Understanding the Windows Server Administration Fundamentals (Part-1)

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Agenda

- What is a Server.
- Server Roles.
- Server Hardware.
- Workgroups & Domains.
- Devices and Printers.
- Windows Server OS Management Tools.
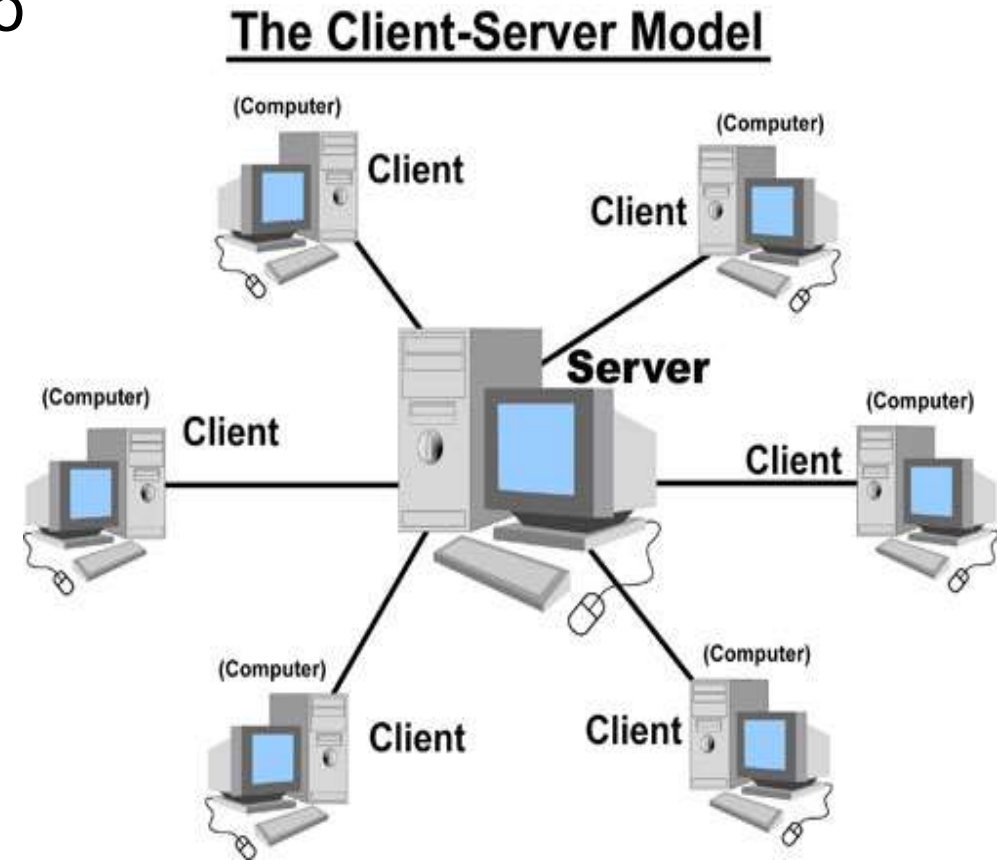
Today's Webinar

- Is directed for the Server technicians and those who want to advance forward with their certification exams after being earning

1. CompTIA A+ Certification.
2. CompTIA Network+ Certification.
3. Or MicroSoft Networking Fundamentals MTA Certification Exam 98-366.
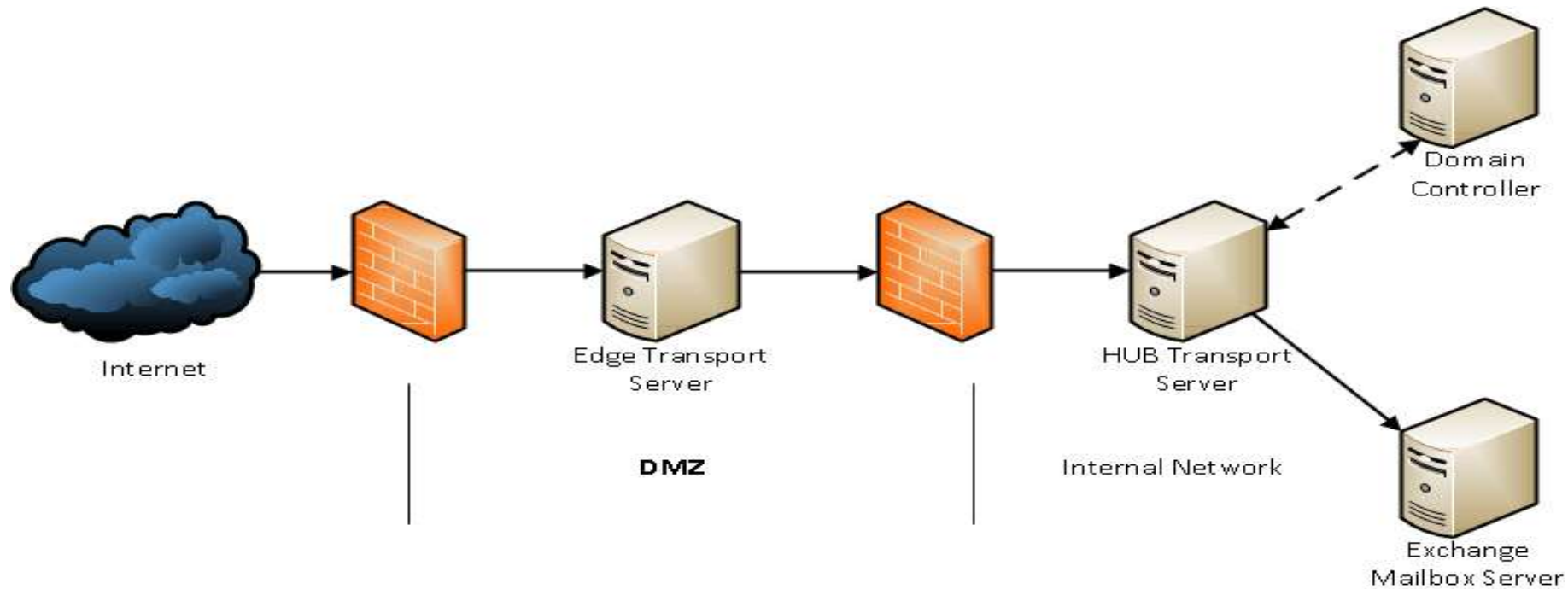- This Webinar is an overview for CopmTIA Server+ SK0-004, and Microsoft MTA Exam 98-365.

