## Lesson 2: Configuring Servers

MOAC 70-410: Installing and Configuring Windows Server 2012



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## Overview

- Exam Objective 1.2: Configure Servers
- Completing Post-Installation Tasks
- Using Roles, Features, and Services
- Using Server Manager
- Delegating Server Administration

## Completing Post-Installation Tasks

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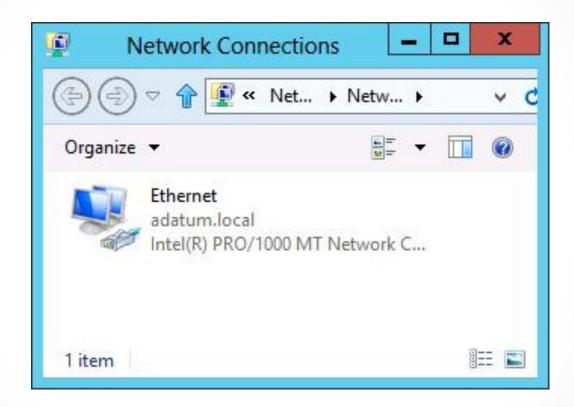
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## Completing Post-Installation Tasks

- While Server 2012 has been redesigned to allow most tasks to be completed remotely, there are tasks that must be performed directly from the server, including:
  - Configure the network connection.
  - Set the time zone.
  - Rename the computer.
  - o Join a domain.
  - Enable Remote Desktop.
  - Configure Windows Update settings.

|  |  | Server Manager   |   |
|--|--|--|---|
| 🗧 🗸 Server Ma  | inager • Local Se  | rver 🔹 🕫 l 🌠   | Manage Tools View Hel   |
| Dashboard  | For WIN-TGBDSKSDS4S  | 5  | TASKS 💌   |
| Local Server<br>All Servers<br>File and Storage Services ▷ | Computer name<br>Workgroup   | WIN-TGBDSKSDS4S<br>WORKGROUP   | Last installed updates<br>Windows Update<br>Last checked for updates  |
|  | Windows Firewall<br>Remote management<br>Remote Desktop<br>NIC Teaming<br>Ethernet | Public: On<br>Enabled<br>Disabled<br>Disabled<br>IPv4 address assigned by DHCP, IPv6 enabled | Windows Error Reporting<br>Customer Experience Improvement P<br>IE Enhanced Security Configuration<br>Time zone<br>Product ID |
|  | Operating system version<br>Hardware information                                   | Microsoft Windows NT 6.2.8400.0<br>VMware, Inc. VMware Virtual Platform                      | Processors<br>Installed memory (RAM)<br>Total disk space  |
|  | <  | m  | >   |

Use the Server Manager for the Local Server to Complete Post-Installation Tasks



#### The Network Connections window

| Internet Protocol Version 4 (TC   | P/IPv4) Properties ? × |
|---|------------------------|
| General   |                        |
| You can get IP settings assigned auton<br>this capability. Otherwise, you need to<br>for the appropriate IP settings. |                        |
| O Obtain an IP address automatical  | y I                    |
| Use the following IP address:   |                        |
| IP address:   | 1 14 A                 |
| S <u>u</u> bnet mask:   |                        |
| Default gateway:  |                        |
| ○ O <u>b</u> tain DNS server address autor  | natically              |
| Use the following DNS server add  | resses:                |
| Preferred DNS server:   | · · ·                  |
| Alternate DNS server:   | • • •                  |
| Ualidate settings upon exit   | Ad <u>v</u> anced      |
|   | OK Cancel              |

The Internet Protocol Version 4 (TCP/IPv4) Properties sheet

| System Properties   |
|---|
| Computer Name Hardware Advanced Remote  |
| Remote Assistance   |
| Allow <u>Remote</u> Assistance connections to this computer   |
|   |
| Ad <u>v</u> anced   |
| Dearte Dealter  |
| Remote Desktop  |
| Choose an option, and then specify who can connect.   |
| Don't allow remote connections to this computer   |
| Allow remote connections to this computer   |
| ✓ Allow connections only from computers running Remote<br>Desktop with <u>N</u> etwork Level Authentication (recommended) |
| Help me choose Select Users   |
| OK Cancel Apply   |

