Lab LW02: MGMTTHOL003
Deploying Software Updates Using Windows Server Update Services

Learning Objectives
After completing this lab, you will have learned:
- How to configure Active Directory and Group Policy to support update deployment
- How to manage a WSUS server
- How to deploy updates to domain members and stand-alone servers
- How to configure an update testing environment
- How to implement an update deployment strategy
- How to use tools provided with the WSUS SDK Samples kit

Overview
This lab is intended for IT Administrators with the responsibility of implementing software update and/or patch management solutions. In this lab you will learn to use Windows Server Update Services (WSUS) to deploy updates to member servers, client computer, and stand-alone servers. You will learn how to implement a software update deployment strategy using Active Directory and Group Policy. You will learn to deploy updates to test computers, and then to production computers. When you complete this lab you will have performed all the steps necessary to deploy a functional software update infrastructure based on WSUS.

Prerequisites
Before working on this lab, you must have:
- Familiarity with Virtual Machine technology
- Experience applying updates manually or through Windows Update or Office Update
- An understanding of Active Directory concepts
- An understanding of Group Policy concepts

For more information
http://www.microsoft.com/windowsserversystem/updateservices/default.mspx

Scenario
A company (Contoso, Inc) has deployed Windows Software Update Services (WSUS) in a headquarters office. You will play the role of the IT Administrator for the headquarters office. You will use your WSUS server to deploy updates to member servers, stand-alone servers, and member client computers on your network. The network infrastructure is configured as shown in the following diagram.
Windows Server Update Services
Hands-on Lab

To save time, all network infrastructure elements (Active Directory, DNS, IP Addresses, Domain Membership, etc) have been pre-configured. WSUS has been installed on the headquarters WSUS server and an initial synchronization has been performed. All domain members have been updated to Windows Update client agent.

All passwords have been set to P@ssw0rd.

Due to the dynamic nature of software updates, this environment has been purposely configured without certain updates. This is to ensure that these updates are available for installation. It is not recommended that you work in a production environment unless all applicable security updates have been tested and installed.

Estimated time to complete this lab: 75 minutes

Getting Started

This lab uses Virtual Machine technology. This lab may be implemented using Virtual PC 2004 with SP1 or Virtual Server 2005. To begin this lab, follow either the Virtual PC 2004 with SP1 or Virtual Server 2005 product documentation to launch the virtual machines. In order to complete the lab exercises, all virtual machines must have connectivity with each other. To ensure the virtual machines have network connectivity with each other in Virtual PC 2004, verify that each virtual machines network adapter is connected to the Local Network. To ensure the virtual machines have network connectivity with each other in Virtual Server 2005, verify that each virtual machines network adapter is connected to the Internal Network.

If the lab is running in a managed environment, these steps may not be necessary.

\[ Using Virtual PC 2004 with SP1 \]

1. On the Start menu, point to All Programs, and then click Microsoft Virtual PC.
2. In the Virtual PC Console, click the HQWSUS machine and then click Start.
3. Wait until the HQWSUS virtual machine fully starts and then start the remaining virtual machines.

**Note** If the virtual machines are not registered in the Virtual PC Console, click New and use the New Virtual Machine wizard to register the virtual machines.

**Using Virtual Server 2005**

4. On the Start menu, point to All Programs, point to Microsoft Virtual Server and then click Virtual Server Administration Website.

5. On the Virtual Server Administration Website, point to HQWSUS and then click Turn On.

6. Wait until the HQWSUS virtual machine fully starts and then start the remaining virtual machines.

**Note** If the virtual machines are not registered in the Virtual Server Administration Website, click Add and register the virtual machines.

**Support Information**

This lab was designed and built by HynesITe, Inc. Support information is available through labs@hynesite.biz. See what’s possible at www.hynesite.biz.
Exercise 1
Configuring the Headquarters WSUS Server

In this exercise you will use the WSUS administration tools to review the configuration of the existing WSUS server at the headquarters office. You will then customize the configuration to support additional requirements of Contoso, Inc.

Background Information

Contoso, Inc. has decided that it will separate approval of updates into three groups. The groups, their memberships, and the rationale behind each decision are shown in the table below. By separating updates into three computer groups, Contoso, Inc. is able to approve updates for different computers based on their individual requirements without having to maintain multiple WSUS servers.

