Release Notes – Rev. A

OmniAccess Stellar AP

AWOS Release 3.0.5 – GA Release

These release notes accompany the OmniAccess Stellar Operating System (AWOS) Release 3.0.5 software for the Stellar APs. This document provides important information on individual software and hardware features. Since much of the information in the release notes is not included in the hardware and software user manuals, it is important to read all sections of this document before installing new hardware or loading new software.

Table of Contents

Related Documentation

The release notes should be used in conjunction with the associated manuals as listed below.
User manuals can be downloaded at: https://businessportal2.alcatel-lucent.com.

Stellar AP Quick Start Guide
The Quick Start Guide assists you in quickly connecting to and configuring the Stellar AP.

Stellar AP Installation Guide
Provides technical specifications and installation procedures for the Stellar AP.

Stellar AP Configuration Guide
Includes procedures for managing and configuring all aspects of the Stellar AP using the built-in web interface.

Technical Tips, Field Notices, Upgrade Instructions
Contracted customers can visit our customer service website at: https://businessportal2.alcatel-lucent.com.

Hardware Supported

- AP1101, AP1220 series, AP1230 series, AP1251, AP1201H, AP1201

New Software Features and Enhancements

The following software features are new with this release, subject to the feature exceptions and problem reports described later in these release notes:

Feature	Platform Support
	OmniAccess Stellar AP1101/AP1220/AP1230/AP1251/AP1201H/AP1201
Dedicated AP scanning mode	All
5Ghz band-steering enforcement option	All
Standard ASCII Characters Support in Password (Express)	All
AP traffic error statistics	All
BLE Beaconing (Cloud)	AP1230/AP1201
Time based policy access to SSID	All
Local authentication with LDAP/AD (Cloud)	All
Increase Per Band Clients Specification	AP1201/AP122x/AP123x/AP1251 support 256 clients/band AP1101/1201H support 128 clients/band
USB console support	AP1201H
User can change the URL of OVC server from WebUI (Express)	All
Convert Cluster AP to OV Enterprise managed AP (Express)	All
RTLS – Support Stanley Healthcare-AeroScout (Cloud)	All

Notes:

- OmniAccess Stellar AP reserves two SSIDs (One on 2.4G band, and one on 5G band). They perform background scanning for WIPs/WIDs services to alert and take preventive actions on any security threat. It is hidden, secure and NO clients can connect to these SSIDs.

Fixed field problems in build 3.0.5.30

PR	Description
ALEISSUE-164	**Summary:** The output of "iwlist ath01 txpower" is incorrect on AP1101. **Explanation:** Display error due to logic in initialization. Fixed the initialization parameter.
ALEISSUE-284	**Summary**: Unable to enable 40MHz and 80MHz on 5GHz of APs with JP(Japan) Country code. **Explanation**: The AP Web UI has been fixed to allow 40/80MHz options, which will comply with Japan rules.
ALEISSUE-289	**Summary:** Auto Power management does not work . **Explanation:** The auto power management module was not limiting the discovery of neighbor APs confined to the AP Group managed by the same OV IP. This has been fixed by adding mechanism to identify neighboring APs managed by same OV IP.
ALEISSUE-294	**Summary:** AP sends different MAC during BOOT process. **Explanation:** It is related to AP service boot sequence using uninitialized MAC parameter for discovering. It's fixed by correcting the boot sequence.
OVE-3042	**Summary:** Clients connected to AP1231 in Enterprise Mode get mapped to the wrong VLAN when using VLAN 1 or VLAN 2. **Explanation:** In AP1231, VLAN 1 and VLAN 2 were reserved internally by AP at bootup. This was the root cause. Moving forward VLAN 4093 and VLAN 4094 will be reserved by AP1231.

Note: All fixes from prior releases are included (refer Appendix A)

Open/Known Problems

The problems listed here include problems known at the time of the product's release. Any problems not discussed in this section should be brought to the attention of the Service and Support organization as soon as possible. Please contact customer support for updates on problem reports (PRs) where no known workaround was available at the time of release.

