

Chapter 1: Selecting Cisco Products for Remote Connections

2-1

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Objectives

Upon completion of this chapter, you will be able to perform the following tasks:

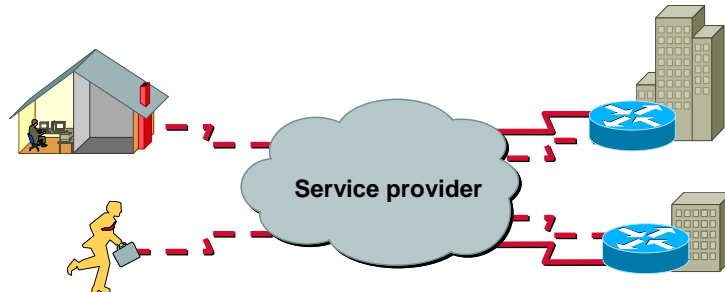
- **Explain the advantages and disadvantages of various WAN connection types**
- **Select the appropriate WAN connection types to interconnect multiple sites**
- **Select the Cisco equipment that will suit the specific needs of each site**
- **Utilize Cisco tools to select the proper equipment**

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Remote Access Overview



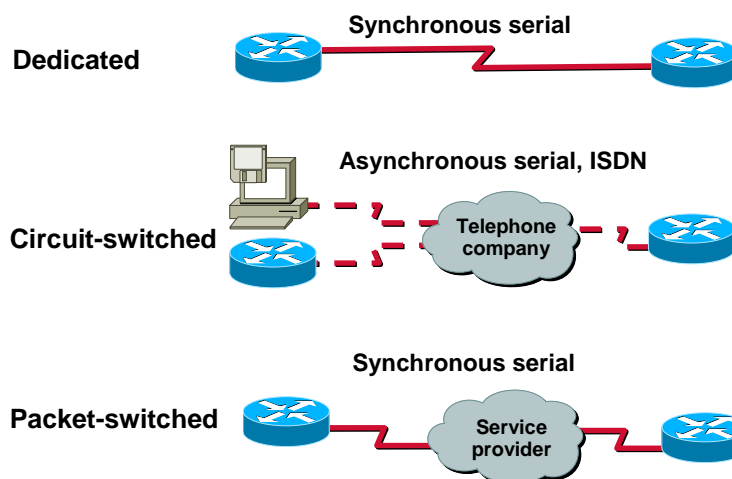
- Remote access networks connect sites
- Connection requirements vary depending on user requirements and cost



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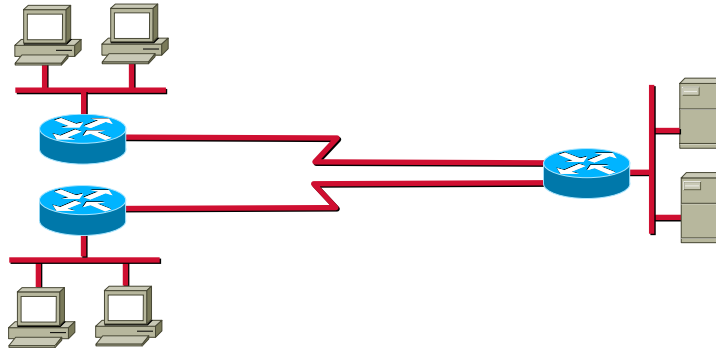
WAN Connection Types



