

## Understanding Autoinstallation of Configuration Files on EX-series Switches

---

Autoinstallation is the automatic configuration of a device over the network from a pre-existing configuration file that you create and store on a configuration server—typically a Trivial File Transfer Protocol (TFTP) server. You can use autoinstallation to automatically configure new devices and to deploy multiple devices from a central location in the network.

Autoinstallation takes place automatically when you connect an Ethernet port on a new switch to the network and power on the switch. You can also explicitly enable autoinstallation on EX-series switches in your network to implement autoinstallation when they are powered on. To configure autoinstallation, you specify a configuration server, an autoinstallation interface, and a protocol for IP address acquisition.

This topic describes:

- Typical Uses for Autoinstallation on page 1
- Autoinstallation Configuration Files and IP Addresses on page 1
- Typical Autoinstallation Process on a New Switch on page 2

### Typical Uses for Autoinstallation

- To deploy and update multiple devices from a central location in the network.
- To configure a new device—Autoinstallation takes place when you power on a device that has only the factory default configuration (boot) file.
- To update a device—Autoinstallation takes place when a device that has been manually configured for autoinstallation is powered on.

### Autoinstallation Configuration Files and IP Addresses

For the autoinstallation process to work, you must store one or more host-specific or default configuration files on a configuration server in the network and have a service available—typically Dynamic Host Configuration Protocol (DHCP)—to assign an IP address to the switch.

You can set up the following configuration files for autoinstallation on the switch:

- **network.conf**—Default configuration file for autoinstallation, in which you specify IP addresses and associated hostnames for devices on the network.
- **switch.conf**—Default configuration file for autoinstallation with a minimum configuration sufficient for you to telnet to the device and configure it manually.
- **hostname.conf**—Host-specific configuration file for autoinstallation on a device that contains all the configuration information necessary for the switch. In the filename, *hostname* is replaced with the hostname assigned to the switch.

If the server with the autoinstallation configuration file is not on the same LAN segment as the new device, or if a specific device is required by the network, you must configure an intermediate device directly attached to the new switch, through

which the new switch can send TFTP, boot protocol (BOOTP), and Domain Name System (DNS) requests. In this case, you specify the IP address of the intermediate device as the location to receive TFTP requests for autoinstallation.

## **Typical Autoinstallation Process on a New Switch**

When an EX-series switch is powered on for the first time, it performs the following autoinstallation tasks:

1. The new switch sends out DHCP or BOOTP requests on each connected interface simultaneously to obtain an IP address.

If a DHCP server responds to these requests, it provides the switch with some or all of the following information:

- An IP address and subnet mask for the autoinstallation interface.
- The location of the (typically) TFTP server, Hypertext Transfer Protocol (HTTP) server, or FTP server on which the configuration file is stored.
- The name of the configuration file to be requested from the TFTP server.
- The IP address or hostname of the TFTP server.

If the DHCP server provides the server's hostname, a DNS server must be available on the network to resolve the name to an IP address.

- The IP address of an intermediate device if the configuration server is on a different LAN segment from the new switch.
2. After the new switch acquires an IP address, the autoinstallation process on the switch attempts to download a configuration file in the following ways:
    - a. If the DHCP server specifies the host-specific configuration file *hostname.conf*, the switch uses that filename in the TFTP server request. The autoinstallation process on the new switch makes three unicast TFTP requests for *hostname.conf*. If these attempts fail, the switch broadcasts three requests to any available TFTP server for the file.
    - b. If the new switch does not locate a *hostname.conf* file, the autoinstallation process sends three unicast TFTP requests for a *network.conf* file that contains the switch's hostname-to-IP-address mapping information. If these attempts fail, the switch broadcasts three requests to any available TFTP server for the file.
    - c. If the switch fails to find a *network.conf* file that contains a hostname entry for the switch, the autoinstallation process sends out a DNS request and attempts to resolve the new switch's IP address to a hostname.
    - d. If the new switch determines its hostname, it sends a TFTP request for the *hostname.conf* file.
    - e. If the new switch is unable to map its IP address to a hostname, it sends TFTP requests for the default configuration file *switch.conf*. The TFTP request procedure is the same as for the *network.conf* file.

3. After the new switch locates a configuration file on a TFTP server, the autoinstallation process downloads the file, installs the file on the switch, and commits the configuration.

- Related Topics**
- Configuring Autoinstallation of Configuration Files (CLI Procedure)
  - Connecting and Configuring an EX-series Switch (CLI Procedure)
  - Connecting and Configuring an EX-series Switch (J-Web Procedure)
  - Configuration Files Terms