PR	Description	Workaround
ALEISSUE-283	Background scanning duration is not respected correctly.	Plan to fix it in AP3.0.5 maintenance build.
	Abnormal count of Interfering AP count on OV Dashboard SR# 00331509.	Plan to fix it in AP3.0.5 maintenance build.

Limitations and/or Dependencies

1. AP – Client traffic error statistics
Limitation:
TX retry statistics for 2.4Ghz devices on AP1201/AP1251/AP1220 not available; TX retry statistics for 5Ghz devices on AP1201/AP1201H/AP1251 not available.
RX error statistics for 2.4/5Ghz devices on AP1201H/AP1201/AP1220/AP1230/AP1251 not available.

New Software Feature Descriptions

Convert Express AP to OVE AP

There are two ways of converting Express AP to Enterprise AP.

1. Convert specified AP to Enterprise AP.
   a. Open the AP configuration page, then click desired AP by referring to screenshot below, edit link is shown in Detailed Information frame.

   b. After detailed info is displayed as in screenshot below, you can choose Enterprise first then set OV IP address either by a static IP address or by DHCP, after configuration, simply save it.

2. Convert all APs in cluster to Enterprise AP.
   a. Simply click Convert to Enterprise in AP configuration page.

b. This is the detailed page shown below, parameters are same as convert a specified AP.

5Ghz band-steering enforcement option

There is an option next to band-steering which forces clients to 5GHz ONLY when they are dual band capable which you can refer to screenshot below.

Time based policy access to SSID

For any WLAN service provide timer based configuration for access.
Default WLAN timer is disable, meaning WLAN service is available as configured all the time
Enable WLAN timer.

- Access Days; default all days are checked.
- HRs of operation enable/disable; default disable, meaning service is available all day.
- When enabled allow start time: hr:min & end time: hr:min for each day along with an option to sync the 1st time set across all days.

You can refer to the following two screenshots below:

WLAN Configuration ×

WLAN Name	Status	Security Level	Captive Portal	Operate
weekday	Enable	Open	Disable	✏ ✖ WMM
weekend	Enable	Open	Disable	✏ ✖ WMM

Edit WLAN Information

Multicast:	○Yes ◉No	
Broadcast ARP:	○Yes ◉No	1.Choose Days to enable
WLAN Access Timer:	on	
Access Days:	☑Mon ☑Tue ☑Wed ☑Thu ☑Fri ☐Sat ☐Sun	
Operational Hours:	on	2.Edit hours if necessary
Start Time:	09:00 📅	hr:min
End Time:	18:30 📅	hr:min
MaxClients Per Band:	64	(1-256)
VLAN ID:	0	(0-4094)
Upstream Per Client:	0	(0-65536)kbps

Create

User can change the URL of OVC server from WebUI (Express)
This is a seldom used feature in production environments, for the FQDN is always activation.myovcloud.com, but it can satisfy scenario for OV Cirrus migration if necessary.

You can refer to the following two screenshots to make the change.

AP Configuration ×

Primary Name	IP	Firmware	Operate
	PVC		
AP-1A:10	192.168.20.119(AP)(M)	3.0.5.23	⊙cfg ⏻reboot
	SVC		
AP-42:20	192.168.20.111	3.0.5.27	⊙cfg ⏻reboot
	MEMBER		
AP-DD:50	192.168.20.128	3.0.5.6	⊙cfg ⏻reboot
	Joining		
	Pending		
Neighboring Group			
AP-B2:80	192.168.20.213	3.0.4.2048	
AP-2C:C0	192.168.20.201	3.0.4.2052	

Detailed Information

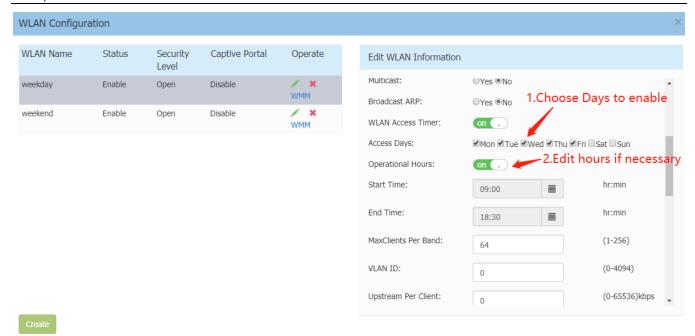|	
AP Name:	AP-1A:10 Edit
MAC:	34:E7:0B:00:1A:10
Location:	Edit
Status:	Working
Role in Group:	PVC
Serial Number:	WKS163300071
Model:	OAW-AP1251
Firmware:	3.0.5.23
Upgrade Time:	Sat Nov 24 08:25:27 2018
Upgrade Flag:	successfully
IP Mode:	DHCP Edit
IP:	192.168.20.119
Netmask:	255.255.254.0
Default gateway:	192.168.21.254
DNS:	219.141.136.10
AP Mode:	Express Edit

