1 Table of Contents

1.1 Revision History

DATE	VERSION	EDITOR	CHANGES
09 Jun 2026	0.1	Ariya Parsamanesh	Initial creation
23 Jun 2026	0.2	Ariya Parsamanesh	Added the testing section

2 New Central Configuration for Tunnelled WLANs

Background

This technote builds on the previous one, where I covered how to onboard and configure Mobility Gateways running HPE Aruba Networking Wireless Operating System 10 (AOS-10) using the New Central cloud-native platform. That technote also covered the basic gateway configuration, including link aggregation and clustering.

Scope

In this technote, I'll focus on the element profiles required to configure AOS-10 AP WLANs that operate in tunnel mode connecting to the mobility gateway cluster. Each profile is explained in context, including why it is needed, so the configuration is easier to follow even if you are not familiar with every technical detail.

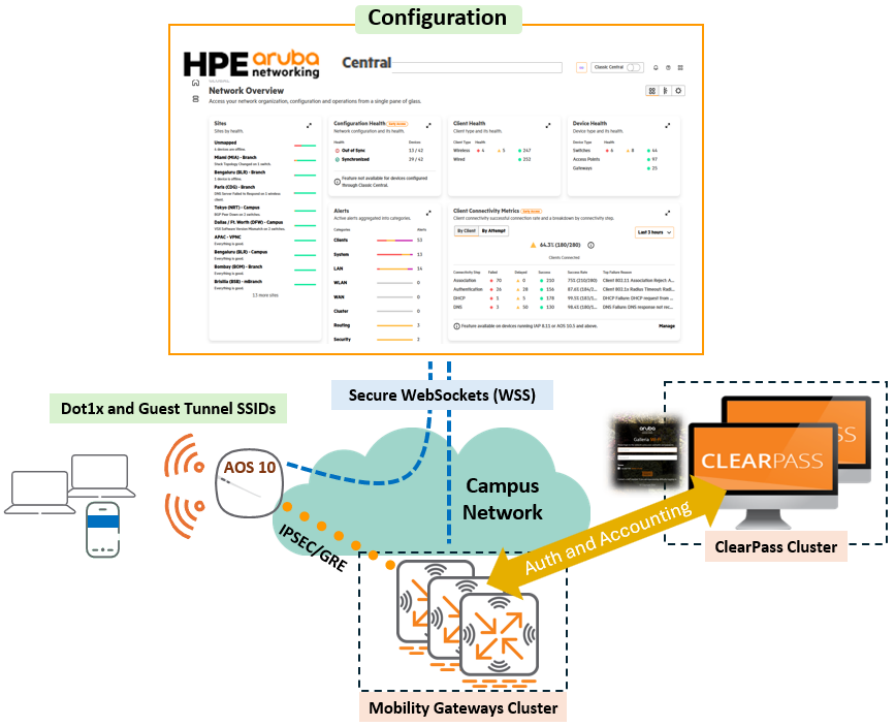
Configuration scenarios

I'll cover two tunnelled WLAN scenarios:

- A tunnelled 802.1X WLAN that derives dynamic user roles.
- A tunnelled guest WLAN that uses external captive portal services.

For both scenarios, I'll use a ClearPass cluster for authentication. ClearPass will also provide the captive portal guest services for the guest WLAN.

The focus is on configuring New Central, not on the ClearPass setup. I assume ClearPass is already configured for 802.1X authentication and guest captive portal services.



2.1 Things you need

- Couple of gateways running minimum AOS10 firmware version or 10.4.1.7 (I am using 10.7.2.5)
- AOS10 APs are already online in New Central.
- Valid HPE Aruba Central account and subscriptions
- ClearPass that is already configured as external authentication server and guest captive portal.

3 Roles and Policies Configuration

In the previous technote, where I configured the gateways, I did not cover user roles. One key point with tunnelled WLANs is that all user traffic is sent through a GRE tunnel between the AP and the gateway. While both the AP and the gateway can technically enforce policy, the best practice is to apply user traffic policy at the gateway.

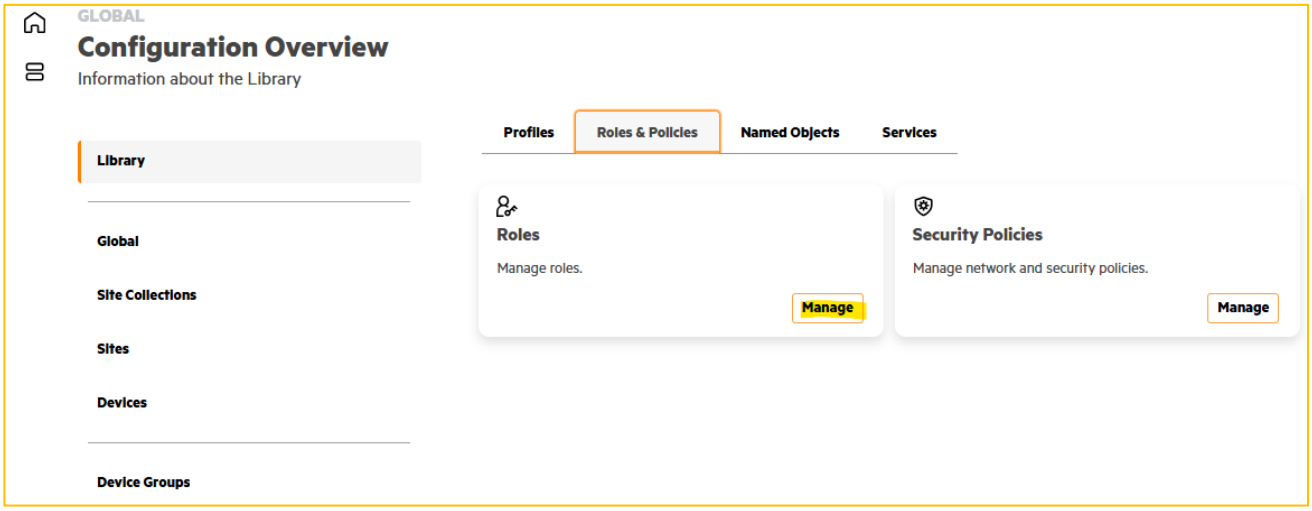
When you configure a WLAN element profile, Aruba Central automatically creates a default role for that WLAN. It then assigns that role to both the campus AP and gateway device functions. In most cases, the default role uses an allow-all policy, which allows traffic to pass from the AP to the gateway without being blocked.

For any additional roles you create, assign them only to the gateway device types and appropriate scope that are part of the WLAN. This gives the gateways the role definitions they need to enforce policy, while keeping unnecessary roles and policies off the APs. This keeps the design cleaner and easier to manage, because policy enforcement happens in one place: at the gateways.

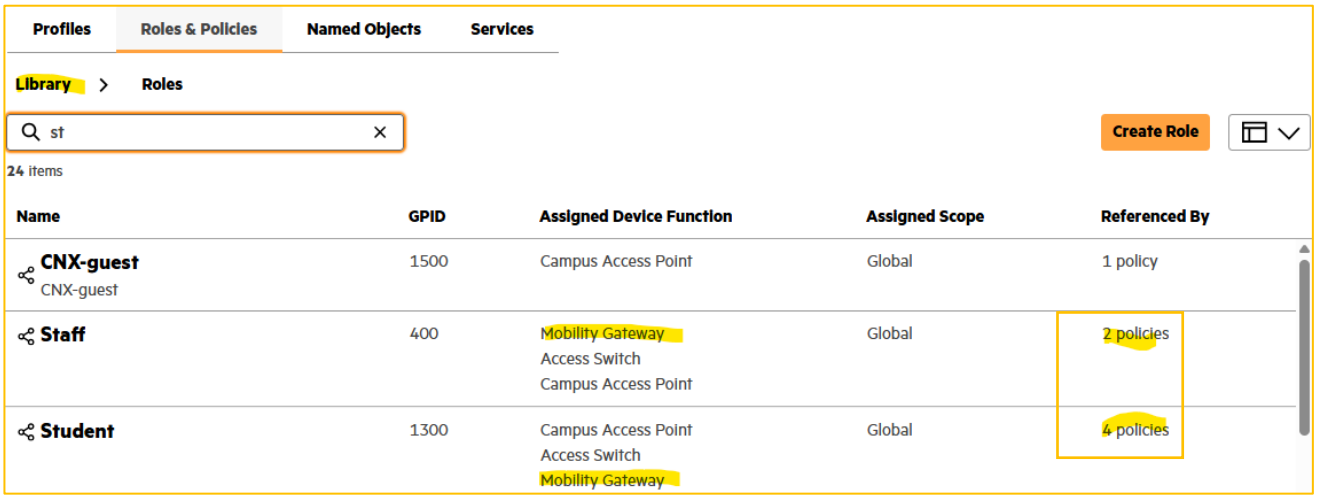
Now having said that, some of the screenshots in this technote indicates that I am assigning roles/policies to the APs and that is correct because in my lab setup I also use those roles in WLANs with bridge mode.

3.1 User Roles

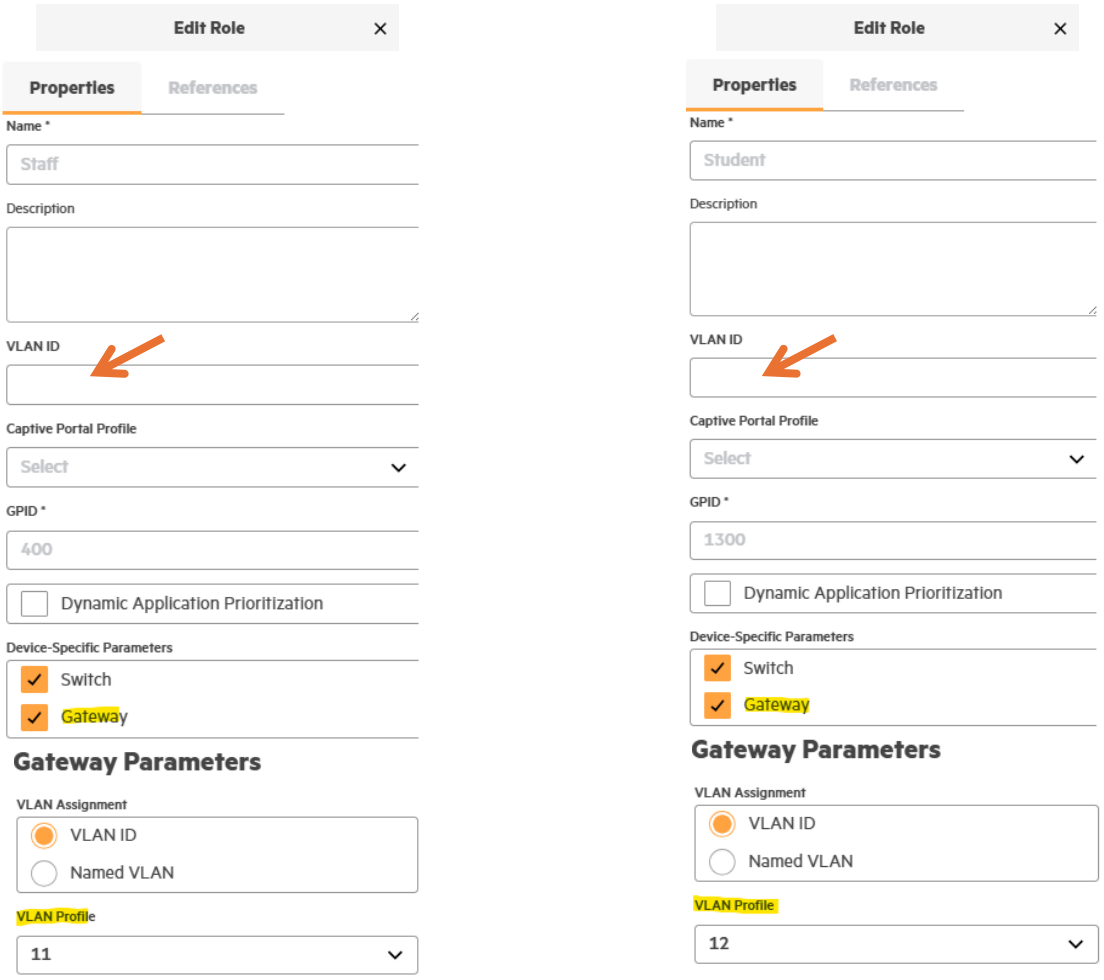
Here I'll go through the configuration of user roles and related policies. In most cases, you want to use the same user roles for your wired and wireless users. I'll start from the library level.



I'll create two roles, Staff and Student. Let's look the roles that I created before.

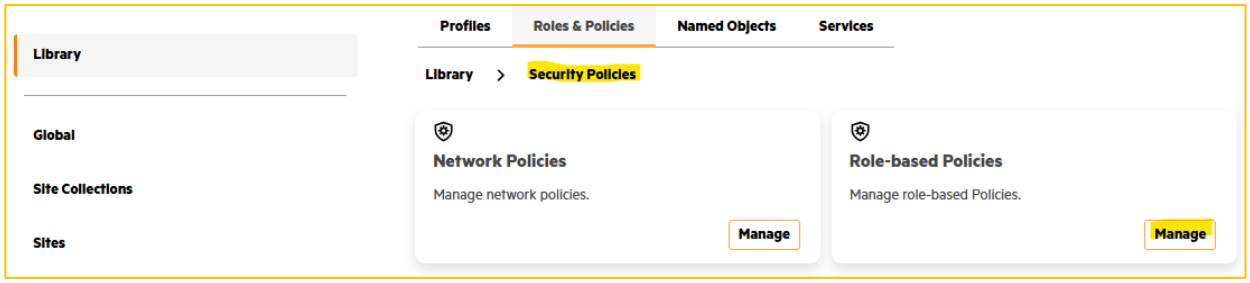


Here I am showing only what is relevant to the wireless users. You can also configure parameters that are specific to LAN switches. Also note the number of policies each of the roles have.



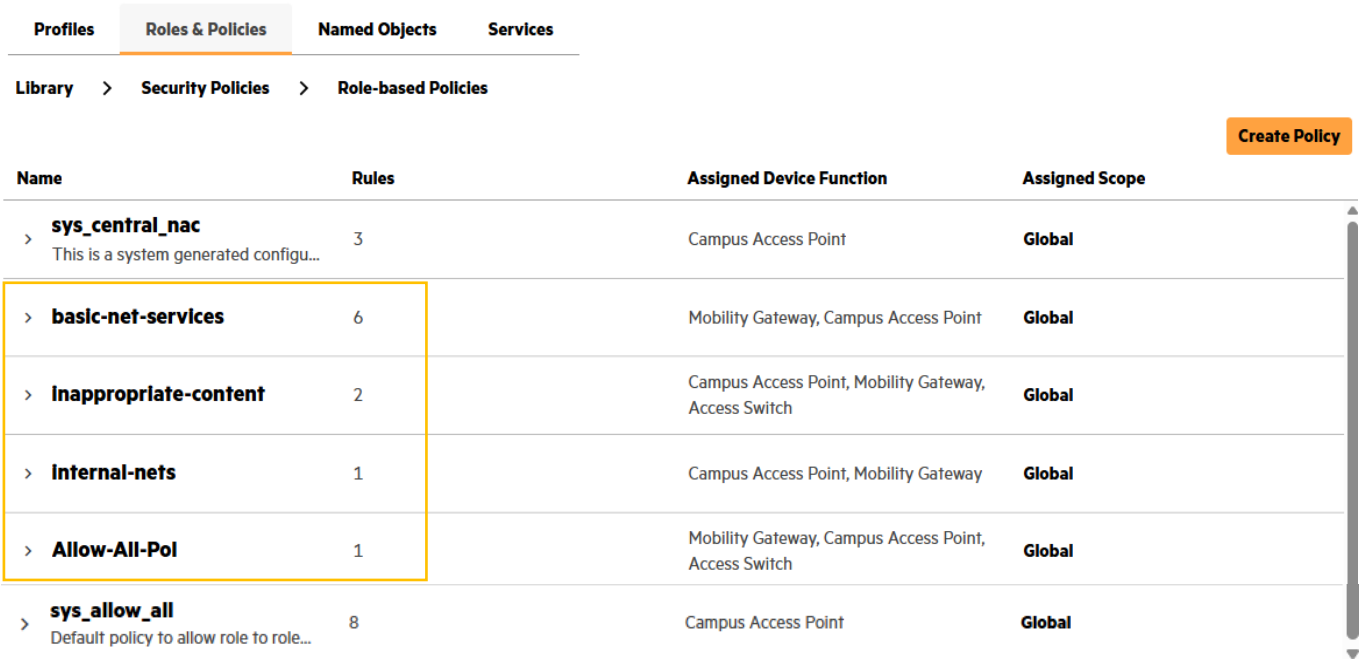
The initial VLAN-id field is empty. This is because I am using these roles exclusively for tunnelled users. That's why I have assigned Staff and Student roles to VLAN11 and 12 respectively in the gateway specific parameters. For large deployments, you can use Named VLANs instead of VLAN ID. Don't forget to assign the device function and scope.

Next, we go to the Security policies and choose Role-based Policies.



