12.2.5 Addressing Method Facts

There are two options for assigning IP addresses. You can use static addressing, or you can specify that IP addresses are dynamically assigned.

This lesson covers choosing an IP assignment method.

Choose an IP Assignment Method

The following table provides information to help you decide which method of assigning IP addresses you should choose.

Method	Uses
Static (manual) assignment	Using static addressing, IP configuration information must be manually configured on each host. Static addressing can be used: • On networks with a very small number of hosts. • To permanently assign IP addresses to hosts that must always have the same address (such as printers, servers, or routers). • For hosts that cannot accept an IP address from DHCP. Static addressing is very susceptible to configuration errors and duplicate IP address configuration errors (two hosts that have been assigned the same IP address). Static addressing also disables both APIPA and DHCP capabilities on the host.
Dynamic Host Configuration Protocol (DHCP) assignment	A DHCP server is a special server configured to pass out IP addresses and other IP configuration information to network clients. Use DHCP for small, medium, or large networks. • When a client boots, it contacts the DHCP server for IP configuration information. • The DHCP server is configured with a range of IP addresses that it can assign to hosts. • The DHCP server can be configured to pass out other IP configuration, such as the default gateway and DNS server addresses. • The DHCP server ensures that each client has a unique IP address. • The DHCP server can be configured to not assign specific addresses in the range. • The DHCP server assigns the IP address and other information to the client. The assignment is called a lease and includes a lease time that identifies how long the client can use the IP address. • At boot and at set intervals, the client contacts the DHCP server to renew the lease on the IP address.

	• The DHCP lease process uses frame-level broadcasts. For this reason, DHCP requests typically do not pass through routers to other subnets. To enable DHCP across subnets:
	  ◦ Enable BootP (DHCP broadcast) requests through the router.
	  ◦ Configure a computer for BootP forwarding to request IP information on behalf of other clients.
	• A DHCP server can be configured to deliver the same address to a specific host each time it requests an address. This is called a reservation.

Copyright © 2022 TestOut Corporation All rights reserved.