



Release Notes for the Catalyst 2918 Switch, Cisco IOS Release 12.2(46)SE

August 28, 2008

These release notes include important information about Cisco IOS Release 12.2(46)SE and any limitations, restrictions, and caveats that apply to this release. Verify that these release notes are correct for your switch:

- If you are installing a new switch, see the Cisco IOS release label on the rear panel of your switch.
- If your switch is on, use the **show version** privileged EXEC command. See the “[Finding the Software Version and Feature Set](#)” section on page 4.
- If you are upgrading to a new release, see the software upgrade filename for the software version. See the “[Deciding Which Files to Use](#)” section on page 4.

For the complete list of Catalyst 2918 switch documentation, see the “[Related Documentation](#)” section on page 18.

You can download the switch software from this site (registered Cisco.com users with a login password):
http://www.cisco.com/web/CN/products/products_netsol/switches/products/ca2918/download.html

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System Requirements

The system requirements are described in these sections:

- [Hardware Supported, page 2](#)
- [Device Manager System Requirements, page 2](#)
- [Cluster Compatibility, page 3](#)
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Hardware Supported

[Table 1](#) lists the hardware supported on this release.

Table 1 Catalyst 2918 Switch Supported Hardware

Switch	Description
Catalyst 2918-24TT	24 10/100 BASE-TX Ethernet ports and 2 10/100/1000BASE-T copper ports
Catalyst 2918-24TC	24 10/100BASE-TX Ethernet ports and 2 dual-purpose uplinks ¹ (two 10/100/1000BASE-T copper ports and two SFP ² module slots)
Catalyst 2918-48TT	48 10/100 BASE-TX Ethernet ports and 2 10/100/1000BASE-T copper uplink ports
Catalyst 2918-48TC	48 10/100BASE-TX Ethernet ports and 2 dual-purpose ports
SFP modules	1000Base-LX/LH, -SX, 100Base-FX

1. Each uplink port is considered a single interface with dual front ends (RJ-45 connector and SFP module slot). The dual front ends are not redundant interfaces, and only one port of the pair is active.
2. SFP = small form-factor pluggable.

Device Manager System Requirements

These sections describes the hardware and software requirements for using the device manager:

- [Hardware Requirements, page 3](#)
- [Software Requirements, page 3](#)

Hardware Requirements

Table 2 lists the minimum hardware requirements for running the device manager.

Table 2 Minimum Hardware Requirements

Processor Speed	DRAM	Number of Colors	Resolution	Font Size
Intel Pentium II ¹	64 MB ²	256	1024 x 768	Small

1. We recommend Intel Pentium 4.
2. We recommend 256-MB DRAM.

Software Requirements

Table 3 lists the supported operating systems and browsers for using the device manager. The device manager verifies the browser version when starting a session to ensure that the browser is supported.



Note

The device manager does not require a plug-in.

Table 3 Supported Operating Systems and Browsers

Operating System	Minimum Service Pack or Patch	Microsoft Internet Explorer	Mozilla Firefox
Windows 2000	None	6.0 or 7.0	1.5 or 2.0
Windows XP	None	6.0 or 7.0	1.5 or 2.0
Windows 2003	None	6.0 or 7.0	1.5 or 2.0
Windows Vista	None	6.0 or 7.0	1.5 or 2.0

Cluster Compatibility

You cannot create and manage switch clusters through the device manager. To create and manage switch clusters, use the command-line interface (CLI).

When creating a switch cluster or adding a switch to a cluster, follow these guidelines:

- When you create a switch cluster, we recommend configuring the highest-end switch in your cluster as the command switch.
- The standby command switch must be the same type as the command switch. For example, if the command switch is a Catalyst 2918 switch, all standby command switches must be Catalyst 2918 switches.

For additional information about clustering, see the software configuration guide and the command reference.

Upgrading the Switch Software

These are the procedures for downloading software. Before downloading software, read this section for important information:

- [Finding the Software Version and Feature Set, page 4](#)
- [Deciding Which Files to Use, page 4](#)
- [Upgrading a Switch by Using the Device Manager, page 5](#)
- [Upgrading a Switch by Using the CLI, page 5](#)
- [Recovering from a Software Failure, page 6](#)

Finding the Software Version and Feature Set

The Cisco IOS image is stored as a bin file in a directory that is named with the Cisco IOS release. A subdirectory contains the files needed for web management. The image is stored on the system board flash device (flash:).