<table>
<thead>
<tr>
<th>Group</th>
<th>Membership</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>All server operating System</td>
<td>All computers running Windows Server 2003</td>
<td>Contoso, Inc has a small number of server computers. These server computers serve large numbers of users. Decisions on which updates to install will be performed on a server by server basis.</td>
</tr>
<tr>
<td>All client computers</td>
<td>All computers running Windows XP Professional that are not used for testing</td>
<td>Contoso, Inc has a large number of client computers. These computers have one of only a few common configurations.</td>
</tr>
<tr>
<td>Test client computers</td>
<td>A sample of several Windows XP Professional computers used for testing configuration changes</td>
<td>Contoso, Inc has a software test lab containing builds of the common configurations. They also have a group of users who participate in test programs.</td>
</tr>
</tbody>
</table>

Reviewing the existing WSUS configuration

In this task you will log on to a domain workstation to evaluate the current configuration of WSUS.

Important   To ensure that the steps in these exercises function, several configuration changes have been made beyond the default WSUS configuration. For details on which specific changes were made, see Appendix A at the end of this lab.

1. Log on to the **Workstation1** virtual machine using the username **Administrator@contoso.com** and the password **P@ssw0rd**.

Tip    In Microsoft Virtual PC 2004 with SP1 and Microsoft Virtual Server 2005,
2. On the Start menu, click Run.
3. In the Run dialog box, type http://hqwsus.contoso.com/wsusadmin and then click OK.
4. In the Connect to HQWSUS.contoso.com dialog box, in User name type Administrator, in Password, type P@ssw0rd, and then click OK.

**Tip** In Internet Explorer, press the F11 key to increase the available working desktop area. Press F11 to return to the normal Internet Explorer view.

5. On the Windows Server Update Services home page, click Options.
6. Under Options, click Synchronization Options.
7. Under Products and Classifications, under Products, click Change, review the listed products, and then click OK.

**Note** The list of products available is updated periodically as new products are supported. This list is updated when WSUS performs a synchronization operation. You will be alerted to new product definitions on the To Do list of the WSUS home page.

8. Under Products and Classifications, under Classification, click Change, review the listed classifications, and then click OK.

**Note** The list of products available is updated periodically as new products are supported. This list is updated when WSUS performs a synchronization operation. You will be alerted to new product definitions on the To Do list of the WSUS home page. For detailed information on each classification, see the WSUS help.

9. Under Update Files and Languages, click Advanced, and then in the Microsoft Internet Explorer dialog box, click OK.
10. Review the Advanced Synchronization Options, and then click OK.
11. Click Updates.
12. Under View, in Products and Classifications, click All updates, in Approval, click All updates, and then click Apply.
13. Review the available updates.
14. Click Home.

Configure WSUS to deploy updates to domain members

In this task you will configure the WSUS server to allow computers with the Automatic Updates client agent to automatically join computer groups on the WSUS server. You will then create several computer groups.

1. On the Windows Server Update Services home page, click Options.
2. Under Options click Computers Options.
3. Under Computers Options, click Use Group Policy or registry settings on computers, and then click Save settings.
4. In the **Microsoft Internet Explorer** dialog box, click **OK**.
5. Click **Computers**.
6. Under **Tasks**, click **Create a computer group**.
7. In Group name, type **All_Servers**, and then click **OK**.
8. Repeat steps 6 – 7 to create the **All_Client_Computers** and **Test_Client_Computers** computer groups.
Exercise 2
Configuring Clients to Receive Updates

In this exercise you will build an organizational unit structure which maps to the update deployment requirements of Contoso, Inc. You will then create group policy objects to configure client computers and server to receive updates from the existing WSUS server.

Background Information

Contoso, Inc. has a very basic Active Directory structure. All computer accounts are in the default organizational units and containers.

Contoso, Inc. has analyzed its software update requirements. They have identified the following types of computers and requirements.

<table>
<thead>
<tr>
<th>Computer Type</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure Servers and Domain</td>
<td>Administrators must manually select which of the approved updates to install on each infrastructure server and domain controller.</td>
</tr>
<tr>
<td>Controllers</td>
<td></td>
</tr>
<tr>
<td>Client Computers</td>
<td>Updates should be automatically installed on all client computers. Updates should be deployed to a group of test client computers before being deployed to remaining client computers.</td>
</tr>
</tbody>
</table>

Contoso, Inc. has identified the following computers and roles.

