



# RELEASE NOTES

NetVanta Internetworking Products

AOS version 18.02.04

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## Introduction

AOS version 18.02.04 is a maintenance release that addresses customer issues that were uncovered in previous code releases.

This release is generally available code. Results obtained during internal testing have been evaluated and the code has been determined to be ready for general availability. Caveats discovered during testing but not addressed in this build are listed in [Errata on page 10](#).

A list of new or updated documents for this release appears in [Documentation Updates on page 13](#).

Configuration guides, white papers, data sheets, and other documentation can be found on ADTRAN's Knowledge Base, <http://kb.adtran.com>. The contents of these release notes will focus on the platforms listed below.

## Supported Platforms

The following platforms are supported in AOS version 18.02.04. To confirm the Boot ROM version of the ADTRAN unit, telnet or console to the unit and issue the **show version** command. In the command output, the Boot ROM version will be listed as **Boot ROM version XX.XX.XX**. If you require a Boot ROM upgrade, please contact ADTRAN Technical Support (support@adtran.com or 888-423-8726) for assistance.

Platform	Standard Feature Pack	Enhanced Feature Pack	Minimum Boot ROM
NetVanta 1534	√		17.06.03.00
NetVanta 1534 (2nd Gen.)	√		17.08.01.00
NetVanta 1534P (2nd Gen.)	√		17.09.01.00
NetVanta 1544/1544F	√		17.06.03.00
NetVanta 1544 (2nd Gen.)	√		17.08.01.00
NetVanta 1544P (2nd Gen.)	√		17.09.01.00
NetVanta 1638	√		18.02.01.SC
NetVanta 1638P	√		18.02.01.SC
NetVanta 1335		√	15.01.00
NetVanta 3120		√	14.04.00
NetVanta 3130		√	14.04.00
NetVanta 3200/3205 (3rd Gen. only)	√	√	17.02.01.00
NetVanta 3305 (2nd Gen. only)	√	√	04.02.00
NetVanta 3430	√	√	13.03.SB
NetVanta 3430 (2nd Gen.)	√	√	17.05.01.00
NetVanta 3448	√	√	13.03.SB
NetVanta 3450	√	√	17.06.01.00
NetVanta 3458	√	√	17.06.01.00
NetVanta 4305 (2nd Gen. only)	√	√	08.01.00
NetVanta 4430	√	√	17.04.01.00
NetVanta 5305	√	√	11.03.00

## System Notes

Beginning with AOS version 17.09.01, the syntax of certain commands was modified from previous AOS versions by either removing or adding the IP keyword. In general, when the **ip** keyword appears in a command, it signifies that the command is only applicable to IPv4 functionality. As more features introduce IPv6 support, the **ipv6** keyword is added to signify the command is only applicable to IPv6 functionality. The **ip** keyword has been removed from several commands to signify that the command has both IPv4 and IPv6 functionality.

Due to this syntax change, downgrading a unit configured in AOS version 18.02.04 to a previous AOS version, could cause service disruption because the new syntax might not be recognized by the previous version. Upgrading a unit from an older AOS version to AOS version 18.02.04 will cause no service disruption because both the old and the new syntaxes are accepted. For more information on specific commands, refer to the [AOS Command Reference Guide](#) (ADTRAN's Knowledge Base article 2219) available at <http://kb.adtran.com>.

## Features and Enhancements

This section highlights the major features, commands, and behavioral changes for AOS version 18.02.

