

Module 1: Introduction to the Microsoft Windows 2000 Networking Infrastructure

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Simulations and interactive exercises were built with Macromedia Authorware

Instructor Notes

Presentation:
30 Minutes

This module provides students with an overview of the Microsoft® Windows® 2000 network infrastructure.

Lab:
00 Minutes

At the end of this module, students will be able to:

- Define the components of a Windows 2000 network infrastructure.
- Describe the role of an intranet in a Windows 2000 network.
- Identify remote access methods.
- Describe how a remote office can be connected to an intranet.
- Identify the methods that are used to establish Internet access.
- Describe the purpose of an extranet.

Materials and Preparation

This section provides you with the required materials and preparation tasks that are needed to teach this module.

Required Materials

To teach this module, you need the Microsoft PowerPoint® file 2153a_01.ppt.

Preparation Tasks

To prepare for this module, you should read all of the materials for this module.

Module Strategy

Use the following strategy to present this module:

- Overview of the Windows 2000 Network Infrastructure

This topic provides information about the elements that a typical Windows 2000 network infrastructure contains. Briefly describe each of the five elements. Each of these elements is described in more detail later in the module.

- Introduction to Intranets

This topic provides information about the role of an intranet in a Windows 2000 network. Describe the purpose of an intranet, and emphasize that Transmission Control Protocol/Internet Protocol (TCP/IP) provides the basis for connectivity on your network.

- Identifying Remote Access Methods

This topic provides information about the types of remote access that Windows 2000 includes. Identify the two types of remote access, and describe the environments in which each of them works best.

- Communicating with Remote Offices

This topic provides information about the role of a remote office in a Windows 2000 network. Explain how a remote office can be connected to an intranet by using routers.

- Providing Internet Access

This topic provides information about the role of the Internet in a network. Explain the reasons why an organization requires Internet access, and then describe the methods that are typically used to establish Internet access.

- Introduction to Extranets

This topic provides information about the role of an extranet in a Windows 2000 network. Describe the purpose of an extranet, and then explain why an organization may want to provide limited access to its intranet to users who are outside the network.

Customization Information

This section identifies the lab setup requirements for a module and the configuration changes that occur on student computers during the labs. This information is provided to assist you in replicating or customizing Microsoft Official Curriculum (MOC) courseware.

There are no labs in this module, and as a result, there are no lab setup requirements or configuration changes that affect replication or customization.

Overview

Topic Objective

To provide an overview of the module topics and objectives

Lead-in

In this module, you will learn about the elements of the Windows 2000 network infrastructure.

- Overview of the Windows 2000 Network Infrastructure
- Introduction to Intranets
- Identifying Remote Access Methods
- Communicating with Remote Offices
- Providing Internet Access
- Introduction to Extranets

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To maintain effective communication and connect remote locations, organizations need to set up and manage computer networks. Microsoft® Windows® 2000 offers a set of networking services that provide standards-based networking protocols and technologies that enable a reliable and interoperable network infrastructure.

At the end of this module, you will be able to:

- Define the components of a Windows 2000 network infrastructure.
- Describe the role of an intranet in a Windows 2000 network.
- Identify remote access methods.
- Describe how a remote office can be connected to an intranet.
- Identify the methods that are used to establish Internet access.
- Describe the purpose of an extranet.

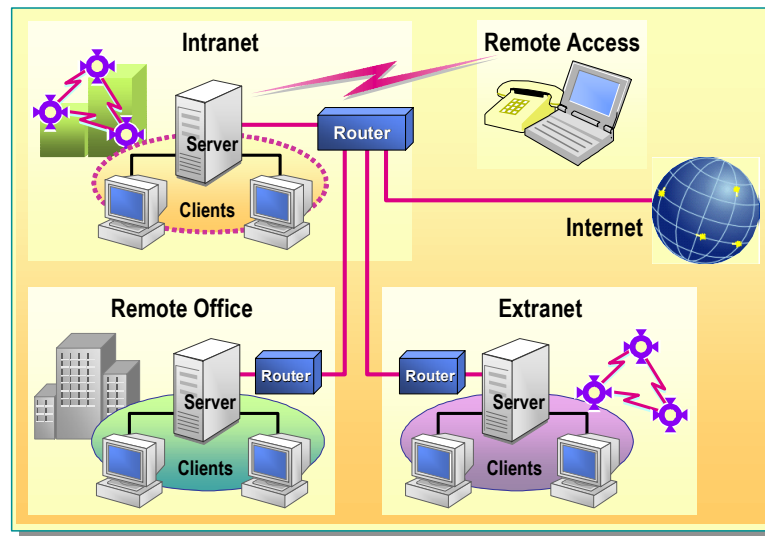
Overview of the Windows 2000 Network Infrastructure

