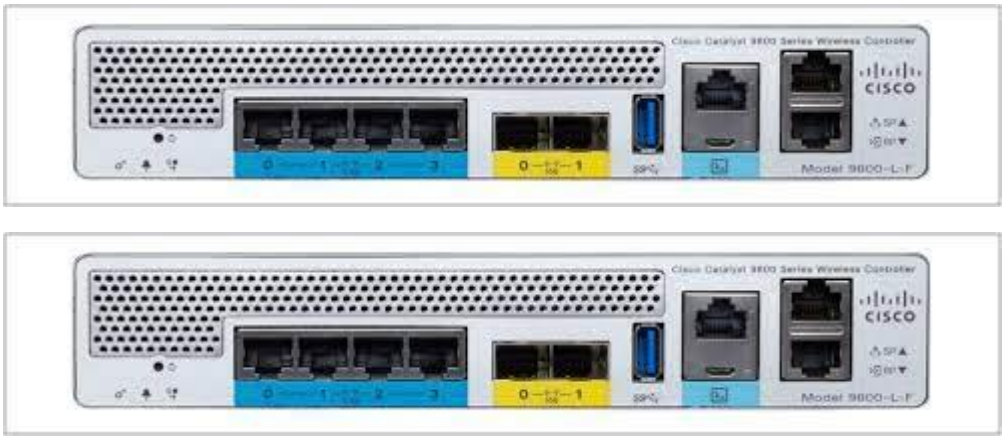
CISCO WLC Configuration:

I got opportunity to deploy and configure Cisco Wireless Controller (Catalyst 9800) in several organizations. I have made a SOP to configure WLC and make it functional in a network infrastructure. This is just a procedure, clients can customize the policies and other rules based on their requirements.

WLC: A Cisco Wireless LAN Controller (WLC) is a network device that manages and controls a group of wireless access points (APs). WLCs are responsible for tasks such as:

- Authenticating and authorizing wireless clients
- Enforcing security policies
- Managing wireless network traffic
- Providing network resiliency
- Troubleshooting wireless network problems

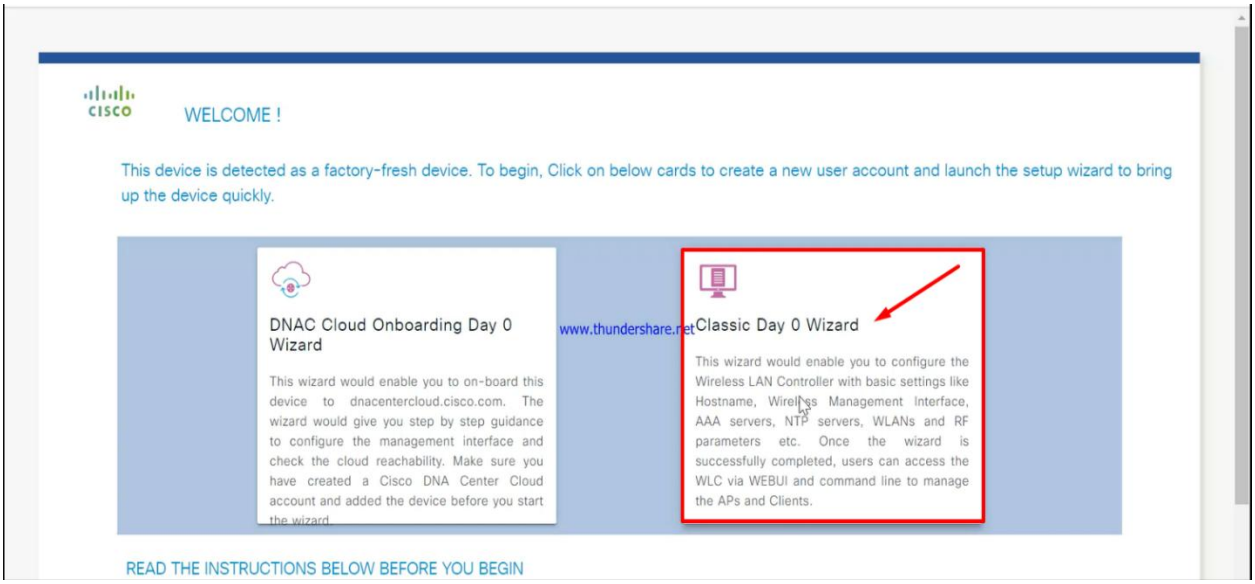
WLCs are typically deployed in enterprise environments where there are a large number of wireless clients and APs. They can be either hardware or software appliances.



Day 0 Express Setup:

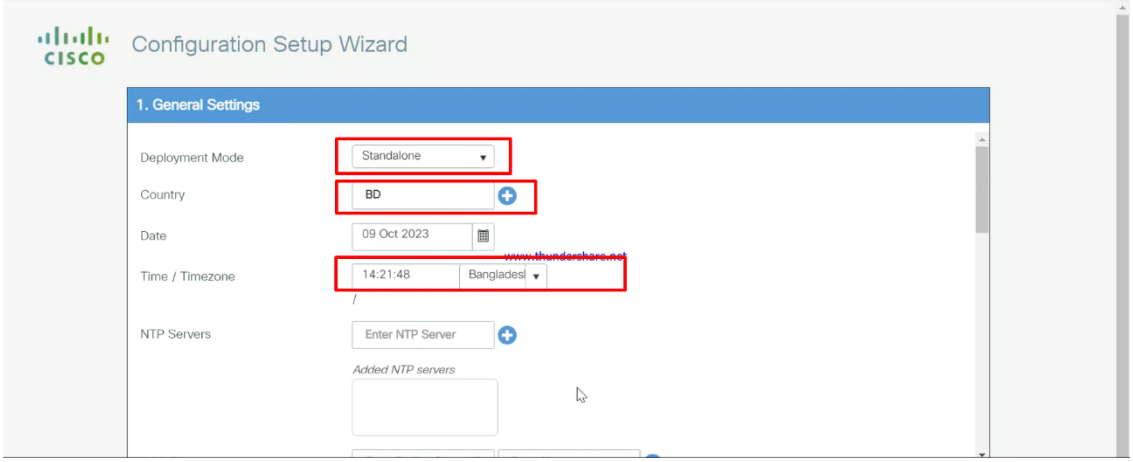
The Cisco Catalyst 9800 Wireless Controller provides a simplified first time out of box installation and configurationinterface for all series of wireless controllers. This section provides a set of instructions to help easily set up the wireless controller to operate in a small, medium, or large network wireless environment, where access points can join and together as a simple solution and provide various services, such as corporate employee or guest wireless access on the network.