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Dedicated Connections



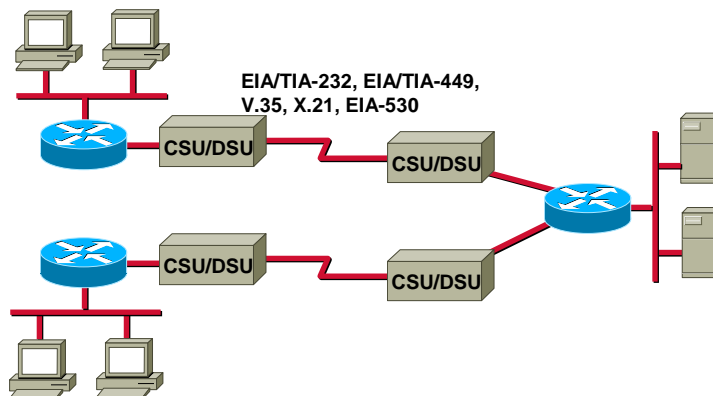
- Links are continuously available

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Dedicated Serial Connections

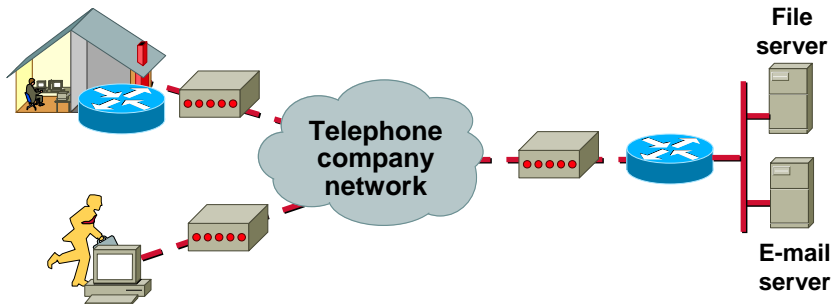


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Circuit Switching Connections



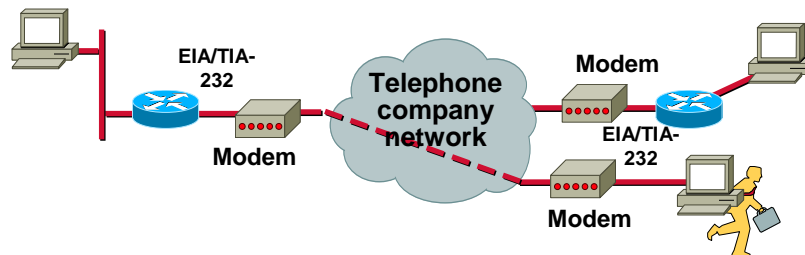
- Circuit switching requires call setup and call teardown
- Circuit switching is used in the telephone company networks and works like a telephone call



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Asynchronous Circuit-Switched Connections



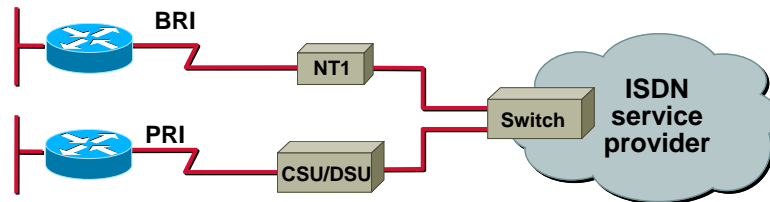
- Connections are made only when traffic dictates a need



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Circuit-Switched ISDN Connections

