

The Aruba logo is displayed in a bold, orange, lowercase sans-serif font. The background of the slide is a photograph of three people in a meeting: a man in a light blue shirt is seated at a table with a laptop, a woman in a grey top is leaning over him, and another woman with curly hair is seated to the right, looking at the laptop. The scene is brightly lit, suggesting an office environment with large windows.

a Hewlett Packard  
Enterprise company

# Network Management & Zero-Touch Provisioning

(activate)

Peter Andries  
System Engineer

# Agenda

- Activate
  - What is it and how use it
- AirWave 8.2.7
  - New switch monitoring and configuration snippets
- Central
  - Recent additions & What's coming

# Activate

# What is Aruba Activate

- A zero-touch provisioning system for all HPE Aruba devices
- An inventory repository of all HPE Aruba devices
- A firmware repository for HPE Aruba devices

# Customer Activate Account Creation

Activate accounts are never created automatically.

## ➤ Account creation steps

1. Register for an account at [activate.arubanetworks.com](https://activate.arubanetworks.com) and provide device or PO details
2. 'Activate' Support reviews the request
3. If user represents a new customer, support creates the customer and user account
4. User receives an email with login credentials

Welcome to Aruba Activate



Username:

Password:

[Request a Login](#) [Reset my password](#)

### Aruba Activate Login Request

User Name:

Organization:

First Name:

Last Name:

Email:

**Validation:**  
Input a valid Serial/MAC combination or Purchase Order Number to Validate Access:

Serial Number:  MAC:

**or**

Purchase Order:

### Aruba Activate Login Request

User Name:

### Aruba Activate Login Request

**Thank you for requesting access to Aruba Activate.**

**You will receive an email once the validation process is complete. It will be less than 2 business days.**

**If access is granted there will be an activation URL embedded in the email allowing you to set your password.**

**If clarification or additional data is needed, a follow up message will be sent to your email address.**

OK

Purchase Order:

Done

Cancel

# Device Assignment

- Activate receives:
  - Sell-Out/PoS Reports from distribution for indirect sales
  - Sell-Out records from HPE for direct sales
- The devices are moved to customer accounts in 'Activate' based on the **'end\_customer\_name'** field reported
- The reported end-customer name must be an exact match to the 'Activate' customer name
- A name mismatch will result in devices being in the Aruba Factory Stock account and not moved to the right customer account

When Activate fails to assign devices, it is almost certain that the reason is because there is a name mismatch

## In case of missing devices

- Contact support to manually move devices by opening a TAC case and specifying that Activate assistance is needed
  - Request for Activate support and provide customer name, order number and SN of any one device on the order for TAC
  
- Request support to create aliases in Activate
  - If it is expected that the Activate customer 'ABC Co' will sometimes be identified as 'ABC Inc' in a sell-through record, request support to create an alias to ensure a match on request. Send the main customer name and a list of possible names that need to be added as an alias. This will ensure that future orders for the customer are mapped correctly

# Activate and Central

- Currently for devices to be automatically placed in a customer's Central inventory:
  - An Activate account must be created per the process detailed in this deck
  - The customer must enter their 'Activate' credentials in their 'Central' account
  - Activate must match the end customer name in the device sell-through record with the customer's Activate account name
- Following 'Activate' account creation, 'Central' customers will manage devices through 'Central' and typically do not need to log into 'Activate' at all

# Activate and Central Details

- When a device is in the *default* folder of the customer's Activate account, and that account is linked to a Central account, the device will appear as an unlicensed device in the customer's Central inventory
- When the device is licensed in Central, it moves to an automatically created folder in the Activate account called *Athena-f-xxxxxx*
- The relationship between an Activate account and a Central account is 1:1
- A single Activate account can manage a customer's Central deployment and Airwave deployment simultaneously
- When a customer manually adds a device to Central, and the Central account is associated with an Activate customer, the device will be placed in that Activate customer account
- When a customer manually adds a device to Central, and the Central account is not associated with an Activate customer, or the Central account is not a paid account, the device is placed in a system folder in Activate called "one\_central\_eval"

# AirWave 8.2.7

# Airwave Key Objectives

## Switching Enhancements

- Management enhancements
- Monitoring features
- Solution

## New Aruba Devices

- New switches, APs, controllers
- New OS versions
- New product features – 11ax, Dynamic Segmentation

## Federal Certifications

- Security enhancements for federal certifications
- Common Criteria
- DoD ACPL

## AW10

- Brand new AirWave platform
- Scale, performance, redundancy

# Network Management Workflow

## Configure



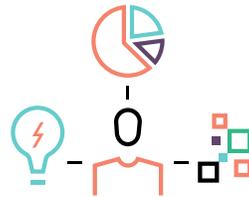
- IAP
  - Templates
  - GUI
- Switch
  - Templates

## Deploy



- Zero Touch
  - DHCP
  - Activate
- Network Scans
- AP Auto Discovery

## Manage



- Config Backup
- Config Snippets
- Config Audit
- Firmware Update

## Monitor



- Topology
- Performance
  - Device
  - Users
- Historical Trends
- Troubleshooting

## Alert/Report



- Canned Reports
- Custom Reports
- Configurable
  - Thresholds/Filters
- Alerts via
  - SNMP/Email

# Airwave v8.2.7 – Switch Monitoring Enhancements

1

Summarized device information, including port & hardware status

2

Port details, PoE, VLAN, neighbor connections, power trends and alerts

3

Visualize details for individual and stacked switches

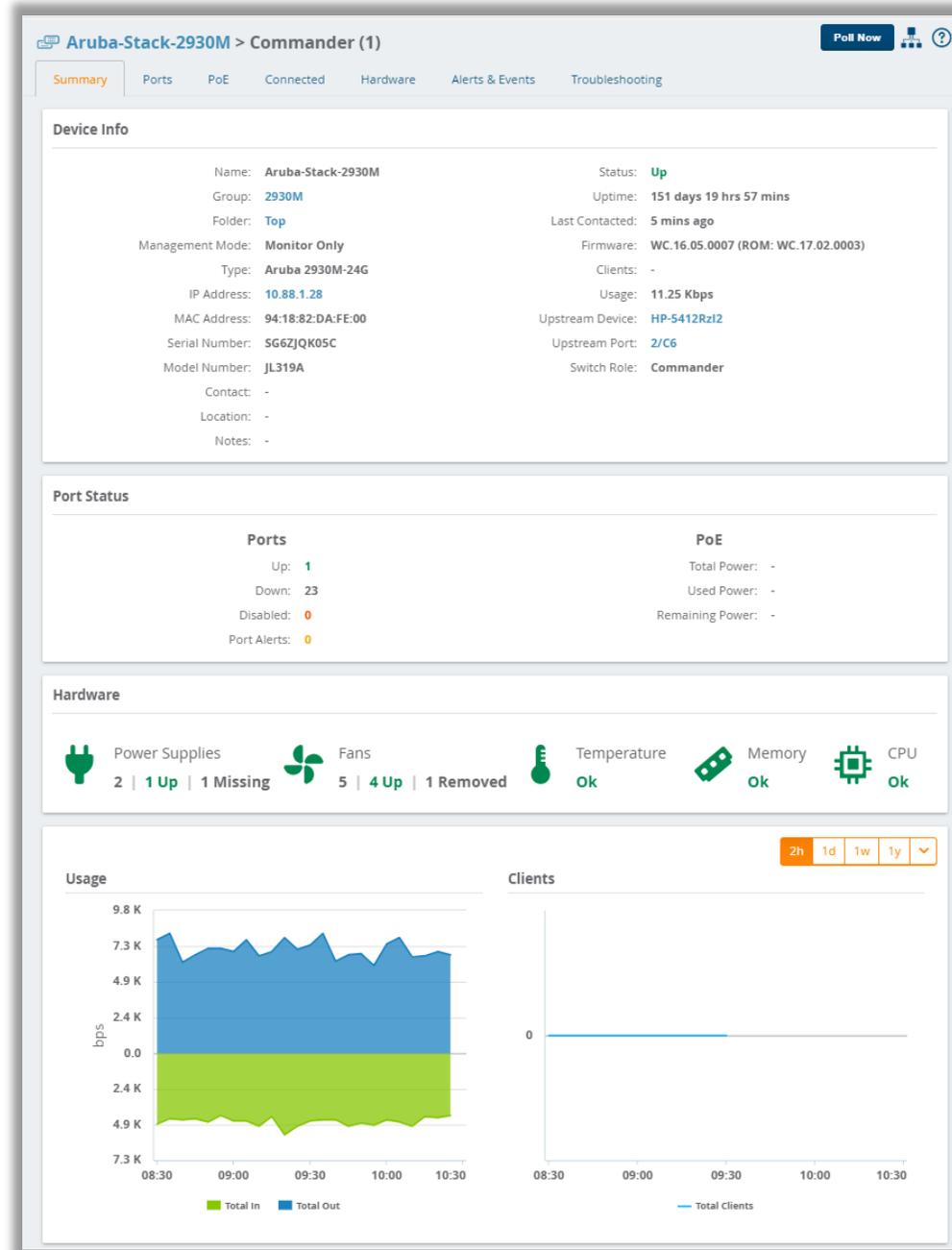
4

Integrated monitoring, alerts and troubleshooting

# AirWave 8.2.7

## Switch Monitoring - Summary

- Device Info
- Port Status
- Hardware
  - Power, Fans, Temperature, Memory & CPU
- Usage
  - In/Out
- Clients



