RELEASE NOTES

AOS version R10.6.0
January 14, 2013

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Contents

Introduction 4
Supported Platforms 4
System Notes 5
Features and Enhancements 5
Fixes 6
Errata 6
Upgrade Instructions 13
Documentation Updates 13

Introduction

AOS version R10.6.0 is a major system release that adds new features and 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 6*.

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 Support Forum, https://supportforums.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 R10.6.0. 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	SBC Feature Pack	Minimum Boot ROM
NetVanta 644		√		A5.01.B1
NetVanta 1234/1234P (2nd Gen. only)	√			XB.01.02
NetVanta 1238/1238P (2nd Gen. only)	√			XB.01.02
NetVanta 1534	√			17.06.03.00
NetVanta 1534 (2nd Gen.)	√			17.08.01.00
NetVanta 1534P (2nd Gen.)	√			17.09.01.00
NetVanta 1535P	√			17.08.01.00
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

Platform	Standard Feature Pack	Enhanced Feature Pack	SBC Feature Pack	Minimum Boot ROM
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
NetVanta 6240		√	√	A5.01.00
NetVanta 6310		√	√	A3.01.B2
NetVanta 6330		√	√	A3.01.B2
NetVanta 6355		√	√	A2.06.B1
Total Access 900 Series (2nd Gen. only)		√		14.04.00
Total Access 900e Series (2nd Gen. only)		√	√	14.05.00.SA

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 R10.6.0 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 R10.6.0 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* available at https://supportforums.adtran.com.

R10.1.0 resolved a BGP implementation issue that slightly changed its behavior. Prior to R10.1.0, a static default route could be redistributed to BGP peers when the command **redistribute static** was configured. As of R10.1.0, a default static route will not be redistributed without being explicitly configured with a **network 0.0.0.0 0.0.0.0** statement.

Features and Enhancements

This section highlights the major features, commands, and behavioral changes for all Converged Access products running AOS version R10.6.0**.**

- The AOS Fast Forwarding Engine now has the ability to expedite traffic prioritized by a configured QoS map.
- Added support for the second generation USB WWAN Network Interface Module capable of supporting 4G rates.
- The AOS Fast Forwarding Engine now has the ability to expedite traffic monitored by VQM.
- Added support for running PPP on Mef-Ethernet subinterfaces on the EFM NIM2 modules.
- Added support for connecting the NetVanta Quad SHDSL EFM NIM2 to Huawei DSLAMs, including EFM discovery and the ability to configure adaptive line rate training while operating as a NTU.

- Added support for PPPoE encapsulation on Ethernet subinterfaces, as well as the ability to configure PPPoE and IP encapsulation on the same Ethernet interface's subinterfaces.

This section highlights the voice specific features, commands, and behavioral changes available in products running AOS version R10.6.0.

- Added support for the Echo Return Loss (ERL) Tool on the NetVanta 6240.

Fixes

This section highlights major bug fixes for all products running AOS version R10.6.0**.**

- When acting as an access controller for NetVanta 160 Access Points, an AOS device became unable to push configuration changes to the access points.
- Deleting a PPP interface being used for dial backup (DBU) in a legacy DBU application while the DBU PPP interface was active, caused AOS devices to reboot.
- The chassis fans in some NetVanta PoE switches oscillated at a higher frequency than expected during a period when the switch was not being heavily utilized.
- When creating or modifying 802.1q subinterfaces in the GUI, a 503 Service Unavailable response was generated.
- The output for **show ipv6 interfaces** <*interface*> <*#*> **prefix** displayed incorrect values for Valid and Preferred Lifetime.
- The NetVanta 644 would not process ARP requests for IP addresses assigned to a loopback interface.

This section highlights the voice specific bug fixes in products running AOS version R10.6.0**, unless otherwise noted.**

- For any device that did not support Multi-VRF for SIP (i.e. NetVanta 600 Series, NetVanta 3100 Series, and NetVanta 7000 Series), SIP access-classes blocked all SIP traffic.
- If a reINVITE was received shortly or immediately after the ACK for the initial INVITE, the ADTRAN unit would respond with a 491 Request Pending. This caused a delay in the connection of two-way audio.

