

Aruba Central

Switch management

Sietze Reitsma, Systems Engineer

“Next Generation NMS innovations are Cloud based”

Sietze Reitsma, Aruba Systems Engineer

TODAY'S ENVIRONMENTS HAVE CHANGED

External Factors

Mobility & IoT



Growing number of users, devices & things

Geography



Multiple business locations, sites or locales

Performance



Anywhere access via non-traditional devices

Organizational Challenges

Manpower & Budget



Leaner teams driven to do more with less

Insight



Limited visibility & control to avoid firefighting

Flexibility

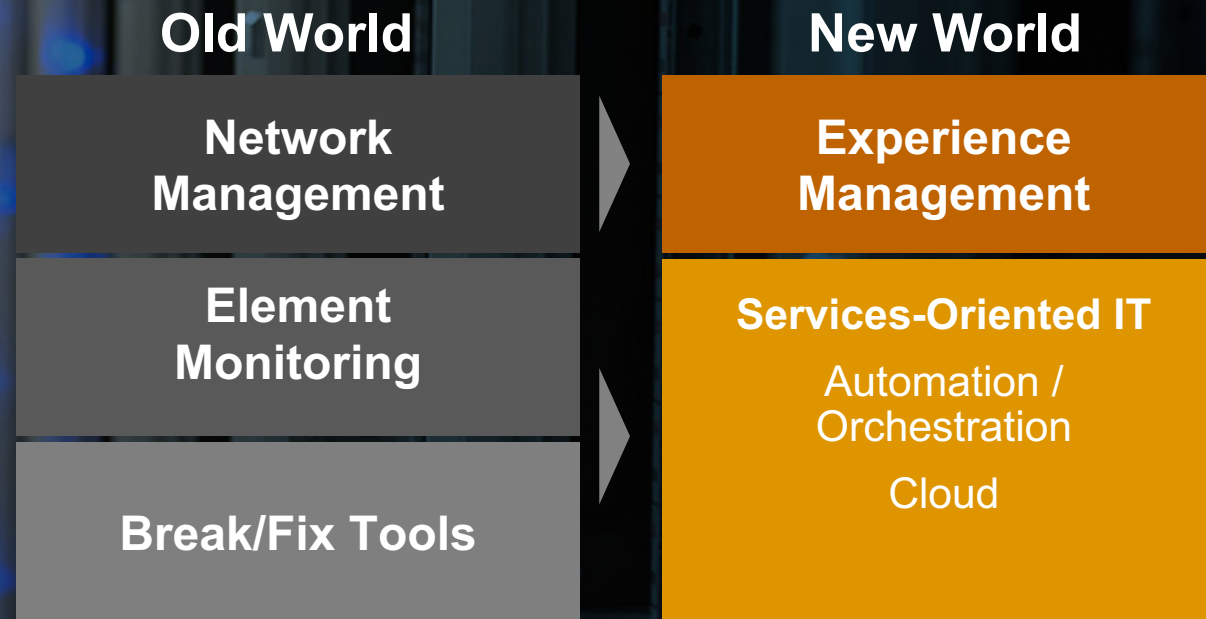


Inability to grow with emerging business needs

THE ROLE OF IT IS SHIFTING

By 2021, 40% of IT staff will hold multiple roles, most of which will be business- rather than technology-related.

Gartner 2018 Predictions



AUTOMATE **EVERYTHING**

SD-BRANCH



PROVISIONING

Automation that drives network infrastructure configuration.



POLICY

Automation that drives device identification, segmentation, and applied actions



AI-OPS

Automation driven from telemetry collection and ML

Installer App

Group and device hierarchy

Device Insight

Dynamic Segmentation

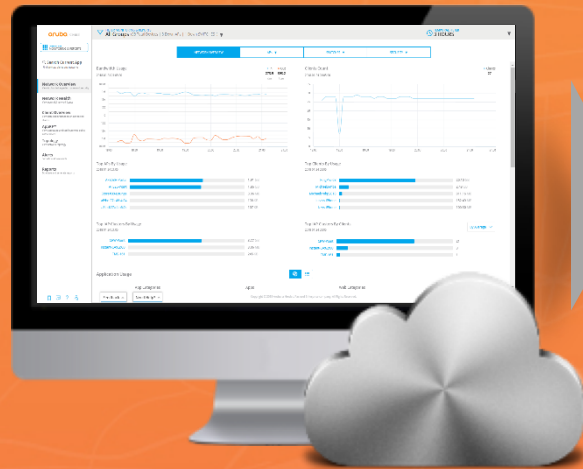
AI Insights to fine-tune RF

Adaptive QoS for WAN

AI Insights for SD-WAN

ARUBA CENTRAL CLOUD MANAGEMENT

Experience Driven
Management



Wired and Wireless



Aruba-OS
Switches



Branch
Gateways



Instant
Access Points

Value Added Services

Guest
Wi-Fi



Presence
Analytics



Connectivity
Health



Redundant & Frequently Updated
Scalable Architecture

Streamlined Provisioning &
Workflow-Driven Usage Models

Built-In API Extensibility and
Managed Services Mode

Extensibility via REST APIs

(Configuration, Monitoring, Alerts and
Secure Access)