# AirWave 8.2.7

## Switch Monitoring - Ports

**aruba** | AirWave

NEW DEVICES 0 UP 15 WIRED UP 15 WIRELESS UP 0 DOWN 3 ROGUE 851 CLIENTS 2 ALERTS 50 Log out admin

### HP-2920-48G-POEP

Summary **Ports** PoE VLANs Connected Hardware Alerts & Events Troubleshooting

**Status - Port 13**

Name: 13  
Description: 13  
Mac Address: D0:67:26:81:B6:B3  
Type: gigabitEthernetT  
Forwarding Mode: Auto

Operational Status: **Up**  
Admin Status: **Up**  
Last Contacted: 06/05/2018 09:05:14 PM  
Usage In: 291.51 Kbps  
Usage Out: 1.83 Mbps

Usage

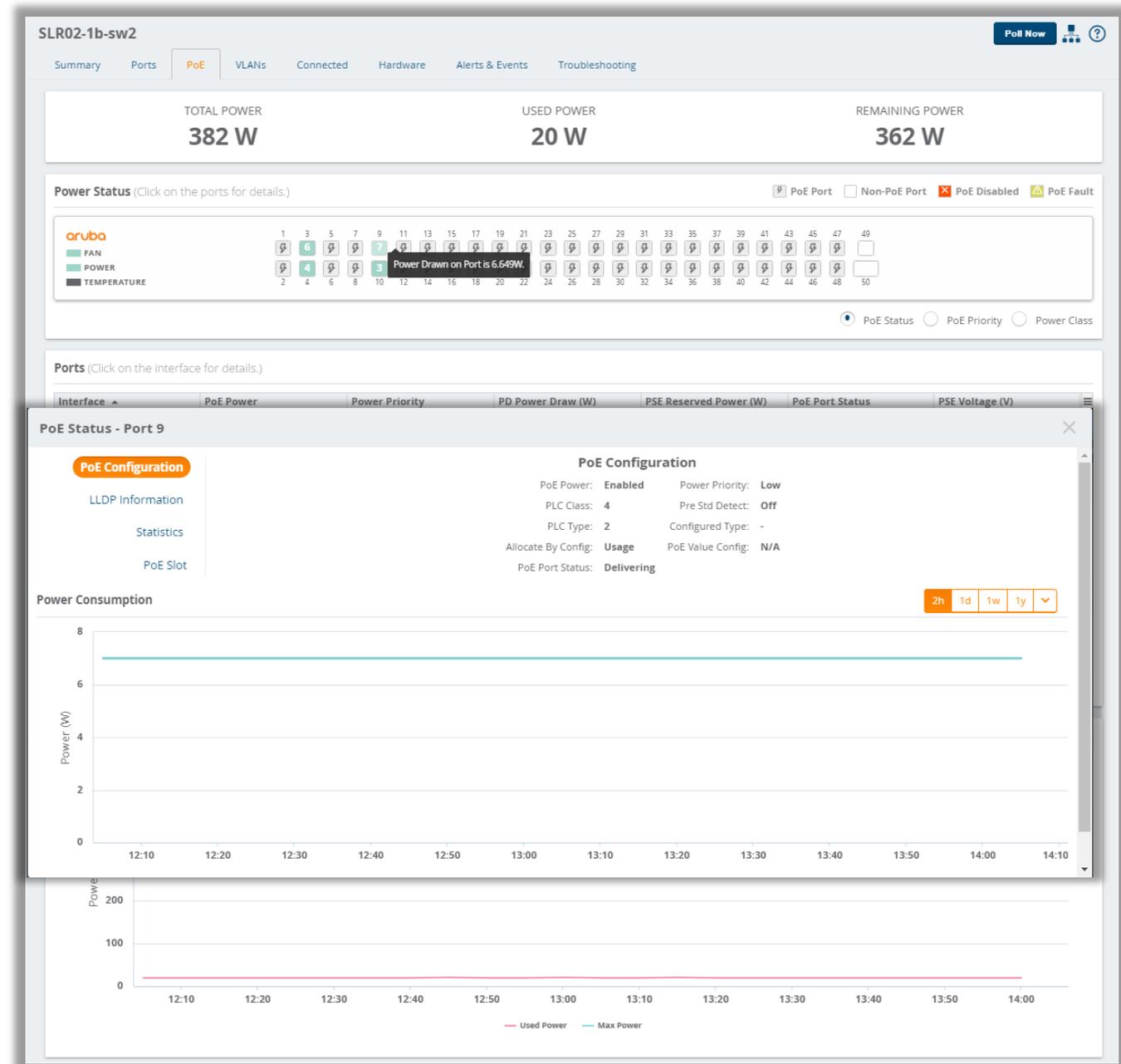
Interface Frame Counters

25 per page Total Items: 48

# AirWave 8.2.7

## Switch Monitoring - PoE

- Summary
  - Total Power
  - Used Power
  - Remaining Power
- Power Status Device panel
  - PoE Ports
  - PoE Disabled
  - PoE Fault
- PoE Port table
  - Details of PoE status and consumption
- Power Consumption Graph
  - Over all power usage vs max power



# AirWave 8.2.7

## Switch Monitoring - VLANs

- VLANs on Device
  - Click row and highlights on VLAN View
- VLAN View
  - Tagged and untagged membership
- Trunks
- Virtual Interfaces table

SLR02-1b-sw2

Summary Ports PoE **VLANs** Connected Hardware Alerts & Events Troubleshooting

VLANs (Click on row to highlight tagged, untagged and trunk ports in faceplate)

VLAN Name	VLAN ID	Untagged Ports	Tagged Ports
DEFAULT_VLAN	1	17-48,50,Trk1	-
VLAN10	10	-	Trk1
VLAN350	350	1-8	Trk1
VLAN755	755	9-16	Trk1

Total Records: 4 (Selected Items: 1)

VLANs View  Tagged Port  Untagged Port

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1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49  
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50

Legend: FAN, POWER, TEMPERATURE

Trunks

Name	Ports	Type
Trk1	49	LacpTrk

Total Records: 1

Virtual Interfaces

Interface	Description	IP Address	IPv6 GLOBAL Unicast ...	Admin Status	Operational Status	Interface Labels	Action
DEFAULT_VLAN	DEFAULT_VLAN	-	-	Up	Up	-	
VLAN10	VLAN10	10.5.2.72	-	Up	Up	-	
VLAN350	VLAN350	-	-	Up	Up	-	
VLAN755	VLAN755	-	-	Up	Up	-	
lo0	lo0	-	-	Up	Up	-	
lo1	lo1	-	-	Down	Down	-	
lo2	lo2	-	-	Down	Down	-	
lo3	lo3	-	-	Down	Down	-	
lo4	lo4	-	-	Down	Down	-	
lo5	lo5	-	-	Down	Down	-	

# AirWave 8.2.7

## Switch Monitoring - Connected

- Summary
  - Connected Device & Neighbors
- Mimic showing connected devices
- Connected Devices
  - Authenticated and Rouge devices connected to the switch
- Neighbors
  - Discovered via SNMP, CDP or LLDP to be connected to the switch

Aruba-Demo-2930Ms > Commander (3) Poll Now

Summary Ports PoE **Connected** Hardware Alerts & Events Troubleshooting

CONNECTED DEVICES: 1 NEIGHBORS: 2

Connected Devices (Mouse over on the highlighted ports to see the connected devices.) Up Down Disabled Alert

aruba

FAN POWER TEMPERATURE

1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 A1 A3 S1

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 A2 A4 S2

Connected Devices: 1  
1. Compal Communications, Inc.-C1:4F:C8

Connected Devices

MAC	Port	Username	User Role	IP Address	Authen Type	Name	Type	Action
00:16:D4:C1:4F:C8	3/37	host/PC5.hpnuk.hp...	-	10.88.1.158	Dot1x	Compal Communicati...	Compal Communicati...	