Errata

The following is a list of errata that still exist in all products running AOS version R10.6.0**.**

- In rare cases, a router will not be able to properly receive IKE messages, preventing IPsec tunnels from being negotiated. Saving the configuration with **ip crypto** enabled, and rebooting the router will resolve the issue.
- It is not possible to configure an 802.1q subinterface for DHCP from the GUI, even though it can be accomplished from the CLI.
- When installed in a NetVanta 6310/6330 Series, the interface on a SHDSL Annex A NIM drops during RFC 2544 performance testing.
- Removing a USB modem from the USB WWAN NIM while active can cause the AOS device to reset. Shutting down the demand interface being used by the modem prior to removing the modem will prevent this reboot.

- If a USB modem is physically disconnected from a USB WWAN NIM while NIM is active, the demand interface being used by the modem will not automatically shut down. The demand interface should be disabled before removing the modem to prevent this issue.
- In certain scenarios, the H.323 ALG may not properly translate the application layer information.
- If a USB modem has been associated with the USB WWAN NIM and then the modem is physically disconnected, the AOS unit may not immediately detect that the modem has been removed.
- An SNMP walk of the NetVanta 6355 lists the physical address for the first interface index only.
- When a switchport on a NetVanta 1535P is running forced speed 100 Mbps in standard mode (not ActivReach mode), jumbo frames greater than 9000 bytes will be dropped.
- When configured for **terminal length 0**, certain **show** commands do not provide complete output.
- The last reboot on a NetVanta 1638 may indicate *System returned to ROM by Watchdog Timeout* even on a manual reboot.
- The current AOS implementation of DHCP message construction may result in Windows XP machines not adopting the DNS servers defined in the DHCP Offer. A workaround using a numbered IP/hex option will allow the message to be constructed in a manner that Windows XP will accept. Microsoft also offers a hotfix to resolve this Windows issue.
- The system clock may drift and lose synchronization with higher stratum devices when NTP is enabled. This issue only affects the NetVanta 3448, 3458, and 6240 products.
- When configuring BGP redistribution, if a protocol is already being redistributed into BGP and a new **redistribute** <*source protocol*> command is issued specifying the same source protocol with a new MED value, the new MED value is not applied until the BGP process is restarted.
- In rare cases on a NetVanta 1535P, a negotiated ActivReach link of 100M 4-pair mode may drop.
- Certain OIDs in the Bridge-MIB may not return a value on a second generation NetVanta 123X switch.
- Certain commands referencing an ACL using quotation marks and spaces cannot be saved properly.
- When a switchport is set to ActivReach mode, a NetVanta 1535P does not support auto MDI/MDIX when the port is connected to a non-ActivReach device (i.e., a standard Ethernet device). If the connected device does not support auto MDI/MDIX, the link will not be established.
- The L3 switch statistics incorrectly report forwarded frames when subjected to a traffic stream consisting of invalid IPv4 header checksum values. The frames are properly dropped by the switch, but the statistics counter erroneously reports frames being forwarded.
- The **vap-reference** command will not replicate VLAN-IDs for an AP unless 802.1q encapsulation has already been manually enabled on the AP destined to receive the replicated configuration.
- Updating PRL values on a Sprint 3G CDMA NIM may not function properly.
- The parent map QoS statistics must be cleared in order to clear the child map statistics.
- A specific QoS map entry cannot be cleared without the entire map being cleared.
- A large enough drift in the system clock can cause an error when the NTP server attempts to synchronize.
- On a NetVanta 1335, a switchport that is configured as a port channel cannot change the edge port mode and cannot be changed from a port channel to another configuration using the GUI.
- The **show interfaces** command output for multilink Frame Relay interfaces will display an incorrect available bandwidth value when a physical link residing in the bundle is down.
- Removing an NTP server configuration does not properly remove that server from the NTP associations table.