Topic Objective

To list the components of the Windows 2000 network infrastructure.

Lead-in

The networking services in Windows 2000 make it easier to install, configure, manage, and support your network infrastructure.



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The Microsoft Windows 2000 server products offer several technologies and services that make installing, configuring, managing, and supporting your network infrastructure easier. A network infrastructure can contain any of the following elements:

- **Intranet.** A private network within an organization usually intended for the distribution of internal information. An intranet is also called a local area network (LAN). It includes services such as document distribution, software distribution, access to databases, and training. In addition to file and printer sharing services, an intranet usually employs applications associated with the Internet, such as Web pages, Web browsers, File Transfer Protocol (FTP) sites, e-mail, newsgroups, and mailing lists that only those within the organization can access.
- **Remote Access.** Provides remote networking for telecommuters, mobile workers, and system administrators who monitor and manage servers at multiple branch offices. All services that are typically available to a LAN-connected user, including file and printer sharing, Web server access, and messaging, can be accessed through a remote access connection.
- **Remote Office.** Part of an organization that is located in a geographically separate area. A LAN in a remote office can be connected to the general corporate network to create a wide area network (WAN).

The WAN connection is a shared remote access connection to the network that enables users in the remote office to communicate and share resources within the entire organization. WAN links are persistent, meaning that they are always available, whereas typical remote access connections must be connected and then disconnected when not in use.

- *Internet*. The worldwide collection of networks and gateways that use the Transmission Control Protocol/Internet Protocol (TCP/IP) suite of protocols to communicate with one another. The Internet comprises high-speed data communication lines between major nodes or host computers—consisting of thousands of commercial, government, educational, and other computer systems—that route data and messages.
- *Extranet*. A collaborative network that uses Internet technology to facilitate relationships between businesses and their suppliers, customers, or other businesses. An extranet may be a part of a company's intranet that other companies can access, or it may be a shared network for collaboration between companies. The shared information might be available only to the collaborating parties or, in some cases, might be public.

To set up your network infrastructure, you must properly configure all of the necessary network protocols, settings, and services that are used in each element of the network infrastructure.

Note For information about how to plan for and design a network infrastructure, see course 1562, *Designing a Microsoft Windows 2000 Networking Services Infrastructure*.

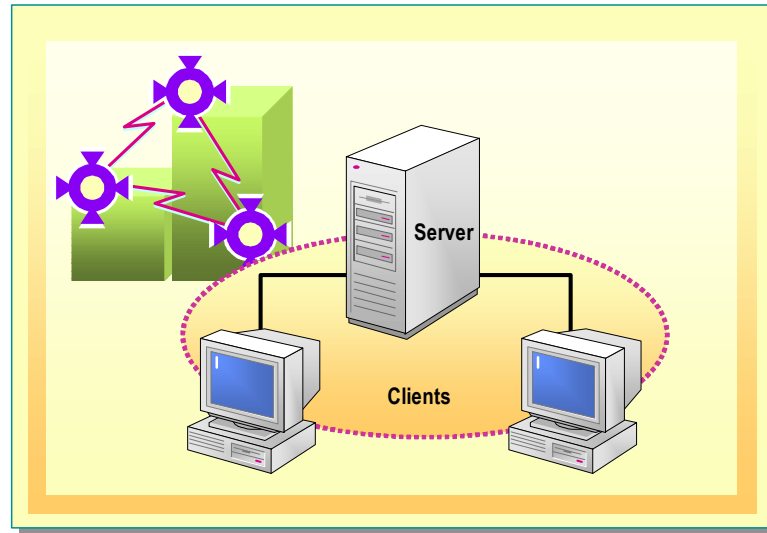
Introduction to Intranets

Topic Objective

To illustrate the concept of an intranet.

