Lesson 6: Configuring Servers for Remote Management

MOAC 70-410: Installing and Configuring Windows Server 2012



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Overview

- Exam Objective 2.3: Configure Servers for Remote Management
- Using Server Manager for Remote Management
- Using Remote Server Administration Tools
- Using Windows PowerShell Web Access
- Working with Remote Servers

Using Server Manager for Remote Management

Lesson 6: Configuring Servers for Remote Management

Using Server Manager for Remote Management

- In Windows Server 2012, Server Manager has been improved to include the ability to perform administrative tasks on remote servers as well as on the local system.
- Server Manager contains tiles that represent other views including a page for the Local Server and one for All Servers, and server groups and role groups.

Using Server Manager for Remote Management



Dashboard thumbnails in Server Manager

B	Server Man	nager		_ D X
🗲 🗸 📲 🖌 🖌	ers	• 🗊 I	Manage	Tools View Help
 Dashboard Local Server All Servers File and Storage Services IIS 	SERVERS All servers 1 total Filter Server Name IPv4 Address W8SVRB 10.0.0.106	€ Manageability Online	 (ii) ▼ (iii) ▼ Last Update 7/4/2012 5:10:12 PM 	TASKS TASKS TASKS Windows Activation 00133-30010-00805
	EVENTS All events 0 total <i>Filter</i>	م		

The All Servers homepage in Server Manager

à		Add Servers			_	D X
Active Directory	DNS Import		Selected			
Location:	🖬 adatum 🕨	٢	Comput	er		
Operating System:	All	•				
Name (CN):	Name, or beginning of name					
		Find Now				
Name 0 Computer(s) foun	Operating System		D Compu	ter(s) selected		
Help				ОК		Cancel

The Add Servers dialog box in Server Manager

b	Add Servers	-		x
Active Directory Location: Operating System Name (CN): Name ServerA SERVERB SERVERB SERVERE SERVERC	Add Servers DNS Import Selected Import Import Computer All Import Import Name, or beginning of name Find Now Import Operating System Find Now Import Windows Server 2012 Datacenter Evaluation Import Import Import O Computer(s) selected Import			x
Help	OK		Canc	el

Searching for servers in Server Manager

🚡 Add Servers		_		x
Active Directory DNS Import Location: if adatum if adatum Operating System: All v Name (CN): Name, or beginning of name Find Now Name Operating System ServerA Windows Server 2012 Datacenter Evaluation SERVERB Windows Server 2012 Datacenter Evaluation SERVERE Hyper-V Server 2012 SERVERC Windows Server 2012 Datacenter Evaluation SERVERC Windows Server 2012 Datacenter Evaluation 4 Computer(s) found	Selected Computer ADATUM.LOCAL (2) SERVERB SERVERC 2 Computer(s) selected			
Help	ОК		Canc	eli

Selecting servers in Server Manager

Adding Workgroup Servers

- To remotely manage a server that is part of a workgroup, you must add the name of the workgroup server to the TrustedHosts list on the computer running Server Manager.
- PowerShell command:

Set-Item wsman:\localhost\Client\TrustedHosts
 <servername> -Concatenate -Force

Calibrating Server Manager Performance

Configure Event Data	a 🗖 🗖 🗙
These settings determine how Server Manager gathers server group that you are currently managing. Change increase the number of events in the Events tile can res Server Manager.	event data from servers in the s to defaults that significantly sult in delayed responses from
Show events with these severity levels Image: Critical Image: Error Image: Warning Image: Information	nal
Get events that have occured within the past	24 hours 🔻
Get events from the following event log files	Multiple •
	OK Cancel

The Configure Event Data dialog box in Server Manager

Configuring WinRM

Þ	Configure Remote Management
	 Enable remote management of this server from other computers.
	Enable applications or commands that require Windows Management Instrumentation (WMI) and Windows PowerShell remote access to manage this server.
	If you disable remote management, applications or commands that require WMI or Windows PowerShell remote access will fail.
	You might not be able to manage this computer remotely from a different local subnet because of firewall settings.
	Local administrator accounts other than the built-in Administrator account may not have rights to manage this computer remotely, even if remote management is enabled.
	More information about remote management, its limitations, and security risks
	OK Cancel