<table>
<thead>
<tr>
<th>Computer Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hqwsus.contoso.com</td>
<td>Domain Controller</td>
</tr>
<tr>
<td>Member1.contoso.com</td>
<td>Infrastructure server</td>
</tr>
<tr>
<td>Workstation1.contoso.com</td>
<td>Client computer for testing</td>
</tr>
</tbody>
</table>

✓ Implement an OU structure to support update deployment.

In this task you will create an OU structure in the Contoso.com domain to ensure each type of computer is correctly configured using group policy. You will then move the existing computer accounts to the correct OU.

1. Ensure you are logged on to the Workstation1 virtual machine as Administrator@contoso.com using the password P@ssw0rd.
2. On the Start menu, point to All Programs, point to Administrative Tools, and then click Active Directory User and Computers.
3. In Active Directory Uses and Computers, click Contoso.com, then on the Action menu, point to New, and then click on Organizational Unit.
4. In the New Object – Organizational Unit dialog box, in Name, type Managed Objects, and then click OK.
5. Repeat steps 4 – 5 to create the remaining organizational units, as show in the following diagram.

7. In the contents plane, click MEMBER1, and then on the Action menu, click Move.

8. In the Move dialog box, navigate to the Managed Objects/Server/Member Servers OU, and then click OK.

9. Repeat steps 7 – 8 to move the remaining computer accounts to the OU’s listed in the following table.

<table>
<thead>
<tr>
<th>Object name</th>
<th>Move From</th>
<th>Move To</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQWSUS</td>
<td>Domain Controllers</td>
<td>Managed Objects/Server/Domain Controllers</td>
</tr>
<tr>
<td>WORKSTATION1</td>
<td>Computers</td>
<td>Managed Objects/Client Computers/Test</td>
</tr>
</tbody>
</table>

Modify the existing Default Domain Controllers group policy object

In this task you will link the existing Default Domain Controllers Policy to the OU which contains the domain controller.

1. Ensure you are logged on to the Workstation1 virtual machine as Administrator@contoso.com using the password P@ssw0rd.

2. On the Start menu, point to All Programs, point to Administrative Tools, and then click on Group Policy Management.

3. In Group Policy Management, navigate to Forest: contoso.com/Managed Objects/Servers and then click on Domain Controllers.

4. On the Action menu, click Link an Existing GPO.

5. In the Select GPO dialog box, click Default Domain Controllers Policy and then click OK.

Create a new automatic updates configuration policies

In this task you will create a new Group Policy object for each of the Windows Update client agent configurations required to implement the Contoso, Inc. update strategy.

1. In Group Policy Management, click the Group Policy Objects node.
2. On the Action menu, click New.
3. In the **New GPO** dialog box, in **Name**, type **All Computers Update Policy**, and then click **OK**.

4. Repeat steps 1 – 3 to create the following group policy objects.
   a. Server Update Policy
   b. Client computers Update Policy
   c. Test Client computers Update Policy

5. Expand the **Group Policy Objects** node, and then click on **All Computers Update Policy**.

6. On the **Action** menu, click **Edit**.

**Configure the All Computers Update Policy group policy object**

In this task you will configure Windows Update client agent settings that apply to all client computers.

1. In **Group Policy**, under **Computer Configuration**, navigate to **Windows Settings/Security Settings/System Services**.

2. In the contents pane, click **Automatic Updates**, and then on the **Action** menu, click **Properties**.

3. In the **Automatic Updates Properties** dialog box, click **Define this policy setting**, click **Automatic**, and then click **Edit Security**.

4. In the **Security for Automatic Updates** dialog box, click **Add**.

5. In the **Select Users, Computers, or Groups** dialog box, type **Network Service**, and then click **OK**.

6. In the **Security for Automatic Updates** dialog box, click the **Allow:Read** checkbox, and then click **OK**.

7. Click **OK** to close the **Automatic Updates Properties** dialog box.

8. Under **Computer Configuration**, navigate to **Administrative Templates/Windows Components/Windows Update**.

9. Using the information in the table below, configure group policy settings for all computers which will receive updates from the headquarters WSUS server.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure Automatic Updates</td>
<td>Enabled</td>
</tr>
<tr>
<td>Specify intranet Microsoft update service location</td>
<td>Allow local administrators to choose setting (option 5)</td>
</tr>
<tr>
<td>Automatic Updates detection frequency</td>
<td>Enabled</td>
</tr>
<tr>
<td>Allow Automatic Updates immediate installation</td>
<td><a href="http://hqwsus.contoso.com">http://hqwsus.contoso.com</a> as both the update server and statistics server</td>
</tr>
<tr>
<td></td>
<td>Interval of 1 hour (testing purposes only)</td>
</tr>
</tbody>
</table>

10. Close Group Policy.

**Configure the Servers Update Policy group policy object**
In this task you will configure Windows Update client agent settings that allow administrators to control which updates are actually installed on servers.