Lead-in

An intranet enables users within an organization to share information. TCP/IP provides the basis for connecting computers together to create an intranet.



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Delivery Tip

Describe the purpose of an intranet.

An intranet is a private network that links computers within an organization together to enable them to communicate with each other. The main function of an intranet is to enable users within the organization to share information and resources.

TCP/IP provides the basis for connectivity on your network. TCP/IP is a set of networking protocols that is an industry standard, and most of the networking services in Windows 2000 rely on it. The scalability of TCP/IP adapts to all network sizes, and the Windows 2000 implementation of TCP/IP includes all of the standard Internet Engineering Task Force (IETF) requirements for TCP/IP hosts and servers.

Key Point

TCP/IP depends on name resolution to work properly.

TCP/IP depends on name resolution to work properly. Name resolution is a process that provides users with easy-to-remember server names, instead of requiring them to use the numerical IP addresses by which servers identify themselves on the TCP/IP network.

Note TCP/IP is the default networking protocol that is installed during Windows 2000 setup.

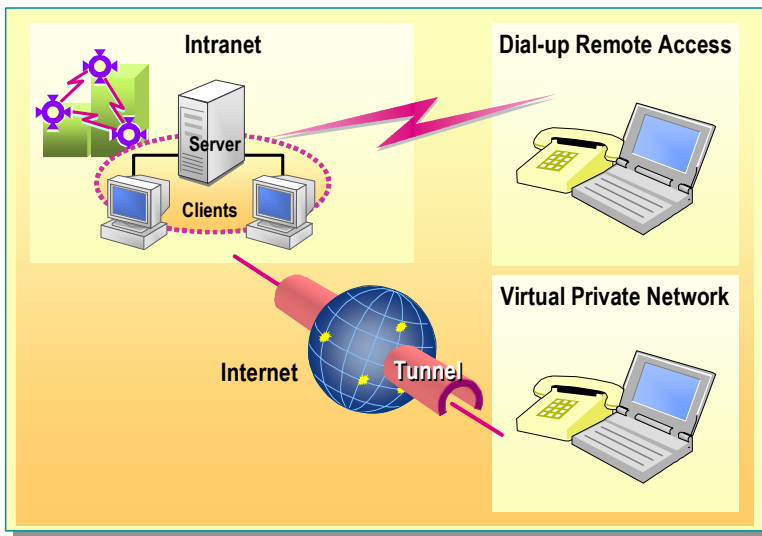
Identifying Remote Access Methods

Topic Objective

To illustrate the concepts of dial-up remote access and VPN access to a network.

Lead-in

Windows 2000 remote access connectivity can be achieved with dial-up remote access or a virtual private network.



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Key Point

Windows 2000 provides two types of remote access connectivity: dial-up remote access and virtual private networking.

You can configure remote access to provide authorized users with connectivity to the corporate network. This enables remote access clients to access resources from remote locations as if they were physically attached to the network.

Remote Access Methods

Windows 2000 provides two different types of remote access connectivity:

- *Dial-up remote access.* To gain access to the network with dial-up remote access, a remote access client uses the public telephone network to create a physical connection to a port on a remote access server that resides in the private network. Typically, with dial-up remote access, you use a modem or Integrated Services Digital Network (ISDN) adapter to dial in to your remote access server.
- *VPN remote access.* A virtual private network (VPN) can provide secure remote access through the Internet, rather than through direct dial-up connections. The VPN client creates an encrypted, virtual, point-to-point connection with a VPN gateway that resides in the private network. Typically, with VPN remote access, you connect to the Internet first, and then create the VPN connection.

Evaluating Remote Access Methods

When deciding on a remote access solution, you identify your remote access needs and compare the benefits and features of direct-dial and VPN remote access. You can choose to use a single method for remote access or deploy both methods. For example, some organizations use a VPN as the primary remote access connection and use dial-up connections when Internet access is unavailable.

