

Microsoft® Official Course



Module 4

Troubleshooting Remote Computers

Microsoft®

Module Overview

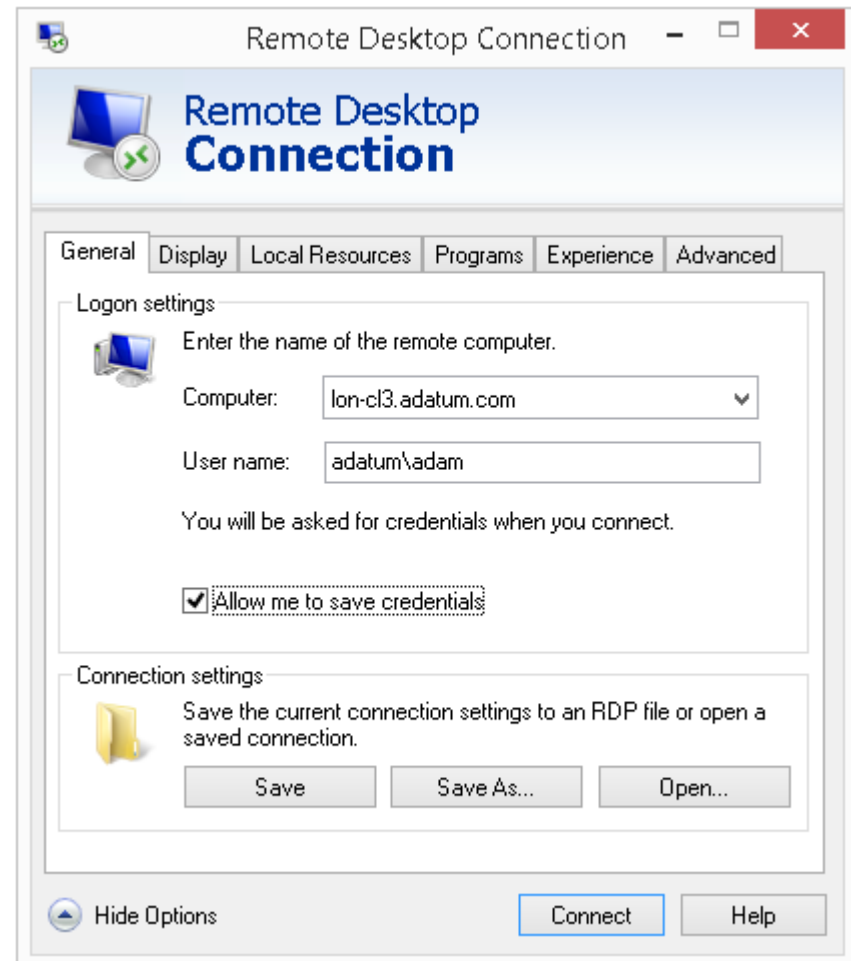
- Using Remote Desktop
- Using Remote Assistance
- Remoting with Windows PowerShell

Lesson 1: Using Remote Desktop

- Overview of Remote Desktop
- Configuring Remote Desktop by Using GPO

Overview of Remote Desktop

- A built-in Windows 8.1 feature that enables users to connect to their own computers from another device using RDP
- Enables administrators to connect to multiple remote devices for management purposes



Configuring Remote Desktop by Using GPO

The screenshot displays the Local Group Policy Editor window. The left-hand pane shows a tree view of policy categories, with 'Remote Desktop Services' expanded to 'Remote Desktop Session Host' and 'Connections' selected. The right-hand pane displays a list of 12 settings, all of which are currently 'Not configured'. The settings are:

Setting	State
Automatic reconnection	Not configured
Allow users to connect remotely by using Remote Desktop S...	Not configured
Deny logoff of an administrator logged in to the console ses...	Not configured
Configure keep-alive connection interval	Not configured
Limit number of connections	Not configured
Suspend user sign-in to complete app registration	Not configured
Set rules for remote control of Remote Desktop Services use...	Not configured
Set remote control permission request timeout	Not configured
Set remote control session UAC desktop	Not configured
Select network detection on the server	Not configured
Select RDP transport protocols	Not configured
Restrict Remote Desktop Services users to a single Remote D...	Not configured

