

Deployment of CX switches with Aruba Central

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1.1 Revision History

DATE	VERSION	EDITOR	CHANGES
15 Jan 2021	0.1	Ariya Parsamanesh	Initial version
20 Jan 2021	0.2	Ariya Parsamanesh	Added the core switches

2 6300 Stack Configuration

2.1 Introduction

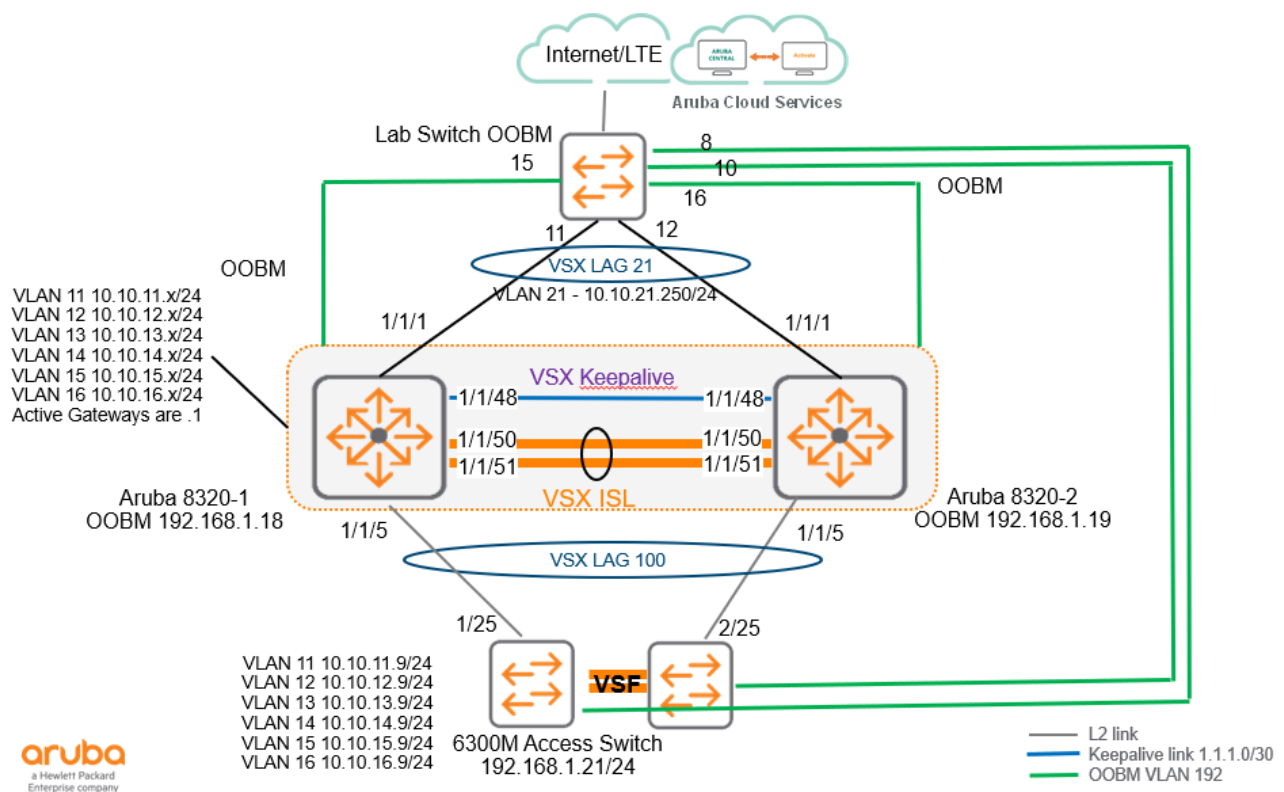
The aim of this short guide is to use the CX App to configure two 6300 switches in VSF and then use Aruba Central to further configure and manage them along with dual 832X core switches in VSX formation.

Our CX switches are using 10.05.0020 but the minimum version required to be managed by Aruba Central is 10.04.0020.

The CX switches are connected to the network through their out of band mgmt. interfaces.

2.2 Topology

Here is a simple topology that will be deployed.



2.3 Factory Default

The first task is to ensure the switch is in a factory default state.

```
!
6300-1# sh version
-----
ArubaOS-CX
(c) Copyright 2017-2020 Hewlett Packard Enterprise Development LP
-----
Version       : FL.10.05.0020
Build Date    : 2020-09-29 07:44:16 PDT
Build ID      : ArubaOS-CX:FL.10.05.0020:3cbfcce60961:202009291304
```

