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Part II: Maintaining a Microsoft® Windows® Server 2003 Environment

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Module 1: Preparing to Administer a Server

Contents

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Overview

Introduction

A major responsibility of a systems administrator is to administer the servers in an organization. Because most systems administrators are not located in the same room as the servers they manage, it is important to understand how to manage servers remotely.

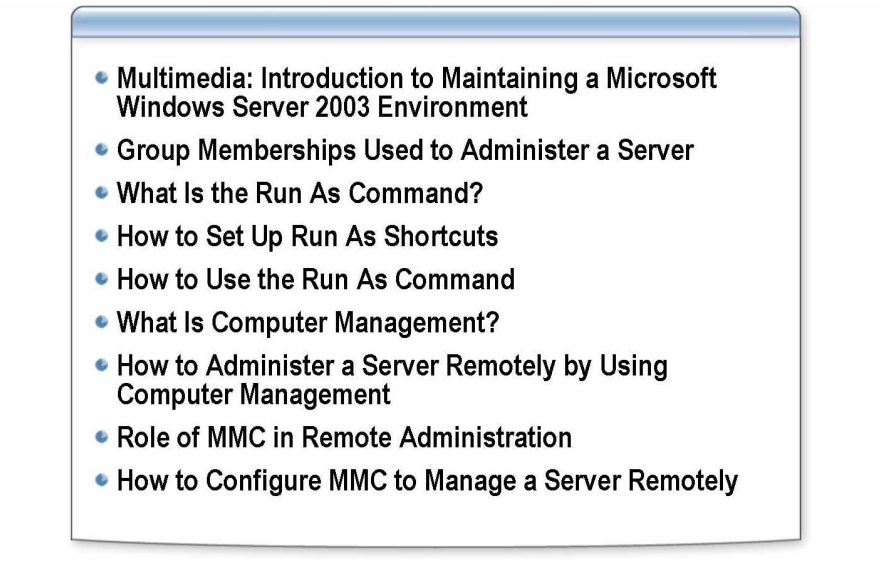
This module describes how to use Microsoft® Windows® Server 2003 to administer servers remotely, what tools to use, and what permissions are required to administer a server. It also discusses how to administer remote connections and why that is an important aspect of system administration.

Objectives

After completing this module, you will be able to:

- Explain the tasks, tools, and rights that are required to administer a server.
- Configure Remote Desktop for Administration and client preferences.
- Manage remote desktop connections.

Lesson: Administering a Server



Introduction

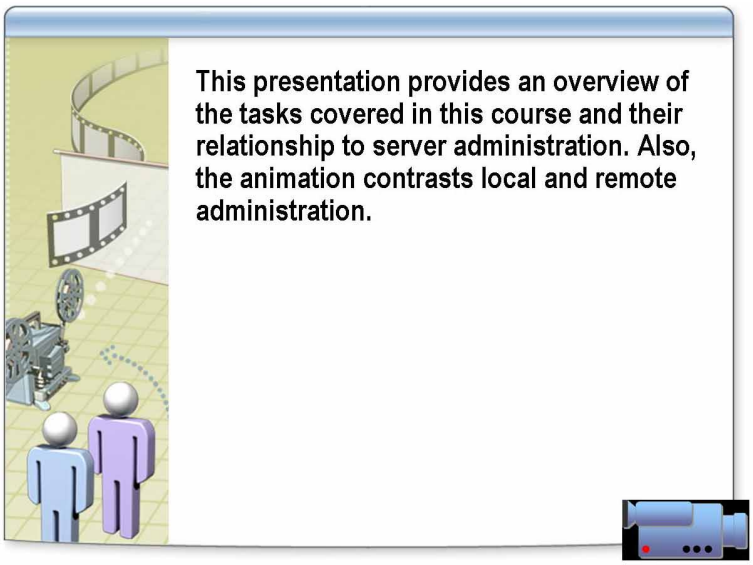
This lesson introduces the tasks, tools, and rights that are required to administer a server. This information is the foundation that you need to perform your job as a systems administrator. This lesson describes the proper use and function of the tools that you use to administer a server and explains the concepts of remote and local server administration.

Lesson objectives

After completing this lesson, you will be able to:

- Explain the tasks that are involved in server administration.
- Explain the group memberships that are used to administer a server.
- Explain the purpose and function of the **Run as** command.
- Configure **Run as** desktop shortcuts.
- Configure a server remotely by using the **Run as** command.
- Explain the role of the Computer Management tool in remote administration.
- Administer a server remotely by using the Computer Management tool.
- Explain the role of Microsoft Management Console (MMC) in remote administration.
- Configure MMC to manage a server remotely.

Multimedia: Introduction to Maintaining a Microsoft Windows Server 2003 Environment

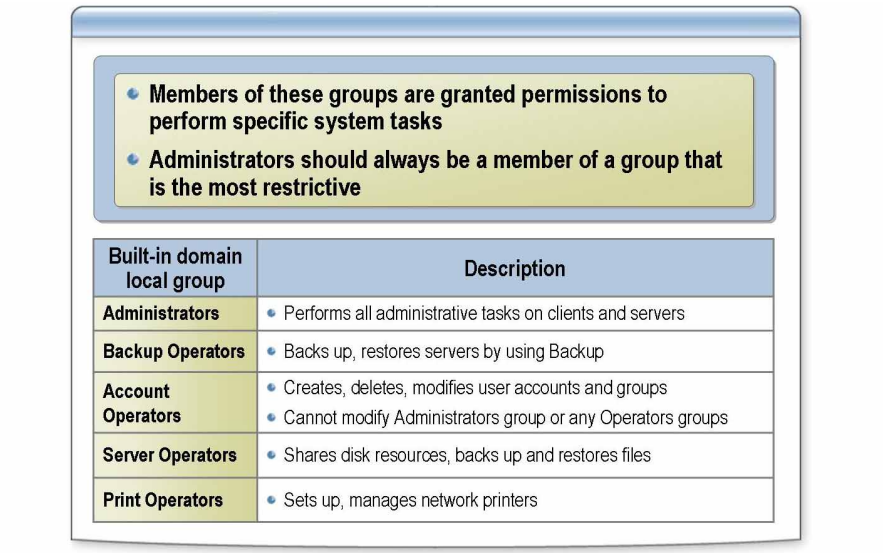


File location

To view the *Introduction to Maintaining a Microsoft Windows Server 2003 Environment* presentation, open the Web page on the Student Materials compact disc, click **Multimedia**, and then click the title of the presentation.

Do not start this presentation unless the instructor tells you to.

Group Memberships Used to Administer a Server



Introduction

To administer a server, you must have appropriate permissions to do the job. It is important to be familiar with the permissions that are assigned to domain local groups that allow their members to perform specific functions, because you can use these groups to perform common administrative tasks.

Built-in domain local groups

When a computer becomes a domain controller, built-in groups are created in the Active Directory® directory service. By default, these groups have predetermined permissions that determine the system tasks that members of a built-in or predefined group can perform. These groups cannot be deleted.

The following list describes the built-in domain local groups and their pre-determined level of permissions.

- *Administrators*. Members of the Administrators group can perform all functions that the operating system supports. Administrators can assign themselves any user rights that they do not have by default. Administrator local group membership should be restricted to only users who require full system access. Log on as an administrator only when necessary.

  Also be very cautious about adding other users to the Administrators group. For example, if a help desk technician is responsible for the printers in your organization, add the technician to the Print Operators group instead of the Administrators group.
- *Backup Operators*. Members of the Backup Operators group can back up and restore files by using the Backup tool.
- *Account Operators*. Members of the Account Operators group can manage user accounts and groups. The exception is that only a member of the Administrators group can modify an Administrators group or any operator group.

- *Server Operators.* Members of the Server Operators group can share disk resources, log on to a server interactively, create and delete network shares, start and stop services, format the hard disk of the server, and shut down the computer. They can also back up and restore files by using the Backup tool.
- *Print Operators.* Member of the Print Operators group can set up local and network printers to ensure that users can easily connect to and use printer resources.

Domain local groups can protect resources

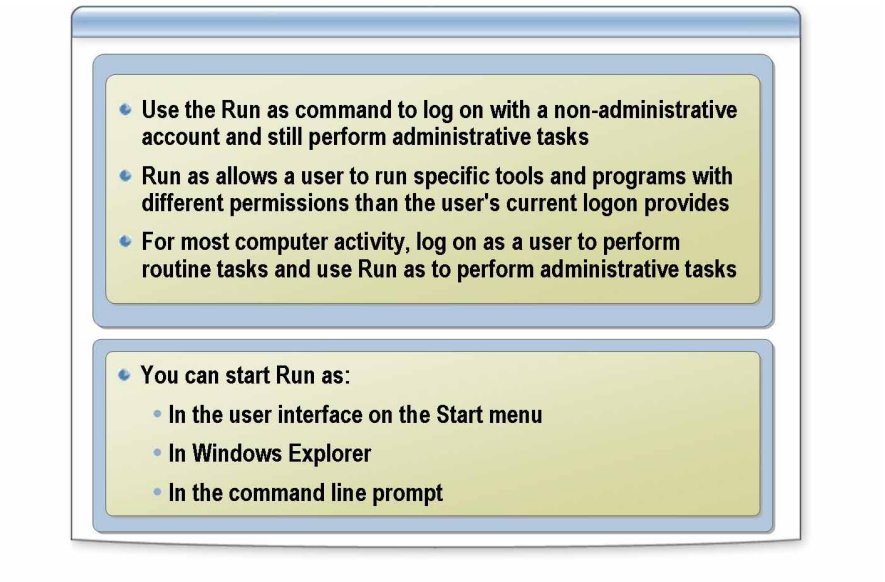
Using a variety of domain local groups and their associated permission levels can protect resources from security breaches. A systems administrator should always be a member of a group that is the most restricted but that provides the appropriate rights and the permissions that are required to accomplish the task. For example, a systems administrator who manages only printers and backup server data should be a member of the printer operators group and should have authority to back up server data.

Domain local group permissions

Members of domain local groups are assigned permissions to perform system tasks, such as backing up files, restoring files, and changing the system time. You can use these groups for administering resources, such as file systems or printers that are located on any computer in the domain where common access permissions are required.

When you run your computer as a member of the Administrators group, the system is vulnerable to Trojan horse attacks and other security risks. The simple act of visiting an Internet site or opening an e-mail attachment can damage the system, because an unfamiliar Internet site or e-mail attachment may contain Trojan horse code that can be downloaded to the system and executed.