Planning & Deployment

Provisioning, Assessment and Visibility

ZERO TOUCH PROVISIONING



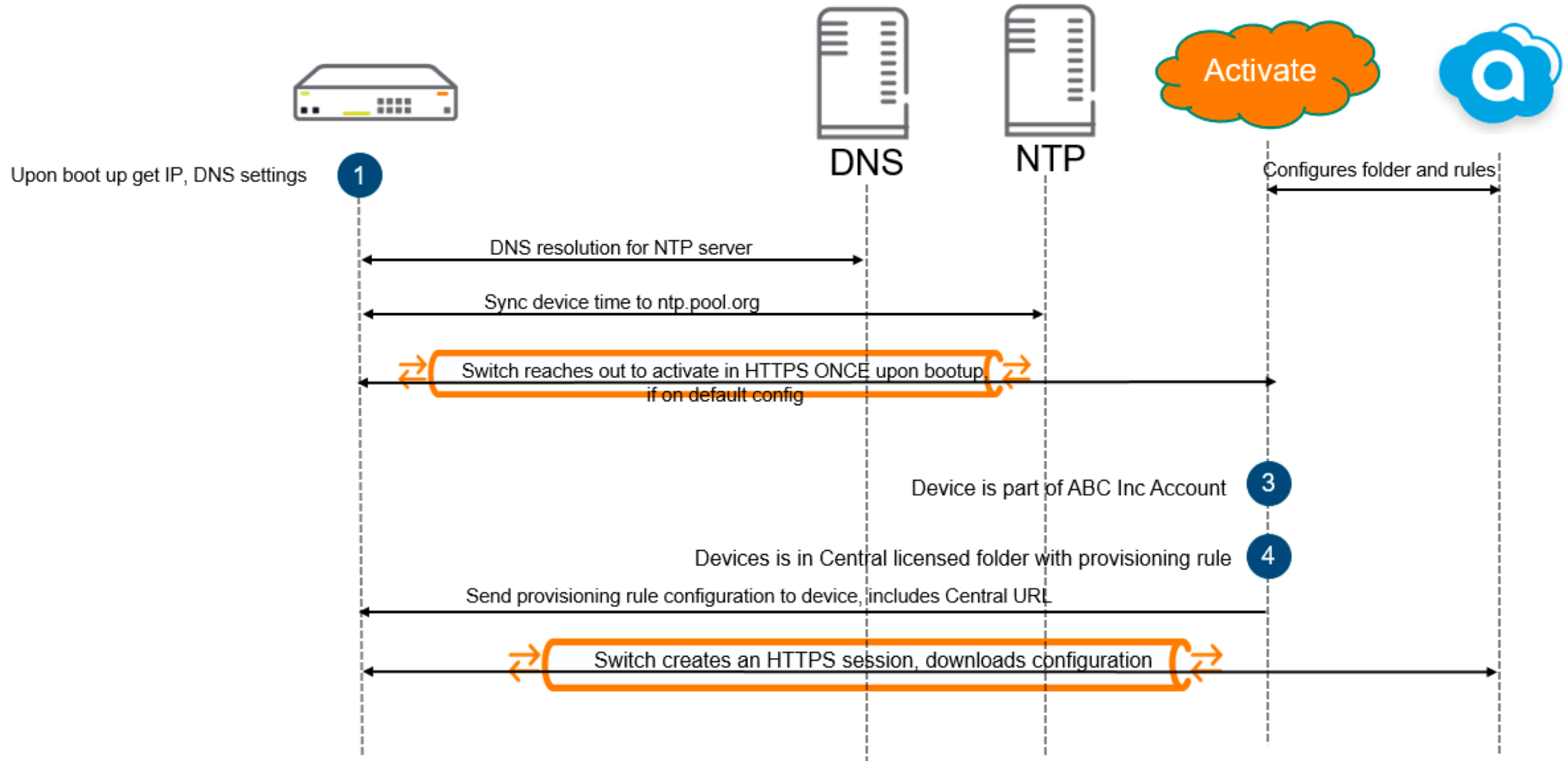
Streamlined Deployment

No Onsite Expertise

Intelligent Workflow

Business Grade Wi-Fi

ZTP

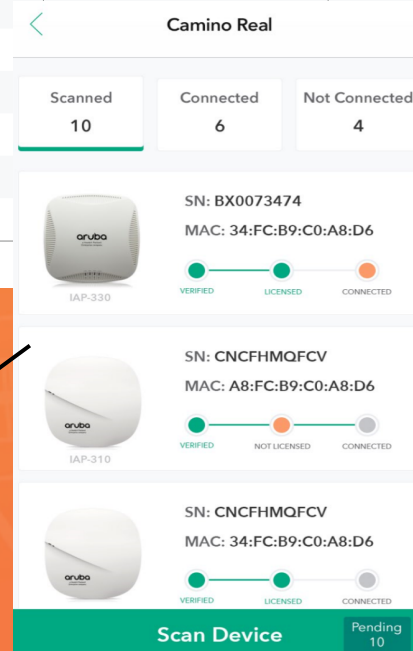


DEVICE ONBOARDING (w/MOBILE APP)