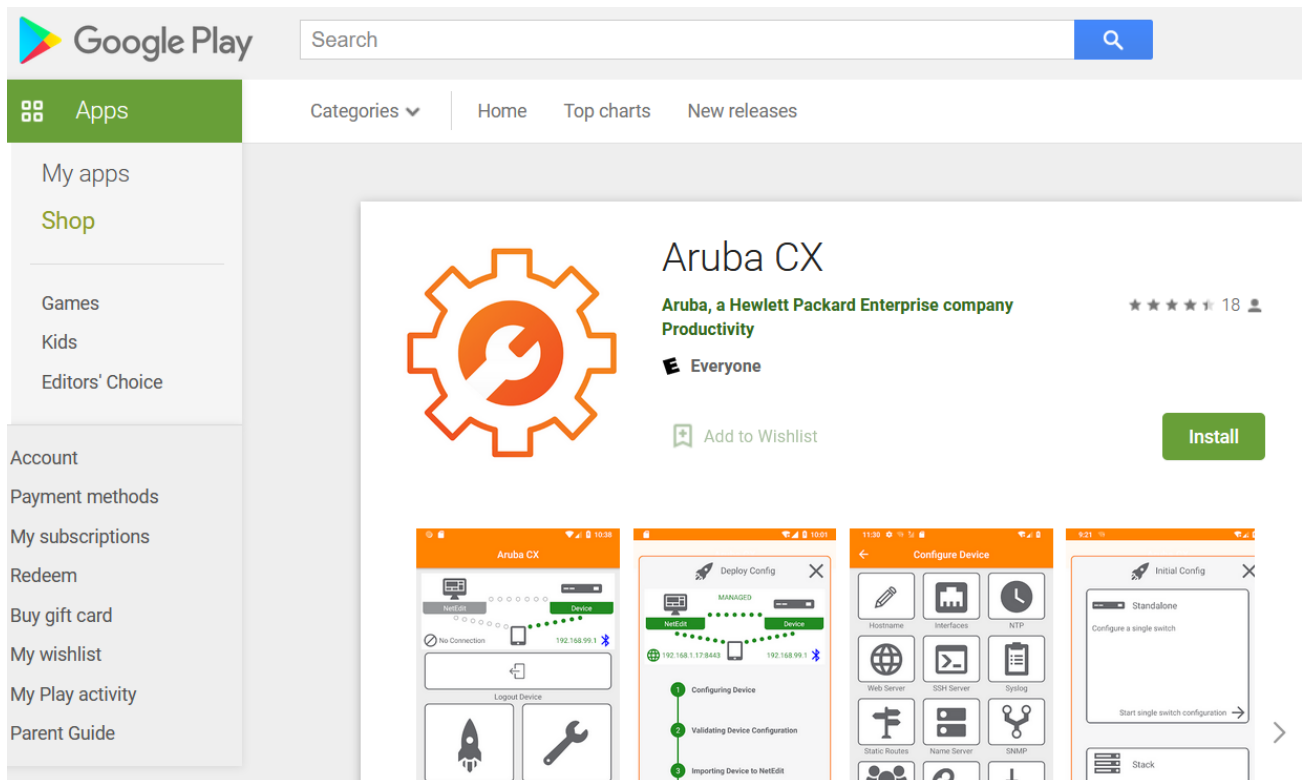
```
Build SHA      : 3cbfcce609617b0cf84a6b941a2b36c43df2eb2cb
Active Image   : secondary

Service OS Version : FL.01.07.0002
BIOS Version      : FL.01.0002
6300-1#
6300-1# erase all zeroize
This will securely erase all customer data and reset the switch
to factory defaults. This will initiate a reboot and render the
switch unavailable until the zeroization is complete.
This should take several minutes to one hour to complete.
Continue (y/n)? y
The system is going down for zeroization.
6300-1#
```