The Server

➢A server is a computer that is a meant to be a dedicated service provider, and a client is a computer that requests services.

➢A network that is made up of dedicated servers and clients is known as a client/server network.

➢A server-based network is the best network for sharing resources and data, while providing centralized network. security for those resources and data.

➢Networks with Windows Server 2003 and Windows Server 2008 are usually client/server networks.

The Client-Server Model

(Computer) Client

(Computer) Client

(Computer) Client

Server

(Computer) Client

(Computer) Client

(Computer) Client

Server Roles

➤A server role is a primary duty that a server performs.

➤You should note that a server could have multiple roles.

➤When you are determining hardware and software needs, look at the role the role and the load the server will be placed under.

The Considerations when Choosing Server hardware are:

➤Server is designed to provide network services (multiple users at the same time),

➤If the server fails or becomes inaccessible, the problem will affect multiple people.

➤You also need to plan so you know how to deal with problems when they occur.

Primary Subsystems

These are the primary subsystems that make up a server:
  ➢Processor ,   Memory,   Storage,   Network
•If any of these fails, the entire system can fail.
•They can also cause bottleneck that may affect performance of the entire system.

Processor

➢The server is build around one or more integrated chips called the **processor**.
➢It is considered the brain of the computer since all of the instructions it performs are mathematical calculations and logical comparisons.

RAM

➢ **_RAM_**, which stands for random access memory, is the computer's short-term or temporary memory.

➢ It stores instructions and data that the processor accesses directly.

➢ If you have more RAM, you can load more instructions and data from the disks.

➢ In addition, having sufficient RAM can be one of the main factors in your computer's overall performance.
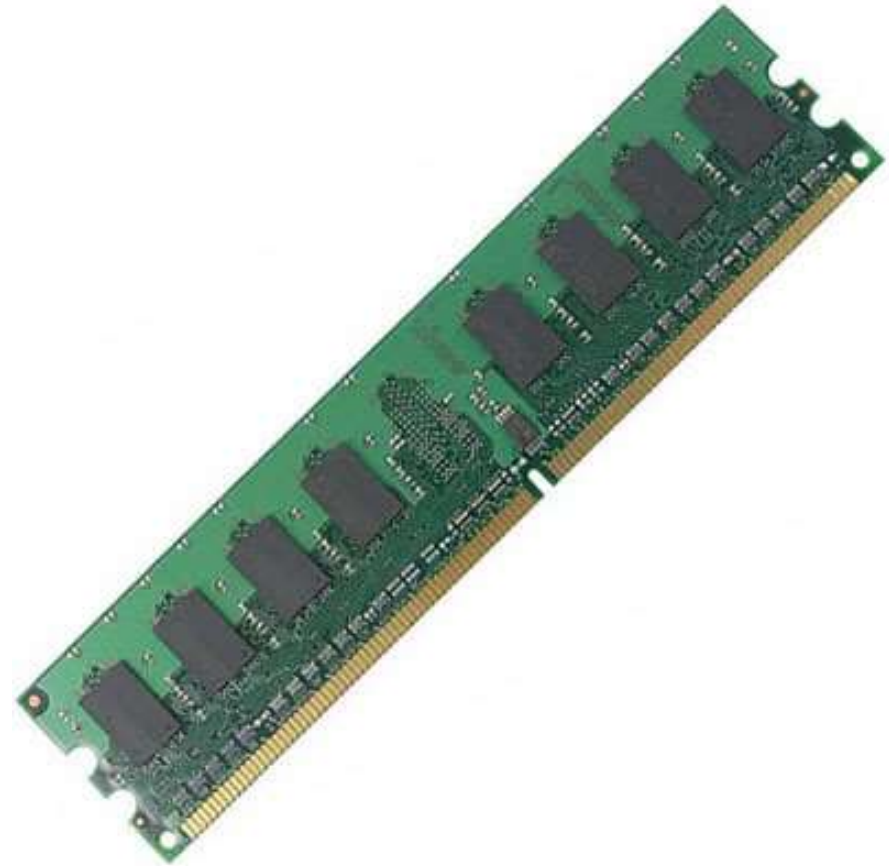
Storage

➢Traditionally, hard ***drives*** are half electronic/half mechanical devices that store magnetic fields on rotating platters.

➢Today, some hard drives, known as solid-state drives, are electronic devices with no mechanical components.

➢While most personal computers have only local storage consisting of internal hard drives, servers may connect to external storage through a network-attached storage (NAS) or storage area network (SAN).

➤ The last primary component that makes up a server is the **network connection**.

➤ Without a network connection, the server is not able to communicate with other servers or the clients.

➤ Most servers include one or more network interface cards or NICs.

➤ The minimum speed of today's network cards is 100 Mbit/second, while the minimum speed for servers is 1 Gbit/second or faster.

➢ component that brings these four subsystems together is the **motherboard**.

➢ For the processor to communicate with the rest of the system, the processor plugs in or connects to a large circuit board called the motherboard or system board.

➢ The motherboard allows the processor to branch out and communicate with all of the other computer components.

BIOS

➢Instructions that control most of the computer's input/output functions, such as communicating with disks, RAM, and the monitor kept in the System ROM chips, are known as the **BIOS** (basic input/output system).

➢By having instructions (software) written on the BIOS, the system already knows how to communicate with some basic components such as a keyboard and how to read some basic disks such as IDE drives.

➢It also looks for additional ROM chips that may be on the motherboard or on expansion cards that you add to the system.

