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1.1 Revision History

DATE	VERSION	EDITOR	CHANGES
01 Jul 2020	0.1	Ariya Parsamanesh	Final version
09 Nov 2025	0.2	Ariya Parsamanesh	Added LLDP OUI and Subtypes section Added Port-Access Role Behaviour section

2 Device Profiles with Aruba 6200/6300/6400 CX Switches

2.1 Introduction

The aim of this solution is to automatically discover the key devices that are connected to the switch port using LLDP and/or CDP, and to apply device profiles to enable automatic configuration of the switch ports in which they are connected.

Device profiles which we had in AOS-S switches like Aruba 2930F/Ms are also available in CX switches that enable predefined configuration settings to be applied to an interface based on the type of devices that are connected to the interface. When a device of a configured type is connected to an interface, the switch automatically applies the corresponding device profile.

Generally, the Device profiles are used for devices such as access points, IP phones, security cameras, and printers. Obviously, it is always much more secure to use ClearPass for device profiling.

In this guide we'll demonstrate this functionality for connecting Aruba APs and UXI sensors.

We need to create a device-profile and associate it with a couple of other profiles namely

1. Role profile
2. LLDP-group profile.

LLDP profile is used to match on some specific LLDP info from the AP and the Role profile is used to assign number of attributes such as VLANs, QoS and PoE priority to name a few.

I have tested this feature with CX switch running CX version 10.15.1030 and 10.16.1006.

2.2 Role Profile

Here is our role profile in which we want the AP to be on native VLAN of 11 and its various WLANs on VLANs 12 and 13. So the switch port needs to be a trunk port. We'll also assign PoE priority and QoS trust.

```
!
port-access role Lab-IAP-role
    description Aruba IAP
    poe-priority high
    trust-mode dscp
    vlan trunk native 11
    vlan trunk allowed 11-13
!
```

2.3 LLDP-Group Profile

LLDP group is the main profile that matches on type of device which gets connected to any of the switch ports. The options for your match criterion are

- sys-desc Configure LLDP system description.
- sysname Configure LLDP system name.
- vendor-oui Configure LLDP vendor OUI.

Note that vendor OUI is not a MAC OUI and for most Aruba APs it is 000b86 and by default LLDP is enabled on all the Instant APs, so you don't need to do anything to enable it. You should note that LLDP vendor OUI is optional, so not all the devices will have this value.

Sysname is the name of that AP. For example, you can configure the APs to have a name that would identify their location, then you could use that as a match criteria. You can also match on sys-desc which is mainly the description of the AP model.

This is the LLDP neighbour info from AP-515, the chassis-name is the “sysname” and Chassis-Description is sys-desc.

```
6300-1# sh lldp neighbor-info detail

LLDP Neighbor Information
=========================
Total Neighbor Entries          : 0
Total Neighbor Entries Deleted  : 6
Total Neighbor Entries Dropped  : 0
Total Neighbor Entries Aged-Out : 3
--------------------------------------------------------------------------------
Port                           : 1/1/1
Neighbor Entries               : 0
Neighbor Entries Deleted       : 6
Neighbor Entries Dropped       : 0
Neighbor Entries Aged-Out      : 3
Neighbor Chassis-Name          : 9c:8c:d8:c9:3e:ae
Neighbor Chassis-Description   : ArubaOS (MODEL: 515), Version Aruba IAP
Neighbor Chassis-ID            : 9c:8c:d8:c9:3e:ae
Neighbor Management-Address    :
Chassis Capabilities Available : Bridge, WLAN
Chassis Capabilities Enabled   :
Neighbor Port-ID               : 9c:8c:d8:c9:3e:ae
Neighbor Port-Desc             : eth0
Neighbor Port VLAN ID          :
TTL                            : 120

Neighbor Mac-Phy details
Neighbor Auto-neg Supported    : true
Neighbor Auto-Neg Enabled      : true
Neighbor Auto-Neg Advertised   : 1000 BASE_TFD, 1000 BASE_T, 100 BASE_TXFD, 100
BASE_TX, Other
Neighbor MAU type              : 1000 BASETFD

6300-1#
```