1. Expand the **Group Policy Objects** node, and then click on **Server Update Policy**.

2. On the **Action** menu, click **Edit**.

3. Under **Computer Configuration**, navigate to **Administrative Templates/Windows Components/Windows Update**.

4. Using the information in the table below, configure group policy settings for all server computers which will receive updates from the headquarters WSUS server.

### Setting | Configuration
--- | ---
Configure Automatic Updates | Enabled
Enable client-side targeting | Enabled
Allow Automatic Updates immediate installation | Disabled
Allow non-administrators to receive update notifications | Enabled

5. Close **Group Policy**

**Configure the Client computers Update Policy group policy object**

In this task you will configure automatic installation of updates for client computers.

1. Expand the **Group Policy Objects** node, and then click on **Client computers Update Policy**.

2. On the **Action** menu, click **Edit**.

3. Under **Computer Configuration**, navigate to **Administrative Templates/Windows Components/Windows Update**.

4. Using the information in the table below, configure group policy settings for all server computers which will receive updates from the headquarters WSUS server.

### Setting | Configuration
--- | ---
Do not display ‘Install Updates and Shut Down’ option in Shut Down Windows dialog box | Enabled
Configure Automatic Updates | Enabled
Enable client-side targeting | Enabled
Allow Automatic Updates immediate installation | Enabled

Do not display ‘Install Updates and Shut Down’ option in Shut Down Windows dialog box | Enabled
5. Close **Group Policy**

**Configure the Test Client computers Update Policy group policy object**

In this task you will create a custom configuration that applies to only client computers used for testing updates.

1. Expand the **Group Policy Objects** node, and then click on **Test Client computers Update Policy**.
2. On the **Action** menu, click **Edit**.
3. Under **Computer Configuration**, navigate to **Administrative Templates/Windows Components/Windows Update**.
4. Using the information in the table below, configure group policy settings for all server computers which will receive updates from the headquarters WSUS server.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not display ‘Install Updates and Shut Down’ option in Shut Down Windows dialog box</td>
<td>Disabled</td>
</tr>
<tr>
<td>Configure Automatic Updates</td>
<td>Enabled</td>
</tr>
<tr>
<td>Auto download and notify for install (Option 3)</td>
<td></td>
</tr>
<tr>
<td>Enable client-side targeting</td>
<td>Enabled</td>
</tr>
<tr>
<td>Target group: Test_Client_Computers</td>
<td></td>
</tr>
</tbody>
</table>

5. Close **Group Policy**.

**Link the group policy objects to the appropriate OU.**

In this task you will link the Group Policy objects you just crated to the OU’s which contain the correct computer accounts.

1. In **Group Policy Management**, navigate to the **Forest: Contoso.com/Domains/Contoso.com/Managed Objects OU**.
2. On the **Action** menu, click **Link an Existing GPO**.
3. In the **Select GPO** dialog box, click **All Computers Update Policy** and then click **OK**.
4. Repeat steps 1 - 3 to link the remaining GPO’s based on the information in the following table.

<table>
<thead>
<tr>
<th>Target Organizational Unit</th>
<th>Group Policy Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contoso.com/Managed Objects/Servers</td>
<td>Server Update Policy</td>
</tr>
<tr>
<td>Contoso.com/Managed Objects/Client Computers</td>
<td>Client Computers Update Policy</td>
</tr>
</tbody>
</table>
Refresh group policy on each server and client computer

In this task you will refresh Group Policy to ensure each computer is correctly configured.

1. Log on to the HQWSUS virtual machine using the username **Administrator** and the password **P@ssw0rd**.
2. On the **Start** menu, click **Run**.
3. In the **Run** dialog box, type **GPUPDATE /FORCE** and then click **OK**.
4. Repeat steps 1 - 4 for the **Member1** and **Workstation1** virtual machines.
5. Wait approximately 3 minutes for group policy to refresh on all client computers. Do not proceed to the next step until group policy refresh is complete.