The Configure Remote Management dialog box

Configuring Windows Firewall

- If you use MMC snap-ins targeting a remote server, Windows Firewall default settings will block the communications.
- Inbound Firewall rules must be managed:

 COM+ Network Access (DCOM-In)
 Remote Event Log Management (NP-In)
 Remote Event Log Management (RPC)
 Remote Event Log Management (RPC-EPMAP)

Configuring Windows Firewall

@	Windows Firewall with	Advanced Security			×	
File Action View Help						
🗢 🏟 🖄 📰 🗟 🖬						
Pindows Firewall with Advance	Inbound Rules				Actions	_
式 Inbound Rules	Name	Group	Profile	Enabl ^	Inbound Rules	A .
🛃 Outbound Rules	BranchCache Content Retrieval (HTTP-In)	BranchCache - Content Retr BranchCache - Hosted Cach	All	No ≡	🔯 New Rule	
Monitoring	BranchCache Peer Discovery (WSD-In)	BranchCache - Peer Discove	All	No	Filter by Profile	2
	COM+ Network Access (DCOM-In)	COM+ Network Access COM+ Remote Administrati	All	No No	Filter by State	ŝ
	 Core Networking - Destination Unreacha Core Networking - Destination Unreacha 	Core Networking Core Networking	All	Yes Yes	View	۲
	Core Networking - Dynamic Host Config Core Networking - Dynamic Host Config	Core Networking Core Networking	All	Yes Yes	Refresh	
	Core Networking - Internet Group Mana	Core Networking	All	Yes	P Help	
	Core Networking - IPHTTPS (TCP-In)	Core Networking Core Networking	All	Yes Yes		
	 Core Networking - Multicast Listener Do Core Networking - Multicast Listener Qu 	Core Networking Core Networking	All	Yes Yes		
< III >	Core Networking - Multicast Listener Rep	Core Networking	All	Yes ×		

The Windows Firewall with Advanced Security snap-in

Configure Windows Firewall with Group Policy

@	New Inbound Rule Wiza	ard			x
Predefined Rules					
Select the rules to be created for	this experience.				
Steps: Bule Type	Which rules would you like to create?				
 Predefined Rules Action 	The following rules define network connectivity Rules that are checked will be created. If a rule the existing rule will be overwritten.	requirements for the se e already exists and is c	elected predefin hecked, the co	ed group. ntents of	
	<u>R</u> ules: Name	Rule Exists	Profile	Desc	
	COM+ Network Access (DCOM-In)	No	AI	Inbou	
		< <u>B</u> ack	<u>N</u> ext >	Cancel	
The Prec	lefined Rules page of t Rule Wizard	he New Ir	nboun	d	

Configure Windows Firewall with Group Policy

<i>@</i>	New Inbound Rule Wizard	x
Action		
Specify the action to be taken w	hen a connection matches the conditions specified in the rule.	
Steps:		
Rule Type	What action should be taken when a connection matches the specified conditions?	
 Predefined Rules Action 	 Allow the connection This includes connections that are protected with IPsec as well as those are not. Allow the connection if it is secure This includes only connections that have been authenticated by using IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node. Customize Block the connection 	
	< Back Finish Cancel	

The Action page of the New Inbound Rule Wizard

Managing Down-Level Servers

- Earlier versions of Windows Server lack the WinRM support needed for them to be remotely managed by Server Manager
- Windows Server 2008 and 2008 R2 must have the following updates downloaded and installed:
 - o .NET Framework 4.0
 - Windows Management Framework 3.0

Managing Down-Level Servers

After the updates are installed, the system automatically starts the Windows Remote Management Service, but there are still tasks that must be completed on the remote server:

- Enable the Windows Remote Management (HTTP-In) rules in Windows Firewall.
- Create a WinRM listener by running the winrm quickconfig command at a command prompt with administrative privileges.
- Enable the COM+ Network Access and Remote Event Log Management rules in Windows Firewall.

Creating Server Groups

- Server groups can be used to simplify administration of several servers.
- Groups can be based on server locations, functions, or any other organizational paradigm.
- Once created, it appears as an icon in the navigational pane and you can manage all the servers in the group, just like the All Servers group.