➢The process of updating your system ROM BIOS, is called flashing the BIOS.
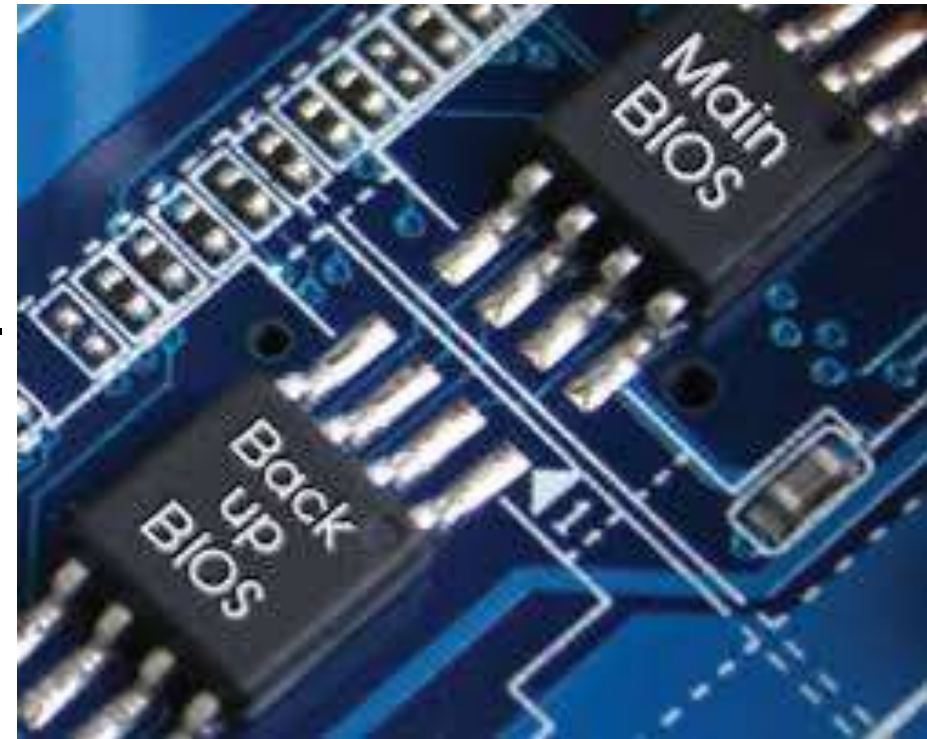
➢A case provides an enclosure that helps protect the system components that are inside.

➢A case with the power supplies and additional fans are usually designed to provide a fair amount of airflow through the system to keep the system cool.

➢The server room is the work area of the Information Technology (IT) department that contains the servers and most of the communication devices including switches and routers.

➢The room should be secure, with only a handful of people allowed to have access to it.

Windows Server Family

➢Windows NT (first released in 1993) is a family of operating systems produced by Microsoft.

➢Since then, Microsoft has built on the previous version and has released Windows 2000 Server, Windows Server 2003, Windows Server 2003 R2, Windows Server 2008, Windows Server 2008 R2, , Windows Server 2012, Windows Server 2012 R2, and Windows Server 2016.

Workgroups and Domains

➤ A *workgroup* is usually associated with a peer-to-peer network in which user accounts are decentralized and stored on each individual computer.

➤A domain is a logical unit of computers that define a security boundary, and it is usually associated with Microsoft's Active Directory.
➤The security of the domain is generally centralized and controlled by Windows servers acting as domain controllers.

