

Router Requirements

Switches are not the only component of a network that come with a variety of features. Your choice of router is another very important decision. Routers play a critical role in networking by connecting homes and businesses to the internet, interconnecting multiple sites within an enterprise network, providing redundant paths, and connecting ISPs on the internet. Routers can also act as a translator between different media types and protocols. For example, a router can accept packets from an Ethernet network and re-encapsulate them for transport over a serial network.

Routers use the network portion (prefix) of the destination IP address to route packets to the proper destination. They select an alternate path if a link goes down. All hosts on a local network specify the IP address of the local router interface in their IP configuration. This router interface is the default gateway. The ability to route efficiently and recover from network link failures is critical to delivering packets to their destination.

Routers also serve other beneficial functions as follows:

- They provide broadcast containment by limiting broadcasts to the local network.
- They interconnect geographically separated locations.
- They group users logically by application or department within a company, based on common needs or requiring access to the same resources.
- They provide enhanced security by filtering unwanted traffic through access control lists.

11.4.2

Cisco Routers

As the network grows, it is important to select the proper routers to meet its requirements. There are different categories of Cisco routers.

Click each button for more information about the categories of routers.

Branch Routers

Branch routers, shown in the figure, optimize branch services on a single platform while delivering an optimal application experience across branch and WAN infrastructures. Maximizing service availability at the branch requires networks designed for 24x7x365 uptime. Highly available branch networks must ensure fast recovery from typical faults, while minimizing or eliminating the impact on service, and provide simple network configuration and management. Shown are the Cisco Integrated Services Router (ISR) 4000 Series Routers.



◀ ● ● ● ▶

11.4.3

Router Form Factors

Like switches, routers also come in many form factors. Network administrators in an enterprise environment should be able to support a variety of routers, from a small desktop router to a rack-mounted or blade model.

Click each button for more information on various Cisco router platforms.

Cisco 900 Series

This is a small branch office router. It combines WAN, switching, security, and advanced connectivity options in a compact, fanless platform for small and medium-sized businesses.



◀ ● ● ● ▶

Routers can also be categorized as fixed configuration or modular. With the fixed configuration, the desired router interfaces are built-in. Modular routers come with multiple slots that allow a network administrator to change the interfaces on the router. Routers come with a variety of different interfaces, such as Fast Ethernet, Gigabit Ethernet, Serial, and Fiber-Optic.

A comprehensive list of Cisco routers can be found by searching Cisco's website www.cisco.com.

11.4.4

Check Your Understanding - Router Hardware

Check your understanding of router hardware by choosing the BEST answer to the following questions.

1. This type of router provides fast performance with high security for data centers, campus, and branch networks.

- branch routers
 network edge routers
 service provider routers
 industrial routers

2. This type of router provides end-to-end delivery of subscriber services.

- branch routers
 network edge routers
 service provider routers
 industrial routers

3. This type of router provides simple network configuration and management for LANs and WANs.

- branch routers
 network edge routers
 service provider routers
 industrial routers

4. This type of router is designed to provide enterprise-class features in rugged and harsh environments.

- branch routers
 network edge routers
 service provider routers
 industrial routers

5. This type of router delivers next-generation internet experience across all devices and locations.

- branch routers
 network edge routers
 service provider routers
 industrial routers

Check

Show Me

Reset