

# **Release Notes for Cisco Network Assistant 5.0** and Later Releases

Revised November 25, 2013.

These release notes include important information about Cisco Network Assistant 5.0 and later releases, and any limitations, restrictions, and caveats that apply to the releases.

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## **New Features**

With Cisco Network Assistant 5.8.9, you can:

- Manage these devices:
  - Cisco Catalyst C2960-XR switches (WS-C2960XR-48FPD-I, WS-C2960XR-48LPD-I, WS-C2960XR-48LPS-I, WS-C2960XR-48TS-I, WS-C2960XR-48TD-I, WS-C2960XR-24PD-I, WS-C2960XR-24TS-I, WS-C2960XR-24PD-I, WS-C2960XR-24TD-I)
  - Catalyst 2960-X switches (WS-C2960X-48FPD-L, WS-C2960X-48LPD-L, WS-C2960X-24PD-L, WS-C2960X-24PD-L, WS-C2960X-24PD-L, WS-C2960X-24PS-L, WS-C2960X-48FPS-L, WS-C2960X-24PS-L, WS-C2960X-24PS-L, WS-C2960X-24PS-L, WS-C2960X-24TS-L, and WS-C2960X-24TS-LL).
  - Rockwell Automation switches (1783-BMS12T4E2CGL, 1783-BMS12T4E2CGNK, 1783-BMS12T4E2CGP, 1783-BMS10CGN)
  - Cisco 5760 wireless controller (AIR-CT5760-25-K9, AIR-CT5760-50-K9, AIR-CT5760-100-K9, AIR-CT5760-250-K9, AIR-CT5760-500-K9, AIR-CT5760-1K-K9, AIR-CT5760-HA-K9)
- Configure these features on autonomous access points:
  - DHCP for assigning IP addresses dynamically or statically for access points.
  - RADIUS Servers for access points.
  - DHCP and Radius Servers configuration for multiple access points using Bulk Edit wizard.

With Cisco Network Assistant 5.8.8.1, you can:

- Manage these devices:
  - Cisco Aironet Access Points (1600 series, 2600 series, 3500 series, 3600 series, and 1550 series).
  - Cisco IE 2000 switches (IE2000-16PTC-G-E, IE2000-16PTC-G-NX, IE2000-16PTC-G-L, IE2000-16TC-G-N, and IE2000-8TC-G-N).
- Configure these features on autonomous access points:
  - Create VLANs and SSIDs.
  - Configure multiple access points at the same time by using the Bulk Edit wizard.
  - View clients associated with each access point.
  - Update the channel settings for the access points.
  - Discovery display in Topology view.
  - Configure the radio interface for an access point.

With Cisco Network Assistant 5.8.7, you can configure these features on Catalyst 3850 switches:

- Controller configuration— Allows you to enable Cisco Discovery Protocol (CDP), a device discovery protocol that runs on all Cisco-manufactured equipment.
- AAA method lists— Provides authentication, accounting, and authorization support.
- AAA server groups—Allows you to manage RADIUS, TACACS+, and LADP server groups that can be used in AAA methods.
- AAA users—Allows you to add a local network user in the device. The local user database stores the credentials (username and password) of all the local network users.

- Remote Authentication Dial-In User Service (RADIUS) servers—Allows you to manage the RADIUS server and fallback parameters.
- Terminal Access Controller Access Control System Plus (TACACS+) servers—Allows you to manage the TACACS+ servers.
- LDAP servers—Allows you to authenticate the user by querying an LDAP server for the credentials of a particular user.
- MAC filtering—Allows you to configure each client MAC address to access network services through a specific Cisco WLAN and interface.
- Mobility management—Allows you to maintain the association seamlessly from one access point to another securely and with as little latency as possible. You can configure mobility groups and mobility anchor configuration. You can also view mobility statistics.
- Local EAP—Allows users and wireless clients to be authenticated locally. You can configure EAP-Fast parameters and EAP profiles.
- Access point groups—Allows you to selectively publish up to 512 WLANs to different access points to better manage your wireless network.
- Wireless Controller Dashboard—Allows you to view a broad range of wireless controller statistics.
- Wireless Radios—Displays reports that show the status of wireless radios on the wireless controller.
- Wireless Clients—Displays reports that show the status of wireless clients on the wireless controller.
- View all access points and search for specific access points.

Note

The online help is not available for these features.

With Cisco Network Assistant 5.8.6, you can:

- Configure these features on Cisco 2500 Series, 4400 Series, 5500 Series, and 7500 Series wireless controllers:
  - Remote Authentication Dial-In User Service (RADIUS) server protocol—Provides authentication and accounting support.
  - Terminal Access Controller Access Control System Plus (TACACS+) server protocol—Provides authentication, accounting, and authorization support.
  - Local network users—Is the database that stores the credentials (username and password) of all the local network users.
  - LDAP server—Allows you to authenticate the user by querying an LDAP server for the credentials of a particular user.
  - MAC filtering—Allows you to configure each client MAC address to access network services through a specific Cisco WLAN and interface.
  - Local EAP—Allows users and wireless clients to be authenticated locally. You can configure EAP-Fast parameters and EAP profiles.
  - Mobility Management—Allows you to maintain the association seamlessly from one access point to another securely and with as little latency as possible. You can configure mobility groups, mobility anchor config, and multicast messaging. You can also view mobility statistics.
  - Controller Configuration— Allows you to enable Cisco Discovery Protocol (CDP), a device discovery protocol that runs on all Cisco-manufactured equipment.
- Create access point groups that allow you to selectively publish up to 512 WLANs to different access points to better manage your wireless network.

- View all access points, search for specific access points. Display access points in the Topology view.
- Launch Cisco Active Advisor from the Partner Connection menu.
- Display a popup window (called Startup Information) from the Help menu. This window is automatically displayed the first time when a new release of CNA is installed.

With Cisco Network Assistant 5.8.5 and 5.8.5.1, you can manage these devices:

- Cisco access points (AP-1140 series, AP-1260 series, AP-3500 series, and AP 3600 series).
- Cisco IE 3010 switches (IE-3010-24-TC and IE 3010-16S-8PC).
- Catalyst 3850 switches (WS-C3850-24T-L, WS-C3850-24T-S, WS-C3850-24T-E, WS-C3850-24P-L, WS-C3850-24P-S, WS-C3850-24P-E, WS-C3850-48T-L, WS-C3850-48T-E, WS-C3850-48T-E, WS-C3850-48P-L, WS-C3850-48P-S, WS-C3850-48P-E, WS-C3850-48F-L, WS-C3850-48F-S, and WS-C3850-48F-E).
- Catalyst 4500 series switches (WS-C4500X-32 switch chassis, WS-C4500X-16 switch chassis, and the C4KX-NM-8 module).
- Cisco 2500 series wireless controllers (AIR-CT2504-5-K9, AIR-CT2504-15-K9, AIR-CT2504-25-K9, and AIR-CT2504-50-K9).
- Cisco 4400 series wireless controllers (AIR-WLC4404-12-K9, AIR-WLC4404-25-K9, AIR-WLC4404-50-K9, and AIR-WLC4404-100-K9).
- Cisco 5500 series wireless controllers (AIR-CT5508-12-K9, AIR-CT5508-25-K9, AIR-CT5508-50-K9, AIR-CT5508-100-K9, AIR-CT5508-250-K9, AIR-CT5508-500-K9, AIR-CT5508-500-2PK, AIR-CT5508-HA-K9, and AIR-CT5508-K9).
- Cisco 7500 series wireless controllers (AIR-CT7510-300-K9, AIR-CT7510-500-K9, AIR-CT7510-1K-K9, AIR-CT7510-2K-K9, AIR-CT7510-3K-K9, AIR-CT7510-6K-K9, and AIR-CT7510-HA-K9).

With Cisco Network Assistant 5.8.2, you can manage these devices:

- Catalyst 2960-S switches (WS-C2960S-F48FPS-L, WS-C2960S-F48LPS-L, WS-C2960S-F48TS-L, WS-C2960S-F24PS-L, WS-C2960S-F24TS-L, WS-C2960S-F48TS-S, and WS-C2960S-F24TS-S).
- Stratix 5700 Ethernet Managed Switches (1783-BMS06SL, 1783-BMS06SA, 1783-BMS06TL, 1783-BMS06TA, 1783-BMS06SGL, 1783-BMS06SGA, 1783-BMS06TGL, 1783-BMS06TGA, 1783-BMS10CL, 1783-BMS10CGA, 1783-BMS10CGL, 1783-BMS10CGA, 1783-BMS10CGP, 1783-BMS10CGN, 1783-BMS20CL, 1783-BMS20CA, 1783-BMS20CGL, 1783-BMS20CGP, 1783-BMS20CGPK, and 1783-BMS20CGN).

With Cisco Network Assistant 5.8 and 5.8.(1), you can:

- Support up to 80 devices in the community
- Manage these devices:
  - Catalyst 2360 switch (WS-C2360-48TD-S)
  - Catalyst 3750 switch (WS-C3750V2-24FS)
  - Cisco 3560 switch (WS-C3560X-48PF-E)
  - Cisco 3750 switch (WS-C3750X-48PF-E)
  - Cisco 2960 switch (WS-C2960-8TC-L)
  - Catalyst 4500 switches (WS-X45-SUP7L-E supervisor module and WS-X4748-UPOE+ E line card)

- Cisco IE 2000 switches: IE-2000-4T-L, IE-2000-4T-B, IE-2000-4T-G-L, IE-2000-4T-G-B, IE-2000-4TS-L, IE-2000-4TS-B, IE-2000-4TS-G-L, IE-2000-4TS-G-B, IE-2000-8TC-L, IE-2000-8TC-B, IE-2000-8TC-G-L, IE-2000-8TC-G-B,
- Cisco 1900 routers: 1921/K9, 1941/K9, 1941-SEC-SRE/K9, 1941-SEC/K9. 1941W-A/K9, 1941W-E/K9, 1941W-P/K9, 1941W-N/K9, 1941-2.5G/K9, 1921-SEC/K9, 1921-T1SEC/K9, 1921-ADSL2-M/K9, and 1921-ADSL2/K9
- Cisco 2900 routers: 2901/K9, 2911/K9, 2921/K9, 2951/K9, 2901-SEC/K9, 2911-SEC/K9, 2921-SEC/K9, 2951-SEC/K9, 2901-V/K9, 2911-V/K9, 2921-V/K9, 2951-V/K9, 2901-VSEC/K9, 2901-VSEC/K9, 2921-VSEC/K9, and 2951-VSEC/K9
- Cisco 3900 routers: 3925/K9, 3945/K9, 3925-SEC/K9, 3925-V/K9, 3925-VSEC-SRE/K9, 3925-VSEC/K9, 3925-CME-SRST/K9, 3945-V/K9, 3945-SEC/K9, 3945-VSEC-SRE/K9, 3945-VSEC/K9, 3945-CME-SRST/K9, 3945E-VSEC-SRE/K9, 3945E-VSEC/K9, 3925E-VSEC/K9, 3945E-CME-SRST/K9, 3945E-V/K9, 3925E-V/K9, 3925-VSEC-CUBE/K9, 3925E-VSEC-CUBEK9, 3945-VSEC-CUBE/K9, 3945E-VSEC-CUBE/K9, 3945E-VSEC-CUBE/K9, 3945E-SEC/K9, 3925E-SEC/K9, 3945E/K9, and 3925E/K9

You can manage these devices with Network Assistant 5.7.6:

- Catalyst 3560-X switches (WS-C3560X-24T-E, WS-C3560X-48T-E, WS-C3560X-24P-E, and WS-C3560X-48P-E)
- Catalyst 3750-X switches (WS-C3750X-24T-E, WS-C3750X-48T-E, WS-C3750X-24P-E, and WS-C3750X-48P-E)

You can manage these devices with Network Assistant 5.7.5:

- Catalyst 3560-C switches (WS-C3560C-12PC-S and WS-C3560C-8PC-S)
- Catalyst 2960-C switches (WS-C2960C-12PC-L, WS-C2960C-8PC-L, and WS-C2960C-8TC-S)
- Catalyst 3750-X switches (WS-C3750X-12S-E and WS-C3750X-24S-E)
- Network Modules (C3KX-NM-10GT and C3KX-SM-10G)

With Network Assistant 5.7 and 5.7(1) you can:

- Encrypt and store your device credentials locally, so that you do not have to re-enter the passwords for each device in your network. The device credentials are encrypted by using your Cisco.com credentials.
- Send periodic data updates to Cisco Systems to help improve Network Assistant and Cisco devices.
- Manage these devices:
  - Catalyst 3560-C switches (WS-C3560CG-8PC-S,WS-C3560CG-8TC-S, and WS-C3560CPD-8PT-S)
  - Catalyst 2960-C switches (WS-C2960CG-8TC-L, WS-C2960CPD-8PT-L, and WS-C2960CPD-8TT-L)

You can manage these devices with Network Assistant 5.6, 5.6(1), 5.6(2), and 5.6(3):

- Catalyst 3750-X switches (WS-C3750X-24T-L, WS-C3750X-48T-L, WS-C3750X-24P-L, WS-C3750X-48P-L, WS-C3750X-48P-L, WS-C3750X-24T-S, WS-C3750X-48T-S, WS-C3750X-24P-S, WS-C3750X-48P-S, and WS-C3750X-48PF-S)
- Catalyst 3560-X switches (WS-C3560X-24T-L, WS-C3560X-48T-L, WS-C3560X-24P-L, WS-C3560X-48P-L, WS-C3560X-48P-L, WS-C3560X-24T-S, WS-C3560X-24P-S, WS-C3560X-24P-S, and WS-C3560X-48PF-S)

- Catalyst 2960-S switches (WS-C2960S-48FPD-L, WS-C2960S-48LPD-L, WS-C2960S-24PD-L, WS-C2960S-48TD-L, WS-C2960S-48TD-L, WS-C2960S-48FPS-L, WS-C2960S-48TS-L, WS-C2960S-24PS-L, WS-C2960S-24TS-L, WS-C2960S-24TS-L, WS-C2960S-24TS-S, and WS-C2960S-24TS-S)
- Catalyst 2928 switches (WS-C2928-24LT-C, WS-C2928-24TC-C, and WS-C2928-48TC-C)
- Catalyst 4900M modules (WS-X4908-10G-RJ45)
- Catalyst 4900 switches (WS-C4948E and WS-C4948E-F)
- Catalyst 4500 switching modules (WS-X45-SUP7-E, WS-X4748-RJ45V+E, WS-X4712-SFP+E, and WS-X4612-SFP-E)
- Catalyst 4500 chassis (WS-C4510R+E and WS-C4507R+E)

You can manage these devices with Network Assistant 5.5:

- Manage these devices:
  - Catalyst 4500 switches (WS-X45-Sup6L-E, WS-X4548-RJ45V+, WS-X4648-RJ45-E, and PWR-C45-6000ACV)
  - Catalyst 3750 switches (WS-C3750V2-24PS, WS-C3750V2-24TS, WS-C3750V2-48PS, and WS-C3750V2-48TS)
  - Catalyst 3560 switches (WS-C3560V2-24PS, WS-C3560V2-24TS, WS-C3560V2-48PS, WS-C3560V2-48TS, WS-C3560V2-24TS-SD, and WS-C3560-12PC-S)
  - Catalyst 2975 switches (WS-C2975GS-48PS-L)
  - Catalyst 2960 switches (WS-C2960-48PST-S, WS-C2960-24PC-S, WS-C2960-24LC-S, and WS-C2960-48PST-L)
  - Catalyst 2350 switches (WS-C2350-48TD-S and WS-C2350-48TD-SD)
  - Cisco Aironet 1252 and 1242G series access points
  - Cisco IE 3000 switches (IE-3000-4TC-E and IE-3000-8TC-E)
  - Stratix 8300 switches (1783-RMS06T and 1783-RMS10T)
  - OneX and small form-factor pluggable (SFP)+ modules
  - Cisco enhanced EtherSwitch service modules (SM-ES2-16-P, SM-ES3-16-P, SM-ES3G-16-P, SM-ES2-24, SM-ES2-24-P, SM-ES3-24-P, SM-ES3G-24-P, SM-D-ES2-48, SM-D-ES3-48-P, and SM-D-ES3G-48-P)
- Configure maximum wattage for all Catalyst 4500 Enhanced Power over Ethernet (EPoE) and PoE+ switching modules

With Network Assistant 5.4, you can

Manage these switches:

- Catalyst 4900M switches
  - WS-X4920-GB-RJ45 switching module:20-port 10/100/1000 half card with RJ-45 connectors
  - WS-X4904-10GE switching module: 4-port 10-Gigabit Ethernet X2 half card
  - WS-X4908-10GE switching module: 8-port 10-Gigabit Ethernet X2 half card
- Catalyst 4500 switches
  - WS-X4624-SFP-E switching module for Catalyst 4500 E-series switches
  - WS-X4248-FE-SFP switching module for Catalyst 4500 series switches
- Catalyst 2918 switches

- Cisco IE 3000 switches
- Cisco Catalyst Blade Module Switch 3012 for IBM
- Cisco Catalyst Blade Switch 3125
- Catalyst Express 520 switches
- Configure PoE policing on the Catalyst 2960 switches (WS-C2960-24PC-L and WS-C2960-24LT-L only)
- Manage a Cisco 1861 Router
- Configure switch alarms, Smartport roles, and DHCP server on the Cisco IE 3000 switches
- Use a wizard to set up and use templates (supported only on the Catalyst Express 520 switches)
- Apply a configuration to a selected device that was backed up from a similar device
- Restart devices as in earlier releases or restore the factory settings
- Generate a troubleshooting log for a device in your community
- Give access to all community devices and manage user access for a specific device
- Add a network cloud to the topology map and manually add a link between nodes on the map
- Configure DHCP snooping, dynamic ARP inspection, and IP source guard security features on Catalyst 4500 and Catalyst 4900 switches
- Run Network Assistant on the Macintosh OS X operating system



The AVVID Wizard was removed from Network Assistant in this release.

With Network Assistant 5.3, you can

- Configure private VLANs on Catalyst 3750-E, Catalyst 3750, Catalyst 3560-E, Catalyst 3560, Catalyst 4500, Catalyst 4500 E-Series, and Catalyst 4900 switches
- Enable IP Routing and EtherChannel support for Catalyst 4500, Catalyst 4500-E Series and Catalyst 4900 switches
- Manage these switches:
  - Cisco Catalyst Blade Switch 3110 for IBM
  - Cisco Catalyst Blade Switch 3120 for HP
  - Cisco Catalyst Blade Switch 3130 and 3032 for Dell
  - Cisco Catalyst 3560-E 12D Switch
- Manage these Catalyst 4500 E-Series switches:
  - Supervisor: Catalyst 4500 E-Series Supervisor Engine 6-E
  - Chassis: Catalyst E-Series 4503, 4506, 4507R, and 4510R
  - Switching modules: 48-port RJ45 PoE 10/100/1000, 48-port Premium PoE 10/100/1000, and 6-port 10-Gigabit Ethernet X2 switching modules

With Network Assistant 5.2, you can manage these devices:

- WS-C2960-48TC-S
- WS-C2960-24TC-S
- WS-C2960-24-S

Network Assistant 5.1 and 5.2 supports these languages:

- French
- German
- Italian
- Japanese
- Simplified Chinese
- Spanish

<u>Note</u>

Release 5.1 does not support the search feature in the Japanese and simplified Chinese versions.

With Network Assistant 5.0 and later, you can

- Manage a community of up to 40 devices.
- Discover devices to use in a community by specifying a range of IP addresses or a subnet.
- Manage Catalyst 3750-E and Catalyst 3560-E switches in your network.
- View Cisco IOS software license information for Catalyst 3750-E and Catalyst 3560-E switches in the Inventory Reports window.
- Configure advanced PoE features on Catalyst 3750-E and Catalyst 3560-E switches.
- Perform diagnostic hardware tests to verify the functionality of a device while it is connected to a live network. (Available on Catalyst 4500, Catalyst 3750, and Catalyst 3560 switches.)
- Enable an RPS 2300 to provide backup power to connected devices and specify priorities for providing power if devices fail simultaneously. The RPS 2300 can be managed through Network Assistant only if it is connected to a Catalyst 3750-E or a Catalyst 3560-E switch.
- View power usage information and adjust power settings for Catalyst 4500 and 4900 switches.
- Include these PIX Firewalls in your community: PIX-501, PIX-506, PIX-506E, PIX-525, PIX-535.
- Include these Adaptive Security Appliances (ASAs) in your community: ASA5505, ASA5510, ASA5520, ASA5540.
- Manage these blade switches: Cisco Catalyst Blade Switch 3020 for Hewlett-Packard Cisco Catalyst Blade Switch 3030 for Dell Cisco Catalyst Blade Switch 3040 for Fujitsu Siemens Computers Cisco Systems Intelligent Gigabit Ethernet Switch Modules for the IBM BladeCenter
- Monitor a number of device-health measurements to avoid downtime and to ensure that your network is running efficiently.
- See the devices in your network in a tree structure when you display the Topology View. This representation is in addition to the topology map that the view presents.
- Preview the commands that will run when you modify port settings, apply Smartports roles, perform diagnostic hardware tests, or manage file systems.
- View details about file systems, the use of space on your devices, and delete files or directories to create space as needed.
- See a graphical representation of all the connected ports to which a Smartports role should be applied and a window in which to perform this task. (These enhancements replace the Smartports Advisor. They appear when you click **Suggest** in the Smartports window.)

- Synchronize the time on your network devices to the PC time or to the time on a particular device.
- Manage MAC addresses on Catalyst Express 500 switches.
- Specify a path for Network Assistant to use when it archives a configuration.
- Search the online help system for a subject by entering a search term or phrase.

## **System Requirements**

The system requirements are described in these sections:

- "Installation Requirements" section on page 9
- "Devices Supported" section on page 9
- "Cluster Compatibility" section on page 25

### **Installation Requirements**

The PC on which you install Network Assistant must meet these minimum hardware requirements:

- Processor speed: 1 GHz
- DRAM: 1 GB
- Hard-disk space: 50 MB
- Number of colors: 65536
- Resolution: 1024 x 768
- Font size: small

These operating systems support Network Assistant:

- Windows 7 Enterprise (64-bit and 32-bit)
- Windows Vista (64-bit and 32-bit)
- Windows XP Professional, Service Pack 3 (64-bit and 32-bit)
- Windows 2008 (64-bit and 32-bit)
- Windows 2003 Server (64-bit and 32-bit)
- Macintosh OS X

# <u>Note</u>

To run Network Assistant on MAC OS X (10.7 Lion and above), follow these steps:

- From the System Preferences window, select Security and Privacy.
- From the Security and Privacy window, select the General tab and click Anywhere.

### **Devices Supported**

Table 1 lists the devices that Network Assistant supports. It supports the Catalyst Express 500 devices only as community members; these devices cannot be cluster members.

#### Table 1Devices Supported

Catalyst 3850-247-L       Stackable 24 10/100/1000 Ethernet ports, I network module slot, 350-W power supply         Catalyst 3850-487-L, Catalyst 3850-487-L       Stackable 48 10/100/1000 PoE+ ports, I network module slot, 715-W power supply         Catalyst 3850-487-L       Stackable 48 10/100/1000 PoE+ ports, I network module slot, 715-W power supply         Catalyst 3850-487-L       Stackable 48 10/100/1000 PoE+ ports, I network module slot, 715-W power supply         Catalyst 3850-487-L       Stackable 48 10/100/1000 PoE+ ports, I network module slot, 715-W power supply         Catalyst 3850-487-L       Stackable 48 10/100/1000 Fultemet ports, I network module slot, 715-W power supply         Catalyst 3850-487-S       Stackable 24 10/100/1000 Ethernet ports, I network module slot, 75-W power supply         Catalyst 3850-487-S       Stackable 48 10/100/1000 Fult-met ports, I network module slot, 715-W power supply         Catalyst 3850-487-S       Stackable 24 10/100/1000 PoE+ ports, I network module slot, 715-W power supply         Catalyst 3850-487-S       Stackable 48 10/100/1000 Fult-met ports, I network module slot, 715-W power supply         Catalyst 3850-487-S       Stackable 48 10/100/1000 Fult-met ports, I network module slot, 715-W power supply         Catalyst 3850-487-E       Stackable 48 10/100/1000 Ethernet ports, I network module slot, 715-W power supply         Catalyst 3850-487-E       Stackable 48 10/100/1000 Ethernet ports, I network module slot, 715-W power supply         Catalyst 3850-487-E       Stac	Catalyst 3850 Switches	Description
Catalyst 3850-48T-LStackable 48 10/100/1000 Ethernet ports, 1 network module slot 350-W power supplyCatalyst 3850-24P-LStackable 24 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48P-LStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-LStackable 48 10/100/1000 Dil PoE ports, 1 network module slot, 1100-W power supplyCatalyst 3850-48F-LStackable 44 10/100/1000 Ethernet ports, 1 network module slot, 350-W power supplyCatalyst 3850-48F-SStackable 44 10/100/1000 Ethernet ports, 1 network module slot, 350-W power supplyCatalyst 3850-48T-SStackable 44 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-SStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-SStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-SStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-SStackable 48 10/100/1000 DeE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-SStackable 48 10/100/1000 Ethernet ports, 1 network module slot, 350-W power supplyCatalyst 3850-48F-EStackable 41 D/100/1000 Ethernet ports, 1 network module slot, 350-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 Ethernet ports, 1 network module slot, 350-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 Ethernet ports, 1 network module slot, 350-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 PoE+ ports, 1 network m	Catalyst 3850-24T-L	1
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I network module slot, 1100-W power supplyCatalyst 3850-24T-EStackable 24 10/100/1000 Ethernet ports, 1 network module slot, 350-W power supplyCatalyst 3850-48T-EStackable 48 10/100/1000 Ethernet ports, 1 network module slot, 350-W power supplyCatalyst 3850-24P-EStackable 24 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48P-EStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48P-EStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 1100-W power supplyCatalyst 3750, 3750-E, and 3750-X SwitchesDescriptionWS-C3750-24FS24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 4 SFP module slotsWS-C3750-24TS24 10/100/1000 Ethernet portsWS-C750G-24TS24 10/100/1000 Ethernet ports and 4 SFP module slots	-	1 network module slot, 715-W power supply
Catalyst 3850-24T-EStackable 24 10/100/1000 Ethernet ports, 1 network module slot, 350-W power supplyCatalyst 3850-48T-EStackable 48 10/100/1000 Ethernet ports, 1 network module slot, 350-W power supplyCatalyst 3850-24P-EStackable 24 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48P-EStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48P-EStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 full PoE ports, 1 network module slot, 1100-W power supplyCatalyst 3750, 3750-E, and 3750-X SwitchesDescriptionWS-C3750-24FS-S24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 4 SFP module slotsWS-C3750G-24T24 10/100/1000 Ethernet portsWS-C3750G-24TS24 10/100/1000 Ethernet portsWS-C3750G-24TS24 10/100/1000 Ethernet ports	Catalyst 3850-48F-S	•
I network module slot, 350-W power supplyCatalyst 3850-48T-EStackable 48 10/100/1000 Ethernet ports, I network module slot, 350-W power supplyCatalyst 3850-24P-EStackable 24 10/100/1000 PoE+ ports, I network module slot, 715-W power supplyCatalyst 3850-48P-EStackable 48 10/100/1000 PoE+ ports, I network module slot, 715-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 PoE+ ports, I network module slot, 715-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 full PoE ports, I network module slot, 1100-W power supplyCatalyst 3750, 3750-E, and 3750-X SwitchesDescriptionWS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-48TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750G-24TS24 10/100/1000 Ethernet portsWS-C3750G-24TS24 10/100/1000 Ethernet ports	Catalyst 3850-24T-F	
I network module slot, 350-W power supplyCatalyst 3850-24P-EStackable 24 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48P-EStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 full PoE ports, 1 network module slot, 1100-W power supplyCatalyst 3750, 3750-E, and 3750-X SwitchesDescriptionWS-C3750-24FS-S24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-24TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750G-24T24 10/100/1000 Ethernet portsWS-C3750-24TS24 10/100/1000 Ethernet ports	Catalyst 5050 241 L	
Catalyst 3850-24P-EStackable 24 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48P-EStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 full PoE ports, 1 network module slot, 1100-W power supplyCatalyst 3750, 3750-E, and 3750-X SwitchesDescriptionWS-C3750-24FS-S24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-24TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750-24TS24 10/100/1000 Ethernet portsWS-C3750-24TS24 10/100/1000 Ethernet ports	Catalyst 3850-48T-E	1
I network module slot, 715-W power supplyCatalyst 3850-48P-EStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 full PoE ports, 1 network module slot, 1100-W power supplyCatalyst 3750, 3750-E, and 3750-X SwitchesDescriptionWS-C3750-24FS-S24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-24TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750G-24T24 10/100/1000 Ethernet portsWS-C3750G-24TS24 10/100/1000 Ethernet ports		1 network module slot, 350-W power supply
Catalyst 3850-48P-EStackable 48 10/100/1000 PoE+ ports, 1 network module slot, 715-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 full PoE ports, 1 network module slot, 1100-W power supplyCatalyst 3750, 3750-E, and 3750-X SwitchesDescriptionWS-C3750-24FS-S24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-24TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750-24TS24 10/100/1000 Ethernet portsWS-C3750-24TS24 10/100/1000 Ethernet ports	Catalyst 3850-24P-E	-
I network module slot, 715-W power supplyCatalyst 3850-48F-EStackable 48 10/100/1000 full PoE ports, 1 network module slot, 1100-W power supplyCatalyst 3750, 3750-E, and 3750-X SwitchesDescriptionWS-C3750-24FS-S24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-48TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750-24T24 10/100/1000 Ethernet portsWS-C3750-24TS24 10/100/1000 Ethernet ports	Catalyst 3850-48P-F	
I network module slot, 1100-W power supplyCatalyst 3750, 3750-E, and 3750-X SwitchesDescriptionWS-C3750-24FS-S24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-48TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750G-24T24 10/100/1000 Ethernet portsWS-C3750G-24TS24 10/100/1000 Ethernet ports	Catalyst 5050 401 L	-
Catalyst 3750, 3750-E, and 3750-X SwitchesDescriptionWS-C3750-24FS-S24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-48TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750G-24T24 10/100/1000 Ethernet portsWS-C3750G-24TS24 10/100/1000 Ethernet ports	Catalyst 3850-48F-E	•
3750-X SwitchesDescriptionWS-C3750-24FS-S24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-48TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750G-24T24 10/100/1000 Ethernet portsWS-C750G-24TS24 10/100/1000 Ethernet ports and 4 SFP module slots		1 network module slot, 1100-W power supply
WS-C3750-24FS-S24 100BASE-FX and 2 SFP module slotsWS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-48TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750G-24T24 10/100/1000 Ethernet portsWS-C3750G-24TS24 10/100/1000 Ethernet ports and 4 SFP module slots	•	Description
WS-C3750-24TS24 10/100 Ethernet ports and 2 SFP module slotsWS-C3750-48TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750G-24T24 10/100/1000 Ethernet portsWS-C750G-24TS24 10/100/1000 Ethernet ports and 4 SFP module slots		
WS-C3750-48TS48 10/100 Ethernet ports and 4 SFP module slotsWS-C3750G-24T24 10/100/1000 Ethernet portsWS-C750G-24TS24 10/100/1000 Ethernet ports and 4 SFP module slots		
WS-C750G-24TS 24 10/100/1000 Ethernet ports and 4 SFP module slots	WS-C3750-48TS	
	WS-C3750G-24T	24 10/100/1000 Ethernet ports
WS-C3750G-12S 12 SFP ports	WS-C750G-24TS	24 10/100/1000 Ethernet ports and 4 SFP module slots
Porto	WS-C3750G-12S	12 SFP ports
WS-C3750-24PS 24 10/100 PoE ports and 2 SFP module slots	WS-C3750-24PS	24 10/100 PoE ports and 2 SFP module slots
WS-C3750-48PS 48 10/100 PoE ports and 4 SFP module slots	WS-C3750-48PS	48 10/100 PoE ports and 4 SFP module slots