- Added support for 100Base-FX SFP operation in the NetVanta 4430.
- Added a VoIP Name Service Caching feature that allows phones configured with a SIP server in FQDN format to re-register with an IPBG or router during a network outage. This is used in combination with the SIP Transparent Proxy. Without this capability, a phone might not resolve a SIP or registrar server and be unable to place calls during an outage.
- Added support for RSA certificates with a key length of 2048 bits.
- Added USB support for NetVanta 1638 and 1638P platforms. This feature allows storage of firmware and configuration files on external USB devices.
- Added support for configurable IPv6 policy timeouts.
- Added support for IPv6 access classes.
- Added DHCP Relay functionality for IPv6 capable devices.
- Added IPv6 Multilink Frame Relay support.
- Added IPv6 Frame relay support.
- Added IPv6 Rapid Route support.
- Added IPv6 SNMP agent support.
- Increased cipher strength for HTTPS/SSL for PCI compliance testing.
- Added the ability to disable either all *weak* ciphers or control each cipher individually. This is used in PCI compliance applications.
- Added IEEE 802.3X full duplex flow control. This allows a station on a point-to-point link to send a special PAUSE frame to signal the other end of the connection to pause transmission for the amount of time specified in the frame. This functionality is often needed when operating in a Storage Area Network environment when transferring massive amounts of data.

- Added the ability to enable the concurrent usage of DHCP server and DHCP relay functionality on any interface, allowing multiple applications to concurrently access DHCP functionality. For example, the DHCP server functionality could be used to assign IP addresses on a data VLAN and DHCP relay functionality could be used to forward DHCP requests on a voice VLAN to a phone server concurrently. This feature is configurable from the ingress interface configuration mode with the command **ip dhcp relay destination** *<ip address>* command.
- Added the ability to configure up to eight QoS classes. Prior to the 18.02.01 release, the products supported only four QoS traffic classes per interface.

## Fixes

**18.02.04** - This section highlights major bug fixes in AOS version 18.02.04.

- The older syntax of **ip snmp agent** command was not recognized by devices running 18.02 or later when applied from the Global Configuration mode.
- Mode-config incorrectly removed routes from the IP routing table when a VPN peer had disconnected.
- ADSL interfaces were unable to train to an Annex-M ADSL connection.
- 1 Gbps or 2.5 Gbps SFP modules would not function properly in conjunction with SFP+ XIM modules.
- It was not possible to set an MTU value on a VLAN interface.
- In release 18.02, the **debug interface cellular** *<slot/port>* command would not display any output.
- A SIP OPTIONS message that did not match an existing proxy user database entry would not create a templated proxy user database entry, preventing the OPTIONS message from being proxied.
- If a less specific OSPF network statement was in an OSPF configuration above a more specific network statement, and then the less specific statement was removed, the more specific network would not be advertised until either the more specific statement was removed and added back or the router was rebooted.
- In some instances, modifying a BGP route map would cause a unit to reboot.
- In certain instances, an AOS switch would respond to a gratuitous ARP with an IP address of 0.0.0.0.
- Adding or removing an Ethernet interface from a bridge group resulted in an overlapping error when attempting to reapply the previously used IPv6 address to the same interface.
- The QoS map statistics for an interface would display slightly incorrect counter values.

**18.02.03** - This section highlights major bug fixes in AOS version 18.02.03.

- The average RPM value listed with the **show fan-tach** command on a NetVanta 5305 would consistently display **0**, even when the fan was functioning properly.
- In some instances, PoE devices that sent 7-byte LLDP TLVs would not receive PoE from a PoE plus capable ADTRAN switch (such as, the NetVanta 1638P and the second generation NetVanta 1534P and 1544P).
- If a TACACS+ request was sent from an AOS device and a TCP session was established between that device and the TACACS+ server (but a response to TACACS+ authorization or accounting requests was ignored by the server), the AOS device could become unresponsive until rebooted.