Accessing Day 0 Express Setup using Web UI: Select Day 0 Wizard:

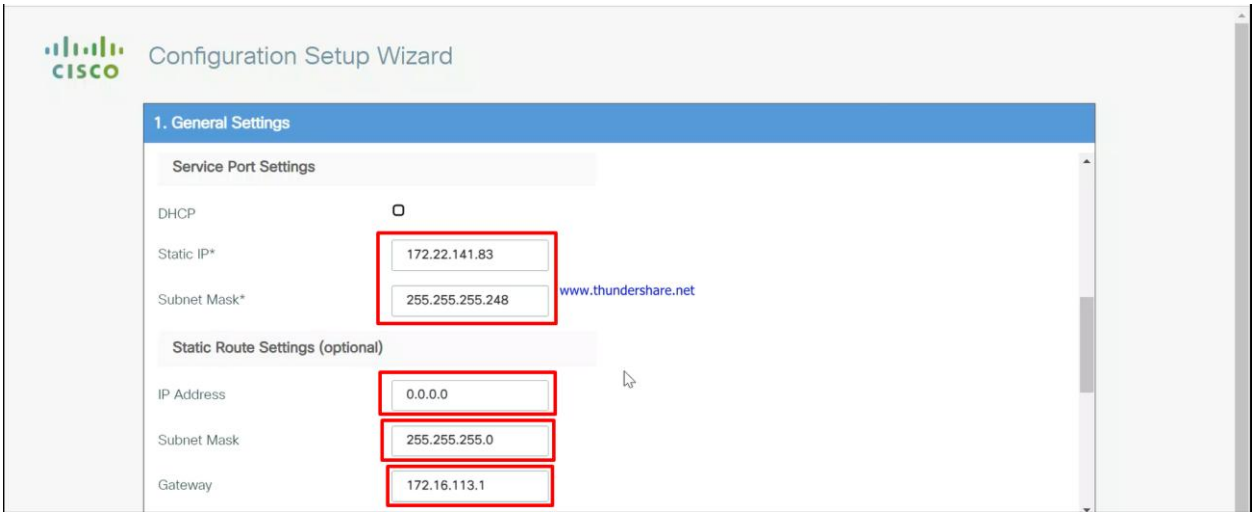


Step 2 Once you are logged into the controller, in the **General Settings** screen, with the help of the checklist,fill in the following:

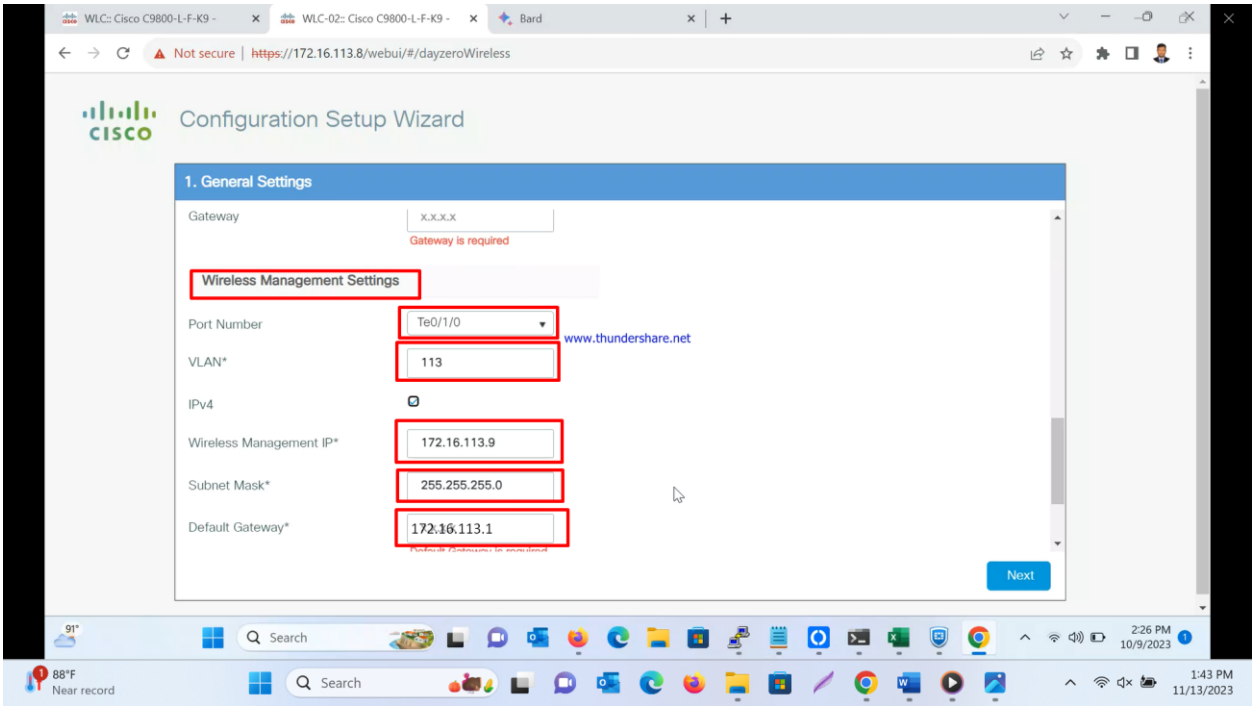
- Deployment mode – standalone, Active or Standby
- Country Code
- Date
- Time/ Time zone
- NTP servers
- AAA Servers
- Wireless Management Settings
  - Port number
  - VLAN
- IPv4
  - Wireless Management IP
  - Subnet mask
  - Default gateway
  - Management VLAN DHCP Server
- IPv6
  - IPv6 Address



