ArubaOS 6.1.3.5

Release Notes

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Contents

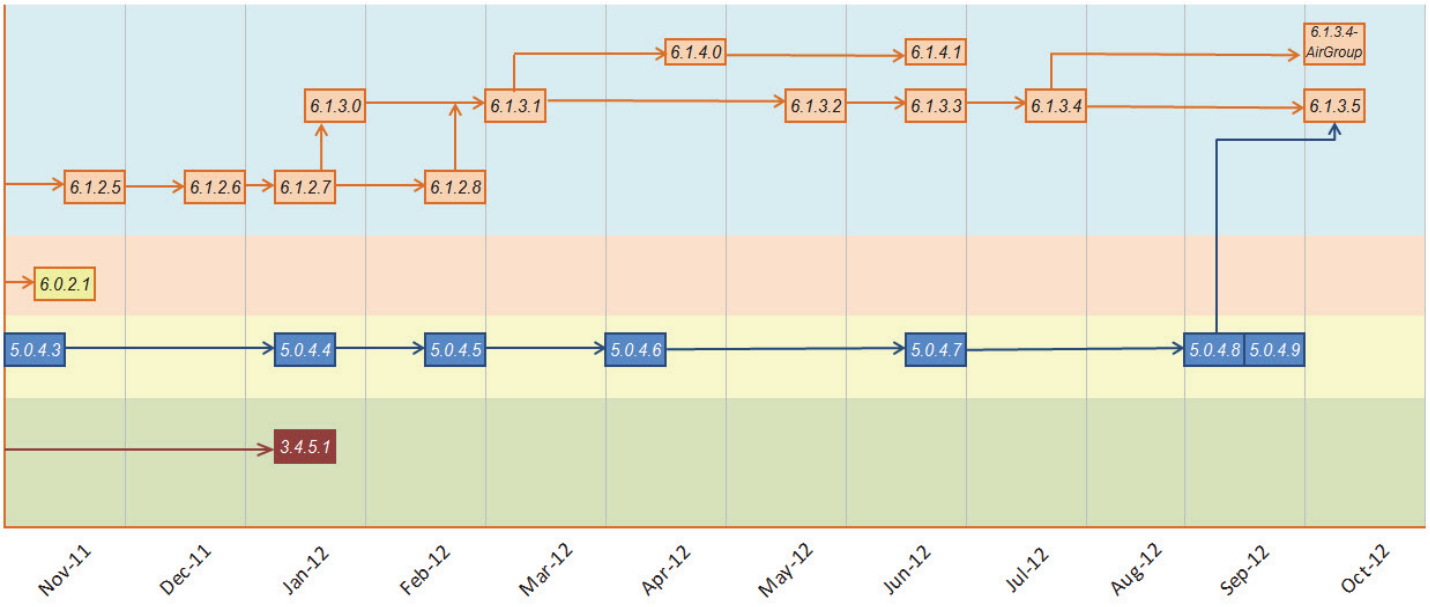
ArubaOS 6.1.3.5 is a general availability patch release that introduces fixes to many previously outstanding issues. All critical and minor security and stability fixes will be applied to subsequent patches of this general availability release until the ArubaOS 6.1.3.x branch naturally merges into a future major GA release. For more information, refer to the End-of-Life policy at http://www.arubanetworks.com/support-services/end-of-life-products/end-of-life-policy/.

To easily upgrade to ArubaOS 6.1.3.5, follow the procedures mentioned in Chapter 6, “Upgrade Procedures” on page 57 section.

Release Mapping

The following illustration shows which patches and maintenance releases are included in their entirety in ArubaOS 6.1.3.5.

Figure 1 *ArubaOS Releases and Code Stream Integration*



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International Telephones	arubanetworks.com/support-services/aruba-support-program/contact-support/
Software Licensing Site	licensing.arubanetworks.com/login.php
Wireless Security Incident Response Team (WSIRT)	arubanetworks.com/support/wsirt.php
Support Email Addresses	
Americas and APAC	support@arubanetworks.com
EMEA	emea_support@arubanetworks.com
WSIRT Email Please email details of any security problem found in an Aruba product.	wsirt@arubanetworks.com

This chapter provides a list of all the bugs fixed and new known issues identified in this release of ArubaOS, as well as a brief summary of the enhancements.

Enhancement

cfgm command

The following parameter descriptions for the **cfgm** command are changed:

- cfgm set sync-type <complete>
- cfgm set sync-type <snapshot>

The new parameters are as follows:

Syntax

Parameter	Description	Range	Default
`sync-type complete`	The master sends full configuration file to the local.	—	—
`sync-type snapshot`	The master sends only the incremental configuration to the local. Note: By default, this configuration is enabled.	—	Enable

Bugs Fixed in this Release

The following issues have been fixed in the ArubaOS 6.1.3.5. For a list of issues fixed in previous versions of ArubaOS 6.1.3, see Chapter 4, "Issues Fixed in Previous 6.1.3.x Releases" on page 23.

Air Management - IDS

Table 1 *Air Management - IDS Issue Fixed*

Bug ID	Description
69419	An M3 controller with a large number of AP-92 remote APs deployed as hotspots no longer displays incorrect values for the bandwidth usage or users on each associated AP. This issue was identified in ArubaOS 5.0.3.3, where incorrect values written to the `wlsxWlanStationStatsTable` MIB were attributed to personal hotspots on the client devices that used the same MAC address as the client's connection to the Aruba AP.

AP

Table 2 *AP Issues Fixed*

Bug ID	Description
68151	An issue was fixed where corrupted memory caused the AP to reboot with the message "NMI Watchdog interrupt on Core 0x0".
70133, 71208	An issue has been fixed where the Cell size reduction (CSR) value setting did not work in the case of an AP-105. High CSR values in dense deployments (APs at short range from each other) were causing throughput issues.
71330	The issue has been fixed where, in previous releases, clients that were not associated to the first VAP (Virtual AP) on an AP did not get handed off even with low signal strength and handoff assist enabled.
72382	An issue has been fixed where frequent packet (ping) loses were observed in clients (laptops) with Intel 6200/6205/5100 chipsets. This caused bad voice quality when voice application were used on the laptops. This issue was found in the ArubaOS 6.1.3.2 version and 802.11n APs.

Authentication

Table 3 *Authentication Issues Fixed*

Bug ID	Description
69840	An issue has been fixed where the EAP-TLS authentication failed when new certificates were used by clients to connect to a network.
72112	The AAA 802.1x authentication default timer values have been changed as follows to support Apple iOS devices: • timer idrequest_period - 5 (previously 30) • server server-retry-period - 5 (previously 30) • server server-retry - 3 (previously 2) • max-requests - 5 (previously 5)

Captive Portal

Table 4 *Captive Portal Issue Fixed*

Bug ID	Description
72465	Clients re-associating in a network using an external XML-API server for L3 authentication were presented with incorrect roles. This issue is now fixed.

Configuration

Table 5 *Configuration Issue Fixed*

Bug ID	Description
69321	An issue has been fixed where some of the 3600 controllers in a network consisting of 3600 and M3 controllers did not come up after an upgrade from ArubaOS 6.1.2.6 to 6.1.3.3.

Hardware Management

Table 6 *Hardware Management Issue Fixed*

Bug ID	Description
58963	An issue was fixed where adding member ports to the port-channel, blocked the ports, resulting in packet drops. This occurred when the static port-channel was configured and spanning tree was disabled on the controller. This issue was observed in controllers running ArubaOS 6.1.3.2.

Interface

Table 7 *Interface Issue Fixed*

Bug ID	Description
69140	An issue has been fixed where the GE 1/0 - 1/3 port on the 650 controller did not link up and transmit packets because of an error in the static configuration of the Full duplex setting. This issue was observed in ArubaOS 3.4.5.0, 5.0.2.1, 5.0.4.7, 6.0.2.1, 6.1.2.5, 6.1.3.1, and 6.1.3.3 with the 650 controller.

IPsec

Table 8 *IPsec Issue Fixed*

Bug ID	Description
71991	A memory issue related to how the controller processes public keys has been fixed. In ArubaOS 6.1.1.0, this issue created a memory leak that caused a reset to the controller process that handles IKE exchanges for remote APs, VPNs, and APs using control plane security.

IPv6

Table 9 *IPv6 Issue Fixed*

Bug ID	Description
68037	An issue was fixed where stateless DHCPv6 did not work properly and DHCPv6 packets sent through the VLAN interface were dropped. The issue occurred when the `ipv6 mld snooping` command was enabled on the VLAN interface.

Mesh

Table 10 *Mesh Issue Fixed*

Bug ID	Description
73343	Support for band-3 channels (100 - 140) has been added for AP-60, AP-61, AP-70, and AP-85 for Saudi Arabia.

Mobility

Table 11 *Mobility Issue Fixed*

Bug ID	Description
72258	An issue has been fixed where Apple devices running iOS 6 were not able to establish VPN tunnel using their built-in VPN client. This issue was seen in 3200 controller running ArubaOS 6.1.3.3.

M-Switch Software

Table 12 *M-Switch Issue Fixed*

Bug ID	Description
67847	An unexpected reboot observed on an AP-125 due to a databus error has been fixed.

Platform/Datapath

Table 13 *Platform/Datapath Issues Fixed*

Bug ID	Description
67178	An issue is fixed where an incorrect tunnel became a part of the VLAN multicast group, resulting in unexpected behavior and wastage of bandwidth in an IPsec tunnel environment. This issue was observed in controllers running ArubaOS 6.1.2.7.
70878	An issue where the status of the NTPD module was busy on controllers running ArubaOS 6.1.2.4, is now fixed.

Port-Channel

Table 14 *Port-Channel Issue Fixed*

Bug ID	Description
70840	An issue has been fixed where a spanning tree loop occurred between the controller and the catalyst after the controller was rebooted. This issue was seen in controllers running ArubaOS 6.1 when a port-channel was configured and spanning tree was enabled. When adding the member ports to the port-channel, the events generated during the process were not serviced in the expected order leading to the member ports to go into blocked state.

RADIUS

Table 15 *Radius Issue Fixed*

Bug ID	Description
68008	An issue is fixed where a controller running ArubaOS 6.1.x failed to send STOP accounting messages to ClearPass Guest (acting as a RADIUS server) when a large number of users aged out from the WLAN network at the same time. This resulted in multiple stale active sessions on ClearPass Guest. Starting from ArubaOS 6.1.3.5, the controller re-transmits the failed STOP accounting messages to the ClearPass Guest server.

Remote AP

Table 16 *Remote AP Issues Fixed*

Bug ID	Description
70990	An issue is fixed where a change in the configuration parameters of the AP system profile caused always-backup mode Virtual APs to disappear from the RAP memory. This issue was observed in controllers running ArubaOS 6.1.3.2, 6.1.3.3, or 6.1.3.4.
71027	An issue is fixed where clients using the split-tunnel forwarding mode were assigned incorrect roles on the RAP following a change in configuration. Clients (iPads) could not log in after the configuration change. This issue was seen in ArubaOS 5.0.4.7 and was attributed to clients' ACL/ role not getting correctly updated to reflect the new configuration in the RAP.
72167	An issue has been fixed, where the RAP-5 always shows the current overlay network as Enhanced High Rate Packet Data (eHRPD) mode instead of displaying its actual network i.e 3G/4G. This is seen in the output of `show ap debug usb ap-name <ap-name>` CLI command field **Current Network Service**. eHRPD is now enhanced to display the actual network -- 3G/4G. This is applicable only when the RAP-5 is provisioned to use UML290 as an uplink connection.

Security

Table 17 *Security Issues Fixed*

Bug ID	Description
66107, 66330, 71142	An issue has been fixed where the Auth module on the local controller crashed when a wired user was configured with more than one IP addresses (probably multiple clients behind a router). This issue occurred when the first IP address created for this user timed out while the rest of them were still reachable. This issue was seen in M3, 3400, 3200, and 6xx running ArubaOS 6.1.3.1.
68304	An issue was fixed where the User Derivation Rules (UDRs) after the 127th rule were not processed when the UDRs were configured using the `conf t aaa derivation-rules user <udr_name>` command.
68315, 73121, 73497	The `show global-user-table list` command now works correctly and displays the list of current users both on the master and the local controllers.
69447	An issue is fixed where the client failed to authenticate with the RSA token server after the controller was upgraded to ArubaOS 6.1.3.1. The issue occurred when EAP-PEAP with EAP-GTC (Generic Token Code) was configured in the AAA Authentication dot1x profile.
70170	An issue has been fixed where the ClearPass (CP) users were not able to access the CP login page causing network issues. This issue was seen in 3600 running ArubaOS 6.1.3.2 with AP-93 RAPs. The root cause was identified as the authentication module not responding due to a loop condition.
72627	An issue has been fixed where after a successful authentication, clients connected to the guest SSID were shown the "Web Authentication is disabled" error page.
73418	An issue has been resolved where a large number of `Dropping EAPOL packet` and `EAP-ID mismatched` entries were seen in the error log. These entries now no longer appear as error messages. This issue occurred when a client roamed from one AP to the another AP without completing authentication at the first AP.
73664	An issue was resolved when wired users connected to a controller acting as a multiplexer client failed to establish a 802.1X authentication upon moving from one port of the controller to another. This issue occurred when a controller was deployed as a multiplexer server (running ArubaOS 6.1.3.2/6.1.3.3/6.1.3.4 version), and another controller was used as a multiplexer client.

SNMP

Table 18 *SNMP Issue Fixed*

Bug ID	Description
59292, 66990	An issue was fixed where compile errors were sometimes produced when importing an ArubaOS 6.1.3.1 MIB to HP OpenView 9.10 or above. This may have occurred if you were using a newer MIB browser.

Station Management

Table 19 *Station Management Issue Fixed*

Bug ID	Description
65810	An issue was fixed where station management (STM) process crashed in the controller causing APs to rebootstrap and failover to a backup controller. This issue was observed in controllers running ArubaOS 6.1.2.7.
72319, 73672	An issue has been fixed where the Station Management module on a 6000 controller running ArubaOS 6.1.3.1 crashed causing the APs to rebootstrap. This issue was seen when frames sent by non-Vocera clients on port 5002 were parsed as Vocera frames causing incorrect memory access, leading to the crash.

WebUI

Table 20 *WebUI Issues Fixed*

Bug ID	Description
69039	An issue was fixed where the arci-cli-helper process that handles WebUI commands crashed in the controller, resulting in a slow WebUI response time. This occurred when there was a failure in authenticating WebUI users. This issue was observed in controllers running ArubaOS 6.1.3.2.
68497, 70106	The **Configuration > Network > Ports > Port-Channel** page of the WebUI now correctly displays the number of **Allowed VLAN IDs**.

New known issues

The following issues have been identified since the last release. For a list of known issues found in previous versions of ArubaOS 6.1.3.x, see Chapter 5, “Known Issues Identified in Previous 6.1.3.x Releases” on page 45.

AP

Table 21 *AP Known Issues and Limitations*

Bug ID	Description
64014	When an AP rebootstraps due to loss of connection to a controller, a process on the AP crashes due to corrupted memory. There is no identified trigger for this issue. Workaround: None.