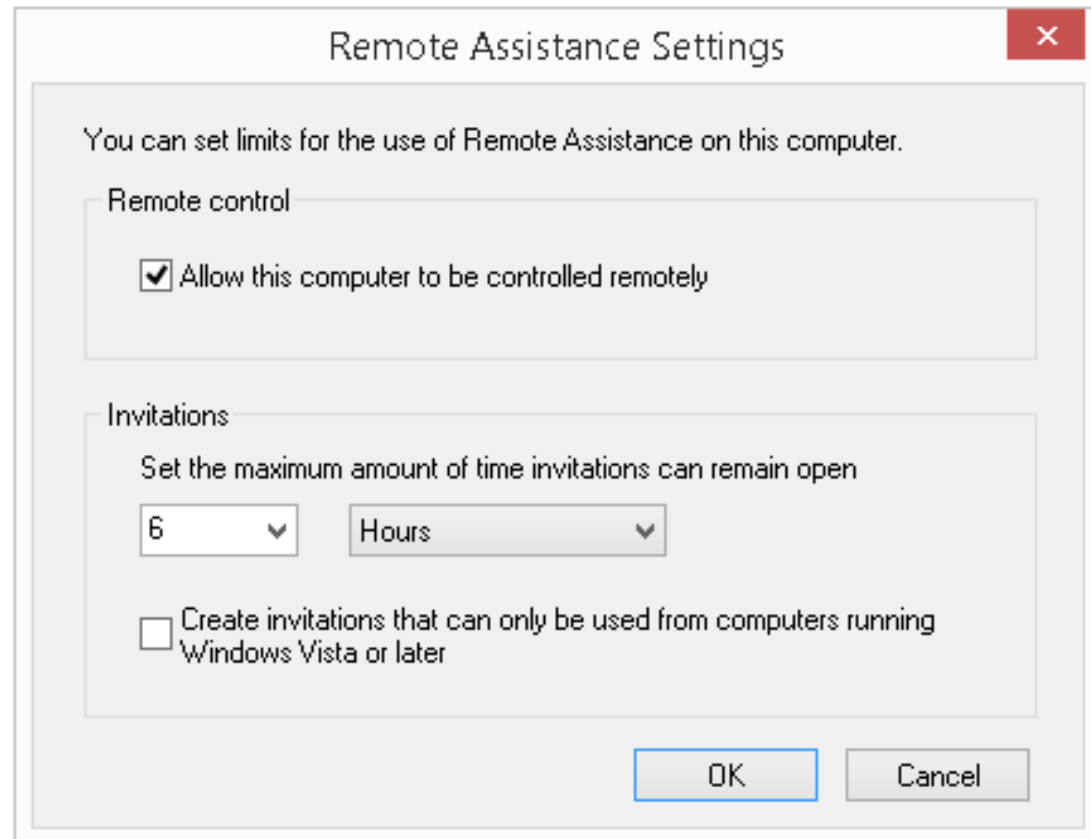
At the bottom of the window, there are tabs for 'Extended' and 'Standard', and a status bar indicating '12 setting(s)'.

