Lesson 2: Implementing Patch Management

MOAC 70-411: Administering Windows Server 2012
Overview

• Exam Objective 1.2: Implement Patch Management
• Understanding Windows Updates and Automatic Updates
• Deploying Windows Server Update Services (WSUS)
• Understanding System Center Configuration Manager (SCCM)
Understanding Windows Updates and Automatic Updates

Lesson 2: Implementing Patch Management
Windows Updates

**Windows Update**: The program that scans your system to determine the updates and fixes your system needs.

**Patch Tuesday**: The second Tuesday of each month, when Microsoft routinely releases security updates.

**Out-of-band patch**: A patch deemed critical or time-sensitive; released when needed.

**Out-of-band update**: An update released when needed.
Hotfixes and Cumulative Patches

**Hotfix**: A single, cumulative package that includes one or more files used to address a problem in a software product, such as a software bug.

**Cumulative patch**: Multiple hotfixes combined into a single package.
Using Automatic Updates

• Ensures that critical updates, security updates, and compatibility updates are made available for installation automatically

• Doesn't significantly affect regular use of the Internet

• Is ideal for small environments
Update Windows Server 2012

Checking for updates
Windows Update Settings

Changing Windows Update settings

Choose your Windows Update settings

When your PC is online, Windows can automatically check for important updates and install them using these settings. When new updates are available, you can also choose to install them when you shut down your PC.

Important updates

- Install updates automatically (recommended)

Updates will be automatically downloaded in the background when your PC is not on a metered Internet connection.

Updates will be automatically installed during the maintenance window.

Recommended updates

- Give me recommended updates the same way I receive important updates

Microsoft Update

- Give me updates for other Microsoft products when I update Windows

Note: Windows Update might update itself automatically first when checking for other updates. Read our privacy statement online.
Automatic Updates Using Group Policies

Primary options:

• Notify for download and notify for install
• Auto download and notify for install
• Auto download and schedule the install
• Allow local admin to choose setting
Deploying Windows Server Update Services (WSUS)

Lesson 2: Implementing Patch Management
Windows Server Update Services (WSUS)

• A program included with today’s Windows Servers
• Allows administrators to manage the distribution of updates and other patches to computers within an organization
• Can retrieve updates directly from Microsoft Update or from another WSUS server on the network
• Works in autonomous or replica mode
A Single WSUS Server for a Few Hundred Computers

A simple WSUS configuration
Multiple WSUS Servers for Larger Sites or Multiple Sites

The WSUS hierarchy
Installing WSUS

- Ensure WSUS server meets minimum hardware and software requirements.
- A single WSUS server can support thousands of clients.
- A single WSUS server with 4 GB of RAM and dual quad-core processor can support up to 100,000 clients.
- Multiple WSUS servers reduce the load on wide area network (WAN) links.
Install WSUS

Adding features
Install WSUS

Selecting the database type
Install WSUS

Specifying the content location

If you have a drive formatted with NTFS and at least 6 GB of free disk space, you can use it to store updates for client computers to download quickly.

If you need to save disk space, clear the check box to store updates on Microsoft Update; downloads will be slower.

If you choose to store updates locally, updates are not downloaded to your WSUS server until you approve them. By default, when updates are approved, they are downloaded for all languages.

Store updates in the following location (choose a valid local path on WIN2012SRV.contoso.com, or a remote path):

CAL\Updates
Configuring WSUS

• Configure how the WSUS server will download updates, what updates will be downloaded, and if downloads will occur automatically or manually.

• Organize the client computers into computer groups.

• Configure the clients to use the WSUS using group policies.

• Approve the updates for deployment.

• Review the update status of the computers and generate reports as necessary.
Initial Configuration of WSUS Using the Update Services Console

Choosing an upstream server

You can choose the upstream server from which your server synchronizes updates.

- Synchronize from Microsoft Update
- Synchronize from another Windows Server Update Services server

Server name: [Enter name]
Port number: 8530

Use SSL when synchronizing update information
If using SSL, ensure that the upstream WSUS server is also configured to support SSL.

This is a replica of the upstream server
A replica server mirrors update approvals, settings, computers and groups from its parent. Updates can be approved only on the upstream server.
Initial Configuration of WSUS Using the Update Services Console

Using the Specify Proxy Server page
Initial Configuration of WSUS Using the Update Services Console

Windows Server Update Services Configuration Wizard:WIN2012SRV

Connect to Upstream Server

Download update information from Microsoft Update

To configure Windows Server Update Services on the following screens, we need to apply your upstream server and proxy server settings and synchronize information about available updates.

Information to be downloaded includes:

- Types of updates available
- Products that can be updated
- Available languages

Click Start Connecting to save and download upstream server and proxy server information. This process might take several minutes or longer, depending on your connection speed.