Force an Automatic Update detection cycle

In this task you will force an automatic updates detection cycle to populate computer groups on the WSUS server. This occurs automatically after a configured period of time in a production environment.

1. Ensure you are logged on to the HQWSUS virtual machine using the username **Administrator@contoso.com** and the password **P@ssw0rd**.
2. On the **Start** menu, click **Run**.
3. In the **Run** dialog box, type **wuauclt.exe /detectnow** and then click **OK**.
4. Repeat steps 1 - 4 for the **Member1** and **Workstation1** virtual machines.
5. You may need to wait approximately 3 minutes for the Automatic Updates detection cycle to complete on all computers. Do not proceed to the next step until the Automatic Updates detection cycle is complete.
Exercise 3
Using WSUS to Deploy Updates

In this exercise you will use WSUS to move through all phases of update deployment. You will first use WSUS to detect missing updates on member servers and client computers. You will then deploy updates to member servers and client computers. When deploying to member servers, you will manually choose which updates to install on each server. When deploying to client computers, you will first deploy updates to test client computers, and then deploy those same updates to production client computers.

Background Information

Another administrator has already create a computer group named Download_Only on the headquarters WSUS server. The Download_Only computer group does not contain any members. The other administrator has approved a number of updates for distribution to the Download_Only computer group to ensure the update files are available locally for installation when the updates are approved for other computer groups.

Note The Download_Only computer group was created for the purposes of this lab to ensure updates are available for installation. It is not required in production environments.

Using WSUS to detect missing updates

In this task you will configure WSUS to detect if some updates are missing from all computers.

1. Ensure you are logged on to the Workstation1 virtual machine as Administrator@contoso.com using the password P@ssw0rd.
3. On the Windows Server Update Services home page, click Updates, and then in the Microsoft Internet Explorer dialog box, click OK.
4. On the Updates page, under View, in Approval, click Install and then click Apply.

Note A selection of updates has been approved for Installation on the Download_Only computer group. This was done during the development of this lab to ensure these updates were available locally on the HQWSUS virtual machine.

5. Click the first update, then press CTRL+A to select all updates.
6. Under Update Tasks, click Change approval.
7. In the Approve Updates dialog box, in Approval, click Detect only, and then click OK.
8. In the Microsoft Internet Explorer dialog box, click OK. All updates will be approved for detection. This will take several minutes.

Force an Automatic Update detection cycle

In this task you will force an automatic updates detection cycle to gather update status information from each computer.
1. Ensure you are logged on to the HQWSUS virtual machine using the username Administrator@contoso.com and the password P@ssw0rd.
2. On the Start menu, click Run.
3. In the Run dialog box, type wuautil.exe /detectnow and then click OK.
4. Repeat steps 1 - 4 for the Member1 and Workstation1 virtual machines.
5. You may need to wait approximately 3 minutes for the Automatic Updates detection cycle to complete on all computers. Do not proceed to the next step until the Automatic Updates detection cycle is complete.

![Review the results of Automatic Update detection](image)

In this task you will review the status of computers on the WSUS server to identify missing updates.

1. Ensure you are logged on to the Workstation1 virtual machine as Administrator@contoso.com using the password P@ssw0rd.
3. On the Windows Server Update Services home page, click Reports.
5. Under Status of Computers, under View, click Needed, and then click Apply.
7. Under View, verify that only the Installed checkbox is selected, and then click Apply.
8. Expand Workstation1.contoso.com
9. Click Home.

![Deploy updates to servers](image)

In this task you will approve updates for computers which are members of the All_Servers computer group.

1. On the Windows Server Update Services home page, click Updates.
2. On the Updates page, under View, in Products and classifications, click Custom, and then click Change custom view.
3. In the Customize View dialog box, in Custom view name, type Windows Server 2003, and then under products ensure that only the Windows Server 2003 family checkbox is selected.
4. In the Customize View dialog box, click Save.
5. On the Updates page, under View, in Approval, click Detect only and then click Apply.
6. Select all of the updates with names beginning with “Security Update” by holding down the CTRL key and clicking on each of the updates. There are four of these updates in the list.
7. Under Update Tasks, click Change approval.
8. In the Approve Updates dialog box, under Approval, next to All_Servers, click Same as All Computers group.
9. In the Same as All Computers group drop down list, click Install and then click OK.
9. In the Microsoft Internet Explorer dialog box, click OK.