Creating a Server Group

b		Create Server Gro	pup		-		x
Server group name							
Server Pool Active D	irectory DNS	Import		Selected			
Filter:				Computer			
Name	IP Address	Operating System					
W8SVRB.adatum.local	10.0.0.106	Microsoft Windows Se					
W8SVRC.adatum.local	fe80::f921:f1ad: 10.0.0.102 fe80::68b7:93c	Microsoft Windows Se					
W8SVRA.adatum.local	169.254.243.178 fe80::b5a7:2fc6	Microsoft Windows Se	•				
<		>					
3 Computer(s) found				0 Computer(s) selected			
Help				ОК		Cance	el

The Create Server Group dialog box in Server Manager

Lesson 6: Configuring Servers for Remote Management

- You can manage remote servers from any computer running Windows Server 2012.
- All the required tools are installed by default.
- The new administrative method that Microsoft is promoting urges administrators to keep servers locked away and use a workstation to manage servers from a remote location.
- To manage Windows servers from a workstation, you must download and install the Remote Server Administration Tools package.

- When you install RSAT on a workstation running Windows 8, all the tools are activated by default.
- When you launch Server Manager on a Windows workstation, there is no local server, and there are no remote servers to manage until you add some.
- Your access to the servers you add depends on the account you use to log on to the workstation.
- You can connect to the server using another account by right-clicking it and, from the context menu, selecting Manage As to display a standard Windows Security dialog box, in which you can supply alternative credentials.

b		Server Manager		
€∍∙	•• All Servers	• ②	Manage Tools	View Help
Dashboard	All serve	RS ers 0 total		TASKS
	Server Name	IPv4 Address Manageability	Last Update Windows Acti	vation
	EVENTS			
	All events 0 to	tal م		TASKS

Server Manager on a Windows workstation

Using Windows PowerShell Web Access

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Using Windows PowerShell Web Access

- A web gateway hosted by Internet Information Services (IIS) on the server to be managed, which enables an administrator to execute PowerShell commands on the server using a standard web browser.
- The big advantage is that the gateway is implemented entirely on the remote server being managed.
- The only software required on the client is a web browser that supports JavaScript and can retain cookies.
- The Administrator can execute PowerShell commands on a remote server using any computer, or even a smartphone or tablet.

Using Windows PowerShell Web Access

- The gateway server setup process includes the following steps:
 - Install the Windows PowerShell Web Access feature.
 - Configure the IIS gateway.
 - Create Authorization rules.

Installing Windows PowerShell Web Access

Select features		DESTINATION SERVER ServerC.adatum.local
Before You Begin Installation Type	Select one or more features to install on the selected server.	Description
Server Selection Server Roles Features Confirmation Results	↓ Telnet Server ^ ↓ TFTP Client ↓ ↓ Ⅲ User Interfaces and Infrastructure (Installed) ↓ Ⅲ Windows Biometric Framework ↓ Windows Feedback Forwarder ↓ Windows Identity Foundation 3.5 ↓ Windows Internal Database ↓ ₩indows PowerShell (Installed) ↓ ₩indows PowerShell 3.0 (Installed) ↓ ₩indows PowerShell ISE (Installed) ↓ ₩indows PowerShell ISE (Installed) ↓ ₩indows PowerShell Web Access ↓ ₩indows Search Service ↓ ₩indows Search Service ↓ ₩indows Searer Backun	Windows PowerShell Web Access lets a server act as a web gateway, through which an organization's users can manage remote computers by running Windows PowerShell sessions in a web browser. After Windows PowerShell Web Access is installed, an administrator completes the gateway configuration in the Web Server (IIS) management console

The Windows PowerShell Web Access feature in the Add Roles and Features Wizard

Installing Windows PowerShell Web Access

E.	Add Roles and Features Wizard
Ad Po	ld features that are required for Windows werShell Web Access?
You folk	cannot install Windows PowerShell Web Access unless the owing role services or features are also installed.
⊿	.NET Framework 4.5 Features
	ASP.NET 4.5
⊿	Web Server (IIS)
	▲ Management Tools
	[Tools] IIS Management Console
	⊿ Web Server
	▲ Application Development
	ASP.NET 4.5
	ISAPI Extensions
	Include management tools (if applicable)
	Add Features Cancel

The Add Features that are required for Windows PowerShell Web Access dialog box

Configuring PowerShell Web Access Gateway

The gateway configuration process consists of the following IIS tasks:

- Create an application pool for the **pswa** web application.
- Associate the application pool with a website.
- Configure the website to use the path to the gateway site files.
- Configure the website to use an https binding.
- Specify an SSL certificate for the website to use.