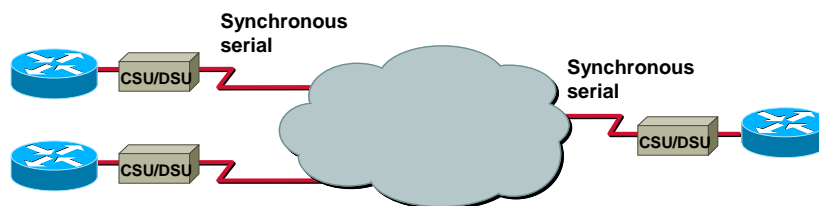


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Packet-Switched Connections

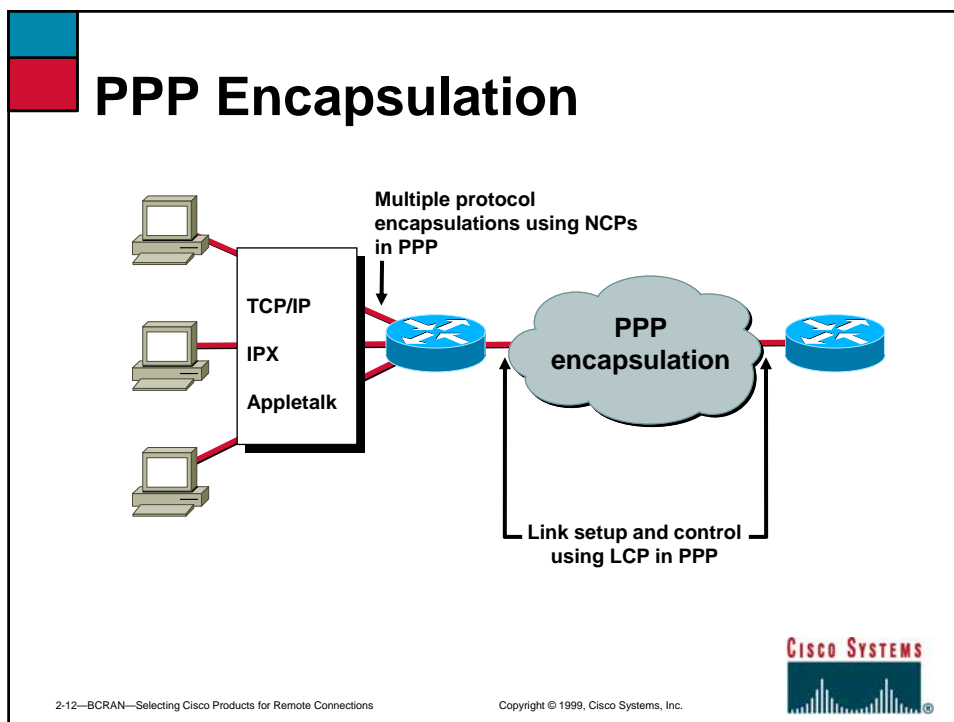
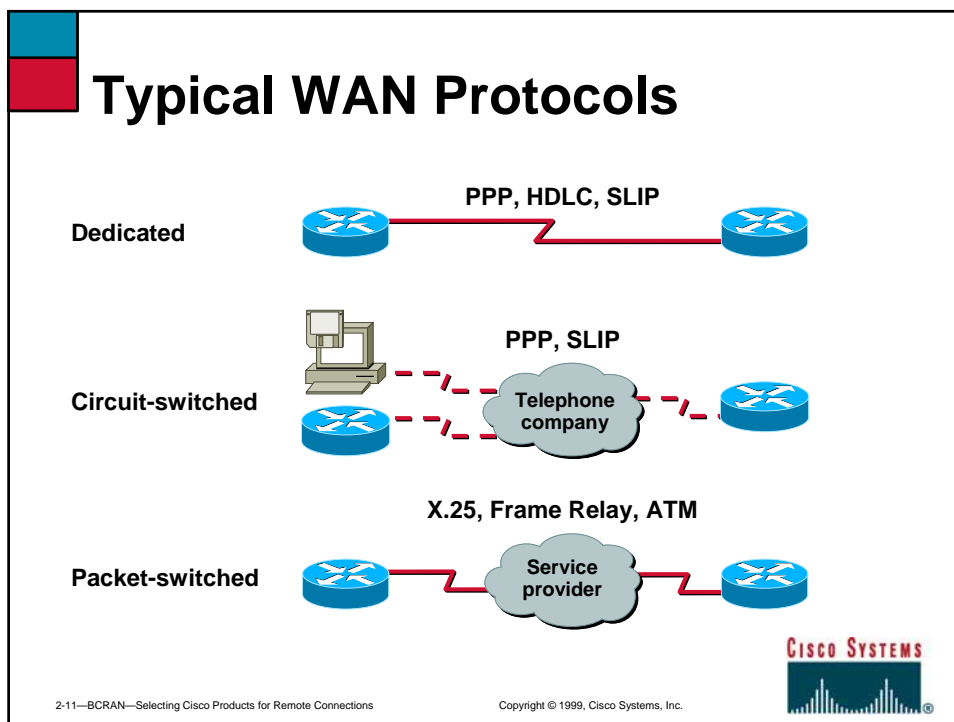