This is the LLDP neighbour info from an old AP-205H

```
6300-1# sh lldp neighbor detail

LLDP Neighbor Information
=========================
Total Neighbor Entries          : 1
Total Neighbor Entries Deleted  : 4
Total Neighbor Entries Dropped  : 0
Total Neighbor Entries Aged-Out : 1
--------------------------------------------------------------------------------
Port                           : 1/1/1
Neighbor Entries               : 1
Neighbor Entries Deleted       : 4
Neighbor Entries Dropped       : 0
Neighbor Entries Aged-Out      : 1
Neighbor Chassis-Name          :
Neighbor Chassis-Description   : ArubaOS (MODEL: 205H), Version Aruba AP
Neighbor Chassis-ID            : 00:0b:86:fd:c4:0e
Neighbor Management-Address    :
```

```
Chassis Capabilities Available : Bridge, WLAN
Chassis Capabilities Enabled   :
Neighbor Port-ID               : 00:0b:86:fd:c4:0e
Neighbor Port-Desc             : eth0
Neighbor Port VLAN ID          :
TTL                            : 120

6300-1#
```

And this is from IAP-205

```
6300-1# sh lldp nei de

LLDP Neighbor Information
=========================
Total Neighbor Entries          : 1
Total Neighbor Entries Deleted  : 5
Total Neighbor Entries Dropped  : 0
Total Neighbor Entries Aged-Out : 2
--------------------------------------------------------------------------------
Port                           : 1/1/1
Neighbor Entries               : 1
Neighbor Entries Deleted       : 5
Neighbor Entries Dropped       : 0
Neighbor Entries Aged-Out      : 2
Neighbor Chassis-Name          : ac:a3:1e:c1:bb:0c
Neighbor Chassis-Description   : ArubaOS (MODEL: 205), Version Aruba IAP
Neighbor Chassis-ID            : ac:a3:1e:c1:bb:0c
Neighbor Management-Address    :
Chassis Capabilities Available : Bridge, WLAN
Chassis Capabilities Enabled   :
Neighbor Port-ID               : ac:a3:1e:c1:bb:0c
Neighbor Port-Desc             : bond0
Neighbor Port VLAN ID          :
TTL                            : 120

Neighbor PoE information       : DOT3
Neighbor Power Type            : Type 2 PD
Neighbor Power Priority        : Unknown
Neighbor Power Source          : PSE
PD Requested Power Value       : 12.5 W
PSE Allocated Power Value      : 12.5 W
Neighbor Power Supported       : No
Neighbor Power Enabled         : No
Neighbor Power Class           : Class4
Neighbor Power Paircontrol     : No
PSE Power Pairs                : SIGNAL

Neighbor Mac-Phy details
Neighbor Auto-neg Supported    : true
Neighbor Auto-Neg Enabled      : true
Neighbor Auto-Neg Advertised   : 1000 BASE_TFD, 100 BASE_TXFD, 100 BASE_TX, 10
BASET_FD, 10 BASE_T
Neighbor MAU type              : 1000 BASETFD

6300-1#
```

So sys-desc becomes handy as match criteria if you have specific VLAN requirement for certain AP models.

Here are the config snippets for the three criterion types that you can use.

```
!
port-access lldp-group Lab-IAP-group1
     seq 10 match vendor-oui 000b86
!
port-access lldp-group Lab-IAP-group2
     seq 10 match sysname Lab
!
port-access lldp-group Lab-IAP-group3
     seq 10 match sys-desc 303H
!
```

Note that if you have two match criteria in one LLDP group profile, the operation is OR.