Cable Modem

INTERNET

Router / Switch

Computer A   Computer B   Computer C

Domain Controlle

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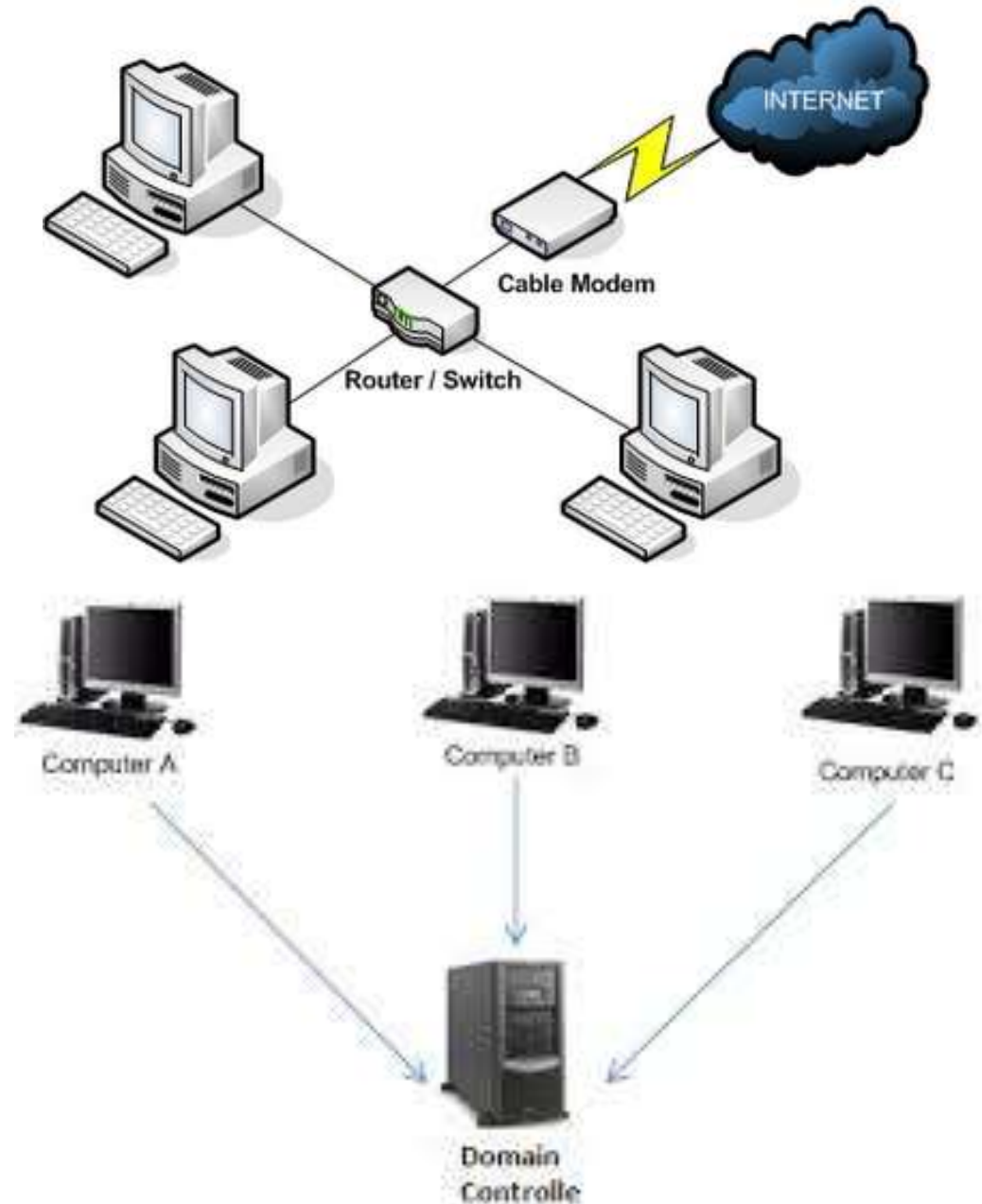
Devices and Printers
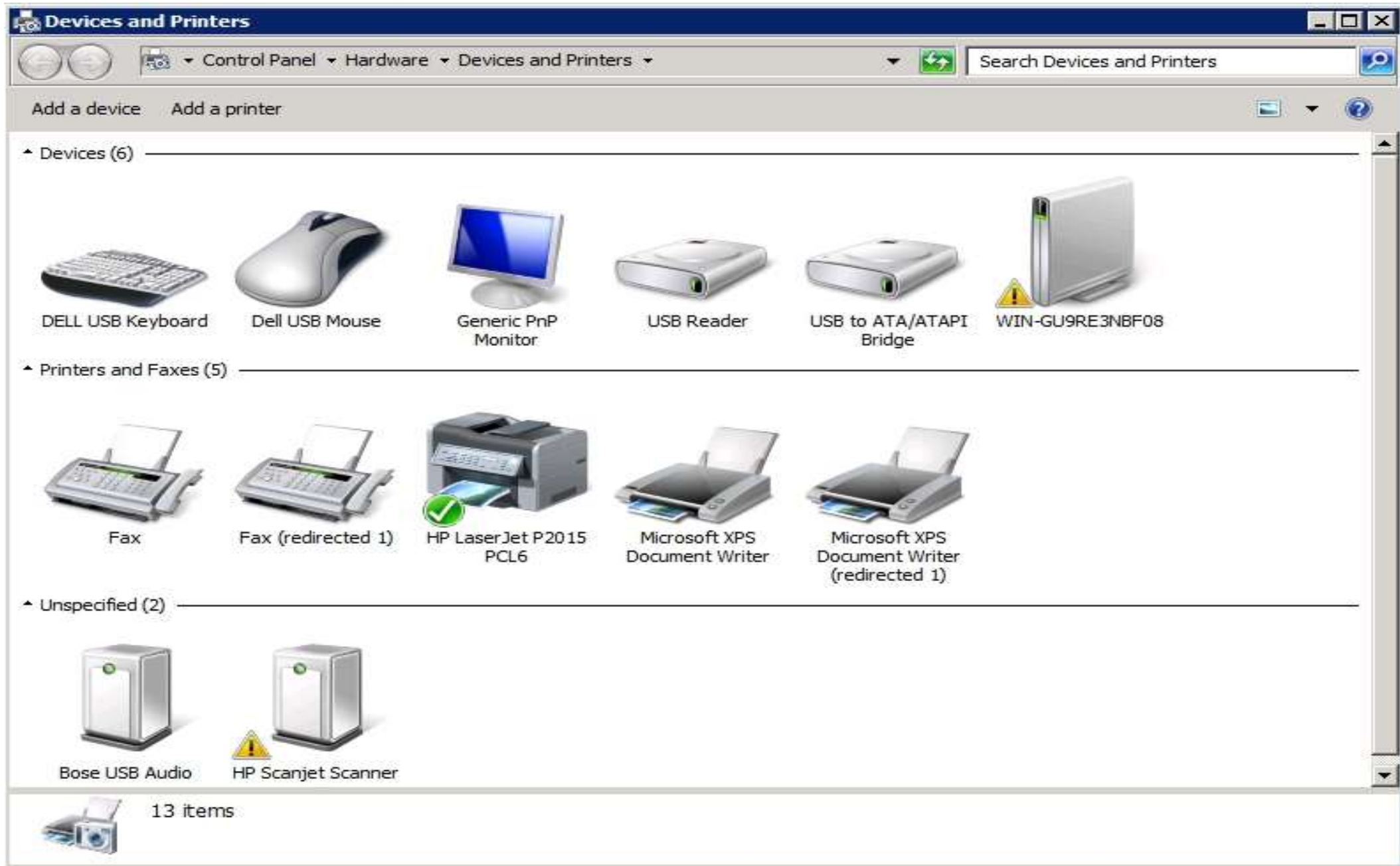
➢Starting with Windows Server 2008 and Windows Vista, Windows includes the Devices and Printers folder to quickly allow users to see all the devices connected to the computer and to configure and troubleshoot these devices.