Catalyst 3560-C Switches	Description
WS-C3750X-48PF-E	48 10/100/1000 PoE+ ports (1100W), StackWise Plus, StackPower, 1 network module slot
WS-C3750X-48P-E	48 10/100/1000 PoE+ ports (715 W), StackWise Plus, StackPower, 1 network module slot
WS-C3750X-24P-E	24 10/100/1000 PoE+ ports (715 W), StackWise Plus, StackPower, 1 network module slot
WS-C3750X-48T-E	48 10/100/1000 Ethernet ports (350 W), StackWise Plus, StackPower, 1 network module slot
WS-C3750X-24T-E	24 10/100/1000 Ethernet ports (350 W), StackWise Plus, StackPower, 1 network module slot
WS-C3750X-24S-E	24 SFP module slots (350 W), StackWise Plus, StackPower, and 1 network module slot
WS-C3750X-12S-E	12 SFP module slots (350 W), StackWise Plus, StackPower, and 1 network module slot
WS-C3750X-48PF-S	48 10/100/1000 PoE+ ports (1100 W), StackWise Plus, StackPower, and 1 network module slot
WS-C3750X-48P-S	48 10/100/1000 PoE+ ports (715 W), StackWise Plus, StackPower, and 1 network module slot
WS-C3750X-24P-S	24 10/100/1000 PoE+ ports (715 W), StackWise Plus, StackPower, and 1 network module slot
WS-C3750X-48T-S	48 10/100/1000 Ethernet ports (350 W), StackWise Plus, StackPower, and 1 network module slot
WS-C3750X-24T-S	24 10/100/1000 Ethernet ports (350 W), StackWise Plus, StackPower, and 1 network module slot
WS-C3750X-48PF-L	48 10/100/1000 PoE+ ports (1104 W), StackWise Plus, and 1 network module slot
WS-C3750X-48P-L	48 10/100/1000 PoE+ ports (715 W), StackWise Plus, and 1 network module slot
WS-C3750X-24P-L	24 10/100/1000 PoE+ ports (715 W), StackWise Plus, and 1 network module slot
WS-C3750X-48T-L	48 10/100/1000 Ethernet ports (350 W), StackWise Plus, and 1 network module slot
WS-C3750X-24T-L	24 10/100/1000 Ethernet ports (350 W), StackWise Plus, and 1 network module slot
WS-C3750V2-48TS	48 10/100 ports and 2 SFP module slots
WS-C3750V2-48PS	48 10/100 PoE ports and 2 SFP module slots
WS-C3750V2-24TS	24 10/100 ports and 2 SFP module slots
WS-C3750V2-24PS	24 10/100 PoE ports and 2 SFP module slots
WS-C3750V2-24FS	24 SFP module slots (downlink) and 2 SFP module slots (uplink)
WS-C3750E-48PD WS-C3750E-48PD (Full Power)	48 10/100/1000 PoE ports (370 W) and 2 10-Gigabit Ethernet module slots 48 10/100/1000 PoE ports (740 W) and 2 10-Gigabit Ethernet module slots
WS-C3750E-24PD	24 10/100/1000 PoE ports and 2 10-Gigabit Ethernet module slots
WS-C3750E-48TD	48 10/100/1000 Ethernet ports and 2 10-Gigabit Ethernet module slots
WS-C3750E-24TD	24 10/100/1000 Ethernet ports and 2 10-Gigabit Ethernet module slots
WS-C3750G-24TS	24 10/100/100 Ethernet ports and 4 SFP module slots
WS-C3750G-24PS	24 10/100/100 PoE ports and 4 SFP module slots
WS-C3750G-48TS	48 10/100/100 Ethernet ports and 4 SFP module slots
WS-C3750G-48PS	48 10/100/100 PoE ports and 4 SFP module slots
WS-C3750G-24PS-W24	24 10/100/100 PoE ports, 2 SFP module slots, and an integrated wireless controller for up to 24 access points
WS-C3750G-24PS-W12	24 10/100/100 PoE ports, 2 SFP module slots, and an integrated wireless controller for up to 12 access points
WS-C3750G-16TD	16 10/100/100 Ethernet ports and 1 10-Gigabit SFP slot

### Table 1 Devices Supported (continued)

WS-C3560CG-8PC-S	8 10/100/1000 PoE+ ports and 2 dual-purpose uplink ports
WS-C3560CG-8TC-S	8 10/100/1000 ports and 2 dual-purpose uplink ports
WS-C3560CPD-8PT-S	8 10/100/1000 PoE ports and 2 10/100/1000BASE-T PD uplink copper ports
WS-C3560C-12PC-S	12 10/100 PoE+ ports and 2 dual-purpose ports
WS-C3560C-8PC-S	8 10/100 PoE+ ports and 2 dual-purpose ports
Catalyst 3560 Switches	Description
WS-C3560-8PC	8 10/100 PoE ports and 1 dual-purpose port
WS-C3560-24TS	24 10/100 ports and 2 SFP module slots
WS-C3560-48TS	48 10/100 ports and 4 SFP module slots
WS-C3560-48PS	48 10/100 PoE ports and 4 SFP module slots
WS-C3560E-12D	10-Gigabit Ethernet X2 module slots
WS-C3560E-12SD-E	12 SFP module slots, 2 10-Gigabit Ethernet X2 module slots and IP services software feature set (IPS)
WS-C3560E-12SD-S	12 SFP module slots, 2 10-Gigabit Ethernet X2 module slots and IP base software feature set (IPB)
WS-C3560-24PS	24 10/100 PoE ports and 2 SFP module slots
WS-C3560G-48PS	48 10/100/100 PoE ports and 4 SFP module slots
WS-C3560G-48TS	48 10/100/100 Ethernet ports and 4 SFP module slots
WS-C3560G-24PS	24 10/100/100 PoE ports and 4 SFP module slots
WS-C3560G-24TS	24 10/100/100 Ethernet ports and 4 SFP module slots
WS-C3560E-24TD	24 10/100/1000 Ethernet ports and 2 10-Gigabit Ethernet module slots
WS-C3560E-48TD	48 10/100/1000 Ethernet ports and 2 10-Gigabit Ethernet module slots
WS-C3560E-24PD	24 10/100/1000 PoE ports and 2 10-Gigabit Ethernet module slots
WS-C3560E-48PD WS-C3560E-48PD (Full Power)	48 10/100/1000 PoE ports (370 W) and 2 10-Gigabit Ethernet module slots 48 10/100/1000 PoE ports (740 W) and 2 10-Gigabit Ethernet module slots
WS-C3560-12PC-S	12 10/100 PoE ports and 1 dual-purpose port
WS-C3560V2-24PS	24 10/100 PoE ports and 2 SFP module slots
WS-C3560V2-24TS	24 10/100 ports and 2 SFP module slots
WS-C3560V2-48PS	48 10/100 PoE ports and 2 SFP module slots
WS-C3560V2-48TS	48 10/100 ports and 2 SFP module slots
WS-C3560V2-24TS-SD	24 10/100 ports and 2 SFP module slots
WS-C3560-X-24T-L	24 10/100/1000 Ethernet ports (350 W) and 1 network module slot
WS-C3560X-48T-L	48 10/100/1000 Ethernet ports (350 W) and 1 network module slot
WS-C3560X-24P-L	24 10/100/1000 PoE+ ports (715 W) and 1 network module slot
WS-C3560X-48P-L	48 10/100/1000 PoE+ ports (715 W) and 1 network module slot
WS-C3560X-48PF-L	48 10/100/1000 PoE+ ports (1100 W) and 1 network module slot
WS-C3560X-24T-S	24 10/100/1000 Ethernet ports (350 W) and 1 network module slot

WS-C3560X-48T-S	48 10/100/1000 Ethernet ports (350 W) and 1 network module slot
WS-C3560X-24P-S	24 10/100/1000 PoE+ ports (715 W) and 1 network module slot
WS-C3560X-48P-S	48 10/100/1000 PoE+ ports (715 W) and 1 network module slot
WS-C3560X-48PF-S	48 10/100/1000 PoE+ ports (1100 W) and 1 network module slot
WS-C3560X-24T-E	24 10/100/1000 Ethernet ports (350 W), 1 network module slot
WS-C3560X-48T-E	48 10/100/1000 Ethernet ports (350 W), 1 network module slot
WS-C3560X-24P-E	24 10/100/1000 PoE+ ports (715 W), 1 network module slot
WS-C3560X-48P-E	48 10/100/1000 PoE+ ports (715 W), 1 network module slot
WS-C3560X-48PF-E	48 10/100/1000 PoE+ ports (1100 W), 1 network module slot
Catalyst 3550 Switches	Description
WS-C3550-12G	10 GBIC-based Ethernet port and 2 fixed 10/100/1000BASE-T ports
WS-C3550-12T	10 fixed 10/100/1000BASE-T and 2 GBIC-based Ethernet ports
WS-C3550-24-DC	24 Ethernet 10/100 ports and 2 GBIC-based Ethernet ports, DC powered
WS-C3550-24	24 Ethernet 10/100 ports and 2 GBIC-based Ethernet ports
WS-C3550-48	48 Ethernet 10/100 ports and 2 GBIC-based Ethernet ports
WS-C3550-24PWR	24 Ethernet 10/100 ports with integrated inline power and 2 GBIC-based Ethernet ports
WS-C3550-24-FX	24 100FX ports and 2 GBIC-based Ethernet ports
Cisco IE 2000 Series Switches	
IE-2000-4T-L	4 10/100BASE-T downlink ports and 2 10/100BASE-T uplink ports
IE-2000-4T-B	4 10/100BASE-T downlink ports and 2 10/100BASE-T uplink ports
IE-2000-4T-G-L	4 10/100BASE-T downlink ports and 2 10/100/1000BASE-T uplink ports
IE-2000-4T-G-B	4 10/100BASE-T downlink ports and 2 10/100/1000BASE-T uplink ports
IE-2000-4TS-L	4 10/100BASE-T downlink ports and 2 100 Mb/s SFP module uplink slots
IE-2000-4TS-B	4 10/100BASE-T Ethernet ports and 2 100 Mb/s SFP module uplink slots
IE-2000-4TS-G-L	4 10/100BASE-T downlink ports and 2 100/1000 Mb/s SFP module uplink slots
IE-2000-4TS-G-B	4 10/100BASE-T downlink ports and 2 100/1000 Mb/s SFP module uplink slots
IE-2000-8TC-L	8 10/100BASE-T downlink ports and 2 Fast Ethernet dual-purpose uplink ports
IE-2000-8TC-B	8 10/100BASE-T downlink ports and 2 Fast Ethernet dual-purpose uplink ports
IE-2000-8TC-G-L	8 10/100BASE-T downlink ports and 2 Gigabit Ethernet dual-purpose uplink ports
IE-2000-8TC-G-B	8 10/100BASE-T downlink ports and 2 Gigabit Ethernet dual-purpose uplink ports
IE-2000-8TC-G-E	8 10/100BASE-T downlink ports and 2 Gigabit Ethernet dual-purpose uplink ports. Supports the IEEE-1588 standard for synchronizing clocks.
IE-2000-16TC-L	16 10/100BASE-T downlink ports, 2 Fast Ethernet dual-purpose uplink ports, and 2 100 Mb/s SFP module uplink slots
IE-2000-16TC-B	16 10/100BASE-T downlink ports, 2 Fast Ethernet dual-purpose uplink ports, and 2 100 Mb/s SFP module uplink slots.