✓ Force an Automatic Update detection cycle

In this task you will force an automatic updates detection cycle to download approved updates to the Member1 virtual machine.

1. Ensure you are logged on to the HQWSUS virtual machine using the username Administrator@contoso.com and the password P@ssw0rd.
2. On the Start menu, click Run.
3. In the Run dialog box, type wuaclt.exe /detectnow and then click OK.
4. Repeat steps 1 - 4 for the Member1 virtual machine.
5. Wait approximately 3 minutes for the Automatic Updates detection cycle to complete on all computers. Do not proceed to the next step until the Automatic Updates detection cycle is complete.

✓ Install updates on the HQWSUS and Member1 virtual machines

In this task you will use the Automatic Updates client agent to install updates on the Member1 virtual machine.

1. Ensure you are logged on to the HQWSUS virtual machine using the username Administrator@contoso.com and the password P@ssw0rd.
2. In the task tray, click the Automatic Updates notification icon.
3. In the Automatic Updates dialog box, click Custom Install (Advanced) and then click Next.
4. Review the list of available updates, and then click Install to begin installing updates.
5. Double click the Automatic Updates notification icon to review the progress of the installation. The installation of all updates may take several minutes.
6. If required, click Restart Now to restart your computer.

✓ Deploy updates to test workstations

In this task you will approve updates for installation on client computers used for testing updates.

1. Ensure you are logged on to the Workstation1 virtual machine as Administrator@contoso.com using the password P@ssw0rd.
2. On the Windows Server Update Services home page, click Updates.
3. On the Updates page, under View, in Products and classifications click Change custom view.
4. In the Customize View dialog box, in Custom view name, type Windows XP, and then under Products ensure that only the Windows XP family checkbox is selected.
5. In the Customize View dialog box, click Save.
6. On the Updates page, under View, in Approval, click Detect only and then click Apply.
7. Click the first update, then press CTRL+A to select all updates.
8. Under Update Tasks, click Change approval.
9. In the Approve Updates dialog box, under Approval, next to Test_Client_Computers, click Same as All Computers group.

10. In the Same as All Computers group drop down list, click Install and then click OK.

11. In the Microsoft Internet Explorer dialog box, click OK.

12. In the Windows Server Update Services error dialog box, click Close.

のでしょうか Force an Automatic Update detection cycle
In this task you will force an automatic updates detection cycle to detect and download approved updates.

1. Ensure you are logged on to the Workstation1 virtual machine using the username Administrator@contoso.com and the password P@ssw0rd.

2. On the Start menu, click Run.

3. In the Run dialog box, type wuauclt.exe /detectnow and then click OK.

4. Wait approximately 3 minutes for the Automatic Updates detection cycle to complete on all computers. Do not proceed to the next step until the Automatic Updates detection cycle is complete.

のでしょうか Install updates on the Workstation1 virtual machine
In this task you will install approved updates on the Workstation1 virtual machine.

1. Ensure you are logged on to the Workstation1 virtual machine using the username Administrator@contoso.com and the password P@ssw0rd.

2. In the task tray, click the Automatic Updates notification icon.

3. In the Automatic Updates dialog box, click Custom Install (Advanced) and then click Next.

4. Review the list of available updates, and then click Install to begin installing updates.

5. Double click the Automatic Updates notification icon to review the progress of the installation. The installation of all updates may take several minutes.

6. If required, click Restart Now to restart your computer.

のでしょうか Deploy updates to production workstations
In this task you will approve updates for installation on production client computers.

1. Ensure you are logged on to the Workstation1 virtual machine using the username Administrator@contoso.com and the password P@ssw0rd.

2. On the Windows Server Update Services home page, click Updates.

3. On the Updates page, under View, in Products and classifications click Change custom view.

4. In the Customize View dialog box, in Custom view name, type Windows XP, and then under products ensure that only the Windows XP family checkbox is selected.

5. In the Customize View dialog box, click Save.

6. On the Updates page, under View, in Approval, click Install and then click Apply.
7. Click the first update, then press $\text{CTRL}+$A to select all updates.
8. Under **Update Tasks**, click **Change approval**.
9. In the **Approve Updates** dialog box, under **Approval**, next to **All_Client_Computers**, click **Same as All Computers group**.
10. In the **Same as All Computers** group drop down list, click **Install** and then click **OK**.
11. In the **Microsoft Internet Explorer** dialog box, click **OK**.
12. In the **Windows Server Update Services** error dialog box, click **Close**.