Total Records: 1

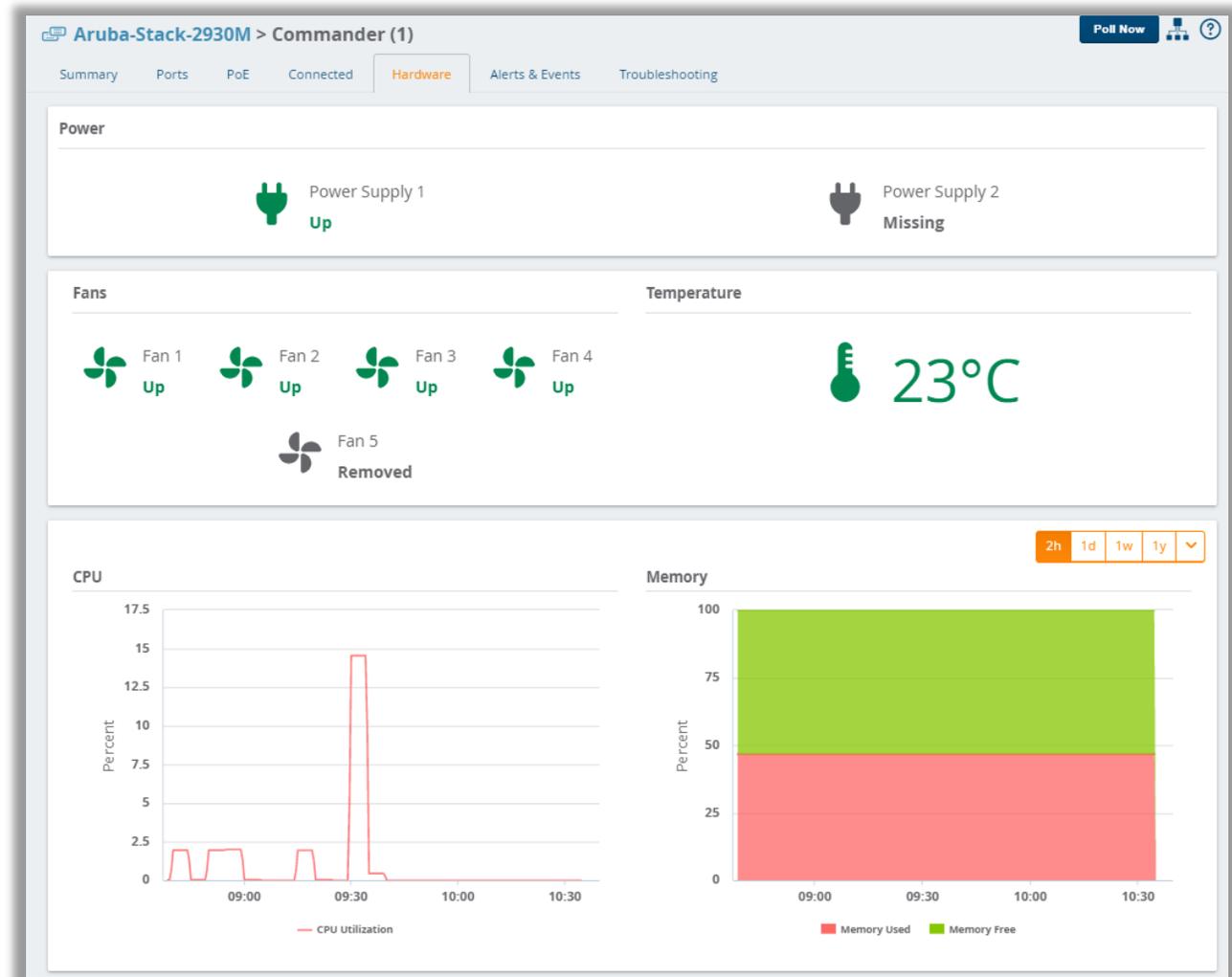
Neighbors

MAC Address	Local Port	Remote Port	Neighbor IP Address	SysName	Description	Capabilities
00:15:60:F4:4E:00	3/1	B14	10.88.69.20	Comms5406	HP J8697A Switch 5406zl, r...	Bridge/Router
XFF	3/33	LAN port	10.88.70.102	regDN 1002,MITEL 5330 DM	regDN 1002,MITEL 5330 D...	Bridge/Phone

# AirWave 8.2.7

## Switch Monitoring - Hardware

- Power Supplies
- Fans
- Temperature
- CPU
- Memory



# AirWave 8.2.7

## Switch Monitoring - Alerts

- Alerts
  - Based on triggers
- Device Events
  - Sent from Device
- AMP Device Events
  - eg Status or Config change
- Audit Log

The screenshot displays the 'Alerts & Events' section for device SLR01-1B-sw1. The Alerts table contains the following data:

Trigger Type	Trigger Summary	Time	Severity	Details
Interface Usage	Usage >= 100000 Kbps for 15 min...	Mon, 10 September 2018, 21:55:24	Warning	-
Interface Usage	Usage >= 100000 Kbps for 15 min...	Mon, 10 September 2018, 21:50:24	Warning	-
Interface Usage	Usage >= 100000 Kbps for 15 min...	Mon, 10 September 2018, 21:50:24	Warning	-

Below the Alerts table, there are three sections: 'Device Events', 'AMP Device Events', and 'Audit Logs'. The 'Device Events' and 'AMP Device Events' sections both show 'No data available'. The 'Audit Logs' section contains two records:

Time	User	Event
Sat Sep 1 10:52:41 2018	masharma	ap_group (id 18): Show Device Settings for: '2' => '0'
Tue Aug 14 13:47:46 2018	dcomfort	ap (id 762): Folder: 'Top > Aruba HPE > SLR switches', Group: '...

# AirWave 8.2.7 Switch Monitoring – Trouble Shooting

Easily run predefined troubleshooting commands

SLR01-1B-sw1 Poll Now ?

Summary Ports PoE VLANs Connected Hardware Alerts & Events **Troubleshooting**

**Commands** Cable Test

**Commands** (Select commands to execute)

Select Command

- Power Over Ethernet**
  - show power-over-ethernet
  - show power-over-ethernet brief
- L2 Loop Prevention**
  - show vlans
  - show spanning-tree
  - show spanning-tree detail
  - show smart-link group all

Auto Run

Run Every 15 seconds For 15 minutes Run

No data available

# AirWave 8.2.7

## Switch Monitoring - Stacking

**DEVICES LIST**

Default View: Devices [ Total Row Count: 14 ]

DEVICE	STATUS	CONFIGURATION	CONTROLLER	FOLDER
10504-IRF	Up	Error	-	Wired
2930F-VSF	Up	Good	-	Wired
2930F-VSF-2	Up	-	-	Wired
2930F-VSF-3	Up	-	-	Wired
2930F-VSF-4	Up	-	-	Wired
5412R-VSF	Up	Mismatched	-	Wired
5412R-VSF-2	Up	-	-	Wired
7503-IRF	Up	Error	-	Wired
AS1-3810	Down	In Progress	-	Wired
Cisco-6509-1	Down	Error	-	Wired
Cisco-6509-2	Up	Error	-	Wired
DS1-3800-stack	Down	Verifying	-	Wired
DS1-3800-stack-2	Down	-	-	Wired
DS1-3800-stack-3	Down	-	-	Wired

Stack Monitoring

**2930F-VSF** Poll Now

Summary | Ports | PoE | VLANs | Connected | Hardware | Alerts & Events | Troubleshooting

---

**Stack Info**

Name: 2930F-VSF	Status: Active
Group: Geneva CIC	Members: 4   4 Up
Folder: Top > Wired	Last Contacted: 5 mins ago
Management Mode: Monitor Only	Firmware: WC.16.04.0008 (ROM: WC.16.01.0003)
IP Address: 10.12.5.21	Clients: -
Contact: Vincent Giles	Usage: 941.47 Mbps
Location: IT Room	IMC: Intelligent Management Center
ID: 2930	
Topology: Ring	

---

**Port Status**

<b>Ports</b>	<b>PoE</b>
Up: 12	Total Power: 1110 W
Down: 124	Used Power: 0 W
Disabled: 0	Remaining Power: 1110 W
Port Alerts: 0	

---

**Hardware**

Power Supplies 4   4 Up	Fans 8   8 Up	Temperature -	Memory Ok	CPU Ok
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**Stack Members**

Name	Member ID	Role	Status	Priority	MAC
2930F-VSF	1	Commander	Up	200	00:FD:45:82:46:80
2930F-VSF-2	2	Member	Up	150	94:18:82:C8:A1:80
2930F-VSF-3	3	Member	Up	100	94:18:82:C8:E2:E0
2930F-VSF-4	4	Standby	Up	128	94:18:82:60:D9:A0

Total Records: 4

# AirWave 8.2.7

## Switch Monitoring – Stacking & VSF

**HP-VSF-Switch**

UP: 5, DOWN: 43, DISABLED: 0, ALERTS: 0

**Ports Status** (Click on the ports for details.)

1 HP-VSF-Switch-1 (Standby)

2 HP-VSF-Switch-2 (Commander)

Interface	Mode	Name	Type	Description	Interface L...	MAC Adre...	Admin Sta...	Operation...	Clients	Usage In	Usage Out	Native VLA...	Tagge
1/A1	Auto	1/A1	gigabitEther...	interface_1V...	-	58:20:B1:98...	Up	Up	0	42.30 Kbps	44.10 Kbps	1	1
1/A2	Auto	1/A2	gigabitEther...	-	-	58:20:B1:98...	Up	Down	0	-	-	1	1
1/A3	Auto	1/A3	gigabitEther...	-	-	58:20:B1:98...	Up	Down	0	-	-	1	1
1/A4	Auto	1/A4	gigabitEther...	-	-	58:20:B1:98...	Up	Down	0	-	-	1	1
1/A5	Auto	1/A5	gigabitEther...	-	-	58:20:B1:98...	Up	Down	0	-	-	1	1
1/A6	Auto	1/A6	gigabitEther...	-	-	58:20:B1:98...	Up	Down	0	-	-	1	1
1/A7	Auto	1/A7	gigabitEther...	-	-	58:20:B1:98...	Up	Down	0	-	-	1	1

**2930F-VSF**

UP: 12, DOWN: 124, DISABLED: 0, ALERTS: 0

**Ports Status** (Click on the ports for details.)

1 2930F-VSF-1 (Commander)

2 2930F-VSF-2 (Member)

3 2930F-VSF-3 (Member)

4 2930F-VSF-4 (Standby)

**Ports** (Click on the interface for details.)

Interface	Type	Admin Status	Operational Status	Native VLANs	Tagged VLANs	Action
1/1	100/1000T	Up	Down	1	1	
1/2	100/1000T	Up	Down	1	1	
1/3	100/1000T	Up	Down	1	1	
1/4	100/1000T	Up	Down	1	1	
1/5	100/1000T	Up	Down	1	1	
1/6	100/1000T	Up	Down	1	1	
1/7	100/1000T	Up	Down	1	1	
1/8	100/1000T	Up	Down	1	1	
1/9	100/1000T	Up	Down	1	1	
1/10	100/1000T	Up	Down	1	1	
1/11	100/1000T	Lin	Down	1	1	

Total Records: 136

# Configuration Snippet – Add an IOT VLAN Across Switches



Config Job ×

① Config Command    ② Select Device    ③ Schedule    ④ Confirm

Job Name \*

Job Description

Device Type \*  
 Aruba Controllers     Aruba Switches     Comware Switches

Config Snippet \*

[Next](#)