- VCs are established
- Packet-switched networks generally share bandwidth, but the cost is cheaper than a leased line

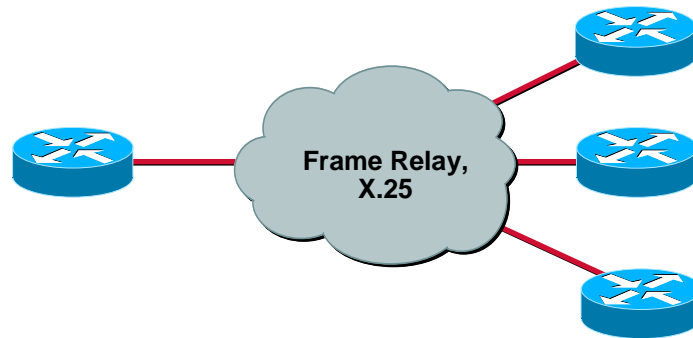
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X.25 and Frame Relay Encapsulations



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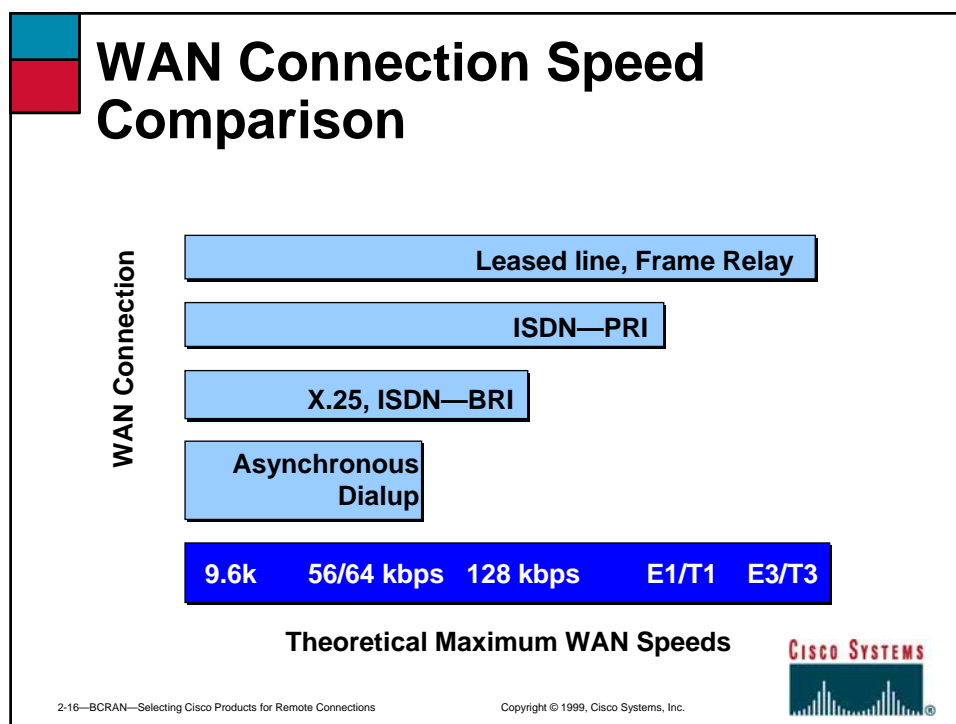
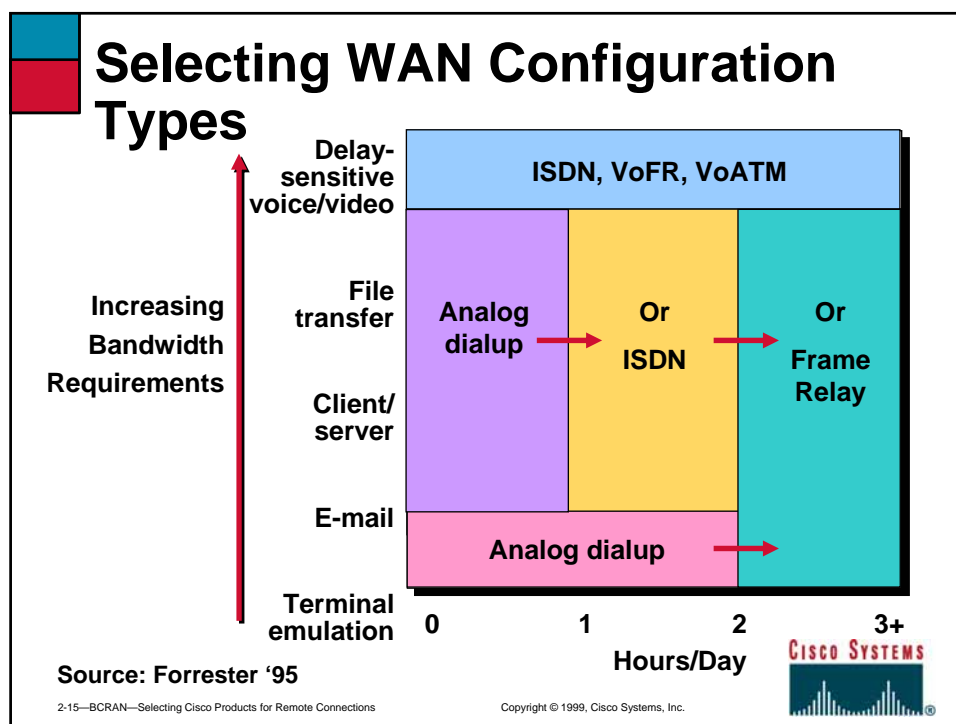
Connection Selection Considerations