- When a QoS map is applied to a VLAN interface, the NetVanta 3448 and 3458 platforms fail to reset QoS map statistics after the **clear counters** command is issued. The **clear qos map** command will clear the statistics properly.
- The VLAN ID for an access point cannot be changed using the GUI.
- The **show atm pvc** counters do not increment.
- The **show bridge** <*number*> command might not show any entries.
- The T1 EFM counters do not increment as traffic passes through the device.
- Using SCEP, AOS devices 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 interface gigabit-switchport <*slot/port*>**), then port authentication will no longer be configurable on that port, even after removal of the **port mirror** command from the configuration.
- A VLAN interface for a VLAN that is not accessed by other switchports will not be advertised by GVRP.
- 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 GUI statistics page for the SHDSL interface does not refresh when in 4-wire mode.
- 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.
- 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.
- 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.
- Configuring a port channel on a NetVanta 3448 can cause the STP topology to become unstable.
- Switch platforms count input discards on the ingress interface when receiving 802.3x pause frames.
- Sierra Wireless USB305 3G modems are sometimes not recognized by the NetVanta USB WWAN NIM.
- Changing the route metric value using **ipv6 address autoconfig default metric** <*value*> command does not change the administrative distance of the default route.
- 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.
- 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.
- 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 interface ppp 1** displays incorrect values for the number of packets sent.

- 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 the NetVanta 150 creating a malformed RADIUS packet.
- NetVanta 150s may not properly handle immediate Access-Accept responses to Access-Request messages.
- In certain instances, an SFP port on a NetVanta 1544 will not function with RAD MiRiCi-E3T3 SFPs.
- 3G connections using a NetVanta USB WWAN NIM and a Sierra Lightning modem can fail.
- The name of a deleted IPv4 ACL cannot be used to name a new IPv6 ACL.
- When changing states, the cellular interface can trigger a core dump on a NetVanta 3448.
- Port mirroring on a NetVanta 1544 switch might not mirror traffic in both directions.
- Browsing to the Switchports menu from the Port Security menu on the NetVanta 1335 WiFi GUI results in a 503 Service Unavailable error.
- Connecting a Novatel U547 USB modem to the NetVanta USB WWAN NIM can cause the router to reboot.
- A startup configuration with greater than 2743 IPv6 prefixes on a VLAN interface causes the NetVanta 3448 to reboot.
- A Spanning Tree L2 broadcast storm lasting several hours can cause the NetVanta 1335 to reboot.
- The L3 Switch Header Error and Discard counters on the NetVanta 1544P (second generation) do not increment.
- The pass phrase for the Wireless Wizard does not persist across reboots.
- Removing and restoring cross-connects multiple times can cause the PC configuration thread depth to reach 100 percent.
- Rapidly removing and adding cross-connects using the CONSOLE port and SSH at the same time can result in a reboot.
- When a switchport on a NetVanta 3458 is configured for **port-security**, it does not receive BPDUs. If multiple connections between the NetVanta 3458 and another switch are made, a switching loop could occur because both ports will automatically enter a forwarding state even though the Spanning Tree protocol should cause one port to enter a blocking state.
- Adding a track with a space in its name to a route will cause the route to be lost on reboot.
- Performance issues occur when using the NetVanta SHDSL ATM NIM2 on the NetVanta 6310/6330.
- When the ADSL interface on the Total Access 900 with ADSL2+ is administratively shutdown, the Net LED will remain red.
- In certain cases, the system uptime reported via SNMP is less than the actual system uptime.
- If the **ethernet-cfm** command is configured on a MEF Ethernet interface, the output of the following CLI commands is not formatted properly:

    1. **show ethernet cfm association**
    2. **show ethernet cfm stack**
    3. **show ethernet cfm mep local**
    4. **show ethernet cfm mep local detail**