✅ **Verify the status of updates for all computers**

In this task you will use the WSUS administration tools to review the status of client computers.

1. Ensure you are logged on to the **Workstation1** virtual machine as **Administrator@contoso.com** using the password **P@ssw0rd**.
2. On the **Start** menu, click **Run**, type **http://hqwsus/wsusadmin**.
3. On the **Windows Server Update Services** home page, click **Reports**.
4. Under **Reports**, click **Status of Computers**.
5. Under **View**, verify that only the **Installed** checkbox is selected, and then click **Apply**.
6. Expand **Workstation1.contoso.com**
7. Click **Home**.
Exercise 4  
Implementing a Branch Office WSUS

In this exercise you will decide between implementing the branch WSUS server as a child server or as a replica server. After making your decision, you will perform the steps to implement your decision.

Contoso, Inc. has decided to install WSUS on the Member1 server and move that server to a remote branch office the server will be used to distribute updates to server and client computer sin that office. The remote branch office has administrative staff available to administer WSUS if needed, however all update testing will be performed at the existing headquarters office.

**Identify requirements for WSUS implementation**

8. Which of the following statements best describes how you feel Contoso, Inc should implement WSUS?
   
   d. Contoso, Inc. should allow each regional office to decide which updates to deploy.
   
   e. Contoso, Inc. should allow the headquarters office to determine which updates are deployed at regional offices.
   
   f. Contoso, Inc. should reduce the workload on the regional office administrators as much as possible.
   
   g. Contoso, Inc. should deploy customized updates in each branch office based on the role of each computer in that branch office.

9. If you selected answer choice A or D, you have selected a child WSUS server deployment. If you have selected answer choice B or C, you have selected a replica server deployment. In this lab, you will deploy a child WSUS server. Complete ONE of the following two procedures, to implement either a replica WSUS server or child WSUS server.

**Implement a replica WSUS server (if you selected answer B or C)**

In this task you will install WSUS and configure it as a replica server. You will use mostly installation defaults, but will not store update binaries locally, and configure the new WSUS server to replicate settings from an existing server. You will then perform a synchronization cycle.

1. Ensure you are logged onto the **Member1** virtual machine using the username **Administrator@contoso.com** and the password **P@ssw0rd**.

2. On the **Start** menu, click **Windows Explorer**.

3. In **Windows Explorer** double click on **WSUS.exe**.

4. On the **Welcome to the Microsoft Windows Server Update Services Setup Wizard** page, click **Next**.

5. On the **License Agreement** page, click **I accept the terms of the License agreement**, and then click **Next**.

6. On the **Select Update Source** page, un-check **Store updates locally**, and then click **Next**.

**Note** To increase performance in this lab scenario, you are not going to store
updates locally on the replica WSUS server. This ensures that the replication will occur in a reduced amount of time. For production WSUS servers, carefully consider storing updates locally versus on a remove WSUS server.

7. On the **Database Options** page, click **Next**.
8. On the **Web Site Selection** page, click **Next**.
9. On the **Mirror Update Settings** page, click **This server should inherit the settings from the following server**, in **Server name**, type *hqwsus.contoso.com*, and then click **Next**.
10. On the **Ready to Install Microsoft Windows Server Update Services** page, click **Next**, and then when setup completes, click **Finish**.
11. On the **Windows Server Update Services** home page, click **Synchronize now**, and then under **Tasks**, click **Synchronize now**.
12. Click **Home**.

**Note** The Windows Server Update Service home page will display the progress of synchronization. This process may take an extended period of time. You may choose to conclude this lab now.

Implement a child WSUS server (if you selected answer A or D)

In this task you will install an additional WSUS server and then configure it to download update metadata and binaries from a parent WSUS server. You will then perform a synchronization cycle.

1. Ensure you are logged onto the **Member1** virtual machine using the username **Administrator@contoso.com** and the password **P@ssw0rd**.
2. On the **Start** menu, click **Windows Explorer**.
3. In **Windows Explorer** double click on **WSUSSetup.exe**.
4. On the **Welcome to the Microsoft Windows Server Update Services Setup Wizard** page, click **Next**.
5. On the **License Agreement** page, click **I accept the terms of the License agreement**, and then click **Next**.
6. On the **Select Update Source** page, un-check **Store updates locally**, and then click **Next**.