Lesson 2: Using Remote Assistance

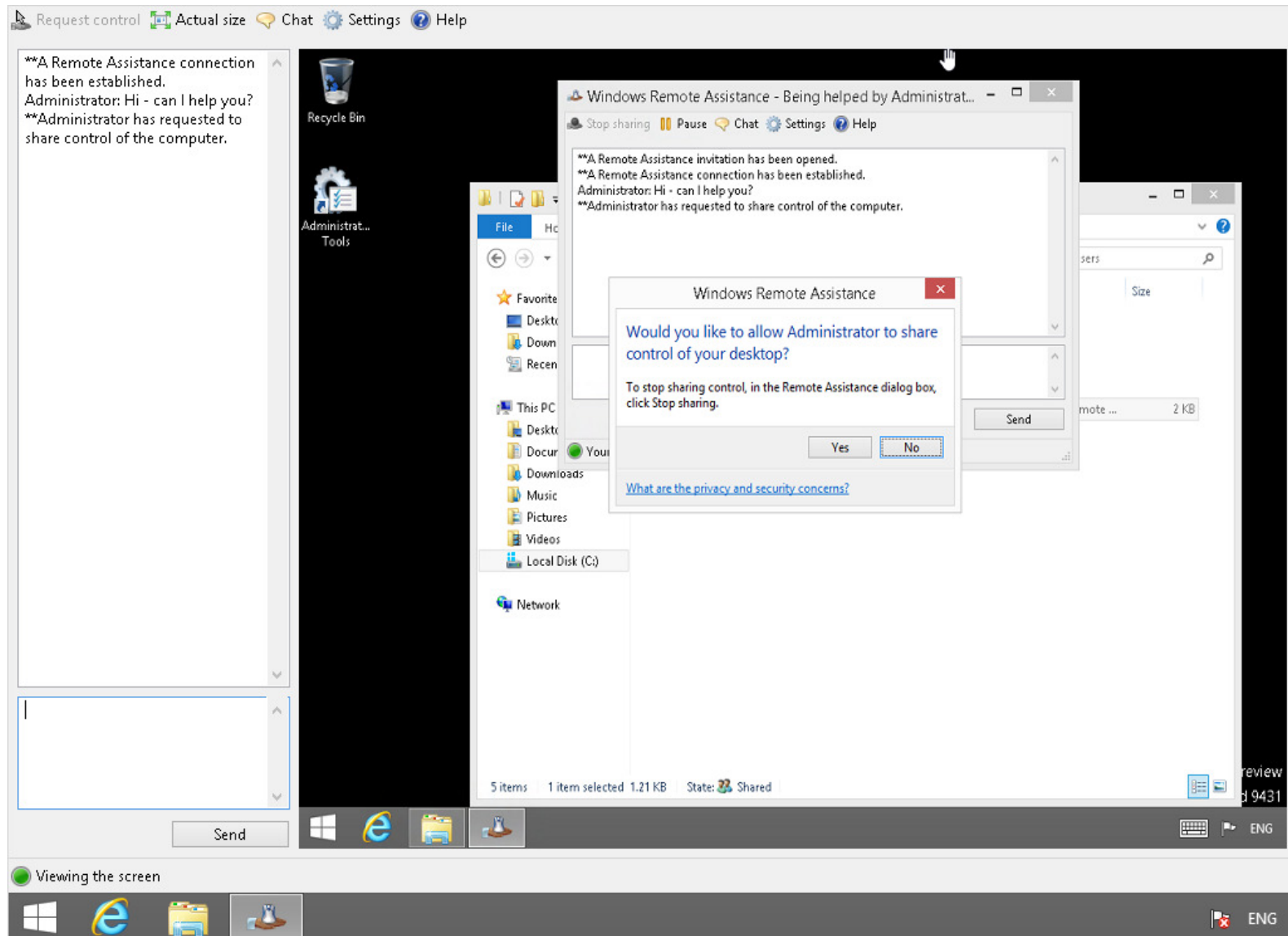
- Using Remote Assistance to Assist Your Users
- Remote Assistance in Windows 8.1
- Configuring Remote Assistance by Using GPOs