Few points about security policies

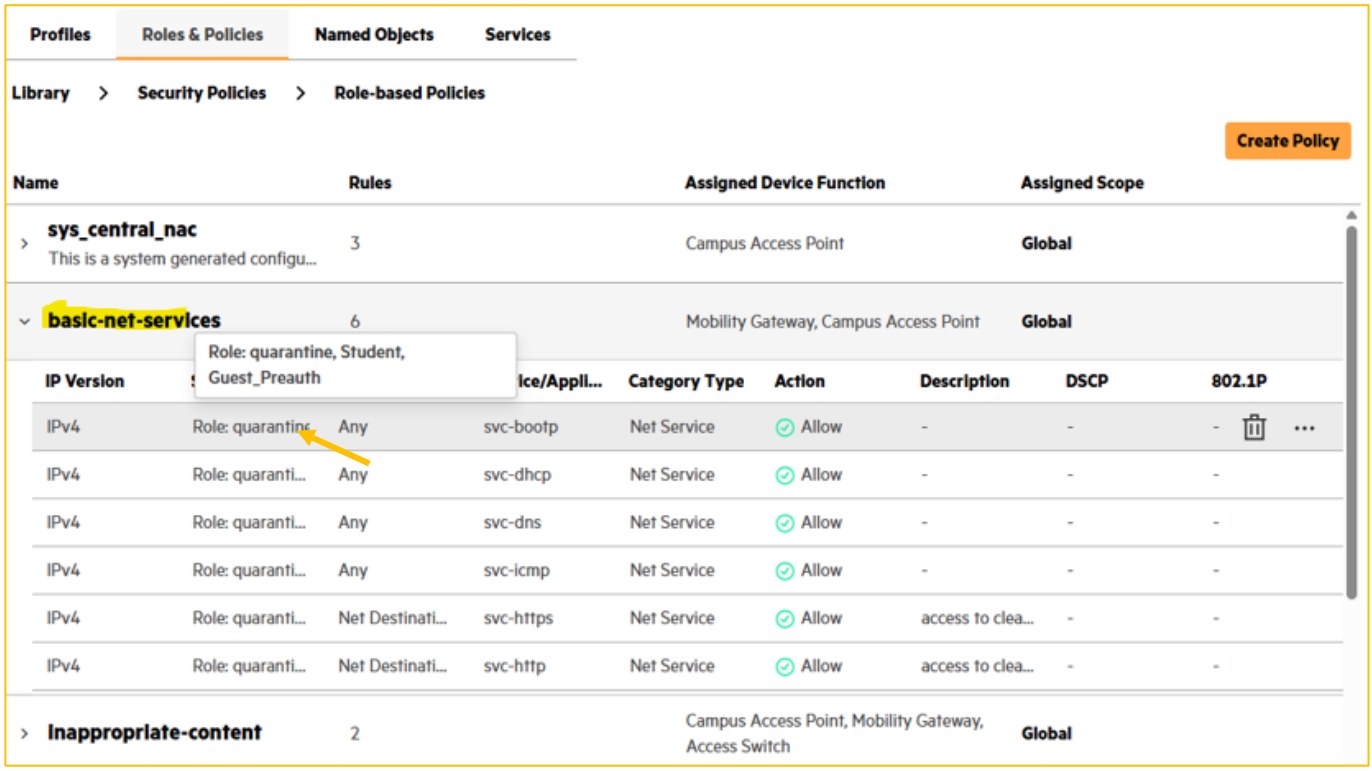
- Security Policies are still applied to scopes and device functions.
- The security policies are processed in a top-down fashion until a match is found.
- Policies can be assigned to multiple roles.
- Anything that starts with "sys_" is system generated. Shown below we have two. The sys_allow_all is an explicit allow all rule, which means all wireless traffic that is bridged locally instead of tunnelled to a gateway, will match this policy if it hasn't yet found a match.
- For "Deny all" policy, you need to explicitly create one.
- And if you decide to have "Deny all" policy then other polices with rules explicitly allowing certain traffic should be defined above it.
- The roles will only be sent to the APs, Switches and Gateways if they have at least one policy referencing it.



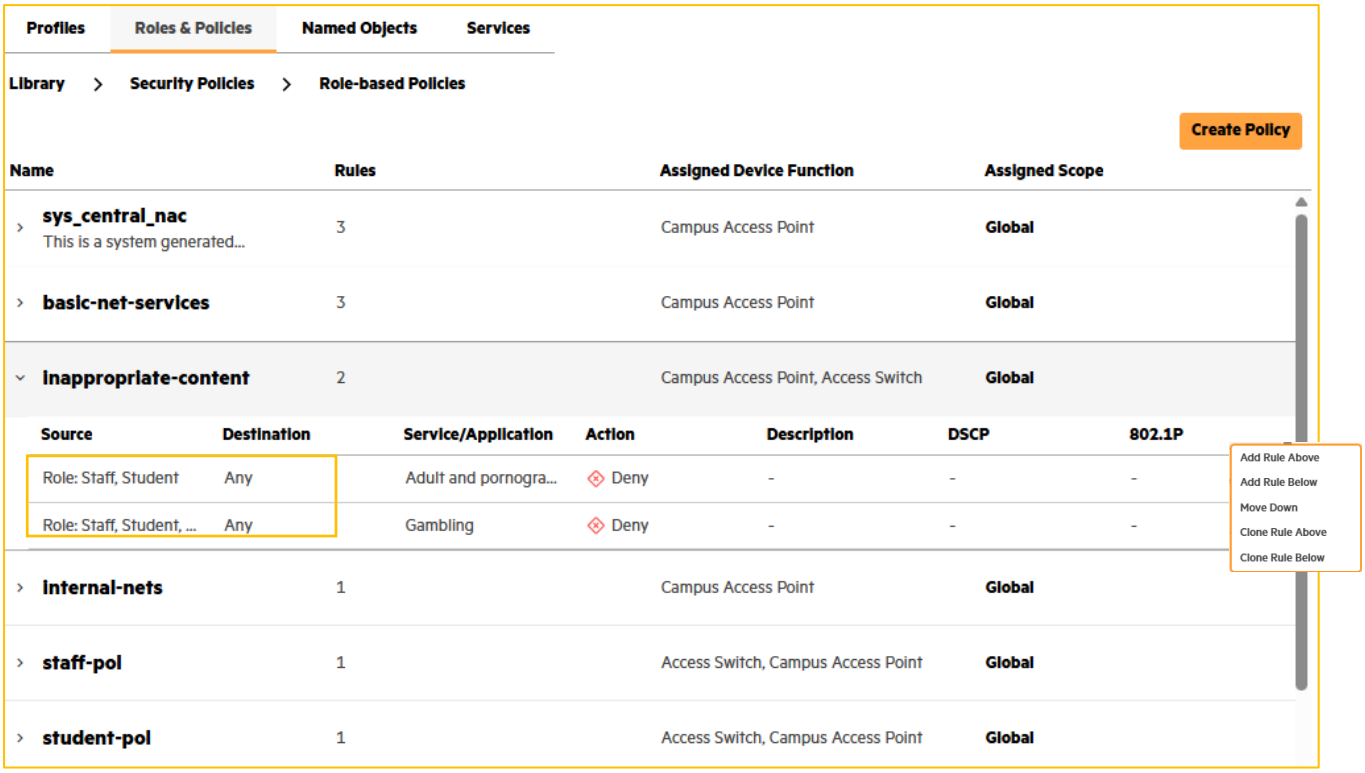
Here I have 4x policies that I created. And each policy consists of a set of rules.

Policies	Purpose	Associated User role for most of the rules
Basic-net-services	Allow access to DHCP and DNS	Student, Guest_Preauth, quarantine
Inappropriate-content	Deny access to inappropriate web categories	Staff, Student,
Internal-nets	Allow access to RFC 1918 networks	Student
Allow-All-Pol	Allow-all access	Staff, Students,

Here I have expanded the “basic-net-services” policy. Note that each rule can be assigned to multiple roles. I have just hovered my mouse over the roles and it displays all the roles that it is assigned to.

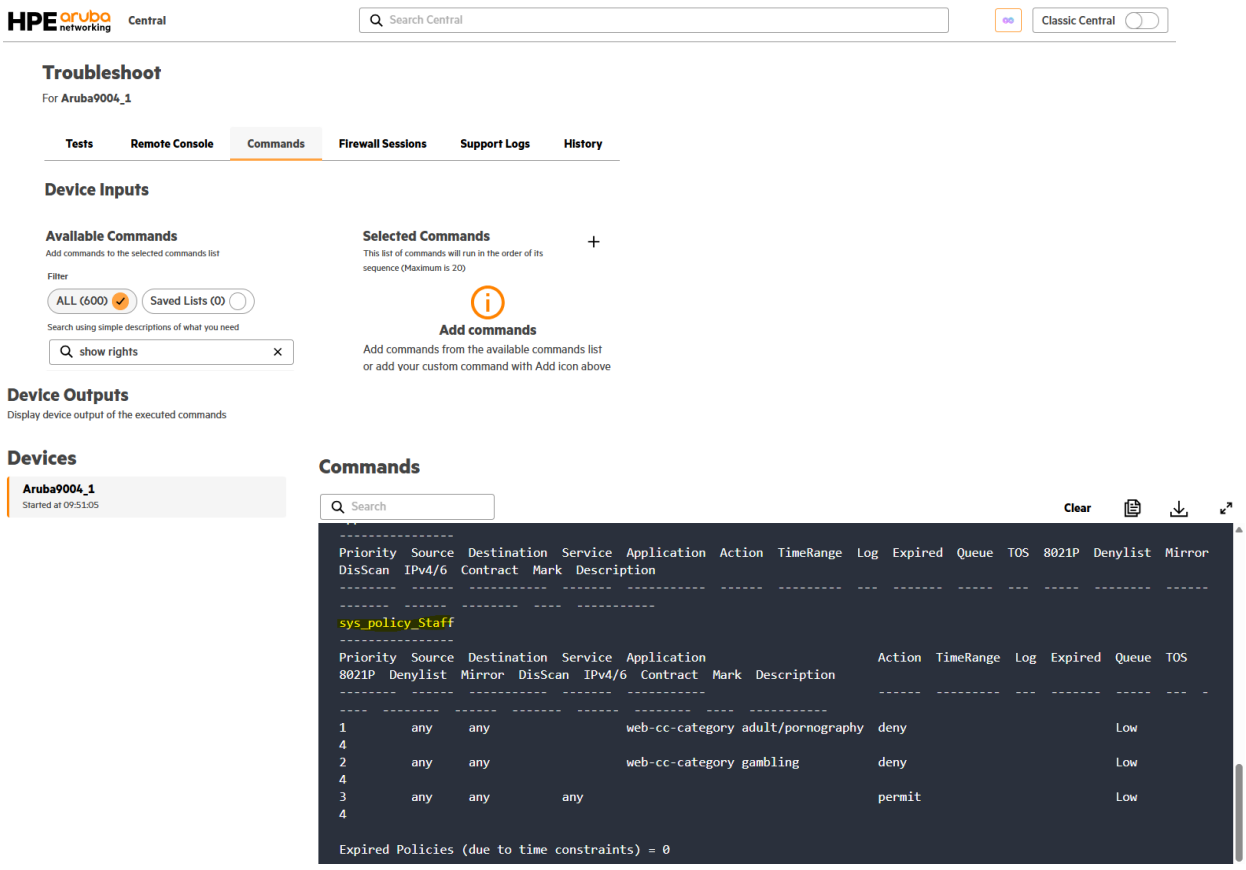


In another example, expanding the “inappropriate-content” policy, you see that I am denying access to Adult and gambling sites. This policy is applied to most of my roles. So here you don’t need to duplicate the rule for each user role.



When you hover your mouse over a rule, “**...**” appears and by clicking on it you can bring up the rule ordering cloning pop-up. As you are reordering the policies, the order gets synced to the devices that are associated to the user-role. You can check the rules that were pushed down to the gateways with “show right <user-role-name>” as shown below for Staff role where I am showing a part of the output that refers to the access policies.

You can use Troubleshooting section



```
access-list List
----------------
Position  Name              Type     Location
--------  ----              ----     --------
1         global-sacl       session
2         apprf-staff-sacl  session
3         sys_policy_Staff  session

global-sacl
-----------
Priority  Source  Destination  Service  Application  Action  TimeRange  Log  Expired  Queue  TOS  8021P  Denylist
--------  ------  -----------  -------  -----------  ------  ---------  ---  -------  -----  ---  -----  --------
apprf-staff-sacl
----------------
Priority  Source  Destination  Service  Application  Action  TimeRange  Log  Expired  Queue  TOS  8021P  Denylist
--------  ------  -----------  -------  -----------  ------  ---------  ---  -------  -----  ---  -----  --------
sys_policy_Staff
----------------
Priority  Source  Destination  Service  Application                        Action  TimeRange  Log  Expired  Queue
ription
--------  ------  -----------  -------  -----------                        ------  ---------  ---  -------  -----
-------
1         any     any                   web-cc-category adult/pornography  deny                               Low
2         any     any                   web-cc-category gambling           deny                               Low
3         any     any          any                                         permit                             Low

Expired Policies (due to time constraints) = 0
(Aruba9004_1) #
```

And the snapshot of the policies for Student role as seen by the gateway. Look at the order of the rules.

```
access-list List
----------------
Position  Name                Type     Location
--------  ----                ----     --------
1         global-sacl         session
2         apprf-student-sacl  session
3         sys_policy_Student  session

global-sacl
-----------
Priority  Source  Destination  Service  Application  Action  TimeRange  Log  Expired  Queue  TOS  8021P  Denylist  Mirror
--------  ------  -----------  -------  -----------  ------  ---------  ---  -------  -----  ---  -----  --------  ------
apprf-student-sacl
------------------
Priority  Source  Destination  Service  Application  Action  TimeRange  Log  Expired  Queue  TOS  8021P  Denylist  Mirror
--------  ------  -----------  -------  -----------  ------  ---------  ---  -------  -----  ---  -----  --------  ------
sys_policy_Student
------------------
Priority  Source  Destination  Service    Application                        Action  TimeRange  Log  Expired  Queue  TOS
scription
--------  ------  -----------  -------    -----------                        ------  ---------  ---  -------  -----  ---
---------
1         any     any          svc-bootp                                     permit                             Low
2         any     any          svc-dhcp                                      permit                             Low
3         any     any          svc-dns                                       permit                             Low
4         any     any                     web-cc-category adult/pornography  deny                               Low
5         any     any                     web-cc-category gambling           deny                               Low
6         any     rfc1918-net  any                                           permit                             Low
7         any     any          any                                           permit                             Low

Expired Policies (due to time constraints) = 0
(Aruba9004_1) #
```

Key points for user roles

- User roles will not be pushed to the gateways even if the role is assigned to gateway device function and has a correct scope unless the role has a policy rule assigned to it.
- user based policies can be assigned to all the device types but only scoped at Global, site collection and sites.
- The scope needed for the user roles can be Global, Site collection/Sites and device groups that has the gateways in place.

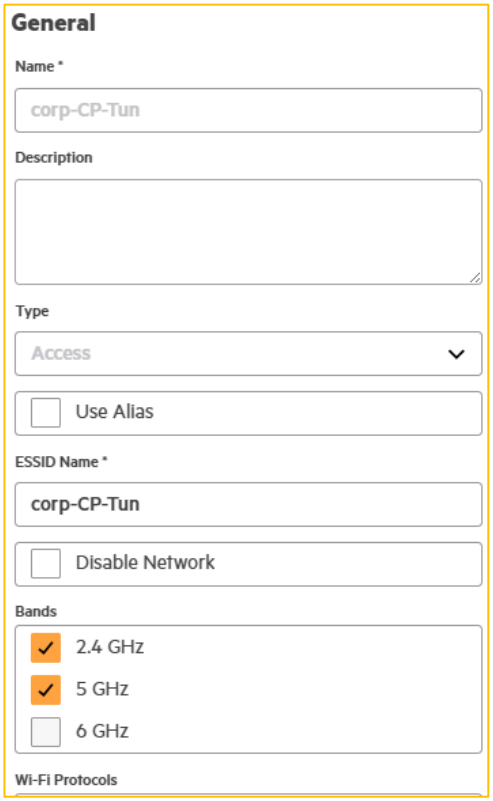
4 WLAN Configuration and Testing

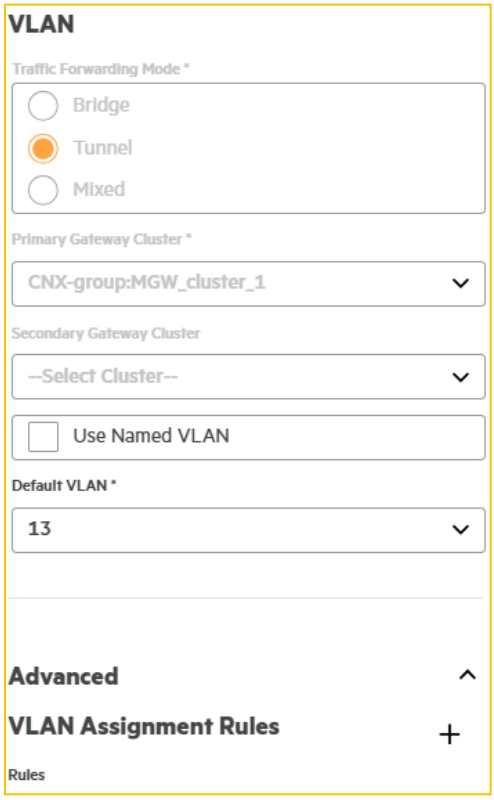
In AOS 10 tunnel mode, the access point decrypts client wireless traffic and forwards it through a GRE tunnel to the selected gateway, where it is processed and sent to the network.