Click here

Reboot All AP	Clear All Configuration	Backup All Configuration	Restore All Configuration	Upgrade All Firmware	Connect To Cloud	Convert To Enterprise

Dedicated AP scanning mode

This is an assistant feature for Network administrators to check quality of wireless environment, it contains three main functions:

1. Analyze all channels continuously or for one time.
2. Detect all wireless interference.
3. Wireless packet capture for further analysis.

The following two screenshots shows how to configure.

1. First you need to forward to AP UI page by click link in AP configuration page.

2. All configuration for those three features are shown as below.

3. When you click Start Capture, it will show you a detailed configuration page below.

4. Here is an example displaying scanning result, you can see channel utilization of 2GHz and statistics of scanning data below.

Scan Mode

One Time   Always: [off]

Last Scan: 2018/12/18 16:23:38

Wireless Capture Config

Start Capture   Stop Capture

2.4G Channels

Channel : 3

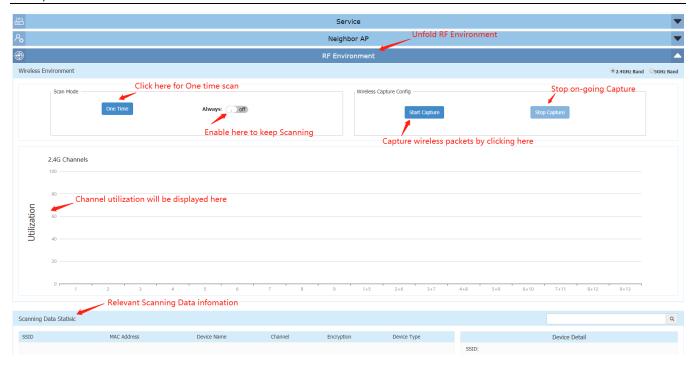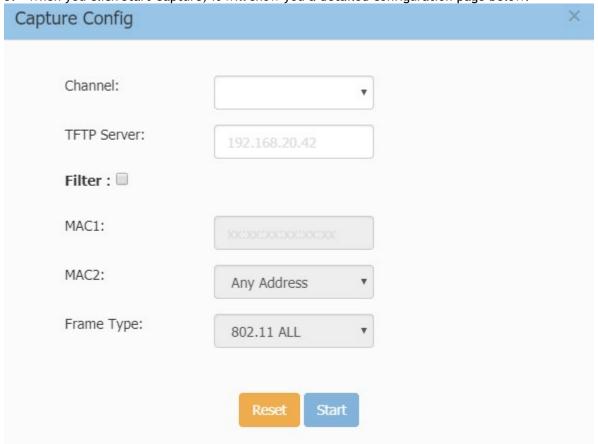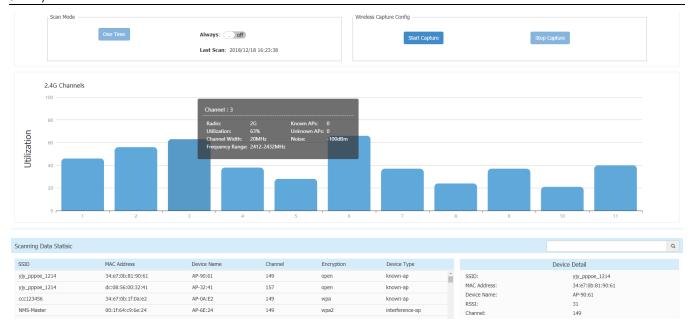|			
Radio:	2G	Known APs:	0
Utilization:	63%	Unknown APs:	0
Channel Width:	20MHz	Noise:	-100dBm
Frequency Range:	2412-2432MHz		