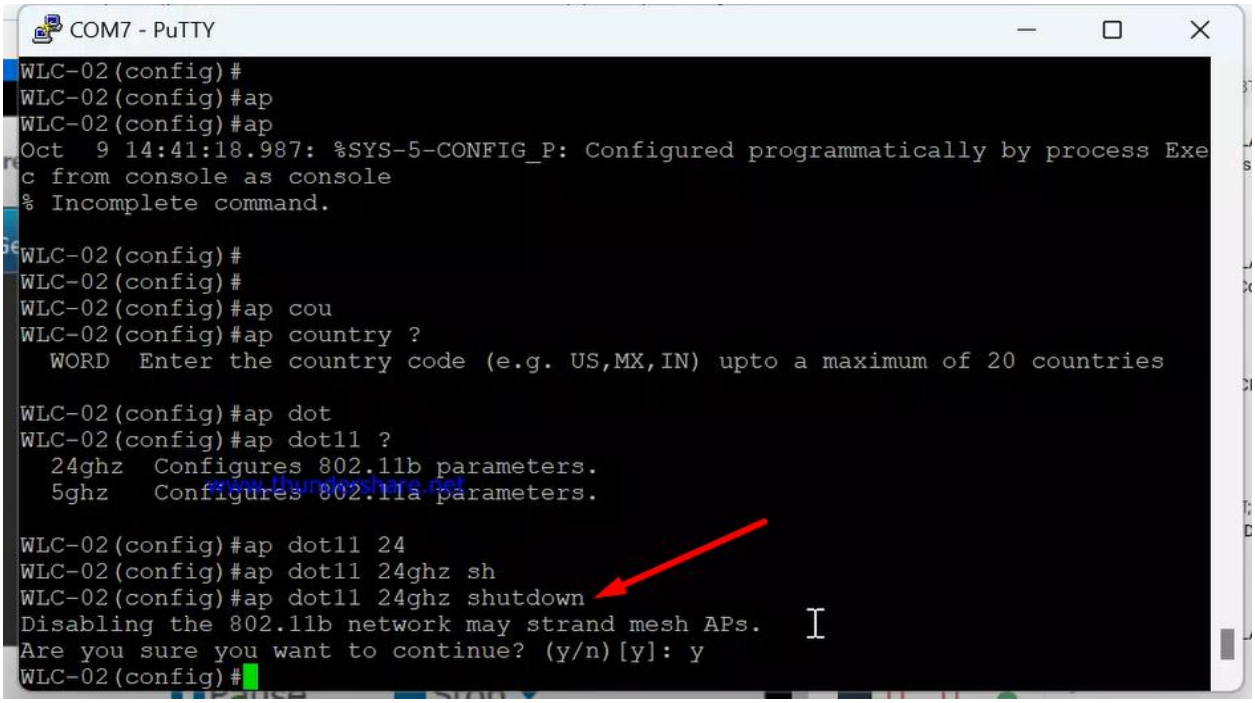
Service Port Configuration: The service port on a Cisco Wireless LAN Controller (WLC) is used for out-of-band management and troubleshooting. The service port is typically configured with a static IP address and is not reachable by wireless clients.

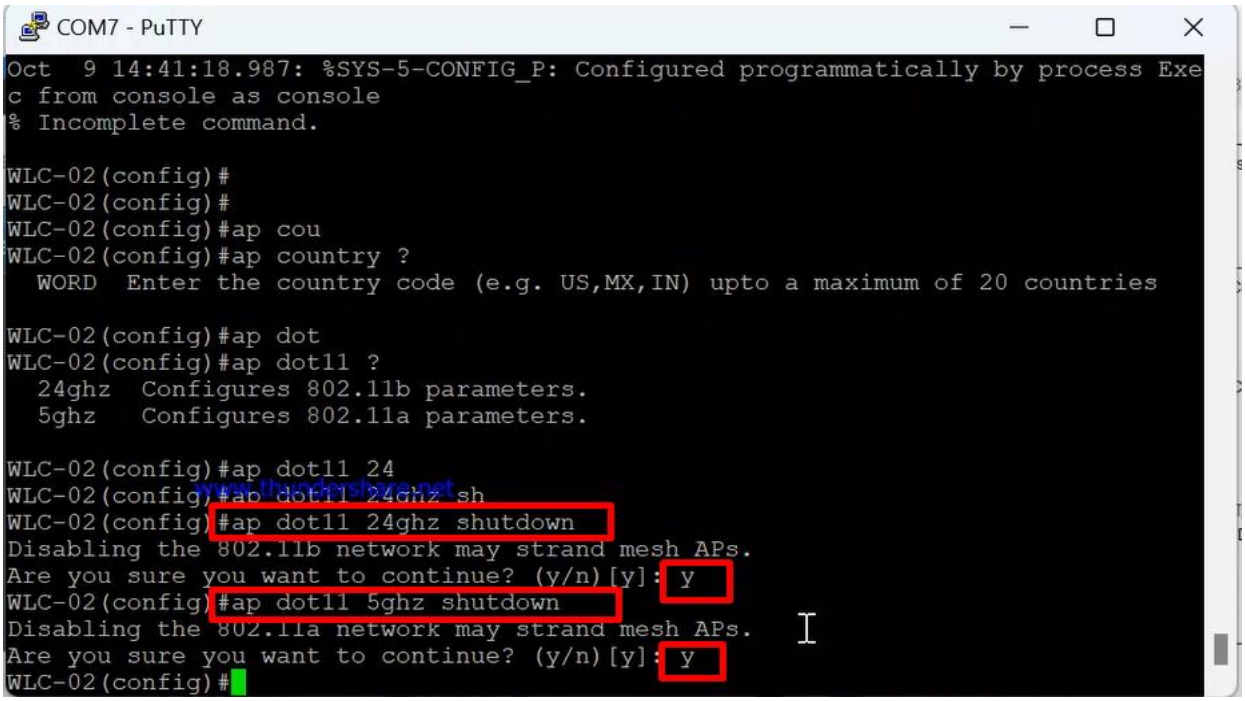


Wireless Management Settings: The Wireless Management Interface (WMI) is a dedicated interface on a Cisco Wireless LAN Controller (WLC) that is used for managing and configuring wireless access points (APs). The WMI is typically configured with a separate IP address and VLAN from the controller's management interface. This helps to isolate the WMI traffic from other types of traffic on the network and to improve the security of the wireless network.