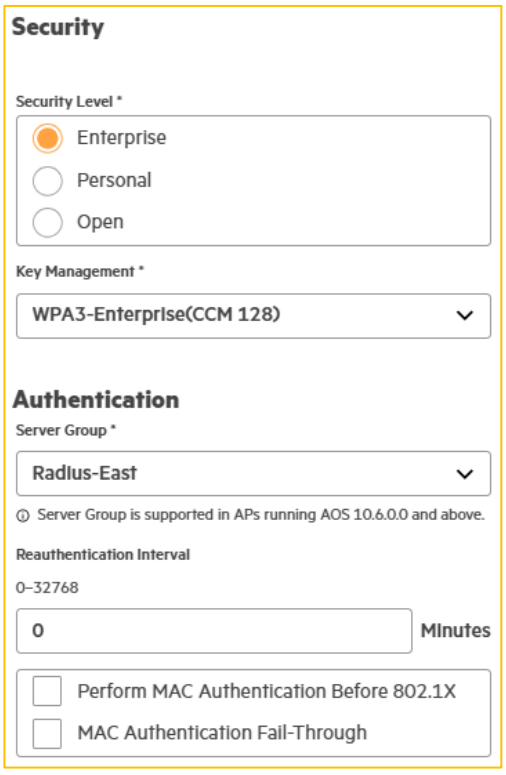
Now we'll configure the tunnel WLANs for dot1x authentication and another one for Guest.

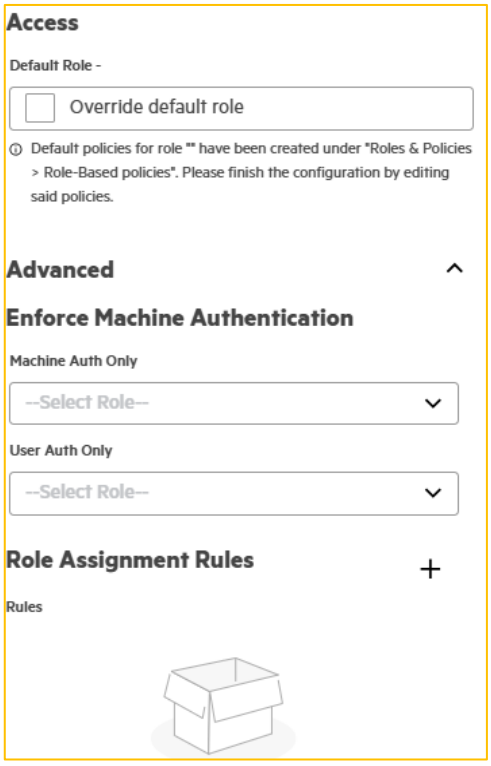
4.1 Tunnel WLAN dot1x Configuration

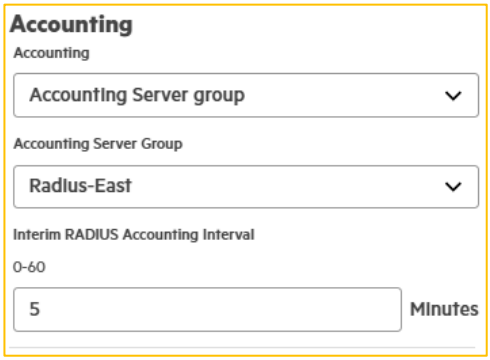
Here is the WLAN configuration for the tunnel WLAN that I'll call "corp-CP-Tun". This will be using ClearPass as my authentication server which I covered in the previous technote for mobility gateways.



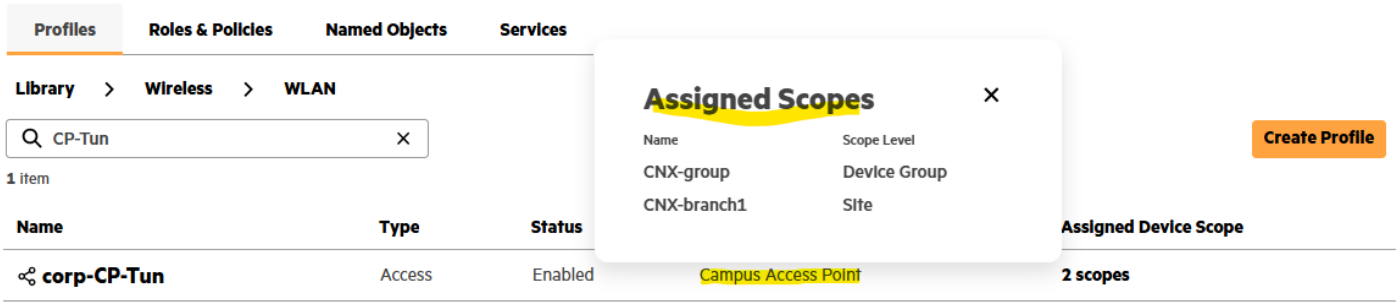








Note that if you want to change the default user role for this WLAN, you can select one of the previously defined user roles from the Default Role drop-down list. This is assigned to all clients that do not have a dynamic role assignment. Scope the WLAN Profile to “Campus Access Point” device function, site and Device Group where AP is present.

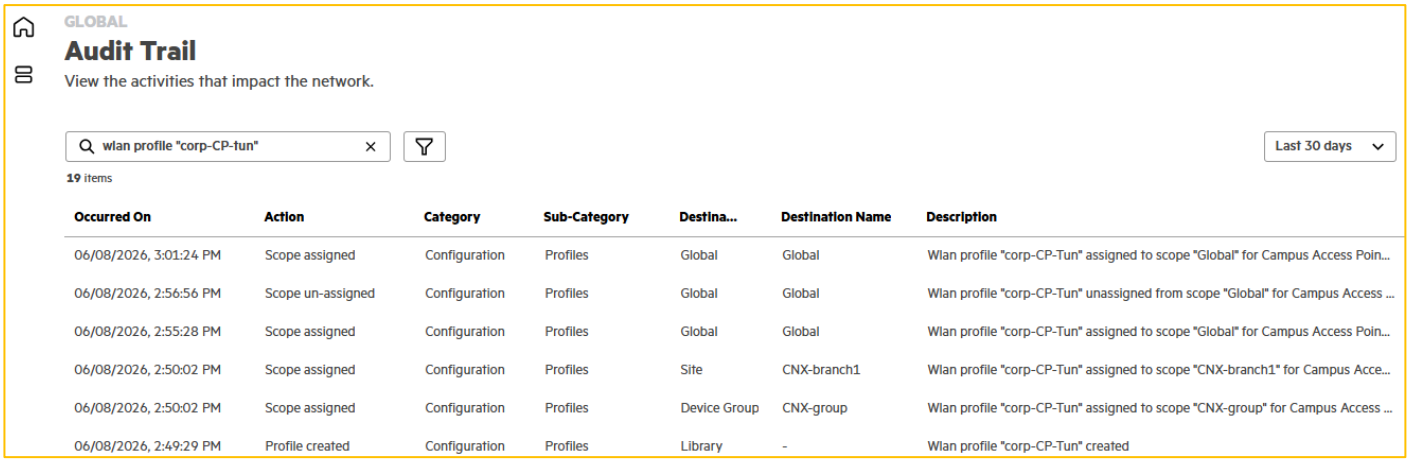


Once it is assigned to the device group, then only the WLAN gets broadcasted from the AP. Note that it is not mandatory for the APs to be in the same device group as the gateway cluster. They can belong to a different device group. However, I am using the same device group for both.

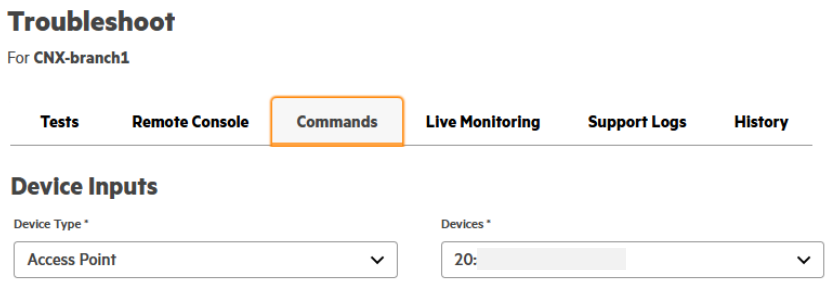
4.2 AP and Gateway Testing

Before we start connecting clients to the WLAN, let’s check the basics to ensure all the configuration is in place.

First check the audit trail in Central to see if all is good.



Then I’ll start from the AP, first check if the WLAN is in the BSS table. You can run all the CLI commands from commands from the Troubleshooting section




```
AP1# sh ap bss-table

Aruba AP BSS Table
------------------
bss                 ess           port  ip           band/ht-mode/bandwidth  ch/EIRP/max-EIRP
type  cur-cl  ap name  in-t(s)  tot-t  flags  mu-mimo  mld-mac/link-id  MBSSID Group
---                 ---           ----  --           ----------------------  ----------------  ---
-  ------  -------  -------  -----  -----  -------  --------------  ------------
d0:d3:e0:b2:2a:90  corp-CP-Tun   ?/?   10.10.10.34  5GHz/HE/80MHz           60E/21.0/23.0     ap
0       AP1      0        56s    KTWZ3  1        -                -

Channel followed by "*" indicates channel selected due to unsupported configured channel.
"Spectrum" followed by "^" indicates Local Spectrum Override in effect.

Num APs:3
Num Associations:0

Flags:       B = Beacon Protection; c = MBO Cellular Data Capable BSS; d = Deferred Delete
Pending; D = VLAN Discovered; E = Enhanced-open BSS without transition mode; I = Imminent VAP
Down; K = 802.11K Enabled; m = Agile Multiband (MBO) BSS; M = WPA3-SAE mixed mode BSS; o =
Enhanced-open transition mode open BSS; O = Enhanced-open BSS with transition mode; Q = DFS CAC
timer running; r = 802.11r Enabled; t = Broadcast TWT Enabled; T = Individual TWT Enabled; W =
802.11W Enabled; x = MBSSID Tx BSS; z = WPA3-AES-CCM128 BSS; Z = WPA3-AES-CCM128 BSS with
transition mode; 3 = WPA3 BSS;

AP1#
```

Next, I'll use this command is to check the tunnel configuration that was pushed to the AP.

```
AP1# sh overlay tunnel config

Overlay Tunnel Config
Cluster MGW_cluster_1 - Zone 0
------------------------------
Index  UAC IP          Tunnel Type  Heartbeat  MTU   Vlan List
-----  ------          -----------  ---------  ---   ---------
0      192.168.1.241   GRE          Enabled    1500  1,10-13,192,4094
1      192.168.1.242   GRE          Enabled    1500  1,10-13,192,4094

AP1#
```

Here you can check that tunnels are created.

```
AP1# sh ata current-cfg

Current Central is Up
Microbranch AP is Disabled
Microbranch System IP is 0.0.0.0/::
[Current Configuration For cluster(MGW_cluster_1)]
<Tunnel list>
-----pub_ip=192.168.1.241, local_ip=192.168.1.241, vlan=1,10-13,192,4094, mcast=0, Tun_Type=GRE,
peer_device_type=Gateway
     key_exp=129600, dstNatt=4500, HBT_interval=3, HBT_Threshold=10
-----pub_ip=192.168.1.242, local_ip=192.168.1.242, vlan=1,10-13,192,4094, mcast=0, Tun_Type=GRE,
peer_device_type=Gateway
     key_exp=129600, dstNatt=4500, HBT_interval=3, HBT_Threshold=10
<SSID list for primary>
-----ssid=corp-CP-Tun, type=0

AP1#
```

You can also check the stats for IPSEC tunnels that are created from the AP to the gateways. One tunnel for each gateway.

```
AP1# sh crypto ipsec stats

IPSEC STATS
-----------
MAP NAME                        IP ADDR         DEVNAME  TX/RX PACKETS  TX/RX BYTES      TX/RX DROPS  TX/RX
ERRORS
--------                        -------         -------  -------------  -----------      -----------  ---------
---
gw-ipsecmap-20:4c:03:82:0f:22   192.168.1.241   tun1     12976/12976    1433138/1424874  0/0          0/0
gw-ipsecmap-28:de:65:73:85:96   192.168.1.242   tun0     363/361        40007/39628      0/0          0/0
Total IPSEC Count: 2

AP1#
```

Now we'll check the tunnels from the gateways starting with the status of tunnel orchestrator.

```
(Aruba9004_1) #show crypto oto

OTO Status
Channel state:              CONNECTED
Channel UP since:           Thu Jun  4 09:30:16 2026
Channel Up count:           1
Channel Down count:         0
Keepalive Interval:         60
#Create Channel:            1
#Delete Channel:            0
#KeepAlive Sent:            205
#KeepAlive Received:        187
#KeepAlive Pending:         0
Create Spec:                2
Update Spec Sent/Recv:      0/0
Delete Spec:                0
Device Spec:                3
Resync Event Sent:          17
Ike Event Sent:             1
Peer Down DPD/HCM/OTO:      0/0/0
BG-SRC Learn/OnRekey:       1/0
BG-SRC Err SPI/Map/Vlan/B-Mesh:  0/0/0/0
Rekey Request/Done/Abort/Fake: 0/0/0/0
State Update Event Sent:  1
Down Event Sent:            0/0
HCM Message Lookup (Success/Fail): 0/0
HCM Message Drops No(VpnIP/ProbeIP): 0/0
Survival-map Cleanup Total/Last: 0/0
Tunnel State Trigger: HCM
SPI Costly:      0
Loop Time/Amon Time(ms):  0/0
Survival Map Lookup/Time(ms): 1/0

(Aruba9004_1) #
```

Here we see that the tunnel is up and operational.

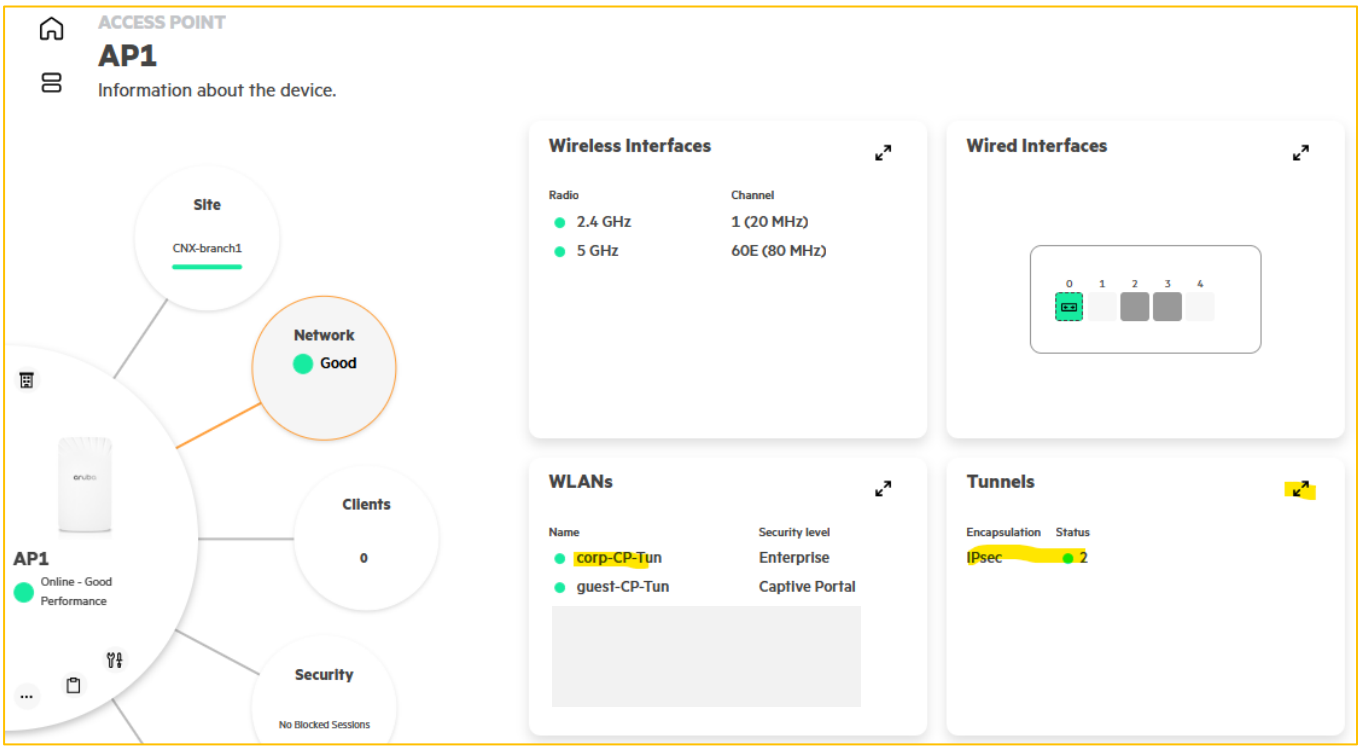
```
(Aruba9004_1) #show tunnelmgr tunnel-list

Tunnelmgr Table Dump
--------------------
Tunnel ID                              Map ID   Peer IP      Peer MAC           Device-Type  Secure-Mode
Status  GRE ID  Mtu
---------                              ------   -------      --------           -----------  -----------  ----
--  ------  ---
fb42e94e-c9ca-459a-a5d3-7792daf67b1b  0x70001  10.10.10.34  20:4c:03:b6:b2:5b  AP           No           UP
12      1500

Total Entries:  1 Up: 1

(Aruba9004_1) #
```

Finally checking the IPSEC tunnels, we notice that there is a tunnel to the AP and another between the gateways on the clusters.