2.4 Device Profile

Now that we have configured the LLDP group and Role profiles, we need to associate it with our device profile as shown below.

```
!
port-access lldp-group Lab-IAP-group
     seq 10 match vendor-oui 000b86
!
port-access role Lab-IAP-role
    description Aruba IAP
    poe-priority high
    trust-mode dscp
    vlan trunk native 11
    vlan trunk allowed 11-13
!
port-access device-profile Lab-IAP-prof
    enable
    associate role Lab-IAP-role
    associate lldp-group Lab-IAP-group
!
```

And here is the partial running configuration for this switch.

```
6300-1# sh run
Current configuration:
!
!Version ArubaOS-CX FL.10.04.3000
!export-password: default
hostname 6300-1
clock timezone australia/melbourne
aruba-central
    disable
ntp server 216.239.35.12 iburst
ntp enable
ntp vrf mgmt
cli-session
    timeout 0
!
ssh server vrf default
ssh server vrf mgmt
vsf secondary-member 2
vsf member 1
    type jl666a
    link 1 1/1/27-1/1/28
vsf member 2
    type jl666a
    link 1 2/1/27-2/1/28
```

```
!
vlan 1,11-12
spanning-tree
interface mgmt
    no shutdown
    ip static 192.168.1.23/24
    default-gateway 192.168.1.249

port-access lldp-group Lab-IAP-group
     seq 10 match vendor-oui 000b86

port-access role Lab-IAP-role
    description Aruba IAP
    poe-priority high
    trust-mode dscp
    vlan trunk native 11
    vlan trunk allowed 11-13

port-access device-profile Lab-IAP-prof
    enable
    associate role Lab-IAP-role
    associate lldp-group Lab-IAP-group

interface 1/1/1
    no shutdown
    no routing
    vlan access 1
interface 1/1/2
    no shutdown
    no routing
    vlan access 11
<removed the rest of the interface config>

interface vlan11
    ip address 10.10.11.1/24
interface vlan12
    ip address 10.10.12.1/24
https-server vrf default
https-server vrf mgmt.
!
dhcp-server vrf default
    pool IAP
        range 10.10.11.5 10.10.11.9 prefix-len 24
        dns-server 8.8.8.8
        default-router 10.10.11.1
        lease 00:02:00
        exit
    pool VLAN12
        range 10.10.12.5 10.10.12.9 prefix-len 24
        default-router 10.10.12.1
        dns-server 8.8.8.8
        lease 00:02:00
        exit
    no authoritative
    enable
6300-1#
```

2.5 Testing

Now we'll connect an AP-303H to port 1/1/1 to test our configuration. First, we'll check the status of the interfaces, 1/1/1 and it is up and has the default VLAN

```
6300-1# sh int b
-------------------------------------------------------------------------------
Port      Native  Mode   Type          Enabled Status  Reason                Speed
          VLAN                                                               (Mb/s)
-------------------------------------------------------------------------------
1/1/1     1       access 1GbT          yes     up                            1000
1/1/2     11      access 1GbT          yes     down    Waiting for link      --
1/1/3     1       access 1GbT          yes     down    Waiting for link      --
1/1/4     1       access 1GbT          yes     down    Waiting for link      --
```

Checking if the device profile is enabled.

```
6300-1# sh port-access device-profile

    Profile Name             : Lab-IAP-prof
    LLDP Groups              : Lab-IAP-group3
    CDP Groups               :
    Role                     : Lab-IAP-role
    State                    : Enabled
6300-1#
```

Checking if the IAP has booted up by seeing the LLDP info.

```
6300-1# sh lldp nei

LLDP Neighbor Information
=========================
Total Neighbor Entries          : 1
Total Neighbor Entries Deleted  : 10
Total Neighbor Entries Dropped  : 0
Total Neighbor Entries Aged-Out : 5

LOCAL-PORT  CHASSIS-ID         PORT-ID          PORT-DESC               TTL      SYS-NAME
-------------------------------------------------------------------------------------
1/1/1       20:4c:03:23:a7:c0  20:4c:03:23:...  eth0                    120      Lab-IAP1

6300-1#
```