You can use the **show version** privileged EXEC command to see the software version that is running on your switch. The second line of the display shows the version.

You can also use the **dir filesystem:** privileged EXEC command to see the directory names of other software images that you might have stored in flash memory.

Deciding Which Files to Use

The upgrade procedures in these release notes describe how to perform the upgrade by using a combined tar file. This file contains the Cisco IOS image file and the files needed for the embedded device manager. You must use the combined tar file to upgrade the switch through the device manager. To upgrade the switch through the command-line interface (CLI), use the tar file and the **archive download-sw** privileged EXEC command.

These are the Cisco IOS Software image files for the Catalyst 2918 switch:

c2918-lanlite-tar.122-46.SE.tar	Catalyst 2918 image file and device manager files. This image has Layer 2+ features.
c2918-lanlitek9-tar.122-46.SETar	Catalyst 2918 cryptographic image file and device manager files. This image has the Kerberos and SSH features.

Archiving Software Images

Before upgrading your switch software, make sure that you have archived copies of the current Cisco IOS release and the Cisco IOS release to which you are upgrading. You should keep these archived images until you have upgraded all devices in the network to the new Cisco IOS image and until you have verified that the new Cisco IOS image works properly in your network.

Cisco routinely removes old Cisco IOS versions from Cisco.com. See *Product Bulletin 2863* for more information:

http://www.cisco.com/en/US/products/sw/iosswrel/ps5187/prod_bulletin0900aecd80281c0e.html

You can copy the bin software image file on the flash memory to the appropriate TFTP directory on a host by using the **copy flash: tftp:** privileged EXEC command.

**Note**

Although you can copy any file on the flash memory to the TFTP server, it is time consuming to copy all of the HTML files in the tar file. We recommend that you download the tar file from Cisco.com and archive it on an internal host in your network.

You can also configure the switch as a TFTP server to copy files from one switch to another without using an external TFTP server by using the **tftp-server** global configuration command. For more information about the **tftp-server** command, see the “Basic File Transfer Services Commands” section of the *Cisco IOS Configuration Fundamentals Command Reference, Release 12.2* at this URL:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1835/products_command_reference_chapter09186a00800ca744.html

Upgrading a Switch by Using the Device Manager

You can upgrade switch software by using the device manager. For detailed instructions, click **Help**.

**Note**

When using the device manager to upgrade your switch, do not use or close your browser session after the upgrade process begins. Wait until after the upgrade process completes.

Upgrading a Switch by Using the CLI

This procedure is for copying the combined tar file to the switch. You copy the file to the switch from a TFTP server and extract the files. You can download an image file and replace or keep the current image.

To download software, follow these steps:

-
- Step 1** Identify the file that you want to download.
- Step 2** Download the software image file. If you have a SmartNet support contract, go to this URL, and log in to download the appropriate files:
- http://www.cisco.com/web/CN/products/products_netsol/switches/products/ca2918/download.html
- To download the image for a Catalyst 2918 switch, click **Catalyst 2918 software**. To obtain authorization and to download the cryptographic software files, click **Catalyst 2918 3DES Cryptographic Software**.
- Step 3** Copy the image to the appropriate TFTP directory on the workstation, and make sure that the TFTP server is properly configured.
- For more information, see Appendix B in the software configuration guide for this release.
- Step 4** Log into the switch through the console port or a Telnet session.
- Step 5** (Optional) Ensure that you have IP connectivity to the TFTP server by entering this privileged EXEC command:

```
Switch# ping tftp-server-address
```

For more information about assigning an IP address and default gateway to the switch, see the software configuration guide for this release.

- Step 6** Download the image file from the TFTP server to the switch. If you are installing the same version of software that is currently on the switch, overwrite the current image by entering this privileged EXEC command:

```
Switch# archive download-sw /overwrite /reload  
tftp: [[/location]/directory]/image-name.tar
```

The **/overwrite** option overwrites the software image in flash memory with the downloaded one.

The **/reload** option reloads the system after downloading the image unless the configuration has been changed and not saved.

For */location*, specify the IP address of the TFTP server.