Using Remote Assistance to Assist Your Users

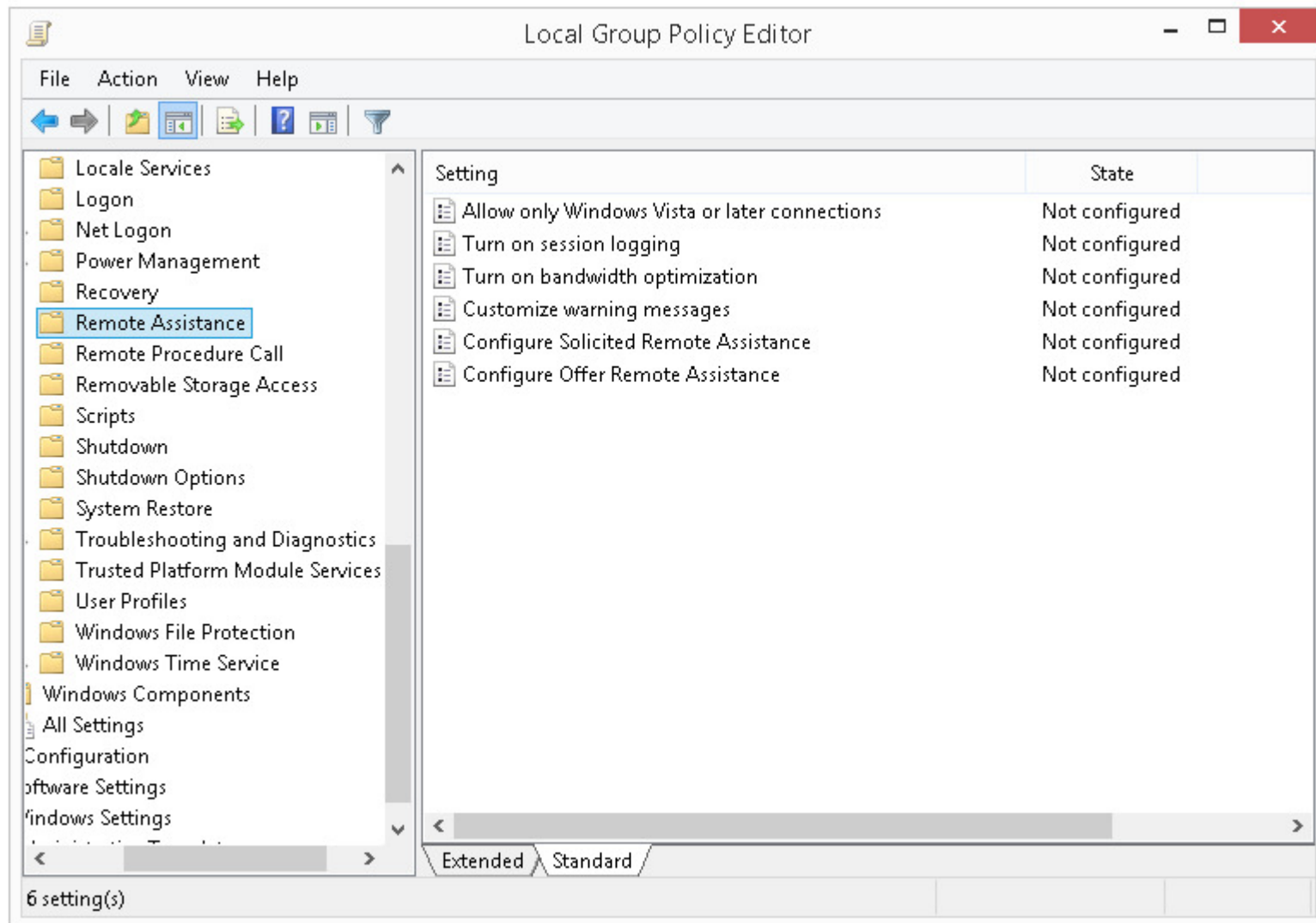
- View Remote Desktop
- Chat session
- Control remotely



Remote Assistance in Windows 8.1



Configuring Remote Assistance by Using GPOs



Lesson 3: Remoting with Windows PowerShell

- Overview of Windows PowerShell Remoting
- Remoting Requirements
- Processing Remote Commands
- Managing Windows PowerShell Remote Sessions
- Running Remote Commands

Overview of Windows PowerShell Remoting

- Remoting features of Windows PowerShell are built on Windows Remote Management
- Run an individual command, or create a persistent connection or session to run a series of commands
- Remote administration is known also as remoting
- Three types of remoting:
 - One-to-Many (Fan-Out)
 - One-to-One
 - Many-to-One (Fan-In)