And now checking if the device profile is “applied”

```
6300-1# sh port-access device-profile interface all
  Port 1/1/1, Neighbor-Mac  20:4c:03:23:a7:c0
    Profile Name:            : Lab-IAP-prof
    LLDP Group:              : Lab-IAP-group3
    CDP Group:               :
    Role:                    : Lab-IAP-role
    State:                   : application-failed
    Failure Reason:          :
6300-1#
```

Note the state. The reason for it is that in the Role profile we have allowed VLANs 11-13 but VLAN 13 is not configured. Now we’ll configure it and test again.

```
6300-1# conf t
6300-1(config)# vlan 13
6300-1(config-vlan-13)# ^Z

6300-1#
```

As soon as we do that, we’ll check the status of the device profile again.

```
6300-1# sh port-access device-profile interface all
```

```
  Port 1/1/1, Neighbor-Mac  20:4c:03:23:a7:c0
    Profile Name:           : Lab-IAP-prof
    LLDP Group:             : Lab-IAP-group3
    CDP Group:              :
    Role:                   : Lab-IAP-role
    State:                  : applied
    Failure Reason:         :

6300-1#
```

This is without rebooting of the AP. And finally, the interface information

```
6300-1# sh int br
--------------------------------------------------------------------------------
Port      Native  Mode   Type          Enabled Status  Reason                Speed
          VLAN                                                               (Mb/s)
--------------------------------------------------------------------------------
1/1/1     11      trunk  1GbT          yes     up                            1000
1/1/2     11      access 1GbT          yes     down    Waiting for link      --
1/1/3     1       access 1GbT          yes     down    Waiting for link      --
```

Note that the port is in Trunk mode and the native vlan is VLAN 11 as specified in the Role profile. Now checking the PoE priority.

```
6300-1# sh power-over-ethernet  brief

  Member 1 Power Status
    Available: 370.00 W  Reserved: 4.34 W  Remaining: 365.66 W
    Always-on PoE Enabled:1/1

PoE       Pwr Power    Pre-std Alloc PSE Pwr PD Pwr PoE Port     PD      Cls Type
Port      Ena Priority Detect  Act   Rsrvd   Draw   Status       Sign
--------- --- -------- ------- ----- ------- ------ ------------ ------ --- ----
1/1/1     Yes high     Off     lldp  4.3 W   4.2 W  delivering*  N/A    4   2
1/1/2     Yes low      Off     usage 0.0 W   0.0 W  searching    N/A    N/A N/A
1/1/3     Yes low      Off     usage 0.0 W   0.0 W  searching    N/A    N/A N/A
```

And the QoS DSCP trust.

```
6300-1# sh int 1/1/1

Interface 1/1/1 is up
 Admin state is up
 Link transitions: 43
 Description:
 Hardware: Ethernet, MAC Address: 88:3a:30:ad:66:67
 MTU 1500
 Type 1GbT
 Full-duplex
 qos trust dscp
 Speed 1000 Mb/s
 Auto-negotiation is on
 Flow-control: off
 Error-control: off
 MDI mode: MDI
 VLAN Mode: access
 Access VLAN: 1
 Rx
          728 packets                96364 bytes
            0 errors                     0 dropped
            0 CRC/FCS
 Tx
         2053 packets               293406 bytes
            0 errors                     0 dropped
```

```
            0 collision
6300-1#
```

2.6 LLDP OUI and Subtypes

As mentioned before we can use LLDP OUI in the LLDP group profile that matches on type of device which gets connected to any of the switch ports. There are use cases that one does not want to differentiate between various Aruba products and wants to use the LLDP OUI method to have the same consistent configuration.

Note that the vendor OUI of 000b86, will identify not only the Aruba APs but also Aruba gateways. So, what if you want to differentiate between the Aruba APs and gateways that connect to the same CX switch?

This is our second use case and for this we use LLDP organisation with subtype.

In LLDP, the Organization OUI and subtype are used to create custom, or "organizationally specific," Type-Length-Value (TLV) messages to share vendor-specific information.