For */directory/image-name.tar*, specify the directory (optional) and the image to download. Directory and image names are case sensitive.

This example shows how to download an image from a TFTP server at 198.30.20.19 and to overwrite the image on the switch:

```
Switch# archive download-sw /overwrite tftp://198.30.20.19/c2918-lanlite-tar.122-46.SE.tar
```

You can also download the image file from the TFTP server to the switch and keep the current image by replacing the **/overwrite** option with the **/leave-old-sw** option.

Recovering from a Software Failure

For additional recovery procedures, see the “Troubleshooting” chapter in the software configuration guide for this release.

Installation Notes

You can assign IP information to your switch by using these methods:

- The Express Setup program, as described in the switch getting started guide.
- The CLI-based setup program, as described in the switch hardware installation guide.
- The DHCP-based autoconfiguration, as described in the switch software configuration guide.
- Manually assigning an IP address, as described in the switch software configuration guide.

New Features

These sections describe the new supported hardware and the new and updated software features provided in this release:

- [New Hardware Features, page 7](#)
- [New Software Features, page 7](#)

New Hardware Features

For a list of all supported hardware, see the [“Hardware Supported” section on page 2](#).

New Software Features

This release includes these new features:

- DHCP server port-based address allocation for the preassignment of an IP address to a switch ports. See the [“Software Configuration Guide Updates” section on page 13](#) for configuration information.
- Generic message authentication support with the SSH Protocol and compliance with RFC 4256.

Limitations and Restrictions

You should review this section before you begin working with the switch. These are known limitations that will not be fixed, and there is not always a workaround. Some features might not work as documented, and some features could be affected by recent changes to the switch hardware or software.

This section contains these limitations:

- [Cisco IOS Limitations, page 7](#)
- [Device Manager Limitations, page 10](#)

Cisco IOS Limitations

These limitations apply to the Catalyst 2918 switch:

- [“Configuration” section on page 7](#)
- [“Ethernet” section on page 8](#)
- [“IP Telephony” section on page 9](#)
- [“SPAN” section on page 9](#)
- [“Trunking” section on page 9](#)
- [“VLAN” section on page 10](#)

Configuration

These are the configuration limitations:

- A static IP address might be removed when the previously acquired DHCP IP address lease expires.

This problem occurs under these conditions:

- When the switch is booted up without a configuration (no config.text file in flash memory).
- When the switch is connected to a DHCP server that is configured to give an address to it (the dynamic IP address is assigned to VLAN 1).
- When an IP address is configured on VLAN 1 before the dynamic address lease assigned to VLAN 1 expires.

The workaround is to reconfigure the static IP address. (CSCea71176 and CSCdz11708)

- When connected to some third-party devices that send early preambles, a switch port operating at 100 Mb/s full duplex or 100 Mb/s half duplex might bounce the line protocol up and down. The problem is observed only when the switch is receiving frames.
The workaround is to configure the port for 10 Mb/s and half duplex or to connect a hub or a nonaffected device to the switch. (CSCed39091)
- When port security is enabled on an interface in restricted mode and the **switchport block unicast interface** command has been entered on that interface, MAC addresses are incorrectly forwarded when they should be blocked
The workaround is to enter the **no switchport block unicast** interface configuration command on that specific interface. (CSCee93822)
- A traceback error occurs if a crypto key is generated after an SSL client session.
There is no workaround. This is a cosmetic error and does not affect the functionality of the switch. (CSCef59331)
- When the **logging event-spanning-tree** interface configuration command is configured and logging to the console is enabled, a topology change might generate a large number of logging messages, causing high CPU utilization. CPU utilization can increase with the number of spanning-tree instances and the number of interfaces configured with the **logging event-spanning-tree** interface configuration command. This condition adversely affects how the switch operates and could cause problems such as STP convergence delay.
High CPU utilization can also occur with other conditions, such as when debug messages are logged at a high rate to the console.
Use one of these workarounds:
 - Disable logging to the console.
 - Rate-limit logging messages to the console.
 Remove the **logging event spanning-tree** interface configuration command from the interfaces. (CSCsg91027)
- The far-end fault optional facility is not supported on the GLC-GE-100FX SFP module.
The workaround is to configure aggressive UDLD. (CSCsh70244).