- When configured, the **ip sip proxy failover match-digits** <value> command was not added to the running configuration.
- SNMP Get Responses produced errors for certain OID values.
- The **speed auto** command on a NetVanta 1638 Dual SFP+ XIM was not preserved on reboot.
- The **exception report generate** command would not function in the CLI of a NetVanta 1638.
- When receiving an Extended Length flag set in the AS\_Path Path Attribute of a BGP update, the local BGP Routing Information Base would not propagate the correct IP next-hop.
- If a unit was booted with a startup configuration in which GVRP was disabled globally and on each interface (the default configuration), and GVRP was enabled on a switchport before GVRP was enabled globally, the interface would not send GVRP BPDUs. If the link went down for any reason and came back up, then GVRP would begin to function.
- The Contact header in a proxied SIP registration continued to use UDP port 5060 when configured for a different UDP port.
- A reboot would result when **debug ip packet** was activated and the unit was configured to match all IP traffic.
- In some instances, NTP source specification did not function.
- The Security Audit created files with an incorrect timestamps.

**18.02.02** - This section highlights major bug fixes in AOS version 18.02.02.

- Occasionally, in a failover scenario, the SIP proxy would send an INVITE request to a SIP server a second time before routing a call via the local gateway, resulting in additional delay before connecting a call.
- The Contact header for **302 Moved Temporarily** responses sent through the proxy contained an IP address instead of a domain, even when configured appropriately with **sip grammar** commands.
- The **ip sip default-call-routing switchboard** command failed to first attempt to route calls via the switchboard instead of a matching SIP proxy user template.
- In a failover scenario, if a proxy user template matched the dialed number on an outbound INVITE, the call was routed back to the device specified in the proxy user template instead of being routed via the B2BUA (in the case of IP business gateways) or sending an error response (in the case of routers).
- When using the SIP proxy in stateful mode, if the SIP server was defined as an FQDN in the configuration, the resolved IP address of the FQDN was used as the From/To/Request-URI host instead of the FQDN itself.
- When using the SIP proxy, if the From header in a response to an outbound request was rewritten by the SIP server from its IP address to its hostname, the SIP proxy would not rewrite it back to the proxy's media-gateway IP address when proxying the response to the device behind the proxy.
- Bursty levels of traffic would cause packet loss on a NetVanta 3130 ADSL interface when using low upload rates.
- Applying configuration changes in the RTP Monitoring Settings section of the GUI would result in an Unknown Error.

- If **ip sip proxy local-gateway** <ip address> was configured and the SIP proxy was being used in transparent mode, if the route to the softswitch became unavailable, the call would fail instead of being routed to the configured local SIP gateway.
- The Network Monitor Wizard for the NetVanta 1638 was missing an image of the unit.
- Configuration changes on an ATM subinterface that caused the subinterface to go down would trigger a reboot on the AOS router.
- TACACS+ authentication did not work when logging into an AOS device via the console.
- In some instances, NTP source specification did not work.
- Reordering IKE attributes in the GUI would result in their deletion and also delete the IKE attributes of other configured IKE policies.
- The NetVanta 3448 would freeze and consequently reboot when an **ipv6 policy-timeout** command was removed while an associated policy session was still active.
- On a NetVanta 3133, the **line-rate-mode fixed** command did not properly set a fixed line rate.
- The ping utility for IPv6 VRF incorrectly displayed successful ping attempts to any address on the local network.
- Unable to upgrade a NetVanta 1638 running 18.02.XX code from n-Command MSP.
- The switchports on a NetVanta 1335 would enter a stalled state, preventing the output queue from emptying and resulting in a loss of communication.
- The **show ipv6 route** <address> command accepted invalid input and returned the default route.
- On a NetVanta 3120, port statistics were not displayed in the GUI on the **Public Interface** menu.
- A QoS map would not transition to active if the map required more bandwidth than was originally available on that interface when the map was assigned.
- After specifying a non-Ethernet hardware type in a DHCP server pool, the hardware address was not added to the running configuration.
- Removing a QoS map from an MLPPP interface on a NetVanta 5305 caused the router to reboot.
  