Delivery Tip

Describe the environments in which dial-up remote access or VPN remote access is the better method.

Use the following information to evaluate remote access methods:

- Dial-up remote access meets the needs of organizations that have small remote user populations, are satisfied with analog or ISDN performance, or have remote users who remain within local calling areas.
- VPN remote access enables organizations to reduce long-distance telephone expenses and use existing Internet network infrastructures instead of managing their own network infrastructures. Consider a VPN solution if your remote user population and long-distance telephone expenses are increasing quickly or if you need additional broadband support.

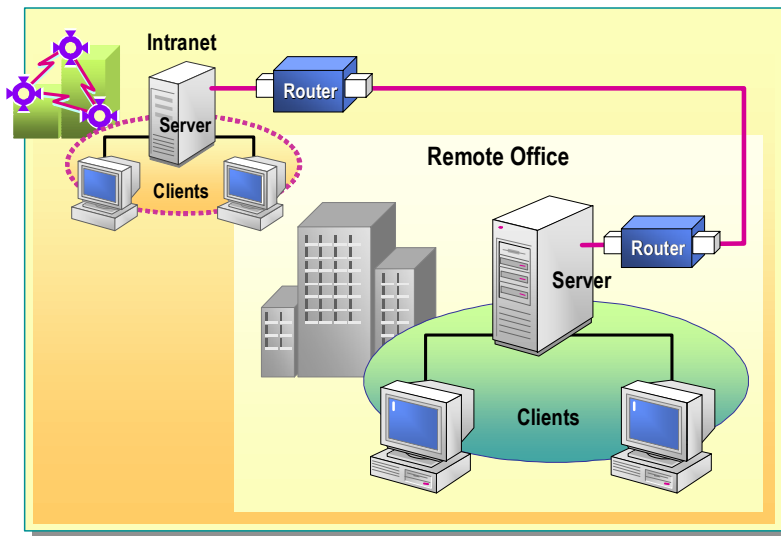
Communicating with Remote Offices

Topic Objective

To illustrate the concept of a remote office.

Lead-in

You can connect remote offices to your intranet by using a router. Routers act as a link between LANs, enabling messages to be sent from one to another.



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Organizations often extend to one or more remote office locations, with a LAN in each of them. By connecting those networks to each other, an organization can operate more effectively. For example, employees in remote offices can share information and communicate more easily with employees at corporate headquarters. In addition, employees who travel between offices can access their files and resources from any remote office location.

Delivery Tip

Explain how network segments can be connected by using routers.

You can connect TCP/IP network segments together by using IP routers, which forward packets from one network segment to another. Routing is used in combination with other network protocol services to provide forwarding capabilities between hosts that are located on separate network segments within a larger TCP/IP-based network.

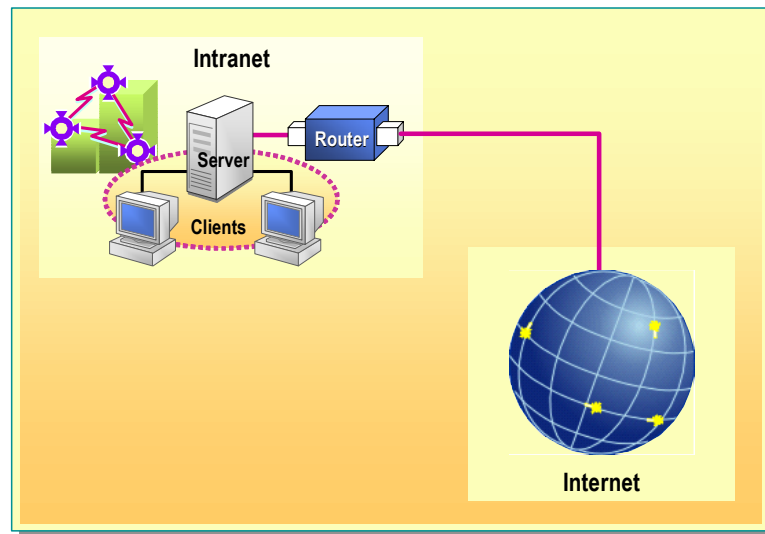
Providing Internet Access

Topic Objective

To illustrate the concept of connecting an intranet to the Internet.