An easy way to find these values are to use the following command.

```
6200Core# sh lldp oui-tlv-details

LOCAL-PORT  CHASSIS-ID         PORT-ID     OUI      OUI-SUBTYPE    OUI-DATA
----------------------------------------------------------------------------
1/1/2       20:4c:03:bc:31:22  GE0/0/0     0080c2   1              0ff6
1/1/2       20:4c:03:bc:31:22  GE0/0/0     0080c2   3              0ff609564c414e2034303836
1/1/2       20:4c:03:bc:31:22  GE0/0/0     000b86   1              0002
1/1/2       20:4c:03:bc:31:22  GE0/0/0     00120f   3              0100000000
1/1/2       20:4c:03:bc:31:22  GE0/0/0     00120f   1              036c01001e
1/1/2       20:4c:03:bc:31:22  GE0/0/0     00120f   4              05dc
6200Core#
```

Aruba 9004-LTE gateway is connected to 1/1/2 and as it can be seen we can just use vendor-oui 000b86 which will also match with APs but if you want a different user-role for gateways, then you can use vendor-oui 0080c2 type 1 value 0ff6. Note that 0ff6 is in hex and when converted to decimal it is 4086 which is the VLAN ID for GE0/0/0 interface.

You should note that OUI values of 0080c2 and 00-12-0F are reserved by IEEE

- 00-80-C2 - Under this LLDP sends Port Vlan ID information, Link Agg, etc
- 00-12-0F - Under this LLDP sends MAC/Phy information, etc.

In our example above, this means that any vendor's device that supports LLDP with VLAN id of 4086 will match. So you need to keep this in mind while using this approach,

```
port-access lldp-group gateway-group
     seq 10 match vendor-oui 0080c2 type 1 value 0ff6

port-access role gateway-role
    description Aruba gateway
    trust-mode dscp
    vlan access 192

port-access device-profile gateway-prof
    enable
    associate role gateway-role
    associate lldp-group gateway-group
```

Again, you can use any of the OUI and their respective subtype for 9004 gateways.

```
OUI      OUI-SUBTYPE    OUI-DATA
-------------------------------------------------
0080c2   1              0ff6
0080c2   3              0ff609564c414e2034303836
000b86   1              0002
00120f   3              0100000000
00120f   1              036c01001e
00120f   4              05dc
```

This is for a G6 UXI sensor and AP-515, here the output indicates that the sensor is connected to 1/1/4 interface.

```
6200Core# sh lldp  nei

LLDP Neighbor Information
=========================

Total Neighbor Entries          : 3
Total Neighbor Entries Deleted  : 0
Total Neighbor Entries Dropped  : 0
Total Neighbor Entries Aged-Out : 0

LOCAL-PORT  CHASSIS-ID         PORT-ID               PORT-DESC        TTL      SYS-NAME
-------------------------------------------------------------------------------------
1/1/4       28:de:65:23:1e:02  28:de:65:23:1e:02     eth0             120      sensor-1
1/1/6       9c:8c:d8:c9:2b:30  9c:8c:d8:c9:2b:30     eth0             120      AP-515-2b:30
```

```
6200Core# sh lldp oui-tlv-details

LOCAL-PORT  CHASSIS-ID         PORT-ID     OUI      OUI-SUBTYPE    OUI-DATA
-------------------------------------------------------------------------------
1/1/4       28:de:65:23:1e:02  28:de:6...  00120f   3              0100000000
1/1/4       28:de:65:23:1e:02  28:de:6...  00120f   1              03ec81001e
1/1/6       9c:8c:d8:c9:2b:30  9c:8c:d...  000b86   1              0001
1/1/6       9c:8c:d8:c9:2b:30  9c:8c:d...  000b86   4              0000
1/1/6       9c:8c:d8:c9:2b:30  9c:8c:d...  00120f   3              0000000000
1/1/6       9c:8c:d8:c9:2b:30  9c:8c:d...  00120f   1              038401001e
1/1/6       9c:8c:d8:c9:2b:30  9c:8c:d...  00120f   4              05f2
1/1/6       9c:8c:d8:c9:2b:30  9c:8c:d...  00120f   2              0001055000ff00ff
```