- The **fair queue 0** command was added to an interface configuration after a QoS parent map was applied.
- A reboot could occur when a TCP packet was received that was larger than the negotiated maximum segment size (MSS) for that session.
- In the GUI of a NetVanta 3120, the IP address of the public interface could not be assigned if the assigned default gateway address did not reside in the same subnet as the IP address.
- SNMP polling attempts failed when using community strings with special characters, such as @.
- When using templated proxy users, the SIP proxy rejected a call if the Contact and From fields did not match, regardless of the configured **accept** statement.
- On a NetVanta 1500 Series, when configured for MAC-based port authentication, the switch would not initiate an EAP-Request when it detected the link was up.



**18.02.01** - This section highlights major bug fixes in AOS version 18.02.01.

- If the native VLAN on an 802.1Q trunk was deleted from the **Physical Interfaces** page of the GUI, the native VLAN would not be removed, but another VLAN would be deleted instead.
- With traffic-shaping enabled on an Ethernet interface, a router booted for more than seven weeks could begin to drop packets in the outbound queue of an interface, contributing to voice quality issues. In addition, the seven week timer would cause console and Telnet management traffic to be sluggish.
- With more than 80 routes in an OSPF database, an SNMP walk of the OSPF MIB tree would fail.
- When using the SIP proxy in stateful mode, the Record-Route header for the AOS device was added as the topmost entry instead of the bottommost entry, which would cause routing issues for the device behind the SIP proxy.
- In some instances, an ICMP probe would not return to a passed state after it failed.
- SSH and HTTP/HTTPS connections would not populate the Remote-Address field of the TACACS+ authentication request. This resulted in the field always populating with 0.0.0.0. Telnet connections were not affected.
- L3 switching table could get into a state where a valid ARP entry would not be inserted.
- The ARP table and L3 switching table could choose different MAC addresses to install when an IP conflict existed in the network.
- Gigabit interfaces could not be added to a Network Monitoring track list.
- An ATM PVCs VPI/VCI could not be set in the GUI.
- Aggregator ASN would not properly advertise as a four-byte ASN by BGP.
- When a NetVanta unit was configured to terminate AH tunnels and if the peer-to-peer negotiation passed through an intermediate NAT, the NetVanta unit would prevent the VPN tunnels from being generated properly.
- The AOS firewall could not create a source NAT for a Gigabit Ethernet subinterface with a four-digit ID number.
- The SIP proxy would populate the Contact header in an outbound INVITE with the IP address of the private interface as opposed to the IP address of the public interface.
- When PPP was configured to negotiate an IP address with a nondefault administrative distance and if a previous default route had already been negotiated with a default administrative distance, the route with the default administrative distance would not be removed when PPP was reconfigured or bounced.
- Reverse Route Injection would not insert the correct next-hop IP address when configured in a load-sharing scenario.
- Some Frame Relay subinterfaces would improperly indicate an average utilization of 0 percent.
- The **Telnet to Unit** link in the GUI would not populate the correct IP address if the unit was being accessed through a NAT destination policy on a third-party device.
- When using SIP proxy user templates, the SIP proxy would not recognize an INVITE as an outbound request and could improperly route it back to the configured template user.
- The **URL Filtering > Top Website** menu in the GUI did not display whether the last visit for a website occurred in AM or PM.
- In some instances, setting a DHCP lease time of more than 9,867 days would prevent the ADTRAN unit from correctly storing the binding.

- The **show interface** command displayed the incorrect ADSL training mode for some DSLAMs. This was only a display error.
- In some instances, modification or removal of crypto client configuration pools would fail.
- Class of service weighted round robin weights were not honored properly.
- Auto-link would send an incorrect checksum to n-Command MSP, which caused a false **Unsaved Configuration Management Alert** in the n-Command MSP server.
- High CPU load would cause interface statistics to report incorrectly.
- The AOS mail-client and a TCL script could not be triggered from the same track.
- A configuration file transfer to the startup configuration using XMODEM failed to initiate.

## Errata

The following is a list of errata that still exist in AOS version 18.02.04.