- Availability
- Bandwidth
- Cost
- Ease of management
- Application traffic
- Quality of service and reliability
- Access control

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WAN Connection Summary

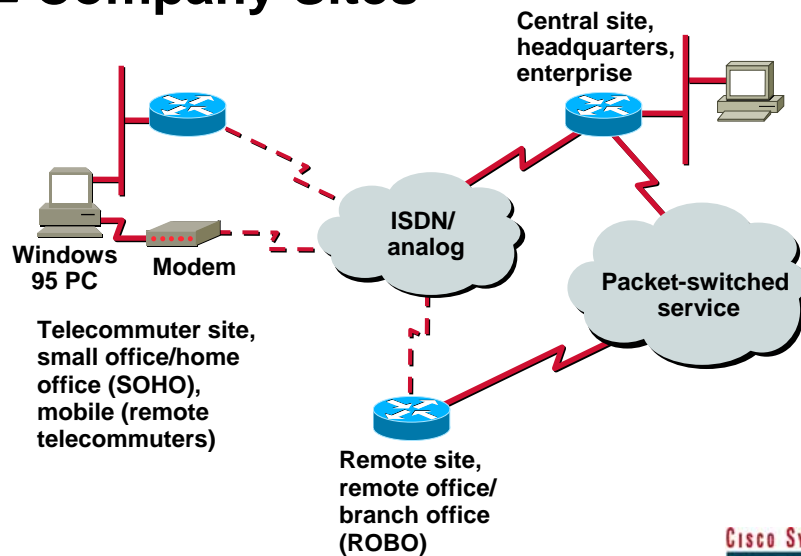
Connection Type	Applications
Leased lines	High control, full bandwidth, high-cost enterprise networks, and last-mile access
Frame Relay	Medium control, shared bandwidth, medium-cost enterprise backbones; branch sites
ISDN	Low control, shared bandwidth, more bandwidth than dialup
Asynchronous dialup	Low control, shared bandwidth, variable cost-effective for limited use connections, high reliability
X.25	Low control, shared bandwidth, variable cost-effective for limited use connections like DDR