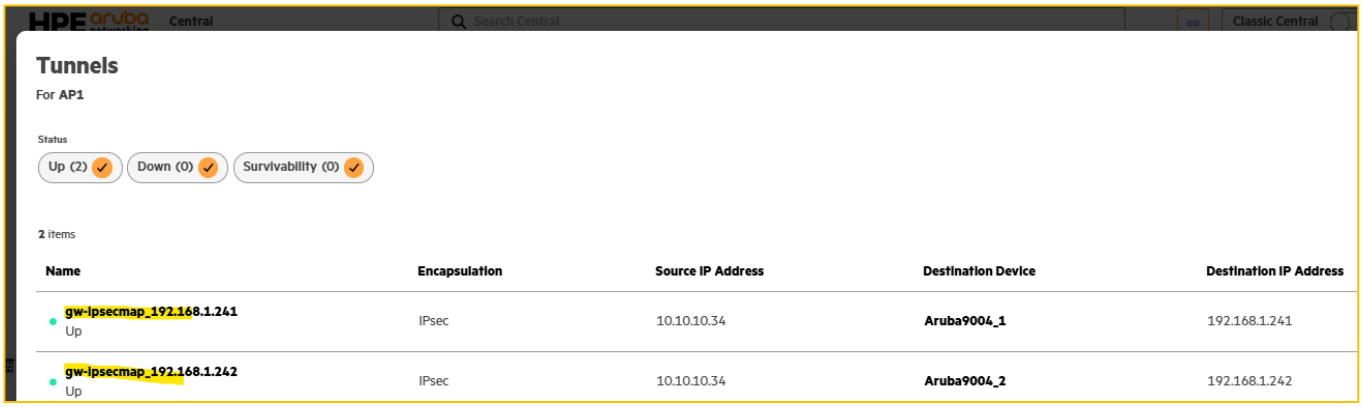
```
(Aruba9004_1) #show crypto ipsec sa
```

```
Tunnel Service SA Information
-----------------------------------
Initiator IP                              Responder IP                              SPI(IN/OUT)         Flags
Start Time         Tunnel Type    Inner IP
------------                              ------------                              ----------------    ------
---------------    ------------   ----------
10.10.10.34                               192.168.1.241                             94e8c000/fe740000   UTlt
Jun  7 13:43:04    AP             10.10.10.34

IPSEC SA (V2) Active Session Information
-----------------------------------
Initiator IP                              Responder IP                              SPI(IN/OUT)         Flags
Start Time         Tunnel Type    Inner IP
------------                              ------------                              ----------------    ------
---------------    ------------   ----------
192.168.1.242                             192.168.1.241                             f7b6f200/f5927f00   T2
Jun  7 16:00:48    N/A              -

Flags: T = Tunnel Mode; E = Transport Mode; U = UDP Encap
       L = L2TP Tunnel; N = Nortel Client; C = Client; 2 = IKEv2
       l = uplink load-balance; t = Tunnel Service; P = Reverse-Pinning Enabled
Total IPSEC SAs: 2

(Aruba9004_1) #
```

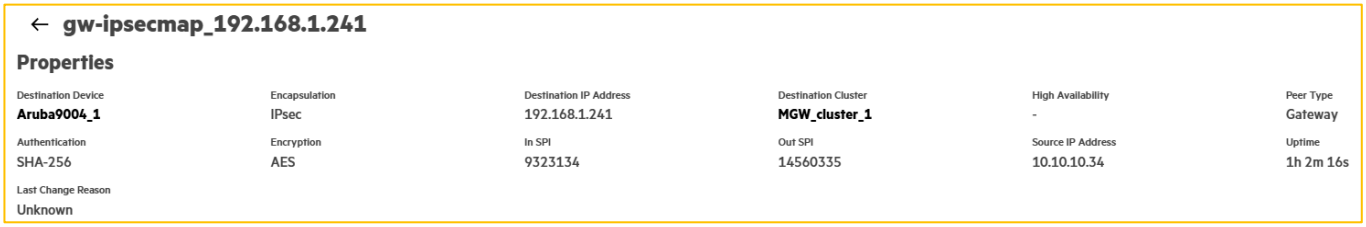
You can also check all this form the Web UI.

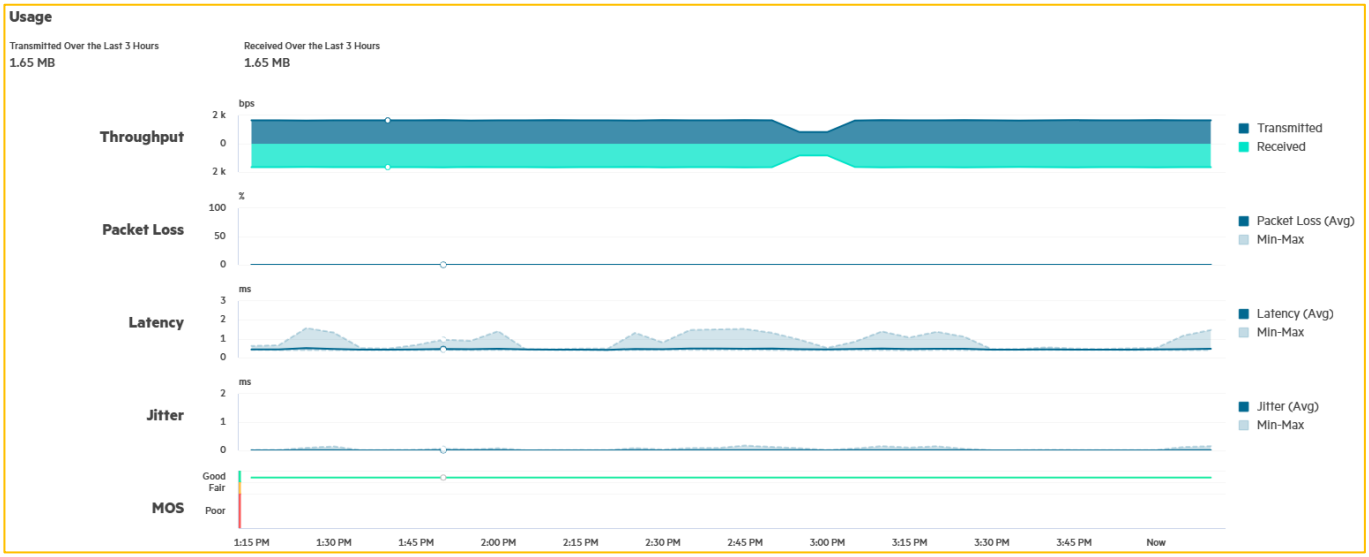


You can expand Tunnel card to get the details.



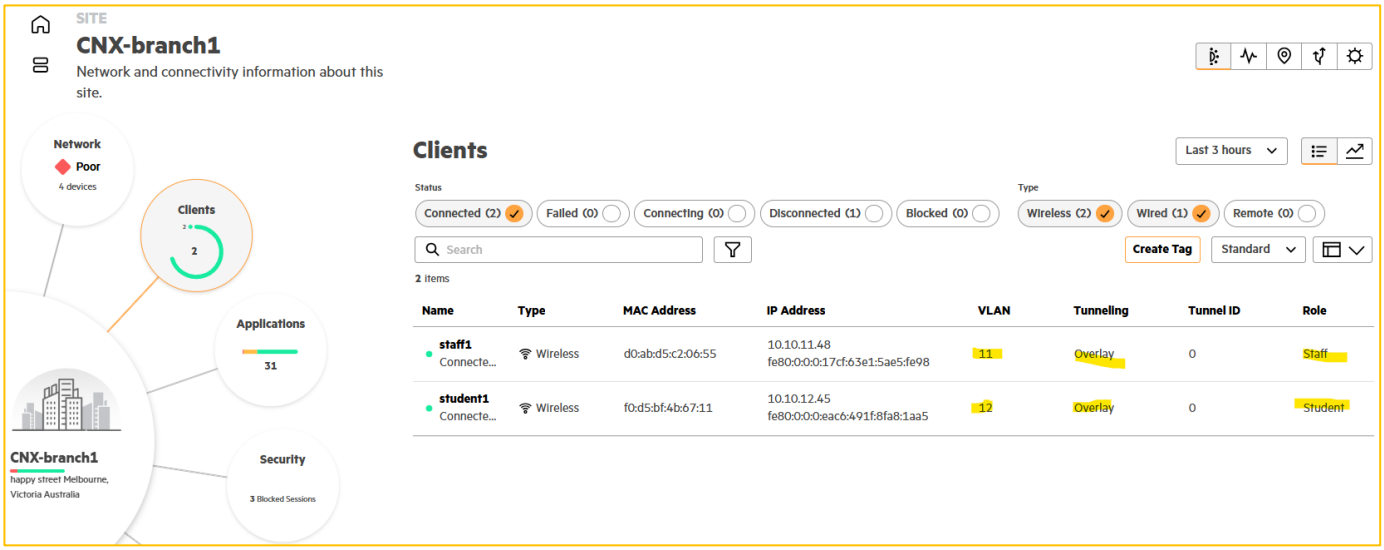
You can also get the performance of each tunnel.





4.3 Dot1x User Testing

Now we get two laptops to connect to the tunnels dot1x WLAN with staff and student credentials respectively. As shown below both could connect successfully and assigned to the correct user-role and are in the correct VLANs.



ClearPass access tracker shows AP's IP address as NAS-Identifier and Gateway' IP address as the NAS-IP-Address. So, all the authentication requests are coming from the gateway. This is important as ClearPass always sends RADIUS CoA to the NAS IP address.

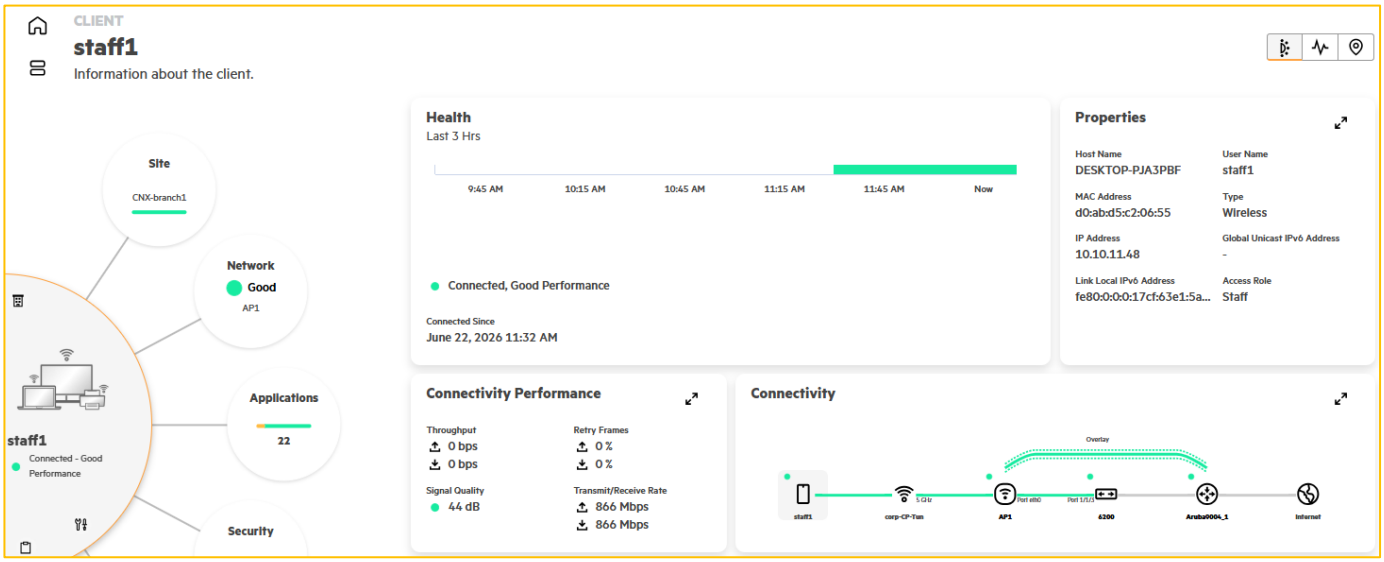
Summary | Input | Output | Accounting

Username:	staff1
End-Host Identifier:	D0-AB-D5-C2-06-55 (Operating System / Microsoft / Windows)
Access Device IP (Port):	192.168.1.241
Access Device Name:	10.10.10.34 (AOS10-gateway3 / Aruba)

RADIUS Request

Radius:Aruba:Aruba-AP-Group	CNX-group
Radius:Aruba:Aruba-AP-MAC-Address	204c03b6b25b
Radius:Aruba:Aruba-Device-MAC-Address	d0abd5c20655
Radius:Aruba:Aruba-Essid-Name	corp-CP-Tun
Radius:Aruba:Aruba-Location-Id	20:4c:03:b6:b2:5b
Radius:IETF:Called-Station-Id	204c03b6b25b
Radius:IETF:Calling-Station-Id	d0abd5c20655
Radius:IETF:Framed-MTU	768
Radius:IETF:Location-Capable	9
Radius:IETF:NAS-Identifier	10.10.10.34
Radius:IETF:NAS-IP-Address	192.168.1.241
Radius:IETF:NAS-Port	0
Radius:IETF:NAS-Port-Type	19
Radius:IETF:Service-Type	2

Here is the view from HPE Aruba Central.



4.4 Tunnel WLAN Guest Configuration

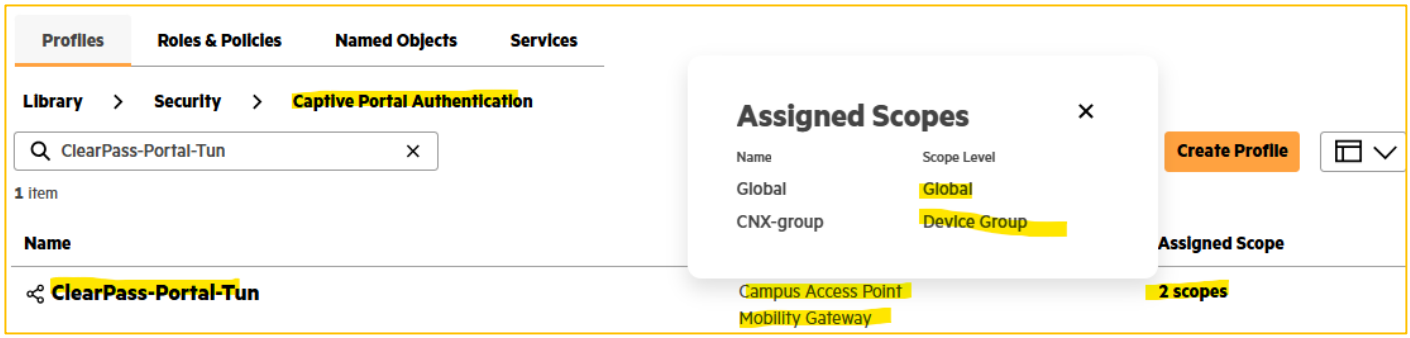
In this section I'll cover basic tunnel WLAN for Guest using external captive portal.