The Remote tab of the System Properties sheet

| v .                           |                                | 10,001110 | iin Chang | jes 🗙  |
|-------------------------------|--------------------------------|-----------|-----------|--------|
| You can chan<br>computer. Cha | ge the name a<br>nges might af |           |           |        |
| Computer nam                  |                                |           |           |        |
| Full computer I<br>WIN-TGBDSK | name:                          |           |           |        |
|                               |                                |           |           | More   |
| Member of                     |                                |           |           |        |
| ○ <u>D</u> omain              |                                |           |           |        |
| • Workgr                      | oup:                           |           |           |        |
| WORK                          | GROUP                          |           |           |        |
|                               |                                | OK        |           | Cancel |

The Computer Name/Domain Changes dialog box

## Using Command Line Tools

- If you selected Server Core when installing, you can perform the post-installation tasks from the command line.
- Minimum requirements:
  Rename the computer
  Join the domain
- Use the Netdom.exe command.

### Using Command Line Tools

| C24              | Administrator: C:\Windows\system32\cmd.exe  |               |
|------------------|---|---------------|
|                  | lministrator>netdom renamecomputer %ComputerName% /NewName:W8SVRE<br>ion will rename the computer WIN-QI9J0QSE0D1   | <u>^</u><br>≡ |
| name. If an      | rvices, such as the Certificate Authority, rely on a fixed machine<br>by services of this type are running on WIN-QI9JOQSEOD1,<br>outer name change would have an adverse impact. |               |
| Do you want      | ; to proceed (Y or N)?  |               |
| y<br>The compute | er needs to be restarted in order to complete the operation.  |               |
| The command      | l completed successfully.   |               |
| C:\Users\Ad      | lministrator>_  |               |
|                  |   | ~             |
|                  |   |               |

#### Renaming a Computer from the Command Line

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## Converting Between GUI and Server Core

- This is a major improvement in Server 2012 over Server 2008 R2.
- Previously, you could only change from Server Core to GUI by performing a re-install.
- Server 2012 allows you to convert between GUI and Server Core as needed.
- Allows the ease of configuration using the GUI and then allows you to conserve system resources by converting to Server Core.

## Converting a GUI Server to Server Core

| DESTINATION SERVER<br>W8SVRA.adatum.local<br>k boxes. |
|---|
|   |
|   |
| e available User<br>nfrastructure                     |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |

The Remove features page in Server Manager

### Converting a GUI Server to Server Core

|   | Remove Roles and Features Wizard   | x |
|---|--|---|
|   | move features that require Graphical Management<br>ols and Infrastructure? |   |
|   | i cannot remove this feature unless dependent features are also<br>loved.  |   |
| ⊿ | Remote Server Administration Tools   |   |
|   | A Role Administration Tools  |   |
|   | DHCP Server Tools  |   |
| ⊿ | User Interfaces and Infrastructure   |   |
|   | Server Graphical Shell   |   |
| ⊿ | Windows PowerShell   |   |
|   | Windows PowerShell ISE   |   |
|   | Remove management tools (if applicable)                                    | 1 |
|   | Remove Features Cancel   |   |
|   |  |   |

The Remove features that require Graphical Management Tools and Infrastructure dialog box

# Using PowerShell

 To convert a Windows Server 2012 Server Core installation to the full GUI option, use this Windows PowerShell command:

Install-WindowsFeature Server-Gui-Mgmt-Infra,Server-Gui-Shell -Restart

 To convert a full GUI server installation to Server Core, use this command:

Uninstall-WindowsFeature Server-Gui-Mgmt-Infra,Server-Gui-Shell -Restart

# **Configuring NIC Teaming**

- Allows administrators to combine the bandwidth of multiple network interface adapters, providing increased performance and fault tolerance.
- NIC teaming is also called bonding, balancing, and aggregation.