- Using the command **debug ethernet cfm loopback request domain** <*domain name*> to filter Ethernet CFM loopback debugs may not display the debug output to the console. Removing the filter and using the **debug ethernet cfm loopback request** command will function properly.
- The output of the command **show ethernet cfm mep local** may display an incorrect maintenance association for a MEPID if multiple maintenance associations are configured on the unit.
- Performance throughput for 66 byte packets on the NetVanta 6355 4T1/NAT test cases has decreased approximately 40 percent. All other packet sizes, including IMIX traffic, have acceptable throughput.
- If the top level ATM interface on a SHDSL ATM NIM2 module is disabled and re-enabled, the ATM circuit will no longer be able to pass traffic. The ADTRAN unit must be rebooted to correct the problem.
- The NetVanta 6240 should send warm_start SNMP traps when the unit is told to reboot by software. It should only send cold_start traps when the power is cycled. Instead, it is sending cold_start traps, even when reloaded by software.
- In the VQM RTP Monitoring menu, the Source IPs and Interfaces menus have invisible data points that appear and display data when the cursor hovers over them. The invisible data point information duplicates a visible data point and can usually be found hidden above the visible data point.
- In the VQM RTP Monitoring menu, the refresh button refreshes the displayed graphic, but it also duplicates information in the lower part of the menu. Also, when the cursor hovers over a data point, it displays multiple instances of the same data.
- On a NetVanta 6310, if a SHDSL circuit with a detected bad splice retrains to a different line rate, the distance of the bad splice will display incorrectly.
- The NetVanta 6310 drops approximately 1 out of every 15K packets from the SHDSL to Ethernet direction with the SHDSL ATM NIM2.

The following is a list of voice specific errata that exist in products running AOS version R10.6.0**, unless otherwise noted.**

- When using a PRI network role, if the ISDN T303 timer expires, a reboot can occur.
- It is possible to configure a UDP port range for the DSP that will overlap with the port range used by RTP Firewall Traversal. This can cause one-way audio.
- The **voice number-complete disable pound** command does not function properly on CAS trunks.
- When the hex encoding of # (%23) is received in a SIP URI, it is not properly converted back to # before being processed by the switchboard.
- Enabling VQM can cause audio to be lost when using the Simple Remote Phone feature.
- AOS does not properly handle more than two Diversion headers that are appended with a comma.
- If the T1 PRI interfaces on a NetVanta 644 are connected to the PSTN or a PBX, the unit could reboot during startup.
- NetVanta 6240 only: While running 29 or greater simultaneous calls using E&M Immediate, Wink, or Feature Group D, it is possible to get in a state where DTMF tone detection will not function on any outbound (DSX to SIP) call that uses DSP 0/1.15 or higher. While in this failed state, all calls in either call direction on DSP 0/2 and all calls in the inbound direction on DSP 0/1 will continue to function. With a load of 28 or fewer calls, all calls will function reliably in both directions on both DSPs. No consistent work around has been identified at this time. A unit reboot will typically fix the problem.
- For SIP to PRI calls on which the called party number is in E.164 format, the called party number will not be presented to the PRI unless **voice international-prefix abbreviated** is configured.