What Is the Run As Command?



Introduction

By using the **Run as** command, also known as a secondary logon, administrators can log on with a non-administrative account and, without logging off, perform tasks by running trusted programs to perform administrative tasks.

Requires two user accounts

To use **Run as** to perform administrative tasks, systems administrators require two user accounts: a regular account with basic privileges and an administrative account. Each administrator can have a different administrative account, or all administrators can share one administrative account.

Use the **Run as** command for most computer activity. When you run your computer while you are logged on as a member of the Administrators group, security is an issue. Also, some items, such as Windows Explorer, the Printers folder, and desktop items, are launched indirectly by Windows. These items cannot be started with **Run as**.

For tasks that cannot be performed by using the **Run as** command, such as upgrading the operating system or configuring system parameters, log off your user account and then log on as an administrator.

Use Run as to open MMC custom consoles

To administer local or remote computers, you can use the **Run as** command to open custom consoles you have created in the Microsoft Management Console (MMC). Using the **Run as** command offers you access to the services and administrative tools that are included in the console, while providing you with the appropriate permissions on the system for the components that are administered by the console.

Any user can use Run as

Although the **Run as** command is primarily intended for systems administrators, any user with multiple accounts can use **Run as** to start programs under different account contexts without logging off.

Three ways to use Run as

There are three ways to use the **Run as** command:

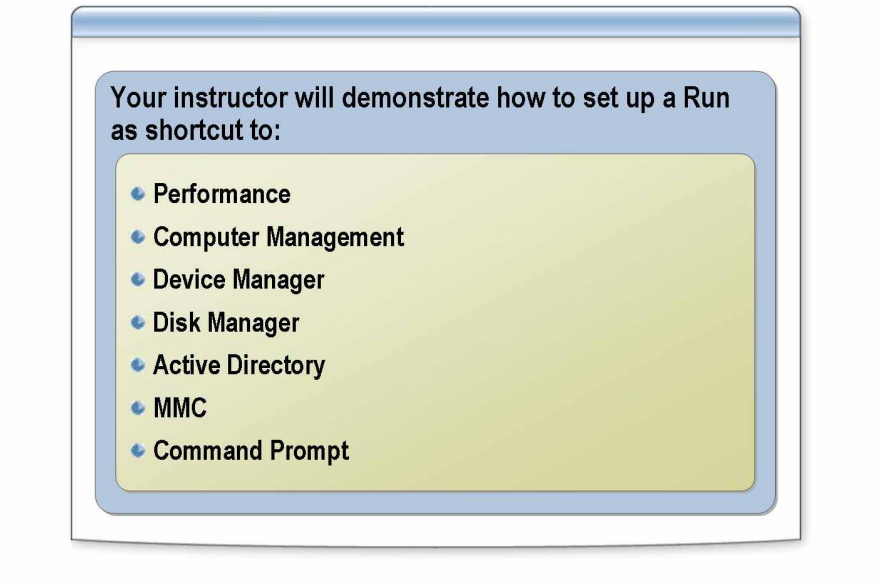
- You can right-click a program located on the **Start** menu, and then click **Run as**.
- You can right-click a program in Windows Explorer, and then click **Run as**.
- You can also use the **Run as** command from a command prompt. This method is typically used for scripting administrative tasks or to start a command shell in the local administrative context. To run **Run as** from a command prompt, type **runas /user:***domain_name\user_name program_name*

For example, to run the Computer Management tool from the command line as an administrator, open a command prompt and then type **runas /user:nwtraders\admininistrator "mmc %windir%\system32 \compmgmt.msc"**

Set up Run as shortcuts

You can also set up **Run as** shortcuts to the services and administrative tools that you use most often, including Performance, Computer Management, Device Manager, and Disk Manager.

How to Set Up Run As Shortcuts



Introduction

To save time, you can configure **Run as** desktop shortcuts to the administrative tools you use most often.

Procedure

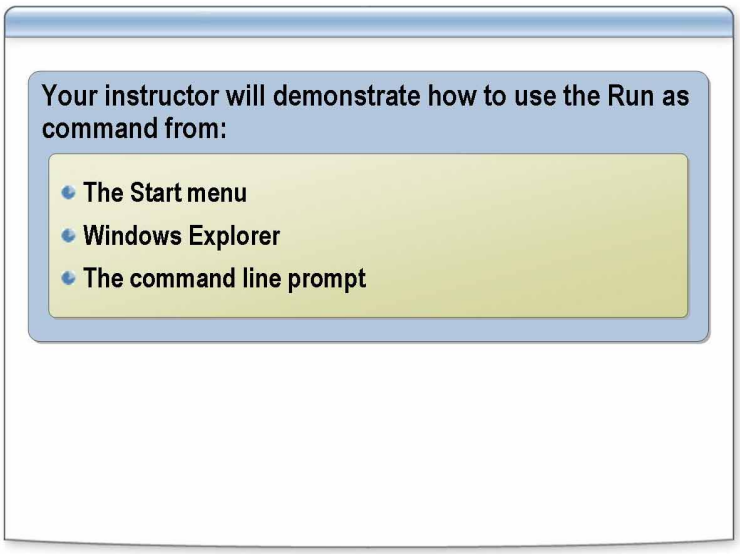
To set up a **Run as** shortcut to Performance:

1. Right-click the desktop, point to **New**, and then click **Shortcut**.
2. On the **Create Shortcut** page, in the **Type the location of the item** box, type **runas /user:Nwtraders\administrator "mmc %windir%\system32\perfmon.msc"** and then click **Next**.
3. On the **Select a Title for the program** page, in the **Type a name for this shortcut** box, type **Performance** and then click **Finish**.

See the following table for additional commands.

Tool	Command line
Computer Management	**runas /user:nwtraders\administrator "mmc %windir%\system32\ compmgmt.msc"**
Device Manager	**runas /user:nwtraders\administrator "mmc %windir%\system32\ devmgmt.msc"**
Disk Manager	**runas /user:nwtraders\administrator "mmc %windir%\system32\ diskmgmt.msc"**
Active Directory	**runas /user:nwtraders\administrator “mmc %windir%\system32\dsa.msc”**
MMC	**runas /user:nwtraders\administrator mmc**
Command Prompt	**runas /user:nwtraders\administrator cmd**

How to Use the Run As Command



Introduction

Use the **Run as** command to launch an MMC console in the context of an account that has the appropriate rights to perform the task. For example, if you are logged on a server as a user and you want to install a new software package, you can log off, log on as an administrator, open Control Panel, use **Add/Remove Programs** to install the new software, log off as administrator, and then log on with your user account. With **Run as**, however, you can open Control Panel, press the SHIFT key, right-click **Add/Remove Programs,** and then use **Run as** to start Add/Remove Programs as an administrator.

Procedure for using the Run as command from the Start menu

To use the **Run as** command from the **Start** menu:

1. On the **Start** menu, right-click the program executable file (or shortcut).
2. Click **Run as**.
3. Click **The following user**.
4. In the **User name** and **Password** boxes, type the account name and password.
5. Click **OK**.

Procedure for using the Run as command from Windows Explorer

To use the **Run as** command from Windows Explorer:

1. Open Windows Explorer, and then right-click the program executable file.
2. Click **Run as**.
3. Click **The following user**.
4. In the **User name** and **Password** boxes, type the account name and password.
5. Click **OK**.

Procedure for using the Run as command from the command line prompt

To use the **Run as** command using the command line prompt:

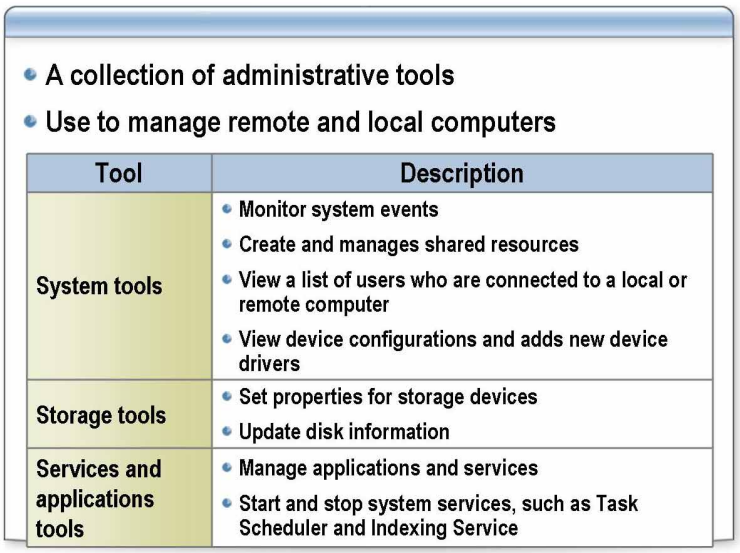
1. On the **Start** menu, click **Run**, type **runas /user:** *domain_name***administrator cmd** (where *domain_name* is the name of your domain), and then click **OK**.
2. A console window appears, prompting for a password for the *domain_name*\administrator account. Type the password for the administrator account, and then press ENTER.
3. A new console appears running in the administrative context. The title of the console displays "running as *domain_ name*\administrator."

Procedure for using Run as shortcuts

To use a **Run as** desktop shortcut to open an administrative tool:

1. On the desktop, double-click the **Performance**, **Computer Manager**, **Device Manager**, or **Disk Manager** icon.
2. Type **P@ssw0rd**

What Is Computer Management?



Definition

Computer Management is a collection of administrative tools that you can use to administer a local or remote computer.

Use Computer Management to manage computers

You can use Computer Management to:

- Monitor system events, such as logon times and application errors.
- Create and manage shared resources.
- View the list of users who are connected to a local or remote computer.
- Start and stop system services, such as Task Scheduler and Indexing Service.
- Set properties for storage devices.
- View device configurations and add new device drivers.
- Manage applications and services.

Computer Management console

The Computer Management console organizes the administrative tools into the following three categories:

- System Tools
- Storage
- Services and Applications

The following sections describe the tools in these categories and explain how to use them to perform administrative tasks.

System Tools

You use the tools in System Tools to manage system events and performance on the computer you are managing.