And here is the device profile configuration for our UXI sensor.

```
port-access lldp-group UXI-Sensor
     seq 10 match vendor-oui 00120f type 1 value 03ec81001e
!
port-access role Lab-UXI-role
    description UXI Sensor
    poe-priority high
    trust-mode dscp
    vlan trunk native 10
    vlan trunk allowed 10-13
!
port-access device-profile UXI-prof
    enable
    associate role Lab-UXI-role
    associate lldp-group UXI-Sensor
!
6200Core(config)# sh port-access device-profile interface all
  Port 1/1/4, Neighbor-Mac  28:de:65:23:1e:02
    Profile Name:           : UXI-prof
    LLDP Group:             : UXI-Sensor
    CDP Group:              :
    MAC Group:              :
    Role:                   : Lab-UXI-role
    State:                  : applied
    Failure Reason:         :
```

```
6200Core(config)#
```

So now that we connected the UXI sensor, it gets profiled and assigned the configured user-role.

```
6200Core# sh port-access clients

Port Access Clients
RADIUS overridden user roles are suffixed with '*'
Flags: Onboarding-Method|Mode|Device-Type|Status

Onboarding-Method: 1x 802.1X, ma MAC-Auth, ps Port-Security, dp Device-Profile
Mode: c Client-Mode, d Device-Mode, m Multi-Domain
Device-Type: d Data, v Voice
Status: s Success, f Failed, p In-Progress, d Role-Download-Failed

-------------------------------------------------------------------------------------------------
Port     Client-Name             IPv4-Address    User-Role           VLAN            Flags
-------------------------------------------------------------------------------------------------
1/1/4    28:de:65:23:1e:02       10.10.10.26     Lab-UXI-role        multi           dp|c|-|s
```

```
6200Core# sh port-access device-profile interface all
  Port 1/1/4, Neighbor-Mac  28:de:65:23:1e:02
    Profile Name:           : UXI-prof
    LLDP Group:             : UXI-Sensor
    CDP Group:              :
    MAC Group:              :
    Role:                   : Lab-UXI-role
    State:                  : applied
    Failure Reason:         :
```

And for completeness here are the output of **lldp oui-tlv-details** for the other Aruba devices.

This is for a 7005 gateway

```
6200Core(config)# sh lldp oui-tlv-details

LOCAL-PORT  CHASSIS-ID         PORT-ID     OUI      OUI-SUBTYPE    OUI-DATA
-------------------------------------------------------------------------------
1/1/2       20:4c:03:1a:2f:74  GE0/0/0     0080c2   1              00c0
1/1/2       20:4c:03:1a:2f:74  GE0/0/0     0080c2   3              00c008564c414e20313932
1/1/2       20:4c:03:1a:2f:74  GE0/0/0     0080c2   3              000106564c414e2031
1/1/2       20:4c:03:1a:2f:74  GE0/0/0     000b86   1              0002
1/1/2       20:4c:03:1a:2f:74  GE0/0/0     00120f   3              0100000000
1/1/2       20:4c:03:1a:2f:74  GE0/0/0     00120f   1              036c01001e
1/1/2       20:4c:03:1a:2f:74  GE0/0/0     00120f   4              05dc
1/1/2       20:4c:03:1a:2f:74  GE0/0/0     0012bb   1              000704
```

This is for a 9004/9004-LTE gateway

```
6200Core# sh lldp oui-tlv-details

LOCAL-PORT  CHASSIS-ID         PORT-ID     OUI      OUI-SUBTYPE    OUI-DATA
-------------------------------------------------------------------------------
1/1/2       20:4c:03:bc:31:22  GE0/0/0     0080c2   1              0ff6
1/1/2       20:4c:03:bc:31:22  GE0/0/0     0080c2   3              0ff609564c414e2034303836
1/1/2       20:4c:03:bc:31:22  GE0/0/0     000b86   1              0002
1/1/2       20:4c:03:bc:31:22  GE0/0/0     00120f   3              0100000000
1/1/2       20:4c:03:bc:31:22  GE0/0/0     00120f   1              036c01001e
1/1/2       20:4c:03:bc:31:22  GE0/0/0     00120f   4              05dc
```