➢It also allows you to view information about the make, model, and manufacturer and gives you detailed information about the sync capabilities of a mobile phone or other mobile devices.
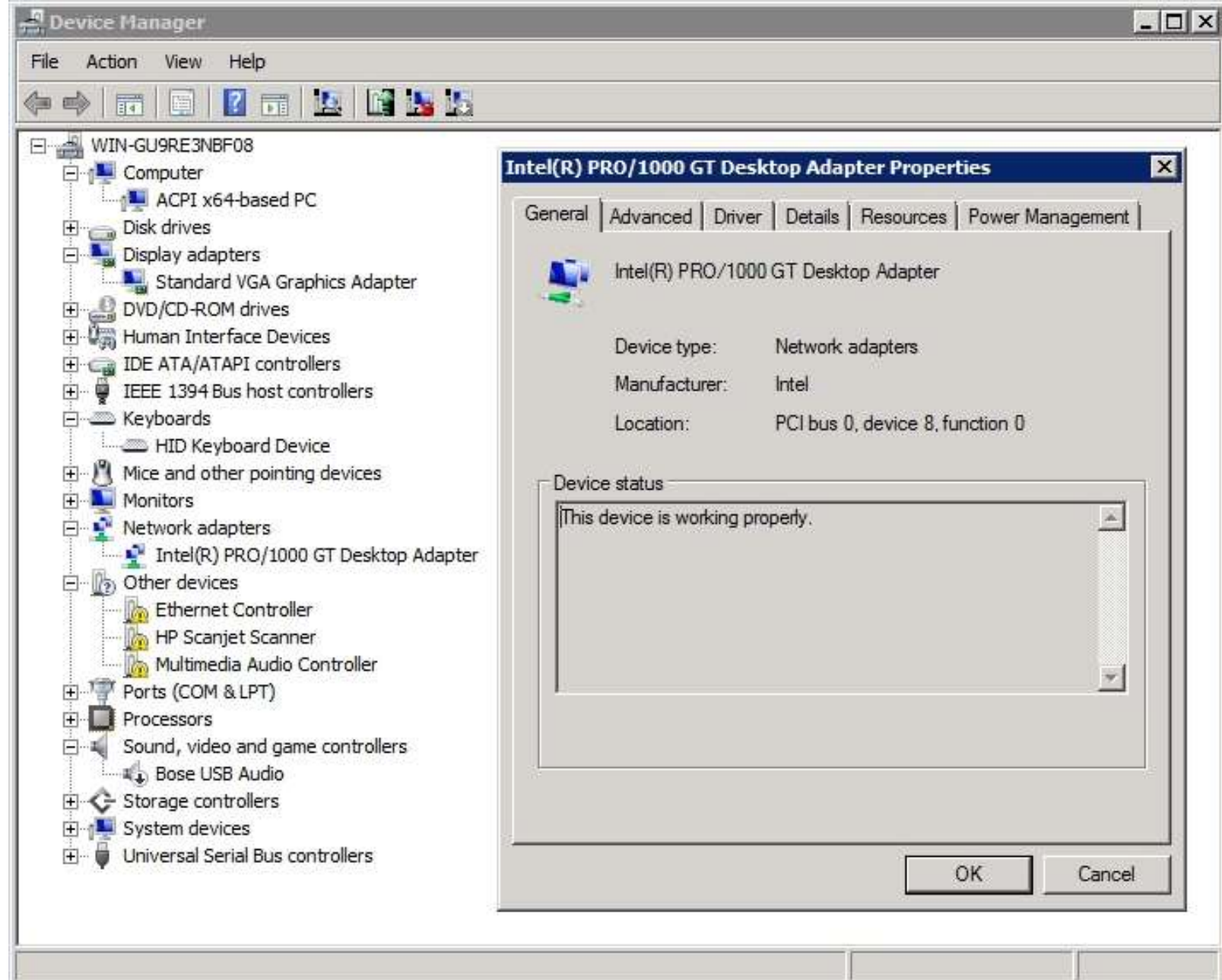
Windows Server OS Management Tools

Microsoft Management Consol

➤The Microsoft Management Console (MMC) is one of the primary administrative tools used to manage Windows and many of the network services provided by Windows.

➤It provides a standard method to create, save, and open the various administrative tools provided by Windows. When you open Administrative Tools, most of these programs are an MMC.

➤To start an empty MMC, go to the command prompt, Start Search box or Run box, type mmc or mmc.exe.
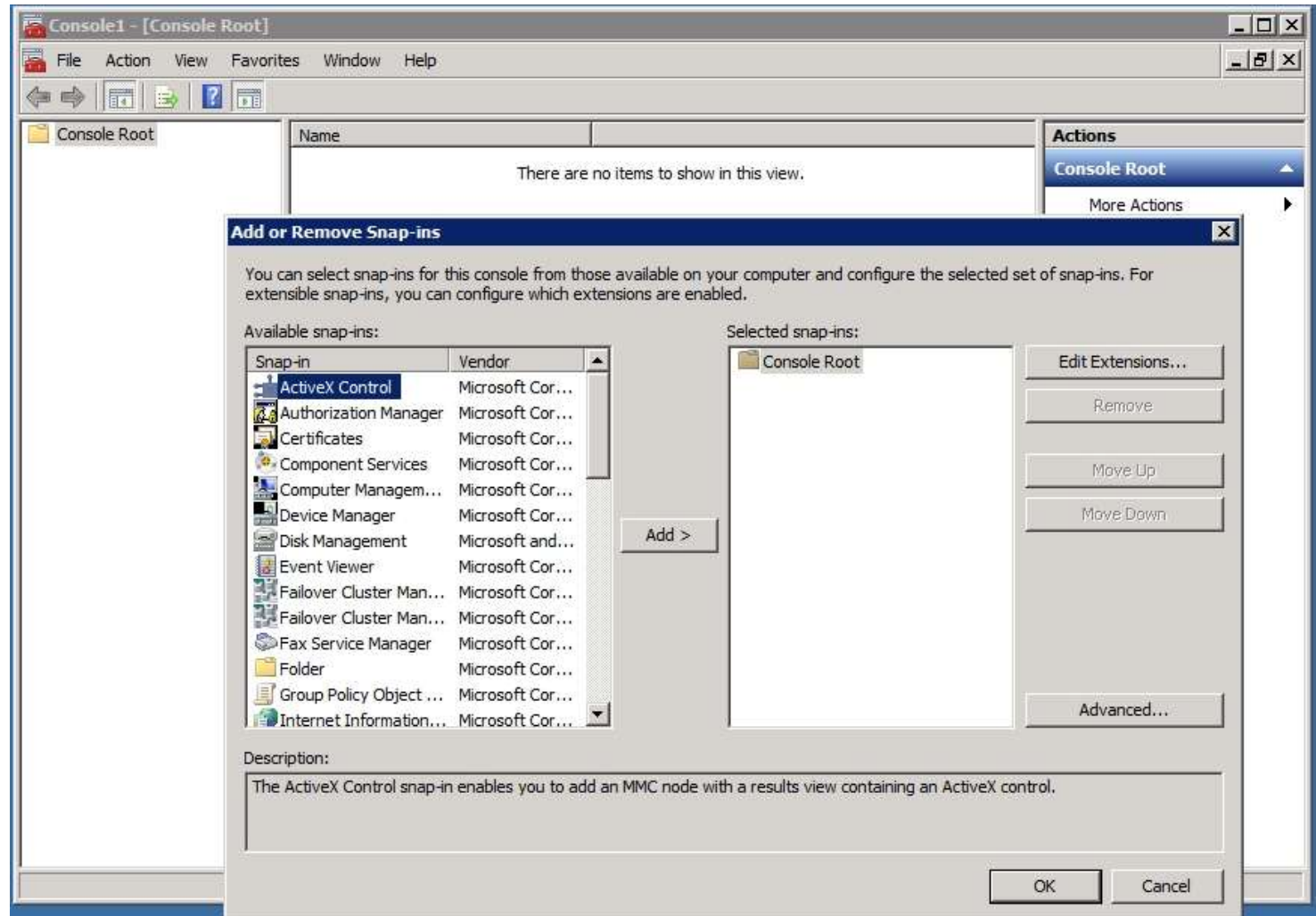
Administrative Tools