Table 21 *AP Known Issues and Limitations (Continued)*

Bug ID	Description
69034	It has been observed that the TCP connection between a tablet device and an Aruba 802.11n AP times out frequently. Additionally, the AP is not sending Wi-Fi frames sent by the client to its uplink for 60 - 90 seconds.
72938	The internal controller process that manages AP management and user association can become overloaded and trigger APs to rebootstrap. This issue occurs when there are many APs associated with the controller and the adaptive resource management (ARM) feature changes the AP power settings on all APs at the same time. Workaround: Disabling ARM may help resolve this issue.
73138	It has been observed that all APs connected to a local controller running ArubaOS 6.1.3.1 come up with the ID flag, but do not become operational. The trigger for this issue is currently unknown. Workaround: Reboot the AP.
73184, 74037	A subset of APs connected to a local controller are up on the local but are marked as down on the master controller. This occurs when campus APs (CAPs) on master or local controllers, not using control plane security, discover the master using DNS, DHCP, or ADP and connect to the master before moving to the local controller configured in the AP system profile. An entry is created on the master and local controllers simultaneously. When the AP is aged out on the master, it is marked as down. Workaround: Execute the command `clear gap-db lms <lms-ip>` on the master using the IP of the local controller. This should make the LMS send an update of all the APs marked UP and the master should show the correct status. Additionally, this issue can be resolved by rebooting the APs.

Authentication

Table 22 *Authentication Known Issue and Limitation*

Bug ID	Description
70343	Custom captive portal (CP) pages are not synchronized between the master and standby controllers. This occurs when captive portal pages are configured in a master/standby setup. If the standby controller becomes a master, the custom portal page no longer shows up during CP authentication.

Control Plane Security

Table 23 *Control Plane Security Known Issue and Limitation*

Bug ID	Description
66413	Occasionally, the Control Plane Security (CPSec) whitelist database entries are not synced between the master controller and the local controller. The lossy network between the master and local causes some whitelist sync fragments to be lost.

IPv6

Table 24 *IPv6 Known Issue and Limitation*

Bug ID	Description
57059	When maximum number of IPv6 L3 interfaces exceeds the supported platform limit, it affects the routing on the controller. Be sure not to exceed the maximum number of IPv6 L3 interfaces.

Mobility

Table 25 *Mobility Known Issue and Limitation*

Bug ID	Description
74272	Traffic from a wireless client on the home agent (HA) to a wired client on the foreign agent (FA) fails when L3 mobility is enabled. This issue is seen in 6000 and 3000 Series controllers running ArubaOS 6.1.x versions and is triggered after the wireless client does multiple HA to FA roams. Workaround: None

Platform/Datapath

Table 26 *Platform/Datapath Known Issues and Limitations*

Bug ID	Description
62096	M3 controllers may unexpectedly reboot with the reason `User pushed reset`. This issue is seen when there is high traffic between the control plane and the datapath. Workaround: Configure VLAN bandwidth contracts to reduce the traffic to the control plane.
63140	A controller may experience a datapath timeout if 2,000 users are created from an untrusted port with upstream and downstream per-user bandwidth contracts.
65690	Under certain traffic conditions, the main processor in the controller might stall, leading to a datapath timeout followed by a controller reboot.
73167	Large number of APs in a network with M3 controller running ArubaOS 6.1.2.8 rebootstrap due to missed heartbeats. This issue is seen during the peak hours (~ 2000 users).
73901	The ports on a controller go into the blocking state when spanning tree is enabled globally and disabled on the interfaces, and the spanning tree on VLAN command is executed twice. Adding a spanning tree on a VLAN which already has a spanning tree causes all the ports in that VLAN to go into the blocking state. This issue was observed in 3200 controllers running ArubaOS 6.1.3.4 and 6.1.3.5. Workaround: Flap the spanning tree state on the ports to recover the controller.

Remote AP

Table 27 *Remote AP Known Issues and Limitations*

Bug ID	Description
51546	While using the Sierra modem 312 for a 3G uplink on a remote AP; 3G to wired failover may leave the USB in hung state. Rebooting the remote AP will make it recover from this state.
67845	In a deployment of a RAP using the UML290 modem, the RAP rebootstraps when an user is connected to the split tunnel mode VAP and the corp ACL has a VLAN/subnet other than its split VAP client subnet.This setup sends the client broadcast data (like netbios) over the USB uplink without source NATing it thereby causing the rebootstrap of the USB uplink. One of the following workarounds may be used: • Add the client subnet as part of the corp alias of the split VAP user role ACL. • Add an entry in split VAP user role ACL, which will deny the netbios broadcast. • Disabling the netbios on the client also solves the issue.

Security

Table 28 *Security Known Issues and Limitations*

Bug ID	Description
72843	An issue has been identified where slower network performance and response times occur with 6000 and 3000 Series controllers running ArubaOS 6.1.3.2 in networks that support mostly client-to-client traffic experience. Workaround: None
72987	The error message “Failed to add wireless station” can appear in the error log. The most likely cause is a low memory situation on the controller.
73130	The ArubaOS Syslog Parser might not change user roles for clients (that have dot1x enabled) in sleep mode. As a workaround, clear the pmk-cache for a successful authentication.

Station Management

Table 29 *Station Management Known Issues and Limitations*

Bug ID	Description
66261	If the **even VLAN** and **preserve VLAN** features are enabled in the VAPs and a client moves from one VAP to another, and if the client VLAN does not exist in the new VAP, the client connection fails. Check with Aruba TAC before you enable these features.
72717	An internal controller process failure (STM module) can occur after upgrading from ArubaOS 6.1.x.x to ArubaOS 6.1.3.x.This condition is rare and may be the result of an incomplete or incorrect upgrade procedure. Please contact Aruba support to seek help to restore normal operation.

Voice

Table 30 *Voice Known Issue and Limitation*

Bug ID	Description
62515, 71202	It has been observed that the SIP ALG does not prioritize the SIP media ports which results in poor traffic quality and disconnections due to frame loss or delay. This issue is seen in controllers running ArubaOS 6.1 with SIP clients configured to use video capability.

WebUI

Table 31 *WebUI Known Issue and Limitation*

Bug ID	Description
66521	When creating a user in the WebUI, you see two **Apply** buttons in the **Configuration > Security > Authentication > Internal DB** page. The **Apply** button at the bottom of the page does not add the user but does apply any user list changes that already exist. Click the **Apply** button at the top to add a new user. After the screen refreshes, click the **Apply** button at the bottom to apply any user list changes.

Issues under investigation

The following issues have been reported in ArubaOS but not confirmed. The issues have not been able to be reproduced and the root cause has not been isolated. They are included here because they have been reported to Aruba and are being investigated. In the tables below, similar issues have been grouped together.

AP

Table 32 *AP Observed Issues*

Bug ID	Description
68211	An unexpected controller reboot occurs. The cause has not been identified.

Platform/Datapath

Table 33 *Platform/Datapath Observed Issues*

Bug ID	Description
72942	A controller running ArubaOS 6.1.3.2 may sometimes not respond when accessed from the network. It was observed that there was no communication across the port-channel of the controller. This issue is under investigation.
73246	The M3 controller running ArubaOS 6.1.3.4 sometimes crashes due to datapath issues. This issue could be due to the buffer getting freed twice.
72359	An unexpected timeout in an internal datapath process caused a 6000 controller to unexpectedly reboot.
72938	There is a case where all of the APs on a controller bootstrapped. It appears to be related to a large number of VAPs and VLANs in addition to large scale network configuration changes. We have been unable to reproduce the issue and are continuing to investigate the issue.

Improved Interference Immunity

The Non-Wi-Fi Interference Immunity feature can help improve performance on an unhealthy network significantly impacted by high levels of non-802.11 noise from devices such as Bluetooth headsets, video monitors and cordless phones. ArubaOS 6.1.3.2 introduces support for a more granular configuration for this feature, with seventeen different configurable settings (levels 0-16). Previous releases supported six different levels only (levels 0-5).

Higher immunity levels provide increased immunity to non-Wi-Fi interference, but some immunity levels can affect the reported noise floor, receive sensitivity of higher modulations, and the receive range of the radio. Most healthy RF environments have a noise floor below -85 dB. The Interference Immunity feature is designed for non-healthy environments and may raise the noise floor above this level. Client and AP throughput should be used to judge the health of the network with a higher noise floor.

Use this feature with caution, as it can have a negative impact on healthy networks with low levels of interference. Best practices are to first configure this feature with the default setting (level 2) then gradually increase the level one step at a time until network performance improves. Higher settings may reduce the coverage area of the AP.

Upgrade Issues

When a device using this feature is upgraded to ArubaOS 6.1.3.2, its previous Interference Immunity behavior is retained, although the actual level number may be changed to match the updated configuration scheme. For example, an AP using the Interference Immunity feature at level 4 in ArubaOS 6.0 will convert to Interference Immunity level 13 when it upgrades to ArubaOS 6.1.3.2, though the actual behavior of the feature will not change.

Updated WebUI and CLI

The **Non-Wi-Fi Interference Immunity field** in an AP's 802.11a and 802.11g radio profiles now support values from 0-16. The CLI commands **rf dot11a-radio-profile <profile> interference-immunity** and **rf dot11g-radio-profile <profile> interference-immunity** also support an increased value range (0-16).

Cell Size Reduction

The Cell Size Reduction feature allows you manage dense deployments and to increase overall system performance and capacity by shrinking an AP's coverage area, thereby minimizing co-channel interference and optimizing channel reuse. This value should only be changed if the network is experiencing performance issue

The possible range of values for this feature is 0-55 dB. The default 0 dB reduction allows the radio to retain its default Rx sensitivity value. Values from 1-55 dB reduce the power level that the radio can hear by that amount.

Impact on Network Performance

If you configure this feature to use a non-default value, **you must also reduce the radio's transmission (Tx) power to match its new received (Rx) power level.** Failure to match a device's Tx power level to

its Rx power level can result in a configuration that allows the radio to send messages to a device that it cannot hear.

Updated WebUI and CLI

An AP's 802.11a and 802.11g radio profiles now include a **Reduce Cell Size (Rx Sensitivity)** field. This feature can be configured in the CLI using the commands **rf dot11a-radio-profile <profile> cell-size-reduction** and **rf dot11a-radio-profile <profile> cell-size-reduction**.

Suppress-ARP and Broadcast-Filter ARP

Beginning with ArubaOS 6.1.3.2, `suppress-arp` on the VLAN interface and `broadcast-filter arp` on the VAP profile are enabled by default. Behaviors associated with these settings are enabled upon upgrade to ArubaOS 6.1.3.2. Note that `suppress-arp` has been modified such that gratuitous ARP will still be flooded on all AP tunnels.

WMS Configuration Changes

WMS configuration has been moved to profiles to prevent busy WMS from interfering with the completion of a `write mem` on the master controller. This change encompasses the `wms general`, `wms-local system`, and `rap-wml commands`. The newly added profiles are:

```
ids wms-general-profile
ids wms-local-system-profile
ids rap-wml-server-profile
ids rap-wml-table-profile
```

Upon upgrading to ArubaOS 6.1.3.2, WMS configuration, except `rap-wml`, will be moved under these profiles.

Single-chain-legacy is Renamed CSD-override

Starting with ArubaOS 6.1.3.2, the `single-chain-legacy` parameter in high-throughput radio profile has been renamed to `csd-override`. When this feature is enabled, all legacy transmissions will be sent using a single antenna. This enables interoperability for legacy or high-throughput stations that cannot decode 802.11n cyclic shift diversity (CSD) data, and changes 802.11n transmission by restricting CSD spreading.

This parameter is enabled by default, and will be enabled when you upgrade to ArubaOS 6.1.3.2, regardless of whether the `single-chain-legacy` setting was enabled or disabled before the upgrade. Do not disable this feature unless you do not need to support legacy or high-throughput stations that cannot support 802.11n CSD data.

Use the command `rf ht-radio-profile <profile> csd-override` to enable this feature, or disable it using the command `rf ht-radio-profile <profile> no csd-override`.

Software Retry is Renamed Temporal Diversity

Beginning with ArubaOS 6.1.3.2, the `sw-retry` parameter under the command `wlan ht-ssid-profile <profile>` has been renamed `temporal-diversity`. Additionally, the output of the command `show wlan ht-ssid-profile [<profile>]` now displays `Temporal Diversity Enable` instead of `Software Retry Enable`.

CLI Changes

The following changes have been made to the ArubaOS CLI in ArubaOS 6.1.3.2.

Table 1 *CLI Changes in ArubaOS 6.1.3.2*

Command	New Parameter add in 6.1.3.2	Description
`aaa user`	`stats-poll`	Enables user stats polling
`ipv6 firewall`	`ext-hdr-parse-len <100-300>` Default: 100	Threshold in bytes beyond which IPv6 header will not be parsed and the packet will be dropped.
`ap provisioning-profile`	`usb-modeswitch`	All the parameters that is required to be passed to usb_modeswitch utility
`rf dot11a-radio-profile`	`cell-size-reduction`	Reduce cell size by controlling Wi-Fi Rx sensitivity. Use this to manage dense deployments and to increase overall system performance/capacity by minimizing co-channel interference and optimizing channel reuse. 0: default sensitivity. 1 - 55: sensitivity reduction from default (dB).
`show ap debug`	`config-msg-history ap-name`	Provides a history of the last 10 control messages sent to and received between a specific AP and the controller.
`show ap debug`	`config-msg-history ip-addr`	Provides a history of the last 10 control messages sent to and received between a specific AP and the controller.
`show ipc statistics app-name`	`sapm`	Provides visibility into the sapm-related IPC messages to and from the STM module's queues.
`show ipc statistics app-name`	`stm-lopri`	Provides visibility into the Station Management Low Priority-related IPC messages to and from the STM module's queues.
`show ipc`	`forwarding-statistics`	Shows statistics about packets forwarded to internal processes from remote nodes.
`show datapath debug`	`opcode`	Shows datapath opcode statistics.

Chapter 4

Issues Fixed in Previous 6.1.3.x Releases

The following issues have been fixed in the previous ArubaOS 6.1.3.x patch releases.

Fixed in 6.1.3.4

Access Points

Table 1 *Access Points Issues Fixed in 6.1.3.4*

Bug ID	Description
52183	Uplink VLAN tagging now works with Point-to-Point Protocol over Ethernet (PPPoE) enabled for a Remote AP (RAP).
63909	The frequency band and regulatory maximum EIRP settings for Saudi Arabia have been updated.
66477, 66476	An issue has been fixed where APs with the country code CO could use channels 12 and 13, which are not specified for that country code.
67622	AP-68 and AP-68P now support the Egypt (EG) regulatory domain.
68549	AP-92 and AP-93 now support the Bahrain (BH) regulatory domain. However, AP-134 and AP-135 will not support this regulatory domain due to pending regulatory approvals.

Air Management (IDS)

Table 2 *Air Management (IDS) Issue Fixed in 6.1.3.4*

Bug ID	Description
68614	An issue that was causing the controller to inefficiently fetch information from the database has been fixed. Prior to this fix the controller functioned properly but the CPU utilization was higher than it should be. This issue was seen on all controllers from 5.0.x to 6.1.3.3. This fix will lower the CPU utilization related to gathering certain types of information from the database.

DHCP

Table 3 *DHCP Issue Fixed in 6.1.3.4*

Bug ID	Description
68613	A controller running ArubaOS 6.1.3.2 configured as a DHCP Relay Agent with IP Helper, requests an IP address using its uplink IP address as the source IP. The DHCP server, however, responds back to the controller's user VLAN IP address. Because of this source IP mismatch, the firewall between the controller and the DHCP server drops the response from the DHCP server. A fix has been introduced that allows the controller to send the user VLAN IP address as the source IP.

Guest Provisioning

Table 4 *Guest Provisioning Issue Fixed in 6.1.3.4*

Bug ID	Description
68796	Management users can now log in to the controller by using the DOMAIN\Username format and view guest users that they have created.