The order of tasks is

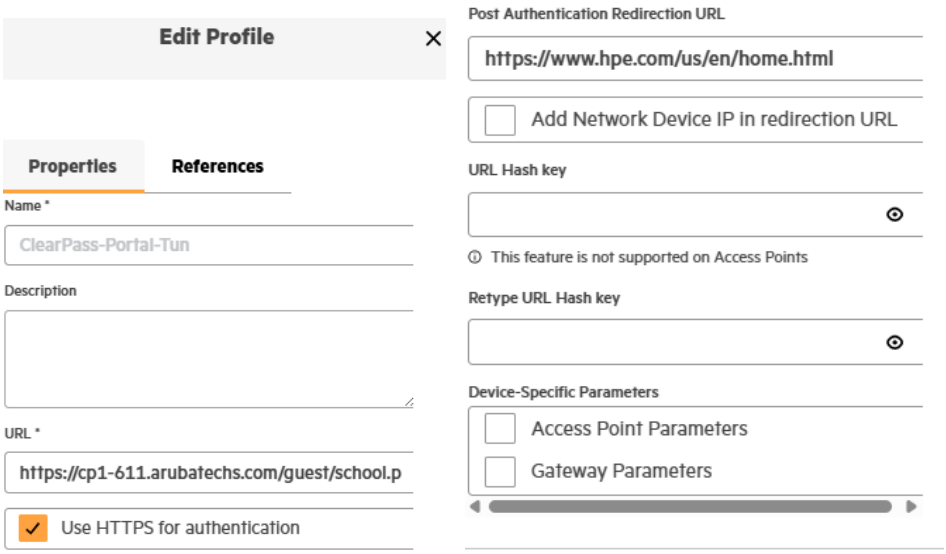
1. Configure Captive Portal Authentication profile
2. Configure Captive Portal Server Certificate (optional)
3. Configure your Names Object Aliases (optional)
4. Configure Pre-authentication User role
5. Configure role policies for the Pre-authentication User role.
6. Configure the Guest WLAN profile

Captive Portal Authentication profile

You need to navigate to Library>> Profiles>>Security >> Captive Portal Authentication to



And here is my configuration.



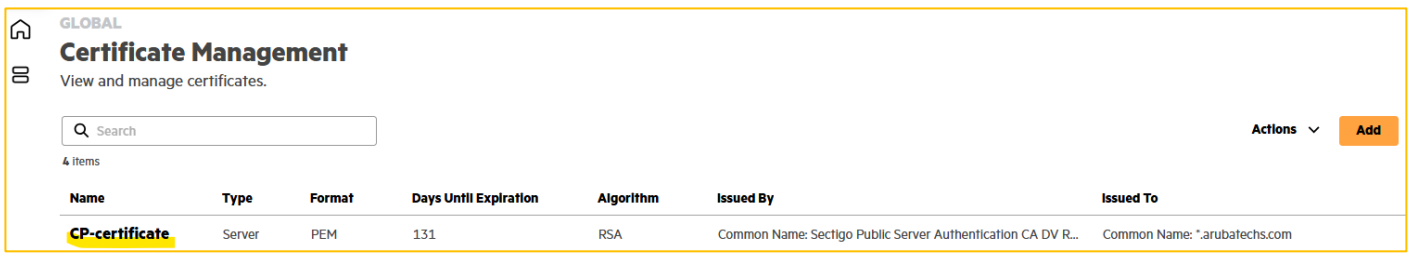
The last part of the URL is .php The Captive portal URL is from ClearPass guest web-login page.

Note with captive portals in tunnel mode and with AOS10, all the redirections are handled by the APs and hence you don't need captive portal certificates for the gateways.

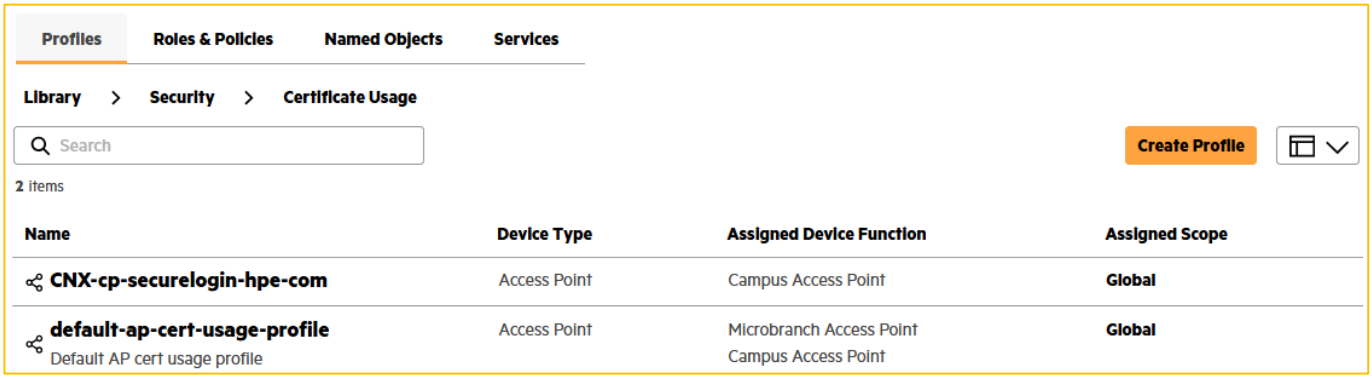
Captive Portal Server Certificate (Optional)

Here I am using a wild card server certificate that I will assign it as the captive port certificate for the APs. You can navigate to Certificate management and upload your PEM server certificate along with the full trust chain. You can also import your existing server certificates from Classic Central if you already had one there.

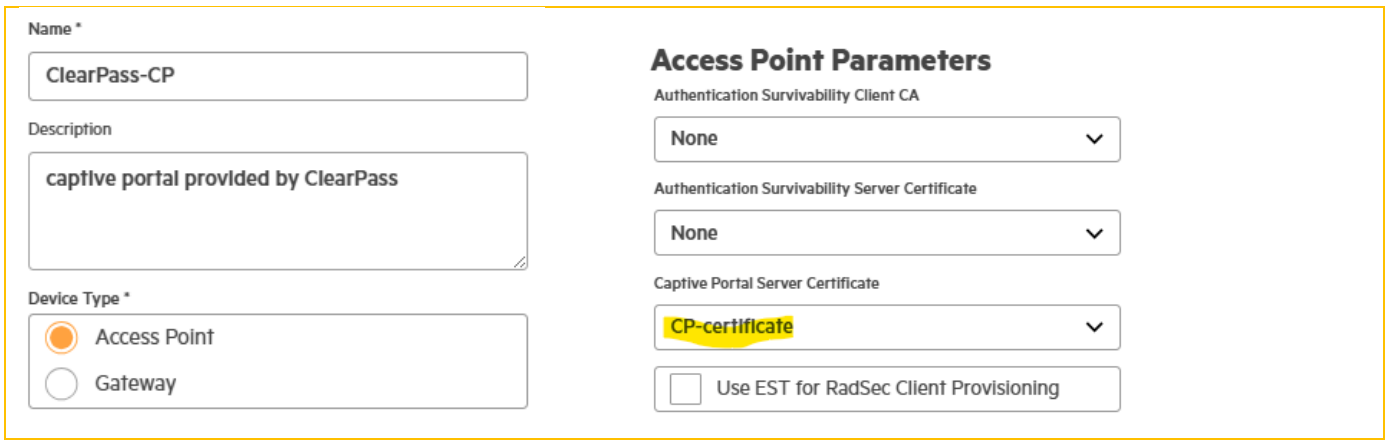
This is how it should look like once you have added the certificate.



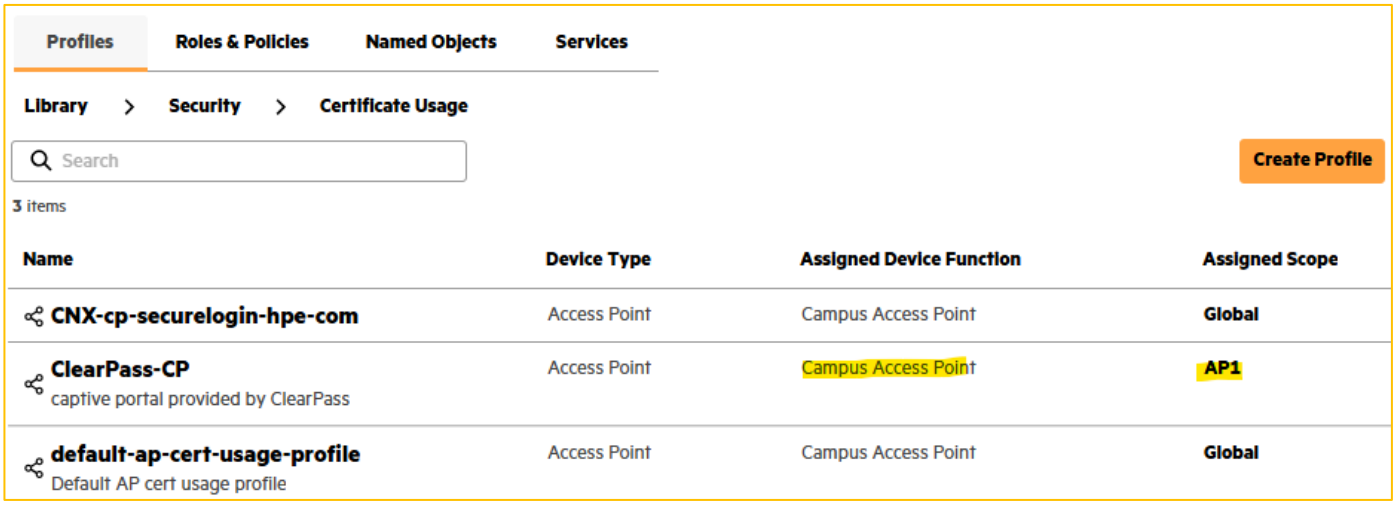
The last step of the certificate management is assigning its usage for captive portal purposes. So again, from Library, I will create a certificate usage profile.



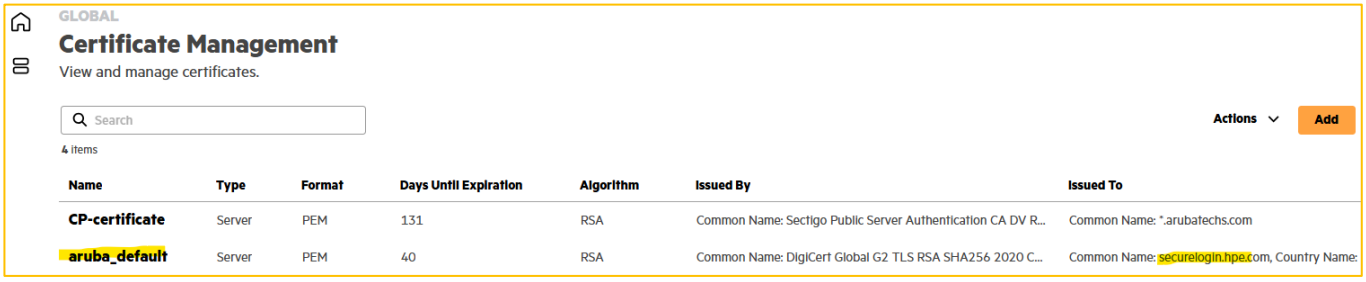
Here I'll create a new profile name "ClearPass-CP" and this is profile where you can assign certificates for all the services that requires it like RadSec or AP 802.1X Server CA (Uplink), etc. I am showing only the Captive portal server certificate.



The rest of the field that I have not shown are left as default. Once it is saved it will be listed as shown below where you can assign to the APs.

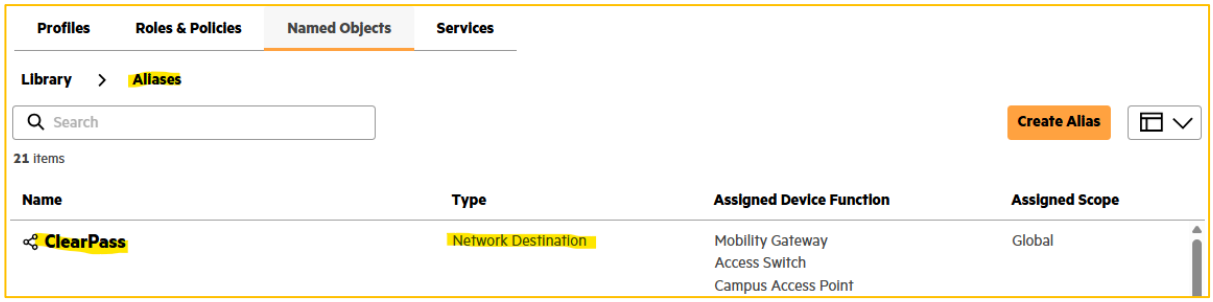


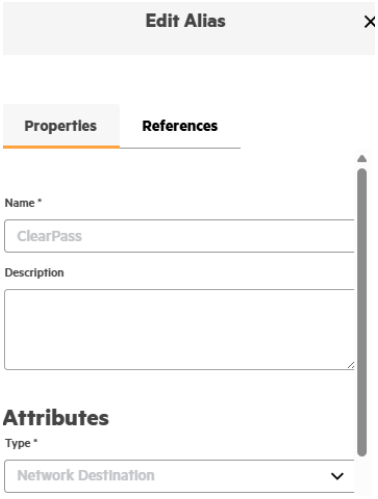
Remember that this is optional as all the APs can use the certificate that is called aruba_default that has Common Name as "securelogin.hpe.com", see below.

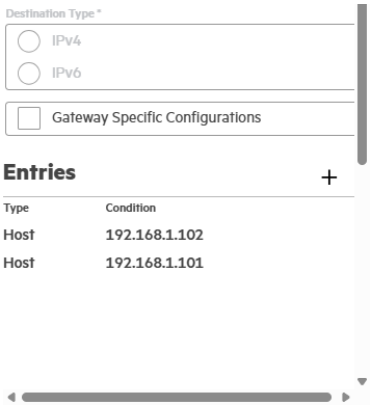


Names Object Aliases (Optional)

Here I am configuring an alias for my ClearPass Guest nodes as they have the captive portal pages.



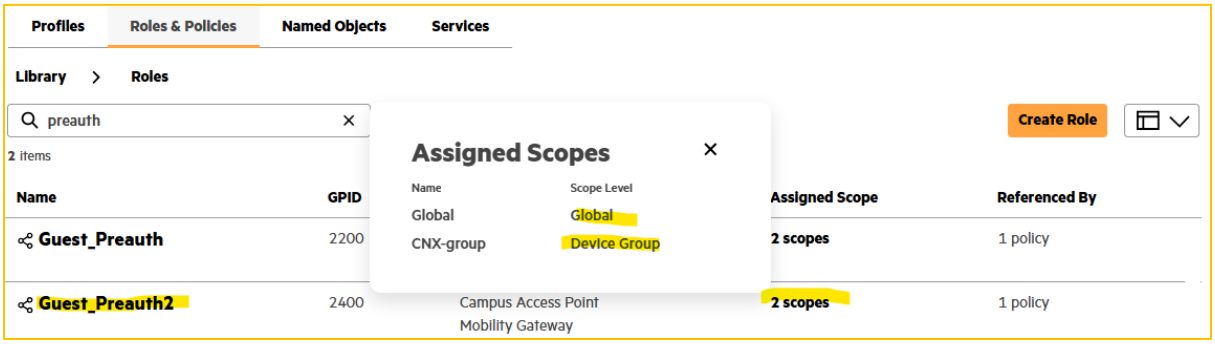


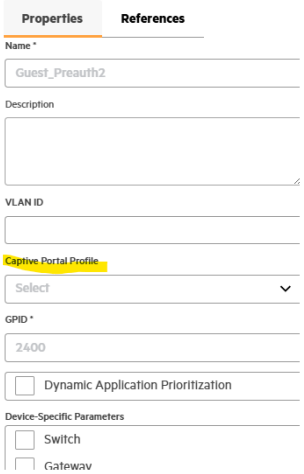


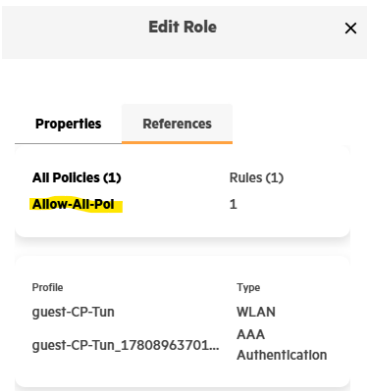
Take a note of the assigned device types and scope.