# NIC Teaming Modes

## Switch Independent Mode

 All adapters are connected to different switches, providing alternate routes through the network

### Switch Dependent Mode

 All adapters are connected to the same switch, providing a single interface with their combined bandwidth

#### Creating a NIC Team

| 3                                | NIC Teaming                 |  |         |  |  |
|----------------------------------|-----------------------------|--|---------|--|--|
| SERVERS<br>All Servers   1 total |                             |  | TASKS 🔻 |  |  |
| Name Status                      | Server Type Teams           |  |         |  |  |
| W8SVRA 🕥 Online                  | Physical 0                  |  |         |  |  |
|                                  |                             |  |         |  |  |
|                                  |                             |  |         |  |  |
|                                  |                             |  |         |  |  |
|                                  |                             |  |         |  |  |
| TEAMS                            |                             | ADAPTERS AND INTERFACES                                |         |  |  |
| All Teams   0 total              | TASKS 💌                     |  | TASKS 🔻 |  |  |
| Team Status Teaming Mo           | ode Load Balancing Adapters | Network Adapters Team Interfaces                       |         |  |  |
|                                  |                             | Adapter Speed State Reason                             |         |  |  |
|                                  |                             | <ul> <li>Available to be added to a team (a</li> </ul> |         |  |  |
|                                  |                             | Ethernet 1 Gbps  | =       |  |  |
|                                  |                             | Ethernet 2 1 Gbps                                      | ~       |  |  |
|                                  |                             |  |         |  |  |

The NIC Teaming window in Server Manager

## Creating a NIC Team

|  | NIC Teaming                | x |  |  |  |
|--|----------------------------|---|--|--|--|
| New team   |                            |   |  |  |  |
| Ŧ  |                            |   |  |  |  |
| Team <u>n</u> ame:   |                            |   |  |  |  |
| Member adapters:   |                            | _ |  |  |  |
| In Team Adapter Spee   | d State Reason             |   |  |  |  |
| Ethernet 1 Gbp   |                            |   |  |  |  |
| Ethernet 2 1 Gbj   | 25                         |   |  |  |  |
|  |                            |   |  |  |  |
|  |                            |   |  |  |  |
|  |                            |   |  |  |  |
| <ul> <li>Additional properties</li> </ul>                            |                            |   |  |  |  |
| Teaming mode:  | Switch Independent 🔹       |   |  |  |  |
| Load balancing mode:   | Address Hash               |   |  |  |  |
| Standby adapter:   | None (all adapters Active) |   |  |  |  |
| Primary team interface: (Name generated automatically); Default VLAN |                            |   |  |  |  |
|  |                            | _ |  |  |  |
|  | OK Cancel                  |   |  |  |  |

The New team page in Server Manager

#### Creating a NIC Team

| ۲ | NIC Teaming   | _     |   | x |
|---|---|-------|---|---|
|   | SERVERS<br>All Servers   1 total  | TASKS | • |   |
|   | Name Status Server Type Teams   |       |   |   |
|   | W8SVRA ① Online Physical 1  |       |   |   |
|   |   |       |   |   |
|   |   |       |   |   |
|   |   |       |   |   |
|   |   |       |   |   |
|   | TEAMS     ADAPTERS AND INTERFACES       All Teams   1 total     TASKS ▼   | TASKS | • |   |
|   | Team         Status         Teaming Mode         Load Balancing         Adapters         Network Adapters         Team Interfaces |       |   |   |
|   | NIC Team ( OK Static Teaming Address Hash 2 Adapter Speed State Reason  |       |   |   |
|   | <ul> <li>NIC Team (2)</li> </ul>  |       | ^ |   |
|   | Ethernet 1 Gbps ① Active  |       | ≡ |   |
|   | Ethernet 2 1 Gbps ① Active  |       | ~ |   |
|   |   |       |   |   |

A new NIC team in the NIC Teaming window in Server Manager

## Using Roles, Features, and Services

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## Using Roles, Features, and Services

- Role: Define the primary function of a server
   o Example: Web Server (IIS)
- Feature: A smaller module, typically with a single purpose
  - Example: a management tool, extension, or optional component
- Service: Programs that run continuously in the background, waiting for a client to send a request

## Using Server Manager

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## Adding Roles and Features

- Use the Add Roles and Features Wizard in the Server Manager.
- Add multiple servers to the Server Manager interface to deploy roles and features to any of your servers.

| 2                        | Add Roles and Features Wizard    | _                   |            | 1 | x |  |
|--------------------------|----------------------------------|---------------------|------------|---|---|--|
| Select installation type |                                  | INATION<br>vers are | ed.<br>Jal |   |   |  |
|                          | < <u>Previous</u> <u>Install</u> |                     | Cance      | 1 |   |  |