IE-2000-16TC-G-L	16 10/100BASE-T downlink ports, 2 Gigabit Ethernet dual-purpose uplink ports, and 2 100 Mb/s SFP module uplink slots.
IE-2000-16TC-G-E	16 10/100BASE-T downlink ports, Gigabit Ethernet dual-purpose uplink ports, and 2 100 Mb/s SFP module uplink slots. Supports the IEEE-1588 standard for synchronizing clocks.
IE-2000-16TC-G-X	16 10/100BASE-T downlink ports, 2 Gigabit Ethernet uplink ports, and 2 100 Mb/s SFP module uplink slots. Supports the IEEE-1588 standard for synchronizing clocks. With 1588 and conformal coat.
IE-2000-16PTC-G-E	12 10/100BASE-T downlink ports, 2 Gigabit Ethernet dual-purpose uplink ports and 4 PoE ports. Supports the IEEE-1588 standard for synchronizing clocks. Can enable NAT by license upgrade.
IE-2000-16PTC-G-NX	12 10/100BASE-T downlink ports, 2 Gigabit Ethernet dual-purpose uplink ports, and 4 PoE ports.
IE-2000-16PTC-G-L	12 10/100BASE-T downlink ports, 2 Gigabit Ethernet dual-purpose uplink ports, and 4 PoE ports.
IE-2000-16TC-G-N	16 10/100BASE-T downlink ports, 2 Gigabit Ethernet dual-purpose uplink ports.
	Supports the IEEE-1588 standard for synchronizing clocks and Network Address Translation (NAT).
IE-2000-8TC-G-N	8 10/100BASE-T downlink ports, 2 Gigabit Ethernet dual-purpose uplink ports.
	Supports the IEEE-1588 standard for synchronizing clocks and NAT.

#### Table 1 Devices Supported (continued)

Cisco IE 3000 Series Switches	Description
IE-3000-4TC	4 10/100BASE-T Ethernet ports and 2 dual-purpose ports. Supports the IEEE-1588 standard for synchronizing clocks.
IE-3000-8TC	8 10/100BASE-T Ethernet ports and 2 dual-purpose ports. Supports the IEEE-1588 standard for synchronizing clocks.
IEM-3000-8TM	Expansion module with 8 10/100BASE-T copper Ethernet ports.
IEM-3000-8FM	Expansion module with 8 100BASE-FX optical Ethernet ports.
IE-3000-4TC-E	4 10/100BASE-T Ethernet ports and 2 dual-purpose ports (IP services software feature set). Supports the IEEE-1588 standard for synchronizing clocks.
IE-3000-8TC-E	8 10/100BASE-T Ethernet ports and 2 dual-purpose ports (IP services software feature set).
Cisco IE 3010 Series Switches	Description
IE-3010-24-TC	24 10/100 FastEthernet ports, 2 dual-purpose ports (2 10/100/1000BASE-T copper ports and 2 SFP module slots), and 2 AC and DC power-supply module slots.
IE 3010-16S-8PC	16 100BASE-FX SFP-module slots; 8 10/100 FastEthernet PoE ports, 2 dual-purpose ports (2 10/100/1000BASE-T copper ports and 2 SFP module slots), and 2 AC and DC power-supply module slots.
Catalyst 2975 Switches	Description
WS-C2975GS-48PS-L	48 10/100/1000 PoE ports and 4 SFP module slots.
Catalyst 2970 Switches	Description
WS-C2970G-24T	24 Ethernet 10/100/1000 ports.
WS-C2970G-24TS	24 Ethernet 10/100/1000 ports and 4 SFP module slots.
Catalyst 2960-C Switches	Description
WS-C2960CG-8TC-L	8 10/100/1000 Ethernet ports and 2 dual-purpose ports.
WS-C2960CPD-8PT-L	8 10/100 PoE ports and 2 10/100/1000BASE-T PD uplink copper ports.
WS-C2960CPD-8TT-L	8 10/100 Ethernet ports and 2 10/100/1000BASE-T PD uplink copper ports.
WS-C2960C-12PC-L	12 10/100 PoE ports and 2 dual-purpose ports.
WS-C2960C-8PC-L	8 10/100 PoE ports and 2 dual-purpose ports.
WS-C2960C-8TC-S	8 10/100 Ethernet ports and 2 dual-purpose ports.
Catalyst 2960 and 2960-S Switches	Description
WS-C2960-24TC-L	24 Ethernet 10/100 ports and 2 dual-purpose ports (LAN base image)
WS-C2960-48TC-L	48 Ethernet 10/100 ports and 2 dual-purpose ports (LAN base image)
WS-C2960-24TT-L	24 Ethernet 10/100 ports and 2 10/100/1000 TX ports (LAN base image)
WS-C2960-48TT-L	48 Ethernet 10/100 ports and 2 10/100/1000 TX ports (LAN base image)
WS-C2960G-24TC-L	20 Ethernet 10/100/1000 ports and 4 dual-purpose ports (LAN base image)
WS-C2960G-48TC-L	44 Ethernet 10/100/1000 ports and 4 dual-purpose ports (LAN base image)
WS-C2960-24TC-S	24 Ethernet 10/100 ports and 2 dual-purpose ports (LAN lite image)

### Table 1 Devices Supported (continued)

WS-C2960-48TC-S	48 Ethernet 10/100 ports and 2 dual-purpose ports (LAN lite image)
WS-C2960-24-S	24 Ethernet 10/100 ports (LAN lite image)
WS-C2960-48TT-S	48 Ethernet 10/100 ports and 2 10/100/1000 ports (LAN lite image)
WS-C2960-8TC-S	8 Ethernet 10/100 ports, 1 10/100/1000 ports (LAN lite image)
WS-C2960-8TC-L	8 10/100 Ethernet ports and 1 dual-purpose port
WS-C2960G-8TC-L	7 10/100/1000 Ethernet ports and 1 dual-purpose port
WS-C2960-24PC-L	24 10/100 ports PoE ports, 2 10/100/1000BASE-T copper ports and 2 SFP module slots (LAN base image)
WS-C2960-24PD-8TT-L	8 10/100 ports and 1 10/100/1000 port that receives power
WS-C2960-24LT-L	24 10/100 ports (8 of which are PoE) and 2 10/100/1000 ports (LAN base image)
WS-C2960-48PST-S	48 10/100 PoE ports, 2 10/100/1000 ports, and 2 SFP module slots (LAN lite image)
WS-C2960-24PC-S	24 10/100 PoE ports and 2 dual-purpose ports (LAN lite image)
WS-C2960-24LC-S	24 10/100 ports (8 of which are PoE) and 2 dual-purpose ports (LAN lite image)
WS-C2960-48PST-L	48 10/100 PoE ports, 1 10/100/1000 ports and 2 SFP module slots (LAN Base image)
WS-C2960S-48FPD-L	48 10/100/1000 PoE+ ports (PoE budget of 740 W) and 2 SFP+ module slots
WS-C2960S-48LPD-L	48 10/100/1000 PoE+ ports (PoE budget of 370 W) and 2 SFP+ module slots
WS-C2960S-24PD-L	24 10/100/1000 PoE+ ports (PoE budget of 370 W) and 2 SFP+ module slots
WS-C2960S-48TD-L	48 10/100/1000 ports and 2 SFP+ module slots
WS-C2960S-24TD-L	24 10/100/1000 ports and 2 SFP+ module slots
WS-C2960S-48FPS-L	48 10/100/1000 PoE+ ports (PoE budget of 740 W) and 4 SFP module slots
WS-C2960S-48LPS-L	48 10/100/1000 PoE+ ports (PoE budget of 370 W) and 4 SFP module slots
WS-C2960S-24PS-L	24 10/100/1000 PoE+ ports (PoE budget of 370 W) and 4 SFP module slots
WS-C2960S-48TS-L	48 10/100/1000 ports and 4 SFP module slots
WS-C2960S-24TS-L	24 10/100/1000 ports and 4 SFP module slots
WS-C2960S-48TS-S	48 10/100/1000 ports and 2 SFP module slots
WS-C2960S-24TS-S	24 10/100/1000 ports and 2 SFP module slots
WS-C2960S-F48FPS-L	48 10/100 PoE+ ports (PoE budget of 740 W) and 4 SFP module slots
WS-C2960S-F48LPS-L	48 10/100 PoE+ ports (PoE budget of 370 W) and 4 SFP module slots
WS-C2960S-F48TS-L	48 10/100 ports and 4 SFP module slots
WS-C2960S-F24PS-L	24 10/100 PoE+ ports (PoE budget of 370 W) and 2 SFP module slots
WS-C2960S-F24TS-L	24 10/100 ports and 2 SFP module slots
WS-C2960S-F48TS-S	48 10/100 ports and 2 SFP module slots
WS-C2960S-F24TS-S	24 10/100 ports and 2 SFP module slots
Catalyst C2960-X and 2960-XR Switches	Description
WS-C2960XR-48FPD-I	48 10/100/1000 PoE+ ports (PoE budget of 740 W) 2 SFP+ module slots, 1025-W power supply.
WS-C2960XR-48LPD-I	48 10/100/1000 PoE+ ports (PoE budget of 370 W) 2 SFP+ module slots, 640-W power supply.

WS-C2960XR-48LPS-I	48 10/100/1000 PoE+ ports (PoE budget of 370 W) and 4 SFP module slots, 640-W power supply.
WS-C2960XR-48FPS-I	48 10/100/1000 PoE+ ports (PoE budget of 740 W) and 4 SFP module slots, 1025-W power supply.
WS-C2960XR-48TS-I	48 10/100/1000 and 4 SFPmodule slots, 250-Wpower supply.
WS-C2960XR-48TD-I	48 10/100/1000 and 2 SFP+ module slots, 250-W power supply.
WS-C2960XR-24PD-I	24 10/100/1000 PoE+ ports (PoE budget of 370 W) 2 SFP+ module slots, 640-W power supply.
WS-C2960XR-24TS-I	24 10/100/1000 and 4 SFPmodule slots, 250-Wpower supply.
WS-C2960XR-24PS-I	24 10/100/1000 PoE+ ports (PoE budget of 370 W) and 4 SFP module slots, 640-W power supply.
WS-C2960XR-24TD-I	24 10/100/1000 and 2 SFP+ module slots, 250-W power supply.
WS-C2960X-48FPD-L	48 10/100/1000 Power over Ethernet Plus (PoE+) ports (PoE budget of 740 W) and 2 small form-factor pluggable (SFP)+ module slots.
WS-C2960X-48LPD-L	48 10/100/1000 PoE+ ports (PoE budget of 370 W) and 2 SFP+ module slots.
WS-C2960X-24PD-L	24 10/100/1000 PoE+ ports (PoE budget of 370 W) and 2 SFP+ module slots.
WS-C2960X-48TD-L	48 10/100/1000 ports and 2 SFP+ module slots.
WS-C2960X-24TD-L	24 10/100/1000 ports and 2 SFP+ module slots.
WS-C2960X-48FPS-L	48 10/100/1000 PoE+ ports (PoE budget of 740 W) and 4 SFP module slots.
WS-C2960X-48LPS-L	48 10/100/1000 PoE+ ports (PoE budget of 370 W) and 4 SFP module slots.
WS-C2960X-24PS-L	24 10/100/1000 PoE+ ports (PoE budget of 370 W) and 4 SFP module slots.
WS-C2960X-24PSQ-L	Cisco Catalyst 2960-X Non-Stackable, fanless, 24 10/100/1000 Ethernet ports, including 8 POE ports (PoE budget of 110 W), two copper module slots, and two SFP module slots.
WS-C2960X-48TS-L	48 10/100/1000 ports and 4 SFP module slots.
WS-C2960X-24TS-L	24 10/100/1000 ports and 4 SFP module slots.
WS-C2960X-48TS-LL	48 10/100/1000 ports and 2 SFP module slots.
WS-C2960X-24TS-LL	24 10/100/1000 ports and 2 SFP module slots.
Catalyst 2955 Switches	Description
WS-C2955T-12	12 Ethernet 10/100 ports and 2 fixed 10/100/1000BASE-T ports
WS-C2955C-12	12 Ethernet 10/100 ports and 2 fixed 100BASE-FX ports
WS-C2955S-12	12 Ethernet 10/100 ports and 2 fixed 1000BASE-LX ports
Catalyst 2950 Switches	Description
WS-C2950-12	12 Ethernet 10/100 ports (SI)
WS-C2950-24	24 Ethernet 10/100 ports (SI)
WS-C2950C-24	24 Ethernet 10/100 ports and 2 fixed 100BASE-FX ports (EI)
WS-C2950G-12	12 Ethernet 10/100 ports and 2 GBIC-based Gigabit Ethernet ports (EI)
WS-C2950G-24	24 Ethernet 10/100 ports and 2 GBIC-based Gigabit Ethernet ports (EI)
WS-C2950G-48	48 Ethernet 10/100 ports and 2 GBIC-based Gigabit Ethernet ports (EI)

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### Table 1 Devices Supported (continued)

WS-C2950SX-24	24 Ethernet 10/100 ports and 2 fixed 1000BASE-SX ports (SI)
WS-C2950SX-48	48 Ethernet 10/100 ports and 2 fixed 1000BASE-SX ports (SI)
WS-C2950T-24	24 Ethernet 10/100 ports and 2 fixed 10/100/1000BASE-T ports (EI)
WS-C2950T-48	48 Ethernet 10/100 ports and 2 fixed 10/100/1000BASE-T ports (EI)
WS-C2950ST-8LRE	8 LRE ports, 2 10/100/1000 ports, and 2 SFP module slots
WS-C2950ST-24LRE	24 LRE ports, 2 10/100/1000 ports, and 2 SFP module slots
Catalyst 2940 Switches	Description
WS-C2940-8TT	8 Ethernet 10/100 ports and 1 fixed 10/100/1000BASE-T port
WS-C2940-8TF	8 Ethernet 10/100 ports,1 fixed 100BASE-FX, and 1 fixed 1000BASE-X SFP module port
Catalyst 2928 Switches	Description
WS-2928-24LT-C	24 10/100 BASE-TX Ethernet ports (8 of which are PoE) and 2 dual-purpose ports
WS-2928-24TC-C	24 10/100 BASE-TX Ethernet ports and 2 dual-purpose ports
WS-C2928-48TC-C	48 10/100 BASE-TX Ethernet ports and 2 dual-purpose ports
Catalyst 2918 Switches	Description
WS-C2918-24TT-C	24 10/100 BASE-TX Ethernet ports and 2 10/100/1000BASE-T copper ports
WS-C2918-24TC-C	24 10/100BASE-TX Ethernet ports and 2 dual-purpose ports
WS-C2918-48TT-C	48 10/100 BASE-TX Ethernet ports and 2 10/100/1000BASE-T copper uplink ports
WS-C2918-48TC-C	48 10/100BASE-TX Ethernet ports and 2 dual-purpose ports
Catalyst 2350 Switches	Description
WS-C2350-48TD-S	48 10/100/1000 Ethernet ports, 2 10-Gigabit Ethernet X2 module slots, AC power
WS-C2350-48TD-SD	48 10/100/1000 Ethernet ports, 2 10-Gigabit Ethernet X2 module slots, DC power
Catalyst 2360 Switches	Description
WS-C2360-48TD-S	48 10/100/1000 ports and 4 SFP+ module slots
SFP modules	1000BASE-LX/LH, -SX,100BASE-FX
Blade Switches	
Catalyst 3125 Switches	Description
WS-CBS3125G-S	18 internal Gigabit Ethernet 1000BASE-X ports, 4 Gigabit Ethernet (RJ-45) uplink ports, 4 RJ-45 SFP module slots and 1 Ethernet management port
WS-CBS3125X-S	18 internal Gigabit Ethernet 1000BASE-X ports, 4 Gigabit Ethernet (RJ-45) uplink ports, 4 RJ-45 SFP module slots, 2 10-Gigabit Ethernet X2 module slots and 1 Ethernet management ports
Catalyst 3110 Blade Switch Modules for IBM	Description
WS-CBS3110G-S	4 external 10/100/1000BASE-T Ethernet ports, 14 internal 1000BASE-X Ethernet downlink
WS-CBS3110G-S-I	ports, 1 internal 100BASE-T Ethernet management port, 2 StackWise Plus ports
WS-CBS3110X-S WS-CBS3110X-S-I	1 external 10-Gigabit Ethernet module slot, 14 internal 1000BASE-X Ethernet downlink ports, 1 internal 100BASE-T Ethernet management port, 2 StackWise Plus ports