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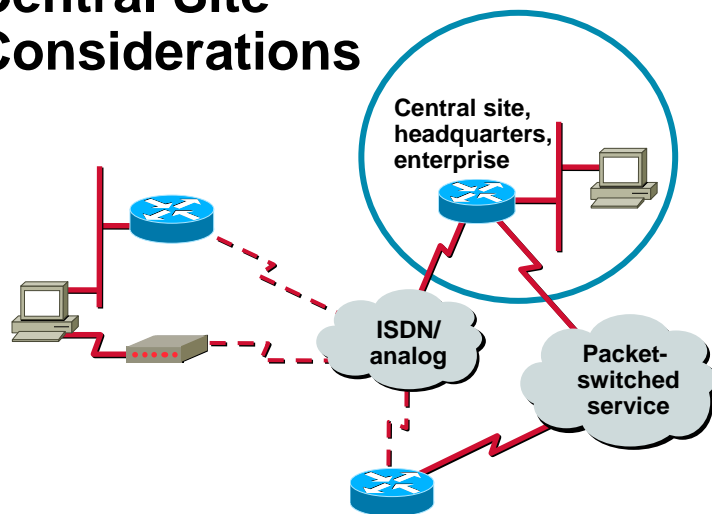
Company Sites



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Central Site Considerations



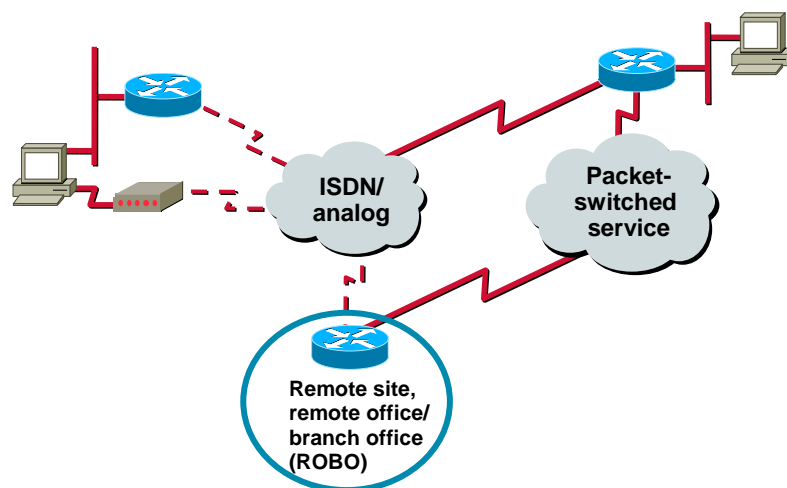
- Must provide access to multiple users and control the network costs



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Branch Office Considerations



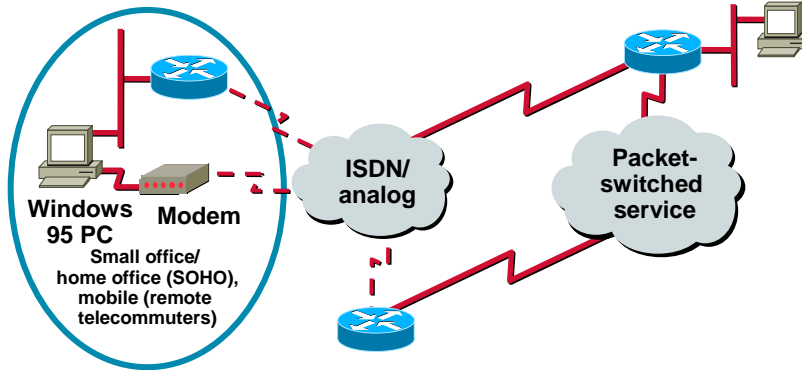
- Must be able to access the central site