Utilization

1 2 3 4 5 6 7 8 9 10 11

Scanning Data Statisic

SSID	MAC Address	Device Name	Channel	Encryption	Device Type
yjly_pppoe_1214	34:e7:0b:81:90:61	AP-90:61	149	open	known-ap
yjly_pppoe_1214	dc:08:56:00:32:41	AP-32:41	157	open	known-ap
ccc123456	34:e7:0b:1f:0a:e2	AP-0A:E2	149	wpa	known-ap
NMS-Master	00:1f:64:c9:6e:24	AP-6E:24	149	wpa2	interference-ap

Device Detail

SSID:	yjly_pppoe_1214
MAC Address:	34:e7:0b:81:90:61
Device Name:	AP-90:61
RSSI:	31
Channel:	149

5. To see the 5GHz channel utilization, simply choose 5GHz Band in the upper right corner.

Wireless Environment   ○2.4GHz Band ⦿5GHz Band

Scan Mode

One Time   Always: [off]

Last Scan: 2018/12/18 16:23:38

Wireless Capture Config

Start Capture   Stop Capture

Switch to 5GHz by clicking here

20MHz Channels

36 40 44 48 52 56 60 64 100 104 108 112 116 120 124 128 132 136 140 144 149 153 157 161 165

40MHz Channels

Channel : 56

Radio:	5G	Known APs:	14
Utilization:	14%	Unknown APs:	0
Channel Width:	20MHz	Noise:	-106dBm
Frequency Range:	5270-5290MHz		

Utilization

38 46 102 110 118 126 134 142 151 159

80MHz Channels

42 58 106 122 138 155

5170   5250   5330 5490   5570   5650   5730 5735   5815(MHz)

Scanning Data Statisic

SSID	MAC Address	Device Name	Channel	Encryption	Device Type
yjly_pppoe_1214	34:e7:0b:81:90:61	AP-90:61	128	open	known-ap

Device Detail

SSID:	yjly_pppoe_1214

Appendix A: Problem fixed from 3.0.0.57 to 3.0.4.2050

Fixed Problem Reports Between Builds 3.0.3.32 and 3.0.4.2050

PR	Description
ALEISSUE-214	**Summary:** Random Client disconnect. **Explanation:** When AP detects excessive packet retransmission errors, the AP puts the client into a state preventing handling of any further data packets. To resolve the issue, the AP upon detecting this state kicks the client so it can disconnect & reconnect.
ALEISSUE-267	**Summary:** Stellar AP 1221 randomly stop broadcasting SSIDs. **Explanation:** SSIDs not broadcasting on some of the APs after running for a long time. The root cause was RF tuning was not occurring in the right sequence leading to interface down status. The sequencing of operation with respect to interface and frequency setting has been corrected to resolve this.
ALEISSUE-282	**Summary:** AP1221 - stopped advertising SSID on 2.4Ghz. **Explanation:** This issue occurs because of a race condition when the AP attempts to perform a channel change, and at approximately the same exact time the DCM functional block (responsible for band-steering & load-balancing) queries the ACS on the old channel for utilization information. This results in the SSID interface locking up stopping SSID to be broadcasted on the band. To resolve, when ACS functional block is performing a channel change, the DCM functional block will back off until the channel change operation is completed.
ALEISSUE-272	**Summary:** AP's going down in OV but it's actually up and serving clients. **Explanation:** The root cause is after deleting the GTTS interface, AP does not handle receiving/forwarding of bigger packets. This has been resolved.
ALEISSUE-189	**Summary:** Though AP's are in Australia country code, customer noticed the Channels 120, 124, 128 in the RF profile which is restricted in Australia. **Explanation:** Remove channel 120,124,128 from web UI.
ALEISSUE-221 ALEISSUE-224	**Summary:** Band steering not working on couple of APs. **Explanation:** The root cause was the lbd process was not initialized properly leading to this. lbd process initialization is corrected to fix this.
ALEISSUE-225	**Summary:** SSIDs not broadcasting. **Explanation:** SSIDs not broadcasting on some of the APs after running for a long time. The root cause was RF tuning was not occurring in the right sequence leading to interface down status. The sequencing of operation with respect to interface and frequency setting has been corrected to fix this.
ALEISSUE-240	**Summary:** AP-1101 devices are continuously rebooting after enabling the Airtime Fairness. **Explanation:** Updated new driver on OAW-AP1101 to solve the problem.
ALEISSUE-216	**Summary:** NAS-ID field not being sent in RADIUS request by Stellar cluster. **Explanation:** Allow user to specify the NAS identifier in web UI and send out through RADIUS request packets.
ALEISSUE-227	**Summary:** HSTS Certificate Error on Android devices while doing Social Login using Facebook **Explanation:** Adding m.facebook.com into the white list domains of Walled Garden, as well as Optimizing the release rules for the IP address resolved by the DNS server.
ALEISSUE-255	**Summary:** Immediately change the default image of captive portal. **Explanation:** Replace the Express internal captive portal background picture.
ALEISSUE-256	**Summary:** APs show down on OV.