- Changing PoE settings in the GUI can cause a 503 Service Unavailable response.
- The NetVanta 1544 could reboot when manually generating an exception report.
- In rare cases, when an IP PBX and IP phones are both passing through a NAT and the SIP proxy on a NetVanta router, some call flows can enter a one-way-audio state. Enabling the command **ip rtp firewall-traversal enforce-symmetric-ip** from the Global Configuration mode works around the issue.
- LLDP speed/duplex mismatch messages can be generated by the second generation NetVanta 1534P switch when Aastra 6737i or 6735i phones are attached.
- A large enough drift in the system clock can cause an error when the NTP server attempts to synchronize.
- The SIP proxy could fail to use the Request-URI from the initial request Contact header for in-dialog requests.
- Attempting to ping across a locally generated VPN tunnel using the GUI can timeout even with valid connectivity.
- In rare circumstances, BGP can enter a state where routes are being learned but are not inserted properly into the route table. A reboot clears the issue.
- Issuing the **speed 100** command on a Gigabit Ethernet port on the back of the NetVanta 1544 (second generation) shuts down the interface.
- If a configured local gateway does not respond in survivability with the SIP proxy, no error is sent to the proxied device.
- A NetVanta 1638P could intermittently stop passing traffic on some interfaces. A reboot will resolve the issue.
- The second generation NetVanta 3430 might not transmit the first packet routed to an IP address after the IP address is removed from the ARP table.
- Using SCEP, NetVanta routers could fail to enroll certificates to a Red Hat Certificate Authority.
- On a NetVanta 1534, if an interface is configured as a port mirror destination (**monitor session 1 destination int gig \***), then port authentication will no longer be configurable on that port, even after removal of the port mirror command from the configuration.
- The T1 interface speed can display **0** in Getif when monitoring a NetVanta 3430.
- A VLAN interface for a VLAN that is not accessed by other switchports will not be advertised by GVRP.

- DoS protection against ICMPv6 ping packets with a payload greater than a specified value (DoS ID: 42) will also drop ICMPv4 packets.
- MLPPP interfaces with more than two T1 interfaces cannot be properly deleted using the GUI.
- The AAA Authentication Banner cannot be set on any AOS product.
- The NetVanta 1638 fails to count output discards when throttling down the transmission of traffic (as a result of receiving pause frames).
- The input/output rate counters for a T1 interface are exaggerated for approximately 15 seconds after clearing them.
- The nondefault T1 coding setting (**ami**) does not persist in the NetVanta 3430's startup configuration after a reboot.
- DNS host table entries on the NetVanta 3448 do not show up in the GUI.
- The GUI statistics page for the SHDSL interface does not refresh when in 4-wire mode.
- The CLI does not allow the user to set the DS0 speed to 56K for an E1 NIM.
- The GUI shows invalid line rate options for a SHDSL interface in 2-wire mode.
- The GUI line rate options for a SHDSL interface do not match those of the CLI.
- Applying PPPoE configuration changes to an AOS router via the GUI causes an HTTP 503 Service Unavailable error.
- If an OSPF hello timer on an interface is modified from the default value, the new timer will not be used until the interface is disabled and re-enabled.
- Adding an IPv6-enabled PPP interface to a bridge group does not require the user to first remove the IPv6 address from the PPP interface.
- Sending a configuration job from n-Command MSP with only a single 200+ character string and no carriage returns can cause the receiving device to reboot.
- Test patterns cannot be generated consistently on E1 NIM cards.
- If the command **no switchport port-security mac-address sticky** is issued on an interface, the interface will no longer allow communication until the command **no port-security** is issued on that interface.
- Clearing a sticky MAC address from an interface with the **no switchport port-security mac-address sticky** command erases sticky MAC addresses from all interfaces.
- AWCP displays as a configurable option under switchports that is incorrect and not functional.
- The SIP debug filter configuration menu in the GUI allows invalid, nonfunctional debug filters to be configured.
- The LLDP interface setup table on the NetVanta 3448 displays an erroneous interface called DataCall in both the CLI and GUI.
- Configuring over 1200 VNS entries on the NetVanta 3448 causes a SIP Pre-Parse error.
- The VNS verification process does not remove inconsistent A-type records from the host table after the configured number of attempts.
- A-type host table entries (associated to a manually configured VoIP Name Service Host) are classified as sticky when an AOS router first boots up with VNS verification enabled.
- Configuring a port channel on a NetVanta 3448 can cause the STP topology to become unstable.
- The NetVanta 3448 does not learn MAC addresses on half-duplex links.