Mobility

Table 5 *Mobility Issues Fixed in 6.1.3.4*

Bug ID	Description
69155	An issue where an Apple iOS/MacOS device sometimes took longer than a minute to get an IP address from the DHCP server after resuming from sleep has been fixed. This was observed when IP mobility was enabled on controllers running ArubaOS 6.1.3.0.
73446	The issue where VPN does not work with Apple IOS6 certificate-based authentication has been fixed. Apple IOS6 certificate-based authentication could not establish an L2TP/IPSEC connection with the controller and therefore caused VPN to not work. This issue impacted the 600 series, 3200, 3400, 3600 and M3 controller running ArubaOS version 6.1.3.4 and earlier.

Other

Table 6 *Other Issue Fixed in 6.1.3.4*

Bug ID	Description
68004	The `phonehome now` command functions as expected if executed after an auto-report is generated. In ArubaOS 6.1.2.8, executing the `phonehome now` command after an auto-report was generated resulted in the following warning message: `*** WARNING ***: PhoneHome service is disabled (phonehome enable) Ignoring any report upload operation.`

Platform/Datapath

Table 7 *Platform/DataPath Issues Fixed in 6.1.3.4*

Bug ID	Description
67966	An issue has been fixed where enabling the “VIA SSL Fallback” option caused a datapath crash and controller reboot. This issue was observed in Aruba 3000 Series/6000 series controllers running ArubaOS 6.1.3.0.
69058, 70619	A controller supports up to four IPv6 addresses in a user table entry for a MAC address. A race condition occurred due to the control plane and data plane going out of sync with respect to the maximum number of IPv4/6 addresses for a MAC address in the user table. This race condition resulted in a datapath crash causing the controller to reboot. This issue has now been fixed.
67886	In a master-local topology with more than 255 local controllers, the status of APs displayed incorrectly (down) in the master controller and correctly (up) in local controllers. This issue has been fixed and the AP status is now displayed correctly in the master controller.

Table 7 *(Continued)Platform/DataPath Issues Fixed in 6.1.3.4 (Continued)*

Bug ID	Description
68069, 68673	An issue where the configuration management process in the controller crashed occasionally during Virtual Router Redundancy Protocol (VRRP) failover and fallback operations has been fixed. This issue was found in master controllers running ArubaOS 6.1.3.1 or later from the core file generated due to configuration management process crash.
68088	Controllers running ArubaOS 6.1.3.1 configured with large number of VRRP instances rebooted after executing the `write memory` or the `show running-config` commands. This issue, which occurred due to the large number of VRRP instances, has been fixed.
68277	An issue where the `halt` command accidently displayed panic messages in controllers (3000 Series/6000 series) running ArubaOS 6.1.3.2 has now been fixed. The `halt` command now functions as expected and gracefully shuts down the controller.

Port Channel

Table 8 *Port Channel Issue Fixed in 6.1.3.4*

Bug ID	Description
68841	An issue was observed in ArubaOS 6.1.3.2 and 5.0.4.6 where a new VLAN could not be associated to port channel 7 using the WebUI. This issue has now been fixed.

RADIUS

Table 9 *RADIUS Issue Fixed in 6.1.3.4*

Bug ID	Description
67619	An issue is now fixed where the controller running ArubaOS 6.1.3.1 did not send `aruba-user-role` Vendor Specific Attributes (VSA) in response to the accounting request message sent by the RADIUS server. This issue was observed after upgrading the controller from ArubaOS 5.0.4.x to ArubaOS 6.1.3.x.

Remote AP

Table 10 *Remote AP Issues Fixed in 6.1.3.4*

Bug ID	Description
57639, 57637	The log message `rap_stm_user_agent_update_handle` incorrectly appeared in the error logs of a controller with RAPs serving split tunnel and bridge clients. This has been fixed so the message correctly shows up in the debug logs and no longer appears in the error logs.
68637	Fixed an issue where AP-134 and AP-135 devices running ArubaOS 6.1.0 or later did not forward source Network Address Translation (NAT) traffic from clients using bridge or split-tunnel forwarding mode to devices connected on the uplink port of the AP.

Security

Table 11 *Security Issues Fixed in 6.1.3.4*

Bug ID	Description
68336	Fixed an issue that caused the authentication process to crash in the controller. This issue was observed when User Derivation Rules (UDR) were configured on the Remote AP and the wired client had more than one IP address.
68652	In a master-standby setup, VRRP configured on untrusted ports between controllers caused the Auth module to crash in the master controller. An Auth module crash can disconnect active users and prevent new users from getting authenticated. This issue was observed in controllers running ArubaOS 6.1.3.2 and has now been fixed.

SNMP

Table 12 *SNMP Issues Fixed in 6.1.3.4*

Bug ID	Description
68423	An issue where a controller did not send the *wlsxAuthServerTimedOut* trap when the authentication (RADIUS) server timed out or was out of service has been fixed. This issue was observed in controllers running ArubaOS 6.1.x.

Station Management

Table 13 *Station Management Issues Fixed in 6.1.3.4*

Bug ID	Description
56666, 63279	The output of the `show ap association` or `show ap bss` CLI commands no longer display entries for clients that are no longer associated to an AP. In previous releases, communication between an AP and a controller might be interrupted by heavy network traffic. In this case, the AP did not notify the controller that a client has left, the controller did not remove the expired user entry.
67544	A controller correctly generates the SNMP trap *wlsxNAccessPointIsUp*.
73194-67737	The issue where clients failed to authenticate with a rejection status of 17 has been fixed. This occurred when an AP was brought up with one of the radios disabled and after 50 days of uptime the radio was enabled. Clients were not able to connect due to an error in the management frame throttle detection. The AP rejected the 802.11 authentication with status 17. To avoid this issue, reboot the AP after enabling the radio or set the management frame throttle limit to 0 in the radio profile.

WebUI

Table 14 *WebUI Issues Fixed in 6.1.3.4*

Bug ID	Description
61561	Accessing the WLAN Wizard from the WebUI no longer results in a blank page.
61674	You can now successfully configure 4G-LTE USB modems when provisioning a RAP using the WebUI.

Table 14 *(Continued)WebUI Issues Fixed in 6.1.3.4*

Bug ID	Description
63952, 66355, 68121	The **Edit** button on the **Configuration** > **Management** > **Guest Provisioning** page now allows you to modify existing users.
64427	You can use the WebUI to configure a policy to redirect traffic to an ESI group. This option is now available on controllers with the ESI, PEFNG or VPN licenses. In previous releases, only the ESI license supported this feature.
67027	When creating a new guest user on the **Guest Provisioning** page, the browser no longer freezes after clicking **Create & Print**.
68466	A fix has been made that allows the controller to update the changes made to the year or month in the **Configuration** > **Management** > **Guest Provisioning** page of the WebUI.
69608, 64017	A fix has been made to **Configuration** > **Network** > **Ports** > **Port Channel** tab of the WebUI where the default member VLAN of the controller was not pre-selected from the VLAN list, causing an error in applying the configuration changes. This fix affects controllers running ArubaOS 6.1.3.0.

Fixed in 6.1.3.3

Table 15 *Bugs fixed in 6.1.3.3*

Bug ID	Description
68712	A problem where VIA failed to start because of an expired certificate has been corrected.

Fixed in 6.1.3.2

Table 16 *Bugs Fixed in 6.1.3.2*

Bug ID	Description
46411	Crash due to memory corruption on APs that use Dynamic Frequency Selection (DFS) channels is now resolved.
47936	The command `show ap debug system-status` returns complete and correct information for APs with more than 25 virtual APs configured.
54939, 60800	AP information is no longer missing from the SNMP table *wlanAPIpAddress*. APs with a MAC address ending with `::fe` or `::ff` were ignored if more than one AP with such a MAC address was connected to a controller.
56856	Fixed a rare crash occurring in all APs (especially AP-120 Series) that was caused by performing noise floor calibration when the radio was not ready. Upgrading to this release should fix any AP crashes where 'ath_hal_reg_read' is in the crash log file. Crash info can be viewed by running `show ap debug crash-info <ap-name>` in the CLI. This version verifies that the radio is ready to calibrate the noise floor before beginning a calibration.
59375	If guest account expiry date/time is not set, then the maximum account expiry time window setting in the internal DB is honored.
59611	An unexpected reboot that occurred on all 802.11n APs (except the AP-135) due to an internal process malfunction has been fixed.

Table 16 *Bugs Fixed in 6.1.3.2 (Continued)*

Bug ID	Description
60534	Root/Admin users can now create a guest user entry with expiration date beyond the maximum account expiry time window setting in the internal DB.
62110	A remote AP's power LED no longer turns off after a while when there is no Ethernet connection.
62245, 59343	Dot1x SSID is now visible to the user when the controller is upgraded from ArubaOS 5.0.3.3 to 6.1.2.5 and when there are over 32 VLANs configured in the VAP profile.
62767	An issue was resolved in the controllers internal messaging system, where under high load, APs could randomly rebootstrap due to missed polls. Typically this issue is only seen on controllers approaching 512 APs in an environment where the APs are sending a lot of messages to the controller.
62978	Ghana (GH) regulatory domain support is available for the AP-120 Series.
63808	Campus APs and remote APs configured with a virtual AP in bridge forwarding mode no longer experience repeated crashes due to a kernel panic. This kernel panic was caused by the code that handles client mobility in bridge mode.
64562	An AP-135 using control plane security no longer crashes and reboots unexpectedly when packet capture is initiated using the `pcap` command. This problem is specific to AP-135 and occurs when packet capture is enabled when control plane security is also on.
64111	Bosnia and Herzegovina (BA) and Macedonia (MK) regulatory domain support is available for the AP-105.
64178	Bosnia and Herzegovina (BA) and Macedonia (MK) regulatory domain support is available for the AP-93H.
64874	Fixed an issue that caused the AP-61 to crash and reboot with a "Reboot caused by kernel page fault at virtual address c052d250, epc == c054271c, ra == c005426dc or ath_rx_tasklet" message in the crash log. This was due to accessing memory outside of allocated space and occurred when VAPs were created and/or deleted frequently or when scanning was enabled.
64889	The AP-105 supports the Uruguay regulatory domain.
64926	An AP process failure that occurred when the AP received a specific type of malformed 802.11 frame has been fixed.
65034, 66243	Fixed an issue that caused the AP-65/AP-61 to reboot under high-traffic scenarios due to memory corruption.
65344, 62556, 65973	APs no longer prematurely reboot before a TFTP transfer of ArubaOS is completed.
65593	APs do not crash and reboot occasionally when a UAPSD (Unscheduled Automatic Power Save Delivery) enabled client is connected to the AP.
65869	Fixed an issue that caused AP-125s with 64Mb RAM to run out of memory and reboot after upgrading to 6.1.3.1. This occurred when too many clients (~120) associated to the AP.
65953	Morocco (MA) regulatory domain support is available for the AP-105.
66129	The issue of a AP-135 terminating on a local controller rebooting due to a crash has been fixed.

Table 16 *Bugs Fixed in 6.1.3.2 (Continued)*

Bug ID	Description
66178	The AP database on a local controller falls out of sync with the master controller when the command `clear gap-db` is executed for an AP terminating on the local controller while the local is coming up or has just gone down. This caused APs that were up on the local controller to appear as down on the master controller. This issue has been fixed.
66246	Fixed an interoperability issue between Cisco 7921/7925 and AP-130 Series in which client-transmit-frame retry percentages were very high. This occurred because control frames (e.g., ACKs) were still being sent on multiple chains even when CSD Override was enabled.
66386 66610, 66611	An issue has been resolved where the packet loss rate on 802.11n APs was high and unstable. This was caused by a problem in the packet retry mechanism. A workaround for this issue is to enable software retries and increase the number of retries in the AP. In addition, ensure that EAPOL rate optimization is not enabled when sw-retry is enabled on the AP.
66841	This release fixed an issue where the AP intermittently failed to detect the power management state of client devices and would send data to the device when it was in sleep mode.
67095	AP-70, AP-85 and AP-60 series devices configured to use the Turkey regulatory domain now fully support channels 100-140. This resolves an issue that could cause APs using channels 100-140 in the Turkey regulatory domain to stop responding or unexpectedly reboot.
67158, 68187	An unexpected reboot observed on an AP-125 due to a databus error has been fixed.
67277	An issue has been fixed where the AP-135 rebooted due to an “out of memory” condition caused by a memory leak due to a failure to decrypt IPsec packets.
67284	When downgrading from 6.1.3.2 to 6.1.3.1 or older or upgrading from any release older than 6.1.3.2 with Control Plane Security enabled, APs no longer become stuck and unable to upgrade. The upgrade now completes successfully.
54574	Improvements to the Hotspotter attack detection feature enabled in the controller’s IDS Impersonation profile make this feature less likely to identify valid APs as Hotspotter attack devices.
65408	This release resolves an issue where changing the *allowed band for 40MHz channels* setting from “all” to “a-only” would improperly allow some APs using that ARM profile to continue to use 40MHz channels on the 802.11g radio band.
53035	Remote APs must have different internal and external IP addresses. If the addresses are the same, an error message is currently displayed to indicate the problem.
61987	User table entries of clients that move from bridge forwarding mode to tunnel mode between SSIDs is updated appropriately.
63392	Incorrect out-of-service messages (due to wrong passwords) encountered by mobile users (specifically iPhone and Blackberry) has been fixed.
66776	An issue that caused MAC authentications to fail after an upgrade from 5.0.4.x to 6.1.3.0 has now been fixed. Best practices are to configure a default MAC server group to avoid MAC authentication failures.
65415	An issue has been resolved where BlackBerry V5 and V7 phones connecting to an internal or hosted captive portal through a guest network with a single-character SSID name now get properly forwarded to the correct captive portal landing page, and no longer triggering an error stating “The protocol specified is not supported by the handheld. Please try a different URL.”