SITE INSTALLATIONS

SITE NAME	CITY	STATUS	INSTALLED DEVICES	INSTALLATION DATE
		● ● ●	IAP SWITCH GATEWAY	
6 UNIQUE SITES		0 3 3	2 0 2	
Salzburg	Salzburg	In Progress	0 0 1	Tue May 29 2018
EMEA-ATM-18	Šibenik	In Progress	1 0 1	Tue May 29 2018
TME Oakmead Site	Sunnyvale	In Progress	1 0 0	Tue May 15 2018
TME Santa Clara Site	Sunnyvale	Pending		
SEEL-US	Sunnyvale	Pending		
Smallsite	Independence,	Pending		

TO SELECT MULTIPLE SITES SHIFT+CLICK OR CTRL+CLICK



Admin configures installer details and allowed sites

Installer receives SMS on allowed sites and credentials

Installer scans devices and adds to assigned network

Site status and types of installed devices provided in dashboard

A

Installer Dashboard

B

Mobile Installer App
(Android & iOS)

Add device manually

DEVICE INVENTORY

View the device

ADD DEVICES

VIEW DEVICES

SERIAL NUMBER

CN75HKZOL

CNFWJ0Y16

CNFWJ0Y17

SG68GYZ06

ASSIGN GROUP

ADD DEVICES

Add up to 6 devices by entering the Serial Number and MAC Address for each device

SERIAL NUMBER

MAC ADDRESS

SERIAL NUMBER

MAC ADDRESS

SERIAL NUMBER

MAC ADDRESS

SERIAL NUMBER

MAC ADDRESS

Add more devices

Done

CURRENT APP GLOBAL SETTINGS

Manage Groups

Device Inventory

Key Management

Subscription Assignment

Labels and Sites

Users & Roles

Certificates

SUBSCRIPTION ASSIGNMENT

Use the options below to assign Device Management, Foundation and Network Service subscriptions to devices.

DEVICE SUBSCRIPTIONS ⓘ

A device management subscription entitles the subscribed device to be managed in Aruba Central and enables most functionality.

Auto Subscribe OFF

You must select devices below to assign subscriptions to them

DEVICES (1 TO BE SUBSCRIBED 0 TO BE UNSUBSCRIBED)