Pre-authentication User Role

Here we'll configure the pre authentication user role for the Guest WLAN. Just like with Instant APs,



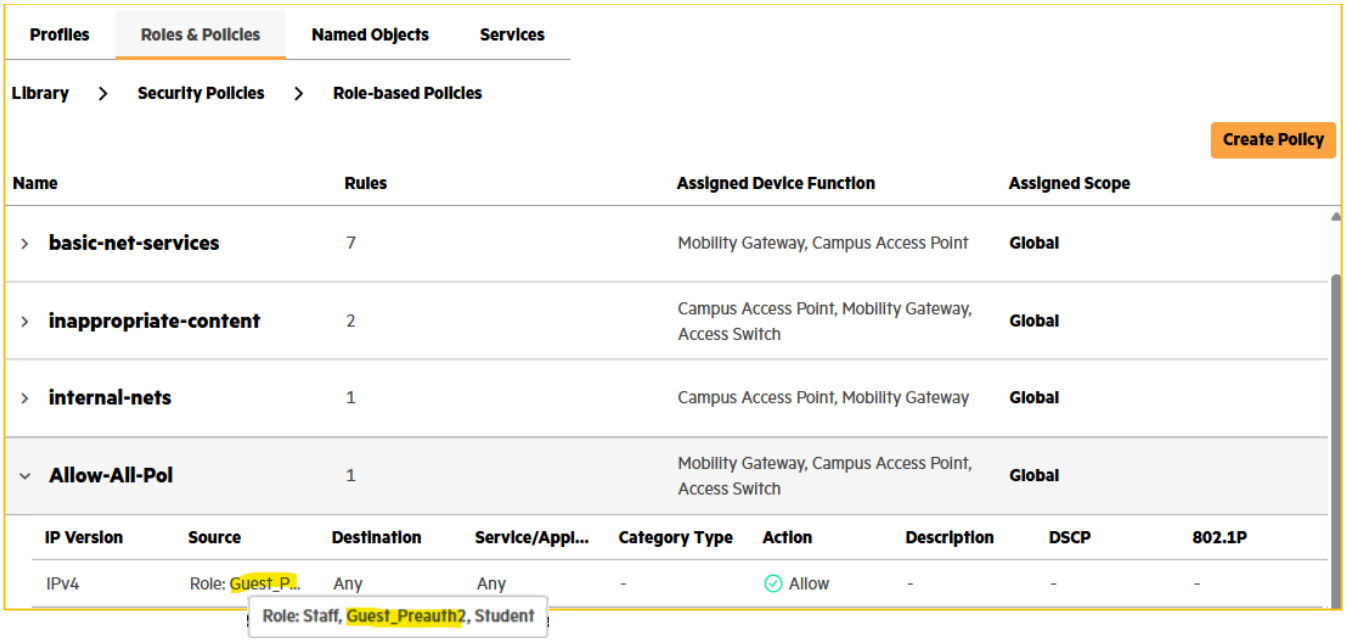




Note that initially when you create this user role, “Captive Portal Profile” field is empty. However, it will only get populated with the corresponding profile when you use this user role as “Assign Pre-Authentication Role” in a WLAN profile that has a captive portal profile.

Role Policies for the Pre-authentication User Role

Here I am using allow-all-pol that I created for this “Guest_Preauth2” user role. With role-based policies, one thing that is different here is that you can assign a rule to multiple user roles.

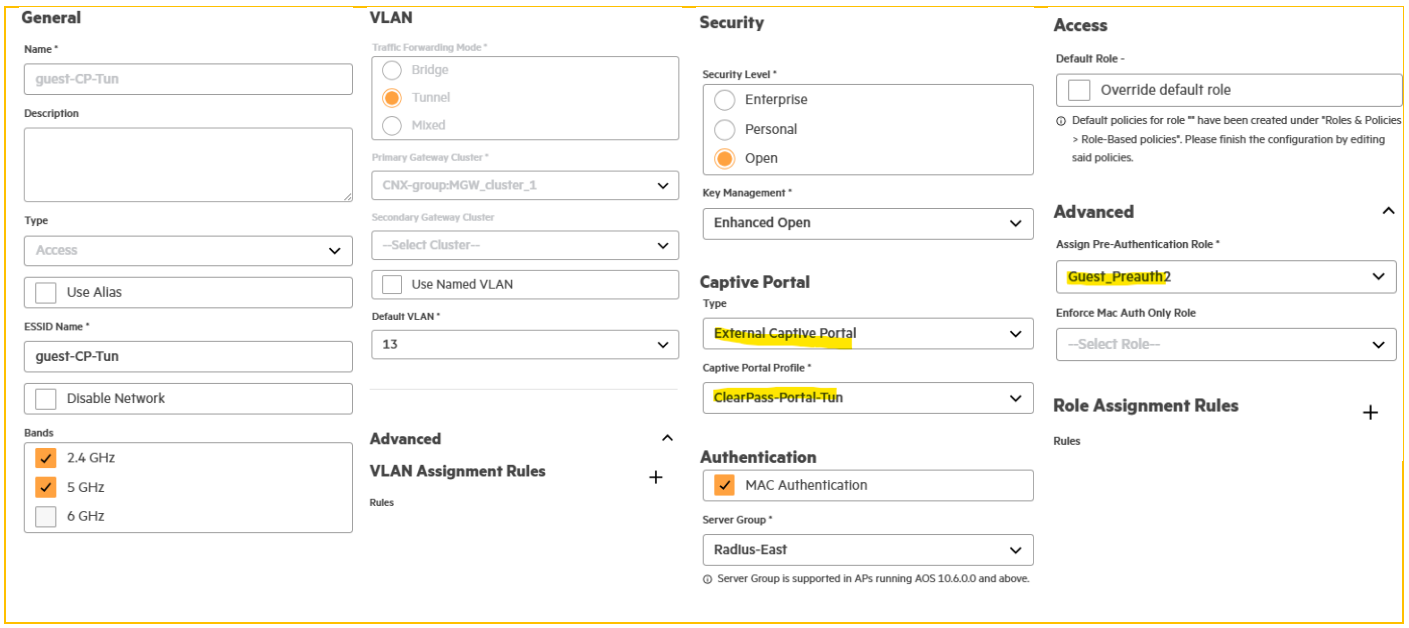


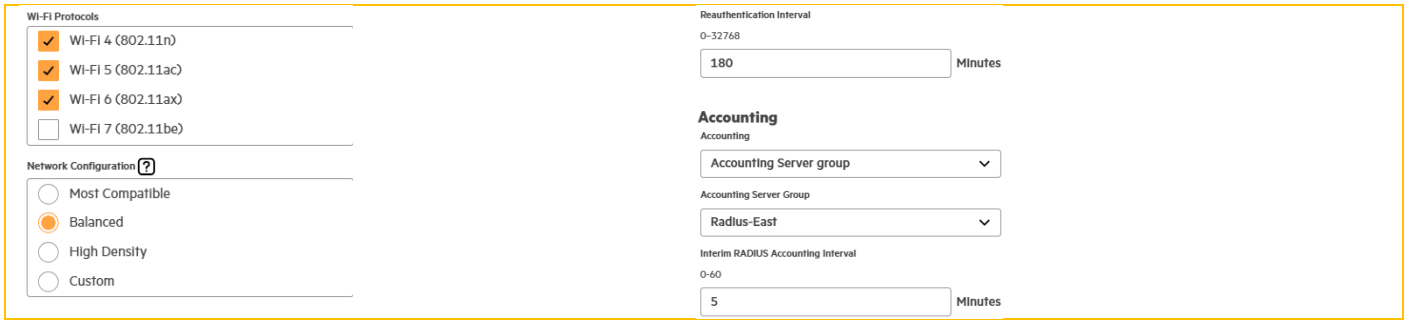
Here I have assigned this Allow-all rule to multiple use-roles and one of them is Guest_Preauth2

Note that even though we have allow-all policy for pre-auth role, AOS 10 has automatic allowances based on the captive portal profile. It allows HTTPS/HTTP to the captive portal target and DHCP/DNS. In the last section I’ll use a different pre-authentication user role which will have a specific allow access rules. But for the time being we’ll use this allow all policy.

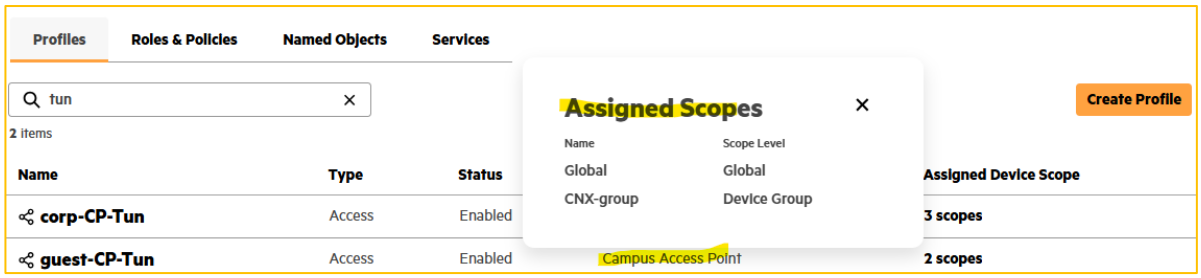
Guest WLAN profile

And finally, we need to configure the WLAN profile and reference the captive portal profile and pre-authentication role we created earlier.

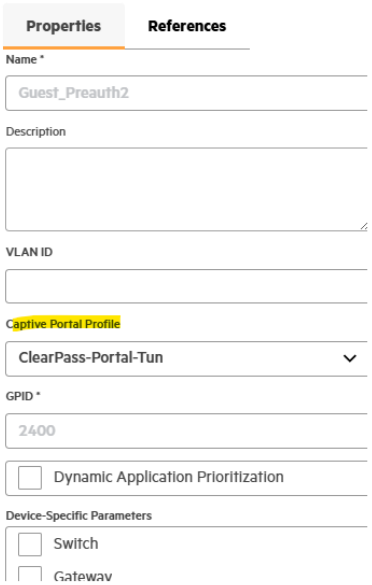




After creating the WLAN SSID Profile shared object, assign it to the "Mobility AP" device function and the scope is Global and to the device group where the AP is present, same as the other tunnelled WLAN which we configured.



So now when we go back and check the Guest_Preauth2 user role, we'll see the corresponding captive portal profile.



4.5 Guest User Testing

Before we get a guest client to connect, let's check the basic configurations that were pushed to the AP and gateways. Remember all the redirection happens from the AP and not the gateways. Again, you can use the troubleshooting page for remote console or running several CLI commands.

Here is the access policy for Guest_Preauth2 user role at the AOS10 AP.

```
AP1# sh access-rule Guest_Preauth2

ACL Vlan     :
ACL Captive Portal:external
ACL ECP Profile    :ClearPass-Portal-Tun
CALEA              :disable
Redirect Blocked HTTPS Traffic  :disable
DPI error page URL:
Bandwidth Limit    :downstream disable upstream disable
airslice-application-list       :
monitoring-application-list     :
Access Rules
------------
```

```
Dest IP  Dest Mask  Eth Type  Dest Match  Protocol (id:sport:eport)  Application  Action  Log
TOS  802.1P  Denylist  App Throttle (Up:Down)  Mirror  DisScan  ClassifyMedia  TimeRange
-------  ---------  --------  ----------  -------------------------  -----------  ------  ---  --
-  ------  --------  ----------------------  ------  -------  -------------  ---------
any      any        IPv4/6    match       any                                  permit
ClassifyMedia

AP1#
```

Next, I'll check the captive portal profile. Note that it looks very similar to an Instant AP configuration.

```
AP1# sh external-captive-portal ClearPass-Portal-Tun

Name                    :ClearPass-Portal-Tun
Server                  :cp1-611.arubatechs.com
Port                    :443
Url                     :/guest/school.php
Auth Text               :
Redirect Url            :https://www.hpe.com/us/en/home.html
Server Fail Throuth     :Disable
Disable Auto Allowlist  :Enable
Use HTTPs               :Yes
Server Offload          :No
Prevent Frame Overlay   :Disable
In Used                 :Yes
Redirect Mode           :Yes
Switch IP               :No

AP1#
```

Here is the similar command to see user-based policies at the gateway.

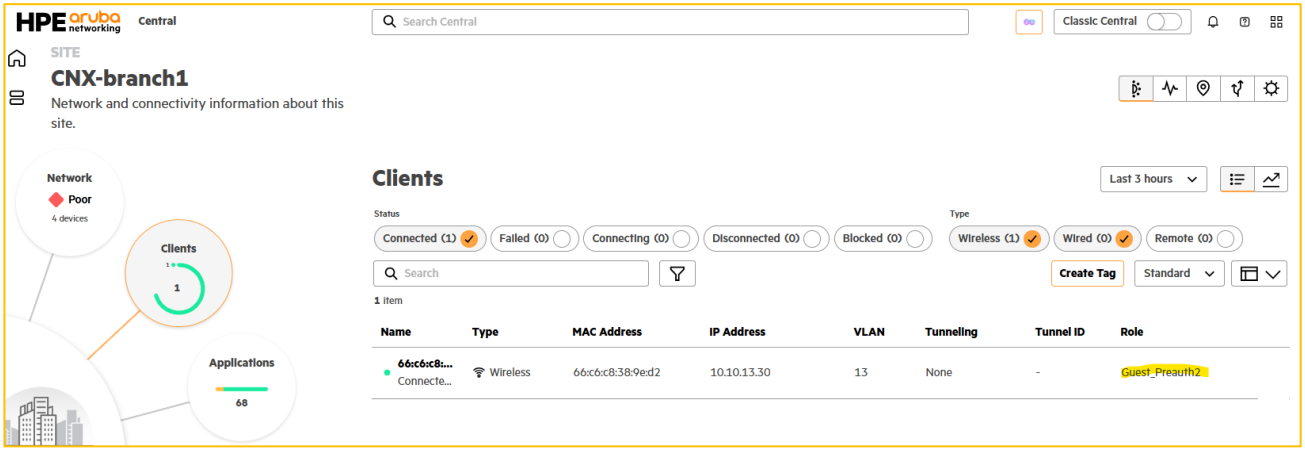
```
(Aruba9004_1) #show rights Guest_Preauth2

Valid = 'Yes'
CleanedUp = 'No'
Derived Role = 'Guest_Preauth2'
 Up BW:No Limit   Down BW:No Limit
 L2TP Pool = default-l2tp-pool
 PPTP Pool = default-pptp-pool
 Number of users referencing it = 0
 Periodic reauthentication: Disabled
 DPI Classification: Enabled
 Youtube education: Disabled
 Web Content Classification: Enabled
 IP-Classification Enforcement: Enabled
 ACL Number = 107/0
 Openflow: Enabled
 Global Role Tag: 2400
 Enforce Dhcp: Disabled
 Max Sessions = 65535

 Check CP Profile for Accounting = TRUE

Application Exception List
--------------------------
Name  Type
----  ----

Application BW-Contract List
----------------------------
Name  Type  BW Contract  Id  Direction
----  ----  -----------  --  ---------

access-list List
----------------
Position  Name                       Type     Location
--------  ----                       ----     --------
1         global-sacl                session
2         apprf-guest_preauth2-sacl  session
3         sys_policy_Guest_Preauth2  session

global-sacl
-----------
```

```
Priority  Source  Destination  Service  Application  Action  TimeRange  Log  Expired  Queue  TOS
8021P  Denylist  Mirror  DisScan  IPv4/6  Contract  Mark  Description
--------  ------  -----------  -------  -----------  ------  ---------  ---  -------  -----  ---
-----  --------  ------  -------  ------  --------  ----  -----------
apprf-guest_preauth2-sacl
--------------------------
Priority  Source  Destination  Service  Application  Action  TimeRange  Log  Expired  Queue  TOS
8021P  Denylist  Mirror  DisScan  IPv4/6  Contract  Mark  Description
--------  ------  -----------  -------  -----------  ------  ---------  ---  -------  -----  ---
-----  --------  ------  -------  ------  --------  ----  -----------
sys_policy_Guest_Preauth2
--------------------------
Priority  Source  Destination  Service  Application  Action  TimeRange  Log  Expired  Queue  TOS
8021P  Denylist  Mirror  DisScan  IPv4/6  Contract  Mark  Description
--------  ------  -----------  -------  -----------  ------  ---------  ---  -------  -----  ---
-----  --------  ------  -------  ------  --------  ----  -----------
1         any     any          any                  permit                          Low
4

Expired Policies (due to time constraints) = 0
(Aruba9004_1) #
```

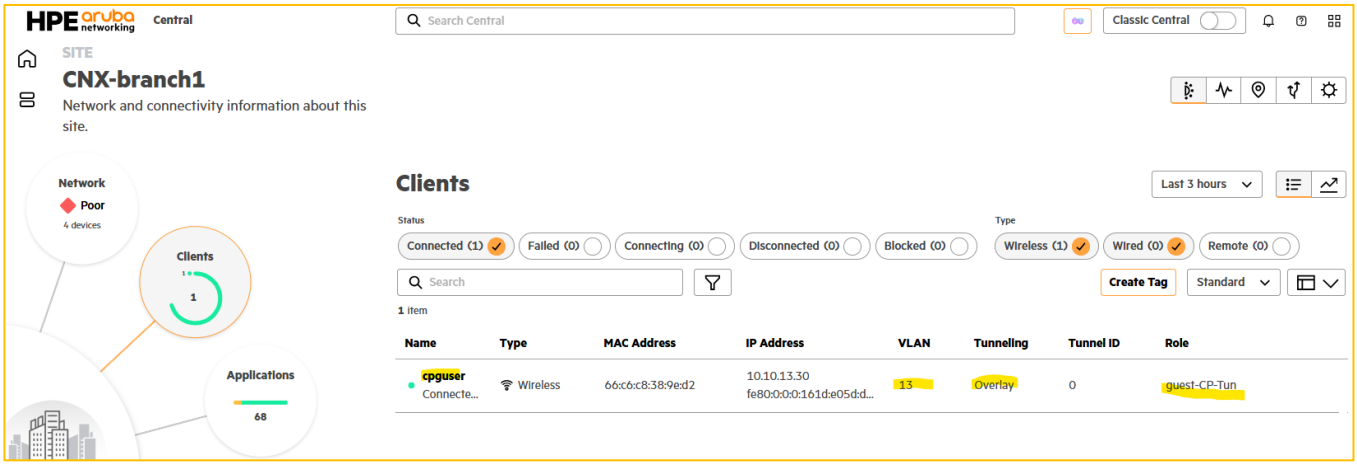
Now we get a client to connect to the tunnelled Guest WLAN. The user gets automatically redirected to the captive portal URL that we configured and uses their credentials to login.