➤Administrative Tools is a folder in the Control Panel that contains tools for system administrators and advanced users.

➤To access the Administrative Tools, open the Control Panel, open Administrative Tools by clicking Start, Control Panel, System, and Security while in Category View or double-click the Administrative Tools applet while in Icon view.

➤There is also a quick link on Windows Servers that can be accessed by clicking the Start button.
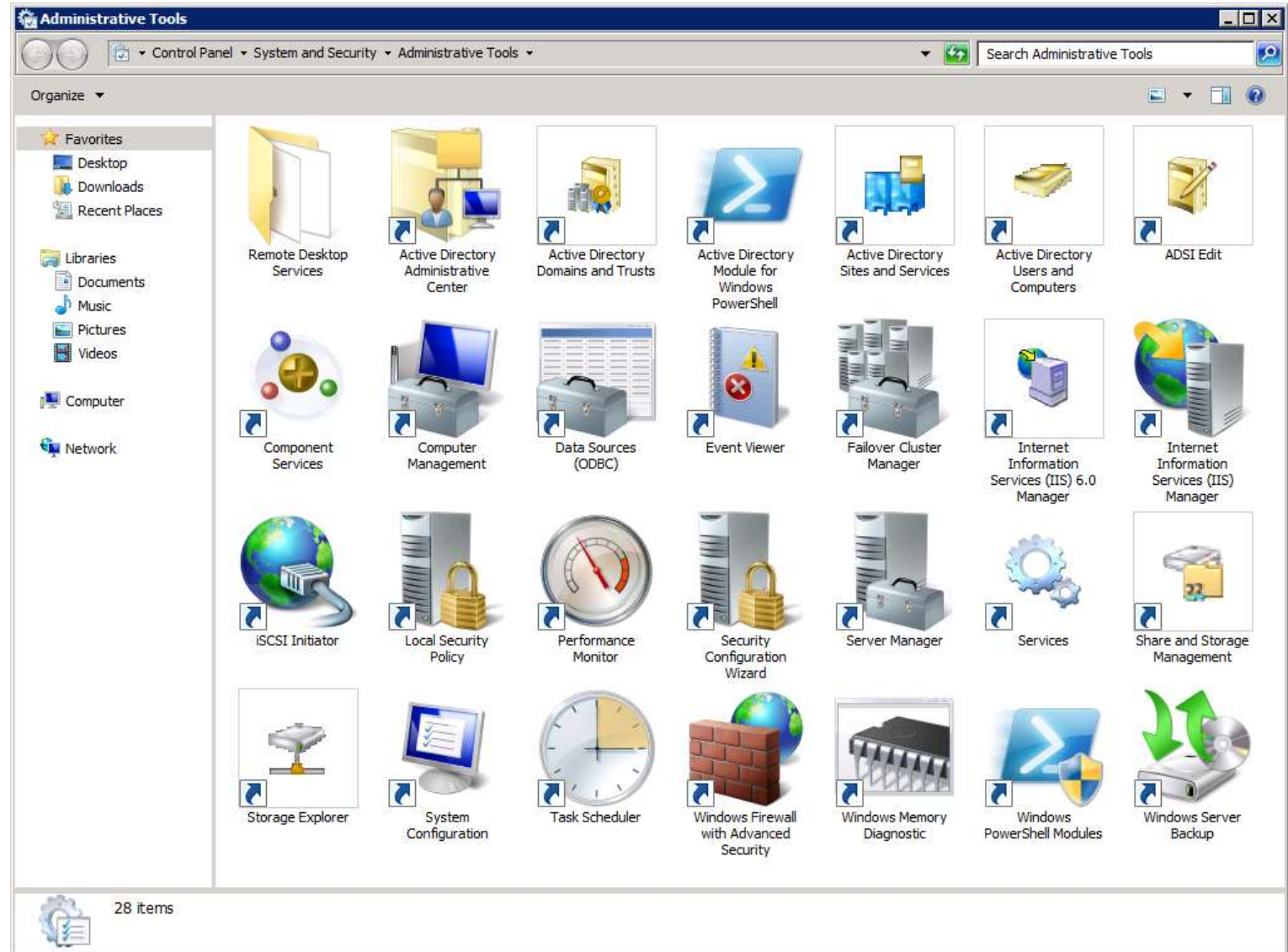
Computer Management Tools

➢Computer Management: Manage local or remote computers by using a single, consolidated desktop tool.