Table 16 *Bugs Fixed in 6.1.3.2 (Continued)*

Bug ID	Description
67114	The wired authentication profile is now assigned the “default” AAA profile. In previous releases, the wired authentication profile had no default value. This change resolves an issue where a wired client connected to a remote AP Ethernet port in tunnel forwarding mode could not access the captive portal login page.
65390	The certificate installed on the Aruba mobility controller was successfully migrated after a code upgrade. In previous releases, the certificate was removed if the file name of the imported certificate exceeded 32 bytes (CERT_NAME_SIZE).
65493	If a controller has both port-channel interfaces and PVST+ enabled, it might take a few seconds for the network route to converge. Until then, the controller will not accept an ESI server entry. If a controller running ArubaOS 6.1.2.0 receives a ping response from a ESI server during this delay period, then the server will be marked as UP (alive), but the update to the datapath will not succeed. Starting with ArubaOS 6.1.3.2, this issue has been resolved so if a controller sees an ESI server is up, it will retry updating its datapath until it succeeds.
64817	Transceivers are now correctly identified when connected to M3 controllers.
48194	An issue has been resolved where datapath routes were not updated without reloading the controller when the subnet mask for the source/destination network was changed in the ipsec-map for Site-Site VPN.
63678	When a controller comes back online after a software upgrade, the APs associated with that controller will correctly retain their proper “ap-role” user roles. This resolves an issue where a VIA client or a campus or remote AP using IPsec could revert to the “guest” (initial) user role after the controller upgrade, because the controller would erroneously remove entries for the AP from the user table along with stale VPN user entries. This issue prevented the AP from upgrading its own image, as the FTP protocol required for AP upgrades is blocked for APs using the guest user role.
64451	An issue has been resolved where a slow memory leak due to continuous failure to establish IKE SA can cause a controller in a Site-Site VPN, Master-Local, Redundant-Master, Cluster-Cluster or Remote-node topology to fail to establish IPsec tunnels or change any IPsec configuration.
59375	If guest account expiry date/time is not set, then the controller honors the maximum account expiry time window setting in the internal database.
60534	Root/Admin users can now create a guest user entry with an expiration date beyond the maximum account expiry time window setting in the internal database.
54249	The 4-way dot1x handshake failure on a mesh link when EAPOL frames are sent at higher rates has been fixed. This issue occurred when a mesh link is encrypted and a mesh point sees a mesh portal with a low Signal-to-Noise Ratio (SNR). To fix this, a new setting, eapol-rate-opt, has been added to the ap mesh-radio-profile. When this setting is enabled, a more conservative rate is chosen for EAPOL frames and mesh echoes.
54518	The issue of AP-85 and other legacy mesh points randomly dropping broadcast frames in some cases, when the ‘ARM/WIPS override’ is enabled in the dot11a-radio-profile or the dot11g-radio-profile, has been fixed. Enabling the ARM/WIPS override in these radio profiles led to problems in the ARP resolution thereby causing mesh point reboots.
63368	The issue of 802.11n capable mesh points failing with the message *authentication time-out* following their association with the mesh port, has been fixed. The problem was particularly seen at lower SNR or when the max-retries parameter in the mesh-radio-profile was set to 4 rather than the newer default of 8. The root cause was identified as the failure to correctly mark EAPOL frames so as to benefit from rate optimization.
63463, 63640, 67424	An issue of the 802.11n mesh APs rebooting when they are configured in the 5GHz band has been fixed. The root cause was attributed to an invalid rate computed by the driver which triggered an assertion in the APs.

Table 16 *Bugs Fixed in 6.1.3.2 (Continued)*

Bug ID	Description
54015	Wired clients connected to an L2 switch can now successfully push traffic when an untrusted port-channel uplink is used between the L2 switch and a local controller configured to use L3 mobility. Previously the clients would obtain an IP address but fail to push traffic.
56326	An issue that could cause traffic to be temporarily disrupted on controllers using OSPF routing has been resolved through improved validation of OSPF Link-State Advertisements (LSAs) in traffic packet headers.
56326	An issue that could cause traffic to be temporarily disrupted on controllers using OSPF routing has been resolved through improved validation of OSPF Link-State Advertisements (LSAs) in traffic packet headers.
49325	An issue has been resolved where passive FTP transfer did not work when Destination NAT was enabled for the user role on the controller. ArubaOS enhancements handle passive FTP with duplex data sessions (forward and reverse data sessions that are NATed.
54001	An issue has been resolved where the datapath module crashed on the controller when duplicate DNS entries were created in the netdestination whitelist.
56792, 67615	Datapath timeout issues causing occasional crashes in the 6000 controller have been fixed. The issue occurred when a packet with the corrupted header hit the datapath.
57450	The controller lost uplink communication to all the devices that are connected externally to the controller when Per-VLAN Spanning Tree (PVST) was disabled in LACP. This issue has been fixed.
59313	A fix to a previously known issue prevents memory leaks caused by continuous port flapping from triggering multiple reboots on M3 and 3000 Series controllers.
60792	An issue has been resolved where the controller crashes due to a datapath bug after upgrading to 6.1.2.4 and 6.1.2.5. The bug is triggered by IGMP Group member configuration change for ex. deletion of a slot/port member from an IGMP group.
61101	An issue of a 651 controller unexpectedly rebooting due to a memory allocation failure during a low memory state has been fixed.
62484	A controller reboot that occurred when `write mem` was executed from the CLI or WebUI shortly after a license was added has been fixed. Please note that in some cases the controller does not reboot but does experience an internal process malfunction.
62527	Executing the `phonehome` command from the ArubaOS WebUI on a heavily-loaded system no longer causes a disruption in WebUI access.
62609	An issue has been resolved where APs rebootstrap due to excessive ARPs in the network. Optimizations have been implemented in the controller to mitigate this.
62818	An issue has been resolved where user entries were not deleted from the user table even after the clients were disconnected from the network. This caused IP spoofing issues as the DHCP server allocated IP addresses of the disconnected clients to the newly connecting clients in the network.
63386	Control messages between the controller and its APs contain a sequence number between 0 and 64k. In some cases, when the sequence number rolls back to 0, the message with sequence number 0 was erroneously being dropped which triggered a timeout message in the error log. This issue has been fixed.

Table 16 *Bugs Fixed in 6.1.3.2 (Continued)*

Bug ID	Description
63843	An issue has been resolved where APs terminating on M3 local controllers were entering into a GRE tunnel teardown/setup loop when the L2 VLAN of the controller connecting the APs was same as the user VLAN configured in the virtual AP profile. As a best practice, avoid this issue by using different VLANs for the users and the AP connecting to the controller. Also, do not generate an link up event if the link is already up.
64569, 66005	An issue has been resolved where the controller rebooted due to memory buffer depletion caused by heavy IPv6 and user traffic.
65349	Enabling mobileIP and user-level debug logs on 6000 Series, 3000 Series and some legacy Aruba controllers running ArubaOS 6.0.x, 6.1.x, 5.0.4.x, and 3.4.5.x caused the mobileIP process to crash. This has now been fixed.
65499	An issue has been resolved where a TFTP/FTP failure occurred when the remote APs tried to FTP the image from the master controller. This issue occurred because the controller did not lower its MTU value, causing an FTP failure for the remote APs. It is recommended to have networks with the MTU value less than the Ethernet size.
65749	An issue has been resolved where the standalone master controller crashed due to malformed multicast Microsoft Network Load Balancer packets. This issue was observed on networks configured with Microsoft TMG firewall network load balancing.
65853	An internal process malfunction on the 650 controller leading to an unexpected reboot has been fixed. This issue occurred when a split VAP had not been initialized when a station attempted to join.
66879	An issue where an internal controller hangs, causing the controller to become inaccessible, has been fixed.
63840	Fragmented packets from an AP terminating on a 651, M3 or 3000 Series controller with a PPPoE uplink are no longer dropped. Improved parsing of PPPoE data, discovery packets and PPPoE encapsulated IP and IPv6 traffic resolves an issue where GRE fragments from APs could get sent to different fast paths on a multi-CPU controller, causing dropped packets and degraded traffic throughput.
63052	Clients using a PPTP-based Virtual Private Network (VPN) to connect to a controller enabled with the AAA fast-age feature are no longer incorrectly assigned a logon user role. This resolves an issue that prevented PPTP clients from authenticating and receiving their correct user role.
57005	Incorrect traffic counters reported by a RADIUS *Accounting Stop* message after a user session is terminated has been fixed.
55311	An issue with aging out IPv6 entries of dual stack clients sending incorrect *RADIUS accounting stop* messages for IPv4 entries have been fixed.
62337	An issue with AP-Group and AP-Location-Id fields in RADIUS requests being empty for wired users connected to a remote AP has been fixed.
65622	A user with more than one IPv4 address is now accounted appropriately in a RADIUS server.
64269	A limitation in the number of supported radius request IDs leading to increased bad authenticator count in RADIUS statistics has been fixed.
59019	An issue with remote APs behind a firewall not reconnecting to controller after the firewall restart has been fixed.
62226	The number of IPsec retries in PPPoE remote APs are equal to number configured in the `number_ipsec_retries` field.

Table 16 *Bugs Fixed in 6.1.3.2 (Continued)*

Bug ID	Description
62733	Issue has been fixed where remote APs connected to a broadband router configured as a DHCP server took a longer time than usual to failover.
63222	Slower upgrades and remote AP reboots have been resolved in scenarios where multiple remote APs are connected to a broadband router or are behind a firewall such that the remote APs appear as coming from a single Public IP to the controller.
50850	Role derivation for bridge mode users is now properly working when machine authentication and 802.1x authentication are configured at the same time. Previously, the user was incorrectly placed in the machine auth role even after successful machine authentication and user 802.1x authentication occurred.
63348	ArubaOS now accurately derives a role and VLAN for wired clients connected to the controller through an L3 device over trunk ports.
55503	Server role derivation for wired VPN users authenticating against a RADIUS server now works as expected. A bug that caused the default VPN role to be assigned to authenticated users is now fixed.
60102	ArubaOS now displays the correct VLAN for all users after successful MAC authentication.
52016	The error message “Save failed: Module Authentication is busy. Please try later” is no longer triggered by adding 100 user roles each with six or more session ACLs.
52629	SNMP tables now include information for clients associated to a remote AP in bridge mode. The IP address matching for bridge mode users is now properly handled.
54675	For ArubaOS versions greater than 6.1.x, the system now properly allows selection of 2048-bit server certificates for use with EAP Offload.
55206	The `show user ip/mac` command output now properly displays all output data. This command was displaying truncated data in ArubaOS 5.0.
59915	The issue of the controller incorrectly counting the VPN stations and VPN users which led to an “User license count error” in the controller log when a large number of VPN clients (around 2000) connected and disconnected, has been fixed. This issue may have caused the VPN client license count to run out in the system. As part of the fix, the output of the `show license-usage user` CLI command has also been refined.
60454	Ethertype ACLs now work for clients that do not have IP addresses. The Ethertype ACL information was not properly populating when the client that was sending traffic did not have an IP address and no L3 entry.
61547	The Auth module now operates properly on the controller while trying to read an invalid ap-name string in a received message. The ap-name string length on both the sender and receiver sides are explicitly checked thus avoiding corruption of the ap-name string.
61964	ArubaOS accurately displays ACL details upon running the command `show acl ace-table acl <#>`. The bug resolution is applicable when the number of Access Control Entries (for ACLs) exceeds 200. This has been fixed as the controller now properly fetches entries.
62800	The issue that caused the controller to generate the error “authmgr[1542]: Error sending the trap to SNMP agent” has been fixed.
63115	The client now properly associates with the new SSID when it switches from one split-SSID to another split-SSID on the same remote AP.
63771	A slow memory leak that eventually causes the authentication manager process to restart has been fixed. This happened when a client used EAP-TLS with termination enabled on the controller.

Table 16 *Bugs Fixed in 6.1.3.2 (Continued)*

Bug ID	Description
63914	The AuthMgr authentication process functions properly under heavy traffic stress. Previously, the AuthMgr process crashed randomly due to a segmentation fault.
64764	The show user CLI command did not work properly. The problem occurred while running the show user command in a system with a large (100 plus) number of users with long character names (200 plus characters) has been fixed.
65047	Access Control List (ACL) entries (ACE) on the controller now work properly and Mobile IP user entries are aged out appropriately. Previously, the controller would run out of ACE buffer as mobile IP visitors (users) were not aged out that prevented configuration of new ACLs.
65294	Machine authentication credentials now work properly and are no longer stored in cache after the machine has been deleted from the local user database.
65385, 60667	Authentication improvements allow TACACS command accounting to function correctly, even in environments with up to 400milliseconds delay between the controller and the TACACS server.
65688	The controller now supports a netdestination when it is being used both as source and destination in a policy and a host is added to it. An incorrect reference count for a netdestination had caused the auth process to crash on removal of policies using that netdestination.
66260	The AuthMgr authentication process functions properly when the default VLAN (1) interface is removed from the configuration. Previously, the AuthMgr process crashed with a segmentation fault when the default VLAN (1) interface was removed from the configuration.
66306, 53218	The AuthMgr authentication process no longer crashes during certain LDAP authentication scenarios and LDAP authentication now works properly. Previously, the AuthMgr process crashed when LDAP referral timeouts happened.
67592	When Control Plane Security is enabled and an AP's DHCP lease expires after the DHCP goes down, the AP will correctly reboot after it is unable to reconnect to the DHCP server.
52186	Interface statistics now display 64-bit counter values when a user polls both *ifHCIn0ctets* and *ifHC0ut0ctets* OIDs on an M3 controller. This bug was due to 32-bit counters based implementation that resulted in incorrect values.
67190	An issue has been resolved where the SNMP process on the controller crashed multiple times. This issue occurred when MMS was used to poll the controller and when the user manually polled arubaGetTable.
60546	The snmpwalk command now performs properly. Previously, an "OID was not increasing" error displayed when users were performing an snmpwalk on *wlanAPBssidAPMacAddress* on a 651 controller.
44866	An AP's IDS general profile no longer incorrectly references other profiles that do not exist, which could cause the controller to lose contact with its APs.
59515	The AP association table no longer shows clients with long association times who are not on the network and absent from the user table, when DOS prevention is enabled in the virtual AP profile.
51453	VLAN 217 is no longer automatically added to all virtual AP profiles on ArubaOS 6.x.
57476	A brief disruption in WebUI access caused by an internal controller process malfunction has been fixed.
59668	An internal controller process malfunction that resulted in a reboot has been fixed. The malfunction was occurred when the ACL configuration was queried by the CLI.

Table 16 *Bugs Fixed in 6.1.3.2 (Continued)*

Bug ID	Description
62305	The SNMP OID *wlsxSwitchTotalNumAccessPoints* returns the correct value (as shown in the WebUI Monitoring tab and `show ap active`) for an AP with no virtual AP and secure jack.
65158	ICMP fragmentation is now handled correctly for remote APs when the switch-IP and the LMS-IP are different. This issue occurred on all APs except the AP-130 Series, when the switch-IP and LMS-IP were different and the AP's uplink had an MTU value less than 1400.
59278	A "DIGITMAP get_dialplan_profile profile not found" warning message was displayed repeatedly after upgrading ArubaOS to 5.0.3.2. This occurred because the default "Dialplan profile" was not configured with a value. Configuring the default "Dialplan profile" and adding an **X. %e** to the dialplan value resolves the issue.
62865	An issue has been resolved where an internal process stopped responding and caused the controller to reboot when the controller tried reaching a NAT-enabled SCCP client (with a private IP address) on the network.
65361	An issue has been resolved where Motorola EWP2100 phones connected to an AP-135 experienced choppy voice quality. The root cause was traced to AP-135s ignoring trigger frames from the handset for a specified period.
67090	VRRP running on an untrusted port now works correctly.
55993	A WebUI issue where the configuration for mapping the access-group to the cellular interface was not saved in the **Configuration** > **Network** > **Ports** > **Cellular** page, has been fixed.
64152	In the WebUI, the user was not able to create guest users with the guest provisioning account when the **end-date** checkbox was disabled in the **Configuration** > **Management** > **Guest Provisioning** page. It is now possible to create guest users with the guest provisioning account even when the **end-date** checkbox is disabled.
63236	The user was not able to configure the CHAP secret along with the PAP username in the WebUI. This issue has been fixed.
60757	An issue has been fixed where incorrect information was displayed when logging into the WebUI with a guest provisioning account in Internet Explorer 9.
52321	The **port-channel enable** checkbox in the **Configuration** > **Network** > **Ports** > **Port-channel** page now accurately reflects the status of the port-channel.
66210	An issue where the IPv6 address configured in the VLAN interface was not displayed in the WebUI has been fixed.
62519	You can now access the **Controller** > **AP** > **Status** page using Internet Explorer 8. The page did not render due to a JavaScript error and the issue has been fixed.
64566	The issue where the WebUI failed to locate rogue APs after upgrading to ArubaOS 6.1.3.0 has been resolved. The user was able to see a list of rogue APs in the **Dashboard** > **Security** page, but was not able to find out details about the physical location of the rogue AP using the **locate** link.
66388	The message for a successful AAA test authentication in the WebUI is now displayed in green. Previously it was displayed in red which could have been interpreted as a failure of the test. AAA servers can be tested on the **Diagnostics** > **Network** > **AAA test server** page.
66230	An usability issue in the WebUI with respect to the **Edit** and **Delete** buttons corresponding to the AP Groups in the **Configuration** > **WIRELESS** > **AP configuration** > **AP Group** has been fixed. Click on the **ap-group name** link to edit the ap-group and the **Delete** button to delete the ap-group.