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Telecommuter Site Considerations



- Must access company information on demand from various remote locations

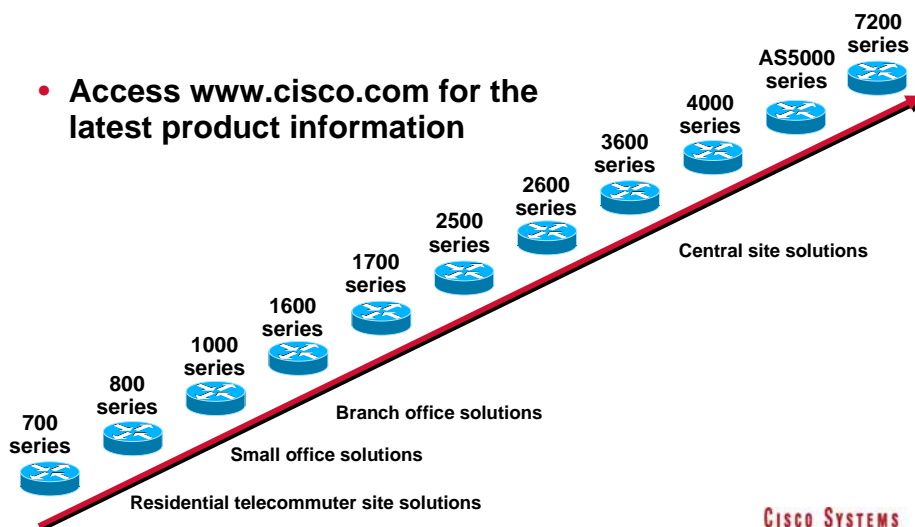


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Cisco Remote Access Solutions

- Access www.cisco.com for the latest product information

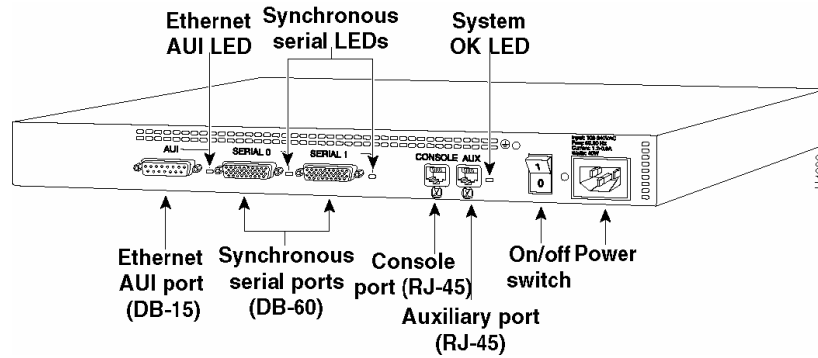


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Determining the Appropriate Interfaces—Fixed Interfaces