Ethernet

These are the Ethernet limitations:

- Traffic on EtherChannel ports is not perfectly load-balanced. Egress traffic on EtherChannel ports are distributed to member ports on load balance configuration and traffic characteristics like MAC or IP address. More than one traffic stream may map to same member ports based on hashing results calculated by the ASIC.
If this happens, uneven traffic distribution will happen on EtherChannel ports.
Changing the load balance distribution method or changing the number of ports in the EtherChannel can resolve this problem. Use any of these workarounds to improve EtherChannel load balancing:
 - for random source-ip and dest-ip traffic, configure load balance method as **src-dst-ip**
 - for incrementing source-ip traffic, configure load balance method as **src-ip**
 - for incrementing dest-ip traffic, configure load balance method as **dst-ip**
 - Configure the number of ports in the EtherChannel so that the number is equal to a power of 2 (i.e. 2, 4, or 8)

For example, with load balance configured as **dst-ip** with 150 distinct incrementing destination IP addresses, and the number of ports in the EtherChannel set to either 2, 4, or 8, load distribution is optimal. (CSCeh81991)

IP Telephony

These are the IP telephony limitations:

- Some access point devices are incorrectly discovered as IEEE 802.3af Class 1 devices. These access points should be discovered as Cisco pre-standard devices. The **show power inline** user EXEC command shows the access point as an IEEE Class 1 device. The workaround is to power the access point by using an AC wall adaptor. (CSCin69533)
- After you change the access VLAN on a port that has IEEE 802.1x enabled, the IP phone address is removed. Because learning is restricted on IEEE 802.1x-capable ports, it takes approximately 30 seconds before the address is relearned. No workaround is necessary. (CSCea85312)
- The Cisco 7905 IP Phone is error-disabled when the phone is connected to wall power. The workaround is to enable PoE and to configure the switch to recover from the PoE error-disabled state. (CSCsf32300)

SPAN

This is the SPAN limitation.

- Cisco Discovery Protocol (CDP), VLAN Trunking Protocol (VTP), and Port Aggregation Protocol (PAgP) packets received from a SPAN source are not sent to the destination interfaces of a local SPAN session. The workaround is to use the **monitor session *session_number* destination {*interface interface-id encapsulation replicate*}** global configuration command for local SPAN. (CSCed24036)

Trunking

These are the trunking limitations:

- The switch treats frames received with mixed encapsulation (IEEE 802.1Q and Inter-Switch Link [ISL]) as frames with FCS errors, increments the error counters, and the port LED blinks amber. This happens when an ISL-unaware device receives an ISL-encapsulated packet and forwards the frame to an IEEE 802.1Q trunk interface. There is no workaround. (CSCdz33708)
- IP traffic with IP options set is sometimes leaked on a trunk port. For example, a trunk port is a member of an IP multicast group in VLAN X but is not a member in VLAN Y. If VLAN Y is the output interface for the multicast route entry assigned to the multicast group and an interface in VLAN Y belongs to the same multicast group, the IP-option traffic received on an input VLAN interface other than one in VLAN Y is sent on the trunk port in VLAN Y because the trunk port is forwarding in VLAN Y, even though the port has no group membership in VLAN Y. There is no workaround. (CSCdz42909).
- For trunk ports or access ports configured with IEEE 802.1Q tagging, inconsistent statistics might appear in the **show interfaces counters** privileged EXEC command output. Valid IEEE 802.1Q frames of 64 to 66 bytes are correctly forwarded even though the port LED blinks amber, and the frames are not counted on the interface statistics. There is no workaround. (CSCec35100).

VLAN

These are the VLAN limitations:

- If the number of VLANs times the number of trunk ports exceeds the recommended limit of 13,000, the switch can fail.

The workaround is to reduce the number of VLANs or trunks. (CSCeb31087)

- When line rate traffic is passing through a dynamic port, and you enter the **switchport access vlan dynamic** interface configuration command for a range of ports, the VLANs might not be assigned correctly. One or more VLANs with a null ID appears in the MAC address table instead.

The workaround is to enter the **switchport access vlan dynamic** interface configuration command separately on each port. (CSCsi26392)

Device Manager Limitations

These are the device manager limitations:

- When you are prompted to accept the security certificate and you click *No*, you only see a blank screen, and the device manager does not launch.