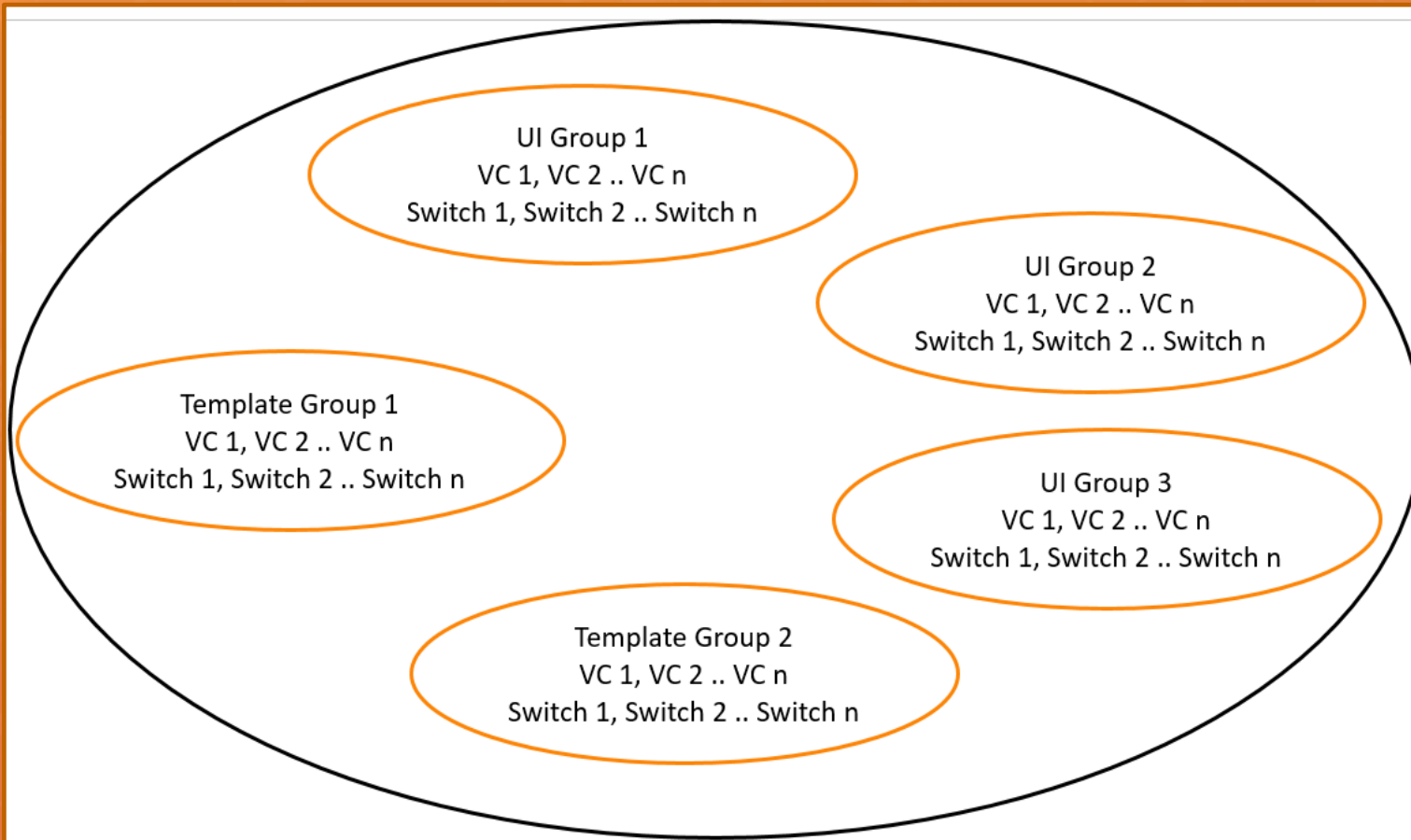
<input type="checkbox"/> SUBSCRIBED	SERIAL NUMBER	MAC ADDRESS	MODEL
<input checked="" type="checkbox"/> NO	CNFWJ0Y16H	20:A6:CD:CF:9A:5E	IAP-335-US
<input type="checkbox"/> NO	BT0224345	6C:F3:7F:C9:CA:79	IAP-105-US
<input type="checkbox"/> NO	CNBVHN794K	B4:5D:50:C5:7F:78	IAP-325-US
<input type="checkbox"/> NO	CNBXHN70SR	B4:5D:50:C5:C1:26	IAP-325-US
<input type="checkbox"/> NO	CNBWHN73L3	B4:5D:50:C5:A0:B4	IAP-325-US
<input type="checkbox"/> NO	CNBXHN743G	B4:5D:50:C5:DA:06	IAP-325-US
<input type="checkbox"/> NO	CR0004290	00:0B:86:B5:87:77	7030-US
<input type="checkbox"/> NO	CNC7J0Y2R6	A8:BD:27:C4:B6:C2	IAP-335-US

UPDATE SUBSCRIPTION

Total number of devices: 203

Understand and create UI Group and Template Group.

Groups are mutually exclusive configuration containers



- Central defines a **Group** as a collection of devices which share common configuration settings.
- There can be several groups in Central.
- A Group can contain one device or hundreds of devices.

Create sites for monitoring

416 days left

arubaCentral

CURRENT APP

GLOBAL SETTINGS

Manage Groups

View, edit and add configuration groups

Device Inventory

View an inventory of all your devices

Key Management

Track all your subscription keys

Subscription Assignment

Assign and modify device and service subscriptions

Labels and Sites

Create and manage labels and sites for monitoring

Users & Roles

Manage user access control to Aruba Central

Certificates

View, edit and add certificates

LABELS AND SITES

Labels are logical sets of devices which can be used for a variety of monitoring and reporting purposes. Each device can be associated with up to five labels, and a label can apply to as many devices as you want.

Sites allow you to group devices based on the location context

MANAGE SITES

DRAG AND DROP DEVICES TO ADD TO A SITE

TO SELECT MULTIPLE DEVICES SHIFT+CLICK OR CTRL+CLICK

CONVERT LABELS TO SITES

Labels

Sites

SITE NAME

ADDRESS

DEVICE COUNT

CREATE NEW SITE

SITE NAME

Aruba Networks

STREET ADDRESS

3333 Scott Blvd

CITY

Santa Clara

United States

▼

California

▼

ZIP/POSTAL CODE

95054

Add

AL

UN

2

2

DRAG

←

DROP

NAME

GROUP

TYPE

20:a6:cd:cf:9a:5e

default

IAP

20:a6:cd:cf:9a:be

default

IAP

2 Device(s)

Airheads 13

GUI vs Templates

aruba Central

CURRENT APP WIRED MANAGEMENT

FILTER WIRED MANAGEMENT
TekTalk_sw (1 Total Devices | 0 Offline APs | 0 Offline SWITCHES | 0 Offline GATEWAYS)

Switch - Aruba

- SWITCHES
- PORTS**
- VLANS
- TRUNKS
- STP
- SECURITY
- DHCP POOLS
- ROUTING
- SYSTEM
- CONFIGURATION AUDIT

PORTS

Ports					
	PORT NUMBER	ADMIN STATUS	POE	SPEED-DUPLEX (MBPS)	ACCESS POLI
<input type="checkbox"/>	1	✓	✓	Auto	--
<input type="checkbox"/>	2	✓	✓	Auto	--
<input type="checkbox"/>	3	✓	✓	Auto	--
<input type="checkbox"/>	4	✓	✓	Auto	--
<input type="checkbox"/>	5	✓	✓	Auto	--
<input type="checkbox"/>	6	✓	✓	Auto	--
<input type="checkbox"/>	7	✓	✓	Auto	--