Catalyst 3012 Blade Switches for IBM	Description
WS-CBS3012-IBM-I WS-CBS3012-IBM	4 external 10/100/1000BASE-T Ethernet ports, 14 internal 1000BASE-X Ethernet downlink ports, 1 internal 100BASE-T Ethernet management port
Catalyst 3020 Blade Switches for HP	Description
WS-CBS3020-HP	16 internal 1000BASE-X ports, 8 10/100/100 copper ports and 4 shared SFP module slots
Catalyst Blade Switch 3030 for Dell	Description
WS-CBS3030-DEL-F WS-CBS3030-DEL-S	10 internal 1000BASE-X ports, 2 external 10/100/1000 copper ports, and 4 SFP module slots
Catalyst Blade Switch 3040 for FSC	Description
WS-CBS3040-FSC	10 internal 1000BASE-X ports, 2 external 10/100/1000 copper ports, and 4 SFP module slots
CIGESM Blade Switch	Description
OS-CIGESM-18TT-EBU	14 internal 1000BASE-X ports and 4 external 10/100/1000 copper ports
Catalyst 3120 Blade Switches for HP	Description
WS-CBS3120G-S	18 internal Gigabit Ethernet 1000BASE-X ports, 4 Gigabit Ethernet (RJ-45) uplink ports, 4 RJ-45 SFP module slots and 1 Ethernet management port
WS-CBS3120X-S	18 internal Gigabit Ethernet 1000BASE-X ports, 4 Gigabit Ethernet (RJ-45) uplink ports, 4 RJ-45 SFP module slots, 2 10-Gigabit Ethernet X2 module slots and 1 Ethernet management port
Catalyst 3130 Blade Switches for Dell	Description
WS-CBS3032-DEL (non-stackable) WS-CBS3032-DEL-F (non-stackable) WS-CBS3130-G-S WS-CBS3130-G-S-F	16 Ethernet 10/100/1000 ports, 4 fixed 1-Gigabit Ethernet SFP ports, and 1 fixed 100BASE-T Ethernet port
WS-CBS3130-X-S WS-CBS3130-X-S-F	16 Ethernet 10/100/1000 ports, 4 fixed 1-Gigabit Ethernet SFP ports, 2 10-Gigabit Ethernet X2 module slots, and 1 fixed 100BASE-T Ethernet port
Catalyst Express 500 Switches	Description
WS-CE500-24TT	24 Ethernet 10/100 ports and 2 10/100/1000BASE-T ports
WS-CE500-24LC	20 Ethernet 10/100 ports, 4 10/100 PoE, and 2 10/100/1000BASE-T ports or SFP module ports
WS-CE500-24PC	24 10/100 PoE ports and 2 10/100/1000BASE-T ports or SFP module ports
WS-CE500G-12TC	8 10/100/1000BASE-T ports and 4 10/100/1000BASE-T ports or SFP module ports
Catalyst Express 520 Series Switches	Description
WS-CE520-8PC-K9	8 10/100 access ports with PoE and 1 10/100/1000BASE-T or SFP module slots
WS-CE520-24TT-K9	24 10/100 access ports and 2 10/100/1000BASE-T ports

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### Table 1 Devices Supported (continued)

WE CE520 24LC K0	20.10/100 second method 10/100 second method: (1.D. E. s. st. 1.2.10/100/1000D + 0E. E
WS-CE520-24LC-K9	20 10/100 access ports, 4 10/100 access ports with PoE ports, and 2 10/100/1000BASE-T or SFP module slots
WS-CE520-24PC-K9	24 10/100 access ports with PoE and 2 10/100/1000BASE-T or SFP module slots
WS-CE520G-24TC-K9	24 10/100/1000BASE-T ports and 2 10/100/1000BASE-T or SFP module slots
Catalyst 4500, Catalyst 4900,	, and Catalyst 4500 E-Series
Chassis	Description
WS-C4503	Catalyst 4503; 3-slot modular chassis
WS-C4506	Catalyst 4506; 6-slot modular chassis
WS-C4507R	Catalyst 4507R; 7-slot modular chassis
WS-C4510R	Catalyst 4510R; 10-slot modular chassis
WS-C4503-E	Catalyst 4503-E; 3-slot modular chassis with CenterFlex technology
WS-C4506-E	Catalyst 4506-E; 6-slot modular chassis with CenterFlex technology
WS-C4507R-E	Catalyst 4507R-E; 7-slot modular chassis with CenterFlex technology
WS-C4510R-E	Catalyst 4510R-E; 10-slot modular chassis with CenterFlex technology
WS-C4510R+E	Catalyst 4500E; 10-slot chassis for 48 Gb/s per slot
WS-C4507R+E	Catalyst 4500E; 7-slot chassis for 48 Gb/s per slot
WS-C4500X-32	32 1G or 10G Ethernet ports (requires either SFP or SFP+ transceivers)
WS-C4500X-16	16 1G or 10G Ethernet ports (requires either SFP or SFP+ transceivers)
Switches	Description
WS-C4948	Catalyst 4948; 44 Ethernet 10/100/1000 ports, 4 ports alternative-wired SFP module
WS-C4948-10GE	48 fixed 10/100/1000BASE-T ports and 2 ports X2-based
WS-C4900M-10GE	Catalyst 4900M partially fixed and partially modular switch
WS-C4948E	48 10/100/1000 ports, 4 10-Gigabit Ethernet SFP+ module slots
WS-C4948E-F	48 10/100/1000 ports, 4 10-Gigabit Ethernet SFP+ module slots, Back-to-Front airflow
Supervisors	Description
WS-X4013+10GE	Catalyst 4500 Series Supervisor Engine II-Plus-10GE
WS-X4013+TS	Catalyst 4500 Series Supervisor Engine II-Plus TS
WS-X4013+	Catalyst 4500 Series Supervisor Engine II-Plus
WS-X4515	Catalyst 4500 Supervisor Engine IV
WS-X4516	Catalyst 4516 Supervisor Engine V
WS-X4516-10GE	Catalyst 4516 10-Gigabit Supervisor Engine V with 2 ports X2-based or 4 ports alternative-wired SFP module
WS-X45-SUP6-E	Catalyst 4500 E-Series Supervisor Engine 6-E
WS-X45-SUP6L-E	Catalyst 4500 E-Series Supervisor Engine 6L-E
WS-X45-SUP7-E	Catalyst 4500E Supervisor Engine 7-E
WS-X45-SUP7L-E	Catalyst 4500E Supervisor Engine 7L-E
Supervisor Daughter Card	Description
WS-F4531	NetFlow Services daughter card

Power Supplies	Description
PWR-RPS2300	Cisco Redundant Power Supply 2300 for the Catalyst 3750-E and 3560-E switches
C3K-PWR-1150WAC	FRU power supply module for the Catalyst 3750-E and 3560-E switches and for the Cisco Redundant Power System 2300
C3K-PWR-750WAC	FRU power supply module for the Catalyst 3750-E and 3560-E switches and for the Cisco Redundant Power System 2300
C3K-PWR-265WAC	FRU power supply module for the Catalyst 3750-E and Catalyst 3560-E switches.
C3K-PWR-265WDC	FRU power supply module for the Catalyst 3750-E and Catalyst 3560-E switches
C3KX-PWR-1100WAC	FRU power supply module for the Catalyst 3750-X and Catalyst 3560-X switches.
C3KX-PWR-715WAC	FRU power supply module for the Catalyst 3750-X and Catalyst 3560-X switches.
C3KX-PWR-350WAC	FRU power supply module for the Catalyst 3750-X and Catalyst 3560-X switches.
C3KX-PWR-440WDC	FRU power supply module for the Catalyst 3750-X and Catalyst 3560-X switches.
PWR-C45-1000AC	1000-W AC power supply (data only)
PWR-C45-1300ACV	1300-W AC power supply (data and PoE)
PWR-C45-1400AC	1400-W AC power supply
PWR-C45-1400DC-P	1400-W DC power supply with integrated PEM
PWR-C45-2800ACV	2800-W AC power supply (data and PoE)
PWR-C45-4200ACV	4200-W AC power supply with integrated PoE
PWR-C45-6000ACV	Catalyst 4500 Series Switch 6000 W AC power supply
Switching Modules	Description
WS-X4124-RJ45	24-port 10/100 with RJ-45 connectors
WS-X4124-FX-MT	24-port Fast Ethernet 100BASE-FX, multimode fiber with MT-RJ connectors
WS-X4148-FX-MT	48-port Fast Ethernet 100BASE-FX, multimode fiber with MT-RJ connectors
WS-X4148-FE-LX-MT	48-port Fast Ethernet 100BASE-LX10, single-mode fiber with MT-RJ connectors
WS-X4148-RJ	48-port 10/100 with RJ-45 connectors
WS-X4148-RJ21	48-port Ethernet 10/100-Mb/s with 4 telco connectors
WS-X4148-RJ45V	48-port Ethernet 10/100-Mb/s inline power
WS-X4224-RJ45V	24-port 10/100 PoE IEEE 802.3af-compliant with RJ-45 connectors
WS-X4232-GB-RJ	32-port Ethernet 10/100 and 2 GBIC uplinks
WS-X4248-RJ21V	48-port 10/100 PoE IEEE 802.3af-compliant with telco connectors
WS-X4248-RJ45V	48-port 10/100 PoE IEEE 802.3af-compliant with RJ-45 connectors
	2 GBIC ports
WS-X4302-GB	
WS-X4302-GB WS-X4424-GB-RJ45	24-port 10/100/1000 with RJ-45 connectors
	24-port 10/100/1000 with RJ-45 connectors         18 GBIC ports
WS-X4424-GB-RJ45	
WS-X4424-GB-RJ45 WS-X4418-GB	18 GBIC ports
WS-X4424-GB-RJ45 WS-X4418-GB WS-X4448-GB-RJ45	18 GBIC ports         48-port Ethernet 10/100/100 with RJ-45 connectors

### Table 1Devices Supported (continued)

Routers			
SM-ES3G-24-P	24 10/100/1000 PoE ports		
SM-ES3G-16-P	-P 16 10/100/1000 PoE ports		
SM-ES3-24-P	23 10/100 ports PoE ports, 1 10/100/100 PoE ports		
SM-ES3-16-P	15 10/100 PoE ports, 1 10/100/1000 port PoE ports		
SM-ES2-24-P	Layer 2-capable, 23 10/100 ports PoE ports, 1 10/100/1000 PoE ports		
SM-ES2-24	23 10/100 ports, 1 10/100/1000 port		
SM-ES2-16-P	15 10/100 PoE ports, 1 10/100/1000 PoE ports		
SM-D-ES3G-48-P	48 10/100/1000 PoE ports, 2 SFP module slots		
SM-D-ES3-48-P	48 10/100 PoE ports, 2 SFP module slots		
SM-D-ES2-48	48 10/100 ports, 2 SFP module slots		
Cisco Enhanced EtherSwit			
WS-X4908-10G-RJ45	8-port 10-Gigabit BASE-T half card with RJ-45 connectors		
WS-X4908-10GE	8-port 10-Gigabit Ethernet X2 half card		
WS-X4904-10GE	4-port 10-Gigabit Ethernet X2 half card		
WS-X4920-GB-RJ45	20-port 10/100/1000 half card with RJ-45 connectors		
Catalyst 4900M Switching			
C4KX-NM-8	<ul> <li>48-port intelligent 60 W PoE per port (maximum of 1500 W per module). 10/100/1000 Ethernet module. Module supports 48 ports at 30 W per port simultaneously, or 24 ports at 60 W per port simultaneously.</li> <li>8-port 1-Gigabit/10-Gigabit BASE-X module.</li> </ul>		
WS-X4612-SFP-E WS-X4748-UPOE+ E	12-port 1000BASE-X SFP module slots		
WS-X4712-SFP+E	12-port 10 Gigabit Ethernet (SFP+) line card		
WS-X4648-RJ45-E	48-port 10/100/1000BASE-T Gigabit Ethernet switching module		
WS-X4548-RJ45V+	48-port 10/100/1000 Premium PoE line card		
WS-X4248-FE-SFP (Catal	vst 4500 series switches)		
WS-X4248-FE-SFP WS-X4624-SFP-E (Catalys			
WS-X4624-SFP-E WS-X4248-FE-SFP	24-port 1000BASE-X ports, SFP-based with LC connectors         48-port 100BASE-X ports, SFP-based with LC connectors		
	6-port 10-Gigabit Ethernet X2		
WS-X4648-RJ45V+E WS-X4606-X2-E	48-Port Premium PoE 10/100/1000		
WS-X4748-RJ45V+E	48-port 10/100/1000 line card nonblocking PoE 802.3at providing up to 30 Watts power/port		
WS-X4648-RJ45V-E	48-port RJ-45 IEEE 802.3af PoE 10/100/1000		
WS-X4506-GB-T	6-port 10/100/1000 PoE IEEE 802.3af-compliant or SFP-module based		
WS-X4306-GB	6 GBIC ports		
WS-X4548-GB-RJ45V	48-port 10/100/1000 PoE IEEE 802.3af-compliant with RJ-45 connectors		
NIG MARIA OD DIARIA	24-port 10/100/1000 PoE IEEE 802.3af-compliant with RJ-45 connectors		

Cisco 800 Series Small Office Home Office Routers: C-831, C-836, C-837, C-851, C-857, C-876, C-877, C-878, 877M

Cisco 1800 Series Integrated Services Routers: C1801, C1801W, C1802, C1802W, C1803, C1803W, C1811, C1811W, C1812, C1812W, C1841, C1861

Cisco 2600 Series Multiservice Platforms: C2610XM, C2611XM, C2620XM, C2621XM, C2650XM, C2651XM, C2691

Cisco 2800 Series Integrated Services Routers: C2801, C2811, C2821, C2851

Cisco 3700 Series Multiservice Access Routers: 3725, 3745

Cisco 3800 Series Integrated Services Routers: 3825, 3845

Cisco 1900 branch routers: 1921/K9, 1941/K9, 1941-SEC-SRE/K9, 1941-SEC/K9. 1941W-A/K9, 1941W-E/K9, 1941W-P/K9, 1941W-N/K9, 1941-2.5G/K9, 1921-SEC/K9, 1921-T1SEC/K9, 1921-ADSL2-M/K9, and 1921-ADSL2/K9.