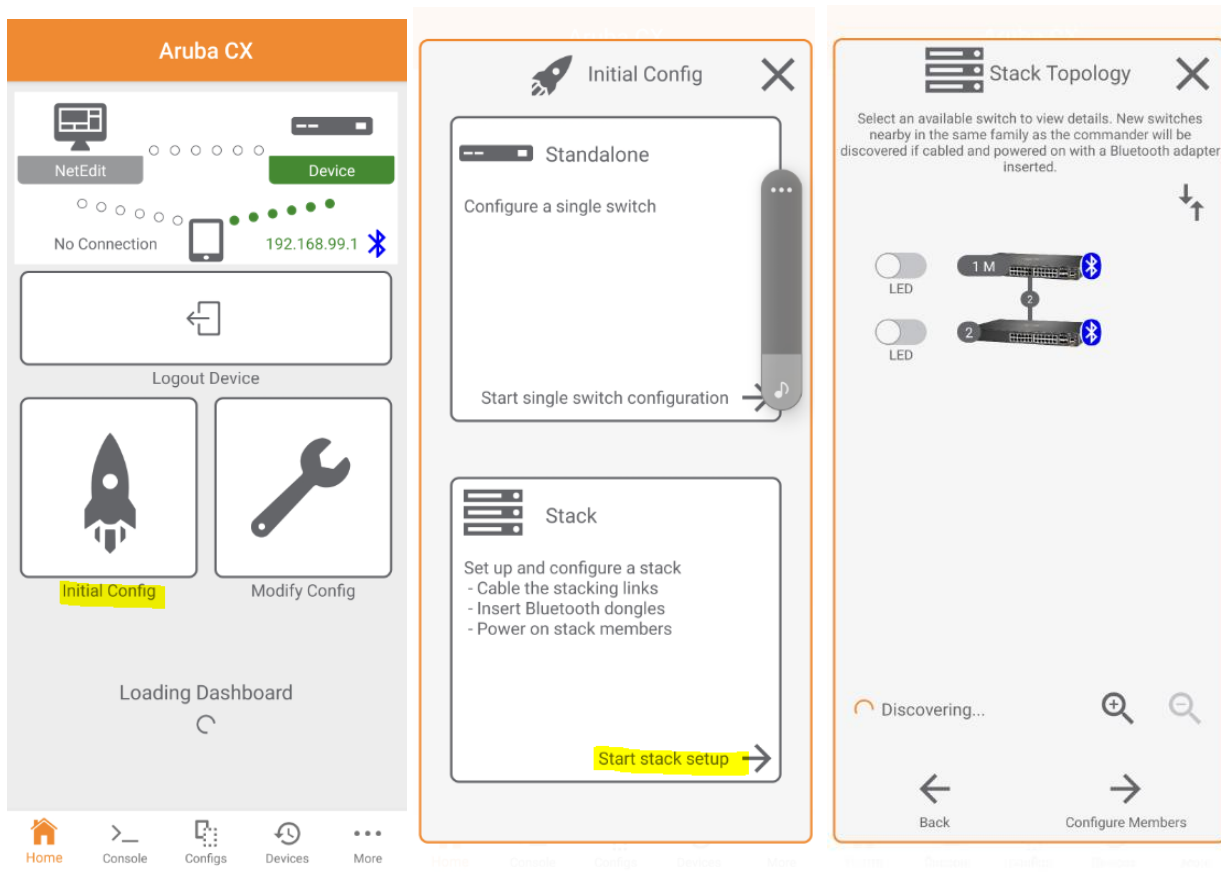
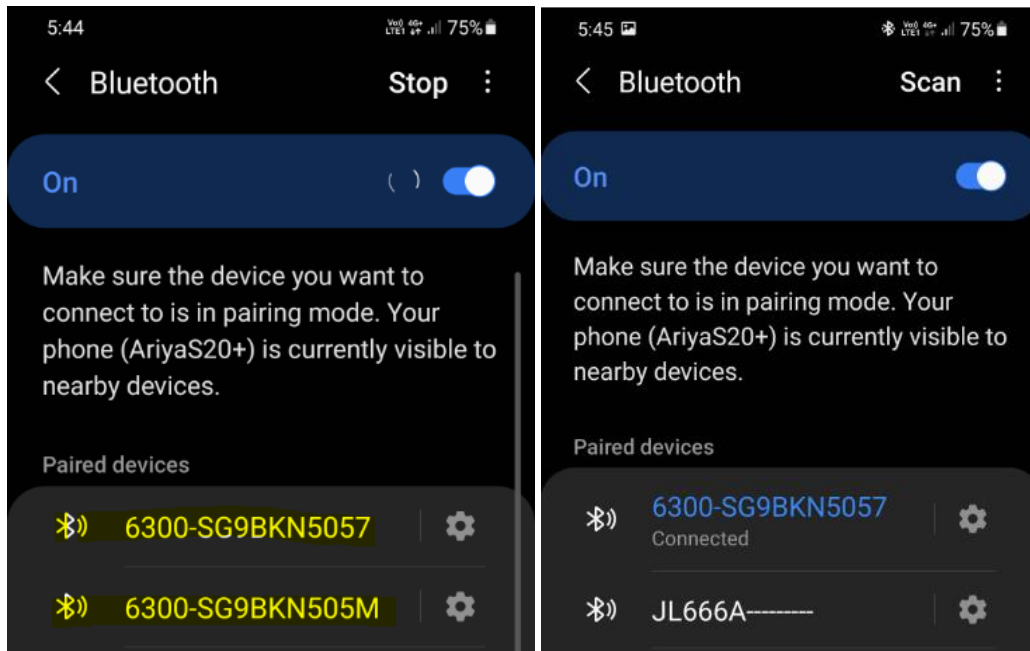
Once the switches have rebooted, you'll just connected them with the 2x stack DAC cables.



2.4 CX App Configuration


You can download the CX App from Google Play, the CX App version we are using here is 2.3.1





Once you have installed it ensure that the blue tooth and GPS are enabled and then try to connect to the switches. Here are the relevant screenshots on an android phone.




 Configure Stack 


Validating... 