1

Ability to push subset of CLI commands

# Configuration Snippet – Devices on which the snippet is applied



Config Job

1 Config Command    2 Select Device    3 Schedule    4 Confirm

DEVICE	STATUS	IP ADDRESS	TYPE	FIRMWARE
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> TME-NMS-MDF-Aruba3810...	↑ Up	10.70.89.2	Aruba 3810M-40G-8SR-PoE...	KB.16.05.0007
<input checked="" type="checkbox"/> TME-NMS-ACS-Aruba2930F-1	↑ Up	10.70.89.3	Aruba 2930F-8G-PoE+-2SFP+	WC.16.05.0007
<input checked="" type="checkbox"/> Aruba-2930F_2	↑ Up	10.70.89.4	Aruba 2930F-8G-PoE+-2SFP+	WC.16.05.0007

Total Items: 3

[Back](#)      [Next](#)

1

Ability to push subset of CLI commands

2

Choose devices for config snippet push

# Configuration Snippet – When to push the snippet?



**Config Job** ×

1 Config Command    2 Select Device    3 **Schedule**    4 Confirm

**Schedule Job**

Run Now

Schedule Job

Please select a date

MAY 2018						
MO	TU	WE	TH	FR	SA	SU
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

**Back**      **Next**

- 1** Ability to push subset of CLI commands
- 2** Choose devices for config snippet push
- 3** Schedule the config push

# Configuration Snippet – Confirming Push



**Config Job** ✕

① Config Command    ② Select Device    ③ Schedule    ④ Confirm

**Job Name**

**Schedule Time** 2018-05-31 17:11:00

**Job Description**

**Config Snippet**

[↗ Hide selected devices \(Total selected devices - 3\)](#)

DEVICE	STATUS	IP ADDRESS	TYPE	FIRMWARE
TME-NMS-MDF-Aruba3...	↑ Up	10.70.89.2	Aruba 3810M-40G-8SR...	KB.16.05.0007
TME-NMS-ACS-Aruba2...	↑ Up	10.70.89.3	Aruba 2930F-8G-PoE+...	WC.16.05.0007
Aruba-2930F_2	↑ Up	10.70.89.4	Aruba 2930F-8G-PoE+...	WC.16.05.0007

Total Items: 3

[Back](#) [Confirm](#)

- 1** Ability to push subset of CLI commands
- 2** Choose devices for config snippet push
- 3** Schedule the config push
- 4** Confirm config push

# Configuration Snippets

- Ships with example snippets
- Need to replace variables
  - You are not prompted
- Can use Template Options as Variables
  - User defined Variables are roadmap

The screenshot displays the Aruba AirWave configuration interface. The top navigation bar shows system status: NEW DEVICES (0), UP (57), WIRED UP (39), WIRELESS UP (18), DOWN (6), ROGUE (643), CLIENTS (4), and ALERTS (2). The left sidebar contains navigation options: Home, Groups, List, Config Jobs (highlighted), Devices, Clients, Reports, System, Device Setup, AMP Setup, RAPIDS, and VisualRF. The main content area shows a table of configuration snippets with columns for Name, Device Type, Creation Time, Config Commands, Description, and Action.

Name	Device Type	Creation Time	Config Commands	Description	Action
Add Syslog Server	Aruba Switch	8/17/2018, 4:02:11 PM	logging <ipaddress>	Enable Logging Syntax : logging [IP-...	
Remove Syslog Server	Aruba Switch	8/17/2018, 4:02:11 PM	no logging <ipaddress>	Disable Logging Syntax : no logging...	
Enable SNMP Trap	Aruba Switch	8/17/2018, 4:02:11 PM	snmp-server enable traps <option>...	Enable SNMPv1/v2 Traps Syntax : s...	
Disable SNMP Trap	Aruba Switch	8/17/2018, 4:02:11 PM	no snmp-server enable traps <opti...	Disable SNMPv1/v2 Traps Syntax : ...	
Enable STP	Aruba Switch	8/17/2018, 4:02:11 PM	spanning-tree enable	Enable spanning-tree	
Disable STP	Aruba Switch	8/17/2018, 4:02:11 PM	spanning-tree disable	Disable spanning-tree (default)	
Configure NTP server	Aruba Switch	8/17/2018, 4:02:11 PM	ntp server <ipaddress>	Configure a NTP server to poll for t...	
Remove NTP server	Aruba Switch	8/17/2018, 4:02:11 PM	no ntp server <ipaddress>	Remove NTP server not to poll for t...	
Enable Interface	Aruba Switch	8/17/2018, 4:02:11 PM	interface <port_number> enable	Enable the Interface Syntax : interf...	
Disable Interface	Aruba Switch	8/17/2018, 4:02:11 PM	interface <port_number> disable	Disable the Interface Syntax : interf...	
Enable DLDAP	Aruba Switch	8/17/2018, 4:02:11 PM	dldap enable	Enable DLDAP	

The 'Config Snippet' modal form is open, showing the following fields:

- Name \***: Configure SNMP Read Community
- Description**: Setting Read community. MIB variables cannot be set, only read.  
Syntax : snmp-server community [ASCII-STR] [manager | operator] restricted
- Device Type \***:  Aruba Controller  Aruba Switch  Comware Switch
- Config Commands \***: snmp-server community <community\_string> <user> restricted

Buttons at the bottom: **Reset**, **Cancel**, **Update**

# Supported Aruba Switches

## AOS-S

- 2530
- 2540
- 2620
- 2920
- 2930F
- 2930M
- 3800
- 3810
- 5400R
- 5406zl
- 5412zl

## AOS-CX

- 8400
- 8320



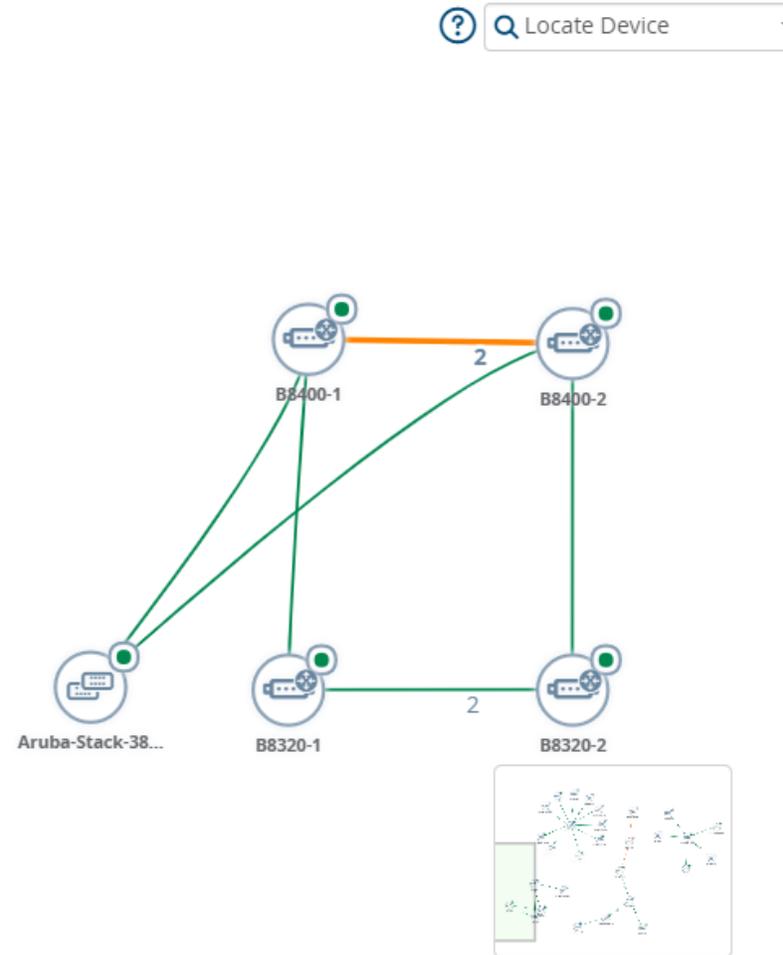
# 8400 / 8320 Support

## – Single device

- Discovery & Topology ✓
- No new switch monitoring ⚠
- Configuration Backup and Baseline ✓
  - Restore is not supported currently ⚠

## – VSX

- Discovery and Topology ✓
- No new switch monitoring ⚠
- No Configuration backup and Baseline ⚠



View	Filter	Actions	Details
● 1/1/1 - 1/1/1 ▲			
Source: LLDP			
<b>1/1/1</b>			
Device: B8400-1			
MAC: 94:F1:28:EF:C2:00			
Description: 1/1/1			
Type: ethernetCsmacd			
Admin Status: Up			
Forwarding Mode: Access			
Operational Status: Up			
Bandwidth In: 1.0 KB			
Bandwidth Out: 1.9 KB			
IP: 10.88.1.2			
Spanning Tree Details:			
<b>1/1/1</b>			
Device: B8400-2			
MAC: 94:F1:28:EF:C3:00			
Description: 1/1/1			
Type: ethernetCsmacd			
Admin Status: Up			
Forwarding Mode: Access			
Operational Status: Up			
Bandwidth In: 1.9 KB			

## 8.2.7.1

- Early Nov time frame
  - Tied to the AoS 8.4 release
- Dynamic segmentation phase 1
  - Visibility of PUTN & PPTN
- Fix some FlexNetwork device support
  - No longer Office connect
  - Topology
  - Still no Configuration Backup / Restore
- Ekahau Support in visual RF
- Support for Switch release 16.07

The screenshot displays the 'Connected' tab in the Aruba network management interface. It shows two sections: 'CONNECTED DEVICES' with a count of 1, and 'NEIGHBORS' with a count of 2. Below these, there is a 'Connected Devices' section with a status bar (Up, Down, Disabled, Alert) and a port grid. A tooltip is visible over port 13, displaying the following information:

- Username: 005056879034
- Role: authenticated (testrole)
- IP Address: 192.168.60.201
- Tunneled Controller: Aruba7005

Below the port grid is a table titled 'Connected Devices' with the following data:

MAC	Port	Username	User Role	IP Address	Authen Type	Notes	Action
00:50:56:87:90:34	13	005056879034	authenticated (testrole)	192.168.60.201	Tunneled-User-MAC	-	

# AirWave 8 Switch management

Getting there....