Stop Connecting  Start Connecting

Connecting to an upstream server
Initial Configuration of WSUS Using the Update Services Console

Selecting products
Initial Configuration of WSUS Using the Update Services Console

Selecting classifications
Initial Configuration of WSUS Using the Update Services Console

Setting a sync schedule

Windows Server Update Services Configuration Wizard: WIN2012SRV

Set Sync Schedule
Configure when this server synchronizes with Microsoft Update

Before You Begin
Microsoft Update Improvement Program
Choose Upstream Server
Specify Proxy Server
Choose Languages
Choose Products
Choose Classifications
Configure Sync Schedule
Finished
What's Next

You can synchronize updates manually or set a schedule for daily automatic synchronization.

- Synchronize manually
- Synchronize automatically

First synchronization: 8:50:35 AM
Synchronizations per day: 1

Note that when scheduling a daily synchronization from Microsoft Update, the synchronization start time will have a random offset up to 30 minutes after the specified time.
Configuring WSUS Synchronization

• Configure the update source and proxy server.
• Specify what products and type of updates you want to download.
• Specify where to store the files.
• Specify what languages you want to support.
• Specify a synchronization schedule.
Configure the Update Source and Proxy Server

Configuring the Update Source settings
Configure the Update Source and Proxy Server

You can choose a proxy server to use when synchronizing updates.

- Use a proxy server when synchronizing

  - Server name: proxyserver.contoso.com
  - Port number: 3128

- Use user credentials to connect to the proxy server
  - User name: 
  - Domain: 
  - Password: 

- Allow basic authentication (password is sent in cleartext)

Configuring the Proxy Server settings
Specify What WSUS Will Synchronize

Selecting and deselecting products
Specify What WSUS Will Synchronize

Selecting and deselecting classifications
Specify What WSUS Will Synchronize

Update Files and Languages

- You can specify where to store update files. Storing files locally requires sufficient disk space.

- Store update files locally on this server
  - [ ] Download update files to this server only when updates are approved
  - [ ] Download express installation files
    Express installation files provide faster download and installation on computers, but are larger and will increase download times for your server.
  - [ ] Download files from Microsoft Update; do not download from upstream server
  - [ ] Do not store update files locally; computers install from Microsoft Update

Note: Saving file and language settings may take several minutes. During this time, computers cannot receive updates and other settings cannot be saved.

Updating files
Specify a Synchronization Schedule

You can synchronize updates manually or set a schedule for daily automatic synchronization.

- Synchronize manually
- Synchronize automatically

First synchronization: 8:00 AM
Synchronizations per day: 1

When scheduling a daily synchronization from Microsoft Update, the synchronization start time will have a random offset up to 30 minutes after the specified time.

Configuring a synchronization schedule
Configuring WSUS Computer Groups

- Computer groups help you specify what updates go to which computers at what time.
- By default, each computer is assigned to the All Computers group.
- As new computers are added, they are assigned to the Unassigned Computers group until you assign them to another group.
- Other than members of the All Computers group, a computer can only be assigned to one other group.
- Using a layered approach allows you to push updates to a test group first, and then roll out the updates to other groups as needed.
Create a Computer Group

Viewing Computers node

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Create a Computer Group

Typing a computer name group
Specify the Method of Assigning Computers to Groups

You can specify how to assign computers to groups.

- **Use the Update Services console**
  Note: New computers will automatically be placed in the Unassigned Computers group.

- **Use Group Policy or registry settings on computers.**

Specifying how computers are assigned to groups
Move a Computer to a Group Using Server-Side Targeting

Moving a computer
Move a Computer to a Group Using Server-Side Targeting

Selecting a computer group
Configuring Group Policies for Updates

• By default, Windows computers get their updates from Windows Update.
• You can use group policies to have the domain computers use the specified WSUS server.
Configure a Computer to Use WSUS for Updates Using Group Policies

Specifying the intranet Microsoft update service location using group policies
Configuring Client-Side Targeting

- Automates the process of assigning computers to computer groups
- For domain computers, use group policies
- Good option if you have several computers
Enable Client-Side Targeting Using Group Policies

Enabling client side targeting using group policies
Enable Client-Side Targeting Using Group Policies

Modifying Windows Update Registry settings
Approving Updates

• Test updates before rolling out to production environment

• Update might cause unforeseen problems affecting hundreds of computers

• Setting a deadline causes clients to install the update at a specific time
  ◦ Can specify a deadline when you approve updates on the WSUS server
  ◦ If an update has a deadline and requires a restart, system reboots at the time of the deadline

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Approve Updates

The All Updates option
Approve Updates

Choosing the Release Date option
Approve Updates
Approve Updates

Selecting a deadline
Viewing Reports

- **Update Status Summary**: This report shows a summary of the update status, with one page per update.
- **Update Detailed Status**: This report shows details of each update, with the update status for each update. One computer is shown per page.
- **Update Tabular Status**: This report shows a summary of the update status in a tabular view, suitable for exporting to a spreadsheet.
- **Update Tabular Status for Approved Updates**: This report shows a summary of the update status in a tabular view for approved updates. This report is suitable for exporting to a spreadsheet.