	Explanation: Some APs appear as down at the OV2500, SSIDs are propagated but the users cannot log in. The root cause was timeout of the AP connection agent when getting other service information, finally leading to this. The timeout process has been optimized to fix this.
ALEISSUE-258	**Summary:** 5 AP's in a cluster not broadcasting 5 Ghz Radio **Explanation:** The root cause was RF tuning was not occurring in the right sequence leading to interface down status. The sequencing of operation with respect to interface and frequency setting has been corrected to fix this.
ALEISSUE-207	**Summary:** Remove default NTP servers if a local server is entered
ALEISSUE-198	**Summary:** OAW-AP1251-ME TX power in 5GHz is very low in 3.0.2.2078
ALEISSUE-167	**Summary:** 8118 phones keep disconnecting & reconnecting to the AP1221(reopen issue 144)
ALEISSUE-170	**Summary:** Compatibility issue of the stellar AP1101 with IE browser.
ALEISSUE-189	**Summary:** Even though AP's are in Australia country code, customer noticed the Channels 120, 124, 128 in the RF profile which are restricted in Australia.
ALEISSUE-201	**Summary:** AP is sending corrupted LLDP packets.
ALEISSUE-127	**Summary:** APs in 5Ghz band using same channel even though Automatic channel configuration is enabled.
OVC-363	**Summary:** AP should support default NTP servers from OV cirrus vendor pool
OVC-1541	**Summary:** AS should change the status of a device to connectedToOV when receiving openVpnConfigFileStatus value = vpnConnectionRetained for AP
OVC-1238	**Summary:** Support new openVPnStatus value = vpnConnectionRetained for AP

Fixed Problem Reports Between Builds 3.0.2.2078 and 3.0.3.32

PR	Description
ALEISSUE-110	Summary: Client inactivity should be a configurable option
ALEISSUE-128	Summary: L3 ACL does not work in the AP-1101 cluster.
ALEISSUE-145	Summary: AP name is not consistent throughout the web gui.
ALEISSUE-88	Summary: ACL per SSID
ALEISSUE-160	Summary: Manually set channels need to be respected by ACS
ALEISSUE-193	Summary: mywifi factory SSID provides open access to network
ALEISSUE-186	Summary: Client is not receiving the IP address if SSID is configured with VLAN-2 on AP1231/32
ALEISSUE-179	Summary: AP 1221 with 3.0.0.57 sending unknown UDP packets
ALEISSUE-90	Summary: Guest re authentication on inactivity
ALEISSUE-87	Summary: Captive portal page is hosted only in http by default
ALEISSUE-86	Summary: Unable to install public, wildcard, private or self-signed certificate on the cluster

Fixed Problem Reports Between Builds 3.0.2.2076 and 3.0.2.2078

PR	Description
Internal	**Summary**: In Enterprise mode when AP running with 3.0.2.2076 or older reboots or when setting up a new AP, it cannot connect to OV.

	Explanation: The AP certificate used for secure encryption to OV for configuration expired on May 2nd, 2018. This new AP software has been patched to address this. Additionally, "OmniVista 4.2.2. Build 115 Patch 2" addresses this issue and "OmniVista 4.3R1" has an option as part of the VA menu, to configure if AP certificates are tightly checked or not". **Note**: If you still have an AP that is failing to connect to OV, please call customer support for further assistance.