This is for a 9106 gateway

```
LOCAL-PORT  CHASSIS-ID         PORT-ID     OUI      OUI-SUBTYPE    OUI-DATA
-------------------------------------------------------------------------------
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   1              0014
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   3              001407564c414e203230
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   3              000706564c414e2037
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   3              000806564c414e2038
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   3              000a07564c414e203130
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   3              001907564c414e203235
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   3              005007564c414e203830
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   3              006307564c414e203939
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   3              01ff08564c414e20353131
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   3              021c08564c414e20353430
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0080c2   3              03f209564c414e2031303130
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     000b86   1              0002
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     00120f   3              0100000000
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     00120f   1              030001001f
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     00120f   4              05dc
1/1/25      f0:1a:a0:64:c0:66  GE0/0/4     0012bb   1              000704
```

This is for a 9114 gateway

```
LOCAL-PORT  CHASSIS-ID         PORT-ID     OUI      OUI-SUBTYPE    OUI-DATA
-------------------------------------------------------------------------------
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   1              0014
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   3              001407564c414e203230
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   3              000706564c414e2037
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   3              000806564c414e2038
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   3              000a07564c414e203130
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   3              001907564c414e203235
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   3              005007564c414e203830
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   3              006307564c414e203939
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   3              00d208564c414e20323130
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   3              00fa08564c414e20323530
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0080c2   3              01fe08564c414e20353130
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     000b86   1              0002
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     00120f   3              0300000022
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     00120f   1              030001001f
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     00120f   4              05dc
1/1/28      f0:1a:a0:57:5a:fe  GE0/0/4     0012bb   1              000704
```

This is for a 6200CX switch that is connected to interface 1/1/2.

```
primary1-Stack# sh lldp oui-tlv-details

LOCAL-PORT  CHASSIS-ID         PORT-ID     OUI      OUI-SUBTYPE    OUI-DATA
-------------------------------------------------------------------------------
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   1              0001
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   3
00010e44454641554c545f564c414e5f31
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   3
00050e6f746865722d36323030462d3132
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   3              000a06564c414e3130
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   3              000b06564c414e3131
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   3              000c06564c414e3132
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   3              000d06564c414e3133
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   3
00100c363230302d32342d564c414e
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   3              001406564c414e3230
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   3              006407564c414e313030
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   3              006e07564c414e313130
1/1/24      94:60:d5:da:5a:20  1/1/13      0080c2   7              0300000100
1/1/24      94:60:d5:da:5a:20  1/1/13      00120f   1              03b001001e
1/1/24      94:60:d5:da:5a:20  1/1/13      00120f   4              23ee
1/1/24      94:60:d5:da:5a:20  1/1/13      883a30   2              0001
```

This is for 6300 CX switch that is connected to interface 1/1/13

```
6200Core# sh lldp oui-tlv-details

LOCAL-PORT  CHASSIS-ID         PORT-ID     OUI      OUI-SUBTYPE    OUI-DATA
-------------------------------------------------------------------------------
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   1              0001
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   3
00010e44454641554c545f564c414e5f31
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   3              006407737475646 56e74
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   3              006e057374616666
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   3              007803696f74
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   3              008204766f6970
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   3
008c0e67756573742d776972656c657373
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   3              0096046d676d74
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   3              00a00a71756172616e74696e65
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   3              00c007564c414e313932
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   3              029a085042542d564c414e
1/1/13      88:3a:30:ad:14:40  1/1/24      0080c2   7              0300000100
1/1/13      88:3a:30:ad:14:40  1/1/24      00120f   1              03b001001e
1/1/13      88:3a:30:ad:14:40  1/1/24      00120f   4              23ee
1/1/13      88:3a:30:ad:14:40  1/1/24      00120f   2              070101
1/1/13      88:3a:30:ad:14:40  1/1/24      883a30   2              0001
```

2.7 VLAN Mode Configuration and Port-Access Role Behaviour

Generally, one would assume that when you configure access VLAN in port-access role, that is one gets when it is applied to the port for that device, irrespective of its initial port configuration. But that is not the behaviour.