- *Event Viewer*. Use Event Viewer to manage and view events that are recorded in the application, security, and system logs. You can monitor the logs to track security events and to identify possible software, hardware, and system problems.
- *Shared Folders*. Use Shared Folders to view connections and resources that are in use on the computer. You can create, view, and manage shared resources; view open files and sessions; and close files and disconnect sessions.
- *Local Users and Groups*. Use Local Users and Groups to create and manage your local user accounts and groups.
- *Performance Logs and Alerts*. Use Performance Logs and Alerts to monitor and collect data about your computer's performance.
- *Device Manager*. Use Device Manager to view the hardware devices that are installed in your computer, update device drivers, modify hardware settings, and troubleshoot device conflicts.

Storage

You use the tools in Storage to manage the properties of storage devices.

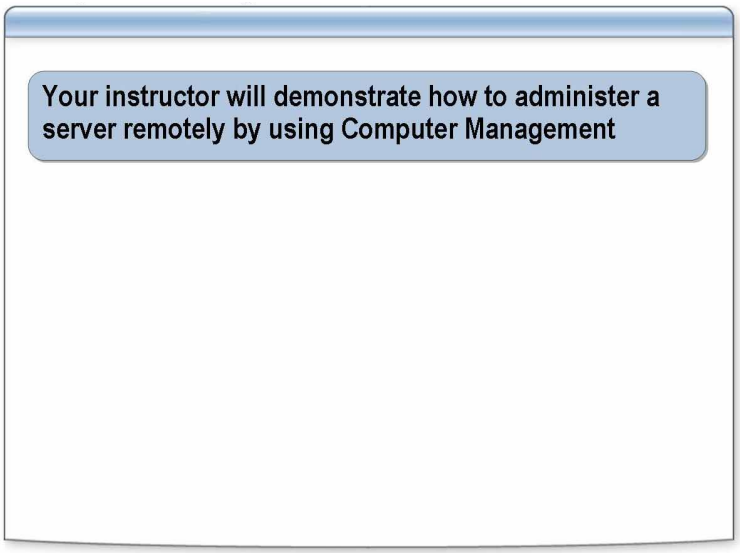
- *Removable Storage.* Use Removable Storage to track your removable storage media and to manage the libraries or data-storage systems that contain them.
- *Disk Defragmenter*. Use Disk Defragmenter to analyze and defragment volumes on your hard disks.
- *Disk Management.* Use Disk Management to perform disk-related tasks, such as converting disks or creating and formatting volumes. Disk Management helps you manage your hard disks and the partitions or volumes they contain.

Services and Applications

The tools in Services and Applications help you manage services and applications on the specified computer.

- *Services*. Use Services to manage services on local and remote computers. You can start, stop, pause, resume, or disable a service. For example, you can use Services to stop a service on a remote computer.
- *WMI Control*. Use WMI Control to configure and manage the Windows Management Service.
- *Indexing Service*. Use Indexing Service to manage the Indexing service and to create and configure additional catalogs to store index information.

How to Administer a Server Remotely by Using Computer Management



Introduction

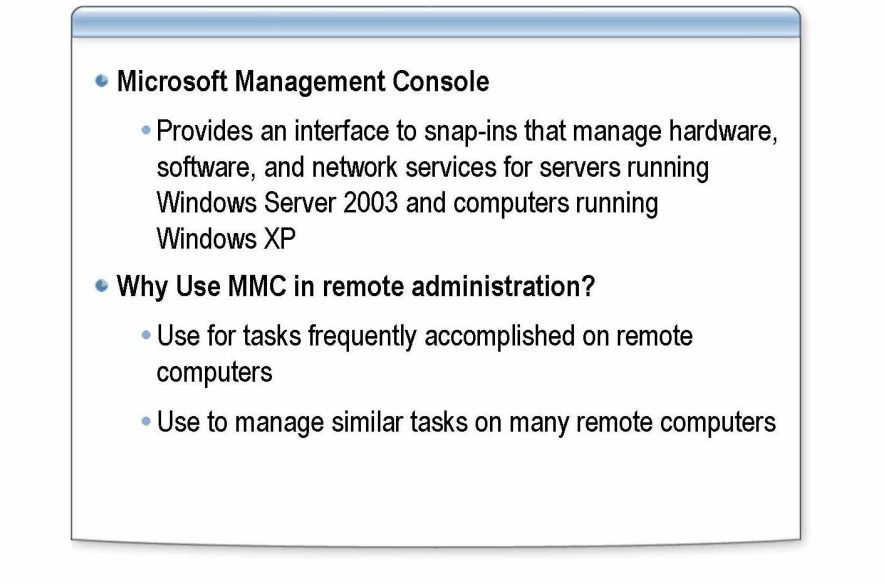
You can use Computer Management tools when you are off-site from the server that you need to manage. The remote management tools that are provided with Windows Server 2003 help you identify and solve problems that users encounter without sending support personnel to the users' work sites. For example, if you are working in your office and you must modify a disk partition on a server that is located in another building, you can use Computer Management to complete the task.

Procedure

To use Computer Management to administer a computer remotely:

1. Log on as an administrator with a password of **P@ssw0rd**
2. On the **Start** menu, right-click **My Computer**, and then click **Manage**.
3. Right-click **Computer Management (local)**, and then click **Connect to another computer**.
4. Click **Another Computer**, type the name of the computer that you want to manage remotely, or click **Browse** to locate the computer, and then click **OK**.
5. In Computer Management, in the console tree, expand either **System Tools**, or **Storage**, or **Services and Applications**.
6. Click the item, and then select the tools that you want to use.

Role of MMC in Remote Administration



Introduction

Microsoft Management Console (MMC) provides an interface that you can use to create, save, and open administrative tools, called snap-ins, that manage the hardware, software, and network components of Windows Server 2003. When you open an administrative tool in MMC, you can specify whether to apply the tool on the local computer or on a remote computer.

Use MMC for remote and local administration

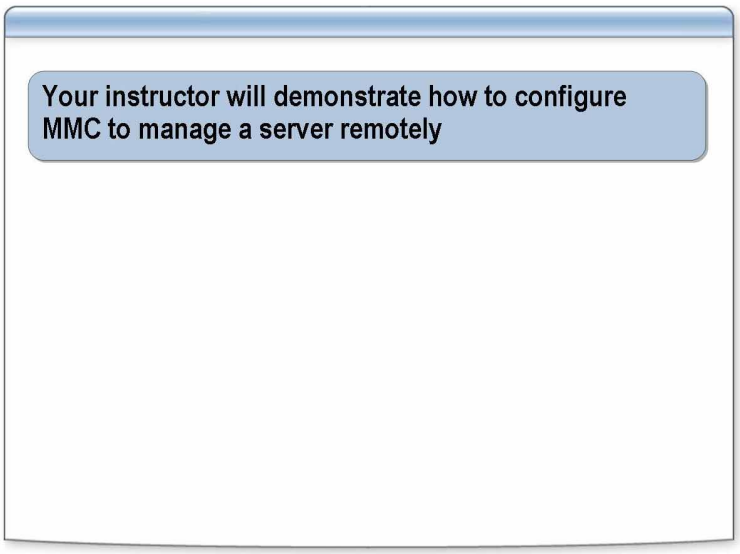
To perform similar tasks on many servers, use MMC snap-ins. Most of the administrative tools that are provided with Windows Server 2003 family operating systems are MMC snap-ins that you can use to administer remote servers as well as your local computer.

Advantages of MMC snap-ins

The advantages of using MMC snap-ins are that you can:

- Create a console that contains the tools you use for the tasks you perform most often. For example, you use Computer Management to administer a remote server.
- Set the focus for a tool to any of the servers that you administer, and switch between servers and tools within a single MMC console. For example, you can use the Computer Management snap-in to view the performance of multiple remote servers.

How to Configure MMC to Manage a Server Remotely



Introduction

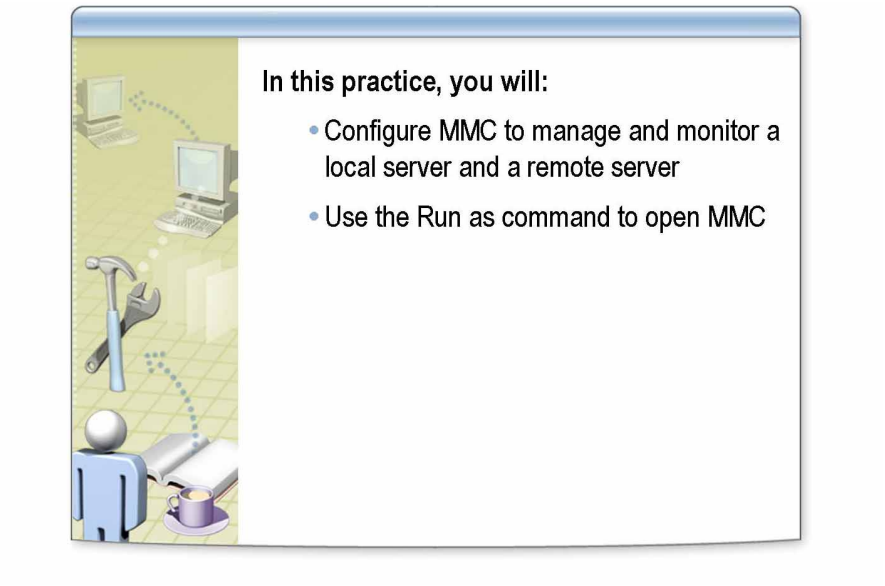
Systems administrators are often required to work off-site. As a systems administrator, you may be located at one site but must perform maintenance on a server at a second site. In this case, you can use an MMC console to remotely manage a server. For example, you can start or stop services on a remote server, review the event log, manage shares, or manage disks.

Procedure

To configure MMC to manage a server remotely:

1. Open Microsoft Management Console.
2. On the **File** menu, click **Add/Remove Snap-in**, and then click **Add**.
3. In the snap-in list, click **Computer Management**, and then click **Add**.
4. When prompted, select the local computer or remote computer that you want to manage by using this snap-in, and then click **Finish**.
5. Click **Close** and then click **OK**.

Practice: Configuring MMC to Manage Files on a Remote Server



Objective

In this practice, you will:

- Configure MMC to manage and monitor a local server and a remote server.
- Use the **Run as** command to open MMC.