- The output of the **show host command** does not display the entire FQDN.
- Issuing the **clear host \*** command can remove permanent SRV-type DNS entries from the host table.
- IPv6 traffic destined to 0:: is forwarded to the default gateway instead of being dropped.
- The output of the **show interface <slot/port>** command claims flow control is enabled even when the interface is operating at half-duplex.
- Switch platforms count input discards on the ingress interface when receiving 802.3X pause frames.
- The NetVanta 3458 and NetVanta 3448 only support 2956 MAC address table entries.
- Sierra Wireless USB305 3G modems are sometimes not recognized by the USB WWAN NIM.
- Changing the route metric value using the **ipv6 address autoconfig default metric \*** command does not change the administrative distance of the default route.
- QoS cannot be invoked on a demand interface.
- The NetVanta 5305 can drop some traffic prioritized by class-based weighted fair queuing (CBWFQ) on a MLPPP interface when a stand-alone QoS map is applied.
- The DNS server can take action on received DNS responses that are not associated with an open request, posing a DoS attack vulnerability.
- Telnet can attempt exec authorization when not configured to do so and succeed.
- The NetVanta 3430 (second generation) can drop a small number of prioritized packets over long periods of time.
- The HTTP interface can lock up intermittently.
- The QoS menu of the GUI displays available bandwidth for a PPP interface that is in a Link Down state.
- A NetVanta 5305 can stop passing traffic for brief intervals when negotiating frequent VPN tunnels using Diffie Hellman Group 5.
- The output queue statistics on an Ethernet interface can fail to display output queue drops when FIFO is enabled.
- The AOS CLI can remove existing child QoS maps from a parent QoS map's configuration when attempting to remove an alternate, nonexistent child QoS map from the parent QoS map prompt.
- Prioritized traffic can be dropped at a significant rate on PPP interfaces when using a parent QoS map (that references a child map with priority allocation) if the shaped rate is configured for more than 75 percent of the line rate.
- The CLI does not display the correct value for Required Bandwidth in the event message generated by applying a QoS map.
- The output from **show qos map int ppp 1** displays incorrect values for the number of packets sent.
- The **max-reserved-bandwidth** command is removed from an Ethernet interface when changing the encapsulation to 802.1Q.
- The NetVanta 5305 can fail to generate an event message to confirm that a QoS map has been applied.
- EAP Identity Responses from a wireless client that do not contain an Identity field can result in a malformed RADIUS packet created by the NetVanta 150.
- HDLC keepalives cannot be disabled from the CLI.
- NetVanta 5305 can generate erroneous fan processor failure event messages.