Edit

- %_sys_template_header%
- hostname "%_sys_hostname%"
- %_sys_module_command%
- %if _sys_use_dhcp = 0%
- ip default-gateway %gw%
- ip dns server-address priority 1 %dns%
- %endif%
- no cwmp enable
- include-credentials
- interface 1
- %port.1.status%
- name "IAP-1"
- exit
- vlan X
-

Golden template with variables

aruba Central 71 days left

FILTER WIRED MANAGEMENT
TG Template Group 1 (1 Total Devices | 0 Offline APs | 1 Offline SWITCHES | 0 Offline GATEWAYS)

Variables

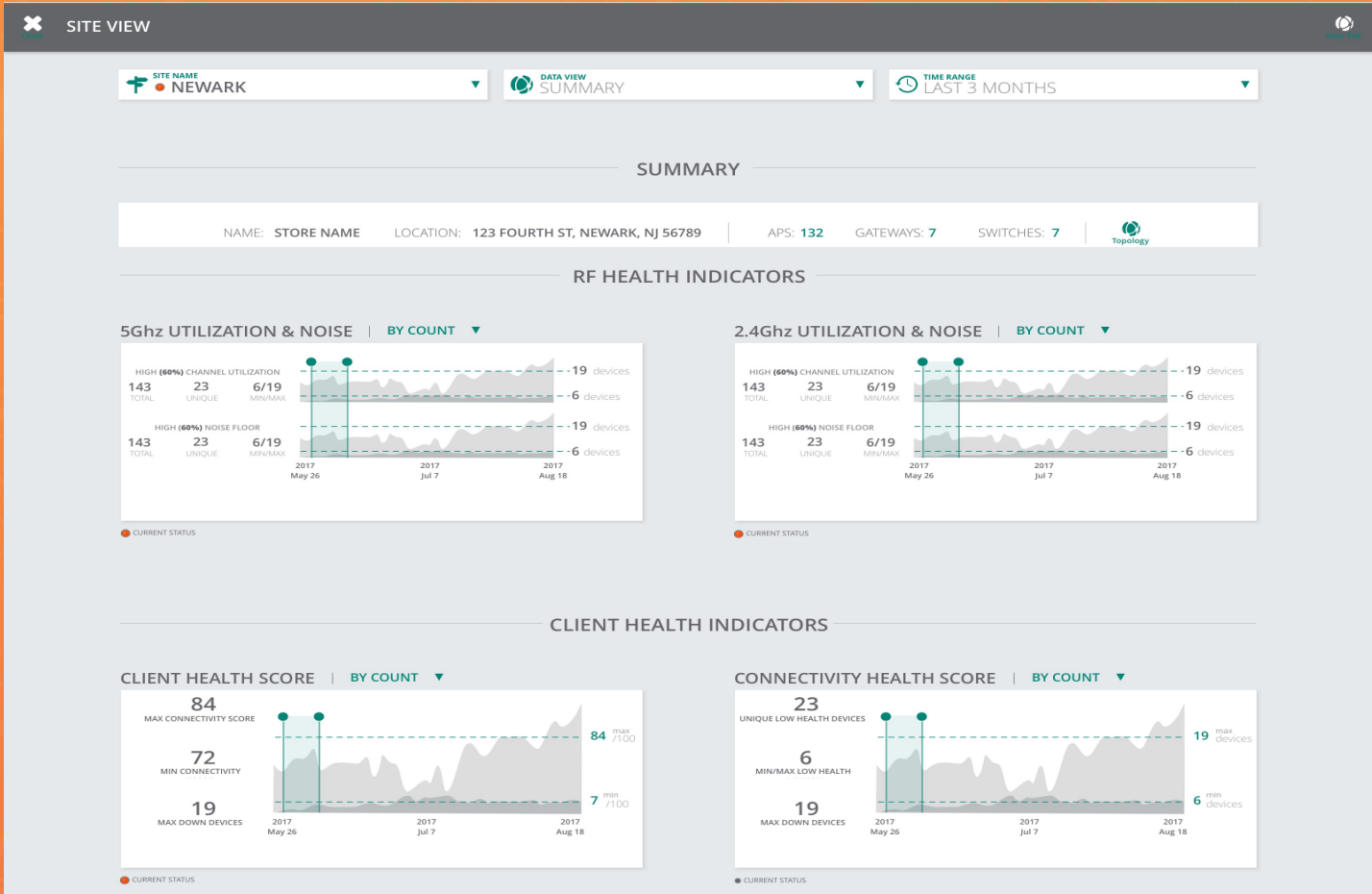
Select the Upload/Download file format and upload variables. Variables '_sys_serial' and '_sys_lan_mac' are mandatory number and mac address.
Upload/Download file format ☐ JSON ☒ CSV