Booting... 

 Waiting for member(s) to boot




NetEdit Login




☒ Stay Logged In


Please enter NetEdit credentials to import the device.

[Skip >](#)




Log In

 Select Template



OOBM





Input Parameters

hostname
6300-stack

admin_password
.....
.....|

use_dhcp
☒ Yes ☐ No

 Back

 Next

Deploy Config

NetEdit

Device

No Connection

192.168.99.1

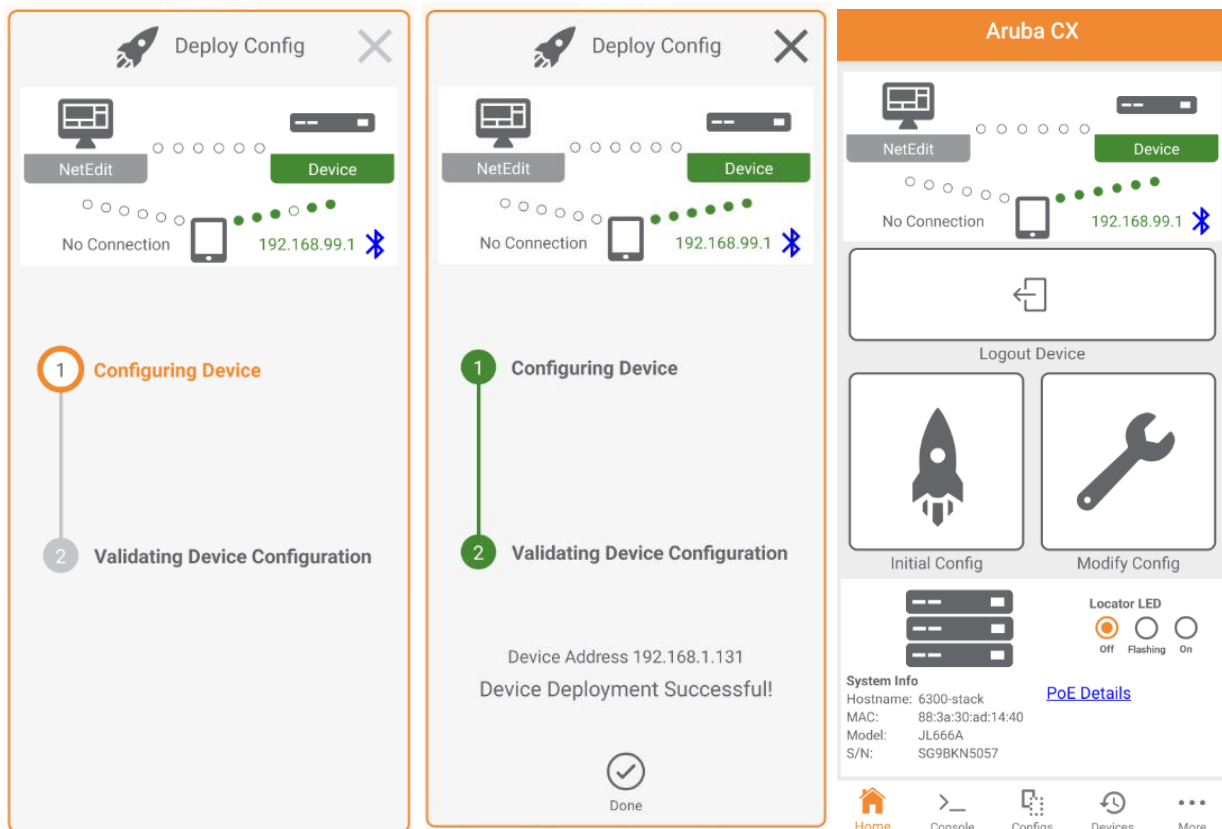
⚠ This will replace the running config on the device.

Device Config

```
ssh server vrf default
ssh server vrf mgmt
vsf member 1
  type jl666a
  link 2 1/1/27-1/1/28
vsf member 2
  type jl666a
  link 1 2/1/27-2/1/28
!
!
!
!
!
vlan 1
spanning-tree
```