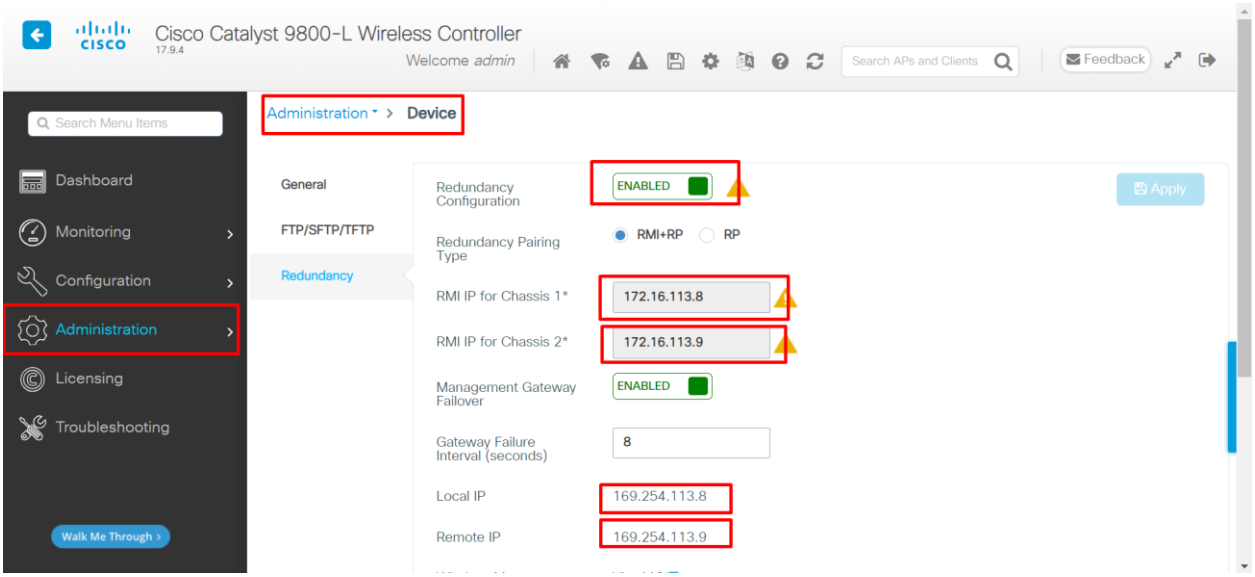
dot11 24ghz and 5ghz shutdown:

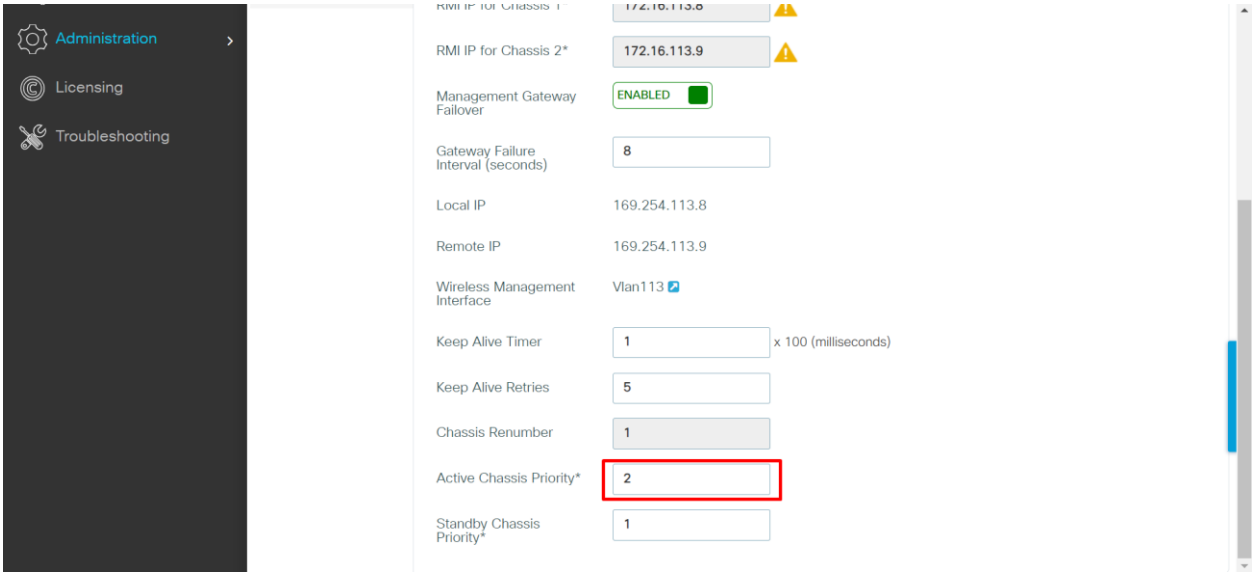




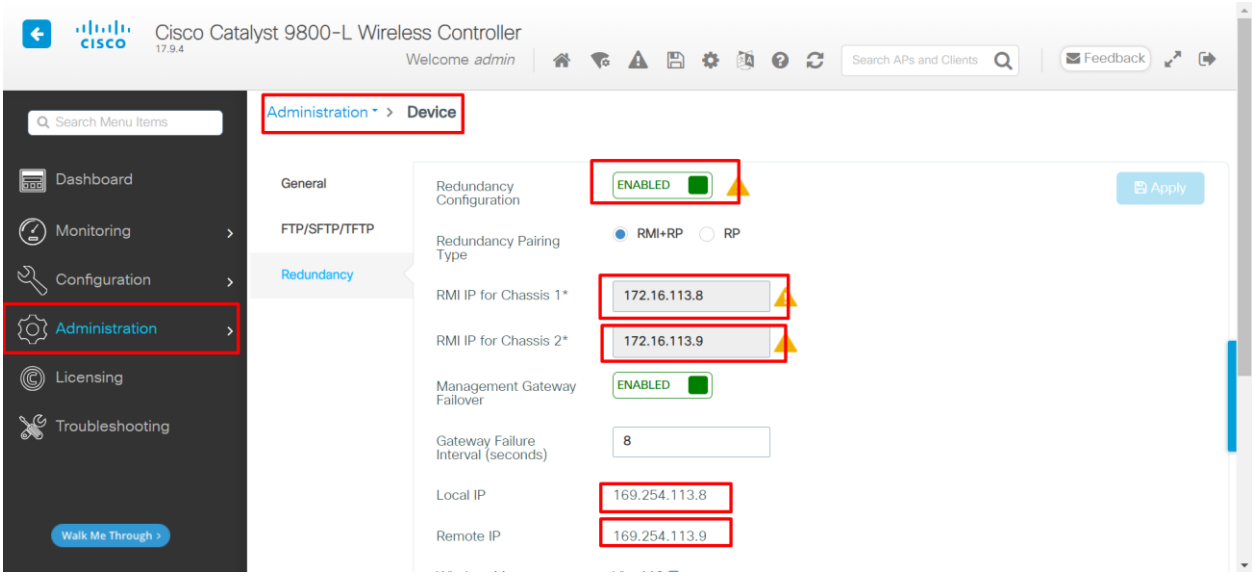
Step 3: Device HA Configuration: Administration > Device > Redundancy