The workaround is to click *Yes* when you are prompted to accept the certificate. (CSCef45718)

Important Notes

These sections describe the important notes related to this software release for the Catalyst 2960 switch:

- [Cisco IOS Notes, page 10](#)
- [Device Manager Notes, page 10](#)

Cisco IOS Notes

This note applies to Cisco IOS software:

- If the switch requests information from the Cisco Secure Access Control Server (ACS) and the message exchange times out because the server does not respond, a message similar to this appears:

```
00:02:57: %RADIUS-4-RADIUS_DEAD: RADIUS server 172.20.246.206:1645,1646 is not responding.
```

If this message appears, check that there is network connectivity between the switch and the ACS. You should also check that the switch has been properly configured as an AAA client on the ACS.

Device Manager Notes

These notes apply to the device manager:

- You cannot create and manage switch clusters through the device manager. To create and manage switch clusters, use the CLI.
- When the switch is running a localized version of the device manager, the switch displays settings and status only in English letters. Input entries on the switch can only be in English letters.

- For device manager sessions on Internet Explorer, popup messages in simplified Chinese can appear as garbled text. These messages appear properly if your operating system is Chinese.
- We recommend this browser setting to speed up the time needed to display the device manager from Microsoft Internet Explorer.

From Microsoft Internet Explorer:

1. Choose **Tools > Internet Options**.
 2. Click **Settings** in the “Temporary Internet files” area.
 3. From the Settings window, choose **Automatically**.
 4. Click **OK**.
 5. Click **OK** to exit the Internet Options window.
- The HTTP server interface must be enabled to display the device manager. By default, the HTTP server is enabled on the switch. Use the **show running-config** privileged EXEC command to see if the HTTP server is enabled or disabled.

Beginning in privileged EXEC mode, follow these steps to configure the HTTP server interface:

	Command	Purpose
Step 1	configure terminal	Enter global configuration mode.
Step 2	ip http authentication {aaa enable local}	Configure the HTTP server interface for the type of authentication that you want to use. <ul style="list-style-type: none"> • aaa—Enable the authentication, authorization, and accounting feature. You must enter the aaa new-model interface configuration command for the aaa keyword to appear. • enable—Enable password, which is the default method of HTTP server user authentication, is used. • local—Local user database, as defined on the Cisco router or access server, is used.
Step 3	end	Return to privileged EXEC mode.
Step 4	show running-config	Verify your entries.

- The device manager uses the HTTP protocol (the default is port 80) and the default method of authentication (the enable password) to communicate with the switch through any of its Ethernet ports and to allow switch management from a standard web browser.

If you change the HTTP port, you must include the new port number when you enter the IP address in the browser **Location** or **Address** field (for example, `http://10.1.126.45:184` where 184 is the new HTTP port number). You should write down the port number through which you are connected. Use care when changing the switch IP information.

If you are *not* using the default method of authentication (the enable password), you need to configure the HTTP server interface with the method of authentication used on the switch.

Beginning in privileged EXEC mode, follow these steps to configure the HTTP server interface:

	Command	Purpose
Step 1	<code>configure terminal</code>	Enter global configuration mode.
Step 2	<code>ip http authentication {enable local tacacs}</code>	Configure the HTTP server interface for the type of authentication that you want to use. <ul style="list-style-type: none"> • enable—Enable password, which is the default method of HTTP server user authentication, is used. • local—Local user database, as defined on the Cisco router or access server, is used. • tacacs—TACACS server is used.
Step 3	<code>end</code>	Return to privileged EXEC mode.
Step 4	<code>show running-config</code>	Verify your entries.

- If you use Internet Explorer Version 5.5 and select a URL with a nonstandard port at the end of the address (for example, `www.cisco.com:84`), you must enter `http://` as the URL prefix. Otherwise, you cannot launch the device manager.

Open Caveats

This section describes the open caveats in this software release:

- CSCsk65142

When you enter the **boot host retry timeout** global configuration command to specify the amount of time that the client should keep trying to download the configuration and you do not enter a timeout value, the default value is zero, which should mean that the client keeps trying indefinitely. However, the client does not keep trying to download the configuration.

The workaround is to always enter a non zero value for the timeout value when you enter the **boot host retry timeout** *timeout-value* command.