- ZTP ✓
- Configuration Backup and Baselineing ✓
- SW upgrades ✓
- Topology ✓
- Improved monitoring ✓
- Reusable Config Snippers ( templates in IMC speak) ✓

# Central

# Central recent additions include

- SD Branch
- Network Health & Label Health dash boards
- UI / Workflow improvements
- Install Manger (in beta)
- Topology View
- Client Details
  - New look & structure

**Aruba Central** | **NETWORK HEALTH** | DATA SOURCE: SUMMARY | GRID | STATUS | MAP | ● NO ISSUES ● POTENTIAL ISSUES

SITE NAME	NUMBER OF DEVICES					WAN	
	STATUS UP   DOWN	HIGH MEM USAGE	HIGH CPU USAGE	HIGH CH UTILIZATION 2.4 GHz   5 GHz	HIGH NOISE 2.4 GHz   5 GHz	UPLINKS DOWN	TUNNELS DOWN
TME Oakmea...	●	●	●	●	●	●	●
Salzburg	●	●	●	●	●	●	●
TME Santa Cla...	●	●	●	●	●	●	●
PGallant	●	●	●	●	●	●	●
EMEA-ATM-18	●	●	●	●	●	●	●
BPa	●	●	●	●	●	●	●
SEE	●	●	●	●	●	●	●
Smal	●	●	●	●	●	●	●
Memorial Sta...	●	●	●	●	●	●	●

12 Sites

---

**CLIENT INFO** | SUMMARY

CLIENTS: 2c:f0:ee:73:5a:9a

CLIENT >>>> SSID >>>> AP

**CLIENT INFO**

USERNAME	-	STATUS	Connected
MAC	2c:f0:ee:73:5a:9a	CONNECTION MODE	802.11AN
IP	192.168.0.92	SSID	Sandfield2
MANUFACTURER	Apple, Inc.	VLAN ID	1
ENCRYPTION	WPA-2 Personal	AUTHENTICATION SERVER	-
DHCP SERVER	192.168.0.254		

**USAGE & RF HEALTH**

SIGNAL STRENGTH	52 dBm	SPEED	240 Mbps
SIGNAL TO NOISE RATIO (SNR)	40 dB	CHANNEL / BAND	52E / 5 GHz

**CURRENT LOCATION**

---

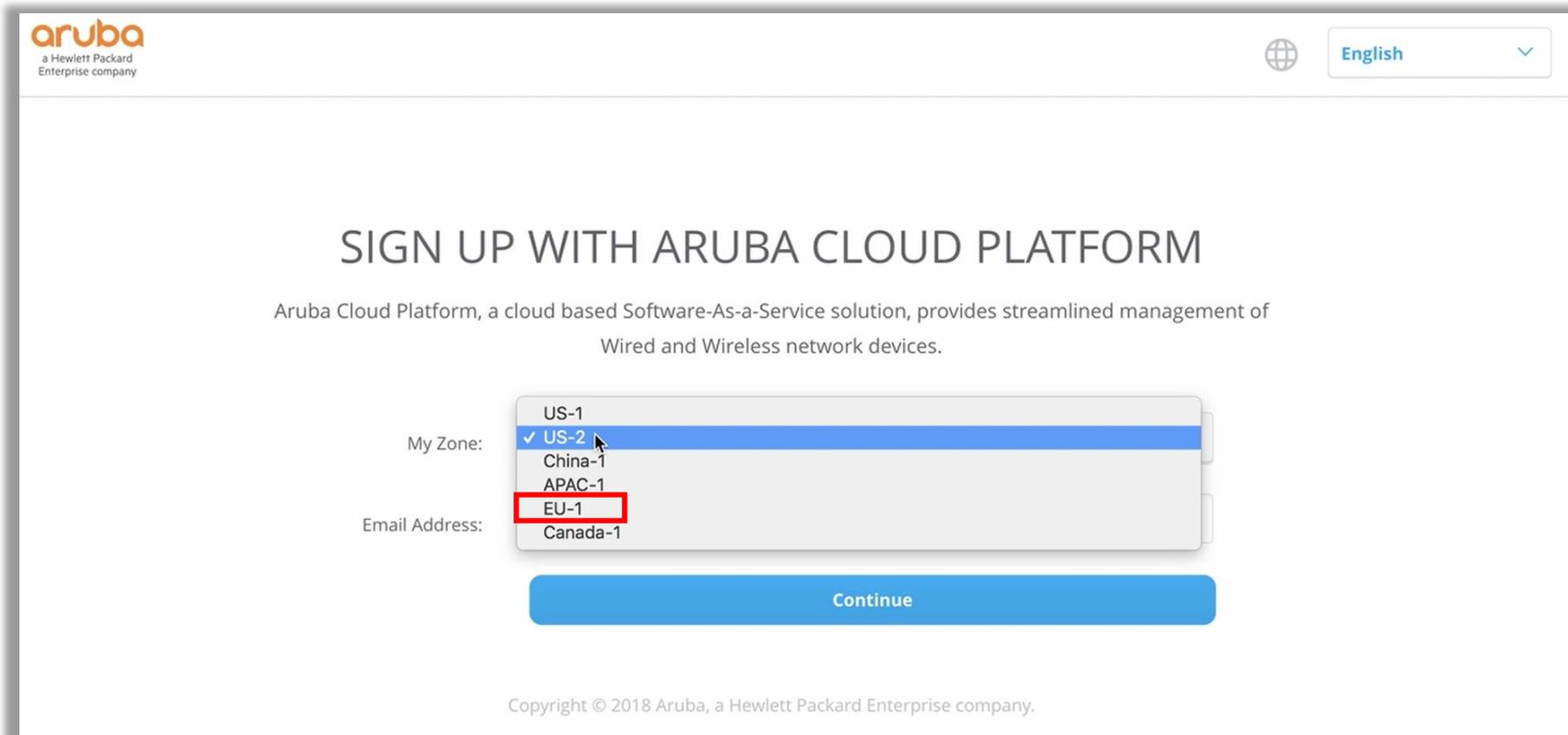
**Topology View**

**Details** | Filter

- GE 0/0/7 - A11
  - Interface: GE 0/0/7
  - Serial: CNC6JSP018
  - Device Name: TME\_OAK\_7008
  - Port Number: 7
- GE 0/0/6 - A10
  - Interface: GE 0/0/6
  - Serial: SG75G490H8
  - Device Name: HP-Switch-5406R212
  - Port Number: 11
- GE 0/0/6 - A10
  - Interface: GE 0/0/6
  - Serial: CNC6JSP018
  - Device Name: TME\_OAK\_7008
  - Port Number: 6
- GE 0/0/6 - A10
  - Interface: A10
  - Serial: SG75G490H8
  - Device Name: HP-Switch-5406R212
  - Port Number: 10

# Central

Sign up to the EMEA Cluster for improved performance



The screenshot shows the Aruba Cloud Platform sign-up interface. At the top left is the Aruba logo with the text "a Hewlett Packard Enterprise company". At the top right is a globe icon and a language selector set to "English". The main heading is "SIGN UP WITH ARUBA CLOUD PLATFORM". Below this is a descriptive sentence: "Aruba Cloud Platform, a cloud based Software-As-a-Service solution, provides streamlined management of Wired and Wireless network devices." The form includes a "My Zone:" label and a dropdown menu. The dropdown menu is open, showing a list of regions: "US-1", "US-2" (which is selected with a blue bar and a checkmark), "China-1", "APAC-1", "EU-1" (which is highlighted with a red rectangular box), and "Canada-1". Below the dropdown is an "Email Address:" label. At the bottom of the form is a large blue "Continue" button. At the very bottom of the page, there is a copyright notice: "Copyright © 2018 Aruba, a Hewlett Packard Enterprise company."

# Central 2.4.5 includes

- Import configuration template from a Switch
- Download and upload variables from CSV
- Per day usage limits on guests
- Support for Aruba 5400R stacks
- Support Aruba Instant 8.3.0.2
- Webhook through the UI
- SD-WAN Gateways
  - Simplified workflow Apply Policies
  - Enhancement to VLANs page
  - Support for WAN availability reports
- MSP enhancements

ADD TEMPLATE

If templates/variables for a aruba switch are modified the entire configuration will be pushed and switch will be rebooted.