Back

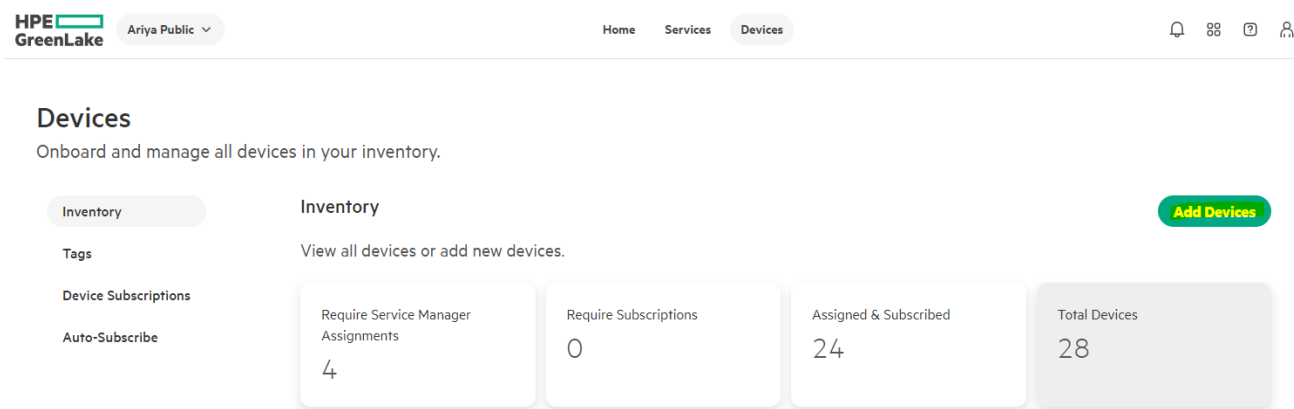
Deploy



At this point the CX stack will use the mgmt. interface and if the DHCP services are available on that network, it will contact and register with Aruba Central.

2.5 Aruba Central Initial Onboarding

You need to add the serial number and the MAC addresses of the CX switches to the HPE GreenLake inventory and once subscribe them. The following screen shot is showing that we have added the devices.



[← Select Device Type](#)

Add Devices

[Cancel ×](#)

Step 2 of 5

Serial Number & MAC Address

Type and add the serial number and MAC Address of the devices you would like to add.

Ownership Type



CSV File



Serial Number & MAC Address

Serial Number

MZSD4PD005

MAC Address

00:00:00:00:00:00

[Enter](#)

Then you need to ensure these switches are also subscribed manually or use auto-subscription.

Devices

Onboard and manage all devices in your inventory.

Inventory

Tags

Device Subscriptions

[Auto-Subscribe](#)

Device Subscriptions

Manage and add device subscription keys. Service subscriptions can be found [here](#)

[Add Device Subscription](#)

All Device Types

[Clear filters](#)[Actions](#)

20 Subscription Key(s)

Once this is done and the CX switches are configured to be in a stack using CX App, they will contact Aruba Central and will end up in the un-provision group.

Global

Groups

Sites and Labels

Certificates

Install Manager

Manage

Overview

Devices

Clients

Guests

Applications

Security

Network Services

Analyze

Alerts & Events

Audit Trail

Tools

Reports

Maintain

Firmware

Organization

GROUPS

A group in Aruba Central acts like a primary configuration container for devices. You can combine devices with common configuration requi configuration settings to all the devices in the group.

MANAGE GROUPS

DRAG AND DROP CLUSTERS AND SWITCHES BETWEEN GROUPS
TO SELECT MULTIPLE DEVICES SHIFT+CLICK OR CTRL+CLICK

Group Name	Devices
ALL CONNECTED DEVICES	5
UNASSIGNED DEVICES	2
Ariya-BGWs	2
TG CX-Core	0
TG CX-Stack	0
default	0
SD-vGW	1

Name	Location	Type
6300-stack	-	Aruba CX
SG9	-	Aruba CX

And now we'll move them into the CX-stack group.

GROUPS

A group in Aruba Central acts like a primary configuration container for devices. You can combine devices with common configuration requirements into a group to apply configuration settings to all the devices in the group.

MANAGE GROUPS

DRAG AND DROP CLUSTERS AND SWITCHES BETWEEN GROUPS
TO SELECT MULTIPLE DEVICES SHIFT+CLICK OR CTRL+CLICK

Group Name	Devices
ALL CONNECTED DEVICES	5
UNASSIGNED DEVICES	0
Ariya-BGWs	2
TG CX-Core	0
TG CX-Stack	2
default	0
SD-VGW	1

Name	Location	Type
6300-stack	-	Aruba CX
SG9B	-	Aruba CX

2.6 Aruba Central Template groups

So now when the switches are powered on again you should see a stack

SWITCHES

1 ONLINE 0 OFFLINE

Device Name	Clients	Alerts	Model	Config Status	Last Seen	Usage	Group
Comms1-6300M-Stack	0	2	ARUBA6300	In sync	-	368 bps	CX-Stack

We then create the variables and upload it.

Variables

1 ONLINE 0 OFFLINE

Device MAC Address	Device Serial Number	Variable Name	Variable Value
88 3a 30	SG9B00	_sys_hostname	Comms1-6300M-Stack
88 3a 30	SG9B00	_sys_ip_address	192.168.1.21
88 3a 30	SG9B00	_sys_lan_mac	88 3a 30 ad 14 40
88 3a 30	SG9B00	_sys_serial	SG9BKH5057
88 3a 30	SG9B00	lag_id	10
88 3a 30	SG9B00	lag_interface_1	1/1/25
88 3a 30	SG9B00	lag_interface_2	2/1/25
88 3a 30	SG9B00	lag_interface_3	3/1/25
88 3a 30	SG9B00	lag_interface_4	4/1/25

After that we have to create the template.