Cisco 2900 branch routers: 2901/K9, 2911/K9, 2921/K9, 2951/K9, 2901-SEC/K9, 2911-SEC/K9, 2921-SEC/K9, 2951-SEC/K9, 2901-V/K9, 2911-V/K9, 2921-V/K9, 2951-V/K9, 2901-VSEC/K9, 2911-VSEC/K9, 2921-VSEC/K9, and 2951-VSEC/K9.

#### **Additional Devices**

EtherSwitch Service Modules on Cisco 2800 Series and Cisco 3800 Series Integrated Services Routers

Stratix 8000 and 8300 Ethernet Managed Switches

Stratix 5700 Ethernet Managed Switches (1783-BMS06SL, 1783-BMS06SA, 1783-BMS06TL, 1783-BMS06TA, 1783-BMS06SGL, 1783-BMS06SGA, 1783-BMS06TGL, 1783-BMS06TGA, 1783-BMS10CL, 1783-BMS10CA, 1783-BMS10CGL, 1783-BMS10CGA, 1783-BMS10CGP, 1783-BMS10CGN, 1783-BMS20CL, 1783-BMS20CA, 1783-BMS20CGL, 1783-BMS20CGP, 1783-BMS20CGPK, and 1783-BMS20CGN)

Rockwell Automation switches (1783-BMS12T4E2CGL, 1783-BMS12T4E2CGNK, 1783-BMS12T4E2CGP, 1783-BMS10CGN)

Catalyst 6500 Series Switch with the Catalyst 6500 Supervisor Engine 32

PIX-501, PIX-506, PIX-506E, PIX-515, PIX-515E, PIX-525, and PIX-535 firewalls

ASA 5505, ASA 5510, ASA 5520, and ASA 5540 Adaptive Security Appliances

All Cisco IP phones

Aironet 350 Series Access Points: AIR-AP350

Aironet 1100 Series Access Points:

AIR-AP1120B-E-K9, AIR-AP1120B-I-K9, AP1120B-J-K9,AIR-AP1121G-A-K9, AIR-AP1121G-E-K9, AIR-AP1121G-J-K9, AIR-AP1131AG-A-K9, AIR-AP1131AG-C-K9, AIR-AP1131AG-E-K9, AIR-AP1131AG-J-K9, AIR-AP1131AG-N-K9, AIR-AP1131AG-K-K9, AIR-AP1131AG-P-K9, AIR-AP1131AG-S-K9, AIR-AP1131AG-T-K9

#### Aironet 1200 Series Access Points:

AIR-A12P10B-A-K9, AIR-AP1200, AIR-AP1210, AIR-AP1220,AIR-AP1220A-A-K9, AIR-AP1220A-J-K9, AIR-AP1220B-A-K9, AIR-AP1220B-E-K9, AIR-AP1220B-J-K9, AIR-AP1230A-A-K9, AIR-AP1230A-J-K9, AIR-AP1230A-T-K9, AIR-AP1230B-A-K9, AIR-AP1230B-E-K9, AIR-AP1230B-J-K9, AIR-AP1231G-A-K9, AIR-AP1231G-E-K9, AIR-AP1231G-I-K9, AIR-AP1231G-J-K9, AIR-AP1232AG-A-K9, AIR-AP1232AG-E-K9, AIR-AP1232AG-J-K9, AIR-AP1232AG-N-K9, AIR-AP1232AG-C-K9, AIR-AP1232AG-P-K9, AIR-AP1232AG-S-K9, AIR-AP1232AG-T-K9, AIR-AP1242AG-A-K9, AIR-AP1242AG-E-K9, AIR-AP1242AG-I-K9, AIR-AP1242AG-J-K9, AIR-AP1242AG-N-K9, AIR-AP1242AG-C-K9, AIR-AP1242AG-P-K9, AIR-AP1242AG-S-K9, AIR-AP1242AG-T-K9, AIR-AP1242AG-K-K9, AIR-AP1242G-A-K9, AIR-AP1242G-E-K9, AIR-AP1242G-P-K9, AIR-AP1252AG-A-K9, AIR-AP1252AG-C-K9, AIR-AP1252AG-E-K9, AIR-AP1252AG-I-K9, AIR-AP1252AG-K-K9, AIR-AP1252AG-N-K9, AIR-AP1252AG-P-K9, AIR-AP1252AG-S-K9, AIR-AP1252AG-T-K9, AIR-AP1252G-A-K9, AIR-AP1252G-F-K9, AIR-AP1252G-P-K9, AIR-AP1252AG-S-K9, AIR-AP1252AG-T-K9, AIR-AP1252G-F-K9, AIR-AP1252G-F-K9, AIR-AP1252G-P-K9, AIR-AP1252AG-S-K9, AIR-AP1252AG-T-K9, AIR-AP1252G-F-K9, AIR-AP1252G-F-K9, AIR-AP1252G-P-K9

AP-1140 series, AP-1260 series, AP-3500 series, and AP 3600 series

Cisco Aironet Access Points (1600 series, 2600 series, 3500 series, 3600 series, and 1550 series).

#### Cisco Wireless Controllers:

- Cisco 2500 series (AIR-CT2504-5-K9, AIR-CT2504-15-K9, AIR-CT2504-25-K9, and AIR-CT2504-50-K9)
- Cisco 4400 series (AIR-WLC4404-12-K9, AIR-WLC4404-25-K9, AIR-WLC4404-50-K9, and AIR-WLC4404-100-K9)
- Cisco 5500 series (AIR-CT5508-12-K9, AIR-CT5508-25-K9, AIR-CT5508-50-K9, AIR-CT5508-100-K9, AIR-CT5508-250-K9, AIR-CT5508-500-K9, AIR-CT5508-500-2PK, AIR-CT5508-HA-K9, and AIR-CT5508-K9)
- Cisco 5760 series (AIR-CT5760-25-K9, AIR-CT5760-50-K9, AIR-CT5760-100-K9, AIR-CT5760-250-K9, AIR-CT5760-500-K9, AIR-CT5760-1K-K9, AIR-CT5760-HA-K9)
- Cisco 7500 series (AIR-CT7510-300-K9, AIR-CT7510-500-K9, AIR-CT7510-1K-K9, AIR-CT7510-2K-K9, AIR-CT7510-3K-K9, AIR-CT7510-6K-K9, and AIR-CT7510-HA-K9)



The Topology view of Network Assistant supports Catalyst 6500 switches. You cannot add these devices to a community or cluster, but you can start Device Manager for them from the Topology view.

### **Access Points**

Cisco Aironet 350, 1100, 1200, and 1242 series. Network Assistant supports them only if they run a Cisco IOS image.



Network Assistant supports only autonomous access points. Access points that are managed by a wireless LAN controller are not supported.

### **Firewalls**

Cisco PIX 515E firewalls. PIX firewalls do not support the Cisco Discovery Protocol, so they are not automatically shown as neighbors in the Topology view. They are shown only after you add them to a community by using a Create Community or Modify Community window. To see a PIX firewall link to another community member, you must add the link manually by selecting **Add Link** in a Topology popup menu.

### **Legacy Devices**

These devices are not supported by Network Assistant:

- Catalyst 2900 XL switches
- Catalyst 3500 XL switches
- C1700 Series Modular Access Routers

### **Cluster Compatibility**

This section describes how to choose command and standby command devices when a cluster consists of a mixture of Catalyst switches. When creating a device cluster or adding a devices to a cluster, follow these guidelines:

- When you create a device cluster, we recommend configuring the highest end device in your cluster as the command device.
- If you are managing the cluster through Network Assistant, the device that has the latest software release should be the command device.
- The standby command device must be the same type as the command device. For example, if the command device is a Catalyst 3750 switch, all standby command devices must be Catalyst 3750 switches.



Catalyst 4500 series switches cannot be configured as standby command devices.

## **Downloading Network Assistant**



The Application Updates feature is currently not available.

To download a new version of CNA, follow these steps:

- 1. Go to this Web address: http://www.cisco.com/en/US/products/ps5931/index.html
- 2. You must be a registered Cisco.com user, but you need no other access privileges.
- 3. Click the Download Software link, and select the version you want to download.
- 4. Find the Network Assistant installer.
- **5.** Download the Network Assistant installer, and run it. (You can run it directly from the Web if your browser offers this choice.)
- 6. When you run the installer, follow the instructions. In the final panel, click Finish.

For information on installing, starting, and connecting to Network Assistant, see *Getting Started with Cisco Network Assistant* at this site:

http://www.cisco.com/en/US/products/ps5931/prod\_installation\_guides\_list.html

## **Updating Network Assistant**

To update Network Assistant to a later release, follow these steps:

- 1. Start Network Assistant.
- 2. Choose Applications > Application Updates.
- 3. In the Authentication window, enter your Cisco.com username and password.
- 4. In the Application Updates window, select Yes to install the latest updates.
- 5. In the Authentication window, enter your Cisco.com username and password.
- 6. Click Restart to restart Network Assistant.

## **Upgrading a Switch by Using Network Assistant**

You can upgrade switch software in two ways by using Network Assistant:

- Drag and drop a software-image file from your PC, mapped drive, or network drive to a device icon in the Topology View.
- Select Maintenance > Software Upgrade from the feature bar.

For detailed instructions, click Help.

## Minimum Cisco IOS Release Supported by Network Assistant

See the switch release notes for the minimum Cisco IOS software release for the devices that Network Assistant manages.

## **Limitations and Restrictions**

You should review this section before you begin working with the device. 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 device hardware or software.

These sections describe the limitations and restrictions:

- "Cluster Limitations and Restrictions" section on page 26
- "Network Assistant Limitations and Restrictions" section on page 28

### **Cluster Limitations and Restrictions**

These limitations apply only to the Catalyst 4500 series switches:

- By default, clustering is disabled on the Catalyst 4500 series switches.
- You must assign an IP address to the Catalyst 4500 series switch if it is a cluster command switch candidate. If the switch is a cluster member candidate, you might not need to assign an IP address.
- By default, the HTTP server is disabled on the Catalyst 4500 series switch. To connect the switch to Network Assistant, you must enable the HTTP server on all cluster members.

- The HTTP port number on Network Assistant and the Catalyst 4500 series switch must match.
- A Catalyst 4500 switch can be a cluster member only if another Catalyst 4500 switch is the command device.
- By default, the Catalyst 4500 series switch is configured with five vty lines. If the switch (such as a cluster command device with multiple cluster members) is connected to Network Assistant, you must configure at least eight + *n* vty lines, where *n* is the number of vty lines used by other applications. You can configure a maximum of 16 vty lines.
- Create a switch virtual interface (SVI) to use for intracluster communication. The SVI must be in the **no shut** state.

This limitation applies only to the Catalyst 4500 series and Catalyst 3750, 3560, 3550, and 2970 switches:

• If a Catalyst 2900 XL or 3500 XL cluster command device is connected to a Catalyst 3550 or a 3750 switch, the command device does not find any cluster candidates other than the 3550 or the 3750 switch candidates. You must add the 3550 or the 3750 switch to the cluster to see other cluster candidates. (CSCdt09918)

This limitation applies only to the Catalyst 4500 series and Catalyst 3750, 3560, 3550, and 2970 switches:

- If both the active command device and the standby command device fail at the same time, the cluster is not automatically recreated. Even if there is a third passive command device, it might not recreate all cluster members because it might not have all the latest cluster configuration information. You must manually recreate the cluster if both the active and standby command devices simultaneously fail. (CSCdt43501)
- When the active device fails in a device cluster that uses Hot Standby Routing Protocol (HSRP) redundancy, the new active device might not contain a full cluster member list.

The workaround is to ensure that the ports on the standby cluster members are not in the Spanning Tree Protocol (STP) blocking state. See the "Configuring STP" chapter in the software configuration guide for more information about verifying port status. (CSCec31495)

This limitation applies only to the Catalyst 3750 and 3750-E switches:

• CSCsg80623

On Catalyst 3750 and 3750-E switches, when running on-demand diagnostic tests on both the stack master and stack member switches, sometimes the tests execute only on the stack master.

Use one of these workarounds:

- Execute the tests on the stack members first, and then run the tests separately on the stack master.
- Schedule the tests to run once on both the stack master and stack member switches.

This limitation applies only to the Catalyst 2955, 2950, and 2940 switches:

• When a cluster of devices have Network Time Protocol (NTP) configured, the command device is not synchronized with the rest of the devices. (CSCdz88305)

## **Network Assistant Limitations and Restrictions**

These are the Network Assistant limitations and restrictions:

These limitations apply to all the devices described in the "Devices Supported" section on page 9:

- CNA supports the standard ASCII character set. Do not enter characters from extended ASCII character sets in GUI fields for feature options.
- A red border appears around the text-entering area of some Network Assistant windows. The color of the border changes to green when text is entered. The colored border does not prevent you from entering text. (CSCdv82352)
- You cannot switch modes (for example, from guide mode to expert mode) for an open Network Assistant window. The workaround is to close the open window, select the mode that you want, and then reopen the Network Assistant window. For the mode change to take effect on any other Network Assistant window that is open, you need to close that window and then reopen it after you select the new mode. (CSCdw87550)
- If you open a window in which you can enter text, open another window, and return to the first window, right-clicking in the text field might make the cursor in this field disappear. You can still enter text in the field. (CSCdy44189)
- When the active device fails in a device cluster that uses HSRP redundancy, the new active device might not contain a full cluster member list.

The workaround is to ensure that the ports on the standby cluster members are not in the STP blocking state. See the "Configuring STP" chapter in the software configuration guide for information about verifying port status. (CSCec31495)

• In the Port Settings window, you must apply a change to some speed settings before you can change a duplex setting.