Upload Variables File **Download Sample Variables File** **Variables file uploaded successfully**

DEVICE MAC ADDRESS	DEVICE SERIAL NUMBER	VARIABLE NAME
f40343-72c490	CN75HKZ0L2	_sys_gateway
f40343-72c490	CN75HKZ0L2	_sys_hostname

```
- {  
-   "Serial number of switch": {  
-       "_sys_lan_mac": "MAC address of Switch",  
-       "_sys_serial": "Serial number of switch",  
-       "_sys_hostname": "HOL-POD-X-SW",  
-       "_sys_snmpv3_engineid": "",  
-       "_sys_use_dhcp": "0",  
-       "gw": "172.30.Y.1",  
-       "dns": "1.1.1.1",  
-       "static.ip.mask": "172.30.Z.9 255.255.255.224",  
-       "port.1.status": "enable",  
-       "port.2.status": "enable",  
-       ".....",  
-       "port.9.status": "disable",  
-       "port.10.status": "disable"  
-   }  
- }
```

SITE HEALTH MONITORING

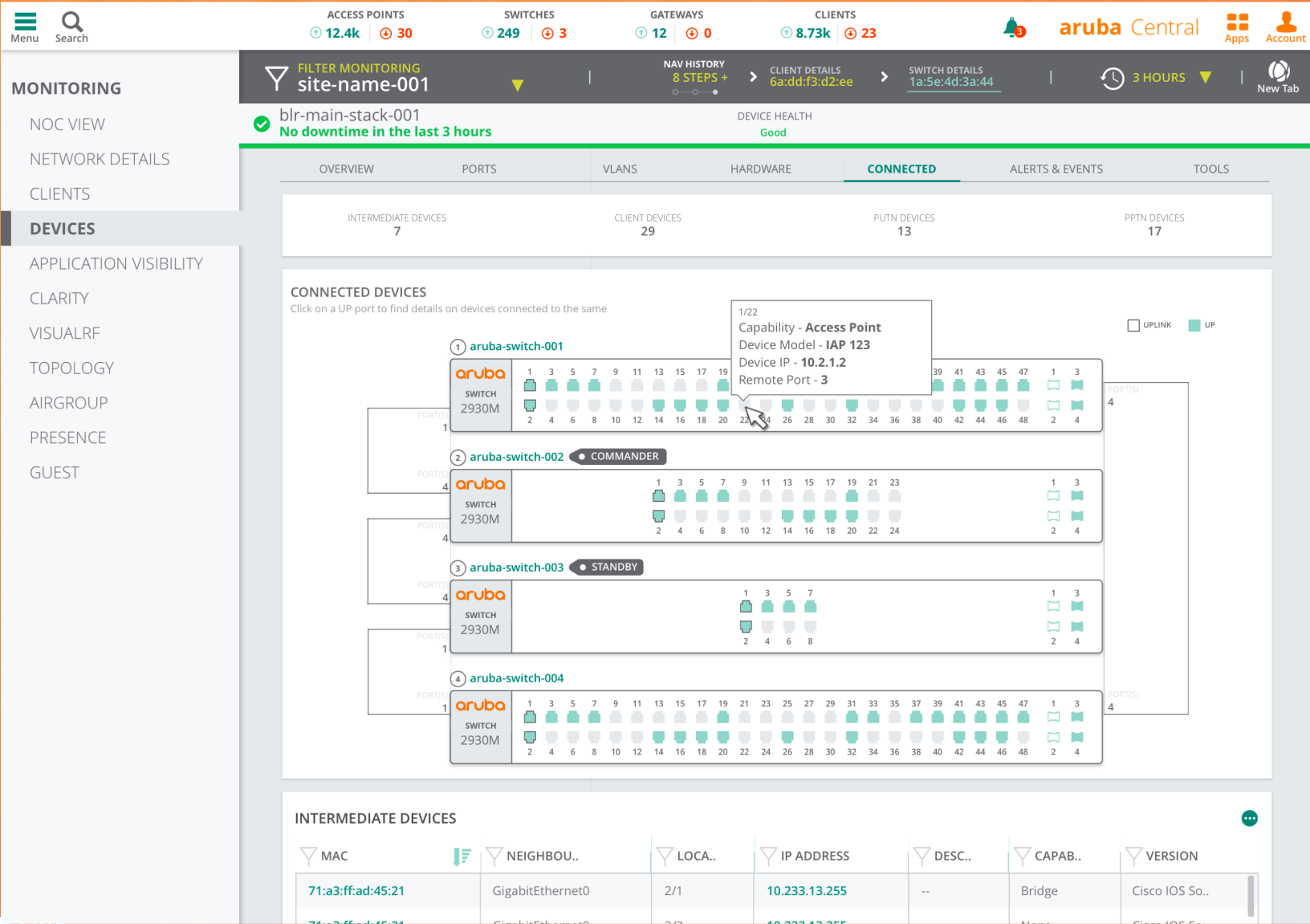


System Health – Connectivity,
CPU & Memory Utilization

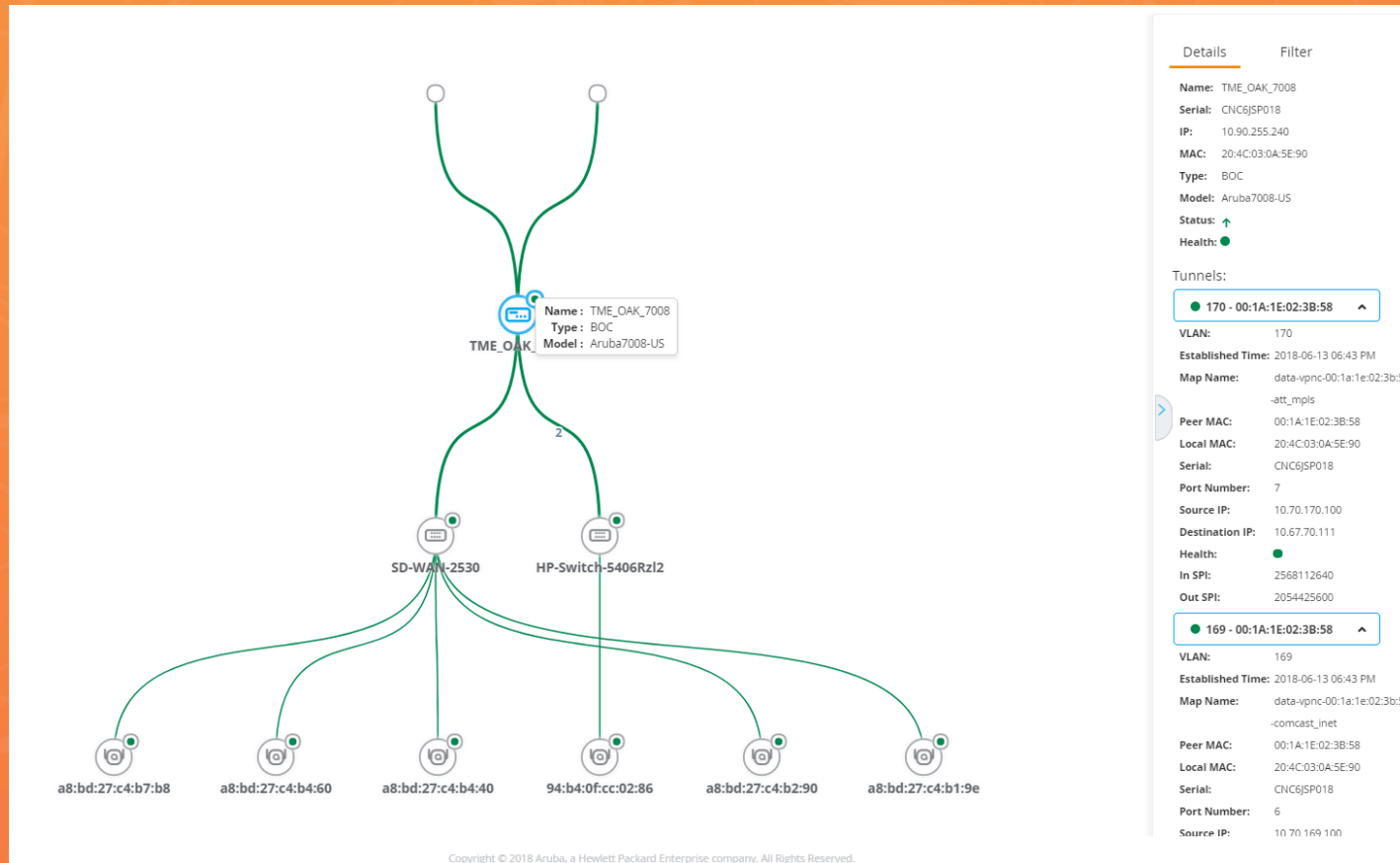
RF Health – Channel Utilization
and Noise Floor