Template Name  Device Aruba Switch

Model ALL Version ALL

Select a device to import configuration 2930F-Demo2 Import Template

Importing configuration from a device will replace the existing template

Template

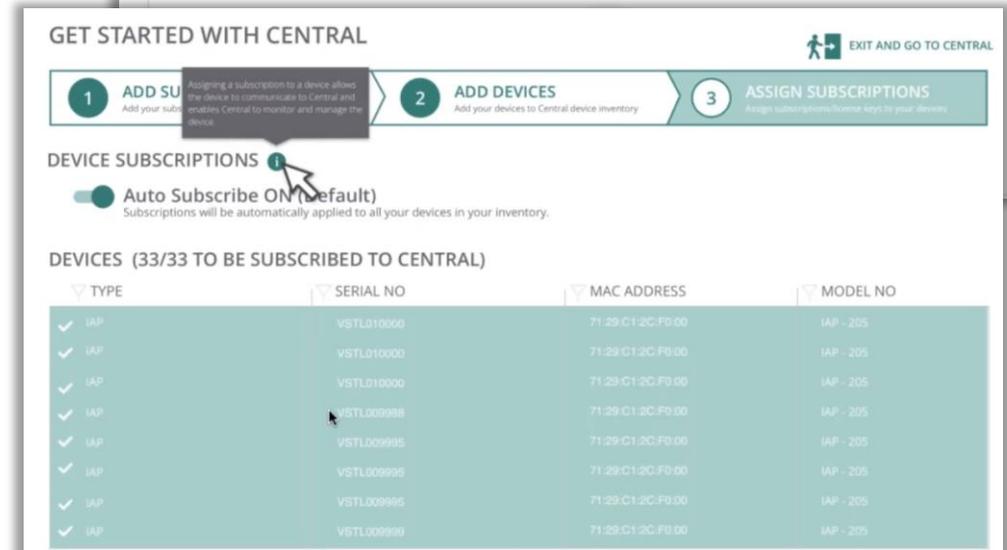
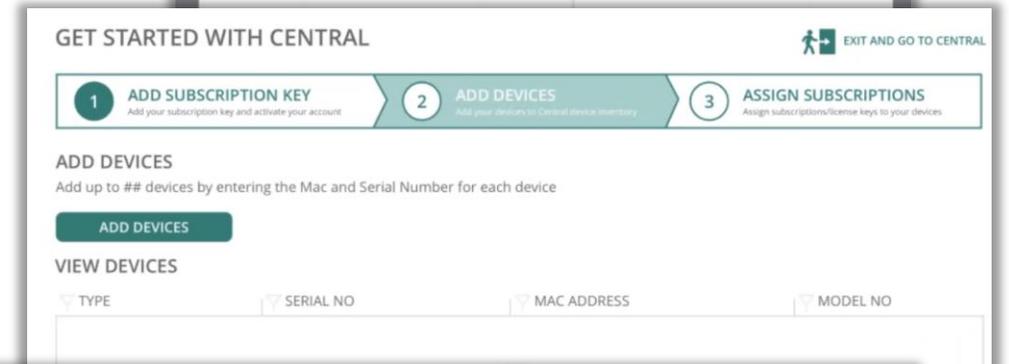
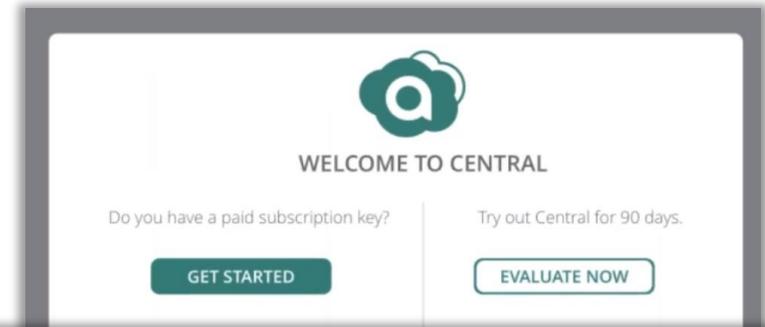
1

Save Cancel

[http://help.central.arubanetworks.com/2.4.5/documentation/online\\_help/content/public\\_cloud/whats\\_new/whats\\_new.htm](http://help.central.arubanetworks.com/2.4.5/documentation/online_help/content/public_cloud/whats_new/whats_new.htm)

# What is coming

- Simplified getting started and on boarding
  - Includes removing the 32 device limit manually adding devices
- Improved switch support
  - Monitoring and Configuration coming in phases
    - LAG/Trunk and STP Configuration
  - UI make over will be introduced
- Controller support
  - H1CY19
- Start rolling in from 2.4.6 to 2.4.9
  - Central releases every 4 to 6 weeks.



# Central – New Switch monitoring mock-ups – may change

**MONITORING**

ACCESS POINTS: 12.4k / 30  
SWITCHES: 249 / 3  
GATEWAYS: 12 / 0  
CLIENTS: 8.73k / 23

**SWITCH HEALTH** site-name-001

HEALTH STATUS: 85%  
DEVICE HEALTH: Good

**SWITCH INFO**

MODEL: J-NUMBER  
MAC: a1:56:1e:9a:6a  
SERIAL: CN59FPB1GX  
UP TIME: 2 Days 12 Hours  
LAST REBOOT: Aug 11 2018 01:47:13  
CONFIG STATUS: Dirty Diff (Update Available)  
LAST CONFIG CHANGE: Jul 14 2018 18:12:23  
HOSTNAME: blr-main-stack-01  
GROUP: aruba\_india\_devices-01  
SITE: blr-aura-091  
LABELS: label\_01, label\_02, label\_03, label\_04, label\_05  
LAST STATS RECEIVED: Aug 16 2018 18:12:23

**VLANs**

NAME	ID	TAGGED
vlan_name_01	1	1, 3, 5, 7, 9
vlan_name_02	2	4, 15, 19-28
vlan_name_03	3	7, 14, 19
vlan_name_04	4	1, 8, 19, 34
vlan_name_05	5	2, 5, 6, 7, 12, 19, 24, 25, 2

**HARDWARE**

ID	NAME	UP
1	aruba-switch2930-01	3
2	aruba-switch2930-02	2
3	aruba-switch2930-03	1
4	aruba-switch2930-04	3

**PORTS FOR vlan-01**

Check tagged or untagged port for a VLAN

1 aruba-switch-001  
2 aruba-switch-002 (COMMANDER)  
3 aruba-switch-003 (STANDBY)  
4 aruba-switch-004

**POWER SUPPLIES**

NAME	STATUS
Power Supply - 1	UP
Power Supply - 2	UP
Power Supply - 3	DOWN
Power Supply - 4	UP
Power Supply - 5	MISSING

**CPU**

CURRENT CPU UTILIZATION: 67%

**INTERMEDIATE DEVICES**

MAC	NAME	TYPE	IP	STATUS	OS
71:a3:ff:ad:45:21	GigabitEthernet0/2/3	10.233.13.255	--	None	Cisco IOS So...
71:a3:ff:ad:45:21	GigabitEthernet0/2/4	10.233.13.255	--	None	Cisco IOS So...
71:a3:ff:ad:45:21	GigabitEthernet0/2/5	10.233.13.255	--	Bridge	Cisco IOS So...
71:a3:ff:ad:45:21	GigabitEthernet0/2/6	10.233.13.255	--	Bridge	Cisco IOS So...
71:a3:ff:ad:45:21	GigabitEthernet0/2/7	10.233.13.255	--	Bridge	Cisco IOS So...
71:a3:ff:ad:45:21	GigabitEthernet0/2/8	10.233.13.255	--	None	Cisco IOS So...
71:a3:ff:ad:45:21	GigabitEthernet0/2/9	10.233.13.255	--	None	Cisco IOS So...
71:a3:ff:ad:45:21	GigabitEthernet0/2/10	10.233.13.255	--	None	Cisco IOS So...

**RUN COMMANDS**

- PING TEST
- CABLE TEST
- INTERFACE BOUNCE
- TRACEROUTE
- POE BOUNCE
- LED CHASSISLOCATE
- PACKET CAPTURE

# Central – New AP Health mock-ups – may change

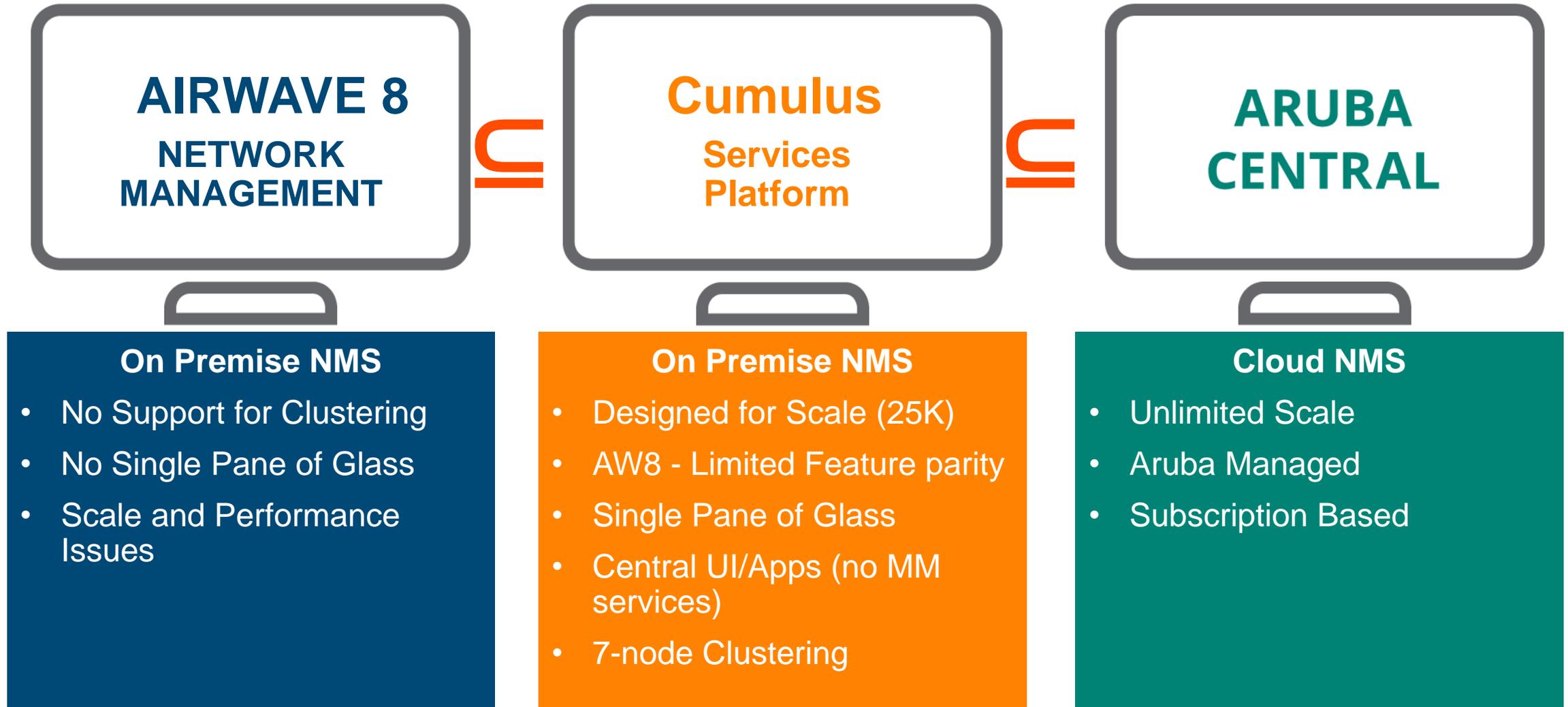
The screenshots illustrate the following components of the AP Health mock-up:

- AP Health Summary:** Shows overall health status (Good/Offline), system metrics (CPU > 60%, Memory > 60%), and radio status (Good/Disabled).
- AP Info:** Provides detailed device information including name (AP-225), MAC address, uptime (2 Days 12 Hours), and firmware version (6.5.4.7).
- RF Health:** Displays RF Channel Utilization and Noise Floor graphs for 2.4 GHz.
- Tunnels:** Shows a list of VPN peers (Primary/Backup) and their status (Up).
- Tunnels Info:** Details the tunnel configuration, including port (GigabitEthernet) and VLAN ID (4094).
- Management Actions:** A sidebar offers various tools such as 'SHOW COMMANDS', 'CONNECTIVITY TESTS', 'SPECTRUM SCAN', 'REBOOT', and 'PACKET CAPTURE'.

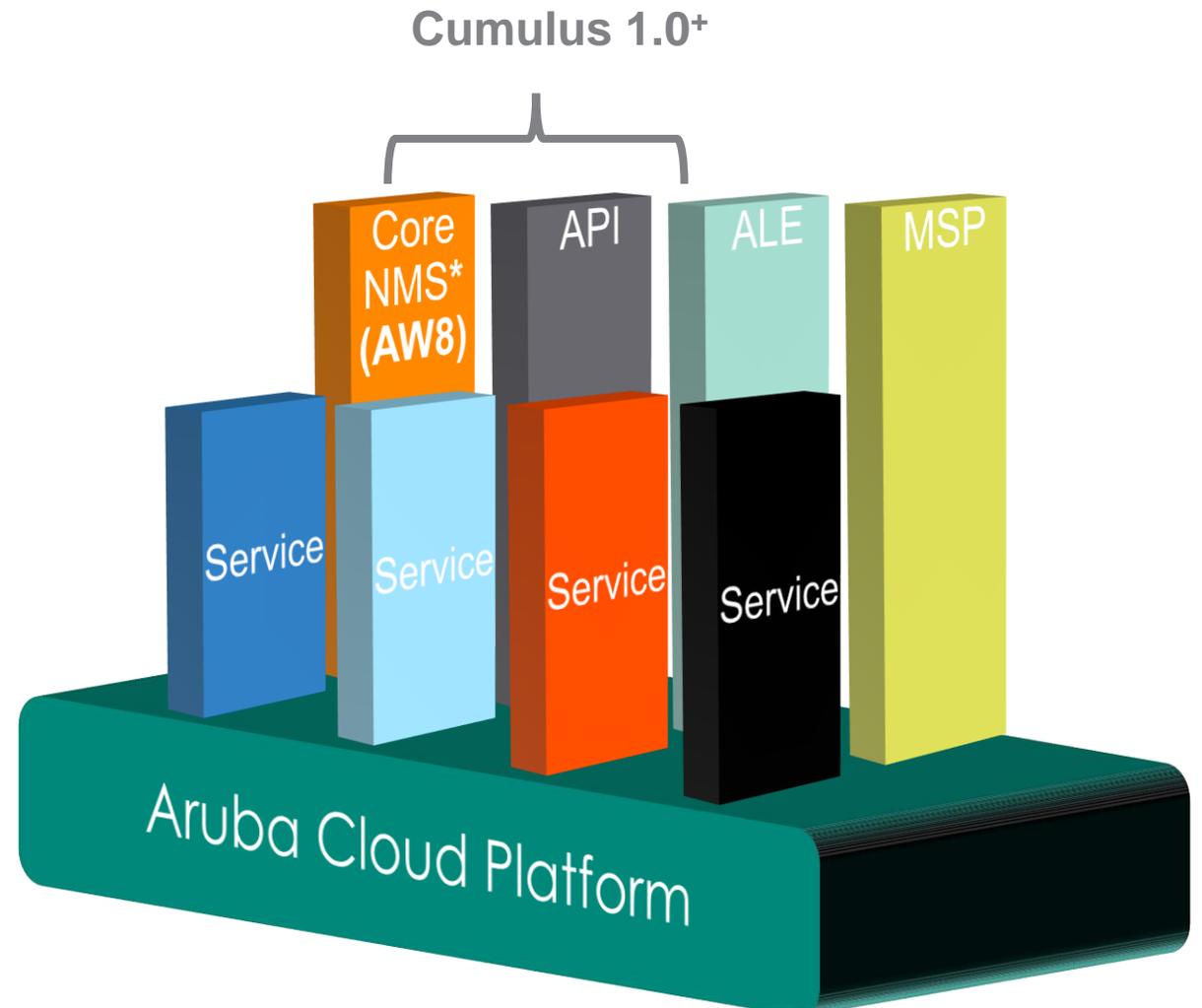
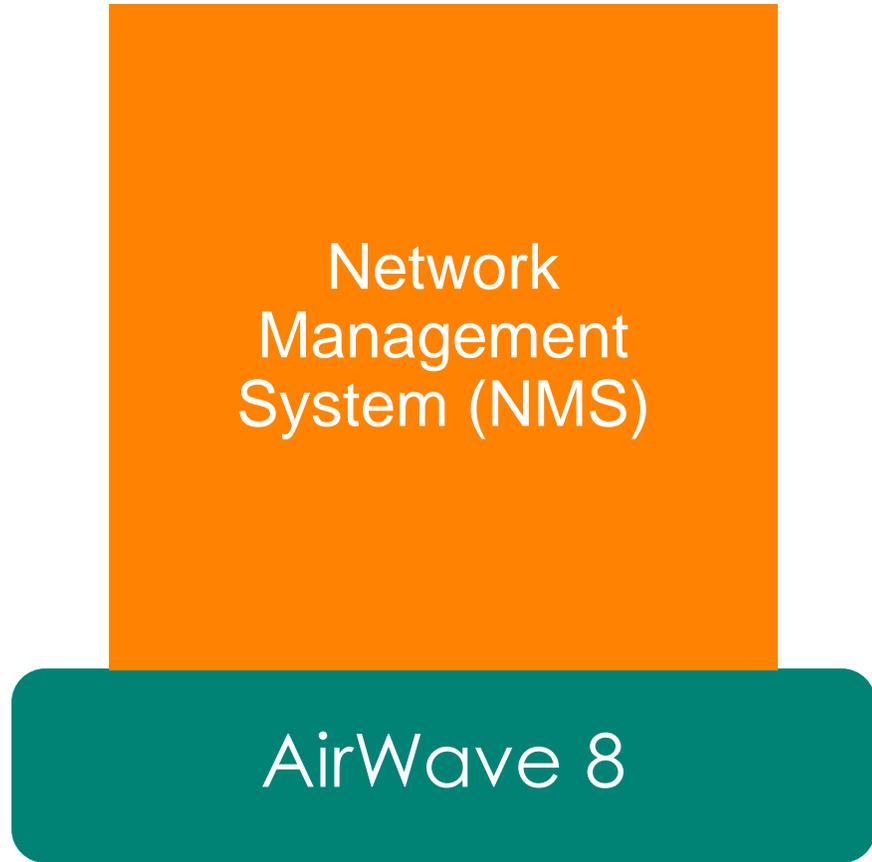
**Thank you !**  
Who's hungry?