After successful authentication it gets redirected to Post Authentication Redirection URL that we configured.

Here is the Aruba Central view before the authentication, note the user role.



And this one is Aruba Central view after successful authentication. The final user role for a successful guest is “guest-CP-Tun”. This is because by default the user role with the name of the WLAN will be assigned. If ClearPass would have sent back a user role that is also configured in New Central, then that would be the assigned user role.



Here is the familiar access tracker view from ClearPass.

Filter: Request ID contains Go Clear Filter Show 50 records

#	NAS IP Address	Server Name	Source	Username	Service	Login Status	Enforcement Profiles	Request Timestamp
1.	192.168.1.241	CP1-611	RADIUS	cpguser	simple MAC Authentication	ACCEPT	gg Aruba cnx-guest access, gg MAC Auth Session Timeout	2026/06/09 14:00:09
2.	192.168.1.241	CP1-611	RADIUS	cpguser	Simple User Authentication with MAC Caching	ACCEPT	gg MAC Caching Session Limit, gg Guest MAC Caching, [Update Endpoint Known], gg MAC Caching Do Expire, gg MAC Caching Expire Post Login, gg Aruba cnx-guest access, gg MAC Caching Session Timeout	2026/06/09 13:57:12
3.	192.168.1.241	CP1-611	RADIUS	66c6c8389ed2	simple MAC Authentication	REJECT	[Deny Access Profile]	2026/06/09 13:56:01

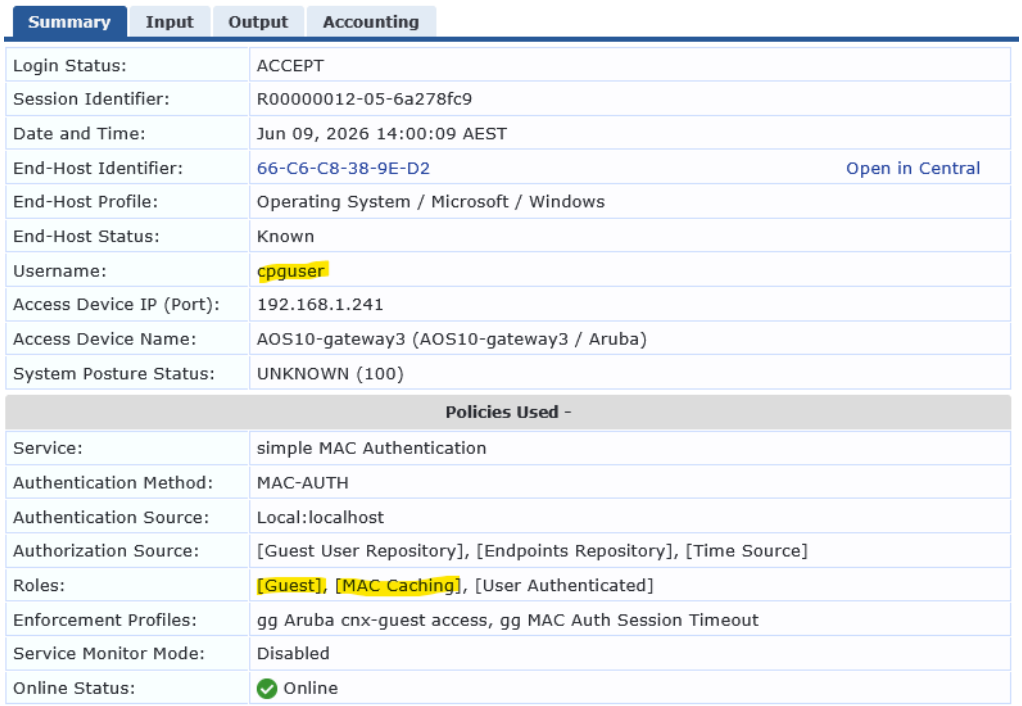
Note that always the first MAC authentication fails as the guest user has not registered or logged in. Then the guest user’s credentials get authenticated by the ClearPass’s MAC caching service. And finally, when I issue a CoA for this user, the user gets disconnected and it reconnects but this time it will pass the MAC authentication and will not get redirected to the captive portal. (note that we had enable MAC authentication got the Guest WLAN profile.

This is the access tracker request session 2 (successful guest user authentication)

Summary | Input | Output | Accounting | RADIUS Dynamic Authorization

Login Status:	ACCEPT
Session Identifier:	R00000011-05-6a278f18
Date and Time:	Jun 09, 2026 13:57:12 AEST
End-Host Identifier:	66-C6-C8-38-9E-D2 Open in Central
End-Host Profile:	Operating System / Microsoft / Windows
End-Host Status:	Known
Username:	cpguser
Access Device IP (Port):	192.168.1.241
Access Device Name:	AOS10-gateway3 (AOS10-gateway3 / Aruba)
System Posture Status:	UNKNOWN (100)
Policies Used -	
Service:	Simple User Authentication with MAC Caching
Authentication Method:	PAP
Authentication Source:	Local:localhost
Authorization Source:	[Guest User Repository], [Endpoints Repository], [Time Source]
Roles:	[Guest], [User Authenticated]
Enforcement Profiles:	gg MAC Caching Session Limit, gg Guest MAC Caching, [Update Endpoint Known], gg MAC Caching Do Expire, gg MAC Caching Expire Post Login, gg Aruba cnx-guest access, gg MAC Caching Session Timeout
Service Monitor Mode:	Disabled

And this is access tracker request session 1 (successful MAC auth after CoA)



Summary	Input	Output	Accounting

Login Status:	ACCEPT
Session Identifier:	R00000012-05-6a278fc9
Date and Time:	Jun 09, 2026 14:00:09 AEST
End-Host Identifier:	66-C6-C8-38-9E-D2 Open in Central
End-Host Profile:	Operating System / Microsoft / Windows
End-Host Status:	Known
Username:	cpguser
Access Device IP (Port):	192.168.1.241
Access Device Name:	AOS10-gateway3 (AOS10-gateway3 / Aruba)
System Posture Status:	UNKNOWN (100)
Policies Used -	
Service:	simple MAC Authentication
Authentication Method:	MAC-AUTH
Authentication Source:	Local:localhost
Authorization Source:	[Guest User Repository], [Endpoints Repository], [Time Source]
Roles:	[Guest], [MAC Caching], [User Authenticated]
Enforcement Profiles:	gg Aruba cnx-guest access, gg MAC Auth Session Timeout
Service Monitor Mode:	Disabled
Online Status:	Online

This is the client view from the AP.

```
AP1# sh client

Client List
-----------
Name      IP Address    MAC Address        OS      ESSID         Access Point       Channel  Type
Role           IPv6 Address                Signal(dB)  Speed (Mbps)
----      ----------    -----------        --      -----         ------------       -------  ----
----           ------------                ----------  ------------
cpguser   10.10.13.30   66:c6:c8:38:9e:d2  Win 10  guest-CP-Tun  20:4c:03:b6:b2:5b  60E      AC
guest-CP-Tun  fe80::161d:e05d:dbf9:172a  47(good)    144(good)
Number of Clients   :1
Info timestamp      :13025

AP1#
```

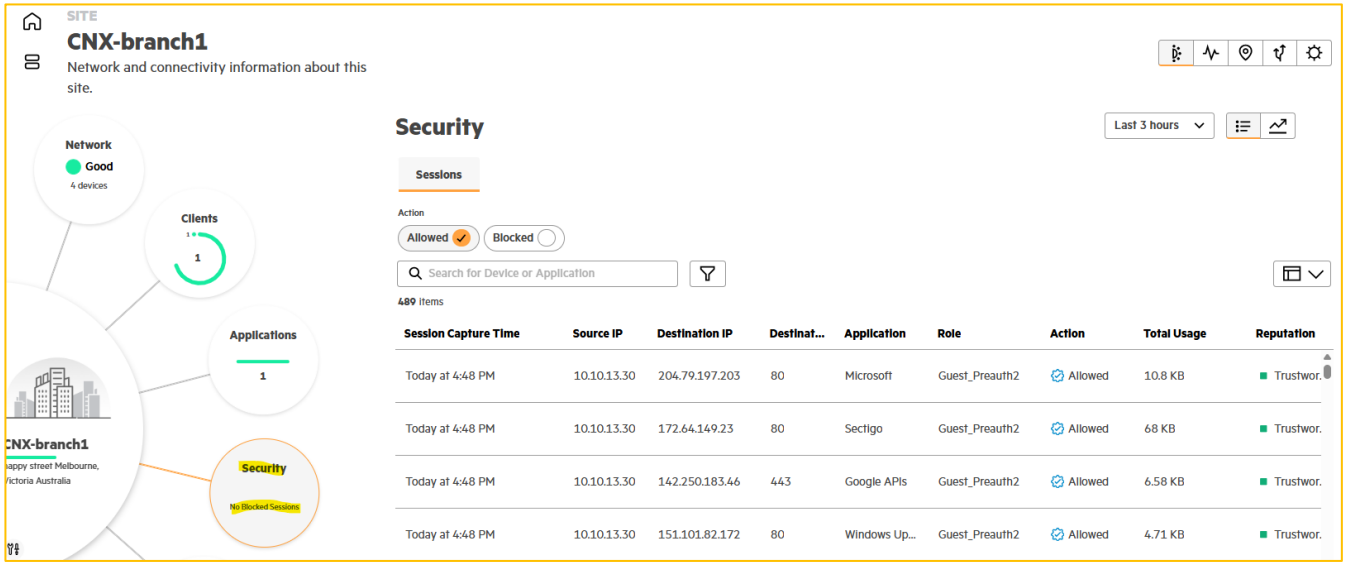
```
AP1# sh datapath user
Datapath User Table Entries
---------------------------
Flags: P - Permanent
       R - ProxyARP to User, N - VPN, L - local, I - Intercept, D - Deny local routing
       M - User Media Classified, K - OS known, S - Simulated Client
FM(Forward Mode): B - Underlay, O - Overlay S - Microbranch, N - N/A

       IP              MAC           ACLs      Contract   Location  Age    Sessions   Flags
Vlan   FM  PAN-Id    MediaSessCnt  UAC
---------------  -----------------  ---------  ---------  --------  -----  ---------  -----     -
---   --   --------  ------------  ----------
10.10.10.34      20:4C:03:B6:B2:5B  105/0/108     0/0     0         0        7/65535  P
1   B    0         0             -
0.0.0.0          66:C6:C8:38:9E:D2  192/0/0       0/0     0         0        0/65535  PK
13   O    0         0             192.168.1.241
10.10.13.30      66:C6:C8:38:9E:D2  192/0/0       0/0     0         0        4/65535  K
13   O    0         0             192.168.1.241
172.31.98.1      20:4C:03:B6:B2:5B  105/0/0       0/0     0         37       0/65535  P
3333   B    0         0             -

AP1#
```

This is the client view form the gateway.

```
(Aruba9004_1) #show user
This operation can take a while depending on number of users. Please be patient ....
```

```
Users
-----
    IP             MAC             Name      Role          Age(d:h:m)  Auth  VPN link     Connected
To      Roaming   Essid/Bssid/Phy                      Profile                            Forward
mode  Type     Host Name  User Type
----------   -----------        ------    ----          ----------  ----  --------  -------------
-----  -------   ---------------                      -------
10.10.13.30  66:c6:c8:38:9e:d2  cpguser   guest-CP-Tun  00:00:16    MAC             N/A
Wireless  guest-CP-Tun/20:4c:03:b6:b2:5b/N/A  guest-CP-Tun_1780896370157002794_  dtunnel
Win 10             WIRELESS

User Entries: 1/1
 Curr/Cum Alloc:1/10 Free:0/9 Dyn:1 AllocErr:0 FreeErr:0

(Aruba9004_1) #
```

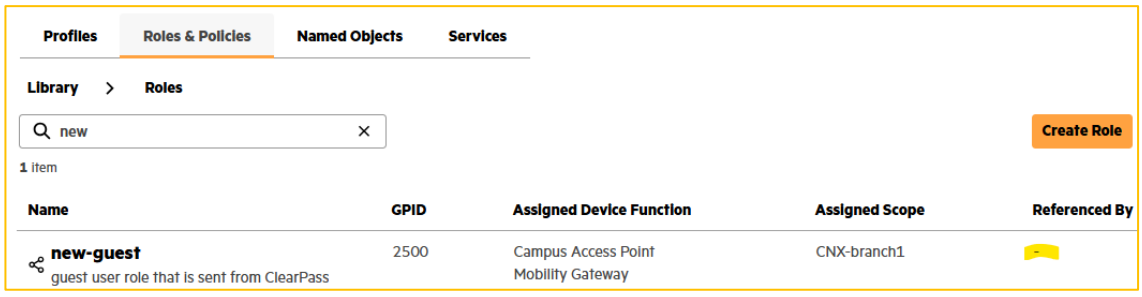
You can also check the user session from the WebUI from security planet.



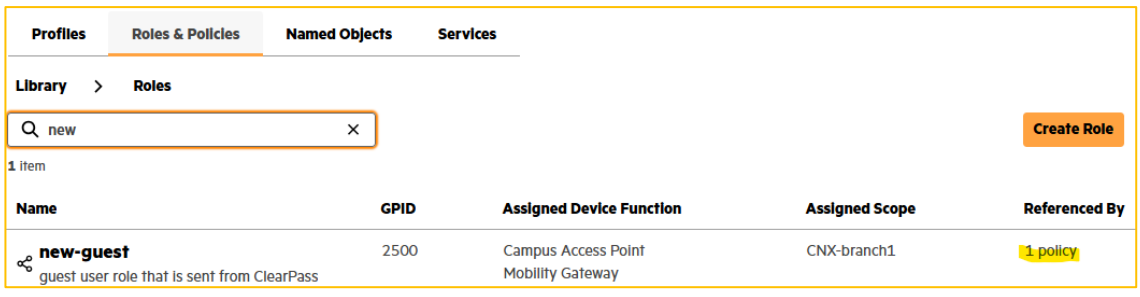
4.6 Tunnel WLAN Guest Configuration with customised User Role

Here I have configured ClearPass to send back “new-guest” after a successful guest login.

Now I’ll create this “new-guest” user role in New Central and assign it to the device types and sites. Note that it is not reference by anything, that’s because I have not yet assigned it to a user role policy rule.

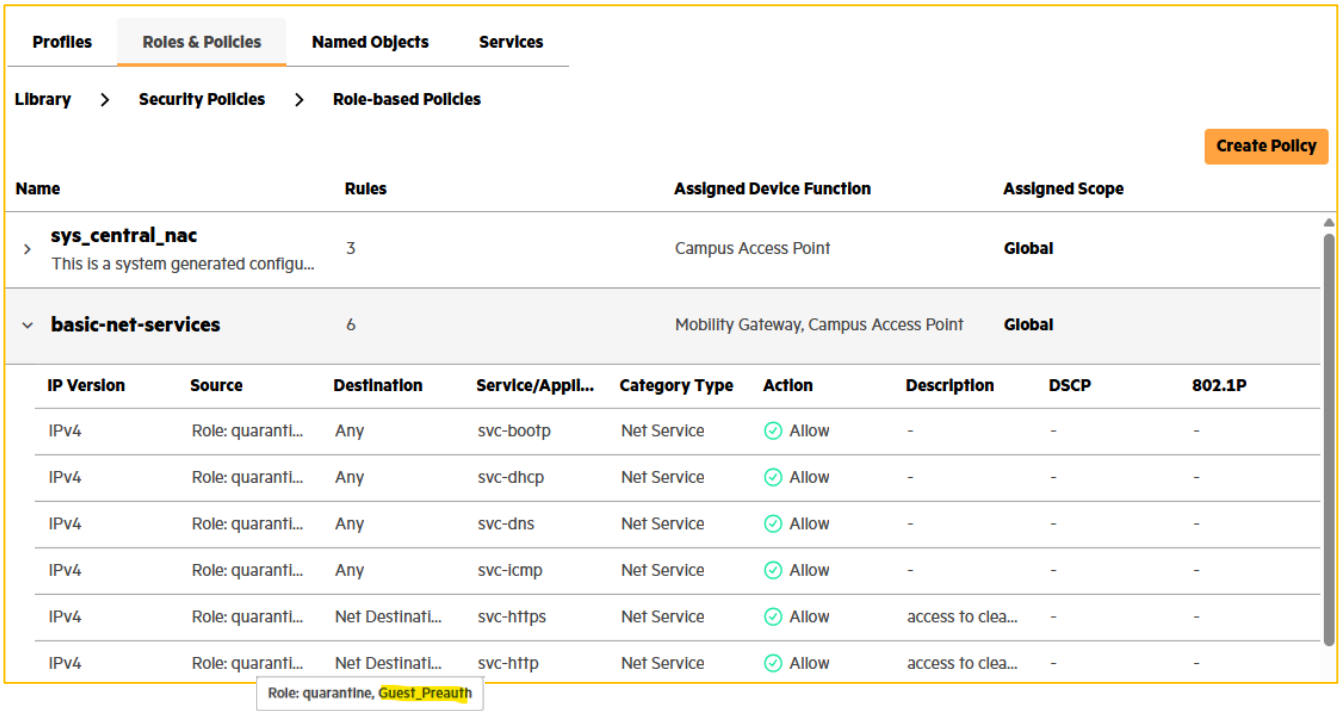


But once I have assigned a role-based policy rule to it, it will be displayed as shown below.