- **Computer Reports**
  - **Computer Status Summary**: This report shows a summary of the Computer status, with one page per computer.
  - **Computer Detailed Status**: This report shows details of each computer's status, with the update status for each update. One computer is shown per page.
  - **Computer Tabular Status**: This report shows a summary of computer status in a tabular view, suitable for exporting to a spreadsheet.
  - **Computer Tabular Status for Approved Updates**: This report shows a summary of computer status in a tabular view for approved updates. This report is suitable for exporting to a spreadsheet.

- **Synchronization Reports**
  - **Synchronization Results**: This report shows the results of the last synchronization.
Viewing Reports

• To view reports:
  o Install Microsoft .NET Framework 3.5 (which includes 2.0 and 3.0)
  o Download and install Microsoft Report Viewer 2008 Redistributable from Microsoft website
Administrating WSUS with Commands

WSUSutil.exe options:

- **export**: Exports the update metadata to an export package file.
- **import**: Imports the update metadata from an export package file.
- **movecontent**: Changes the file system location where the WSUS server stores update files and optionally copies any update files from the old location to the new location.
Administrating WSUS with Commands

WSUSutil.exe options:

- **reset**: Checks that every update metadata row in the database has corresponding update files stored in the file system.

- **deleteunneededrevisions**: Purges the update metadata for unnecessary update revisions from the database.
Administrating WSUS with Commands

Windows PowerShell commands:

- **Add-WsusComputer**: Adds an already registered specified client computer to a specified target group.
- **Approve-WsusUpdate**: Approves an update to be applied to clients.
- **Deny-WsusUpdate**: Declines the update for deployment.
- **Get-WsusClassification**: Gets the list of all WSUS classifications currently available in the system.
- **Get-WsusComputer**: Gets the WSUS computer object that represents the client computer.
- **Get-WsusProduct**: Gets the list of all products currently available on WSUS by category.
- **Get-WsusServer**: Gets the value of the WSUS update server object.
Administrating WSUS with Commands

Windows PowerShell commands:

• **Get-WsusUpdate**: Gets the WSUS update object with details about the update.
• **Invoke-WsusServerCleanup**: Performs the process of cleanup on a specified WSUS server.
• **Set-WsusClassification**: Sets whether the classifications of updates that WSUS synchronizes are enabled or disabled.
• **Set-WsusProduct**: Sets whether the product representing the category of updates to synchronize is enabled or disabled.
• **Set-WsusServerSynchronization**: Sets whether the WSUS server synchronizes from Microsoft Update or from an upstream server and uses the upstream server properties.
Troubleshooting Problems with Installing Updates

WSUS logs:

- Application event log
- C:\Program Files\Update Services\LogFiles\Change.txt
- C:\Program Files\Update Services\LogFiles\softwareDistribution.txt
Troubleshooting Problems with Installing Updates

- For synchronization problems with Windows Update, open Windows Update on the server and download and install updates.
- For client connection problems, verify that a client can connect to the WSUS server with:
  http://WSUSServerName/iuident.cab
- Commands for starting and stopping Windows Update:
  net stop wuauserv
  net start wuauserv

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System Center Configuration Manager

• Provides remote control, patch management, software distribution, operating system deployment, network access protection, hardware inventory, and software inventory
• Formerly known as System Management Server (SMS)
System Center Configuration Manager

• Uses an agent that must be installed on each computer
  o Agent can be pushed out from the SCCM console or can be pushed using group policies

• With multiple sites, you can set up distribution points so updates, software packages, and operating system packages have to be pushed to the site only once
Lesson Summary

- Windows Update scans your system to determine what updates and fixes your system needs.
- A service pack is a tested, cumulative set of hotfixes, security updates, critical updates, and updates.
- Auto Update works in the background to identify new updates and download them to your computer.
- Windows Server Update Services (WSUS) distributes updates and other patches to computers within an organization.
- WSUS works in autonomous or replica mode.
- To install WSUS on Windows Server 2012, you install WSUS as a role.
Lesson Summary

• To specify what updates go to correct computers at the correct time, organize your computers into computer groups.
• Each computer is assigned to the All Computers group by default. Newly added computers are assigned to the Unassigned Computers group until assigned to another group.
• Server-side targeting manually assigns a computer to a group.
• Client-side targeting automatically assigns computers to computer groups using group policies.
• You can use group policies to have the domain computers use a specified WSUS server.
• WSUS can control which updates clients receive and when clients receive those updates.
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