- When using MGCP, if the received caller ID name from the call agent is the O flag to indicate that it is unavailable, the unit will send the text string **Unavailable** as the caller ID name to the FXS port, instead of sending the O flag for the name.
- Connection information (c=) in a media description does not override connection information in session description.
- If the ADTRAN device is configured with single call appearance mode, forwarded calls on a PRI trunk will fail.
- SIP traffic will not route to a SIP server on a remote network unless a static default route exists.
- The GUI on the Total Access 900/900e Series lists T1 clocking options that are not valid for the product (i.e., System and Through).
- On either a voice trunk or a voice user with a CODEC list configured, entering the command **no codec-list** <*list name*> <*direction*> always removes the <*list name*>, regardless of the configured direction.
- When using the local conferencing feature, echo cancellation is not enabled on three-way calls.
- If the route to the primary SIP server is invalid or points to **null 0**, SIP server rollover does not function properly.
- The CLI does not prevent users from configuring invalid SIP to PRI cause-code mappings.
- On the Total Access 900e platform, when 44 PRI calls (PRI to SIP direction only) and any number of analog calls (any direction) are active, the 44th PRI call will not connect approximately 80 percent of the time. Call flows of 44 PRI only calls and 44 SIP to PRI with analog calls function properly.
- On a second generation Total Access 900e with two PRI configurations, there will be no audio path on the 48th and subsequent calls.
- The Total Access 900e Series cannot properly handle more than 40 simultaneous E&M RBS calls. More than 40 simultaneously active calls could result in no dial tone or no audio on the last 8 channels.
- During G.711 A-law SIP to ETSI PRI calls, low voice quality scores are experienced on the outbound audio stream towards the SIP network. This issue is not seen on the ETSI PRI endpoints or with G.711 u-law and G.729 CODECs. A person listening to the audio on the SIP side will hear audio just below G.729 quality.
- On the NetVanta 6240 Series, over an extended period of use, T.38 calls can cause DSP channels to cease producing a dial tone and have poor voice quality. Rebooting the unit will correct the problem.
- DSP captures on the NetVanta 6240 and 644 platforms consume large amounts of memory while in progress. The unit could become unstable if a DSP capture is active for an unusually long period of time.
- The NetVanta 6240 Series IPBGs could reboot if 60 simultaneous calls are placed through the DSP.
- On NetVanta 6240 Series units, V.21 messages will sound overly amplified when listening to the TX output of a T.38 DSP capture. This is a flaw of the capture utility and not representative of how the audio actually sounds.
- Using the HEAD acoustics test suite, some G.168 echo cancellation test cases fail on the NetVanta 6240 and NetVanta 644. These same tests pass on Total Access 900 Series units. There is no reason to believe this would affect a customer in the field.
- If the configuration includes a secondary IP address, executing an SNMP walk results in a failure at the ipAdEntAddr OID with error OID not increasing. If the secondary IP address is removed, the walk completes successfully.

- If a SIP trunk is trying to register a large number of users and the registration fails, activating **debug sip trunk-registration** will cause the Telnet and console connection to become unresponsive. This occurs on the NetVanta 6310/6330 Series platforms only. A reboot clears the condition.
- With multiple PRIs in the same ISDN group, bringing one PRI down will cause calls that should use the other PRI to fail. A workaround is to use two ISDN groups that only contain one PRI each.
- With the ADTRAN unit set for **voice flashhook mode transparent**, the conference originator must wait for the third party to answer before executing the flashhook to initiate the conference.
- In rare cases, when an IP PBX and IP phones are both passing through a NAT and the SIP proxy on an AOS device, some call flows can enter a one-way-audio state. Enabling the **ip rtp firewall-traversal enforce-symmetric-ip** command from the Global Configuration mode works around the issue.
- Proxy user templates cannot modify SDP IP addresses correctly in some applications.

Upgrade Instructions

Upgrading ADTRAN products to the latest version of AOS firmware is explained in detail in the configuration guide *Upgrading Firmware in AOS*, available at https://supportforums.adtran.com.

Documentation Updates

The following documents were updated or newly released for AOS version R10.6.0 or later specifically for the AOS products. These documents can be found on ADTRAN's Support Forum available at https://supportforums.adtran.com. You can select the hyperlink below to be immediately redirected to the document.

- *AOS Command Reference Guide*
- *NetVanta 160/161 Wireless Configuration Guide*
- *NetVanta 150 Wireless Configuration Guide*
- *Configuring IPv6 in AOS*
- *Configuring Call Queuing on the NetVanta 7000 Series*
- *Session Border Controllers in AOS*
- *Configuring SMDR Reports for the NetVanta 7000 Series*
- *Configuring Transcoding in AOS*
- *Configuring Media Anchoring in AOS*
- *AOS Voice International Configuration Guide*
- *Configuring the NetVanta 7000 Series Personal Phone Manager*
- *Configuring Music On Hold on the NetVanta 7000 Series*
- *NetVanta Ethernet Port Protection Device Quick Start Guide*
- *NetVanta 1230 Series (2nd Gen) Hardware Installation Guide*
- *NetVanta 1535P ActivReach Ethernet Switch Quick Start Guide*
- *NetVanta ActivReach Media Converter Quick Start Guide*