Table 16 *Bugs Fixed in 6.1.3.2 (Continued)*

Bug ID	Description
67091	Extremely long user names caused the **Dashboard** > **Client** page to display a blank page due to a JavaScript error. Usernames up to 64 characters are recommended.
61660	The controller's Wireless Management System (WMS) can consistently classify APs or wireless clients as rogue or valid devices, and is no longer disrupted by issuing the command **show wms client probe** in the command-line interface or viewing clients on the **Monitoring** > **Controller** > **Clients** page in the WebUI. This resolves an issue where WMS processes could be disrupted by running the commands for a monitored AP or client in a dense network environment, where the monitored AP or client could be seen by at least 115 other Aruba APs.
65161	Changes to how MAC-level protocol data units (MPDUs) are counted has resolved a known issue that could make the output of the **show ap debug** CLI command display inaccurate data for transmitted WMM frame (Tx WMM) counters. This issue did not impact WMM traffic, just how WMM traffic statistics were displayed.

Fixed in 6.1.3.1

Table 17 *Bugs Fixed in 6.1.3.1*

Bug ID	Description
60276	Serbia regulatory domain support is available for the AP-130 Series.
61191	An issue has been resolved where RX frames which were not mapped to an RX descriptor could cause an AP to unexpectedly reboot.
62391	Improvements to RX queue access resolved an issue that could cause an AP to unexpectedly reboot.
62405	Argentina regulatory domain support is available for the AP-130 Series, the AP-175P, and MSR2K23NO.
62507	Oman regulatory domain channels were updated for the AP-124 and AP-125.
62650	Ukraine regulatory domain support is available for the AP-130 Series.
62710	Algeria regulatory domain support is available for the AP-130 Series.
63155	Support for the AP-105, AP-125, and AP-130 Series has been added for Peru, Venezuela, Tunisia, and Israel.
63273	An AP-134 crash and reboot with reboot reason “Reboot caused by kernel panic: Fatal exception” has been fixed.
63909	The frequency band and regulatory maximum EIRP settings for Saudi Arabia have been updated.
63338	Deauthentication messages are no longer sent over the air for internal ageouts if NI is not found.
63978	An issue in which clients were intermittently unable to connect to an AP-135 and once connected, experienced slow throughput, has been fixed.
64576	Enabling EAPOL optimization no longer reduces the number of retries of EAPOL frames.
60152	Clients sending user credentials to the AP before the “Interval between Identify requests” wait time defined in the 802.1x authentication profile could not complete 802.1x authentication after association.

Table 17 *Bugs Fixed in 6.1.3.1*

Bug ID	Description
64322	Users coming through a L2 GRE tunnel are now correctly placed in the role defined per the VLAN wired AAA profile.
60119	A controller interface can be configured with both a interface description and a trusted VLAN with an assigned AAA profile.
61232	A configuration option has been added in the connection profile to display a banner message to all VIA users accessing the system.
57612	Site-to-Site IKEv2 with certificate and fragmentation now works correctly when MOBIKE is enabled.
63838	An isakmpd module crash that occurred when ArubaOS received a DPD packet and message did not point to isakmp_sa has been fixed.
43835	XFP-based ports no longer incorrectly stays up after removing the XFP module or the cable connected to the XFP module.
64273	An unexpected controller reboot caused by STM module crash due to a non-noe voice client hitting noe alg has been fixed.
57831	Improvements to the datapath module increase controller stability, and prevent the controller from failing to respond due to datapath exceptions.
57950	Improved serialized access of data in the Adjacency Protocol (AMAP) module has resolved an issue that caused the fpapps process to stop responding.
60811	Changes to the handling of unknown unicast MAC addresses has resolved an issue where the datapath bridge table could get saturated and cause high levels of datapath utilization.
62095	Upon upgrading, if an additional image is required due to missing ancillary files, the controller now displays stating the ancillary files is missing and the flash may need to be cleared.
65288	ArubaOS now supports prioritization of Lync RTCP packets.
61586	CSS now works correctly with RAPs in split-tunnel mode.
54621	Improvements to RF Plan resolved an issue where heat-maps displayed in the WebUI did not always take their expected shape.
62694	Improvements to the format of RF Plan files allow files to be imported using the RF Plan WebUI without triggering XML errors.
56267, 62052	An auth memory leak for the memory allocated in user_add_af_ap() has been fixed.
61921	Memory improvements increase the stability of the auth module.
54413, 53711, 55123, 57512	Resolved an SNMP issue triggered by internal user IP address lookup.
62455	The ifIndex value returned by the IP table during an SNMP walk on a 620 controller correctly matches the MIB value returned in the ifDescr table.
61259, 61261	A new configuration setting has been added to enabled or disable Domain Pre-connect under the VIA connection profile.

Table 17 *Bugs Fixed in 6.1.3.1*

Bug ID	Description
63521	Audio and Video sessions with the same session ID no longer cause the STM module to stop responding after both sessions age out.

Fixed in 6.1.3.0

Table 18 *Bugs Fixed in 6.1.3.0*

Bug ID	Description
63112	The default AP regulatory-domain profile does not contain any 40 Mhz channels defined for 5 GHz. So, an AP that supports DFS channels (AP-120 Series) will randomly choose any channel from the DFS and non-DFS 40 Mhz pairs.
63083, 65595	Controller reboots due to datapath exception triggered by a race condition when bandwidth contracts are configured, is now resolved.
59484	Nothing is written into the HAL registers (disable or enable interrupts) if reset/chan change is in progress.
44112	This release has resolved an issue that caused RAP-2WG APs to perform unwanted reboots has been fixed.
52450	APs no longer ignore association requests if all the APs associated to a local controller rebootstrap at the same time.
61340 61342	Improvements to the **pppd** service and timer checks prevents Remote APs from performing unwanted reboots.
61720	The default regulatory domain profile for the country code JP3 contains all valid channels for that regulatory domain.
62267	Heartbeats from an AP-125 correctly appear in the output of the **show ap debug system-status** command.
59027	The bridge user-entry now correctly ages out, if the user has roamed to another remote AP on a different management VLAN.
52892	AP-68P no longer drops frames greater than 1468 bytes for a bridged VAP with a VLAN.
53835	AP-124 and AP-125 now accept FCC DFS channels.
55939	A Regulatory domain for AP-124 and AP-125 in Croatia had been approved but was not enabled in AOS. The Croatia country code was enabled in the controller and the AP's regulatory domain was integrated in AOS.
57249	Client can associate as 40Mhz capable with ZA regulatory domain. Before the fix, with ZA regulatory domain client could associate only as 20Mhz capable.
58380	AP-125 no longer crashes after repeated VAP enable or disable attempts.
58534	AP-125 no longer crashes after upgrading to new build.
58261	AP-105 crash with a raw call trace `tlb_do_page_faults` no longer occurs.
57578	AP kernel panic messages no longer occur.

Table 18 *Bugs Fixed in 6.1.3.0*

Bug ID	Description
51460	AP-125 no longer crashes due to a kernel page fault at the virtual address.
54256, 54609, 57659	An AP crash due to a kernel page fault caused by a stack corruption has been fixed.
53897, 52825, 55118, 53365, 59274, 61930	An AP-125 crash caused by a node leak has been fixed.
59367, 59371	An unwanted AP reboot caused by a kernel panic at ath_process_uapsd_trigger message no longer occurs.
59643	An unwanted AP reboot caused by a kernel panic at bogus non HT station count 0 - ieee80211_node_leave no longer occurs.
56707	The show AP database command no longer displays the Local controllers down on the Master, when all the APs on the Local controllers are up.
53438	AP-61 no longer incorrectly reboots with "Kernel Panic Error."
57802	The ESI-installed blacklist entries are no longer unexpectedly installed as "Permanent" instead of being governed by the Virtual AP's “Blacklist Timeout”.
59239	Better mechanisms to debug low free memory on APs are now available.
59706, 61804	An unwanted AP reboot caused by a kernel panic at aruba_deferred_set_channel message no longer occurs.
53389, 61564	The packet capture no longer triggers an ARM channel change with reason "INV".
56272	Incorrectly encoded redirect URLs from a captive network no longer cause a problem.
45571, 58833	Captive portal is now working on the local controllers when the guest VLAN has “ip nat inside” enabled.
58729	The command `ipv6 cp-redirect-address disable` now works correctly.
48961	When the port status is changed to "down," the speed/duplex configuration is no longer incorrectly removed.
52248	The manual blacklist command now accepts the MAC address without a colon.
48836, 51456	The `backup flash` command no longer falsely displays an error on legacy platforms.
51159	M3 no longer sticks in bootloop due to configuration corruption.
43431, 50855	Client blacklisting now works correctly when `max-authentication-failures` is set to 2 or a larger value.
48793	The disconnect ACK now uses the correct source IP address and Amigopod does not drop it.

Table 18 *Bugs Fixed in 6.1.3.0*

Bug ID	Description
57802	The ESI-installed blacklist entries are no longer unexpectedly installed as “Permanent” instead of being governed by the Virtual AP's “Blacklist Timeout”.
53189	Improvements to the syslog process allow you to change user roles through the Extended Services Interface (ESI).
49504	The `show inventory` command now correctly displays the serial number and other data on M3 slot #1.
49956	The syslog is now sent out following a fan failure.
62298	On a 3000 Series controller, using SFP-SX transceivers, the link state will indicate going up continuously in the syslog. The actual link state itself does not flap. However due to the link up transitions internally, STP, OSPF, LACP will not converge. If you are not running any of these protocols on that port, there should be no effect.
56371	A Redundant-Master controller will no longer reboot with “Reboot Cause: Nanny rebooted machine - isakmpd process died."
53218	Auth module no longer crashes during an LDAP authentication timeout.
53391	The local user DB now adds the Remote IP correctly even when the first octet of the IP address is greater than 127.
55202, 55003	After failing MAC authentication and falling into the Initial-Role of the AAA profile, if the user attempts to reconnect, MAC authentication will correctly happen again.
53984, 63277, 53904	AMs no longer report rogues with SSID 'tarpit' in environments where no wireless neighbors should be seen. No SSID 'tarpit' was configured. And this was reported from multiple devices.
62296, 62297, 62502, 62477, 62468	An Aruba 651 controller is no longer susceptible to continuous rebooting if its internal AP (radio) is configured in Air Monitor mode (am-mode).
58601	The controller no longer gets SQL syntax error messages after upgrading.
55740	Mesh points no longer crash in node_cleanup() after downgrading the controller.
56398	The loopback address can now be advertised through OSPF when the loopback address is in a different subnet than any configured VLANs.
52093	Issuing the CLI command l**ocal-userdb-guest del username <name>** and **local-user del username <name>** no longer causes a controller to run low on memory and unexpectedly reboot.
52492, 53600, 56561, 54231, 57302, 55620, 61152, 61155, 56928	An unexpected controller reboot due to a hard watchdog accompanied by “reason for reboot: unknown” has been fixed. Additionally, a change has been made to ArubaOS to prevent the use of “reason for reboot: unknown” for unexpected reboots. Unknown reboots we caused by flash write failures. Now, the flash write is retried by performing an erase followed by another write.
53332	Improvements to the **Datapath** module prevent the controller from performing unwanted reboots.

Table 18 *Bugs Fixed in 6.1.3.0*

Bug ID	Description
60373	Improvements to SOS crash dump collection allow datapath crashes to recover more quickly.
60431, 63006	Issuing the CLI command show trunk no longer causes the **fpapps** module to stop responding when the controller includes a large number of non-contiguous VLANs.
46116	The TCP maximum segment size for TKIP tunnels has been reduced to better accommodate the WEPCRC length.
58502	Packets are now sent from the trunk port on the controller to a client on the trunk port behind a remote AP with a proper VLAN tag.
52845	Proxy-arp now provides support for split-tunnels.
54191, 55794	FTP data transfer and reuse of a stray session no longer triggers a race condition and datapath timeout exception.
54943	Users are now able to get IP address on VMWare Fusion.
52092	Client with .255 IP address can now ping across L2 GRE.
52732	M3 datapath no longer crashes.
60670	The 620 controller no longer reboots due to a datapath exception when connected to a Bell ADSL modem.
59078	Controller tagged VLAN traffic received through trunk port is no longer sent out the egress port without a PPPoE header.
53821, 54053, 55125, 55130, 55616, 56657, 59457, 62102, 62006, 62206	The mysql process now begins before any other processes to help prevent an unexpected controller reboot that occurred following a number of module crashes.
50914	The cfgm local is now able to successfully create a socket for connecting to the cfgm master and receive its configuration.
54194, 54238	Improvements to the PAPI timeout handler prevent memory errors that could trigger unwanted controller reboots. The PAPI timeout handler now validates the buffer before taking any action.
58097	A local 620 controller connected through a DSL modem using PPPoE is now able to reach the master controller.
53709	A RADIUS packet no longer limits a client's username to 32 bytes when EAP termination is enabled on the controller.
59723, 59743	User traffic will be passed normally if the client connects to a VAP in split-tunnel forwarding mode, the client has a initial user role of **denyall** (any any any deny), even if the wireless adapter on the client is disabled then reenabled.
60167	If PPPoE remote APs using certificates and IKEv2 have a static inner IP addresses but then later change their outer IP address or port during rebootstrap, the inner IP route is retained when the remote APs establish a new IKE SA to the controller.

Table 18 *Bugs Fixed in 6.1.3.0*

Bug ID	Description
61000	Improvements to the handling of HELLO packets allow remote APs to be able to properly associate to their controller upon upgrading to ArubaOS 6.1.3.
60458	Remote AP mesh portal and wired bridging are no longer failing. Customer required LAN extension by using enet port of mesh point to locally bridge via Remote Mesh Portal. This bridge failed as the incoming user on the mesh point did not pickup a valid user ACL. All traffic (except ARP) was blocked by the firewall on the Remote Mesh Portal.
53408	When the VLAN ID is not set in the virtual-ap profile, the VAP survives when connectivity to the controller is lost and the AP is rebooted.
59744	The RAP-2WG now correctly switches to the second controller IP returned by the DNS server when the first one is not reachable.
44973	The Group Key is now present on a bridge/split virtual AP and now correctly matches with the controller auth.
45719	The remote AP now comes up when connected to a DSL modem (Dlink) with a DHCP scope in the range of 192.168.11.x, and 192.168.11.1 as its own IP.
47990	Backup SSID users correctly show up on the L3 user table and do not incorrectly age out.
59036	Clients can now send traffic if the controller is not reachable from a remote AP, clients are connected to backup/always/persistent bride mode virtual AP's, and no PEF-NG license is installed.
55438	The dhcp-option user derivation rules that involve multiple dhcp-options now work correctly.
57474	This release includes ability to filter the IPsec mirroring to a single peer with the CLI command **firewall session-mirror-ipsec peer <peer_ip>**.
61551	Improvements to the **Auth** module prevent the controller from performing unwanted reboots.
52494	An unexpected controller reboot due by an auth module crash caused by a memory leak has been fixed.
55519	Auth module now operates correctly on the controller and Authmgr no longer registers 100% busy.
51888	Successful authentication no longer incorrectly displays the error log.
52592	The "show global-user-table" command no longer takes 2 minutes to respond in a master/backup scenario.
52181	Rule can now be removed from an ACL
59661	An unexpected controller reboot due by an auth module crash caused by a memory leak has been fixed.
58786	The "authmgr get segfault" message no longer occurs while processing a new user and trying to perform "devid cache lookup mac."
51393	MIPT phones no longer reboot with "any any udp 68 deny rule" in validuser ACL.
53988	L2 roams now generate the `wlsxUserEntryAttributesChanged` message.
54334	Upgrading no longer corrupts the wlanAPBssidAPMacAddress OID.