Lead-in

An organization can use Internet access to establish a Web site, provide remote access to the network, and enable users to perform research and use e-mail.



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Many organizations require Internet access to establish a Web site, provide VPN remote access, and enable users to perform research and use e-mail. Windows 2000 provides services that enable an organization to connect to the Internet without compromising security, reliability, or performance.

Typically, Internet access is established by using the following methods:

- A dial-up connection to an Internet service provider (ISP). This method is used primarily in small organizations and by home-computer users.
- A dedicated line, such as a T1 carrier that is connected to a LAN. This method is used in large organizations that have their own node on the Internet or connect to an ISP that is a node.

Delivery Tip

Describe the methods that are typically used to establish Internet access.

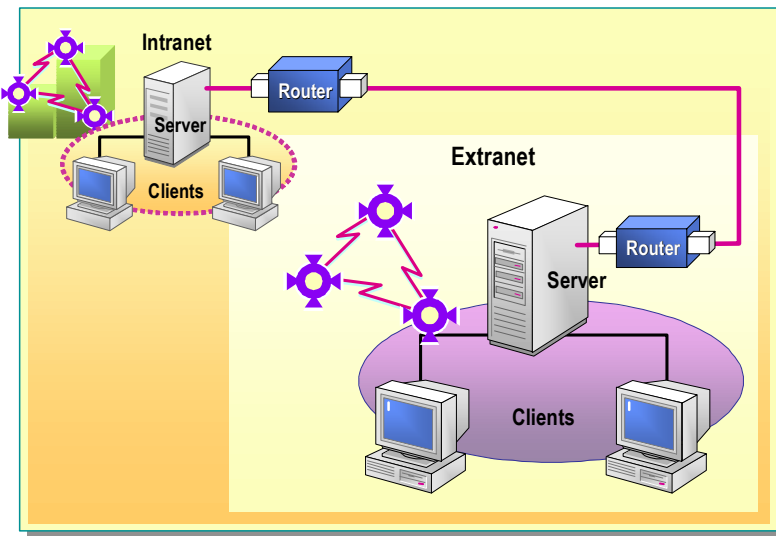
Introduction to Extranets

Topic Objective

To illustrate the concept of an extranet.

Lead-in

You can configure an extranet to provide customers, suppliers, and business partners with limited access to your intranet.



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Delivery Tip

Describe the purpose of an extranet.

An extranet enables an organization to extend its network to customers, suppliers, and other business partners for information-sharing purposes. An extranet allows users who are outside of your network to have limited access to information on your intranet, based on the level of permissions that you assign to them.

Windows 2000 provides features that simplify the process of configuring an extranet, and that secure your intranet against unauthorized access. Typically, an extranet is provided through secured VPN connections, which you can configure to meet specific needs. For example, business partners may need extranet access, a department may need access to another department's intranet, or you may want to provide selective public access to your intranet.

Review

Topic Objective

To reinforce module objectives by reviewing key points.

Lead-in

The review questions cover some of the key concepts taught in the module.

- Overview of the Windows 2000 Network Infrastructure
- Introduction to Intranets
- Identifying Remote Access Methods
- Communicating with Remote Offices
- Providing Internet Access
- Introduction to Extranets

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1. What are the five elements that a Windows 2000 network infrastructure can contain?

A network infrastructure can contain any of the following elements: an intranet, remote access, a remote office, Internet access, or an extranet.

2. What are the two types of remote access connectivity that Windows 2000 provides?

Windows 2000 remote access connectivity can be achieved with dial-up remote access or VPN remote access.

3. How can you connect remote offices to your intranet?

You can connect remote offices to your intranet by using a router. Routers act as a link between LANs, enabling messages to be sent from one to another.

4. What are the two methods that are typically used to provide Internet access?

Internet access is established by using the following methods:

- **A dial-up connection to an ISP**
- **A dedicated line, such as a T1 carrier that is connected to a LAN**

5. What is the purpose of an extranet?

An extranet enables an organization to extend its network to customers, suppliers, and other business partners for information-sharing purposes.