➢Using Computer Management, you can perform many tasks, such as monitoring system events, configuring hard disks, and managing system performance.
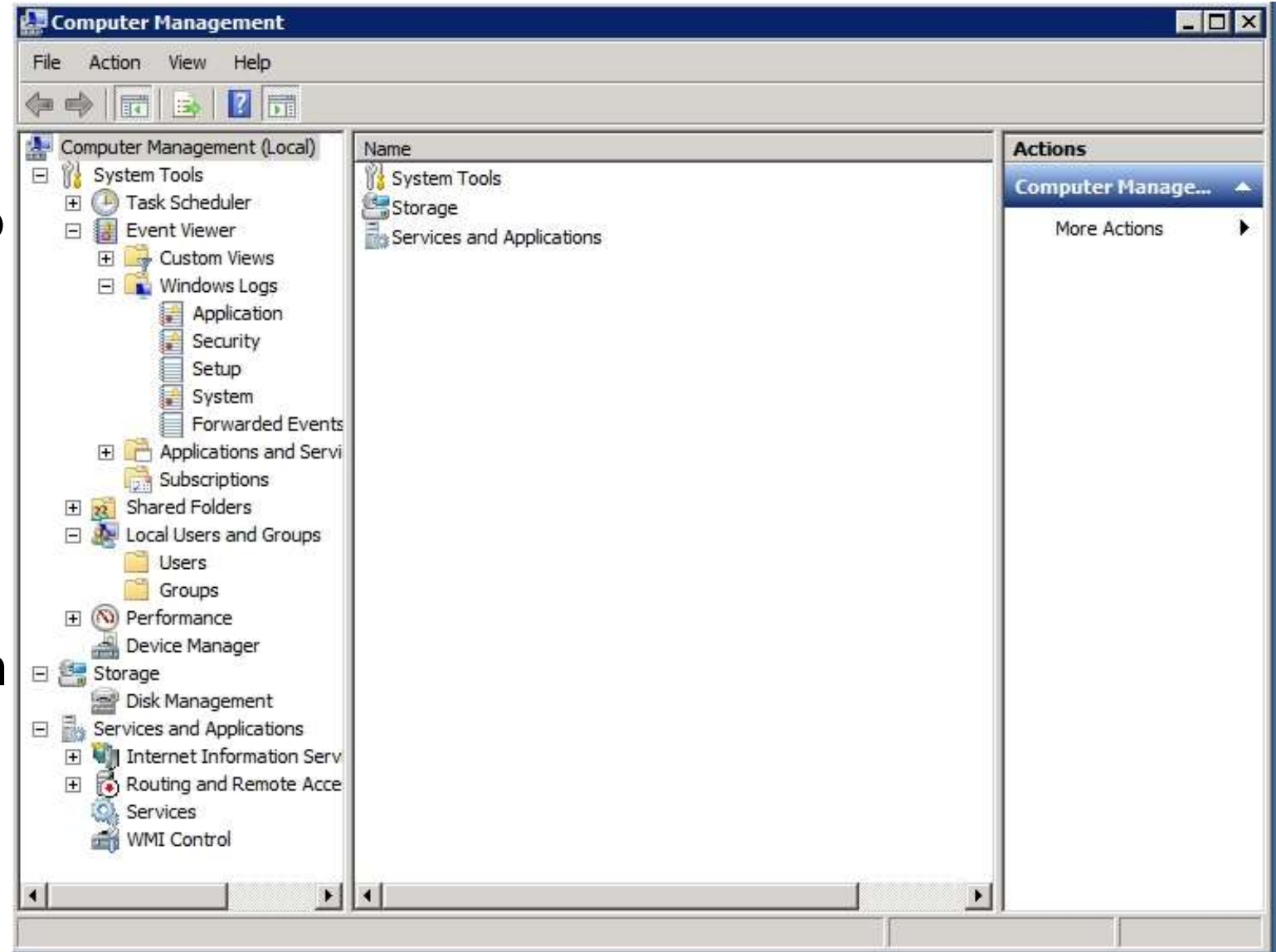
Server Manager and Roles

➢A server role is a set of software programs that, when installed and properly configured, enables a computer perform a specific function for multiple users or computers within a network.