# Cumulus (aka Airwave 10)

# Network Management

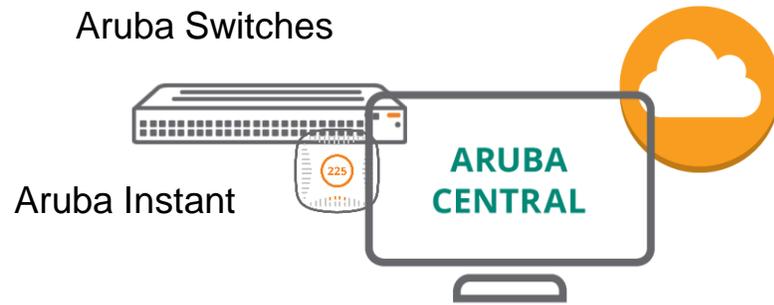


# What is Cumulus?

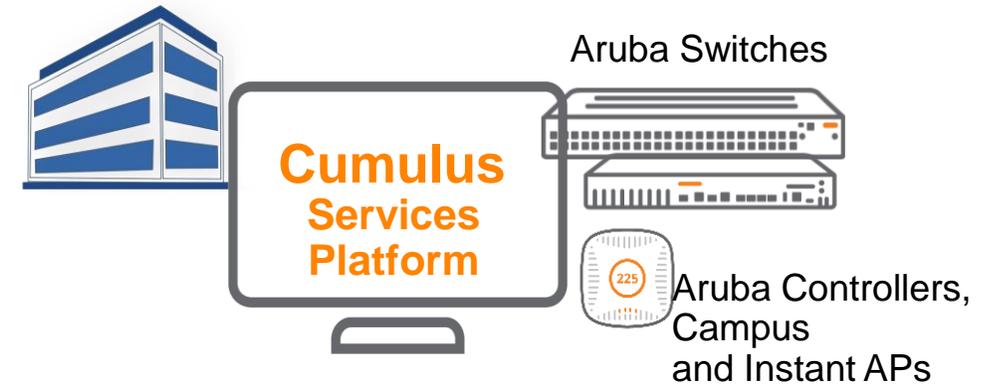


\*Core NMS features written from Scratch  
+Cumulus requires new hardware and AW8 cannot be upgraded to Cumulus

# One Application, Two Deployment Models



- Only solution that will support cloud
- Supports Aruba today
- Clarity, Presence and Guest options
- UCC support coming
- Scales via cloud architecture



- On-prem solution for all Aruba gear
- 4K to 25K devices per cluster
- Core NMS: monitoring, config, alerts
- Topology, VisualRF, RAPIDS
- Supports Clarity, UCC, AppRF...
- On roadmap: Multivendor, SA

# Architecture – Cluster Capacity

Cluster (Appliance Only)	Device Limit	Redundancy
1 Node 	4K	No Redundancy
3 Node 	8K	N + 1 Redundancy
5 Node 	16K	N + 1 Redundancy
7 Node 	25K	N + 1 Redundancy

- These are high end server appliances
  - 256GB RAM, 4TB SSDs & 40 Cores
- Scale & Redundancy = comes at a COST with Cumulus
- ALE will require min x 2

# AirWave 8 & Cumulus today

## AirWave 8

- This as the main solution for Wired & Wireless
  - Add IMC if required
- Future proof new AW8 investments
  - New AW8 sku based on the Cumulus appliance planned
- Focus is on adding switch support and new APs etc
- Will still be developed
- Glass still being developed

## Cumulus

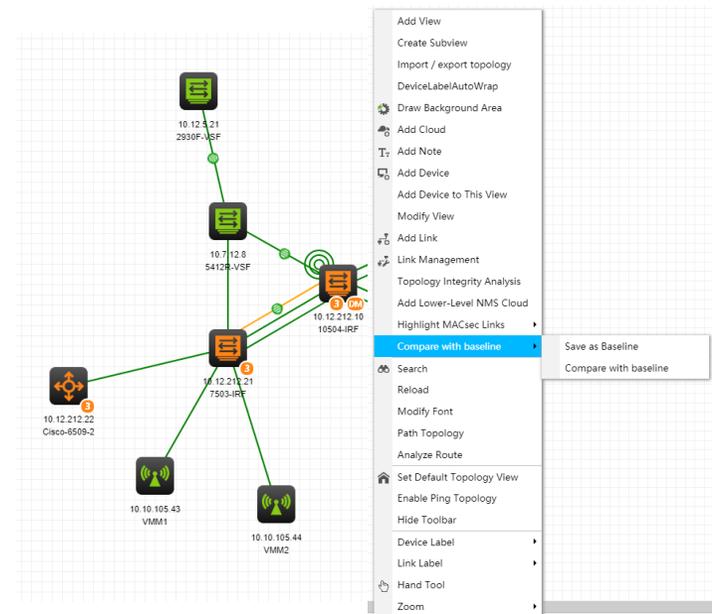
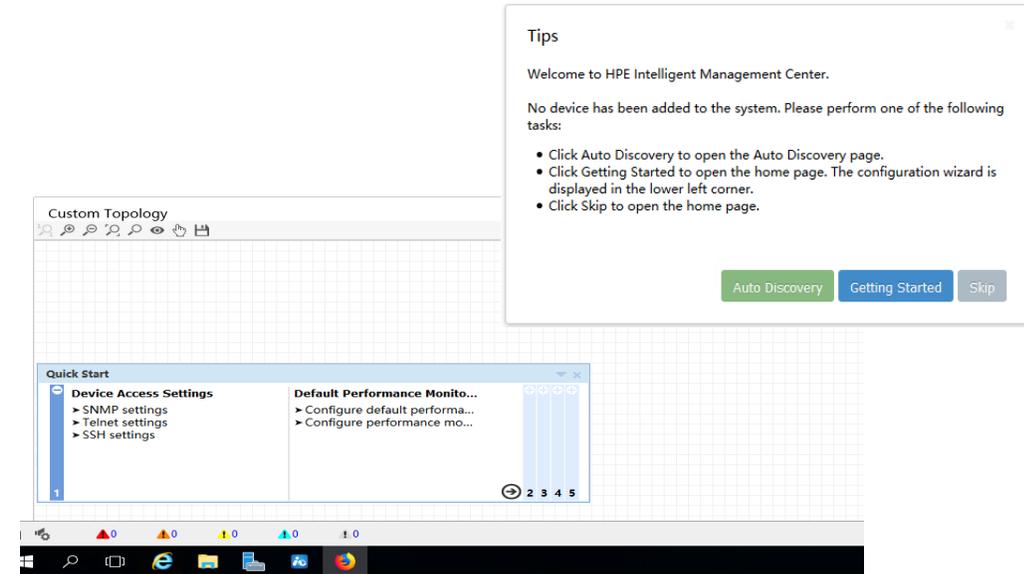
- Aimed at very large AP scale deployments - scale
  - Multiple AW8 today's > 4K APs
  - Clustering for scale and resilience
  - FCS end of CY18 currently
  - GA due early CY19
- Deploying cloud architecture On Prem will be ££££ !
  - Will not run on existing AW8 HW
  - Its NOT an upgrade
  - There will be migration and “aggressive” upgrade promotions
- Central working on catching up with switch management

# IMC 7.3 - What's been happening ?

# IMC 7.3 E0605

## The Current Version

- Latest OS support
  - Windows Server 2016 & MS SQL 2016
- Simpler to install and evaluate
  - Embedded DB is MS Express 2016
  - Getting started wizard on first launch
- Aruba OS-CX support 8400 & 8320
  - Discovery Topology, Monitoring, Backup, Baseline SW upgrade, NTA etc
  - No support for VSX and Config Restore ⚠
- Smarter & Easier to use
  - Port Groups can be used widely for easier interface selection
  - Focus on the important alarms via Suppressing edge ports intermittent alarm
  - Quickly identify how the network has changed with Topology baselining
  - Thresholds dependant on interface speed
  - Repeat Alarm count highlights issues that need addressing



# IMC 7.3 E0605 P04

## Available Now

- Smarter Monitoring and Alerts
  - Supports 5 threshold levels for greater granularity
  - Rules based Alarm severity
  - Group based Default Monitored Settings
- Ease of use and efficiency improvements
  - Merged Templates
  - Re-Baselining from configuration change alert
  - SW upgrade efficiency improvements
  - Easier to see what's failed compliance checks
  - Auto Discover into Groups
- New custom report fields
  - Serial number
  - HW & SW versions
  - Product number

The image displays three overlapping screenshots from the Aruba IMC 7.3 E0605 P04 interface.

**Top Left Screenshot: Modify Index**  
This screen shows a table for configuring index thresholds. A dropdown menu is open for 'Threshold Level', showing options: Disable, Threshold 1, Threshold 2, Threshold 3, Threshold 4, and Threshold 5 (highlighted). The table includes columns for 'Index Name', 'Interface Inb', 'Threshold Level', and 'Value 1'.

Threshold Level	Value 1
Threshold 1	60.000
Threshold 2	90.000
Threshold 3	0.000
Threshold 4	0.000

**Top Right Screenshot: Compliance Policy Check Results**  
This screen shows the results of a compliance check. It includes a 'Violation Severity' pie chart and a table of 'Compliance Policy Check Information'.

Check Time: 2018-09-07 11:20:42

Task Name: check 78  
Creator: admin  
Violating Devices: 3  
Vulnerability Sum: 5  
Task Description:

Violation Severity: Critical: 0, Major: 0, Info: 0, Warning: 0, Minor: 5

Compliance Policy Name	Rules	Check Result	Violations	Violating Devices
CL - Demo Compliance Policy	9	⊗	5	3
Check syscontact	1	⊗	2	2
10504-IRF(10.12.150.5)		⊗	1	
7503-IRF(10.12.150.1)		⊗	1	
Check syscontact & location (A)	1	⊗	1	1
2930F-VSF(10.12.5.21)		⊗	1	

**Bottom Screenshot: Alarm Level Configuration**  
This screen shows the configuration for an alarm level. It includes a sidebar with 'Alarm Settings' and 'Alarm Level Configuration' selected. The main area has fields for 'Rule Name', 'Concerned Devices', 'Concerned Alarms', 'Configuration Item', 'Configuration Item Value', and 'Alarm Level Configuration'.

Rule Name \* [ ] ?

Concerned Devices: All Devices

Concerned Alarms: All Alarms

Configuration Item: Alarm Duration (dropdown menu open showing Alarm Duration and Alarm Repetitions)

Configuration Item Value: [ ]

Alarm Level Configuration:  Critical  Major  Minor  Warning

Buttons: Add, OK, Cancel

# IMC 7.3 Other recent updates includes Service Health Manager (SHM) 7.3 E0502P06

- Smarter & Simpler configuration and deployment of NQA and IP SLA
  - Creating an NQA instance now sets up everything on the Server/Client and Initiator/Responder
- IMC's SHM is the only solution for managing and reporting on AoS IP SLA other than the CLI