TEMPLATES

1 ONLINE 0 OFFLINE

Template Name	Device Type	Model	Version	Last Modified
Comms1-6300M-Stack	ARUBA6300	SG9B00	1.0	2023-01-25

ADD TEMPLATE



?

BASIC INFO

Select device type, model, part name and version

?

TEMPLATE

Template Configuration

BASIC INFO

1

The template configuration should match the running configuration CLI order and format.

TEMPLATE NAME

6300-VSF

DEVICE TYPE

Aruba CX

MODEL

ALL

VERSION

ALL

CANCEL

BACK

NEXT

EDIT TEMPLATE



✓

BASIC INFO

Select device type, model, part name and version

?

TEMPLATE

Template Configuration

TEMPLATE

IMPORT CONFIGURATION AS TEMPLATE

Show Variables List

```

1 hostname %_sys_hostname%
2 allow-unsupported-transceiver
3 user admin group administrators password plaintext aruba123
4 clock timezone australia/melbourne
5 ntp server 216.239.35.12 iburst
6 ntp server 216.239.35.4 iburst
7 ntp server 216.239.35.8 iburst
8 ntp enable
9 ntp vrf mgmt
10 ssh server vrf default
11 ssh server vrf mgmt
12
13 %if vsf_sec_mbr%
14 vsf secondary-member %vsf_sec_mbr%
15 %endif%

```

CANCEL

BACK

SAVE

As soon as you save the template Aruba Central will try to push it to the switches in that group.

CX-Stack

Access Points

Switches

Gateways

Manage

Overview

Devices

Clients

Applications

Security

Analyze

Templates

Variables

Configuration Audit

TEMPLATES (1)

Template Name

Device Type

Model

Version

Last Modified

6300-VSF	CX	ALL	ALL	Sat, 16 Jan 2021 00:32:31 GMT
----------	----	-----	-----	-------------------------------

Here is the sample where the push has failed.

Access Points

Switches

Gateways

Templates

Variables

Configuration Audit

OVERVIEW

In Aruba Central, the configuration of a virtual controller or switch can be individually modified. Modifications at the device level over changes between devices and their parent group.

Occasionally a Central managed device will fail to receive a configuration change from Central, and if this condition exists for any dev

AUTO COMMIT STATE

The group is set to Auto commit state **ON**

Change to Auto commit state **OFF**

The group auto-commit is not applicable for Gateways and MAS devices on the Configuration Audit page.

Auto Commit State: ON

1 Device

View & Edit

Auto Commit State: OFF

0 Device

View & Edit

TEMPLATE ERRORS & CONFIGURATION SYNC ISSUES

Template Errors

0 Device

View Template Errors

Failed / Pending Changes

1 Device

Failed / Pending config changes

Access Points

Switches

Gateways

Templates

Variables

Configuration Audit

OVERVIEW

In Aruba Central, the configuration of a virtual controller or switch can be individually modified. Modifications at the device level over changes between devices and their parent group.

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AUTO COMMIT STATE

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The group auto-commit is not applicable for Gateways and MAS devices on the Configuration Audit page.

Auto Commit State: ON

1 Device

View & Edit

Auto Commit State: OFF

0 Device

View & Edit

TEMPLATE ERRORS & CONFIGURATION SYNC ISSUES

Template Errors

0 Device

View Template Errors

Failed / Pending Changes

1 Device

Failed / Pending config changes

CONFIG DIFFERENCE

Config Difference

Name	Action
SG9E	View Config Difference

Config Difference - SG9E

Note: Config push failed because of login failure due to template password not being same as device password.

```

hostname Comms1-6300M-Stack
allow-unsupported-transceiver
user admin group administrators password plaintext aruba123
clock timezone australia/melbourne
ntp server 216.239.35.12 iburst
ntp server 216.239.35.4 iburst
ntp server 216.239.35.8 iburst
ntp enable
ntp vrf mgmt
ssh server vrf default
ssh server vrf mgmt
vsf secondary-member 2
vsf member 1
type vsf_mbr_1_type%
link 1 1/1/27
link 2 1/1/28
vsf member 2
type vsf_mbr_2_type%
link 1 2/1/27

```

Close

Page: 1/1

2.7 Aruba Central Monitoring

Once you are finished with the configuration, you can view the stack from the monitoring section.

10 | Page

Comms1-6300M-...