Health Scores – Clients and
Connectivity

Physical Stack monitoring



SITE TOPOLOGY & OPERATIONAL HEALTH



Health Status of Targeted
Devices and Links

Multiple Views – Tree & Planetary
with VLAN Overlays

Detailed Status of Connected
Devices and Links

FIRMWARE UPGRADES & COMPLIANCE

FIRMWARE

Virtual ControllersSwitch - MASSwitch - ArubaGateways

Filter by upgrade status: Show All

Virtual Controllers Selected: 0

<input type="checkbox"/>	VC NAME	APS	FIRMWARE VERSION	LATEST AVAILABL...	FIRMWARE COMPLIA...	STATUS
<input type="checkbox"/>	● a8:bd:27:c4:b1:9e	1	8.3.0.0_64659	8.3.0.0_64659	Not Set	✓ Firmware up to date
<input type="checkbox"/>	● a8:bd:27:c4:b4:40	1	8.3.0.0_64659	8.3.0.0_64659	Not Set	✓ Firmware up to date
<input type="checkbox"/>	● AR-BranchIAP	0	8.3.0.0_64659	8.3.0.0_64659	Not Set	✓ Firmware up to date
<input type="checkbox"/>	● instant-C4:B2:90	1	8.3.0.0_64659	8.3.0.0_64659	Not Set	✓ Firmware up to date
<input type="checkbox"/>	● Instant-CA:62:8C	4	6.5.1.0-4.3.1.1_57902	6.5.4.7_64552	Not Set	⚠ Newer firmware available
<input type="checkbox"/>	● instant-CA:62:C0	3	6.5.1.0-4.3.1.1_57902	8.3.0.0_64659	Not Set	⚠ Newer firmware available
<input type="checkbox"/>	● IPerf	1	8.3.0.0_64659	8.3.0.0_64659	Not Set	✓ Firmware up to date

Manage Compliance Status Across Entire Infrastructure

Coverage for Wired, Wireless and WAN

Displays Current, Latest Available and Compliance Status

API BASED EXTENSIBILITY

URL

Monitoring

TOKEN

Enter api key or token

API REFERENCE

Network

AP

List Access Points

List BSSIDs

Delete AP

AP Details

AP Neighbouring Clients

AP RF Summary

AP Bandwidth Usage

Top N AP Details

Client

Swarm

Label

Switch

Notification

Events

WIDS

List Access Points

GET /monitoring/v1/aps

Get access points. You can only specify one of group, swarm_id, label parameters. Possible error_codes for the error responses are

- 0001 - General Error.
- 0002 - Validation Error. Out of Range value for a query parameter.
- 0003 - Validation Error. Unsupported query combination
- 0004 - Validation Error. Invalid value for a query parameter

Parameters

group

string Filter by group name

swarm_id

string Filter by Swarm ID

label

string Filter by Label name

RESPONSE SAMPLE

```
{
  "count": 0,
  "total": 0,
  "aps": [
    {
      "serial": "string",
      "name": "string",
      "macaddr": "string",
      "swarm_id": "string",
      "group_name": "string",
      "status": "string",
      "ip_address": "string",
      "model": "string",
      "firmware_version": "string",
      "swarm_master": true,
      "client_count": 0,
      "ssid_count": 0,
      "labels": [
        "string"
      ],
      "radios": [
        {
          "macaddr": "string",
          "index": 0,
          "status": "string",
          "band": 0
        }
      ]
    }
  ]
}
```

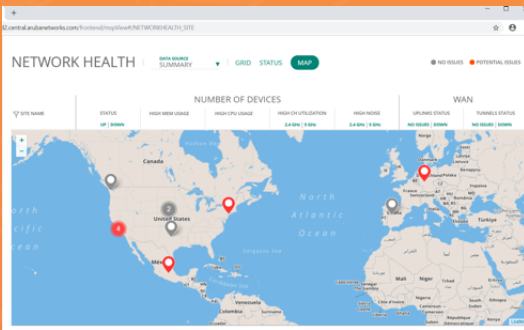
RESPONSE SCHEMA

Every feature and function of UI
available via API's

Complete lifecycle coverage from
provisioning to logging & reporting

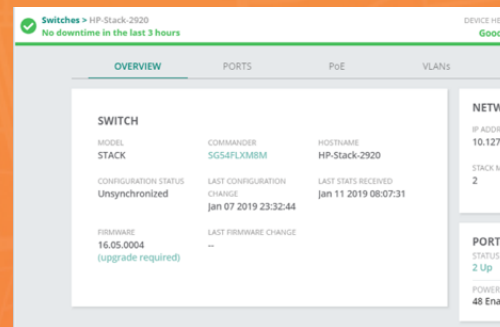
Secure gateway access, with
OAuth authentication

ARUBA SD-BRANCH CLOUD MANAGED FULL-STACK SOLUTION



Single Pane of Glass

Zero-touch Provisioning
One touch, hierarchical config changes across thousands of sites
End-to-end visibility across Wireless, Wired, WAN



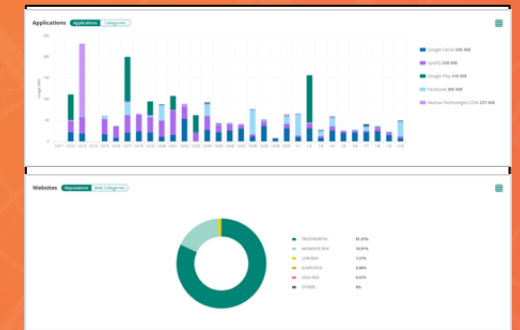
Client, Gateway, WAN Health Scores

Easy troubleshooting & RCA
Site Topology, Context Based Correlation



True Enterprise SD-WAN

Dynamic Path Selection and Policy Based Routing
SLAs with fine-grained context awareness



Role-Based Policies, Application Visibility, Access Control

Layer-7 Firewall, Web Content Classification
Prioritize business critical applications for QoS

airheads

TECH TALK *LIVE*

Thank You