Configuring a Test Installation

Σ		Administrator: Windows PowerShell	_ 🗆 X			
PS C:\Users\Administrato WARNING: Using a test ce should be used only for Creating application poo	r.ADATUM> in: rtificate in internal te l pswa_pool.	stall-pswawebapplication -usetestcertificate a production environment is not recommended for security reasons. This sting of Windows PowerShell Web Access. The test certificate expires in 	certificate 90 days.			
Name	State	Applications				
pswa_pool	Started					
Creating web application	pswa					
Path :/pswa ApplicationPool :pswa_pool EnabledProtocols : http PhysicalPath : C:\Windows\Web\PowerShellWebAccess\wwwroot						
Creating self-signed certificate						
Creating HTTPS binding						
PS C:\Users\Administrato	r.ADATUM>					

Configuring the PowerShell Web Gateway with the default settings

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Customizing a Gateway Installation

The syntax of the cmdlet, with its main parameters:

Install-PswaWebApplication [-WebApplicationName <app name>]
[-WebSiteName <site name>] [-UseTestCertificate]

The functions of the parameters:

-WebApplicationName: Enables you to specify an alternative to the default application name, which is pswa.

-WebSiteName: Enables you to specify an alternative to the default site in which the cmdlet installs the gateway application.

-UseTestCertificate: This parameter causes the server to create a self-signed certificate and bind it to the website.

Creating Authorization Rules

When the gateway is properly configured, there are four layers of security that users must go through before they can execute commands on a server:

- IIS certificate authentication
- Windows PowerShell Web Access Gateway authentication
- Windows PowerShell Web authorization rules
- Target server authentication and authorization

Creating Authorization Rules

To create and manage authorization rules, you use the following PowerShell cmdlets:

- Get-PswaAuthorizationRule
- Test-PswaAuthorizationRule
- Add-PswaAuthorizationRule
- Remove-PswaAuthorizationRule

Creating Authorization Rules

PS C:\Users\Administrator\Documents> get-website							
Name	ID	State	Physical Path	Bindings			
Default Web Site	1	Started	%SystemDrive%\inetpub\wwwroot	 http *:80: https *:443: sslFlags=0			
PS C:\Users\Administrator\Documents>							٢
1						0	2
Submit Cancel	⇒	History: 🎓	÷		Connected to: serverc Sig	gn Out	

An active Windows PowerShell Web Gateway session

Working with Remote Servers

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Working with Remote Servers

Server Manager provides three basic methods for addressing remote servers:

- Contextual tasks: When you right-click a server in a Servers tile, anywhere in Server Manager, you see a context menu that provides access to tools and commands pointed at the selected server.
- Non-contextual tasks: The menu bar at the top of the Server Manager console provides access to internal tasks.
- Non-contextual tools: The console's Tools menu provides access to external programs.

Working with Remote Servers

a	Ser	ver Manager	_ 🗆 🗙
🗲 🗧 🕶 All Serv	rers	🛛 🕝 🚩 Manage	Tools View Help
 Dashboard Local Server All Servers 	SERVERS All servers 5 to	otal	
■File and Storage Services ▶	Server Name IPv4 A SERVERD 10.0 SERVERC 10.0 SERVER08A 10.0 SERVER08B 10.0 SERVERE 10.0	Add Roles and Features Restart Server Computer Management Remote Desktop Connection Windows PowerShell Configure NIC Teaming Configure Windows Automatic Feedback	unning, and requ unning, and requ
	EVENTS All events 6 total Filter Server Name ID	Manage As Remove Server Refresh Copy	TASKS V

Contextual tasks in Server Manager

Lesson Summary

- Windows Server 2012 facilitates remote server management, so that administrators rarely have to work directly at the server console. This conserves server resources that can better be devoted to applications.
- The primary difference between the Windows Server 2012 Server Manager and previous versions is the ability to add and manage multiple servers at once.
- Server Manager has been tested with as many as 100 servers added to the interface. However, the tool's performance is based on a number of factors, including the hardware resources of the computer running Server Manager and the amount of data the remote servers are transmitting to Server Manager over the network.
- When you add servers running Windows Server 2012 to Server Manager, you can immediately begin using the Add Roles and Features Wizard to install roles and features on any of the servers you have added.

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