SummaryHardwareAI Insights

Manage

Overview

Clients

LAN

Device

Analyze

Alerts & Events

Audit Trail

Tools

Reports

Maintain

Firmware

SWITCH DETAILS

SWITCH

Model

ARUBA6300

CONDUCTOR

SG9E

LOCATION

--

CONTACT

--

CONFIGURATION

In sync

LAST STATS RECEIVED

20 Jan 2021 10:08:54

FIRMWARE VERSION

10.06.0010

Last Sync:

Jan 20, 2021, 10:01:01

GROUP

CX-Stack

SITE

--

LABEL(S)

--

NETWORK

IP Address

192.168.1.21

DEFAULT VLAN

1

STACK ID

632b6bb3-34f3-4b38-a1ef-12aaf37ba80e

STACK MEMBERS

2 / 0 Down

STACK TOPOLOGY

Chain

PORTS

STATUS

0 Up

52 Down

0 Alert

0 Uplink

POWER OVER ETHERNET (PoE)

AVAILABLE

740W

USED

0W

PoE DENIED PORTS

0

ALERT

0

HARDWARE

CPU

Good

MEMORY

Good

TEMPERATURE

Good

POWER SUPPLY

2 Total

2 Up

FANS

6 Total

6 Up

0 Down

Here is the Port view for the stack.

Comms1-6300M-...

PortsPoEVLAN

Manage

Overview

Clients

LAN

Device

Analyze

Alerts & Events

Audit Trail

Tools

Reports

Maintain

Firmware

PORT STATUS

Up

2

DOWN

50

ALERT

0

UPLINK

0

STACK: Comms1-6300M-Stack

Click on a port for port level information

UPLINK

UP

DOWN

ALERT

DISABLED

1 Comms1-6300M-Stack

COMMANDER

SWITCH

6300

1 3 5 7 9 11 13 15 17 19 21 23

2 4 6 8 10 12 14 16 18 20 22 24

25 27

26 28

2 Comms1-6300M-Stack

STANDBY

SWITCH

6300

1 3 5 7 9 11 13 15 17 19 21 23

2 4 6 8 10 12 14 16 18 20 22 24

25 27

26 28

And the VLAN view

Comms1-6300M-...

PortsPoEVLAN

Manage

Overview

Clients

LAN

Device

Analyze

Alerts & Events

Audit Trail

Tools

Reports

VLANs

NAME	ID	STATUS	TAGGED PORTS	UNTAGGED PORTS	IP ADDRESS	VOICE	IGMP
DEFAULT_VLA...	1	Up		lag/10, 1/1/26-1/1/28, 2/1...		DISABLED	DISABLED
Guest	16	Up	lag/10		10.10.16.9	DISABLED	DISABLED
IoT	15	Up	lag/10		10.10.15.9	DISABLED	DISABLED
Restricted	13	Up	lag/10	1/1/1-1/1/24	10.10.13.9	DISABLED	DISABLED
Staff	11	Up	lag/10		10.10.11.9	DISABLED	DISABLED
Student	12	Up	lag/10		10.10.12.9	DISABLED	DISABLED
Voice	14	Up	lag/10		10.10.14.9	DISABLED	DISABLED

Once you create a site and add the switches to it, then you could also view the topology

Campus-1 ✓

Site Health Summary Wi-Fi Connectivity WAN Health AI Insights **Topology** FLOORPLANS

LOCATION: 17 Sm... APs: 0 SWITCHES: 3 GATEWAYS: 0

SUMMARY STATISTICS

✓ No issues

CHANGE LOG

	-3h	-1h30m	Now
CONFIG	○	○	○
FIRMWARE	○	○	○
REBOOT	○	○	○

Jan 20, 2021, 12:30 Jan 20, 2021, 14:00 Jan 20, 2021, 15:30

Campus-1 ✓

Site Health Summary Wi-Fi Connectivity WAN Health AI Insights **Topology** FLOORPLANS

Show Labels ☑ | 🔍 | 📍 Locate Gateways, Controllers, Switches and AP

VSX_Core-8320-1

VSX_Core-8320-2

Comms1-6...0M-Stack

And here is the neighbor table.

Core-8320-1 ✓

Clients **Neighbours**

NEIGHBOUR DEVICES

MAC ADDR...	HOSTNAME	IP ADD...	DESCRIPTION	LO...	RE MOT...	CAPABIL...	VLAN ID(S)
88:3a...	Comms1-6300M-Stack	10.10.11.9	Aruba JL666A FL.10.06.0010	1/1/5	1/1/25	Bridge, Router	1,11,12,13,14,15,16
98:f2...	Core-8320-2	1.1.1.2	Aruba JL479A TL.10.06.0010	1/1/48	Keepalive-Link	Bridge, Router	1
f8:60...	Aruba-2930F-12G-PoE...	10.10.21.250...	Aruba JL693A 2930F-12G-PoE+	1/1/1	11	Bridge, Router	1,21
98:f2...	Core-8320-2	10.10.11.3	Aruba JL479A TL.10.06.0010	1/1/50	VSX-ISL-mem-por	Bridge, Router	1,11,12,13,14,15,16,21
98:f2...	Core-8320-2	10.10.11.3	Aruba JL479A TL.10.06.0010	1/1/51	VSX-ISL-mem-por	Bridge, Router	1,11,12,13,14,15,16,21

3 832X Configuration

As with the 6300 switches, you need to add the 832X switches to the inventory and then add it to a template based group.