After you configure a speed setting, click Apply, and then configure a duplex setting. (CSCeh43889)

• When there are more than one neighbor devices of the same device type and they have same hostname, the Topology view displays only one neighbor device instead of displaying all the neighbor devices.

The workaround is to not have same hostname for more than one device. (CSCsb50280).

• CSCsd06275

The Smartports window shows the NME-XD-24ES-1S-P EtherSwitch service module with two Mode buttons instead of one.

There is no workaround.

• CSCs180850

In the Modify VLAN window if you switch the vlan IDs of the isolated VLAN and the community VLAN and then click **OK** and **Apply**, these changes do not appear in the VLANs window.

The workaround is to do the same steps again. This time the changes take place.

#### **Catalyst 4500 Series Switches**

On Catalyst 4500 series switches, Network Assistant supports only the features shown in Table 2:

Menu Path	Features	
Configure	Smartports, Power Supplies, and Save Configuration	
Configure > Ports	Port Settings and EtherChannel	
Configure > Security	Security Wizard, Port Security, DHCP Snooping, DAI, and IP Source Guard	
Configure > Switching	VLANs, MAC Addresses, and Voice VLAN	
Configure > Routing	Enable/Disable, Protocols, and Inter-VLAN Routing Wizard	
Configure > Device Properties	IP Addresses, Hostname, System Time, HTTP Port, Users and Passwords, and SNMP	
Configure > Clusters	Cluster Conversion Wizard, Create Cluster, Delete Cluster, Add To Cluster, Remove From Cluster, and Hop Count	
Monitor	Health, Event Notification, System Messages, and Search	
Monitor > Reports	Inventory, Bandwidth Graphs, Link Graphs, ARP, and Router Reports	
Monitor > Views	Front Panel and Topology	
Troubleshoot	Ping and Trace and Diagnostics	
Maintenance	Software Upgrade, File Management, Configuration Archive, Restart/Reset, and Telnet	

Table 2 Features Supported by Catalyst 4500 Series Switches

These limitations apply to the Catalyst 4500 Series switches:

• In Network Assistant, some windows, such as VLAN, Hostname, and so on, might not open from the Front Panel view popup menu for Catalyst 4500 series switches.

The workaround is to close Network Assistant and restart it. (CSCef67553)

• You cannot see the PoE columns in the Port Settings window for Catalyst 4503, 4506, or 4507R switches that run Cisco IOS 12.2(20)EWA and have a WS-4548, WS-4524, or WS-4506-GB-T PoE line card.

The workaround is to upgrade the software on the switch to a later version of Cisco IOS. (CSCeh75133)

#### **Community Limitations**

These limitations apply only to communities:

- A community can contain up to 40 devices. This limit is enforced whenever you add devices to a community.
- CSCsd04956

The Topology view does not show the internal Gigabit Ethernet link between routers and the EtherSwitch service modules NME-16ES-1G and NME-X-23ES-1G.

There is no workaround.

• Changes to the topology or the network do not propagate across all open Network Assistant sessions connected to the same community. You see this inconsistency when multiple Network Assistant sessions are open on one desktop and they are pointing to the same community.

Open one Network Assistant session per desktop per community. (CSCeh53619)

- The Topology view sometimes displays duplicate devices and links. There is no workaround. (CSCeh61352)
- In the Topology view, the redundant link for an HSRP group is not shown. There is no workaround. (CSCeh54526)
- If a community has members that are connected to a member through a hub or a Gigastack module, the Topology view shows all the connections. However, if nonmembers are connected to a community member through a hub or a Gigastack module, the Topology view shows only the connection of the first nonmember.
- Accessing a community through a router running Network Address Translation (NAT) is not supported.
- When a device with a device ID that exceeds 40 characters is added to the community, its link disappears. The device ID is usually the hostname, but if a domain name is specified, the device ID is in the form hostname.domain-name. There is no workaround, other than to limit the size of the device ID to 40 characters or less. (CSCsi77210)

#### **Cluster Limitations**

These limitations apply only to clusters:

• When you add a new member with a username and password that is different from the existing cluster member usernames and passwords, Network Assistant produces an exception error because of an authentication failure.

The workaround is to add the new member without a username and password. When the new member is added to the cluster, remove the existing username and password from the Username and Password fields, enter a new username and password, and then apply it to all cluster members. (CSCdz07957)

• Changing the password or current authentication while Network Assistant is running causes HTTP requests to fail.

The workaround is to close all Network Assistant sessions and then to restart it. (CSCeb33995)

• When TACACS authentication is enabled only on a command device, member devices cannot be configured.

The workaround is to enable TACACS authentication on the member devices. (CSCed27723)

• When there are Catalyst 2950 and 2955 devices in a cluster, and you open the QoS Queue window to configure the devices, and then try to view the settings for other devices by using the device selection menu, Network Assistant halts after 20 to 30 selections.

The workaround is to close and then to restart Network Assistant. (CSCed39693)

• A Java exception error occurs when Network Assistant is in read-only mode and you start the Port Settings window. This only occurs on Catalyst 3500 XL, 2950 LRE, and 2900 XL switches.

The workaround is to open the Port Settings window with Network Assistant in read-write mode. (CSCee25870)

• After a cluster member loses connectivity, the connect icon in the status bar incorrectly displays a connect status instead of a disconnect status.

There is no workaround. (CSCee93695)

• If a Catalyst 2970 switch is a cluster command device and a Catalyst 3750 or 3550 switch is a cluster member, enabling IGRP on a network on the Catalyst 3750 or 3550 switch creates a *Premature EOF* error.

There is no workaround. Make the Catalyst 3750 or 3550 switch the command device.

After you click Finish, you see the commands that are actually applied to the device. (CSCeg60365)

• Zooming in or zooming out on the time axis of a bandwidth graph when the axis approaches noon or midnight might cause the time increments to be incorrectly labeled.

Close the Bandwidth Graph window, reopen it, and zoom in or out again. (CSCej02776)

### **Community and Cluster Limitations**

These limitations apply to both communities and clusters:

- When the Link Graphs application has run for hours displaying packet drop and error information, sometimes the X-axis crosses the Y-axis at a negative Y value instead of at Y= 0. This condition occurs with all supported operating systems, browsers, and Java plug-ins. There is no workaround. (CSCdz32584)
- After you click **Apply** or **Refresh** in the Simple Network Management Protocol (SNMP) window, the window size changes. (CSCdz75666, CSCdz84255)
- When you enable log scaling for Link Graphs, the Y-axis scale becomes illegible. There is no workaround. (CSCdz81086)
- If an access control list (ACL) is deleted from a device, all QoS classes on Catalyst 2970 and 3750 switches that use this ACL for traffic classification become unusable. The modification of these classes to use any other traffic classification (match statement) fails. The workaround is to delete the QoS class that uses the undefined ACL and then, recreate it with the intended traffic classification (match statement). (CSCed40866)
- When an Open Shortest Path First (OSPF) summary address is added for a 10.x.x.x network, a Windows exception error sometimes occurs.

The workaround is to add the address by using the **router ospf** *<process-id>*, **area** *<area-id>*, and **range** *<address> <mask>* configuration commands. (CSCed87031)

• Hostnames and Domain Name System (DNS) server names with commas for a cluster command device, member device, or candidate device can cause Network Assistant to behave unexpectedly.

You can correct his by not using commas in hostnames or DNS names. Do not enter commas when also entering multiple DNS names in the IP Configuration tab of the IP Management window in Network Assistant.

- Access control entries (ACEs) that contain the **host** keyword precede all other ACEs in standard ACLs. You can reposition the ACEs in a standard ACL with one restriction: No ACE with the **any** keyword or a wildcard mask can precede an ACE with the **host** keyword.
- If Network Assistant loses IP connectivity to the switch and an action is performed in the IP Address window, a Java exception error occurs.

The workaround is to close and to reopen the IP Address window when connectivity is restored. (CSCee91784)

• When you reload a device by using Network Assistant, it saves the running configuration. If you want to reload without saving the running configuration, use the CLI. (CSCeh24259)

• If a dual-media port on a Catalyst 4500 switch, model WS-C4948 or model WS-X4506-GB-T, is configured to RJ-45 and you apply a Smartports port role, the port is changed to SFP, the default setting. The connection to the port is lost.

The workaround is to reconfigure the media type to RJ-45 through the Port Settings window. (CSCeh31699)

• If you open the Modify Port Settings or the Modify Port Mode window twice in succession from the Front Panel view by right-clicking a port, selecting Port Settings or VLAN from the popup menu, and repeating these actions for another port, the windows display the settings for the port that you selected first.

The workaround is to ensure that the **Interface** field in these windows applies to the port that you selected. Be sure to close these windows between port selections. (CSCei17154)

• After you perform a search, the TAB key moves the focus in the search results. If you press the TAB key enough to reach the end of the results, the next TAB keystroke moves the focus out of the search results and into the next-in-focus window on the Network Assistant desktop.

The workaround is to Press ALT-s to return to the search results. (CSCei68648)

• Network Assistant does not verify whether the VLAN and the native VLAN are the same on the access point and the switch port that is connected to the access point. VLAN differences might cause wireless connectivity problems when you use the Secure Wireless feature.

The workaround is to ensure that the VLANs and the native VLAN are the same on the access point and the switch port. (CSCsb77434)

## Important Notes

These sections contain important notes related to Network Assistant:

- "Switches Running in VSS" section on page 32
- "Installation Notes" section on page 33
- "Compatibility with Cisco IOS" section on page 33
- "Cisco IOS Notes" section on page 33
- "Community Notes" section on page 34
- "Cluster Notes" section on page 34
- "Network Assistant Notes" section on page 34

### Switches Running in VSS

Network Assistant does not manage switches that are running in VSS (Virtual Switching System). If a device is discovered running in VSS, Network Assistant won't support the configuration of any features, and you might see unexpected results if you try to configure any features.

### **Installation Notes**

These are the installation notes that apply to Network Assistant:

• When you start Network Assistant, Java determines whether the resources it needs are available. If they are not, Java displays the message Could not create Java Virtual machine, and the session ends. To overcome this problem, open the file C:\Program Files\Cisco Systems\CiscoSMB\Cisco Network Assistant\startup\startup.properties (the default installation path), and modify this entry:

JVM\_MAXIMUM\_HEAP=1024m

Replace 1024m with a lower setting that does not exceed the available RAM. There is no way to foresee what value will work. Try 512m, and lower it further if necessary. You can use the dial peer tag range 2500 to 2999 out-of-band to define your own dial peers.

• If the Network Assistant InstallShield wizard fails to start, it is likely that the temporary folder location defined through the environment variables TMP and TEMP has some problem. Assigning a correct temporary folder location can fix such problems.

### **Compatibility with Cisco IOS**

If you run Cisco IOS 12.2(25)SEE or later, Cisco IOS 12.2(25)SEG or later, or Cisco IOS 12.1(22)EA7 or later, you must run Network Assistant 4.0 or later.

### **Cisco IOS Notes**

• Network Assistant fails when a device is running the cryptographic software image and the vty lines have been configured with the **transport input ssh** and **line vty 0 15** global configuration commands only use SSH.

The workaround is to use the **transport input ssh telnet** and **line vty 0 15** global configuration commands to allow SSH and Telnet access through the vty lines. After you upgrade to Cisco IOS 12.2(25)SE or higher, you can enable http or https separately from Telnet. (CSCdz01037)

• Catalyst 3750 or 3560 switches with a 16-MB flash memory can experience problems due to flash memory constraints, especially if they are using larger size images, such as c3750-ipservicesk9-tar, c3560-ipservicesk9-tar, c3750-ipbasek9-tar. or c3750-ipbasek9-tar images. These are the affected switches:

Catalyst 3560: WS-C3560-24PS and WS-C3560-48PS

Catalyst3750: WS-C3750-24PS, WS-C3750-24TS, WS-C3750-48PS, WS-C3750-48TS, WS-3750G-24T, WS-C3750G-12S, WS-C3750G-24WS, WS-C3750G-24TS, WS-C3750G-16TD

The workaround for these switches is to use the corresponding lm images, such as the c3750-ipserviceslmk9-tar or c3560-ipserviceslmk9-tar images, which require less memory. In future releases, images are expected to grow more in size, requiring more need for the lm images.

## **Community Notes**

- Config Export: If you want to use and manage the same community on multiple devices, you can copy your community xml file (for example EnergyWiseTest.xml) from one device to another. This file is stored in the following location:
  - For OS X: \$HOME/.networkassistant/communities
  - For Windows: C:\Documents and Settings\<userid>\.networkassistant\communities
- This note applies to a community on all the devices described in the "Devices Supported" section on page 9.

All the devices for the topology of a community are derived from the "Cisco IOS CDP (Cisco Discovery Protocol)" table. Therefore, the Topology view shows duplicate devices when CDP discovers duplicate devices. This happens for a single device when you enter the **show cdp neighbor** command. Two devices appear: one with the actual hostname (for example, *abc*), the other with hostname.domainname (for example, *abc.cisco.com*).

## **Cluster Notes**

This note applies to cluster configuration only on the Catalyst 3550 switches:

The **cluster setup** privileged EXEC command and the **standby mac-address** interface configuration command have been removed from the command-line interface (CLI) and the documentation because they did not function correctly.

### **Network Assistant Notes**

These notes apply to Network Assistant configuration on all the devices described in the "Devices Supported" section on page 9:

- To run Network Assistant on MAC OS X (10.7 Lion), follow these steps:
  - From the System Preferences window, select Security and Privacy.
  - From the Security and Privacy window, select the General tab and click Anywhere.
- The HTTP server interface must be enabled to display the network assistant. 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.

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.

	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.
		• <b>aaa</b> —Enable the authentication, authorization, and accounting feature. You must enter the <b>aaa new-model</b> interface configuration command for the <b>aaa</b> keyword to appear.
		• <b>enable</b> —Enable password, which is the default method of HTTP server user authentication, is used.
		• <b>local</b> —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.

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

The network assistant 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 use Network Assistant on Windows 2000, it might not apply configuration changes if the enable password is changed from the CLI during your Network Assistant session. You have to restart Network Assistant and enter the new password when prompted. Platforms other than Windows 2000 prompt you for the new enable password when it is changed.
- Network Assistant does not display QoS classes that are created through the CLI if these classes have multiple match statements. When using Network Assistant, you cannot create classes that match more than one match statement. Network Assistant does not display policies that have such classes.1
- Within an ACL, you can change the sequence of ACEs that have the **host** keyword. However, because such ACEs are independent of each other, the change has no effect on the way the ACL filters traffic.
- In the Front Panel view or Topology view, Network Assistant does not display error messages in read-only mode for these devices:
  - Catalyst 3550 member switches running Cisco IOS Release 12.1(6)EA1 or earlier
  - Catalyst 2950 member switches running Cisco IOS Release 12.0(5)WC2 or earlier
  - Catalyst 2900 XL or 3500 XL member switches running Cisco IOS Release 12.0(5)WC2 or earlier

In the Front Panel View, if the device is running one of the software releases listed previously, the device LEDs do not appear. In Topology View, if the member is an LRE switch, the CPE devices that are connected to the switch do not appear. The Bandwidth and Link graphs also do not appear in these views.