Fixed Problem Reports Between Builds 3.0.2.1065 and 3.0.2.2076

PR	Description
ALEISSUE-111	**Summary:** EIRP for AP 1251 in 3.0.0.60 code is always 10 dBm. **Explanation:** The issue was in the display.
ALEISSUE-122	**Summary:** Handheld scanners on 2.4Ghz don't roam properly on AP1101 cluster. **Explanation:** Option now available to disable 802.11b rates on the 2.4Ghz.
ALEISSUE-139	**Summary:** AP Throughput goes low periodically. **Explanation:** The issue is happened when disable background scanning, throughput drops in a large amount.
ALEISSUE-146	**Summary:** Client IP is not consistent. **Explanation:** This happens in a special kind of environment, when Net camera works as a HTTP server associate to the AP.
ALEISSUE-161	**Summary:** ACS needs to choose 20 or 40 MHz channel width when working in Israel. **Explanation:** ACS to choose 20/40 MHz wide channels when operating in a country code that has limited 5 GHz channels.
ALEISSUE-170	**Summary:** Compatibility issue of the stellar AP1101 with IE browser. **Explanation:** UTF-8 encoding automatically when access WEB GUI now.

Fixed Problem Reports Between Builds 3.0.2.40 and 3.0.2.1065

PR	Description
ALEISSUE-127	**Summary:** APs in 5Ghz band using same channel though Automatic channel configuration is enabled. **Explanation:** Optimization on DRM module, especially when Country Code changed.
ALEISSUE-138	**Summary:** Allow space in SSID name. **Explanation:** Create/Edit strings beginning with space and end with space will be deleted when finish saving this configuration; If there are multiple spaces in the middle of the strings, the length of SSID will include the length of those multiple spaces.
ALEISSUE-134	**Summary:** 5 Ghz band not broadcasting. **Explanation:** Fixed one possible trap in DRM, which may cause this.
ALEISSUE-109	**Summary:** When PVC role changes from one AP to another, there is no notification **Explanation:** Add logs when PVC role changed include performing the "update to PVC" action.
OVE-837	**Summary:** Client status takes about 5-10 mins to update in OV WLAN dashboard and WMA->Client UI. **Explanation:** part of this issue was solved as follows: 1. AP Status display Down – need your help to debug the root cause ("UP" in AP list in below screenshot); 2. Client "Attached Band" shows 'nullGHz' – WMA polling cycle is too long, AP

	needs to optimize to send multiple messages to ensure the information is complete in next release.
HOS30-1475	**Summary:** 【802.11r roaming】802.11r roaming has problem in R3.0.2.38. **Explanation:** This happens in Germany Customer environment, when Client roaming between multiple APs, Client needs to finish a complete process of PSK authentication.
HOS30-1491	**Summary:**【Cluster】Privilege Escalation Vulnerability in AWOS v3.0.2.x (and all previous). **Explanation:** User can simulate Tech Support HTTP request to execute commands in AP, for security reasons, from this build on, the commands send to AP are encapsulated in the same format, without any common shell commands, Sanity check with user input, only supported commands can be executed.

Fixed Problem Reports Between Builds 3.0.2.38 and 3.0.2.40

PR	Description
OVCLOUD-2774	**Summary:** Cloud connection status in AP. **Explanation:** Add "ocloud_show" command for trouble shooting in support account.
OVCLOUD-3251	**Summary:** AP cannot call home successful to AS in PreProd env. **Explanation:** This happens in specific environment when VPN connection takes a fairly long time.
OVCLOUD-3139	**Summary:** Cannot apply AV profile to AP 1251. **Explanation:** This issue cause by too small username and password buffer (only 32 char) for sftp. we have change buffer size to 128.