3.1 Aruba Central Template

Please refer to Appendix, for the details of template and variables that were used in this deployment.

The top screenshot shows the Aruba Central interface with the 'SWITCHES' tab selected. The left sidebar shows the 'Manage' section with 'Overview', 'Devices', 'Clients', 'Applications', and 'Security'. The main content area displays a summary of switches: 2 ONLINE, 2 OFFLINE, and 0 UNKNOWN. Below this is a table of switches:

Device Name	Clients	Alerts	Model	Config Status	Last Seen	Usage	MAC
Core-8320-1	0	1	8320 (JL479A)	In sync	-	96 kbps	d0:67:2
Core-8320-2	0	1	8320 (JL479A)	In sync	-	96 kbps	98:f2

The bottom screenshot shows the 'TEMPLATES' tab selected. The left sidebar is the same. The main content area displays a table of templates:

Template Name	Device Type	Model	Version	Last Modified
CX-Core-8320	CX	8300	ALL	Mon, 18 Jan 2021 04:42:58 GMT

Here is the device view of Core-1 switch.

The top screenshot shows the Aruba Central interface with the 'Core-8320-1' device selected. The left sidebar shows the 'Manage' section with 'Overview', 'Clients', 'LAN', 'VSX', 'Device', 'Alerts & Events', and 'Audit Trail'. The main content area displays the 'Summary' tab with switch details:

SWITCH DETAILS			
Model: 8320	J-NUMBER: JL479A	LOCATION: --	CONTACT: --
Serial: TW84	MAC Address: d0:67:2	UPTIME: 16 Hours 44 Minutes 1 Seconds	LAST REBOOT: Jan 19, 2021, 22:59:25
CONFIGURATION: In sync Last Sync: Jan 20, 2021, 12:32:09	LAST STATS RECEIVED: 20 Jan 2021 15:43:28	FIRMWARE VERSION: 10.06.0010	
GROUP: CX-Core	SITE: Campus-1	LABEL(S): --	

The bottom screenshot shows the 'Ports' tab selected. The left sidebar is the same. The main content area displays the 'PORTS' tab with port status:

PORT STATUS			
Up: 5	DOWN: 49	ALERT: 0	UPLINK: 0

Below the port status is a 'STANDALONE: Core-8320-1' section with a port level information view. It shows a grid of port status indicators for 8300 switches, with a legend for UPLINK, UP, DOWN, ALERT, and DISABLED.

Core-8320-1

Ports

PoE

VLAN

Manage

Overview

Clients

LAN

VSX

Device

Analyze

Alerts & Events

Audit Trail

Tools

Reports

VLANs

NAME	ID	STATUS	TAGGED PORTS	UNTAGGED PORTS	IP ADDRESS	VOICE	IGMP
DEFAULT_VLA...	1	Up		lag/1, lag/50, lag/100-lag/...		DISABLED	DISABLED
Guest	16	Up	lag/1, lag/100-lag/101			DISABLED	DISABLED
IoT	15	Up	lag/1, lag/100-lag/101			DISABLED	DISABLED
Restricted	13	Up	lag/1, lag/100-lag/101			DISABLED	DISABLED
Server	21	Up	lag/1, lag/50			DISABLED	DISABLED
Staff	11	Up	lag/1, lag/100-lag/101			DISABLED	DISABLED
Student	12	Up	lag/1, lag/100-lag/101			DISABLED	DISABLED
Voice	14	Up	lag/1, lag/100-lag/101			DISABLED	DISABLED

Core-8320-1

VSX

Manage

Overview

Clients

LAN

VSX

Device

Analyze

Alerts & Events

Audit Trail

Tools

Reports

Maintain

Firmware

VSX SUMMARY

ISL STATUS Peer Established	ISL MGMT STATE Operational	CONFIG SYNC STATUS In-Sync	NAE Peer Reachable
HTTPS SERVER Peer Reachable	LAST SYNCED 20 jan 2021 12:32:08	Role Primary	

INFO

SYSTEM

LOCAL MAC d0:67:2	PEER MAC 98:f2:t	PEER HOSTNAME Core-8320-2	PEER IP 1.1.1.2
----------------------	---------------------	------------------------------	--------------------

CONFIGURATION

CONFIG SYNC Enabled	ISL PORT lag1	PEER ISL PORT lag1	MC LAGS lag50 lag101 lag100
------------------------	------------------	-----------------------	--------------------------------------