Resolved Caveats

These caveats have been resolved in this release:

- CSCin91851, CSCsh42013, and CSCsh42316

The SSH Protocol now supports generic message authentication and is compliant with RFC 4256.

- CSCsc96474

Traceback messages such as these no longer appear when a large number of IEEE 802.1x supplicants repeatedly try to log in and log out.

```
Jan 3 17:54:32 L3A3 307: Jan 3 18:04:13.459: %SM-4-BADEVENT: Event 'eapReq' is invalid
for the current state 'auth_bend_idle': dot1x_auth_bend Fa9
Jan 3 17:54:32 L3A3 308: -Traceback= B37A84 18DAB0 2FF6C0 2FF260 8F2B64 8E912C Jan 3
19:06:13 L3A3 309: Jan 3 19:15:54.720: %SM-4-BADEVENT: Event 'eapReq_no_reAuthMax' is
invalid for the current ate 'auth_restart': dot1x_auth Fa4
```

- CSCsd03580

When IEEE 802.1x is globally disabled on the switch by using the **no dot1x system-auth-control** global configuration command, interface level IEEE 802.1x configuration commands, including the **dot1x timeout** and **dot1x mac-auth-bypass** commands, are now available.

- CSCsi52707

When you set an interface back to its default configuration by using the **default interface** configuration command, this message no longer appears:

```
%SM-4-STOPPED: Event 'mabAbort' ignored because the state machine is stopped:
dot1x_auth_mab
-Traceback= 1D2368 3C1BA8 3C1D40 3C16A8 9EF8D8 9E6CC4
```

- CSCsi75246

An address learned as a supplicant that is aged out by port security aging can now be relearned by port security even under these conditions:

- IEEE 802.1x authentication, port security, and port security aging are enabled on a port.
- An address is cleared by port security.
- You enter the **clear port security** privileged EXEC command.

- CSCsj04337

You no longer receive an Invalid Certificate error message when you start the Cisco Device Manager from a Firefox web browser.

- CSCsj42841

You can now start a Telnet session from the Cisco Device Manager from an Internet Explorer 7.0 web browser.

- CSCsq38082

The cluster configuration is now saved to each cluster member when you save the configuration to the cluster commander.

Documentation Updates

These are the documentation updates for this release:

- [Software Configuration Guide Updates, page 13](#)
- [System Message Guide Updates, page 17](#)

Software Configuration Guide Updates

These are new sections for the “Configuring DHCP Features” chapter.

Understanding DHCP Server Port-Based Address Allocation

DHCP server port-based address allocation is a feature that enables DHCP to maintain the same IP address on an Ethernet switch port regardless of the attached device client identifier or client hardware address.

When Ethernet switches are deployed in the network, they offer connectivity to the directly connected devices. In some environments, such as on a factory floor, if a device fails, the replacement device must be working immediately in the existing network. With the current DHCP implementation, there is no guarantee that DHCP would offer the same IP address to the replacement device. Control, monitoring, and other software expect a stable IP address associated with each device. If a device is replaced, the address assignment should remain stable even though the DHCP client has changed.

When configured, the DHCP server port-based address allocation feature ensures that the same IP address is always offered to the same connected port even as the client identifier or client hardware address changes in the DHCP messages received on that port. The DHCP protocol recognizes DHCP clients by the client identifier option in the DHCP packet. Clients that do not include the client identifier option are identified by the client hardware address. When you configure this feature, the port name of the interface overrides the client identifier or hardware address and the actual point of connection, the switch port, becomes the client identifier.

In all cases, by connecting the Ethernet cable to the same port, the same IP address is allocated through DHCP to the attached device.

The DHCP server port-based address allocation feature is only supported on a Cisco IOS DHCP server and not a third-party server.

Configuring DHCP Server Port-Based Address Allocation

This section contains this configuration information:

- [Default Port-Based Address Allocation Configuration, page 14](#)
- [Port-Based Address Allocation Configuration Guidelines, page 14](#)
- [Enabling DHCP Server Port-Based Address Allocation, page 15](#)

Default Port-Based Address Allocation Configuration

By default, DHCP server port-based address allocation is disabled.

