRepository	Searches a repository for critical, recommended, and optional updates. You are notified with a balloon tooltip from the application icon in the notification area prior to downloading and installation.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action DOWNLOAD -repository C:\MyRepository	Searches a repository for critical, recommended, and optional updates and downloads those that do not contain a license agreement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been downloaded.
%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action INSTALL -repository C:\MyRepository	Searches a repository for critical, recommended, and optional updates and installs those that do not contain a license agreement and a reboot requirement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You are notified with a balloon tooltip from the application icon in the notification area after the updates have been installed.

Table 21. Command line scripts (continued)

Scripts	Description
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action INSTALL -repository C:\MyRepository -noicon</pre>	Searches a repository for critical updates and installs those that do not contain a license agreement and a reboot requirement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You will not be notified with a balloon tooltip from the application icon in the notification area after the updates have been installed.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action INSTALL -repository C:\MyRepository -noicon</pre>	Searches a repository for critical and recommended updates and installs those that do not contain a license agreement and a reboot requirement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You will not be notified with a balloon tooltip from the application icon in the notification area after the updates have been installed.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action INSTALL -repository C:\MyRepository -noicon</pre>	Searches a repository for critical, recommended, and optional updates, and installs those that do not contain a license agreement and a reboot requirement. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You will not be notified with a balloon tooltip from the application icon in the notification area after the updates have been installed.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action INSTALL -repository C:\MyRepository -noicon -includerebootpackages 1,3,4</pre>	Searches a repository for critical updates and then installs those that do not contain a license agreement with specified reboot types. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You will not be notified with a balloon tooltip from the application icon in the notification area after the updates have been installed. Packages with a reboot type will force system to reboot or shut down.

Table 21. Command line scripts (continued)

Scripts	Description
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action INSTALL -repository C:\MyRepository -noicon -includerebootpackages 1,3,4</pre>	Searches a repository for critical and recommended update packages, and then installs those that do not contain a license agreement with specified reboot types. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You will not be notified with a balloon tooltip from the application icon in the notification area after the updates have been installed. Packages with a reboot type will force system to reboot or shut down.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action INSTALL -repository C:\MyRepository -noicon -includerebootpackages 1,3,4</pre>	Searches a repository for critical, recommended, and optional update packages, and then installs those that do not contain a license agreement with specified reboot types. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You will not be notified with a balloon tooltip from the application icon in the notification area after the updates have been installed. Packages with a reboot type will force system to reboot or shut down.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search C -action INSTALL -repository C:\MyRepository -noicon -includerebootpackages 1,3,4 -noreboot</pre>	Searches a repository for critical updates and installs those that do not contain a license agreement with specified reboot types. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You will not be notified with a balloon tooltip from the application icon in the notification area after the updates have been installed. Reboot type 3 will suppress a system reboot.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search R -action INSTALL -repository C:\MyRepository -noicon -includerebootpackages 1,3,4 -noreboot</pre>	Searches a repository for critical and recommended updates then installs those that do not contain a license agreement with specified reboot types. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You will not be notified with a balloon tooltip from the application icon in the notification area after the updates have been installed.

Table 21. Command line scripts (continued)

Scripts	Description
	Reboot type 3 will suppress a system reboot.
<pre>%PROGRAMFILES%\Lenovo\System Update\Tvsu.exe /CM -search A -action INSTALL -repository C:\MyRepository -noicon -includerebootpackages 1,3,4 -noreboot</pre>	Searches a repository for critical, recommended, and optional updates and then installs those that do not contain a license agreement with specified reboot types. You are prompted to agree to the license agreements before the download starts if you have not disabled the license agreement dialog box. You will not be notified with a balloon tooltip from the application icon in the notification area after the updates have been installed. Reboot type 3 will suppress a system reboot.

When System Update is performing an automatic search through a proxy server with authentication and no user name or password has been saved, no dialogs will be displayed to the end user. An error will be logged to the System Update log file and System Update will shut down. If the user name and password has been saved, System Update will try to connect the proxy server using the saved user name and password information. If there are errors with the connection or performing the automatic search, the errors will be logged to the System update log file and System Update will be shut down.

Whenever System Update is about to download and install a set of updates containing one or more packages that require automatic reboot or shutdown of the target system, no warning message is displayed informing the end user about the reboot or shutdown.