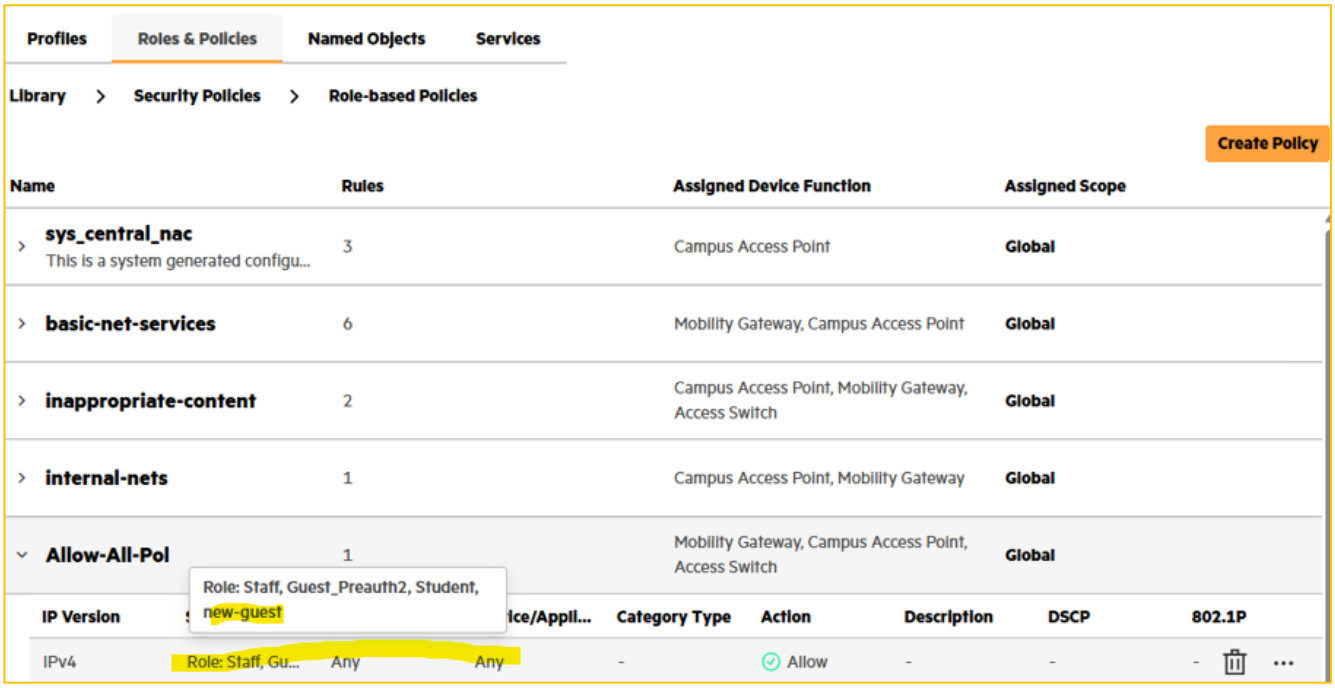


I configured a new pre-authentication user role “Guest_Preauth”.

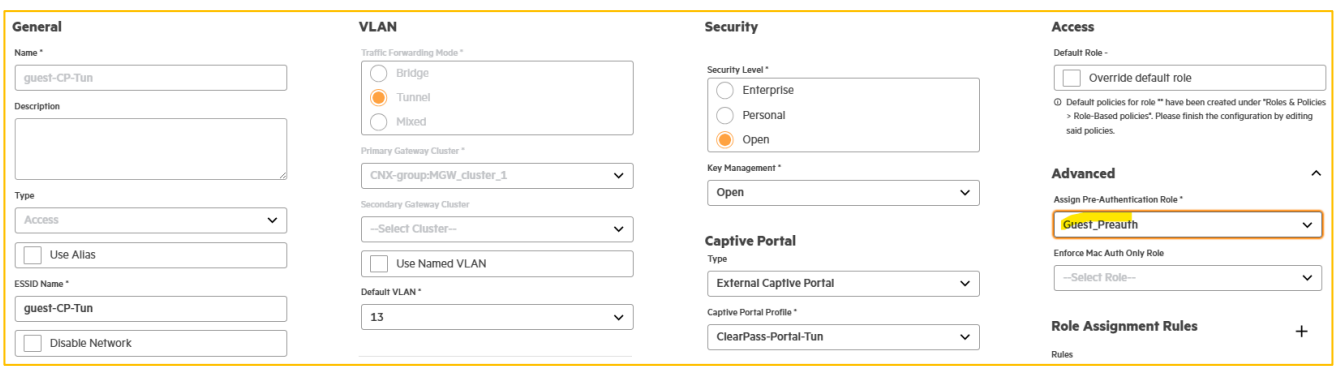
Here are the rules that are assigned to the “Guest_Preauth” role. Note that the rules are assigned to both “Guest_Preauth” and “quarantine” roles.



I have also assigned the allow-all rule to “new-guest” role.



Finally, we need to change the pre-authentication role in the guest-CP-Tun WLAN profile to use “Guest_Preauth” that we just created.

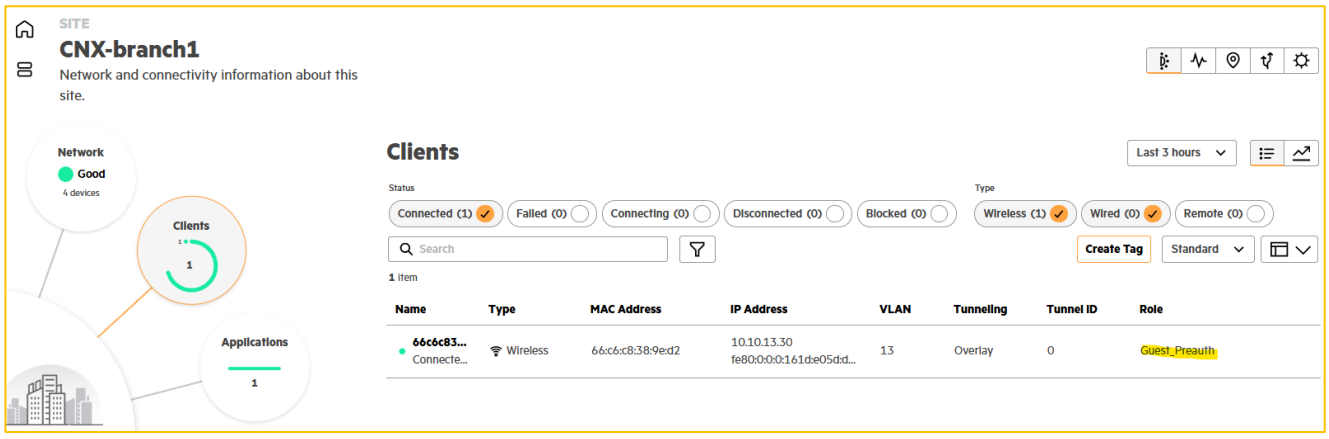


4.7 User Testing with Customised User Roles

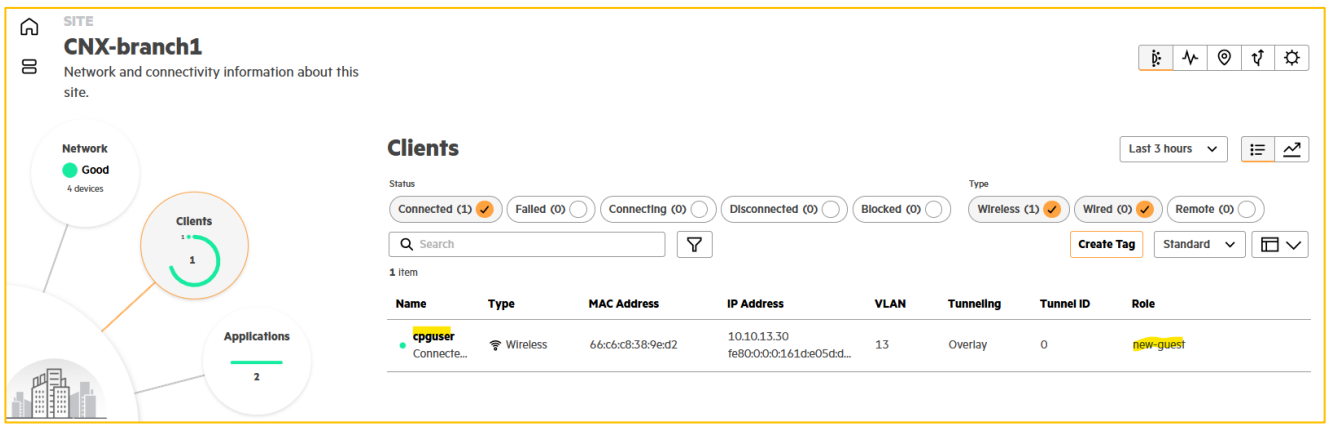
Before we get a guest client to connect, let's check the basic configurations that were pushed to the AP and gateways. From the troubleshooting page I remote console to the AP and ran this command to see the access policy for Guest_Preauth user role.

```
AP1# sh access-rule Guest_Preauth

ACL Vlan     :
ACL Captive Portal:external
ACL ECP Profile    :ClearPass-Portal-Tun
CALEA              :disable
Redirect Blocked HTTPS Traffic  :disable
DPI error page URL:
Bandwidth Limit    :downstream disable upstream disable
airslice-application-list       :
monitoring-application-list     :
Access Rules
------------
Dest IP  Dest Mask         Eth Type  Dest Match  Protocol (id:sport:eport)  Application  Action
nge
-------  ---------         --------  ----------  -------------------------  -----------  ------
---
any      any               IPv4/6    match       bootp                                   permit
any      any               IPv4/6    match       dhcp                                    permit
any      any               IPv4/6    match       dns                                     permit
any      any               IPv4/6    match       icmp                                    permit
netdest  ClearPass-VIP(3)  IPv4/6    match       https                                   permit
netdest  ClearPass-VIP(3)  IPv4/6    match       http                                    permit
AP1#
```

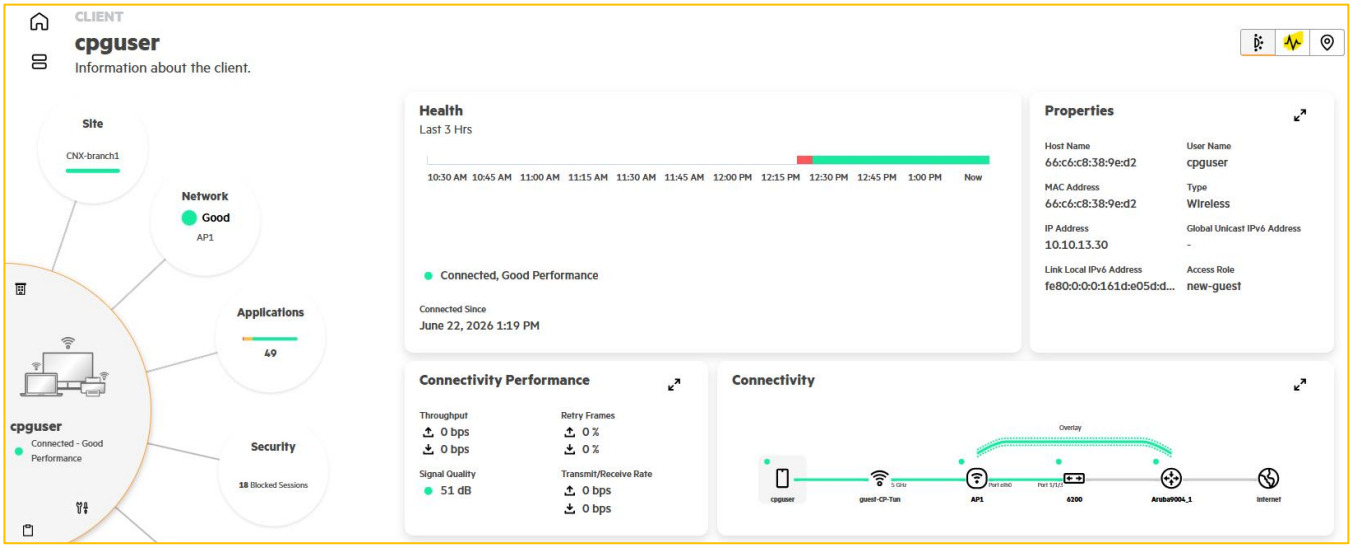
Now let's get a user to connect to the guest-CP-Tun WLAN. It is seen that it gets a correct pre authentication user role.



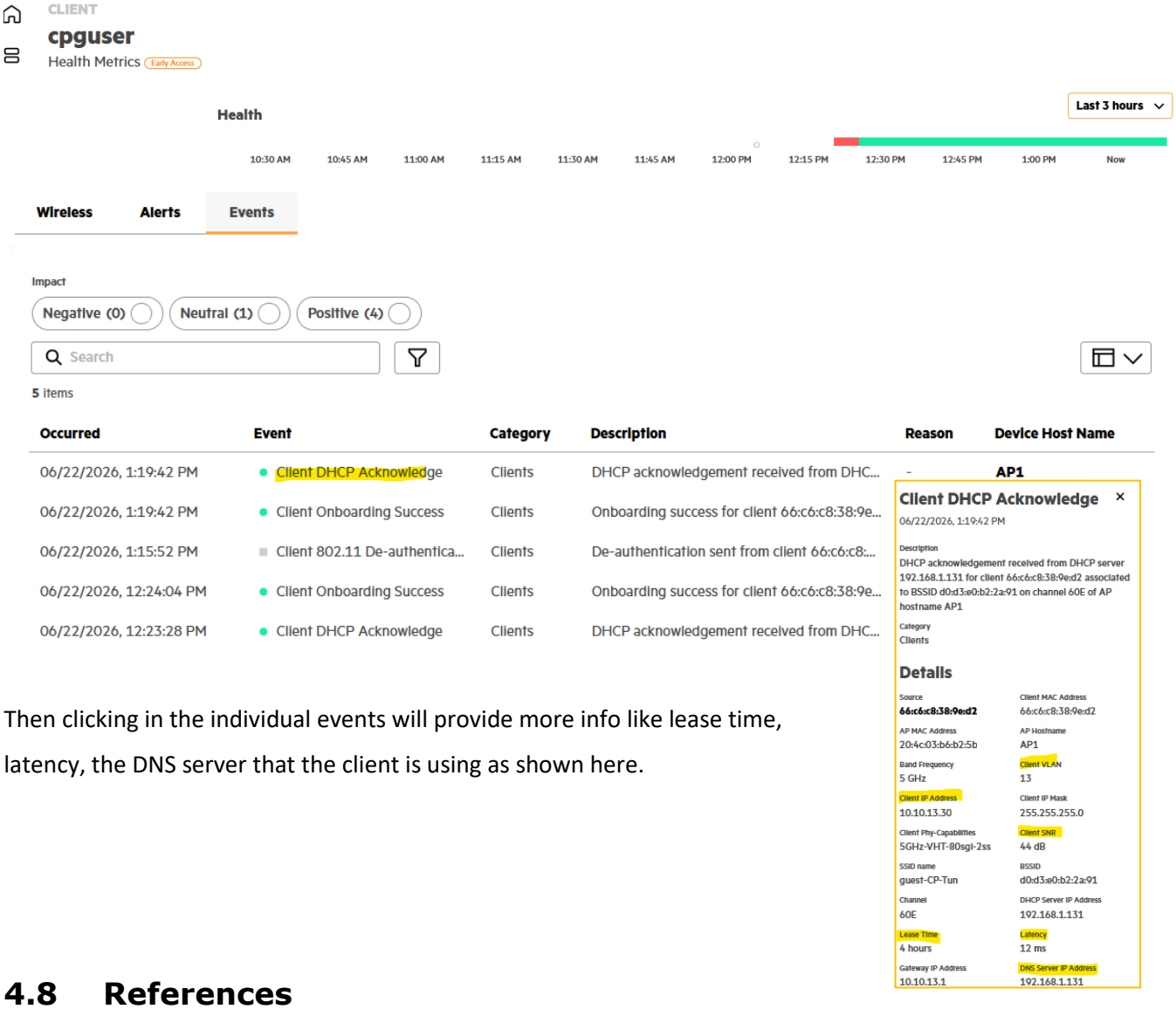
After being redirected to the captive portal and entering valid credentials, the user is successfully authenticated and granted network access. Note the new user role.



You can click on the username to get more information about it. Clicking it will change the context as shown below.



You can then check the health metric icon.



Then clicking in the individual events will provide more info like lease time, latency, the DNS server that the client is using as shown here.

4.8 References

For comprehensive configuration detail in New Central you can refer to Validated Solution Guide - Central Configuration Example

You can also refer to the Central Online documentation.