Fixed Problem Reports Between Builds 3.0.0.63 and 3.0.2.38

PR	Description
ALEISSUE-133	**Summary:** Client is taking few minutes to connect to the network. it is a PSK SSID. **Explanation:** This issue was caused by the load balance algorithm. The algorithm is now been optimized to avoid getting into this situation.
ALEISSUE-130	**Summary:** Duplicate APs in the cluster. **Explanation:** This issue was caused by the AP obtaining an incorrect mac address at the bootup. It is fixed in this release.
ALEISSUE-100	**Summary:** AP-1101 running in express mode does not accept the class-B IP address as Group Management IP. **Explanation:** This was an AP GUI's problem and fixed in this release.
ALEISSUE-99	**Summary:** Band Steering doesn't work on Express Mode Release 3.0.0.57. **Explanation:** This issue was caused by the load balance algorithm. The algorithm is now been updated to felicitate correct band-steering.
ALEISSUE-95	**Summary:** Guest operator account security issues **Explanation:** The fix blocks from users from altering guest operator's privileges from browser inspector.
ALEISSUE-65	**Summary:** ÖÄÅ characters are not supported. **Explanation:** These characters are now supported.

| ALEISSUE-82 | **Summary:** Config changes made are not updated when the OLD PVC comes up.
Explanation: This is fixed by preventing an old PVC from overriding the config done with new PVC after it comes back up. |

Fixed Problem Reports Between Builds 3.0.0.61 and 3.0.0.63

PR	Description
ALEISSUE-105	**Summary:** Static channel assignment gets changed automatically **Explanation:** Channel assignment changes automatically even if the channel is set manually.
ALEISSUE-106	**Summary:** Roaming not working when both 2.4 GHz & 5 GHz radio configured with or without 802.11r **Explanation:** There were no synchronization messages sent to the new neighbor AP resulting in roaming failure

Fixed Problem Reports Between Builds 3.0.0.57 and 3.0.0.61

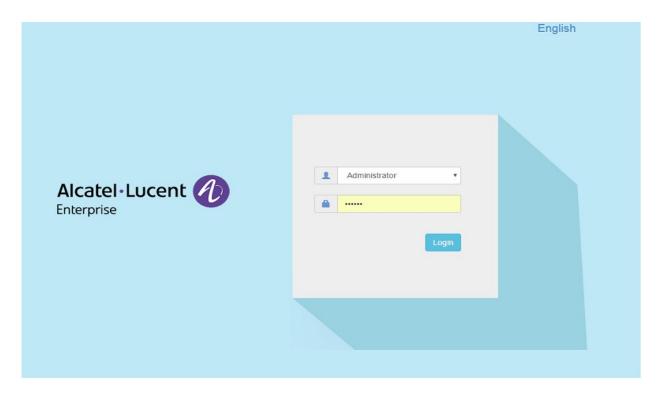| PR	Description
None	**Summary:** KRACK / WPA2 Key Reinstallation Vulnerabilities. **Explanation:** Flaws in WPA2 key management may allow an attacker to decrypt, replay, and forge some frames on a WPA2 encrypted network.
ALEISSUE-101	**Summary:** Apple AirPlay stopped working, after upgrades AP1101 to release 3.0.0.57. **Explanation:** Two clients on the same SSID and band were not able to communicate.
ALEISSUE-102	**Summary:** 5 GHz band not broadcasting. **Explanation:** Initial setup with 2.4GHz and 5GHz is OK. Overnight 5 GHz band disappears and only see 2.4GHz band can be seen.
ALEISSUE-108	**Summary:** Performance issue in 2.4G band. **Explanation:** Wireless performance degrades over time, devices experience slow connection.

Appendix B – Upgrade Instructions

Mandatory Upgrade of the OAW-AP1101
Release 2.1 is not compatible with Release 3.0. All the Stellar AP1101 APs running R2.1 MUST be upgraded to the latest software release version available from customer support so that all the APs can form a cluster with release 3.0 or can be managed by OmniVista. Please Visit https://businessportal2.alcatel-lucent.com to get the latest software and follow the upgrade instructions below.
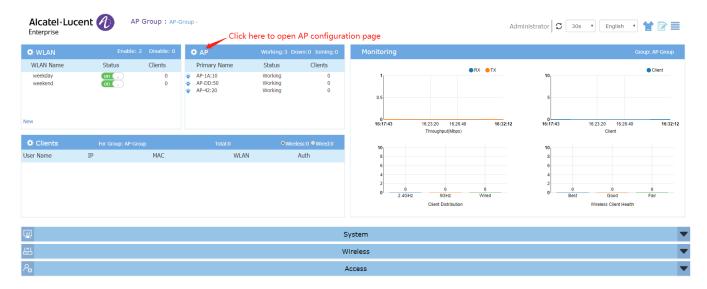
General Software Upgrade Instructions (WiFi Express)