Port-Based Address Allocation Configuration Guidelines

These are the configuration guidelines for DHCP port-based address allocation:

- Only one IP address can be assigned per port.
- Reserved addresses (preassigned) cannot be cleared by using the **clear ip dhcp binding** global configuration command.
- Preassigned addresses are automatically excluded from normal dynamic IP address assignment. Preassigned addresses cannot be used in host pools, but there can be multiple preassigned addresses per DHCP address pool.

Enabling DHCP Server Port-Based Address Allocation

Beginning in privileged EXEC mode, follow these steps to globally enable port-based address allocation and to automatically generate a subscriber identifier on an interface.

	Command	Purpose
Step 1	configure terminal	Enter global configuration mode.
Step 2	ip dhcp use subscriber-id client-id	Configure the DHCP server to globally use the subscriber identifier as the client identifier on all incoming DHCP messages.
Step 3	ip dhcp subscriber-id interface-name	Automatically generate a subscriber identifier based on the short name of the interface. A subscriber identifier configured on a specific interface takes precedence over this command.
Step 4	interface <i>interface-id</i>	Specify the interface to be configured, and enter interface configuration mode.
Step 5	ip dhcp server use subscriber-id client-id	Configure the DHCP server to use the subscriber identifier as the client identifier on all incoming DHCP messages on the interface.
Step 6	end	Return to privileged EXEC mode.
Step 7	show running config	Verify your entries.
Step 8	copy running-config startup-config	(Optional) Save your entries in the configuration file.

After enabling DHCP port-based address allocation on the switch, use the **ip dhcp pool** global configuration command to preassign IP addresses and to associate them to clients.

Beginning in privileged EXEC mode follow these steps to preassign an IP address and to associate it to a client identified by the interface name.

	Command	Purpose
Step 1	configure terminal	Enter global configuration mode.
Step 2	ip dhcp pool <i>poolname</i>	Enter DHCP pool configuration mode, and define the name for the DHCP pool. The pool name can be a symbolic string (such as Engineering) or an integer (such as 0).
Step 3	network <i>network-number</i> [<i>mask</i> <i>/prefix-length</i>]	Specify the subnet network number and mask of the DHCP address pool.
Step 4	address <i>ip-address</i> client-id <i>string</i> [<i>ascii</i>]	Reserve an IP address for a DHCP client identified by the interface name. <i>string</i> —can be an ASCII value or a hexadecimal value.
Step 5	end	Return to privileged EXEC mode.
Step 6	show ip dhcp pool	Verify DHCP pool configuration.
Step 7	copy running-config startup-config	(Optional) Save your entries in the configuration file.

To disable DHCP port-based address allocation, use the **no ip dhcp use subscriber-id client-id** global configuration command. To disable the automatic generation of a subscriber identifier, use the **no ip dhcp subscriber-id interface-name** global configuration command. To disable the subscriber identifier on an interface, use the **no ip dhcp server use subscriber-id client-id** interface configuration command.

To remove an IP address reservation from a DHCP pool, use the **no address ip-address client-id string DHCP pool** configuration command.

In this example, a subscriber identifier is automatically generated, and the DHCP server ignores any client identifier fields in the DHCP messages and uses the subscriber identifier instead. The subscriber identifier is based on the short name of the interface and the client preassigned IP address 10.1.1.7.

```
switch# show running config
Building configuration...
Current configuration : 4899 bytes
!
version 12.2
!
hostname switch
!
no aaa new-model
clock timezone EST 0
ip subnet-zero
ip dhcp relay information policy removal pad
no ip dhcp use vrf connected
ip dhcp use subscriber-id client-id
ip dhcp subscriber-id interface-name
ip dhcp excluded-address 10.1.1.1 10.1.1.3
!
ip dhcp pool dhcppool
 network 10.1.1.0 255.255.255.0
 address 10.1.1.7 client-id "Et1/0" ascii
<output truncated>
```

This example shows that the preassigned address was correctly reserved in the DHCP pool:

```
switch# show ip dhcp pool dhcppool
Pool dhcp pool:
  Utilization mark (high/low) : 100 / 0
  Subnet size (first/next) : 0 / 0
  Total addresses : 254
  Leased addresses : 0
  Excluded addresses : 4
  Pending event : none
  1 subnet is currently in the pool:
  Current index   IP address range           Leased/Excluded/Total
  10.1.1.1       10.1.1.1 - 10.1.1.254     0 / 4 / 254
  1 reserved address is currently in the pool
  Address         Client
  10.1.1.7       Et1/0
```