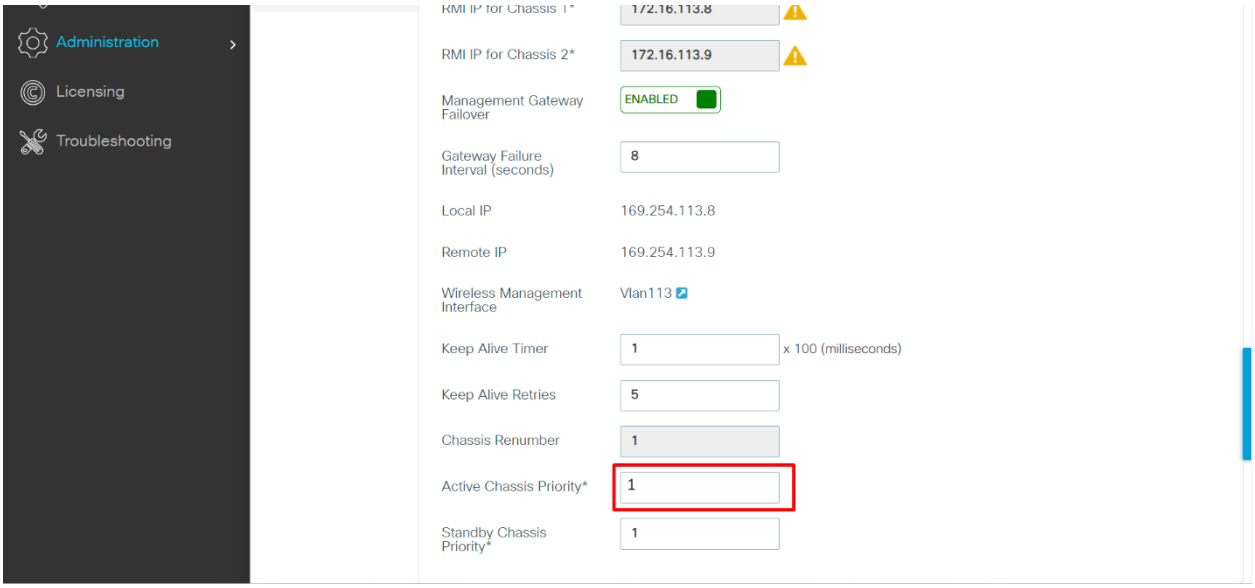
High Availability (HA) is a feature of Cisco Wireless LAN Controllers (WLCs) that allows two WLCs to operate as a single logical controller. This provides redundancy and load balance, which can improve the performance and reliability of the wireless network.





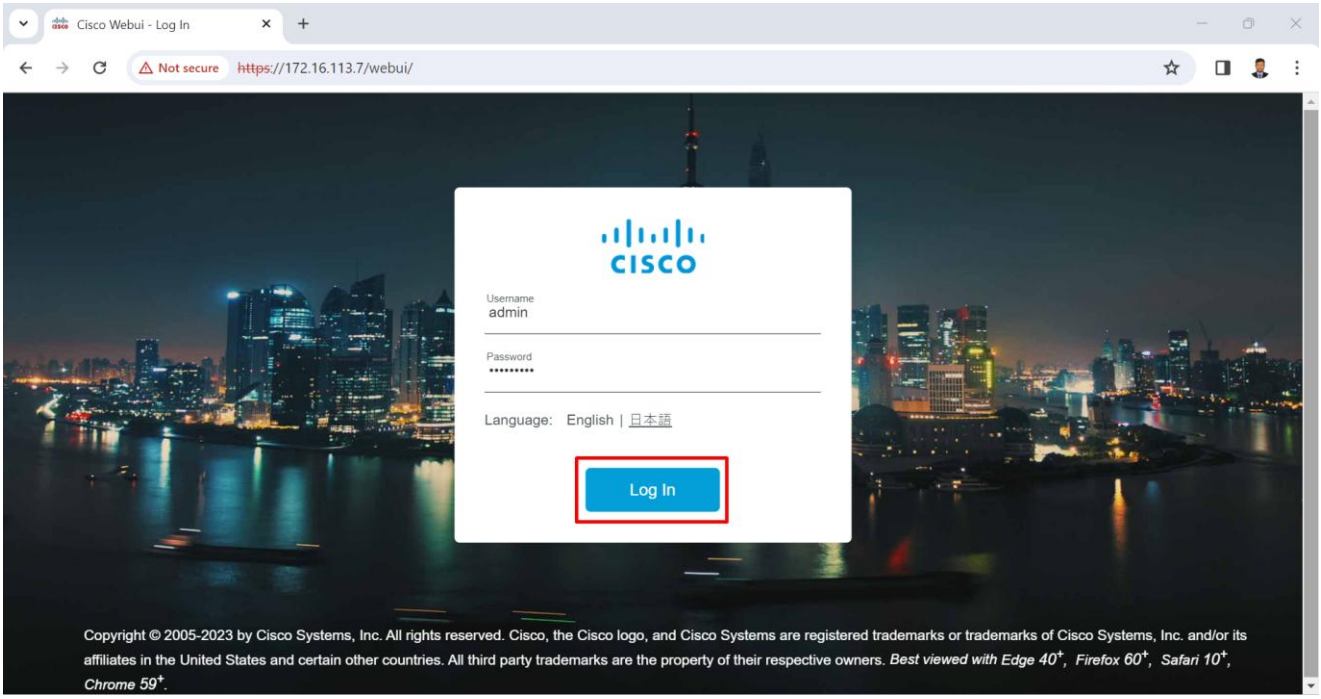
WLC - 02


Cisco Catalyst 9800-L Wireless Controller
17.9.4
Welcome admin
Search APs and Clients
Feedback
Search Menu Items
Dashboard
Monitoring
Configuration
Administration
Licensing
Troubleshooting
Walk Me Through
Administration > Device
General
FTP/SFTP/TFTP
Redundancy
Redundancy Configuration
ENABLED
Apply
Redundancy Pairing Type
RMI+RP
RP
RMI IP for Chassis 1*
172.16.113.8
RMI IP for Chassis 2*
172.16.113.9
Management Gateway Failover
ENABLED
Gateway Failure Interval (seconds)
8
Local IP
169.254.113.8
Remote IP
169.254.113.9