**Note** To increase performance in this lab scenario, you are not going to store updates locally on the replica WSUS server. This ensures that the replication will occur in a reduced amount of time. For production WSUS servers, carefully consider storing updates locally versus on a remove WSUS server.

7. On the **Database Options** page, click **Next**.
8. On the **Web Site Selection** page, click **Next**.
9. On the **Mirror Update Settings** page, click **Next**.
10. On the **Ready to Install Microsoft Windows Server Update Services** page, click **Next**, and then when setup completes, click **Finish**.
11. On the **Windows Server Update Services** home page, click **Options**.
12. On the **Options** page, click **Synchronization Options**.
13. On the **Synchronization Options** page, under **Update Source**, click **Synchronize from an upstream Windows Server Update Services server**, and then in **Server name**, type **HQWSUS.contoso.com**.

14. Under **Tasks** click **Save settings**, and then in the **Microsoft Internet Explorer** dialog box, click **OK**.

15. Under **Tasks**, click **Synchronize now**, and then click **Home**.

**Note**  The Windows Server Update Service home page will display the progress of synchronization. This process may take an extended period of time. You may choose to conclude this exercise now.
Exercise 5
Using the WSUS API Samples and Tools

In this exercise you will use the WSUS API Samples and Tools to perform several administrative tasks. You will then use the tools to generate reports from the WSUS database that can be consumed by other applications.

**Background Information**

The WSUS API Samples and Tools are a set of free tools written using the WSUS public API. They are available for download at [www.microsoft.com/updateservices](http://www.microsoft.com/updateservices). The following tools will be used in this exercise.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADImporter</td>
<td>Populate computer groups on the WSUS server from existing Active Directory computer objects.</td>
</tr>
<tr>
<td>Update Services Notifications</td>
<td>Configure notification of WSUS server events, such as synchronization and email periodic activity reports to the WSUS administrator.</td>
</tr>
</tbody>
</table>

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Add computer accounts in Active Directory to WSUS computer groups

1. Ensure you are logged on to the HQWSUS virtual machine using the username **Administrator** and the password **P@ssw0rd**.
2. On the **Start** menu, point to **All Programs** and then click on **Update Services API Samples**.
3. In the **C:\Program Files\Updates Services API Samples and Tools** window, double click on **ADImporter**, and then double click on **ADImporter.exe**

**Note** ADImporter.exe must be run on the WSUS server in order to function.

4. In **WUS AD Importer**, under **Active Directory**, expand **Contoso.com**, and then click **MainOffice_Servers**.
5. Under **DNS Name**, check the box next to **MO-Server1**, **MO-Server2**, and **MO-Server3**.
6. Under **WSUS Server**, click **Create WSUS Group**.
7. In the **Add Group** dialog box, in **Group Name**, type **MainOffice_Servers** and then click **OK**.
8. Under **WSUS Server**, click **MainOffice_Servers**, and then click **Add Computers to WSUS Target Group**.
9. Click **Import Computers to WSUS**, and then in the **Result Report** dialog box, click **OK**.
10. Close all open windows.

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Configure email notifications of WSUS events
1. On the Start menu, point to All Programs and then click on Update Services API Samples.

2. In the C:\Program Files\Updates Services API Samples and Tools window, double click on Update Services Notifications, and then double click on Setup.msi.

3. In the Update Services Notifications dialog box, click Next.

4. On the License Agreement page, click I Agree, click Next, and then click Next again.

5. On the Installation Complete page, click Close.

6. On the Start menu, point to All Programs, and then click on Update Services Notifications.

7. In the Update Services Notifications dialog box, In recipients, type administrator@corp.contoso.com. In Outgoing mail server (SMTP) type hqwsus.contoso.com.

8. In the Update Services Notifications dialog box, click Test.

9. Click OK to close the Update Services Notifications dialog box.

10. In the Update Services Notifications dialog box, click Yes.

Ensure email notifications are operational

11. On the Start menu, point to All Programs, and then click Outlook Express.

12. In Outlook Express, click Send/Recv, and then click the Update Services Notifications Test Message from HQWSUS and review the contents.

13. Close Outlook Express.

14. Close all programs and log off.
Appendix A: Alterations from Default WSUS Installation for Lab Environment

The following changes were made to the default installation of WSUS on the HQWSUS virtual machine to ensure the functionality of this lab.

1. All downloads were configured as English only.
2. A computer group named Download_only was created.
3. A series of updates were approved for the Download_only group.
4. A full synchronization was performed.