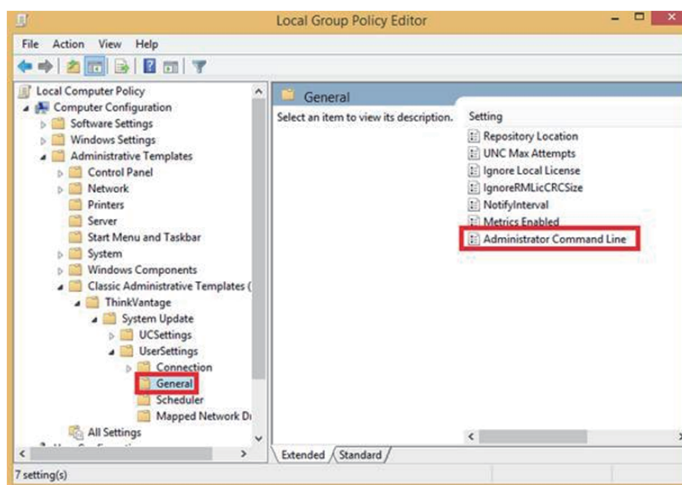
Note: Command line scripts may be changed in later releases. If you use silent command line scripts and a repository to store update packages, to recognize update packages with license agreements, set the following registry value to **YES**:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Lenovo\System Update
\Preferences\UserSettings\General\IgnoreLocalLicense
```

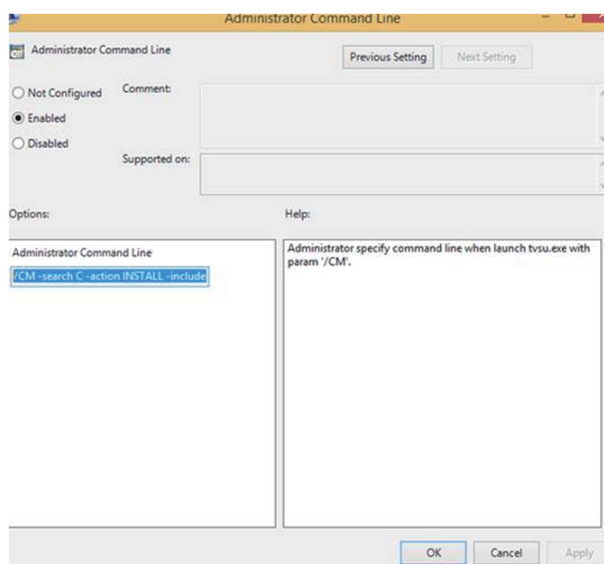
For System Update 5.07.0032 and its later versions, users cannot run command lines directly on client computers using administrative privileges. Users have to run command lines through Group Policy settings on the Active Directory server by doing the following:

1. Download the System Update Administrator Tools package from the following Web site and install the package to your Active Directory server:
https://download.lenovo.com/pccbbs/thinkvantage_en/zb59_tvsu_win7_win8_admin029.exe
2. Do one of the following:
 - **For the administrative XML template (ADMX) file:** Copy the tvsu.admx file from C:\SWTOOLS\TOOLS\Admin to C:\Windows\PolicyDefinitions. Then Copy the tvsu.adml file from C:\SWTOOLS\TOOLS\Admin\en-us to C:\Windows\PolicyDefinitions\en-US.
 - **For the ADM file:** Right-click **Administrator Templates** to add the ADM file. For more information, see “Adding administrative templates” on page 28.

- Run gpedit.msc on the Active Directory server to launch the Group Policy Editor and locate **Administrator Command Line** as shown:



- Enable and configure **Administrator Command Line** with desired command line and then click **OK**. For example, you can type `/CM -search C -action INSTALL -includerebootpackages 1,3,4 -noicon -noreboot -nolicense -defaultupdate` as shown:



- Apply your group policy settings to client computers. For more information, see “Applying group policy immediately” on page 29.
- On client computers, run the command line `tvsu.exe /CM`.

Search modes

The following table provides a list of search modes supported by System Update.

Table 22. Search modes

Search mode	Description
-search C	Enables System Update to search for critical updates.
-search R	Enables System Update to search for critical and recommended updates.
-search A	Enables System Update to search for critical, recommended, and optional updates when searching the Lenovo Help Center. Note: If you are using a network share repository, use the -search A command. Then System Update will search for critical, recommended, and optional update packages from the network share repository folder.

Notification parameters

The notification parameter used on the command line specifies the way System Update handles update packages and then notifies you when packages have been processed.

The following table provides the parameters and their descriptions.

Table 23. Notification parameters

Parameter	Description
-action LIST	Enables System Update to notify you with a balloon tooltip from the application icon in the notification area when update packages are available on the Lenovo Help Center Web site. If you click the balloon tooltip, System Update displays the license agreement dialog box, or the Updates for Your System panel. If you select the Do not show again check box in the license agreement dialog box, System Update will not display this dialog box again.
-action DOWNLOAD	Enables System Update to notify you with a balloon tooltip from the application icon in the notification area when update packages have been downloaded to your system and are ready for installation. If you have not selected the Do not show again check box, System Update will prompt you to approve a license agreement prior to downloading. After downloading, System Update notifies you with a balloon tooltip. When you click the balloon tooltip, System Update will display the Install Deferred Updates panel and enable you to install updates of interest.