For more information about configuring the DHCP server port-based address allocation feature, go to Cisco.com, and enter *Cisco IOS IP Addressing Services* in the Search field to access the Cisco IOS software documentation. You can also access the documentation here:

http://www.cisco.com/en/US/docs/ios/ipaddr/command/reference/iad_book.html

Displaying DHCP Server Port-Based Address Allocation

To display the DHCP server port-based address allocation information, use one or more of the privileged EXEC commands in [Table 1-4](#):

Table 1-4 **Commands for Displaying DHCP Port-Based Address Allocation Information**

Command	Purpose
<code>show interface <i>interface id</i></code>	Display the status and configuration of a specific interface.
<code>show ip dhcp pool</code>	Display the DHCP address pools.
<code>show ip dhcp binding</code>	Display address bindings on the Cisco IOS DHCP server.

System Message Guide Updates

This section contains system messages that have been added to or removed from the switch.

Added System Messages

These messages have been added.

Error Message %PAGP_DUAL_ACTIVE-3-OBJECT_CREATE_FAILED: Unable to create [chars]

Explanation The switch cannot create the specified managed object. [chars] is the object name.

Recommended Action No action is required.

Error Message %PAGP_DUAL_ACTIVE-3-RECOVERY_TRIGGER: PAgP running on [chars] informing virtual switches of dual-active: new active id [enet], old id [enet]

Explanation Port Aggregation Protocol (PAgP) received a new active ID on the specified interface, which means that all virtual switches are in a dual-active scenario. The interface is informing virtual switches of this, which causes one switch to go into recovery mode. [chars] is the interface. The first [enet] is the new active ID. The second [enet] is the ID that it replaces.

Recommended Action No action is required.

Error Message %PAGP_DUAL_ACTIVE-3-REGISTRY_ADD_ERR: Failure in adding to [chars] registry

Explanation The switch could not add a function to the registry. [chars] is the registry name.

Recommended Action No action is required.

Error Message %PM-6-EXT_VLAN_ADDITION: Extended VLAN is not allowed to be configured in VTP CLIENT mode.

Explanation The switch did not add a VLAN in VTP client mode.

Recommended Action Copy the message exactly as it appears on the console or in the system log. Research and attempt to resolve the error by using the Output Interpreter. Use the Bug Toolkit to look for similar reported problems. If you still require assistance, open a case with the TAC, or contact your Cisco technical support representative, and provide the representative with the gathered information. For more information about these online tools and about contacting Cisco, see the “Error Message Traceback Reports” section in the system message guides.

Deleted System Messages

These system messages have been removed:

Error Message %VQPCLIENT-2-INITFAIL: Platform-specific VQP initialization failed. Quitting

Error Message %VQPCLIENT-2-IPSOCK: Could not obtain IP socket

Error Message %VQPCLIENT-7-NEXTSERV: Trying next VMPS [IP_address]

Error Message %VQPCLIENT-7-PROBE: Probing primary server [IP_address]

Error Message %VQPCLIENT-2-PROCFAIL: Could not create process for VQP. Quitting

Error Message %VQPCLIENT-7-RECONF: Reconfirming VMPS responses

Error Message %VQPCLIENT-2-SHUTDOWN: Interface [chars] shutdown by VMPS

Error Message %VQPCLIENT-3-THROTTLE: Throttling VLAN change on [chars]

Related Documentation

These documents provide complete information about the switch and are available from this Cisco.com site:

http://www.cisco.com/web/CN/products/products_netsol/switches/products/ca2918/tsd_products_support_series_home.html

- *Release Notes for the Catalyst 2918 Switch*
- *Catalyst 2918 Switch Software Configuration Guide*
- *Catalyst 2918 Switch Command Reference*

- *Catalyst 2918 Switch System Message Guide*
- *Catalyst 2918 Switch Getting Started Guide*
- *Regulatory Compliance and Safety Information for the Catalyst 2918 Switch*
- *Cisco Small Form-Factor Pluggable Modules Installation Notes* at:

http://www.cisco.com/en/US/docs/interfaces_modules/transceiver_modules/installation/note/78_15160.html

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

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