Scenario

You are the systems administrator for an organizational unit on a network. You are responsible for managing and monitoring the shared folders on your server and on a remote server. You will create an MMC snap-in that allows you to manage and monitor shared folders on both servers simultaneously. You will also create a shared folder on the remote server by using the same tool. You will use this tool frequently, so you will save it on your desktop. Because you do not have file privileges on the remote server, you will use the **Run as** command to use the tool.

Practice: Creating a custom MMC console

► **Create a custom MMC console to manage and monitor shared folders on multiple servers**

1. Log on to the domain with your *Computer***User** account (where *Computer* is the name of your computer) and with a password of **P@ssw0rd**.
2. On the **Start** menu, click **Run**.
3. In the **Run** dialog box, type **mmc** and then click **OK**.
4. On the **File** menu, click **Add/Remove snap-in**, click **Add**, and then add a Computer Management snap-in for your computer.
5. On the **File** menu, click **Add/Remove snap-in**, click **Add**, and then add a Computer Management snap-in for the Glasgow computer.
6. In the Computer Management (Local) tree, expand **System Tools**, expand **Shared Folders**, and then click **Shares**.
7. Determine whether you can monitor shared folders on your computer.

8. In the Computer Management (Glasgow) tree, expand **System Tools**, expand **Shared Folders**, and then click **Shares**.
9. Determine whether you can monitor shared folders on the Glasgow computer.
10. Save the console on the desktop as **MMC1**.
11. Close MMC1.
12. Using **Run as**, open MMC1 as the domain administrator.
13. Verify that you can monitor shares on your computer and the Glasgow computer.

Practice: Creating a shared folder

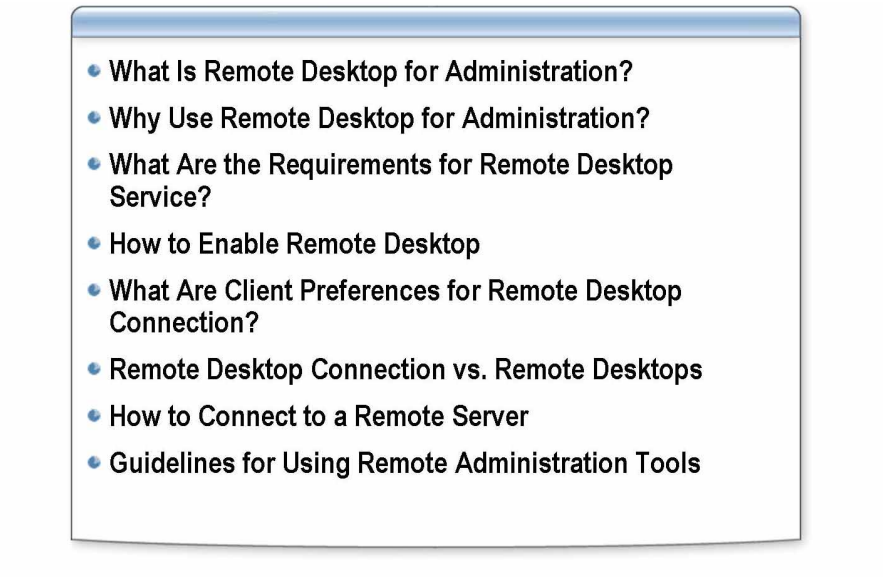
► **Create a shared folder on a remote computer using MMC1**

1. In the MMC1 window, open the **Computer Management (Glasgow)** tree, expand **System Tools**, expand **Shared Folders**, and then click **Shares**.
2. Right-click **Shares**, and then click **New Share**.
3. Create a shared folder on \\Glasgow with the following parameters:

Parameter	Entries
Share name	*ComputerName* (where *ComputerName* is the name of your computer, such as Vancouver, Denver, and so on)
Location	**C:\MOC\Shares***ComputerName*
Permissions	Administrator: **Full** Users: **Read-only**

4. Close the MMC1 window and do not save console settings.
5. Verify that the administrators have full control and that users have read-only permissions.
6. Close all windows and log off.

Lesson: Configuring Remote Desktop to Administer a Server



Introduction

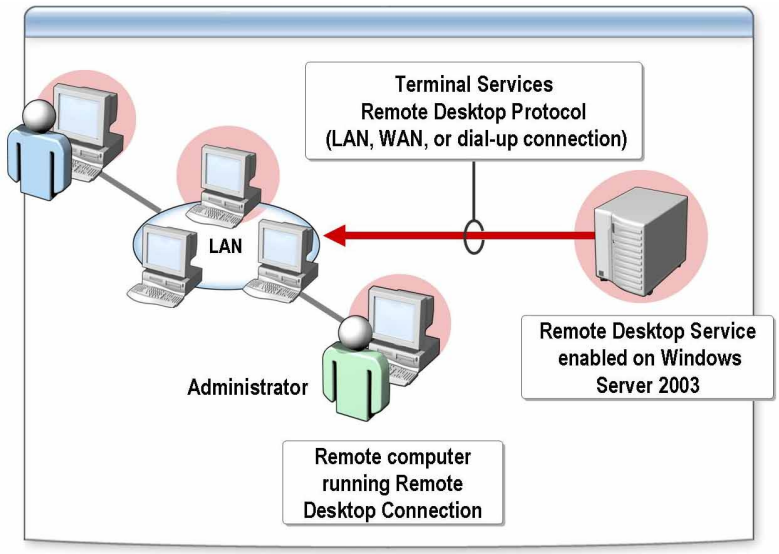
This lesson explains how to configure Remote Desktop for Administration and how to configure the client to allow access to the servers by using Remote Desktop for Administration. This lesson also describes how to establish the connection between the administrator's computer and the server.

Lesson objectives

After completing this lesson, you will be able to:

- Describe Remote Desktop for Administration and explain how it works.
- Explain the uses of Remote Desktop for Administration.
- Describe the requirements for Remote Desktop Service.
- Enable Remote Desktop.
- Explain client preferences for Remote Desktop.
- Describe the differences between Remote Desktops and Remote Desktop Connections.
- Connect to a remote server.
- Explain the guidelines for using Remote Administration tools.

What Is Remote Desktop for Administration?



Introduction

By using Remote Desktop for Administration, you can manage one or more remote computers from a single location. In a large organization, you can use remote administration to centrally manage many computers that are located in other buildings or even in other cities. In a small organization, you can use remote administration to manage a single server that is located in an adjacent office.

Remote access to servers

Remote Desktop for Administration provides access to a server from a computer at another location by using Remote Desktop Protocol (RDP). RDP transmits the user interface to the client session, and it also transmits the keyboard and mouse clicks from the client to the server.

You can create up to two simultaneous remote connections. Each session that you log on to is independent of other client sessions and the server console session. When you use Remote Desktop for Administration to log on to the remote server, it is as if you are logged on to the server locally.

Remote Desktop Connection and Remote Desktops snap-in

Remote Desktop for Administration provides two tools that you can use to administer a remote server: Remote Desktop Connection and the Remote Desktops snap-in.

Each instance of the Remote Desktop Connection tool creates its own window and allows you to administer one remote server per window. It always starts a new session on the server.

The Remote Desktops snap-in is useful for administrators who remotely administer multiple servers or for administrators who must connect to the console session remotely. The Remote Desktops snap-in displays a split window with a console tree on the left and remote connection information in the details pane on the right.

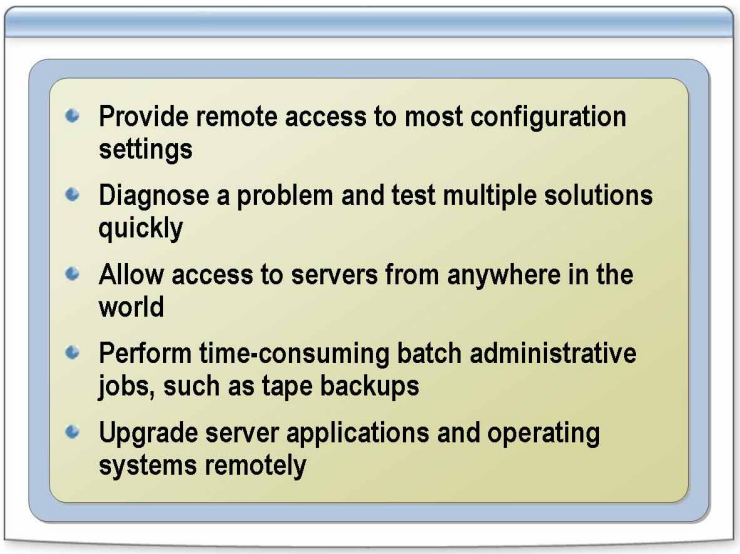
The maximum number of remote desktop connections to a server is two. After you reach this limit, Remote Desktops allows no other remote desktop connections to the server.

Note To allow more than two Remote Desktop connections, you must install Terminal Services. For more information about Terminal Services, see the white paper, *Technical Overview of Terminal Services*, under **Additional Reading** on the Student Materials compact disc.

Remote Desktop Service

Remote Desktop Service provides server access. It is installed with Windows Server 2003 and must be enabled before you can configure Remote Desktop Administration.

Why Use Remote Desktop for Administration?



Introduction

Remote Desktop for Administration is a convenient and efficient service that can greatly reduce the overhead that is associated with remote administration. For example, Remote Desktop for Administration allows multiple systems administrators to manage remote servers.

Remote sessions

Remote Desktop for Administration allows you either to start a new remote session on a server or to remotely take over the console session on a server. However, there can be only one console session running on a server at one time. If you log on to the console remotely while another administrator is logged on to the console session, the first administrator is locked out.

Note System messages that are sent to the console are displayed at the console session and not at the other remote sessions.

Run earlier versions of Windows

By using Remote Desktop Connection, systems administrators can also fully manage computers that are running Windows Server 2003 family operating systems from computers that are running earlier versions of Windows.

Access to configuration settings

Remote Desktop for Administration is useful because it provides remote access to most configuration settings, including Control Panel, which usually cannot be configured remotely.

By using a Remote Desktop session, you can access MMC, Active Directory, Microsoft Systems Management Server, network configuration tools, and most other administrative tools.