Table 23. Notification parameters (continued)

Parameter	Description
-action INSTALL	Enables System Update to notify you with a balloon tooltip from the application icon in the notification area when update packages have been downloaded and installed. If you have not selected the Do not show again check box, System Update will prompt you to approve a license agreement prior to downloading. After downloading and installing update packages, System Update notifies you with a balloon tooltip. To view the status of the download and installation process, click the balloon tooltip and System Update displays the message, saying "Your system has been updated." If an update package has a reboot type 1 or 4, System Update prompts you with a balloon tooltip at designated intervals to notify you that a package will restart your system. The designated interval for the restart notification is set in the registry with the NotifyInterval setting in Table 9 "\UserSettings\General" on page 18. If an update package has a reboot type 3, System Update will download and install the update package and then prompts you with a restart notification but does not continue with restart notifications at designated intervals. Otherwise, it will download and install the update packages, and then display the result.
-SCHEDULER	Enables System Update to run from the scheduler function. Note: This parameter is a registry entry that has to be updated in the registry and not on the user interface.
-repository <path>	Enables you to specify the repository folder to store update packages. System Update will search for update packages stored in the repository folder you specified.
-NoIcon	Enables you to turn off the balloon tooltip that will be displayed when packages are found, downloaded, or installed with System Update.
-IncludeRebootPackages 1,3,4	Enables System Update to install update packages with the specified reboot types. The reboot type can be 1, 3, or 4. The following list provides the value for reboot types supported by System Update: • 1: The reboot that is forced by the package. • 3: The reboot that is required for the package to take effect. The software distribution client will force a reboot after all packages are installed. • 4: The shutdown that is forced by the package.
-NoReboot	Enables System Update to prevent a reboot after the system installs an update package with reboot type 3. However, this parameter cannot suppress a reboot or shutdown when packages have a reboot type 1 or 4.

Table 23. Notification parameters (continued)

Parameter	Description
-clearhistory	Enables you to control whether the history and session folder are preserved or deleted during an upgrade or over-installation. The default is to preserve the history and session folder.
-clearsettings	Enables you to control whether configurable settings are preserved or deleted during an upgrade or over-installation. The default is to preserve your settings.
-showprogress	Enables Thin Installer to display the progress bar during the process of searching and installing updates. The updates are preselected by the administrator, and users cannot deselect the updates. The update progress screen will close when the installation is completed. No screens or icons will be displayed to indicate the results. Note: System Update does not support this setting.

Example:

```
tvsvu.exe /CM -search A -action INSTALL -IncludeRebootPackages 1,3,4
```

The following list provides a description of the search mode and notification methods used:

- **-search A** - searches for critical, recommended, and optional packages.
- **-action INSTALL** - installs the update packages.
- **-IncludeRebootPackages 1,3,4** - downloads and installs update packages that require a reboot.

Notes:

1. If you do not include -IncludeRebootPackages 1,3,4, System Update will not detect packages that require a reboot.
2. To configure System Update to recognize license agreements automatically when you are using a local repository but not the Lenovo Help Center Web site, set the following registry value to **YES**:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Lenovo\System Update
\Preferences\UserSettings\General\IgnoreLocalLicense
```

For more information about working with license agreements, see “Working with license agreements” on page 37. If you do not set this registry setting to **YES**, System Update will not detect packages with license agreements when using command scripts.

MapDrv utility

The MapDrv utility provides network share related functions for System Update. To define the network share information, use the MapDrv utility to connect or disconnect network shares. The MapDrv utility maintains network share information in a registry key that is protected by administrator access only. The network share information includes the network share name (in UNC format), user name (saved in the registry as an encrypted string), and the password (saved in the registry as an encrypted string).

The MapDrv utility can be found in the System Update installation directory. The default installation directory is located at c:\Program Files\Lenovo\System Update.

The network share information is stored in the following registry entry:

```
HKLM\Software\Lenovo\MND\TVSUAPPLICATION
```

If an Active Directory policy is used, these values are stored in the following registry entry:
HKLM\Software\Policies\Lenovo\MND\TVSUAPPLICATION

The strings stored in the TVSUAPPLICATION key are:

Table 24. The MapDrv settings and values

String	Description
UNC	The value of this string specifies the stored network share.
User	The value of this string specifies the stored encrypted user name for this share.
Pwd	The value of this string specifies the stored encrypted password for this share.
NetPath	The value is generated by the MapDrv utility to indicate the actual connection path. It might be in IP dotted format if the ServerName string is not working. The actual connection path may not be the same as the stored UNC value.

The MapDrv utility also enables an administrator to use the encryption engine to generate an encrypted user name and password, which can be used to pre-populate network share information on multiple systems. Using the encryption engine in this manner does not update the registry on the system.

Command line interface

The command line interface to the MapDrv utility is as follows:

```
mapdrv /<function> <app id> /unc <sharename> /user <username> /pwd <password>
[/timeout <seconds>] [/s]
```

Table 25. Parameters

Parameter	Description
<i>/function</i>	Identifies the function to provide. Valid values are store, connect, disconnect, and display.
<i>app id</i>	Identifies the application. The value specified is used to form the registry key name that contains the network share information, for example: TVSUAPPLICATION.
<i>/unc sharename</i>	Identifies the network share name to store. The share name should be in the UNC form, for example: \\myserver\myshare
<i>/user username</i>	Specifies the user name to store.
<i>/pw password</i>	Specifies the password to store.
<i>/timeout seconds</i>	Specifies the connection timeout value to store. The default is 30 seconds.
<i>/s</i>	Enables a silent operation.

The return code is **0** if an operation was successful. Otherwise, the return code is greater than **0**.

When the MapDrv utility is launched with no parameters, the end user will be prompted for the network share, user name and password, and then MapDrv will attempt to connect to the specified network share using the specified credentials.

Using the MapDrv utility

The following sections provide ways that you can use the **MapDrv** command.

Displaying encrypted user name and password strings

This function displays the registry key of the network share information where the encrypted user name and password is stored. Using the `/display` function will not store the user name and password in the registry. You need to copy the encrypted user name and password to the appropriate registry key.

```
mapdrv /view <app id> /user <username> /pwd <password>
```

Example:

```
mapdrv /view TVSUAPPLICATION /user temp/pwd password
```

```
app id: TVSUAPPLICATION
```

```
user: temp
```

```
pwd: password
```

This command captures the encrypted user name and password to set up the repository with UNC path with authentication.

Storing network share information for a ThinkVantage application

This function stores the network share information in the registry using `<tvt>` to define the subkey from the main MapDrv registry key:

```
mapdrv /store <app id> /unc <sharename> /user <username> /pwd <password>  
[/timeout <seconds>]
```

This sets the UNC, user name, and password values in the registry.

Connecting to the network share for a ThinkVantage application

Connect the network share for the specified ThinkVantage application:

```
mapdrv /connect <app id> [ /s]
```

Connects to the share using the UNC, user name, and password values in the registry. The actual connection UNC is output to the NetPath value.

Disconnecting the network share for a ThinkVantage application

The following command disconnects the network share for the specified ThinkVantage application if the application is currently connected:

```
mapdrv /disconnect <app id>
```

Performs a net use `/d` [*NetPath stored in registry*] to disconnect the network connection.

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