Table 18 *Bugs Fixed in 6.1.3.0*

Bug ID	Description
60667	Authentication improvements allow TACACS command accounting to function correctly, even in environments with up to 400milliseconds delay between the controller and the TACACS server.
58895	Applying a “noe-acl” no longer causes RTP packets to be dropped for IP Touch 310/610 phones.
57869	High CPU in STM no longer causes APs to drop from controller due to certain netservice configuration.
58554	The CAC call status for an Alcatel OmniTouch 8128 phone properly resets back to zero after session termination.
44110	Cisco Phones plugged in the wire behind the remote AP are no longer unnecessarily re-registering with Call Manager.
54467	When an AP is provisioned with a white space in between the AP name (example: "AP NAME"), the AP provisioning page no longer comes up blank.
55205	The Netdestination entries can now be deleted.
52453	WPA-PSK Pre-Shared Keys are now accepted by the controller GUI.
54387	There is no issue with VLAN pool in the GUI.
54516	Alcatel-Lucent SR-1-123255069: IE no longer has a Red Cross mark in the Guest Provisioning (Page Design field).
58485	WebUI now correctly displays the EVENTS and REPORTS tab.
55949	WebUI Mesh now correctly shows "Rate RX/TX" in the "Last Update" field.
50500	Client activity is now displayed properly on WebUI for wired clients on Remote AP.
60529	Trying to emulate WISPr client using wget no longer gets wrong redirection if custom SSL cert is used.
58882	A RADIUS accounting start message will not be sent to the RADIUS server if a user is deleted via an XML API **user_delete** command issued from an external XML API server.
49321	The Radius attributes in "Aruba-Location-Id" are filled correctly when forward mode is split-tunnel.

Chapter 5

Known Issues Identified in Previous 6.1.3.x Releases

This chapter describes the known issues and limitations identified in the previous 6.1.3.x versions of ArubaOS

Supported Browsers

Beginning with ArubaOS 6.0, the following browsers are officially supported for use with the ArubaOS WebUI:

- Microsoft Internet Explorer 8.x on Windows XP, Windows Vista, Windows 7, and MacOS
- Mozilla Firefox 3.x on Windows XP, Windows Vista, Windows 7, and MacOS
- Apple Safari 5.x on MacOS

Maximum DHCP Lease Per Platform

Exceeding the following limits may result in excessive CPU utilization, and unpredictable negative impact on controller operations.

Table 1 *Maximum DHCP Lease Per Platform*

Platform	Description
M3	512
3200	512
3400	512
3600	512
600 Series	512

Aruba 651 Internal AP

It has been observed that an Aruba 651 controller reboots unexpectedly when the internal AP is enabled (bug 60722 and duplicates). to disable the internal AP, complete one of the following procedures:

In the CLI

1. Create a dot11g radio profile and disable the radio

```
(Aruba651) #configure terminal
(Aruba651) (config) # rf dot11g-radio-profile disable-radio
(Aruba651) (802.11g radio profile "disable-radio") #no radio-enable
(Aruba651) (802.11g radio profile "disable-radio") #exit
```

2. Apply the radio profile to a specific AP.

```
(Aruba651) (config) #ap-name <ap-name>
(Aruba651) (AP name "<ap-name>") #dot11g-radio-profile disable-radio
```

```
(Aruba651) (AP name "<ap-name>") #end
```

3. Save the configuration

```
(Aruba651) #write memory
```

In the WebUI

Creating a Profile

1. Navigate to **Configuration > Wireless > AP Configuration**. Select the AP Specific tab.
2. Click the Edit button by the AP for which you want to create a new RF management profile.
3. In the Profiles list, expand the RF Management menu, then select 802.11g radio profile.
4. Click the 802.11g radio profile drop-down list in the Profile Details window pane and select NEW.
5. Enter a name for your new 802.11g radio profile “disable-radio”
6. Uncheck the “Radio Enable” checkbox to disable the radio then click Apply to save your settings.

Known Issues

Access Point

Table 2 *Access Point Known Issues and Limitations*

Bug ID	Description
59177	The Aruba 651 controller may become unstable and crash frequently with cfgm, arc cli, and nanny. This may be due to the controller running out of memory. Making the internal AP inactive will prevent the crash.
56678	The Goodput (bps) values displayed on the **Dashboard>Access Points** and **Dashboard>Clients** pages in the controller WebUI appears lower than the expected value. As a workaround, view the usage data on the **Dashboard>Usage** page.
64248	When using Iperf to measure throughput, in one case, Last_ACK_SNR was seen to drop from 45 dB (idle) to 20 dB. When the client is idle or not running Iperf, the two SNR values are very close. There is no applicable workaround, as this is an observation while testing throughput using Iperf.
62672, 63154, 61669	Rarely, it has been observed that a 651 controller reboots after some days if its internal AP (radio) is configured in Air Monitor mode (am-mode). This could be triggered if memory becomes full by air monitoring statistics or excessive monitoring events for a number of days. As a workaround, reconfigure the internal AP (radio) in Access Point mode (ap-mode). Alternatively, you may disable the radio if not needed.
61938	In a rare situation a remote AP may fail to renew ip-address through DHCP after rebootstrap event. A remote AP will reboot when it is stuck in this state, as it will hit retry-ipsec count. After rebooting the remote AP will recover from this state.

57624	AP-105s might not come up when connected to a Cisco PoE switch (WS-C6509-E:WS-X6148A-GE-45AF). The APs are not powering up despite the maximum amount of power being allocated to the port the AP is connected to. The following error messages were returned when a `shutdown` or `no shutdown` was executed on the port the AP was connected to:
	`%CDP-4-DUPLEX_MISMATCH: duplex mismatch discovered on GigabitEthernet9/48 (not half duplex), with SEP001BD5E87C32 Port 1 (half duplex).`
	`%C6K_POWER-SP-1-PD_HW_FAULTY: The device connected to port 3/2 has a hardware problem. Power is turned off on the port.`
	`%C6K_POWER-SP-1-PD_HW_FAULTY: The device connected to port 3/2 has a hardware problem. Power is turned off on the port.`

Table 2 *Access Point Known Issues and Limitations (Continued)*

Bug ID	Description
60722, 61100, 57925, 60846, 64517, 66118, 66128, 66185, 66659, 64526, 61539, 61196, 67435, 67670 67671, 67673, 67871, 67872, 67977, 63460, 65049, 62111, 66409, 66136	Aruba 651 controller might crash and result in unexpected reboot when the internal AP is enabled. As a workaround, disable the radio on the internal AP of the Aruba 651 controller. To disable the radio for a specific AP, please follow the instruction provided in "Aruba 651 Internal AP" on page 45.
69019	PPPoE RAPs may rebootstrap due to missed heartbeats in a network with high traffic on the wired AP interface. This issue is seen in ArubaOS6.1.3.0.
69367	APs flooded with packets in a network with large number of datapath sessions sometimes drop the ping command. This issue is seen in AP-105 running ArubaOS 6.1.3.2.
71291	With the addition of DFS channel support on the AP-124 and AP-125 in ArubaOS 6.1.3.2, DFS channels are now automatically assigned by ARM to `ap regulatory-domain-profile "default."` However, these channels do not appear in the default profile's channel plan. This can lead to connectivity issues for voice and data clients.

ARM

Table 3 *ARM Known Issues and Limitations*

Bug ID	Description
62878	If band steering is enabled, errors in the voice-aware band steering feature can cause active 802.11a/g capable voice clients to be disassociated from an AP if those clients roam to a new 802.11g radio.
56760	Per-SSID bandwidth contracts do not work well with decrypt-tunnel mode with UDP traffic. For example: • the actual bandwidth allocation is around 25% off compared to the configured bandwidth allocation. With tunnel mode, the error rate is only 5-10%. • the maximum UDP throughput for a single client is only 155 Mbps, which is about 30Mbps off when compared to 183 Mbps in tunnel mode.

Authentication

Table 4 *Authentication Known Issues and Limitations*

Bug ID	Description
56130	When roaming between wireless and wired users, a user may fall into a logon role instead of a mac-auth role.
56236	A replay counter mismatch might be observed during the 4-way handshake in WPA2-AES mode with Cisco 7921 and 7925 handsets. This usually happens after the clients come back up from power save mode. This mismatch will not be seen on the next attempt.
61935	A DHCP fingerprinting user-derived rule with a **set-vlan** action does not work with 802.1x authentication. This type of rule does work on an open system network.
69840	Newly issued client certificates may be rejected by the controller with eap-offload enabled. A few hours after the certificate has been generated, authentication begins working properly. This issue occurs when the controller's datapath (an internal process) clock slows, causing newly issued certificates to appear to be invalid. Additionally, the longer the uptime of the controller, the larger the time period required for the certificate to be accepted. This issue was reported in ArubaOS 6.1.3.2. To avoid this issue, you can reboot the controller or issue certificates whose start date is far in the past.
70343	Custom captive portal (CP) pages are not synchronized between the master and standby controllers. This occurs when captive portal pages are configured in a master/standby setup. If the standby controller becomes a master, the custom portal page no longer shows up during CP authentication.

DHCP

Table 5 *DHCP Known Issue and Limitation*

Bug ID	Description
69145	Starting with ArubaOS 6.1.3.2, if your controller supports clients behind a wireless bridge or virtual clients on VMware devices, you must disable the **broadcast-filter arp** setting to allow those clients to obtain an IP address.

IPsec

Table 6 *IPsec Known Issue and Limitation*

Bug ID	Description
69430	After upgrading to ArubaOS 6.1.3.2, a Campus AP (CAP) reboots with the message `switching to clear. Error:RC_ERROR_IKEP1. Ipsec not successful after reboot`. The reboot occurs when the CAP is unable to establish an IPSec connection with the controller. There is no applicable workaround for this issue.

IPv6

Table 7 *IPv6 Known Issue and Limitation*

Bug ID	Description
57059	When maximum number of IPv6 L3 interfaces exceeds the supported platform limit, it affects the routing on the controller. Be sure not to exceed the maximum number of IPv6 L3 interfaces.

Management

Table 8 *Management Known Issues and Limitations*

Bug ID	Description
61423	Some old user entry in the user table may not age out even after the client disconnects from the network. As a workaround use the command `aaa user delete` to clear such old stale entry.
63800	Valid APs might be incorrectly and randomly classified as unknown on local controller in a multi-controller environment. As a workaround, manually reclassify those AP as valid.
62852, 64110	In few cases, we noticed a controller may restart unexpectedly due to wms module restart. It does not have any operational impact on clients. As a workaround, delete WMS entries from the controller database and restore wms-backup.db. Your local Aruba Support or Sales contact can help in restoring this.

Mesh

Table 9 *Mesh Known Issue and Limitation*

Bug ID	Description
56642	An AP-135 configured as a mesh point fails to upgrade if the mesh link to the 2 spatial stream Series (10x,9x,12x, 175 series) mesh portal is using HT mode. As a workaround, do not enable HT on an 2 spatial stream mesh portal or change the default supported-MCS from 0-23 to 0-15."

Mobility

Table 10 *Mobility Known Issues and Limitations*

Bug ID	Description
62988	Wireless clients might incorrectly be assigned to the wrong VLAN when VLAN mobility is enabled. As a workaround, set firewall bandwidth contract to Default.
63163	Mobility-enabled datapath bridge entries are getting deleted for untrusted users. Mobility is deleting and adding the datapath bridge entry for the clients even when there is active traffic going on. It happens only when Mobility is turned on.
63164	The mobile IP module might crash when there are several hundred mobile clients in addition to another 1000+ users, and all are L2 roaming.

OCSP/CRL

Table 11 *OCSP/CRL Known Issue and Limitation*

Bug ID	Description
55419	The certmgr module becomes busy when a large number of OCSP requests hit the certmgr while the OCSP server is unreachable. This issue will appear whenever there is misconfiguration or outage between the controller and the OCSP responder.

Platform/Datapath

Table 12 *Platform/Datapath Known Issues and Limitations*

Bug ID	Description
56242	The VPN Site-to-Site IPsec tunnel is unstable when a high rate of traffic is generated. This is caused by a miscalculation of the IPsec tunnel's idle timeout that triggers the Dead Peer Detection (DPD) exchange. As a workaround, disable the DPD on both controllers to prevent the tunnel from failing.
58011, 64524, 64517	An Aruba 651 controller with the internal AP enabled is susceptible to unexpected rebooting due to an internal memory leak. As a workaround, disable the internal AP.
58487	In some cases, with control plane security enabled, APs might take a long time (more than 30 minutes) to come up. This is due to control plane security SA setup timing out because the AP is not receiving the fourth IKE packet from the controller.
63140	A controller may experience a datapath timeout if 2,000 users are created from an untrusted port with upstream and downstream per-user bandwidth contracts.
62838	If an AP comes up on an untrusted port where the first port rule is allow all, that AP's sessions may be denied.
62238	In a network where the user VLANs extend from the controller to an uplink Cisco switch, there are certain applications that try to reach the users connected behind a RAP. The Cisco environment has the ARP Ageout and the Cam table ageout set to 4 hours. This causes any traffic sent to the controller for any user who has aged out to get flooded to all users in that VLAN.
63359, 62551	The kernel module crashed on the standby controller while running ArubaOS 6.1.2.5. The Reboot Cause shows `User pushed reset` when we are not able to write the cause of the reboot. The cause could be software watchdogs, SOS crashes, bus/cache errors, and busy CPUs.
68829	After upgrading to ArubaOS 6.1.3.2, users experience slower-than-expected throughput if the `per-user` option is configured in bandwidth contracts.
69277	The Point-to-Point Tunneling Protocol (PPTP) VPN connection is lost when the user tries to connect to the PPTP server using Windows 7 client as the VPN client and switches to split-tunnel forwarding mode. This issue is seen in ArubaOS 6.1.3.2.
69619	It has been reported that wireless clients experience latency due to slower-than-expected throughput on the controller. This issue is seen in a deployment where the wireless clients are connected to RAPs (AP-93) terminating on an Aruba 3000 Series controller running ArubaOS 6.1.3.2.

Port Channel

Table 13 *Port Channel Known Issue and Limitation*

Bug ID	Description
62936	If the native VLAN of a trunk LACP port channel is set as untrusted, LACP member ports may stop responding upon upgrading the controller to ArubaOS 6.1.3 or later.

PPTP

Table 14 *PPTP Known Issue and Limitation*

Bug ID	Description
55177	A Mac PPTP client connecting to an M3 as a PPTP server might be disconnected if it is idle for 10 minutes.

Remote Access Point

Table 15 *Remote Access Point Known Issues and Limitations*

Bug ID	Description
61428	In some cases, if an authentication process restart on controllers that have ACLs configured with large number of ACEs could cause APs to reboot. As a workaround, reboot the controller.
63073	Saving a backup of a virtual AP on a remote AP to flash memory may fail if the virtual AP has large ACLs with 500 ACE entries. As a workaround, reduce the number of ACE entries on the ACLs before saving the backup.
51546	While using Sierra modem 312 for a 3G uplink on a remote AP; 3G to wired failover may leave the USB in hung state. Rebooting the remote AP will make it recover from this state.