Multiple uses

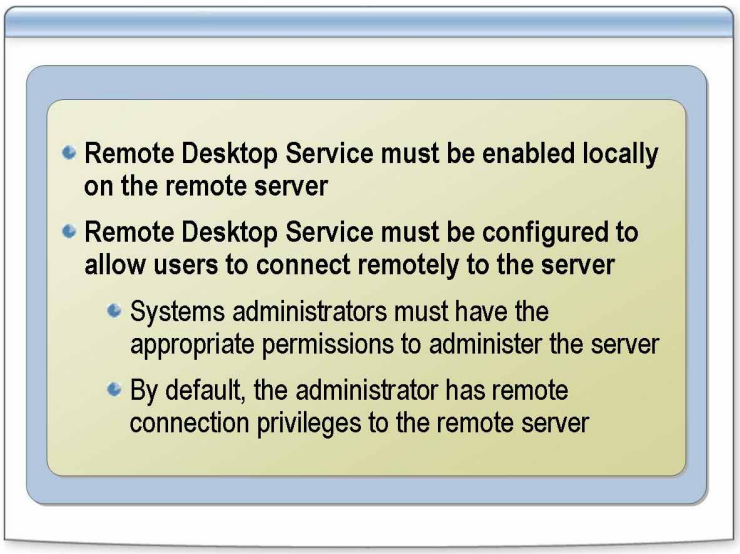
Using Remote Desktop for Administration can help you diagnose a problem and test multiple solutions quickly.

You can access the servers from anywhere in the world by using a wide area network (WAN), a virtual private network (VPN), or a dial-up connection. When you run a time-consuming batch administrative job, such as a tape backup, you can start the job, disconnect from the corporate network, and later reconnect to check progress.

You can use Remote Desktop for Administration to upgrade server applications remotely and to perform tasks that are not usually possible unless you are working at the console.

Administrative tasks are quicker and more intuitive than using command line utilities, although it is still possible to open a command prompt.

What Are the Requirements for Remote Desktop Service?



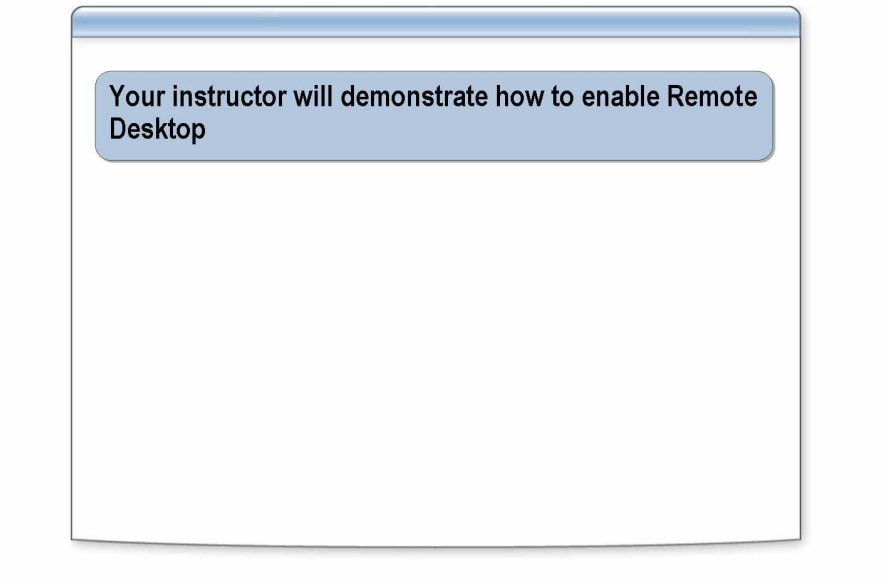
Introduction

Before you can administer a server remotely, the remote server must be enabled for remote administration.

Remote Desktop Service configuration

Remote Desktop Service must be enabled locally on the remote server by a systems administrator who is working at the console. The systems administrator must have the appropriate permissions to administer the computer. By default, an administrator has remote connection privileges to the remote server.

How to Enable Remote Desktop



Introduction

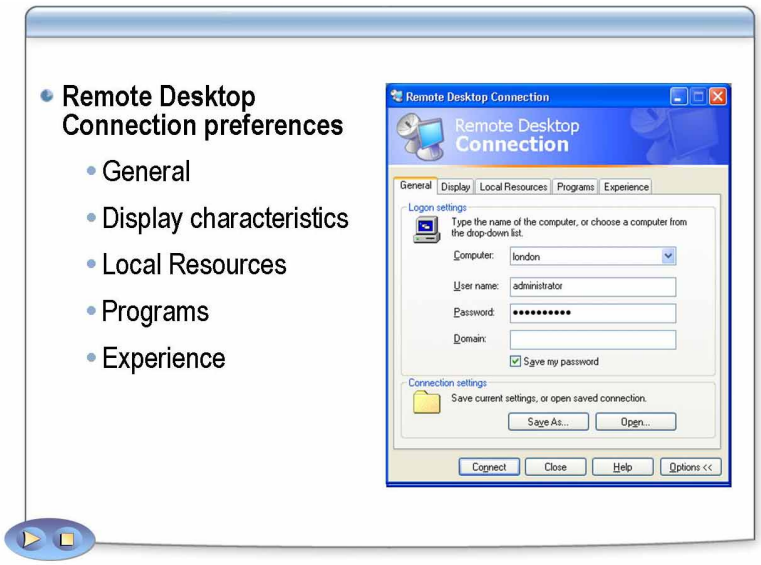
A systems administrator can use Remote Desktop to perform remote tasks such as adding software and installing service packs on a remote server.

Procedure

To configure the server connections to remotely administer a server:

1. Log on as Administrator.
2. On the **Start** menu, right-click **My Computer**.
3. Click **Properties**.
4. Click **Remote**.
5. Select the **Allow users to connect remotely to this computer** check box.

What Are Client Preferences for Remote Desktop Connection?



Introduction

Remote Desktop Connection is a client-side application that allows you to connect to a server after Remote Desktop for Administration is enabled on the server.

Client preferences configuration

To configure your remote desktop connection, you must set up client preferences. To do this, use the Remote Desktop Connection interface to configure the information about the connection and the client computer.

To complete your configuration, set the client preferences on the following tabs:

- *General*. Use the **General** tab to provide information that is required for automatic logon to the remote server. This information includes the name of the server, the user name and password, and the domain name. You can also save your password, save your connection settings, and open a saved connection.
- *Display*. Use the **Display** tab to change the screen size and color settings of the remote desktop and to hide or display the connection bar in full-screen mode.
- *Local Resources*. Use the **Local Resources** tab to choose whether to allow a remote desktop to have access to the disk drives, serial ports, printers, or smart card on your local computer. Allowing access from the remote desktop is called *resource redirection*. When you allow the remote desktop to have access to these resources, the remote desktop can use the resources for the duration of the session.

  For example, you choose to make your local disk drive available to the remote desktop. Although this access allows you to easily copy files to or from the remote desktop, it also means that the remote desktop has access to the contents of your local disk drive. If this access is not appropriate, you can clear the appropriate check box to keep your local disk drive or any other local resource from being redirected to the remote desktop.

- *Programs*. Use the **Programs** tab to specify that a program starts upon connection to the remote server.
- *Experience*. Use the **Experience** tab to improve the performance of your connection to the remote server by allowing certain characteristics of the remote Windows session, such as the Desktop background, to appear as if they are enabled on the remote computer. To improve the performance of your connection, select a faster connection speed. The default connection speed, 56 kilobits per second, offers good performance for most networks. Use the faster speed settings to enable richer graphical features, such as desktop wallpaper or menu sliding and fading.

Remote Desktop Connection vs. Remote Desktops

Service	Functions

Remote Desktop Connection	• Connects to one server (running Remote Desktop) per session
	  ◦ You can run multiple connections if you run multiple copies of Remote Desktop Connection
	  ◦ Console tree displays name of server
	• Each connection can be displayed full screen or in a window
	• Opens a remote session to a server by default

Remote Desktops	• Connects to multiple servers simultaneously
	• Each connection is displayed in the MMC console:
	  ◦ Console tree displays name of server
	  ◦ Details pane displays remote session
	• Opens the console session by default

Introduction

Windows Server 2003 comes with two clients that allow administrators to connect to the remote desktop:

- Remote Desktop Connection
- Remote Desktops snap-in

Remote Desktop Connection

Using Remote Desktop Connection, you can connect to one server. You can run multiple copies of Remote Desktop Connection to connect to multiple servers, but you must switch between Remote Desktop Connection sessions to manage each server. Each connection can be displayed full screen or in a window.

When you connect to a server using Remote Desktop Connection, you will open a remote session by default.

Remote Desktops

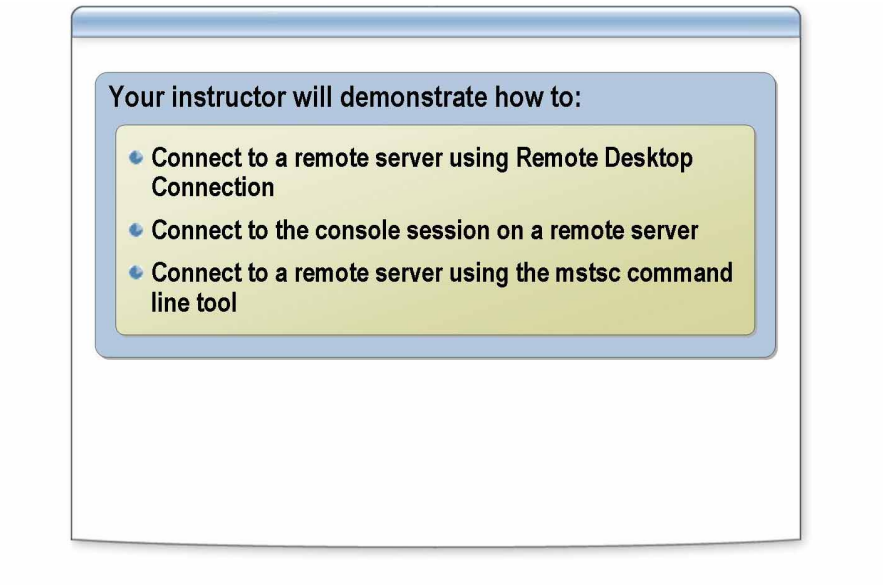
You can use the Remote Desktops snap-in to connect to multiple servers simultaneously. Each connection is displayed in an MMC console. The console tree displays the name of the server and the details pane displays the remote session.

When you connect to a server by using Remote Desktops, the console session opens by default.

Use the command line tool

You can also connect to the console session on a remote server by using the **Run** command and the **mstsc** command line tool.