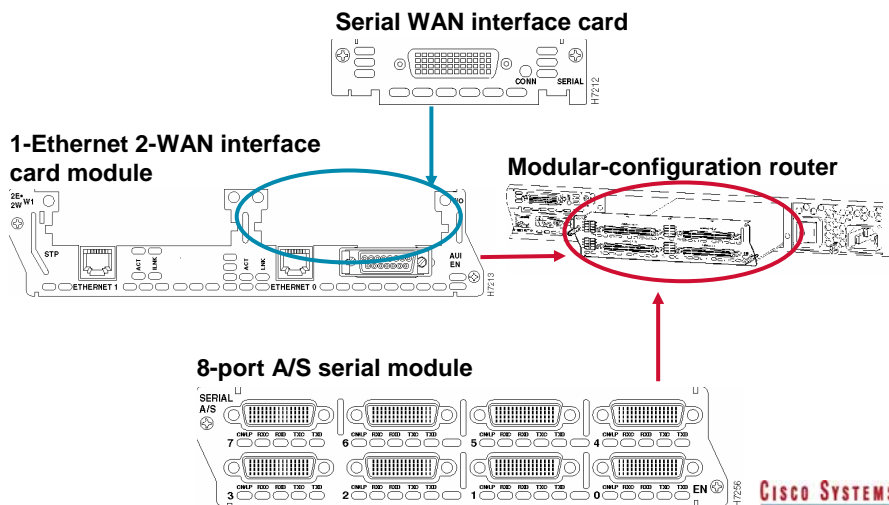
Fixed-configuration router



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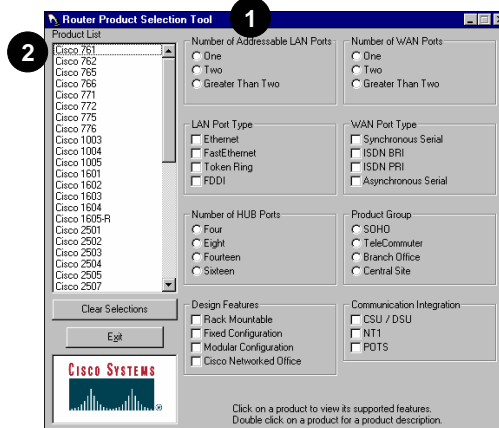
Determining Appropriate Interfaces—Modular Interfaces



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Selecting Products with Cisco Product Selection Tools



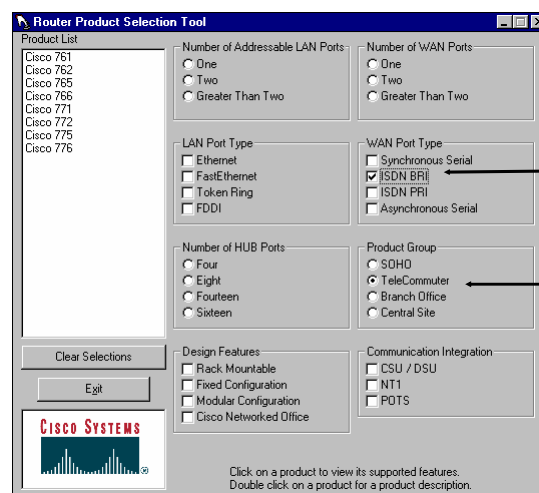
- For up-to-date information, use the online tools at www.cisco.com



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Product Selection Tool Example



BRI selection

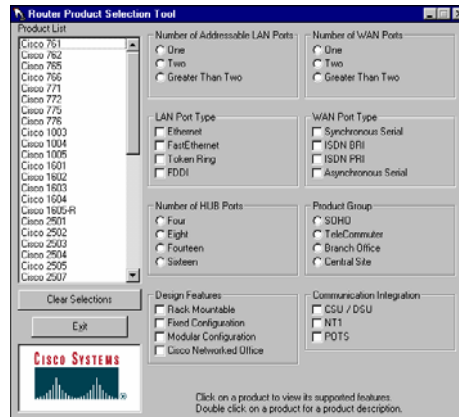
Telecommuter selection



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Laboratory Exercise: Visual Objective



- Use the product selection tool to select Cisco equipment



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Summary

After completing this chapter, you should be able to perform the following tasks:

- Determine if each site is a central site, branch office, or telecommuter site
- Select the Cisco products that will suit the specific needs of each site
- Utilize Cisco tools to select the proper equipment



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Review Questions

- **Identify the types of WAN connections discussed in this chapter and the appropriate protocols used on each connection.**
- **Describe the considerations when implementing a WAN connection at a central site, branch office, and telecommuter site.**
- **Identify available Cisco equipment designed for a telecommuter site, a branch office, and a central site.**