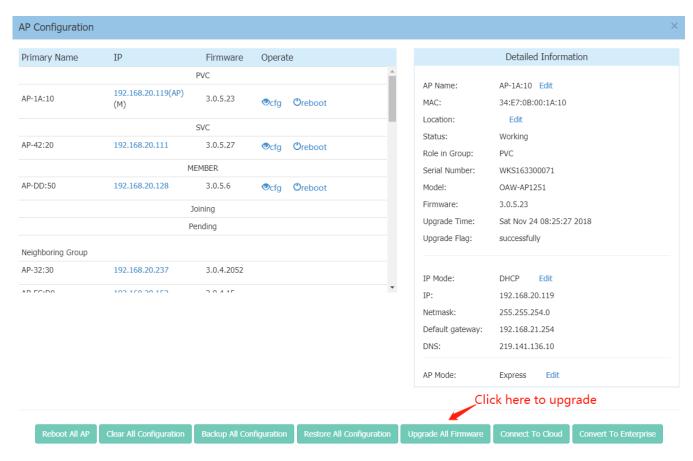1. Login to AP using Administrator account with default password 'admin'.

2. Click on the AP tab to open up the AP Configuration page.

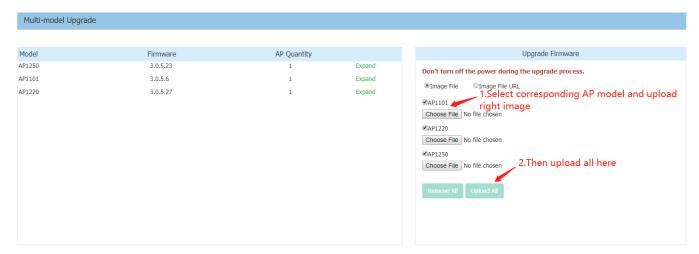**3. On AP Configuration Page, click Upgrade All Firmware.**

4. Select the firmware file and click **Upload To All**, this will upgrade the firmware and reboot the AP.

Multi-model Upgrade			

Model	Firmware	AP Quantity	
AP1250	3.0.5.23	1	Expand
AP1101	3.0.5.6	1	Expand
AP1220	3.0.5.27	1	Expand

Upgrade Firmware

Don't turn off the power during the upgrade process.

◉Image File   ○Image File URL

☑AP1101   **1.Select corresponding AP model and upload right image**
[Choose File] No file chosen

☑AP1220
[Choose File] No file chosen

☑AP1250   **2.Then upload all here**
[Choose File] No file chosen

[Remove All] [Upload All]

Technical Support

Alcatel-Lucent Enterprise technical support is committed to resolving our customer's technical issues in a timely manner. Customers with inquiries should contact us at:

Region	Phone Number
North America	1-800-995-2696
Latin America	1-877-919-9526
Europe Union	+800 00200100 (Toll Free) or +1(650)385-2193
Asia Pacific	+65 6240 8484

Email: ebg_global_supportcenter@al-enterprise.com

Internet: Customers with Alcatel-Lucent service agreements may open cases 24 hours a day via Alcatel-Lucent's support web page at: https://businessportal2.alcatel-lucent.com.

Upon opening a case, customers will receive a case number and may review, update, or escalate support cases on-line. Please specify the severity level of the issue per the definitions below. For fastest resolution, please have telnet or dial-in access, hardware configuration—module type and revision by slot, software revision, and configuration file available for each switch.

Severity 1 - Production network is down resulting in critical impact on business—no workaround available.
Severity 2 - Segment or Ring is down or intermittent loss of connectivity across network.
Severity 3 - Network performance is slow or impaired—no loss of connectivity or data.
Severity 4 - Information or assistance on product feature, functionality, configuration, or installation.