#### The Select Installation type page in the Add Roles and Features Wizard

| 🛓 Add Roles and Features Wizard 📃 🗖 🗙                                   |   |                      |  |                               |         | x   |
|---|---|----------------------|--|-------------------------------|---------|-----|
| Select destination  | on server   |                      |  | DESTINATION<br>lo servers are |         |     |
| Before You Begin  | Select a server or a virtual  |                      | o install roles and features.  |                               |         |     |
| Installation Type<br>Server Selection                                   | <ul> <li>Select a server from the</li> <li>Select a virtual hard dis</li> </ul> |                      |  |                               |         |     |
| Server Selection<br>Server Roles<br>Features<br>Confirmation<br>Results | Server Pool Filter: Name  | IP Address           | Operating System   |                               |         |     |
|   | SERVERC.adatum.local<br>ServerA.adatum.local<br>SERVERB.adatum.local            | 10.0.0.1,192.16      | Microsoft Windows Server 2012 Da<br>Microsoft Windows Server 2012 Da<br>Microsoft Windows Server 2012 Da | tacenter Ev                   | aluatio | on  |
|   |   | erver Manager. Offli | ows Server 2012, and that have been<br>ine servers and newly-added servers f                             |                               |         | the |
|   |   | < Prev               | ious Next > Instal   |                               | Cancel  |     |

#### The Select destination server page in the Add Roles and Features Wizard

| <u>a</u>   | Add Roles and Features Wizard                              |                     | _  |  | x         |
|--|--|---------------------|--|--|-----------|
| Before You Begin<br>Installation Type<br>Server Selection<br>Server Roles<br>Features<br>Confirmation<br>Results |  |                     | ninistrate<br>oft updat<br>, create s<br>ers for di<br>d get rep<br>els of the | on SERV<br>latum.lo<br>rvices<br>ors to<br>les that<br>separat<br>fferent<br>ports o | ER<br>cal |
|  | Windows Deployment Services Windows Server Update Services | ∨<br>Next > Install |  | Cance  |           |

The Select server roles page in the Add Roles and Features Wizard

|        | atures that are required for Windows Serve<br>Services?  | er |
|--------|--|----|
|        | ot install Windows Server Update Services unless the role services or features are also installed. | 2  |
| ⊿ .NET | Framework 4.5 Features   | ^  |
| A      | ASP.NET 4.5  |    |
| ⊿ Rem  | ote Server Administration Tools  | =  |
| ⊿ F    | ole Administration Tools   | -  |
| 4      | Windows Server Update Services Tools   |    |
|        | API and PowerShell cmdlets   |    |
| ⊿ Web  | Server (IIS)   |    |
| ⊿ №    | /lanagement Tools  |    |
| 4      | IIS 6 Management Compatibility   | V  |
|        | de management tools (if applicable)  |    |
| -36    |  |    |

The Add features that are required dialog box in the Add Roles and Features Wizard

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|   |   | DESTINATION SERVER  |
|---|---|---|
| Select features<br>Before You Begin<br>Installation Type<br>Server Selection<br>Server Roles<br>Features<br>Confirmation<br>Results | Select one or more features to install on the selected server.  Features  NET Framework 3.5 Features  NET Framework 4.5 Features (Installed)  Background Intelligent Transfer Service (BITS) BitLocker Drive Encryption BitLocker Network Unlock BranchCache Client for NFS Data Center Bridging Enhanced Storage | Description<br>.NET Framework 3.5 combines the<br>power of the .NET Framework 2.0<br>APIs with new technologies for<br>building applications that offer<br>appealing user interfaces, protect<br>your customers' personal identity<br>information, enable seamless and<br>secure communication, and provide<br>the ability to model a range of<br>business processes. |
|   |   | > Install Cancel  |

The Select features page in the Add Roles and Features Wizard

| <u>k</u>   | Add Roles and Featur | res Wizard                                 | _ 🗆 🗙                                     |
|--|----------------------|--|---|
| E Select role servic Before You Begin Installation Type Server Selection Server Roles Features WSUS Role Services Content Web Server Role (IIS) Role Services Confirmation Results |                      | dows Server Update Services<br>Description | LESTINATION SERVER<br>W85VRC.adatum.local |
|  |                      | < Previous Next > In                       | nstall Cancel                             |