How to Connect to a Remote Server



Introduction

As a systems administrator, you may often waste time traveling to remote servers to perform administrative tasks. By using the Remote Desktop Connection tool to remotely administer servers in your organization, you can spend less time commuting and have more time to do your job.

Procedure for connecting to a remote desktop

To connect to a remote server by using Remote Desktop Connection:

1. On the client computer, click **Start**.
2. Point to **All Programs**, point to **Accessories**, point to **Communications**, and then click **Remote Desktop Connection**.
3. In the **Computer** box, type a computer name or the IP address of the server that is running Windows Server 2003 with Remote Desktop Service installed.
4. When finished with the remote session, on the **Start** menu, click **Log off**.

Procedure for connecting to the console session on a remote server

As a systems administrator, you may be required to connect to the console session so that you can see the system messages that are sent to the console. You may also be required to simultaneously manage multiple servers. Use the Remote Desktops snap-in to connect to the console session of a remote server or to manage multiple servers simultaneously.

To connect to a server or servers by using the Remote Desktops snap-in:

1. On the **Start** menu, point to **Administrative Tools**, and then click **Remote Desktops**.
2. In the console tree, right-click **Remote Desktops**, and then click **Add New Connection**.
3. In the **Add New Connection** dialog box, enter the name of the server, a connection name, a user name and password, and the name of the domain.

4. If you want to connect to the console session, verify that the **Connect to console** check box is selected.
5. To manage multiple servers, repeat steps 2 and 3.
6. When finished with the remote session, on the **Start** menu, click **Log off**.

Procedure for connecting to a remote desktop using the mstsc command line tool

To connect to the console session on a remote server by using the **mstsc** command line tool.

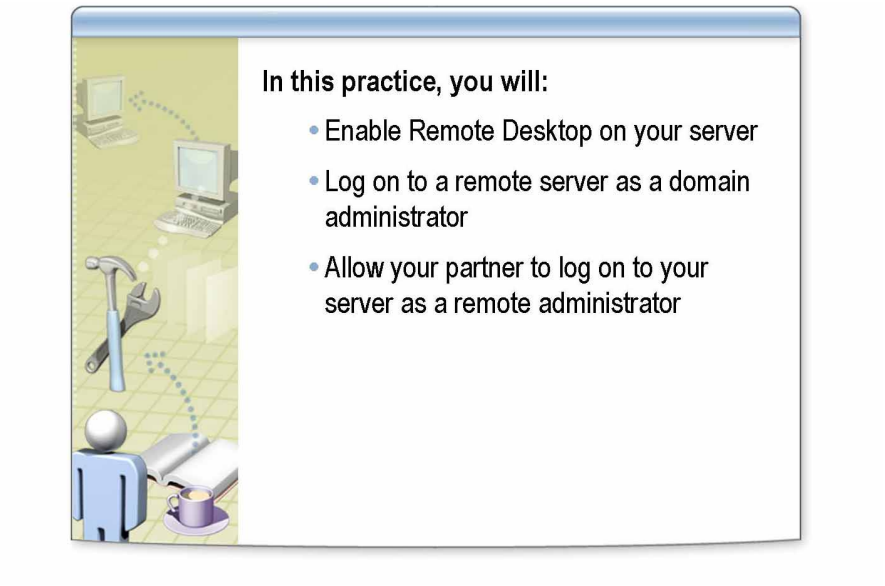
1. On the **Start** menu, click **Run**.
2. In the **Run** dialog box, type **cmd** and then click **OK**.
3. At the command prompt, type the following command and then press ENTER:

   mstsc /v:*server* **/console**

   where *server* is the name of the remote server.
4. Log on to the remote server.

For the complete syntax of the **mstsc** command, type **mstsc /?** at the command prompt.

Practice: Configuring Remote Desktop



Objective

In this practice, you will:

- Configure your server to allow your partner to gain access to it remotely.
- Connect to your partner's server by using Remote Desktop Connection.
- Allow your partner to log on to your computer as a domain administrator by using Remote Desktop Connection.

Scenario

You are the systems administrator for an organizational unit on a network. Management has asked you to configure your server so that the domain administrator can manage your server remotely.

Practice: Enabling Remote Desktop

► **Enable Remote Desktop on your server**

1. Log on to the domain with your *Computer***User** account (where *Computer* is the name of your computer) with the password of **P@ssw0rd**.
2. In Control Panel, hold down the SHIFT key, right-click **System**, and then click **Run as**.
3. In the **Run as** dialog box, in the **User name** box, type **nwtraders\administrator** and then in the **Password** box, type **P@ssw0rd** and press ENTER.
4. On the **Remote** tab, in the **Remote Desktop** box, select the **Allow users to connect remotely to this computer** check box.
5. Click **OK** to close all dialog boxes.
6. Wait until your partner has finished this procedure before continuing.

Practice: Verifying that Remote Desktop is enabled

► **Verify that Remote Desktop is enabled on your partner's computer**

1. On the **Start** menu, point to **All Programs**, point to **Accessories**, point to **Communications**, and then click **Remote Desktop Connection**.

   Alternatively, you can open a command prompt and use the **mstsc** command to connect to your partner's computer:

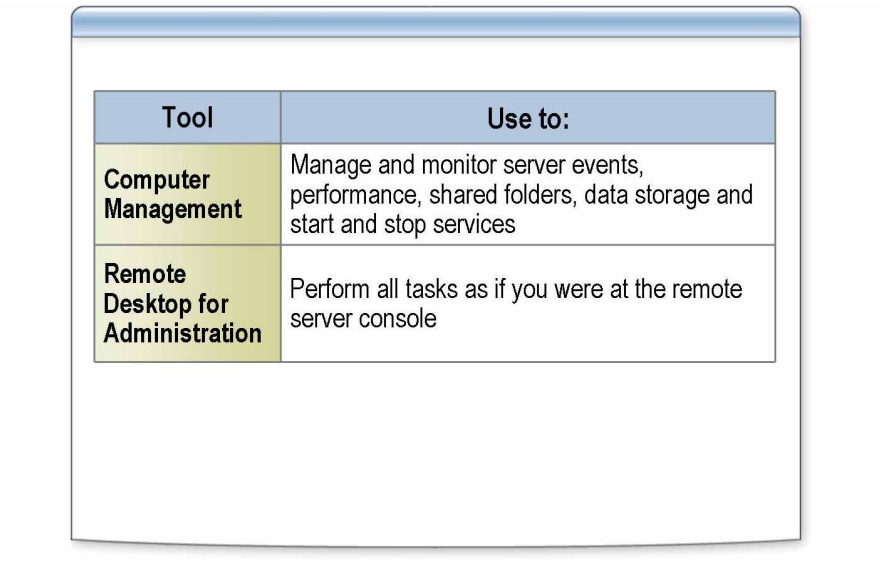
   mstsc /v:*PartnerComputer* **/f**

2. Connect to your partner's computer using the following parameters:

Computer	***PartnerComputer*** **(where Partner*Computer* is the name of your partner's computer)**
User name	Administrator
Password	P@ssw0rd
Domain	NWTRADERS

3. Verify that the name of your partner's computer appears at the top of the screen.
4. Log off the remote computer.
5. Close all windows and log off.

Guidelines for Using Remote Administration Tools



Introduction

Windows Server 2003 operating systems provide several tools that you can use to manage servers from a remote location. These tools expand your flexibility because you can work as though you are physically present at each server in your organization. By understanding the functions of each tool, you can choose the most appropriate one for your remote administration tasks.

Computer Management tool tasks

The tasks that you can perform by using the Computer Management tool in remote administration are described in the following table.

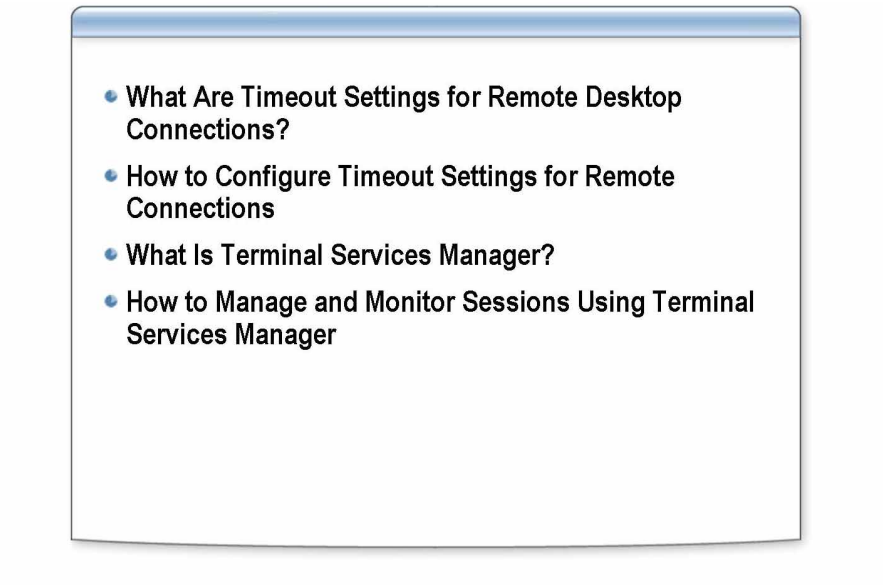
Application	Task
Server configuration	Manage and monitor shared folders
Accounts	Modify users and groups
Network connectivity	Monitor events
	Manage and monitor performance logs and alerts
	Start and stop services
Data storage	Manage data storage

Remote Desktop for Administration tasks

The uses of the Remote Desktop for Administration tool in remote administration are described in the following table.