By this I mean if I configure the following,

```
port-access lldp-group Lab-AP-group
     seq 10 match vendor-oui 000b86
!
port-access role Lab-AP-role
    description Aruba AP
    vlan access 10
!
port-access device-profile Lab-AP-prof
    enable
    associate role Lab-AP-role
    associate lldp-group Lab-AP-group
```

and the initial port configuration is as shown below

```
6200Core# sh run int 1/1/3
interface 1/1/3
    no shutdown
    no routing
    vlan trunk native 30
    vlan trunk allowed 5,30
    exit

6200Core# sh vlan port 1/1/3
---------------------------------------------------------------------------------
VLAN  Name                                Mode            Mapping
---------------------------------------------------------------------------------
5     VLAN5                               trunk           port
30    VLAN30                              native-untagged port
6200Core#
```

Then when the device profile applies this to the port that the AP is connected to (in our case 1/1/3), you get the following

```
6200Core# sh vlan port 1/1/3

---------------------------------------------------------------------------------
VLAN  Name                                Mode            Mapping
---------------------------------------------------------------------------------
5     VLAN5                               trunk           port
10    VLAN10                              native-untagged port-access,port
30    VLAN30                              trunk           port

Overridden VLAN list: 30
6200Core#
```

So, if you want a VLAN access port (not VLAN trunk) after the role is applied, then the best practice is to create a single VLAN trunk. By that I mean changing the sample configuration to this.

```
port-access role Lab-AP-role
    description Aruba AP
    vlan trunk native 10
    vlan trunk allowed 10
```

And this is the outcome when the device profile role is applied.

```
6200Core(config)# sh vlan port 1/1/3

---------------------------------------------------------------------------------
VLAN  Name                                Mode            Mapping
---------------------------------------------------------------------------------
10    VLAN10                              native-untagged port-access

Overridden VLAN list: 5,10-13,30
6200Core#
```

Below is the VLAN derivation rule table for your reference.

Initial Interface VLAN config	Role/RADIUS VLAN config	Arbitrated VLAN after DP is applied
access X	-	access X
access X	access A	access A
access X	trunk native A	access A
access X	trunk native A trunk allowed A	native untagged A trunk allowed (A)
access X	trunk native A trunk allowed B,C	native untagged A trunk allowed (A),B,C
access X	trunk allowed A,B	native untagged X trunk allowed A,B,(X)
trunk allowed X	-	native untagged 1 vlan trunk allowed X
trunk allowed X	access A	native-untagged A trunk allowed (A)
trunk allowed X	trunk native A	native untagged A vlan trunk allowed (A)
trunk allowed X	trunk native A trunk allowed A	native untagged A trunk allowed (A)
trunk allowed X	trunk native A trunk allowed B,C	native untagged A trunk allowed (A),B,C
trunk allowed X	trunk allowed A,B	trunk allowed A,B
trunk native X trunk allowed Y,Z	-	native untagged X trunk allowed (X),Y,Z
trunk native X trunk allowed Y,Z	access A	native untagged A trunk allowed Y,Z

trunk native X trunk allowed Y,Z	trunk native A	native-untagged A trunk allowed Y,Z
trunk native X trunk allowed Y,Z	trunk native A trunk allowed A	native untagged A
trunk native X trunk allowed Y,Z	trunk native A trunk allowed B,C	native untagged A trunk allowed (A),B,C
trunk native X trunk allowed Y,Z	trunk allowed A,B	native untagged vlan X trunk allowed A,B