The Select role services page in the Add Roles and Features Wizard

| Confirm installa   | ation selections  | DESTINATION SERVER<br>W8SVRC.adatum.local |
|--|---|---|
| Before You Begin<br>Installation Type                                      | To install the following roles, role services, or features on selec   | ted server, click Install.                |
| Server Selection<br>Server Roles   | Optional features (such as administration tools) might be displ<br>been selected automatically. If you do not want to install these<br>their check boxes.                           |   |
| WSUS<br>Role Services<br>Content<br>Web Server Role (IIS)<br>Role Services | .NET Framework 4.5 Features<br>ASP.NET 4.5<br>Remote Server Administration Tools<br>Role Administration Tools<br>Windows Server Update Services Tools<br>API and PowerShell cmdlets |   |
| Confirmation<br>Results  | Web Server (IIS)<br>Management Tools<br>IIS 6 Management Compatibility<br>IIS 6 Metabase Compatibility<br>Export configuration settings<br>Specify an alternate source path         | ~   |

The Confirm installation selections page in the Add Roles and Features Wizard

# **Deploying Roles to VHDs**

 In addition to installing roles and features to servers on the network, Server Manager enables administrators to install them to virtual machines that are in an offline state.

#### Installing Roles and Features – Offline VHD

|   | Add Roles and Features Wizard   |
|---|---|
| Select destinati  | DESTINATION SERVER<br>W8SVRB.adatum.local:C:\Users\8400.0.amd64fre.winmain_win8rc.120518-142  |
| Before You Begin<br>Installation Type<br>Server Selection | Select a server or a virtual hard disk on which to install roles and features. <ul> <li>Select a server from the server pool</li> <li>Select a virtual hard disk</li> </ul>   |
| Server Roles<br>Features<br>Confirmation<br>Results       | Server Pool       1. Select a server on which to mount the virtual hard disk (VHD).         Filter:       IP Address       Operating Syster         Name       IP Address       Operating Syster         W8SVRB.adatum.local       10.0.0.106       Microsoft Windo         W8SVRC.adatum.local       10.0.0.101, 10.0       Microsoft Windo         W8SVRA.adatum.local       10.0.0.101, 10.0       Microsoft Windo         Server Pool       1. Select a server on which to mount the virtual hard disk (VHD). |
|   | Image: Computer(s) found         Virtual Hard Disk         C:\Users\8400.0.amd64fre.winmain_win8rc.120518-1/         Browse         2. Select an offline VHD file on which Windows Server 2012 is already installed, and on which you want to install roles and features.   |
|   | < Previous Next > Install Cancel  |

The Select destination server page in the Add Roles and Features Wizard

# **Configuring Services**

- Server Manager will allow you to view all of the services installed on a server and stop, start, restart, pause, and resume a service.
- To configure services you need to use the Services MMC snap-in.

## Delegating Server Administration

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## Delegating Server Administration

- Delegation allows you to have specific administrators or IT staff responsible for different parts of network administration.
- Not all IT staff require full administrative access to servers.
- Have junior IT personnel responsible only for tasks like creating user accounts and changing passwords.

# Lesson Summary

- The new Server Manager is designed to enable administrators to fully manage Windows servers without ever having to interact directly with the server console, either physically or remotely.
- There are some tasks that administrators might have to perform immediately after the operating system installation that require direct access to the server console.
- If you selected the Server Core option when installing Windows Server 2012, you can perform post-installation tasks from the command line.
- In Windows Server 2012, the Properties tile in Server Manager provides the same functionality as the Initial Configuration Tasks window in previous versions.

# Lesson Summary

- In Windows Server 2012, you can convert a computer installed with the full GUI option to Server Core, and add the full GUI to a Server Core computer.
- NIC teaming is a new feature in Windows Server 2012 that enables administrators to combine the bandwidth of multiple network interface adapters, providing increased performance and fault tolerance.
- For administrators of enterprise networks, it might be necessary to add a large number of servers to Server Manager. To avoid having to work with a long scrolling list of servers, you can create server groups, based on server locations, functions, or any other organizational paradigm.
- In addition to installing roles and features to servers on the network, Server Manager also enables administrators to install them to virtual machines that are currently in an offline state.

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