Application	Task
Software applications	Install software applications
Server configuration	Defragment a disk
	Domain controller promotion/demotion
	Modify Microsoft .NET Framework configuration
	Modify folder options
Device drivers	Modify device drivers
Update software	Install service packs
	Install hotfixes
	Update system management properties
Desktop options	Modify date and time
	Modify display settings
	Modify fonts
	Modify regional and language settings
	Modify Distributed File System (DFS) services
Hardware configurations	Modify keyboard options
	Modify mouse options
	Modify modem options
	Modify power options
	Modify printer options
	Add and remove printers
Network connectivity	Modify Internet options
	Modify network connection configuration
	Monitor network connections
	Modify accessibility options
	Modify Internet Information Services (IIS) settings
Schedule tasks	Modify scheduled tasks
Accounts	Modify system options
	Modify user and group accounts
Licensing and certificate	Modify licensing
	Modify certificates
Remote services	Modify Component Services
	Modify Data Sources Open Database Connectivity (ODBC)
	Configure and enable Routing and Remote Access
	Modify Terminal Services
Data storage	Manage data storage

Lesson: Managing Remote Desktop Connections



Introduction

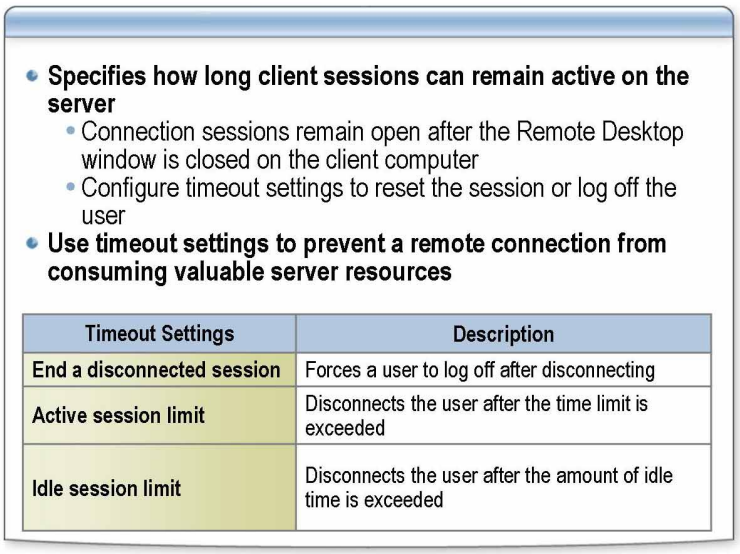
As a systems administrator, you must monitor users, sessions, and applications on the remote server and perform various tasks to manage the server connection. In this lesson, you will learn the importance of managing Remote Desktop Connection and learn how to terminate sessions that are no longer in use.

Lesson objectives

After completing this lesson, you will be able to:

- Explain timeout settings in Terminal Services Configuration.
- Configure timeout settings for remote connections.
- Explain Terminal Services Manager and when it is used.
- Manage and monitor remote desktop connection sessions.

What Are Timeout Settings for Remote Desktop Connections?



Introduction

Each session that you log on to has its own desktop session as well as the server console session. You can configure the amount of time that client sessions can remain active on the server by using Terminal Services Configuration.

Establish timeout sessions

You must establish timeout sessions for these connections because as long as a session is active, it continues to consume valuable server resources. When a session is disconnected but not logged off, that session is using one of two available connections to the server.

Log off a session

Logging off from a session ends the session that is running on the server. Any applications that are running in the session are closed, and unsaved data is lost.

Disconnect a session

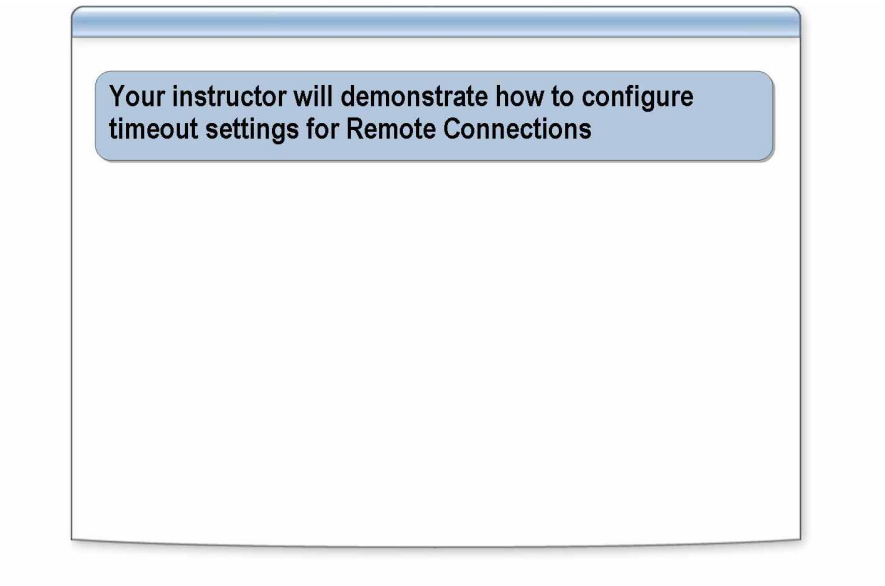
After you establish a connection with a remote server, the connection remains open until you log off. When you log off from a session, the session continues to run on the server. The user can log on to the server and resume the session. The session remains open until the user logs off, until an administrator closes it, or until the timeout setting is reached.

Timeout options

Use Terminal Services Configuration to set the appropriate timeouts. The following timeout options are available:

- *End a disconnected session.* Allows you to set the maximum amount of time that a disconnected session remains open on a server.
- *Active session limit*. Allows you to set the maximum amount of time that a user's session can remain active on the server.
- *Idle session limit*. Allows you to set the length of time that a session can be idle before it is logged off.

How to Configure Timeout Settings for Remote Connections



Introduction

Using timeout settings can help you manage server resources. After you set up session connection limits, you can run server administration more efficiently.

Timeout settings example

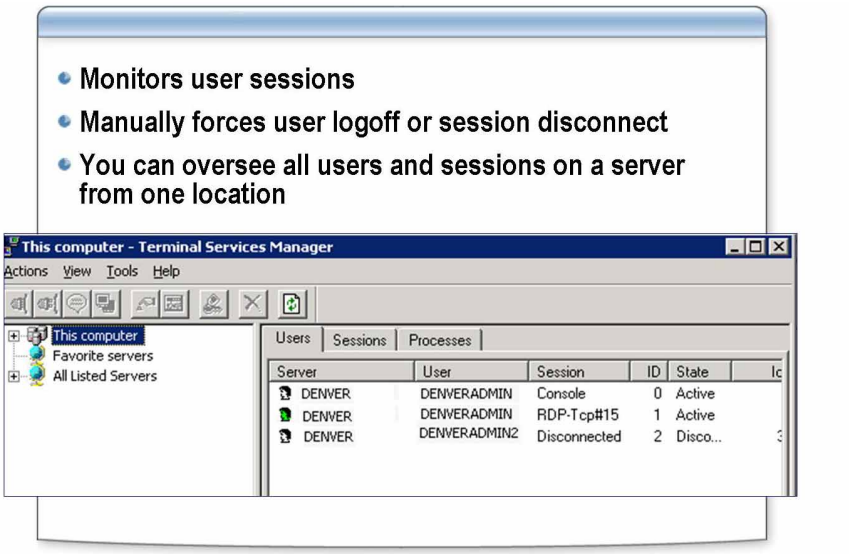
For example, another administrator left for a two-week vacation and forgot to log off a remote connection. If you configured the timeout settings, that connection is automatically logged off after a predetermined time.

Procedure

To configure a timeout setting for a remote connection:

1. Click **Start**.
2. On the **Administrative Tools** menu, click **Terminal Services Configuration**.
3. In the details pane, right-click **RDP-Tcp**, and then click **Properties**.
4. On the **Sessions** tab, select the first **Override user settings** check box.
5. Adjust the appropriate settings:
   - End a disconnected session
   - Active session limit
   - Idle session limit

What Is Terminal Services Manager?



Introduction

You can use Terminal Services Manager to view information about Remote Desktop sessions on your server. Use this tool to monitor users and sessions on each server and to manage disconnected sessions from the remote server.

Obtain administrative information

Use Terminal Services Manager to obtain administrative information about the established Remote Desktop sessions. You can oversee all users and sessions on a terminal server from one location.

Monitor disconnected sessions

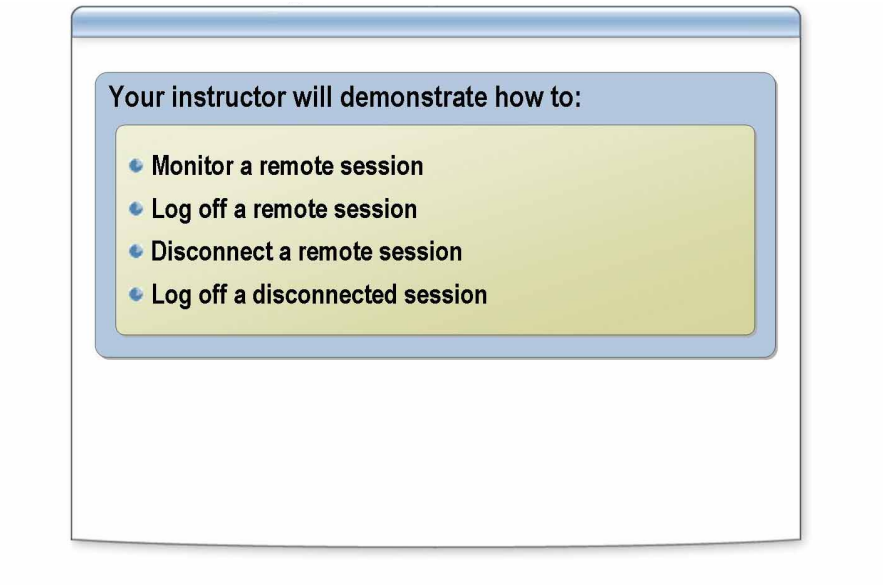
Using Terminal Services Manager, you can view the disconnected sessions on the server. Disconnected sessions display the word "Disconnected" under the **Session** and the **State** columns.

Important A disconnected session must be logged off in order to terminate it. It is important to log off all sessions when they are no longer in use, so that the limited number of remote connections can be used most efficiently.

Log off disconnected sessions

The **Log Off** command enables you to log off a user from a session on the server. Be aware that logging off a user without warning can result in loss of data at the user's session. When you log off a user, all processes end, and the session is deleted from the server.

How to Manage Sessions by Using Terminal Services Manager



Introduction

By monitoring a remote session, you can find out who has established a remote connection and determine the status of that connection. If the connection has been idle, and you suspect that the administrator has disconnected and forgotten to log off, you can manually log off that session remotely.

Procedure for monitoring a remote session

To monitor a remote session by using Terminal Services Manager:

1. On the remote server, click **Start**.
2. On the **Administrative Tools** menu, click **Terminal Services Manager**.
3. Click the **Sessions** tab to view the current sessions.