Role/VLAN Derivation

Table 16 *Role/VLAN Derivation Known Issue and Limitation*

Bug ID	Description
51691, 56746	When using DHCP user derivation rules and captive portal authentication, the client is assigned to the wrong role after a DHCP-Renew. All controllers running version ArubaOS 6.1.0.0 are affected. DHCP user derivation rules and captive portal cannot be used together.

Security

Table 17 *Security Known Issues and Limitations*

Bug ID	Description
47868	The name option under the `netdestination6 ipv6 alias option` does not exist.
55898	The command `show user` does not display the correct information for captive portal users when those users are connected through an L3 gateway.

Table 17 *Security Known Issues and Limitations (Continued)*

Bug ID	Description
55913	After issuing the `aaa user delete all` command, users might be incorrectly placed in the logon role.
56503	The username shown in the user table is the client's dot1x username instead of the captive portal username when the client disconnects and then reassociates.
57500	Custom captive portal login pages do not work when guest logon is enabled. The guest logon field is not displayed on the custom login page. This issue does not occur with the default Aruba login page. As a workaround, use the default captive portal page or use user logon.

61690	In an ACL with the following lines:
	`ip access-list session good`
	`any any any deny blacklist log`
	The ACL has enabled the blacklist option, and the valid client is falling into the MAC auth default role. The non-valid client is being denied but not blacklisted.

62099	When connecting a client to an untrusted wired port, user entries appear in the `show user-table` output and are not aged out. To avoid stale user entries from consuming user licenses on the controller, use the `aaa user delete` command to delete unwanted user names.
62437	The AAA state for the an AP does not get cleared after the AP completes 802.1x authentication. The IP address from the AP's first assigned VLAN stays associated to the AP's MAC address, even after the AP moves to a different VLAN. As a workaround, manually change the AAA state of the AP and reboot the controller.
66413	Occasionally, the Control Plane Security whitelist database entries are not synced between the master controller and the local controller. The lossy network between the master and local causes some whitelist sync fragments to be lost.
69859	When machine-auth and 802.1x, with a captive portal profile, are configured together, a client might be forced to reauthenticate against the captive portal when roaming to a new AP. This occurs when the client is momentarily given the machine-auth role, which has no captive portal profile, so the client reauthenticate. To prevent this, remove the machine-auth configuration or configure the machine-auth user role to have the same captive portal profile as the 802.1x user role.
72987	The error message "Failed to add wireless station" can appear in the error log. The most likely cause is a low memory situation on the controller.

Startup Wizard

Table 18 *Startup Wizard Known Issue and Limitation*

Bug ID	Description
66893	The campus WLAN wizard throws error when deleting a WLAN using **Exit Now** link in Step 1 after modifying the WLAN multiple times with regards to authentication type and internal/guest mode. As a workaround, delete the WLAN using WebUI or CLI.

Station Management

Table 19 *Station Management Known Issues and Limitations*

Bug ID	Description
69827	VLAN mobility does not work with VLAN-based SDR on a 802.1x SSID. VLAN Mobility is designed for use with an assigned VLAN. However, a derived VLAN will override an assigned VLAN. If different derivation rules are configured on different controllers, different VLANs will be given to a client when it roams and VLAN mobility will have no effect. To maintain the same VLAN while roaming, use an assigned VLAN with VLAN mobility enabled or use a derived VLAN but configure the rules on each controller such that a client will always get the same VLAN.
72717	An internal controller process failure (STM module) can occur after upgrading from ArubaOS 6.1.x.x to ArubaOS 6.1.3.x.This condition is rare and may be the result of an incomplete or incorrect upgrade procedure. Please contact Aruba support to seek help to restore normal operation.

Syslog

Table 20 *Syslog Known Issue and Limitation*

Bug ID	Description
62916	Access Points may send debug log messages to the Syslog server, even if debug log messages are disabled.

Voice

Table 21 *Voice Known Issues and Limitations*

Bug ID	Description
65546	Classified media sessions from Lync clients might not be fast aged after call termination.
56506	SIP ALG might generate an additional CDR with invalid data when DELTS is received while terminating the call. Additionally, an invalid entry is added to the voice call quality table.This is a CLI issue and does not impact functionality.
55058	CLI output might not show the Lync clients getting tagged with the high priority ToS value. This is a CLI display issue and does not affect the functionality. It has been seen with Lync clients taking part in conference calls. This issue does not occur with peer-to-peer calls.

WebUI

Table 22 *WebUI Known Issues and Limitations*

Bug ID	Description
55040	On the WebUI, the U600 modem in the 4G option is missing from the **Wireless > AP Installation > Provisioning Profile,** preventing you from creating a provisioning profile for the U600 in 4G. Perform one of the following as a workaround: • Create a provisioning profile with 4G parameters (i.e., usb_type = "beeceem-wimax") from the command line and apply that profile to the ap-group. • Choose the correct device type in the USB settings of the AP Installation page through the WebUI

Issues Under Investigation

The following issues have been reported in ArubaOS but not confirmed. The issues have not been able to be reproduced and the root cause has not been isolated. They are included here because they have been reported to Aruba and are being investigated. In the tables below, similar issues have been grouped together.

Access Points

Table 23 *Access Points Observed Issues*

Bug ID	Description
66820	An AP-65 model access point reboots continuously. This may be related to the fact that the device was simultaneously upgraded and moved from a 5.0.x release an older Aruba 200 controller to a 6.1.x release on newer 3000 Series controller.
69347	AP-65 sometimes crashes and reboots in an ArubaOS 6.1.3.2 network.

Air Management - IDS

Table 24 *Air Management - IDS Observed Issues*

Bug ID	Description
65946	The tables in the **Monitoring>Network>All Access Points** page of the WebUI and in the output of the `show wms ap list` command in the CLI show an incorrect number of users.

OSPF

Table 25 *OSPF Observed Issues*

Bug ID	Description
62839	The OSPF process on the controller may not function correctly when OSPF routing, OSPF neighbors, and a DHCP helper IP address are configured, causing the controller to reboot.

Platform/Datapath

Table 26 *Platform/Datapath Observed Issues*

Bug ID	Description
66612	iPad and iPhone VPN clients disconnect after five to ten minutes if their IP address is NATed on the controller.
66725, 66275, 66338, 66361, 65690, 65632, 65984	An internal controller process malfunction, leading to a controller reboot, has been observed.
66359	High datapath utilization was observed on a controller, which resulted in user connectivity issues and packet loss.

Table 26 *Platform/Datapath Observed Issues (Continued)*

Bug ID	Description
66798	After upgrading to ArubaOS 6.1.3.0, it has been reported that slower-than-expected throughput has been experienced when bandwidth contracts are enabled.
69903	An internal controller process malfunction, leading to a controller reboot, has been observed.

WebUI

Table 27 *WebUI Observed Issues*

Bug ID	Description
66516	When APs are distributed in multiple pages in the WebUI in the **Configuration** > **WIRELESS** > **AP Installation** > **Provisioning** tab, the UI sorts only the APs in the current page and not the entire list.
66521	In the WebUI, while creating an user you see two **Apply** buttons in the **Configuration** > **Security** > **Authentication** > **Internal DB** page. The **Apply** button at the bottom of the page does not add the user but does apply any user list changes that already exist. Click the **Apply** button at the top to add a new user. After the screen refreshes, click the **Apply** button at the bottom to apply any user list changes.

WMS

Table 28 *WMS Observed Issues*

Bug ID	Description
65702	The controller's Wireless Management System (WMS) utilizes a large amount of CPU resources, preventing users from changing or saving their controller’s configuration.

Chapter 6

Upgrade Procedures

This chapter details software upgrade procedures. Aruba best practices recommend that you schedule a maintenance window when upgrading your controllers.

Read all the information in this chapter before upgrading your controller.

Topics in this chapter include:

Important Points to Remember and Best Practices

Ensure a successful upgrade and optimize your upgrade procedure by taking the recommended actions listed below. You should save this list for future use.

- Schedule the upgrade during a maintenance window and notify your community of the planned upgrade. This prevents users from being surprised by a brief wireless network outage during the upgrade.
- Avoid making any other changes to your network during the upgrade, such as configuration changes, hardware upgrades, or changes to the rest of the network. This simplifies troubleshooting.
- Know your network. Please verify the state of your network by answering the following questions.
  - How many APs are assigned to each controller? Verify this information by navigating to the **Monitoring > Network All Access Points** section of the WebUI, or by issuing the **show ap active** and **show ap database** CLI commands.
  - How are those APs discovering the controller (DNS, DHCP Option, Broadcast)?
  - What version of ArubaOS is currently on the controller?
  - Are all controllers in a master-local cluster running the same version of code?
  - Which services are used on the controllers (employee wireless, guest access, remote AP, wireless voice)?
- Resolve any existing issues (consistent or intermittent) before you upgrade.
- If possible, use FTP to load software images to the controller. FTP is faster then TFTP and offers more resilience over slow links. If you must use TFTP, ensure the TFTP server can send over 30 MB of data.
- Always upgrade the non-boot partition first. If problems occur during the upgrade, you can restore the flash, and switch back to the boot partition. Upgrading the non-boot partition gives you a smoother downgrade path should it be required.
- Before you upgrade to ArubaOS 6.1.3.5, assess your software license requirements and load any new or expanded licenses you require. For a detailed description of these new license modules, refer to the "Software Licenses" chapter in the user guide.

Memory Requirements

All Aruba controllers store critical configuration data on an onboard compact flash memory module. Ensure that there is always free flash space on the controller. Loading multiple large files such as JPEG images for RF Plan can consume flash space quickly. To maintain the reliability of your WLAN network, Aruba recommends the following compact memory best practices:

- Issue the **show memory** command to confirm that there is at least 40 MB of free memory available for an upgrade using the CLI, or at least 60 MB of free memory available for an upgrade using the WebUI. Do not proceed unless this much free memory is available. To recover memory, reboot the controller. After the controller comes up, upgrade immediately.
- Issue the **show storage** command to confirm that there is at least 60 MB of flash available for an upgrade using the CLI, or at least 75 MB of flash available for an upgrade using the WebUI.

In certain situations, a reboot or a shutdown could cause the controller to lose the information stored in its compact flash card. To avoid such issues, it is recommended that you issue the **halt** command before rebooting.

If the output of the **show storage** command indicates that insufficient flash space is available, you must free up additional memory. Any controller logs. crash data or and flash backups should be copied to a location off the controller, then deleted from the controller to free up flash space. You can delete the following files from the controller to free memory before upgrading:

- **Crash Data:** Issue the **tar crash** command to compress crash files to a file named **crash.tar**. Use the procedures described in "Backing up Critical Data" on page 58 to copy the **crash.tar** file to an external server, then issue the command **tar clean crash** to delete the file from the controller.
- **Flash Backups:** Use the procedures described in "Backing up Critical Data" on page 58 to backup the flash directory to a file named **flash.tar.gz**, then issue the command **tar clean flash** to delete the file from the controller.
- **Log files:** Issue the **tar logs** command to compress log files to a file named **logs.tar**. Use the procedures described in "Backing up Critical Data" on page 58 to copy the **logs.tar** file to an external server, then issue the command **tar clean logs** to delete the file from the controller.

Backing up Critical Data

It is important to frequently back up all critical configuration data and files on the compact flash file system to an external server or mass storage device. At the very least, you should include the following files in these frequent backups:

- Configuration data
- WMS database
- Local user database
- Licensing database
- Floor plan JPEGs
- Custom captive portal pages
- x.509 certificates
- Controller Logs

Backup and Restore Compact Flash in the WebUI

The WebUI provides the easiest way to back up and restore the entire compact flash file system. The following steps describe how to back up and restore the compact flash file system using the WebUI on the controller:

1. Click on the **Configuration** tab.
2. Click the **Save Configuration** button at the top of the page.
3. Navigate to the **Maintenance > File > Backup Flash** page.
4. Click **Create Backup** to back up the contents of the compact flash file system to the flashbackup.tar.gz file.
5. Click **Copy Backup** to copy the file to an external server.

   You can later copy the backup file from the external server to the compact flash file system using the file utility in the **Maintenance > File > Copy Files** page.
6. To restore the backup file to the Compact Flash file system, navigate to the **Maintenance > File > Restore Flash** page. Click **Restore**.

Backup and Restore Compact Flash in the CLI

The following steps describe the back up and restore procedure for the entire compact flash file system using the controller's command line:

1. Enter **enable** mode in the CLI on the controller, and enter the following command:

   ```
   (host) # write memory
   ```
2. Use the **backup** command to back up the contents of the Compact Flash file system to the flashbackup.tar.gz file.

   ```
   (host) # backup flash
   Please wait while we tar relevant files from flash...
   Please wait while we compress the tar file...
   Checking for free space on flash...
   Copying file to flash...
   File flashbackup.tar.gz created successfully on flash.
   ```
3. Use the **copy** command to transfer the backup flash file to an external server:

   ```
   (host) copy flash: flashbackup.tar.gz ftp: <ftphost> <ftpusername> <ftpuserpassword>
   <remote directory>
   ```

   You can later transfer the backup flash file from the external server to the Compact Flash file system with the copy command:

   ```
   (host) # copy tftp: <tftphost> <filename> flash: flashbackup.tar.gz
   ```
4. Use the **restore** command to untar and extract the flashbackup.tar.gz file to the compact flash file system:

   ```
   (host) # restore flash
   ```

Upgrading in a Multi-Controller Network

In a multi-controller network (a network with two or more Aruba controllers), special care must be taken to upgrade all controllers based on the controller type (master or local). Be sure to back up all controllers being upgraded, as described in "Backing up Critical Data" on page 58.

For proper operation, all controllers in the network must be upgraded with the same version of ArubaOS software. For redundant (VRRP) environments, the controllers should be the same model.

To upgrade an existing multi-controller system to ArubaOS 6.1.3.5:

1. Load the software image onto all controllers (including redundant master controllers).
2. If all the controllers cannot be upgraded with the same software image and reloaded simultaneously, use the following guidelines:
   a. Remove the link between the master and local mobility controllers.
   b. Upgrade the software image, then reload the master and local controllers one by one.
   c. Verify that the master and all local controllers are upgraded properly.
   d. Connect the link between the master and local controllers.

Upgrading to 6.1.x

ArubaOS 6.x is supported only on the newer MIPS controllers (M3, 3000 Series and 600 Series). Legacy PPC controllers (200, 800, 2400, SC1 and SC2) are *not* supported. DO NOT upgrade to 6.x if your deployments contain a mix of MIPS and PPC controllers in a master-local setup.


CAUTION

When upgrading the software in a multi-controller network (one that uses two or more Aruba controllers), special care must be taken to upgrade all the controllers in the network and to upgrade them in the proper sequence.(See "Upgrading in a Multi-Controller Network" on page 59.)

Caveats

Before upgrading to any version of ArubaOS 6.1, take note of these known upgrade caveats.

- Control plane security is disabled when you upgrade from 3.4.x to 6.0.1 (control plane security is disabled in 6.0.1) and then to 6.1.
- If you want to downgrade to a prior version, and your current ArubaOS 6.1 configuration has control plane security enabled, disable control plane security before you downgrade.

  For more information on configuring control plane security and auto-certificate provisioning, refer to the *ArubaOS 6.1 User Guide*.