- To use the Network Assistant on Windows Vista, you must first install the Telnet utility. Unlike earlier versions of Microsoft Windows, Telnet is not installed by default. You install Telnet as you would other Window components, from the programs folder in the control panel. (CSCsj37409)
- To successfully install and use the Network Assistant on Windows Vista, install the Network Assistant application in a folder that has full access privileges for the Network Assistant user. Otherwise, unexpected behavior can occur. (CSCsj50074)
- After installing the Network Assistant on Windows Vista, a warning message might appear that says the program might not have installed correctly. If this occurs, perform the following steps:
  - 1. Click What settings are applied?
  - 2. Click What is program compatibility?
  - 3. Click Click to open the Program Compatibility Wizard; then click Next.
  - 4. Click I want to choose from a list of programs.
  - 5. Click Cisco Network Assistant; then click Next.
  - 6. Click Do not apply a compatibility mode; then click Next.
  - 7. Check **Disable visual themes**; then click **Next.** This option assures that the minimize, maximize, and close buttons display correctly. (CSCsj26429)
  - 8. Click Next again.

Windows Vista launches the Network Assistant and asks if the program ran properly. If the program did not run correctly, select **No**, and follow the onscreen prompts.

**9.** If the Network Assistant opened correctly, click **This program installed correctly**. Otherwise, select **No**, and follow the onscreen prompts.

## **Documentation Updates**

### Update for Network Assistant Release 5.8.9

The online help is available for the following features.

Under the Configure menu for Catalyst 3850 switches:

- AAA (NGWC)
  - Method Lists
  - Server Groups
  - AAA Users
  - Radius
  - TACACS+ Servers
- Mobility Management
  - Mobility Groups
- Local EAP
  - EAP-Fast Parameters
- AP Group

- AP Group

Under the Monitor menu:

- Mobility Statistics
- Reports
  - Wireless Clients

Under the Configure menu for access points:

- Wireless
  - Radius servers
  - DHCP Configuration
- Bulk Edit
  - Bulk Edit

## **Update for Network Assistant Release 5.8.8.1**

The online help is now available for these features (for the Catalyst 3850 switches).

Under the Configure menu:

- AAA (NGWC)
  - Server Groups
  - LDAP Servers
  - MAC Filtering
- Mobility Management
  - Mobility Anchor Config
- AP Group
  - All AP

Under the Monitor menu:

- Reports
  - Wireless Radios

## **Update for Network Assistant Release 5.8.7**

The online help is not available for these features (for the Catalyst 3850 switches).

Under the Configure menu:

- AAA (NGWC)
  - Method Lists
  - Server Groups
  - AAA Users
  - Radius
  - TACACS+ Servers

- LDAP Servers
- MAC Filtering
- Mobility Management
  - Mobility Groups
  - Mobility Anchor Config
- Local EAP
  - EAP-Fast Parameters
  - Profiles
- AP Group
  - All AP
  - AP Group

Under the Monitor menu:

- Mobility Statistics
- Wireless Controller Dashboard
- Reports
  - Wireless Clients
  - Wireless Radios

The Cisco 5760 wireless controller is not supported in this release.

## **Open Caveats**

These sections describe the open caveats that could create possibly unexpected activity in this software release.

Unless otherwise noted, these caveats apply to all the devices described in the "Devices Supported" section on page 9:

• CSCtk98641

On a Catalyst 3750-X switch, you cannot delete a directory containing hundreds of files by using the Files tab of the **Maintenance > File Management** window.

The workaround is to delete the files individually or in groups of 100 or less.

CSCtk98553

The software upgrade on the Catalyst 3750-X switch might fail if you use Network Assistant to upgrade the switch.

The workaround is to upgrade the switch by using the CLI through the console.

CSCtl74627

In Configuration Settings tab of the **Configure > Ports > Port Settings** window, you cannot set the speed for SFP+ ports on Catalyst 3750-X and 3560-X switches. The ports operate at 10 Gb/s.

• CSCtu33157

When you select the Trap Managers tab of the **Configure > Device Properties > SNMP Management** window and check Enable SNMP, Enable Traps, and Send All Traps, and apply the changes, the changes are not saved. In this case it adds all the available types of traps. The workaround is to create a trap manager with limited types of traps to send and you need to uncheck the **Send All Traps** checkbox.

• CSCtu35495

When you use the **Configure > Ports > EtherChannels > Create EtherChannels** window to create an EtherChannel on an interface that has voice VLAN enabled, an error message is displayed, and the EtherChannel is saved without the interface details.

The workaround is to use the **Configure > Switching > Voice VLAN** window to change the setting to *None* on the specific interface before you create the EtherChannel.

• CSCtu15630

The upgrade fails when you try to upgrade the WS-C3560CPD-8PT-S switch from Cisco IOS Release 12.2(55)EX2 to IOS Release 12.2(55)EX3 by using the **Software Upgrade > Upgrade Settings** window and selecting the Standard Mode.

The workaround is to select the Remote TFTP Mode option from the **Software Upgrade> Upgrade** Settings window.

• CSCtw61637

The **Sync Stored Credentials with Cisco CCO** window fails to display if you enter the wrong old credentials more than four times under these conditions:

- 1. You reset your CCO credentials on Cisco.com and launch Network Assistant.
- 2. You enter the new credentials in the Authenticate to Cisco CCO window, and the Sync Stored Credentials with Cisco CCO is displayed.
- **3.** You then enter the community name in the **Connect** window, and click **OK**. If you exit and launch Network Assistant again, the **Sync Stored Credentials with Cisco CCO** window does not appear.

The workaround is to enter the valid device credentials, or to re-create your communities.

CSCtu42125

The cluster to community conversion feature does not work when the password store feature is enabled.

The workaround is to disable the password store feature.

• CSCtx31452

When you select the Time Range tab of the **Configure > Security > ACL** window to make modifications and click **OK**, the changes are not saved. This applies to all devices that support the ACL feature.

There is no workaround.

• CSCty77275

The output displayed in the uploaded configuration file for the **show snmp** command does not match actual CLI output.

There is no workaround.

• CSCtx72944 (Applies to the Catalyst 3750-X and 3560-X switches)

You cannot enable or disable the Routing Information Protocol (RIP) protocol by using the RIP tab in the **Configure > Routing > Protocols** window.

The workaround is to enable or disable RIP by using the CLI.

• CSCtx76921 (Applies to the Catalyst 3750-X, 3560-C, and 2960-C switches)

The software upgrade fails when you try to upgrade the switch by using the **Software Upgrade > Upgrade Settings** window and selecting the Remote TFTP Server mode.

The workaround is to upgrade the switch by using the CLI. See the switch release notes for information on upgrading the switch by using the CLI.

• CSCtx76912 (Applies to the Catalyst 3750-X and 3560-C switches)

The software upgrade fails when you try to upgrade the switch by using the **Software Upgrade > Upgrade Settings** window and selecting the Standard mode.

The workaround is to upgrade the switch by using the CLI. See the switch release notes for information on upgrading the switch by using the CLI.

CSCtz31327 (Applies to devices that support the routing protocols)

Network Assistant produces an exception error when you try to configure the Enhanced IGRP (EIGRP) and Open Shortest Path First (OSPF) protocols by selecting the EIGRP tab and the OSPF tab in the **Configure > Routing > Protocols** window.

The workaround is to configure the EIGRP and OSPF protocols by using the CLI. See the switch software configuration guide for information.

• CSCtz31357 (Applies to devices that support the routing protocols)

If the EIGRP and OSPF protocols are not configured, and you click the Advanced button in the EIGRP tab of the **Configure > Routing > Protocols** window, the system stops responding.

There is no workaround.

• CSCtz31273 (Applies to devices that support the routing protocols)

Network Assistant produces an exception error when you try to configure MAC addresses by using the **Configure > Switching > MAC Addresses** window.

The workaround is to configure MAC addresses by using the CLI. See the switch software configuration guide for information.

CSCub21087 (Applies to the Catalyst 3750V2-24FS and Cisco IE 2000 switches)

The software upgrade fails when you try to upgrade the switch by using the **Software Upgrade > Upgrade Settings** window and selecting the Standard mode or the Remote TFTP Server mode.

The workaround is to upgrade the switch by using the CLI. See the switch release notes for information on upgrading the switch by using the CLI.

• CSCuh21358

You cannot upgrade the Catalyst 3850 switches by using the **Software Upgrade> Upgrade Settings** window and selecting the Standard Mode.

The workaround is to upgrade the switch by selecting the Remote TFTP Mode option from the **Software Upgrade> Upgrade Settings** window.

CSCui31549 (Applies to access points)

You cannot connect clients to access points if the SSID is created through Network Assistant.

The workaround is to create the SSID by using CLI commands. By using that SSID, then the user can connect the clients with the access points.

Use these CLI commands to create an SSID:

```
AP# configure terminal
AP(config)# dot11 ssid <ssid name>
AP(config)# authentication open
AP(config)# authentication key-management wpa version 2
```

```
AP(config)# guest-mode
AP(config)# wpa-psk ascii 0 <password>
```

• CSCuj05900 (Applies to access points)

The online help does not appear in the VLAN windows when you access the VLAN feature in guide mode (**Switching** > **VLANs**).

The workaround is to use the VLAN feature in expert mode if you want to view the online help.

These caveats apply to Cisco EtherSwitch service modules:

• CSCei55046

The front panel view on EtherSwitch service modules NME-16ES-1G-P, NME-X-23ES-1G-P, NME-XD-24ES-1S-P, and NME-XD-48ES-2S-P shows the EN-LED as not enabled.

There is no workaround.

CSCs168964

When running Network Assistant with Cisco IOS Release 12.2(40) SE and later, you cannot enable EIGRP routing protocols using the IP Routing Protocols window in Network Assistant.

The workaround is to configure EIRGP by using the CLI.

## **Resolved Caveats**

This caveat was resolved in Network Assistant 5.6(1):

• CSCt194603

Network Assistant now discovers a Catalyst 3560X-24P-S switch.

These caveats were resolved in Network Assistant 5.6:

• CSCs148788

The EIGRP tab now appears in the **Configure > Routing > Protocols** window for a Catalyst 4500 or Catalyst 4900 device running Cisco IOS 12.2(54)SG or later.

• CSCsz93256 (Catalyst 4500 and 4900 switches)

The Smartports feature is disabled when

- The supervisor engine on a Catalyst 4500 switch is configured with stateful switchover (SSO) redundancy and the standby supervisor is in the *hot standby* mode.
- The Catalyst 4500 and 4900 devices are running Cisco IOS Release 12.2(20)EWA.
- CSCta94236 (Catalyst 4500 switches)

The VLAN feature is disabled when the supervisor engine on a Catalyst 4500 device is configured with SSO redundancy and the standby supervisor is in the hot standby mode.

• CSCtd59560

The Front Panel view of a Catalyst 4500 switch no longer displays the Fan Tray status LED as red, if the physical LED is green.

• CSCtf02193

The Smartports menu now appears for the Catalyst 4500 and Catalyst 4900 switches running the Cisco LAN base image.

• CSCth73971

These features are no longer disabled when

- The supervisor engine on a Catalyst 4500 switch is configured with stateful switchover (SSO) redundancy and the standby supervisor is in the *hot standby* mode.
- The Catalyst 4500 switch is running Cisco IOS 12.2(54)SG or later.

Configure > SmartPorts Configure > Switching > VLANs Configure > Security > Security Wizard Configure > Security > DHCP Snooping Configure > Security > DAI Configure > Device Properties > IP Addresses Configure > Switching > MAC Addresses > Dynamic Addresses Configure > Switching > Voice VLAN

• CSCti80111

The Front Panel view of a Catalyst 4500 redundant chassis now appears.

These caveats were resolved in Network Assistant 5.3:

• CSCsg56064

The port statistics for 10-Gigabit Ethernet ports now appear in the Port Statistics window for the Catalyst 3750-E and 3560-E switches. (In previous releases, the port statistics always appeared as zero).

• CSCsj38349

When running Windows Vista, Network Assistant now synchronizes the system time to the PC time.

These caveats were resolved in Network Assistant 5.0:

• CSCeh32160

If you change a hostname while a Network Assistant window is open, the window now displays the new hostname.

CSCeh37933

When running Network Assistant on a Catalyst 4500 switch whose modules do not support an Alternatively Wired Port (AWP), the Media Type column in the Port Settings window no longer appears.

CSCeh54393

In a Topology view for a community, the link icons for the routed, trunk, and Gigastack links now appear.

• CSCeh59451

When port security is supported on static access interfaces, ISL trunk ports, and IEEE 802.1Q trunk ports, the message Port security is only supported on static access interfaces no longer appears in the Port Security window.

• CSCeh60050

In the Topology view, if there are multiple links between community members and one of the links is blocked, it is no longer shown in green. It is now correctly shown in gray.

• CSCsd64494

For a stack of Catalyst 3750 switches, the **Hostname** list in the Bandwidth Graphs window now shows an entry for only the stack.

• CSCsb77153

On Catalyst 4500 and 4900 series switches, you can now edit the flow control values from the Port Settings window.

CSCsd80600

When you open the Modify Port Settings window from the Front Panel view and change the duplex, speed, or power settings on PoE switches, the new settings now appear when you close the window and open it again.

• CSCsb88555

On a Catalyst 4500 or Catalyst 4900 series switch, port security is not longer enabled on trunk ports. If you select **Security > Port Security** and try to associate a secure address with a trunk port, an Invalid input detected error no longer appears.

CSCsb88566

When you connect to Network Assistant in read-only mode, choose **Configure > Port > Port Settings** on the feature bar, and select a Catalyst 4500 series switch, you are no longer prompted for the level-15 access password.

• CSCsg95292

When you configure a DC port to standby mode on an RPS 2300, the Event Notification window for a Catalyst 3750 switch no longer shows an RPS failed message.

• CSCsg96622

When running Network Assistant, the RPS 2300 is no longer listed in the selectable device drop-down list.

## **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.

## **Related Documentation**

This online document provides complete information about Network Assistant:

Getting Started with Cisco Network Assistant

http://www.cisco.com/en/US/products/ps5931/prod\_installation\_guides\_list.html

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.

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