Procedure for logging off a remote session

To log off a remote session by using Remote Desktop:

1. On the client computer, in the Remote Desktop window, click **Start**.
2. Click **Log Off**, and then click **Log Off**.

Procedure for disconnecting a remote session

To disconnect a remote session by using Remote Desktop:

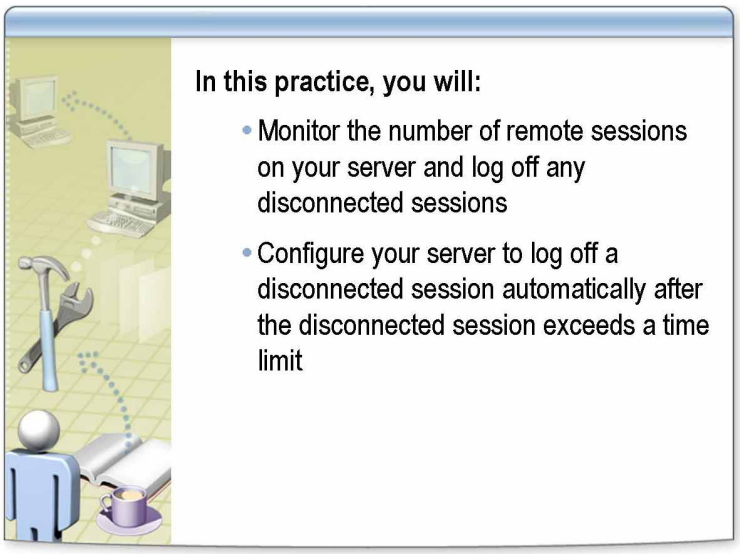
- On the client computer, close the Remote Desktop window.

Procedure for logging off a disconnected session

To log off a disconnected session by using Terminal Services Manager:

- On the remote server, on the **Sessions** tab, right-click the disconnected session, and then click **Reset**.

Practice: Configuring Remote Desktop Sessions



Objective

In this practice, you will:

- Monitor the number of remote sessions on the server, and log off any disconnected sessions.
- Configure the server to log off a disconnected session automatically after the disconnected session exceeds a time limit.

Scenario

You are the systems administrator for an organizational unit on a network. You notice that the domain administrator often accesses your server by using Remote Desktop but fails to log off when finished. You often must log off the disconnected sessions manually. You decide to enable the timeout setting to close disconnected sessions after they are idle for more than one minute.

Practice: Logging off disconnected sessions manually

► **Manually log off disconnected sessions**

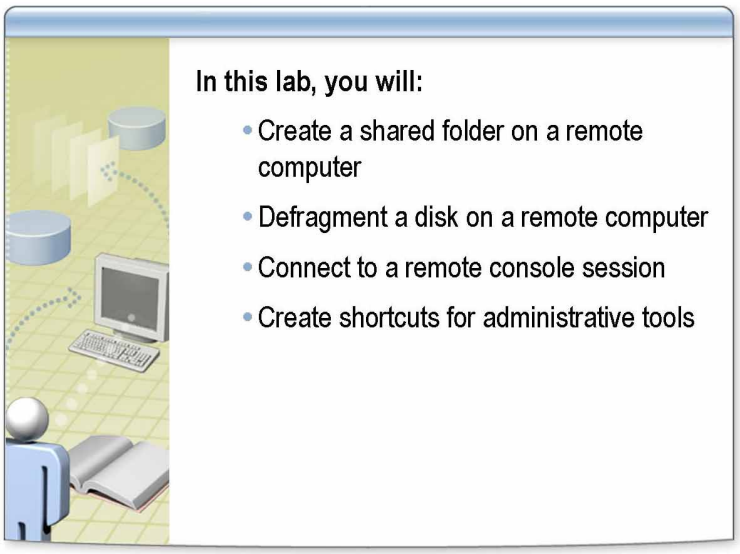
1. Log on to the domain with your *Computer***User** account (where *Computer* is the name of your computer) and with a password of **P@ssw0rd**.
2. Open Control Panel, open Administrative Tools, right-click **Terminal Services Manager**, and then click **Run as**.
3. In the **Run As** dialog box, type **nwtraders\administrator** in the **User name** box, type **P@ssw0rd** in the **Password** box, and then press ENTER.
4. If a **Terminal Services Manager** message box appears, click **In the future, do not show this message**, and then click **OK**.
5. Right-click the disconnected session, and then click **Log Off**.
6. Close Terminal Services Manager.

Practice: Configuring a session

► **Configure a one-minute time limit for disconnected sessions**

1. In Administrative Tools, open Terminal Services Configuration by using **Run as**.
2. In the **Run As** dialog box, type **nwtraders\administrator** in the **User name** box, type **P@ssw0rd** in the **Password** box, and then press ENTER.
3. Open the **RDP-Tcp Properties** dialog box.
4. On the **Sessions** tab, configure a one-minute time limit for disconnected sessions.
5. Close all windows and log off.

Lab A: Preparing to Administer a Server



Objectives

After completing this lab, you will be able to:

- Create a shared folder on a remote computer.
- Defragment a disk on a remote computer.
- Connect to a remote console session.
- Create shortcuts for administrative tools.

Scenario

You are the systems administrator for an organizational unit on a network. Another systems administrator, who is off-site, has sent you an urgent e-mail message asking you to create a new shared folder on her server and to defragment the D drive on her server. You also receive a phone call from a third systems administrator who wants you to review the paging graph that he is viewing on the console at the Glasgow server.

Systems administrator notes

Using Computer Management, share the C:\MOC\Shares\MeetingNotes folder on your partner's computer.

Remotely connect to your partner's computer, and use Computer Management to defragment the D drive.

Connect to the console of the Glasgow computer, and then view the paging graph.

Prerequisites

None.

Estimated time to complete this lab: 40 minutes

Exercise 0
Configuring Folder Permissions

You must run a script to configure the folder permissions on your computer.

► **To configure the folder permissions on your computer**

1. Log on to the domain as Administrator with a password of **P@ssw0rd**.
2. On the **Start** menu, click **Run**.
3. In the **Run** dialog box, type **C:\MOC\2275\Labfiles\Setperm.cmd** and then press ENTER.
4. Log off.

Exercise 1
Creating a Shared Folder on a Remote Computer

Using Computer Management, you will create shared folders on your partner's computer. To do this, you will use the **Run as** command to run Computer Management with administrative credentials.

Tasks	Specific instructions
1. Log on to your domain user account.	▪ Log on to your domain user account, *Computer***User** with a password of **P@ssw0rd**.
2. Open an MMC window.	▪ Use the **Run as** command to open an MMC window with administrative credentials.
3. Build a tool by using the Computer Management snap-in for your partner's computer.	▪ On the **File** menu, select **Add/Remove Snap-in** to open the Computer Management snap-in for your partner's computer.
4. Share the folder.	▪ In Computer Management, share the C:\MOC\2275\Labfiles\Test folder as **Test** with the following share permissions: Administrators: **Full** Everyone: **Read-only**
5. Verify that the shared folder exists on the computer.	▪ Use the **Run** command to connect to your partner's computer by using the Universal Naming Convention (UNC) *Partner'sComputer**Test.*

Exercise 2
Defragmenting a Disk on a Remote Computer

In this exercise, you will defragment a disk on a remote computer by using Computer Management and Remote Desktop Connection.

Tasks	Specific instructions
1. In the Console1 window, open Disk Defragmenter.	▪ In the Console1 window, expand **Storage**, and then click **Disk Defragmenter**.
What happens when you try to defragment a disk on a remote computer by using a local copy of Disk Defragmenter?	
2. Connect to your partner's computer by using Remote Desktop Connection.	▪ Open Remote Desktop Connection and connect to your partner's computer as an administrator.
3. Defragment the D drive on the remote computer.	▪ Open Computer Management on the remote computer, and then open Disk Defragmenter.
4. Log off from the remote connection.	▪ Log off from the remote connection.

Exercise 3
Connecting to a Remote Console Session

In this exercise, you will connect to a remote console session by using Remote Desktops.

Tasks	Specific instructions
1. Connect to a remote computer using Remote Desktops.	**a.** Open Control Panel, and then open Administrative Tools. **b.** Open Remote Desktops. **c.** Maximize the Remote Desktops window, and then maximize the Console Root\Remote Desktops window. **d.** Right-click **Remote Desktops**, and then click **Add New Connection**. **e.** Connect to Glasgow using the following data: • Server name or IP Address: **Glasgow** • Connection name: **Glasgow** • User name: **Administrator** • Password: **P@ssw0rd** • Domain: **nwtraders** **f.** In the console tree, expand **Remote Desktops**, and then click **Glasgow**.
2. Open Task Manager and view remote computer performance.	**a.** Start Task Manager by opening the **Run** dialog box and typing **taskmgr.exe** **b.** View Performance.
What happens when another user connects to the Glasgow console session while you are viewing the console session?	
3. Close all windows.	▪ Close all windows.

Exercise 4
Creating Shortcuts to Administration Tools

In this exercise, you will create shortcuts to commonly used administrative tools.

Tasks	Specific instructions
1. Create a shortcut to Computer Management.	**a.** Create a shortcut to Computer Management by right-clicking the desktop, clicking **New**, and then clicking **Shortcut**. **b.** In the **Type the location of the item** box, type **runas /user:nwtraders \administrator "mmc %windir%\system32\compmgmt.msc"** and then click **Next**. **c.** In the **Type a name for this shortcut** box, type **Computer Management** and then click **Finish**.
2. Create a shortcut to Active Directory Users and Computers.	▪ Use **runas /user:nwtraders\administrator "mmc %windir%\system32\dsa.msc"**
3. Create a shortcut to Performance.	▪ Use **runas /user:nwtraders\administrator "mmc %windir%\system32\perfmon.msc"**
4. Create a shortcut to Device Manager.	▪ Use **runas /user:nwtraders\administrator "mmc %windir%\system32\devmgmt.msc"**
5. Create a shortcut to Disk Manager.	▪ Use **runas /user:nwtraders\administrator "mmc %windir%\system32\diskmgmt.msc"**
6. Create a shortcut to Command Prompt.	▪ Use **runas /user:nwtraders\administrator cmd**
7. Create a shortcut to Microsoft Management Console.	▪ Use **runas /user:nwtraders\administrator mmc**
8. Test each shortcut.	▪ Test each shortcut and verify that the correct tool appears.
9. Close all windows.	▪ Close all windows.