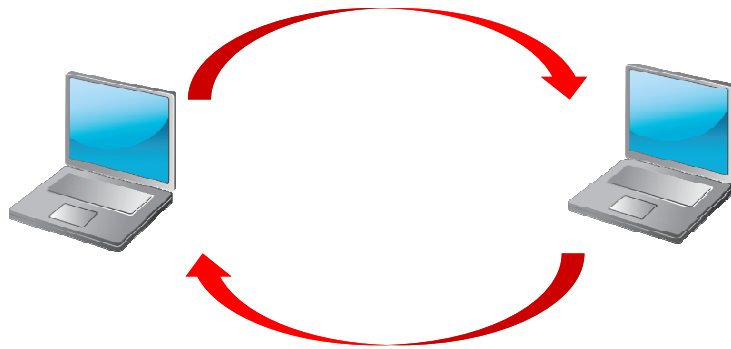
Remoting Requirements

To enable remoting, use the following procedure:

1. Verify the status of the Windows Remote Management service:
Winrm quickconfig
2. Enable remoting:
Enable-PSremoting -force

Processing Remote Commands

1. Local computer sends the Windows PowerShell command to the remote computer by using the Windows Remote Management protocol



2. Command runs in Windows PowerShell on the remote computer

3. Command results are sent back by using the Windows Remote Management protocol and appear in Windows PowerShell on the local computer

- All of the local input to a remote command is collected before any of it is sent to the remote computer
- The output is returned to the local computer as it is generated

Managing Windows PowerShell Remote Sessions

Two types of Windows PowerShell remote sessions:

Create a temporary session:

- You can start an temporary session by using the **Invoke-Command** cmdlet with the **ComputerName** parameter
- A temporary connection is created for the command and closes the connection when the command completes

Create a persistent session:

- Open a new Windows PowerShell session on the remote computer, then connect to the computer and enter the session:
 - The **New-PSSession** cmdlet creates the PSSession
 - The **Invoke-Command** cmdlet enables cmdlets to be run within the Windows PowerShell session
- You can run as many commands as desired during the session
- You must manually close the Windows PowerShell session by using the **Exit-PSSession** cmdlet

Running Remote Commands

- To run a remote command on a single computer:
 - Create a session object for a single computer using **New-PSSession** and specifying a single computer using the *ComputerName* parameter.
 - Use the *ComputerName* parameter to specify a single computer for **Invoke-Command**.
- To run a remote command on multiple computers:
 - Create a session object for multiple computers using **New-PSSession** and specifying a multiple computers using the *ComputerName* parameter.
 - Use the *ComputerName* parameter to specify multiple computers for **Invoke-Command**.
- To run a local script on remote computers:
 - Use the *FilePath* parameter of the **Invoke-Command** cmdlet.



Running Remote Commands

- `Invoke-Command -ComputerName LON-CL1 -ScriptBlock {Get-EventLog -log system}`
- `$s = New-PSWorkflowSession -ComputerName LON-CL1`
- `Enter-PSSession $s`
- `Invoke-Command -Session $s -ScriptBlock {$c = Get-command}`
- `Invoke-Command -Session $s -ScriptBlock {$c.count}`



Lab: Troubleshooting Remote Computers

- Exercise 1: Using Remote Desktop
- Exercise 2: Using Remote Assistance
- Exercise 3: Using Windows PowerShell Remoting

Logon Information

Virtual machines: 20688D-LON-DC1
 20688D-LON-CL1
 20688D-LON-CL3

User name: **Adatum\Administrator**

Password: **Pa\$\$w0rd**

Estimated Time: 45 minutes

Lab Scenario

The IT manager has called a meeting with the help desk staff. The manager explains that, wherever possible, staff should be using remote management techniques to help resolve users' computer problems. This will help resolve problems more quickly, and will help to reduce support costs.

Lab Review

- In the lab, you enabled Remote Desktop through the firewall by editing the local firewall settings. Is there an alternative way in which you can make this change?
- Can you foresee using Windows PowerShell remoting in your organization?

Module Review and Takeaways

- Review Questions