Install using the WebUI


CAUTION

Confirm that there is at least 60 MB of free memory and at least 75 MB of flash available for an upgrade using the WebUI. For details, see "Memory Requirements" on page 58

Upgrading From an Older version of ArubaOS

Before you begin, verify the version of ArubaOS currently running on your controller. If you are running one of the following versions of ArubaOS, you must download and upgrade to an interim version of ArubaOS before upgrading to ArubaOS 6.1.3.5.

- For ArubaOS 3.x.versions earlier than ArubaOS 3.4.4.1, download the latest version of ArubaOS 3.4.5.x.
- For ArubaOS RN-3.x or ArubaOS 5.0.x versions earlier than ArubaOS 5.0.3.1, download the latest version of ArubaOS 5.0.4.x.
- For ArubaOS versions 6.0.0.0 or 6.0.0.1, download the latest version of ArubaOS 6.0.1.x.

Follow step 2–step 11 of the procedure described in "Upgrading From a Recent version of ArubaOS" on page 61 to install the interim version of ArubaOS, then repeat step 1–step 11 of the procedure to download and install ArubaOS 6.1.3.5.

Upgrading From a Recent version of ArubaOS

The following steps describe the procedure to upgrade from one of the following recent versions of ArubaOS:

- 6.0.1.x or later
- 5.0.3.1 or later (If you are running ArubaOS 5.0.3.1 or the latest 5.0.x.x, review "Upgrading With RAP-5 and RAP-5WN APs" on page 61 before proceeding further.)
- 3.4.4.1 or later

Install the ArubaOS software image from a PC or workstation using the Web User Interface (WebUI) on the controller. You can also install the software image from a TFTP or FTP server using the same WebUI page.

1. Download ArubaOS 6.1.3.5 from the customer support site.
2. Upload the new software image(s) to a PC or workstation on your network.
3. Log in to the ArubaOS WebUI from the PC or workstation.
4. Navigate to the **Maintenance > Controller > Image Management** page. Select the **Upload Local File** option, then click **Browse** to navigate to the saved image file on your PC or workstation.
5. Select the downloaded image file.
6. In the **partition to upgrade** field, select the non-boot partition.
7. In the **Reboot Controller After Upgrade** option field, best practices is to select **Yes** to automatically reboot after upgrading. If you do not want the controller to reboot immediately, select **No**. Note however, that the upgrade will not take effect until you reboot the controller.
8. In Save **Current Configuration Before Reboot** field, select **Yes**.
9. Click **Upgrade**.
10. When the software image is uploaded to the controller, a popup window displays the message **Changes were written to flash successfully**.Click **OK**. If you chose to automatically reboot the controller in step 7, the reboot process starts automatically within a few seconds (unless you cancel it).
11. When the reboot process is complete, log in to the WebUI and navigate to the **Monitoring > Controller > Controller Summary** page to verify the upgrade.

Once your upgrade is complete, perform the following steps to verify that the controller is behaving as expected.

1. Log in into the WebUI to verify all your controllers are up after the reboot.
2. Navigate to **Monitoring > Network Summary** to determine if your APs are up and ready to accept clients.
3. Verify that the number of access points and clients are what you would expected.
4. Test a different type of client for each access method that you use and in different locations when possible.
5. Complete a backup of all critical configuration data and files on the compact flash file system to an external server or mass storage facility. See "Backing up Critical Data" on page 58 for information on creating a backup.

Upgrading With RAP-5 and RAP-5WN APs

If you have completed the first upgrade hop to the latest version of ArubaOS 5.0.4.x and your WLAN includes RAP-5/RAP-5WN APs, do not proceed until you complete the following process. Once complete, proceed to step 5 on page 61. Note that this procedure can only be completed using the controller's command line interface.

1. Check the provisioning image version on your RAP-5/RAP-5WN Access Points by executing the **show ap image version** command.

2. If the flash (Provisioning/Backup) image version string shows the letters *rn*, for example, 3.3.2.11-rn-3.0, note those AP names and IP addresses.
3. For each of the RAP-5/RAP-5WN APs noted in the step 2, upgrade the provisioning image on the backup flash partition by executing the following command:

   ```
   apflash ap-name <Name_of_RAP> backup-partition
   ```

   The RAP-5/RAP-5WN reboots to complete the provisioning image upgrade.
4. When all the RAP-5/RAP-5WN APs with a 3.3.2.x-based RN provisioning image have successfully upgraded, verify the provisioning image by executing the following command:

   ```
   show ap image version
   ```

   The flash (Provisioning/Backup) image version string should now show a version that does not contain the letters "rn", for example, 5.0.4.8.

If you omit the above process or fail to complete the flash (Provisioning/Backup) image upgrade to 5.0.4.x and the RAP-5/RAP-5WN was reset to factory defaults, the RAP will not be able to connect to a controller running ArubaOS 6.1.3.5 and upgrade its production software image.

Install using the CLI

Confirm that there is at least 40 MB of free memory and at least 60 MB of flash available for an upgrade using the CLI. For details, see "Memory Requirements" on page 58

Upgrading From an Older version of ArubaOS

Before you begin, verify the version of ArubaOS currently running on your controller. If you are running one of the following versions of ArubaOS, you must download and upgrade to an interim version of ArubaOS before upgrading to ArubaOS 6.1.3.5.

- For ArubaOS 3.x.versions earlier than ArubaOS 3.4.4.1, download the latest version of ArubaOS 3.4.5.x.
- For ArubaOS RN-3.x or ArubaOS 5.0.x versions earlier than ArubaOS 5.0.3.1, download the latest version of ArubaOS 5.0.4.x.
- For ArubaOS versions 6.0.0.0 or 6.0.0.1, download the latest version of ArubaOS 6.0.1.x.

Follow step 2 –step 7 of the procedure described in "Upgrading From a Recent version of ArubaOS" on page 62 to install the interim version of ArubaOS, then repeat step 1–step 7 of the procedure to download and install ArubaOS 6.1.3.5.

Upgrading From a Recent version of ArubaOS

The following steps describe the procedure to upgrade from one of the following recent versions of ArubaOS:

- 6.0.1.x or later
- 5.0.3.1 or later. (If you are running ArubaOS 5.0.3.1 or the latest 5.0.x.x, review "Upgrading With RAP-5 and RAP-5WN APs" on page 61 before proceeding further.)
- 3.4.4.1 or later

To install the ArubaOS software image from a PC or workstation using the Command-Line Interface (CLI) on the controller:

1. Download ArubaOS 6.1.3.5 from the customer support site.

2. Open a Secure Shell session (SSH) on your master (and local) controller(s).
   Execute the **ping** command to verify the network connection from the target controller to the FTP/TFTP server:

   ```
   (hostname)# ping <ftphost>
   ```

   or

   ```
   (hostname)# ping <tftphost>
   ```

3. Use the **show image version** command to check the ArubaOS images loaded on the controller's flash partitions. The partition number appears in the **Partition** row; **0:0** is partition 0, and **0:1** is partition 1. The active boot partition is marked as **Default boot**.

   ```
   (hostname) #show image version
   ---------------------------------
   Partition               : 0:0 (/dev/ha1)
   Software Version        : ArubaOS 6.1.1.0 (Digitally Signed - Production Build)
   Build number            : 28288
   Label                   : 28288
   Built on                : Thu Apr 21 12:09:15 PDT 2012
   ---------------------------------
   Partition               : 0:1 (/dev/ha1)**Default boot**
   Software Version        : ArubaOS 6.1.3.2 (Digitally Signed - Production Build)
   Build number            : 33796
   Label                   : 33796
   Built on                : Fri May 25 10:04:28 PDT 2012
   ```

4. Use the **copy** command to load the new image onto the non-boot partition:

   ```
   (hostname)# copy ftp: <ftphost> <ftpusername> <image filename> system: partition
   <0|1>
   ```

   or

   ```
   (hostname)# copy tftp: <tftphost> <image filename> system: partition <0|1>
   ```

5. Execute the **show image version** command to verify the new image is loaded:

   ```
   (hostname)# show image version

   ---------------------------------
   Partition               : 0:1 (/dev/ha1) **Default boot**
   Software Version        : ArubaOS 6.1.3.5 (Digitally Signed - Production Build)
   Build number            : 29381
   Label                   : 29381
   Built on                : Fri Sept 28 00:03:14 PDT 2012
   ---------------------------------
   Partition               : 0:1 (/dev/ha1)
   Software Version        : ArubaOS 6.1.3.2 (Digitally Signed - Production Build)
   Build number            : 33796
   Label                   : 33796
   Built on                : Fri May 25 10:04:28 PDT 2012
   ```

6. Reboot the controller:

   ```
   (hostname)# reload
   ```

7. Execute the **show version** command to verify the upgrade is complete.

```
(hostname)# show version
```

Once your upgrade is complete, perform the following steps to verify that the controller is behaving as expected.

1. Log in into the command-line interface to verify all your controllers are up after the reboot.
2. Issue the command **show ap active** to determine if your APs are up and ready to accept clients.
3. Issue the command **show ap database** to verify that the number of access points and clients are what you would expected.
4. Test a different type of client for each access method that you use and in different locations when possible.
5. Complete a backup of all critical configuration data and files on the compact flash file system to an external server or mass storage facility. See "Backing up Critical Data" on page 58 for information on creating a backup.

Downgrading

If necessary, you can return to your previous version of ArubaOS.

If you upgraded from 3.3.x to 5.0, the upgrade script encrypts the internal database. New entries created in ArubaOS 6.1.3.5 are lost after the downgrade (this warning does not apply to upgrades from 3.4.x to 6.1).

If you do not downgrade to a previously-saved pre-6.1 configuration, some parts of your deployment may not work as they previously did. For example, when downgrading from ArubaOS 6.1.3.5 to 5.0.3.2, changes made to WIPS in 6.x prevents the new predefined IDS profile assigned to an AP group from being recognized by the older version of ArubaOS. This unrecognized profile can prevent associated APs from coming up, and can trigger a profile error.

These new IDS profiles begin with ids-transitional while older IDS profiles do not include transitional. If you think you have encountered this issue, use the `show profile-errors` and `show ap-group commands` to view the IDS profile associated with AP Group.

When reverting the controller software, whenever possible, use the previous version of software known to be used on the system. Loading a release not previously confirmed to operate in your environment could result in an improper configuration.

Before you Begin

Before you reboot the controller with the pre-upgrade software version, you must perform the following steps:

1. Back up your controller. For details, see "Backing up Critical Data" on page 58.
2. Verify that control plane security is disabled.
3. Set the controller to boot with the previously-saved pre-6.1 configuration file.
4. Set the controller to boot from the system partition that contains the previously running ArubaOS image.

   When you specify a boot partition (or copy an image file to a system partition), the software checks to ensure that the image is compatible with the configuration file used on the next controller reload. An error message displays if system boot parameters are set for incompatible image and configuration files.
5. After downgrading the software on the controller:

- Restore pre-6.1 flash backup from the file stored on the controller. Do not restore the ArubaOS 6.1.3.5 flash backup file.
- You do not need to re-import the WMS database or RF Plan data. However, if you have added changes to RF Plan in ArubaOS 6.1.3.5, the changes do not appear in RF Plan in the downgraded ArubaOS version.
- If you installed any certificates while running ArubaOS 6.1.3.5, you need to reinstall the certificates in the downgraded ArubaOS version.

Downgrading using the WebUI

The following sections describe how to use the WebUI to downgrade the software on the controller.

1. If the saved pre-upgrade configuration file is on an external FTP/TFTP server, copy the file to the controller by navigating to the **Maintenance > File > Copy Files** page.
   a. For **Source Selection**, select FTP/TFTP server, and enter the IP address of the FTP/TFTP server and the name of the pre-upgrade configuration file.
   b. For **Destination Selection**, enter a filename (other than default.cfg) for Flash File System.
2. Set the controller to boot with your pre-upgrade configuration file by navigating to the **Maintenance > Controller > Boot Parameters** page.
   a. Select the saved pre-upgrade configuration file from the Configuration File menu.
   b. Click **Apply**.
3. Determine the partition on which your previous software image is stored by navigating to the **Maintenance > Controller > Image Management** page. If there is no previous software image stored on your system partition, load it into the backup system partition (you cannot load a new image into the active system partition):
   a. Enter the FTP/TFTP server address and image file name.
   b. Select the backup system partition.
   c. Click **Upgrade**.
4. Navigate to the **Maintenance > Controller > Boot Parameters** page.
   a. Select the system partition that contains the pre-upgrade image file as the boot partition.
   b. Click **Apply**.
5. Navigate to the **Maintenance > Controller > Reboot Controller** page. Click **Continue**. The controller reboots after the countdown period.
6. When the boot process is complete, verify that the controller is using the correct software by navigating to the **Maintenance > Controller > Image Management** page.

Downgrading using the CLI

The following sections describe how to use the CLI to downgrade the software on the controller.

1. If the saved pre-upgrade configuration file is on an external FTP/TFTP server, use the following command to copy it to the controller:

   ```
   (host) # copy ftp: <ftphost> <ftpusername> <image filename> system: partition 1
   or
   (host) # copy tftp: <tftphost> <image filename> system: partition 1
   ```

2. Set the controller to boot with your pre-upgrade configuration file.

   ```
   # boot config-file <backup configuration filename>
   ```

3. Execute the **show image version** command to view the partition on which your previous software image is stored. You cannot load a new image into the active system partition (the default boot).

   In the following example, partition 0, the backup system partition, contains the backup release 6.1.3.2. Partition 1, the default boot partition, contains the ArubaOS 6.1.3.5 image:

```
#show image version
-----------------------------------
Partition               : 0:1 (/dev/ha1)
Software Version        : ArubaOS 6.1.3.2 (Digitally Signed - Production Build)
Build number            : 33796
Label                   : 33796
Built on                : Fri May 25 10:04:28 PDT 2012
-----------------------------------
Partition               : 0:1 (/dev/hda2) **Default boot**
Software Version        : ArubaOS 6.1.3.5 (Digitally Signed - Production Build)
Build number            : 28864
Built on                : 2012-09-28 2:11:59 PST 2012
```

4. Set the backup system partition as the new boot partition:

```
# boot system partition 0
```

5. Reboot the controller:

```
# reload
```

6. When the boot process is complete, verify that the controller is using the correct software:

```
# show image version
```

Before You Call Technical Support

Before you place a call to Technical Support, please follow these steps:

1. Provide a detailed network topology (including all the devices in the network between the user and the Aruba controller with IP addresses and Interface numbers if possible).
2. Provide the wireless device's make and model number, OS version (including any service packs or patches), wireless NIC make and model number, wireless NIC's driver date and version, and the wireless NIC's configuration.
3. Provide the controller logs and output of the **show tech-support** command via the WebUI Maintenance tab or via the CLI (**tar logs tech-support**).
4. Provide the syslog file of the controller at the time of the problem. Aruba strongly recommends that you consider adding a syslog server if you do not already have one to capture logs from the controller.
5. Let the support person know if this is a new or existing installation. This helps the support team to determine the troubleshooting approach, depending on whether you have an outage in a network that worked in the past, a network configuration that has never worked, or a brand new installation.
6. Let the support person know if there are any recent changes in your network (external to the Aruba controller) or any recent changes to your controller and/or AP configuration. If there was a configuration change, list the exact configuration steps and commands used.
7. Provide the date and time (if possible) when the problem first occurred.If the problem is reproducible, list the exact steps taken to recreate the problem.
8. Provide any wired or wireless sniffer traces taken during the time of the problem.
9. Provide the controller site access information, if possible.