➢Role services are software programs that provide the functionality of a role or service.
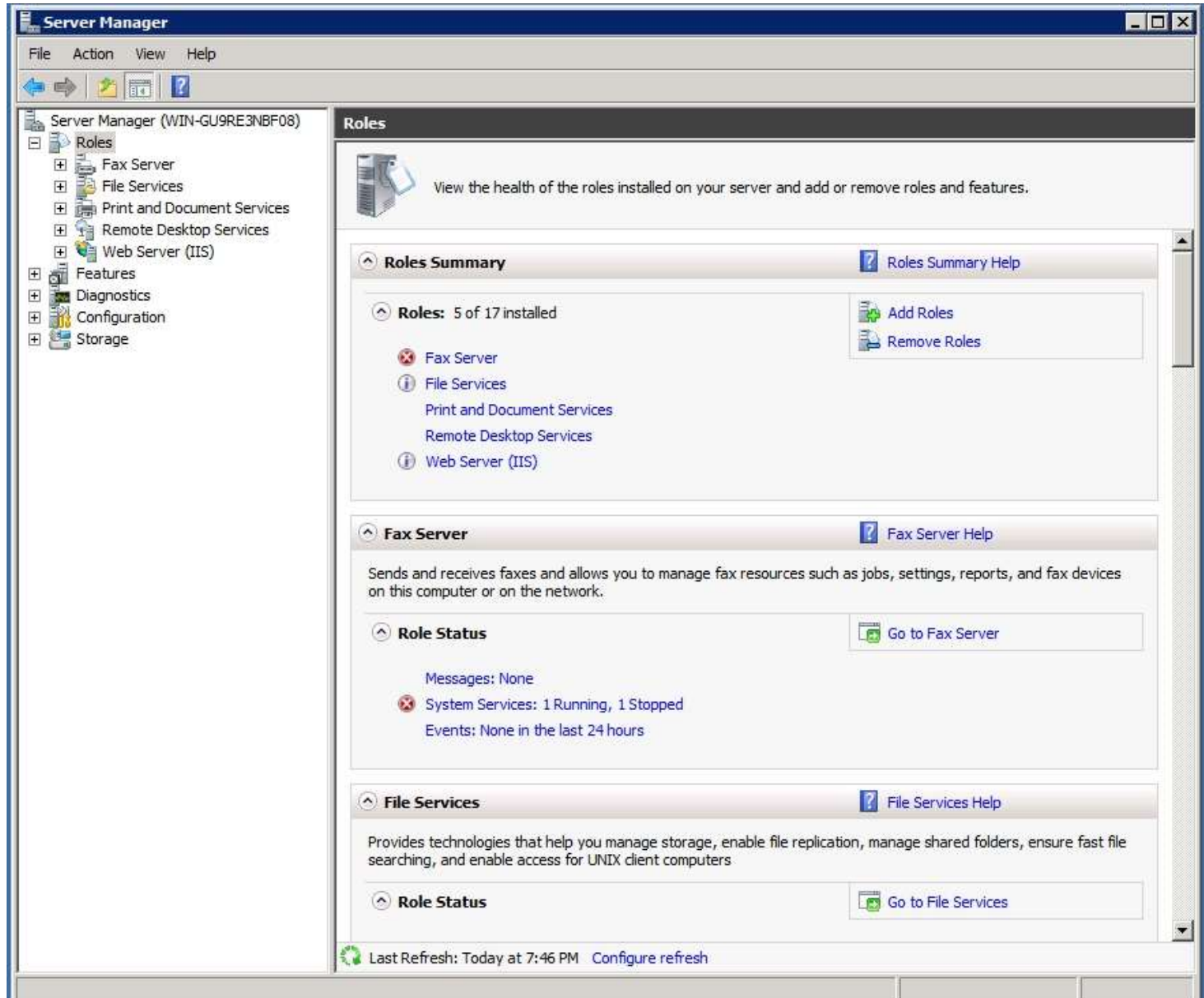
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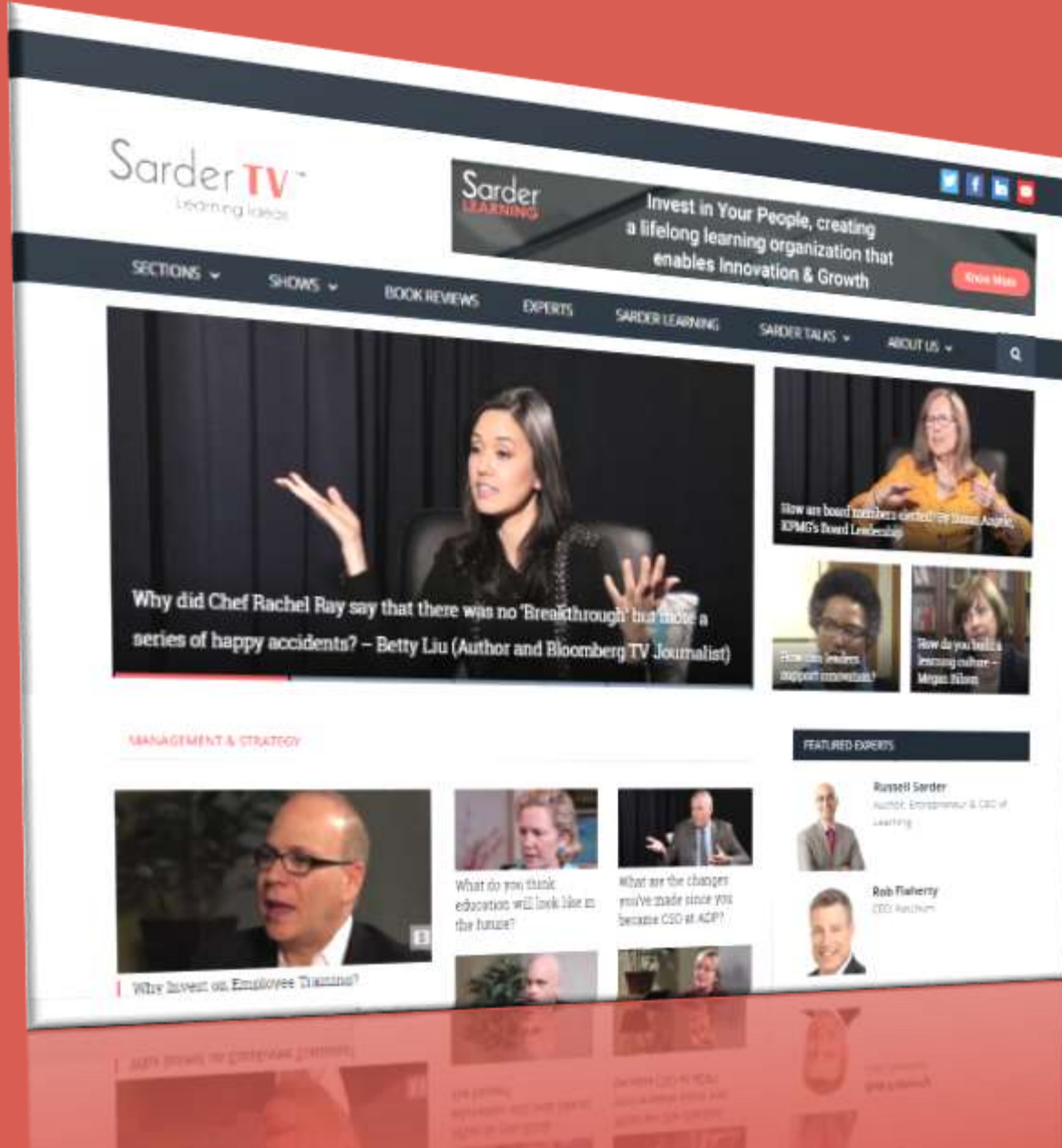
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