- NetVanta 150 might not properly handle immediate Access-Accept responses to Access-Request messages.
- The IPv6CP protocol state can occur even when IPv6 is disabled on a PPP interface.
- In some instances, an SFP port on a NetVanta 1544 will not function with RAD MiRiCi-E3T3 SFPs.
- Frames can be dropped for a brief period while an ARP entry is updated.
- GRE tunnel interface statistics do not display properly in the GUI's GRE tunnel configuration menu.
- 3G connections using a NetVanta USB WWAN NIM and a Sierra Lightning modem can fail.
- The cellular interface can trigger a core dump on a NetVanta 3448 when changing states.
- Selecting the link for a Gigabit Ethernet switchport on the second generation NetVanta 1500 Series, while on the Flow Control menu of the GUI, causes the user to be redirected to the VLAN application tab.
- Port mirroring on a NetVanta 1544 switch might not mirror traffic in both directions.
- A Gigabit Ethernet switchport can become suspended from port channel after sustained runtime.
- Proxy user templates cannot modify SDP IP address correctly in some applications.
- Connecting a Novatel U547 USB modem to the NetVanta USB WWAN NIM can cause the router to reboot.
- Port T1 3/3 on a NetVanta 4305 can fail intermittently when attached to an MLPPP bundle. Rebooting the device will restore the interface.
- In some cases, the T1 interface statistics will log Degraded Minutes although there are no other physical errors logged for that T1.

## Upgrade Instructions

Upgrading ADTRAN products to the latest version of AOS firmware is explained in detail in the configuration guide [Upgrading Firmware in AOS](#) (ADTRAN's Knowledge Base article 1630), available at <http://kb.adtran.com>.

## Documentation Updates

The following documents were updated or newly released for AOS version 18.02 or later specifically for the NetVanta Internetworking products. These documents can be found on ADTRAN's Knowledge Base available at <http://kb.adtran.com>. Search either by title or article number (shown in parenthesis following the document title).

- AOS Command Reference Guide (60000CRG0-35C, article 2219)
- NetVanta 120 Watt AC Power Supply Quick Start Guide (61700460F1-13A, article 3438)
- NetVanta 500 Watt PoE Power Supply Quick Start Guide (61700462F1-13A, article 3439)
- NetVanta 640 Series Hardware Installation Guide (61700144G1-34A, article 3436)
- NetVanta 640 Series Quick Start Guide (61700144G1-13A, article 3437)
- NetVanta 1230 Series (2nd gen) Hardware Installation Guide (61702594G1-34A, article 3450)
- NetVanta 1230 Series (2nd gen) Quick Start Guide (61702594G1-13A, article 3448)
- NetVanta 1335 Hardware Installation Guide (61700515E2-34C, article 3105)

- NetVanta 1335 Quick Start Guide (61700515E2-13D, article 2333)
- NetVanta 1500 Series (2nd Gen) Hardware Installation Guide (61702590G1-34C, article 3405)
- NetVanta 1534 Series Quick Start Guide (61700590G1-13D, article 2520)
- NetVanta 1544 Series Quick Start Guide (61700544G1-13E, article 3069)
- NetVanta 1600 Series Gigabit Ethernet Switch Hardware Installation Guide (61700568F1-34A, article 3442)
- NetVanta 1638 Series Gigabit Ethernet Switch Quick Start Guide (61700568F1-13A, article 3441)
- NetVanta 4000 Series Hardware Installation Guide (61200890E2-34N, article 2337)
- NetVanta 4430 Quick Start Guide (61700630E1-13B, article 3011)
- NetVanta 6240 Series Hardware Installation Guide (61700202G1-34A, article 3434)
- NetVanta 6240 Series Quick Start Guide (61700202G1-13A, article 3435)
- NetVanta Dual Stacking XIM Quick Start Guide (61700470F1-13A, article 3440)
- NetVanta Dual T1/FT1 NIM Quick Start Guide (61202872L1-13C, article 3430)
- NetVanta Ethernet NIM2 Quick Start Guide (61700107G1-13A, article 3447)
- NetVanta Safety and Regulatory Information (61200500E1-48C, article 3444)
- NetVanta Series CompactFlash Quick Start Guide (61200816E1-13C, article 3443)
- Upgrading AOS Firmware (61200990L1-29.1D, article 1630)
- USB WWAN NIM and the Cellular Interface (61700801G1-29.2E, article 3394)
- Using IPv6 in AOS (6AOSCG0016-29B, article 3505)