Administration
Licensing
Troubleshooting
RMI IP for Chassis 2*
172.16.113.9
Management Gateway Failover
ENABLED
Gateway Failure Interval (seconds)
8
Local IP
169.254.113.8
Remote IP
169.254.113.9
Wireless Management Interface
Vlan113
Keep Alive Timer
1
x 100 (milliseconds)
Keep Alive Retries
5
Chassis Renumber
1
Active Chassis Priority*
1
Standby Chassis Priority*
1

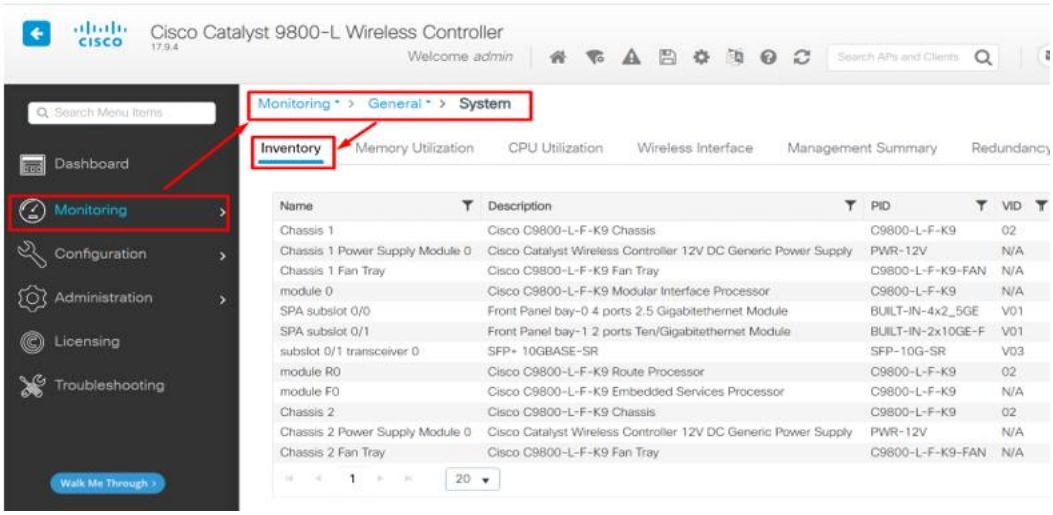
Login to Wireless-LAN-Controller

To Access or Login, the WLC Manager type in the browser https://172.16.113.7 That is Virtual IP Address for Two WLC Like Primary & Secondary because that was Configured HA.



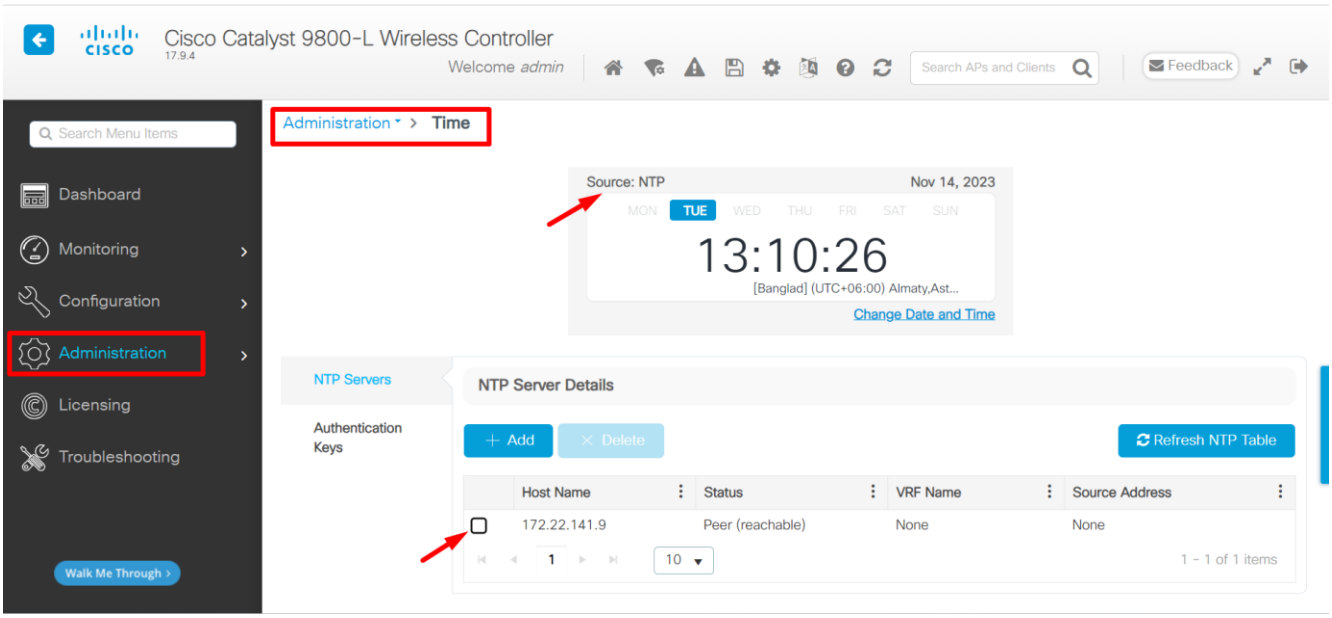
Wireless-Controller Inventory Checking:

Monitoring >General >System > Inventory



Set Date & Time-Zone/ NTP Server:

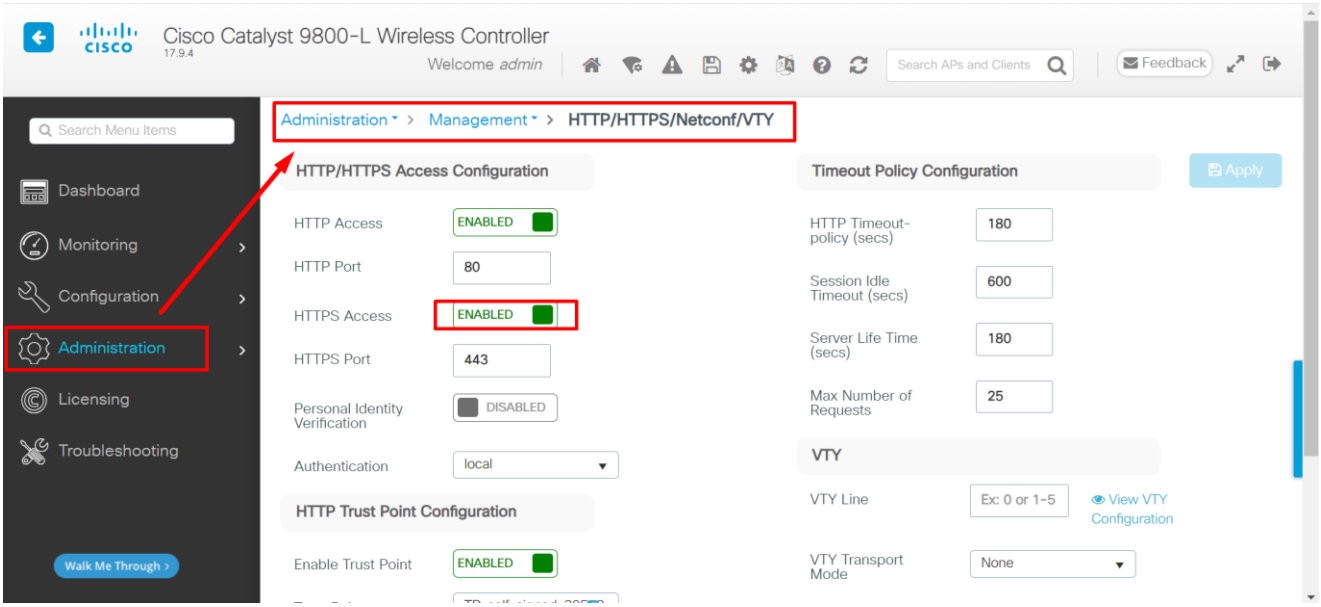
Administration > Time



Enable Management Access in Wireless-Lan-Controller:

Enable HTTP/HTTPS Access:

Administration >Management > HTTP/HTTPS>Netconf/VTY Configuration Enable/Disable>Apply

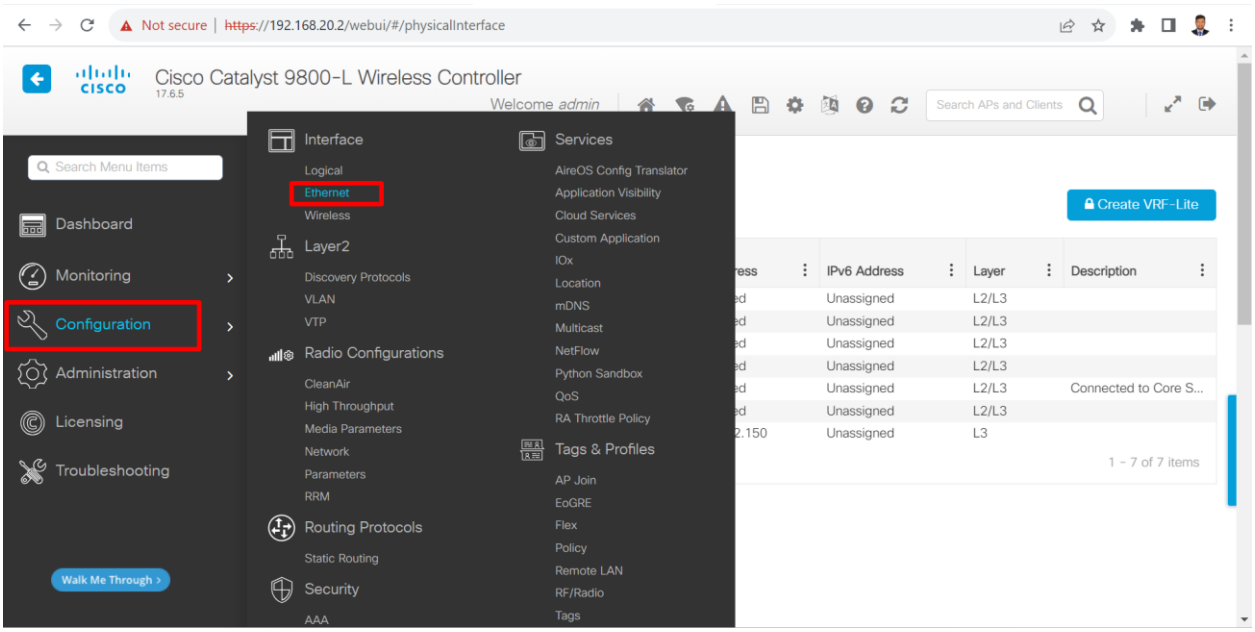


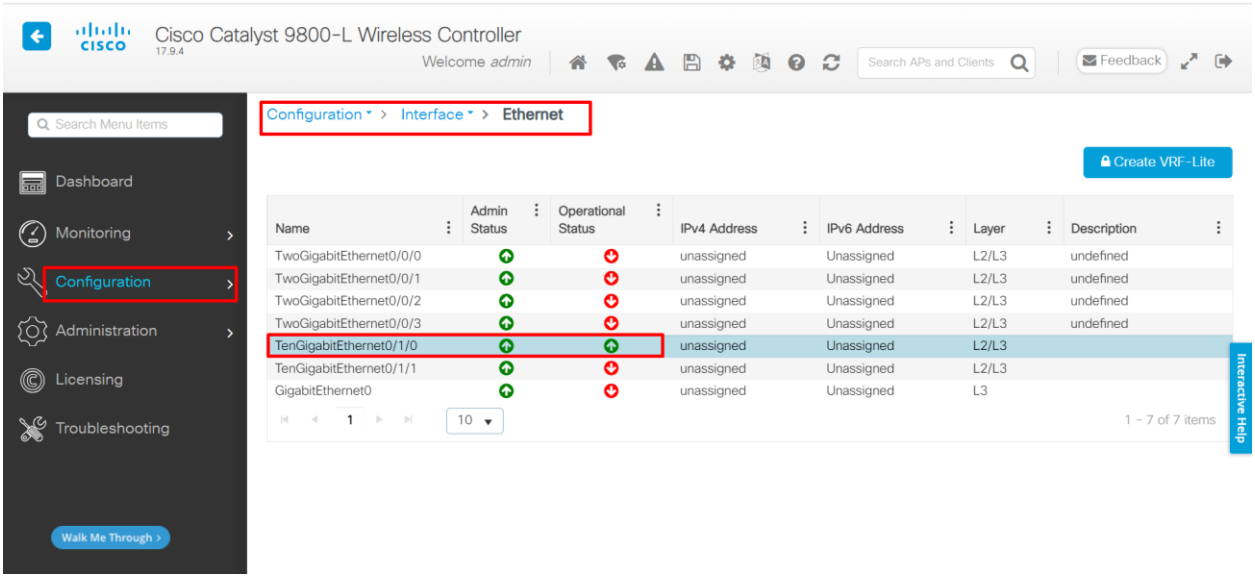
SSH Configuration:

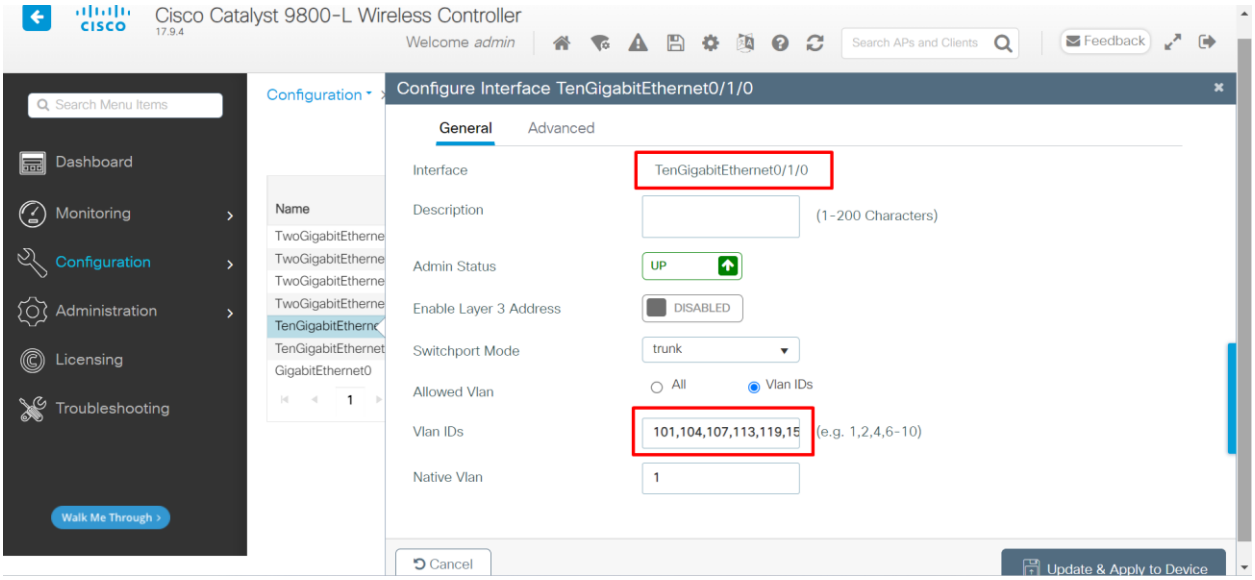
```
line con 0
 exec-timeout 0 0
 stopbits 1
line aux 0
line vty 0 4
 length 0
 transport input ssh
line vty 5 15
 transport input ssh
!
```

WLC Ethernet Configuration: Set IP address in Interfaces.

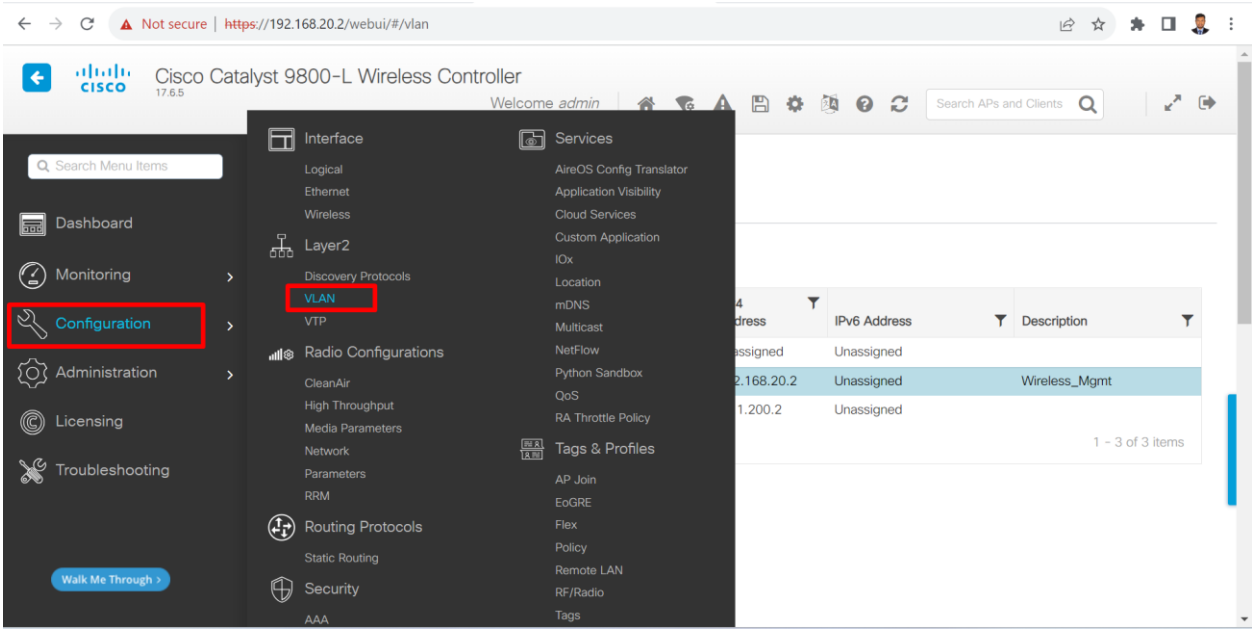
Configuration > Interface > Ethernet

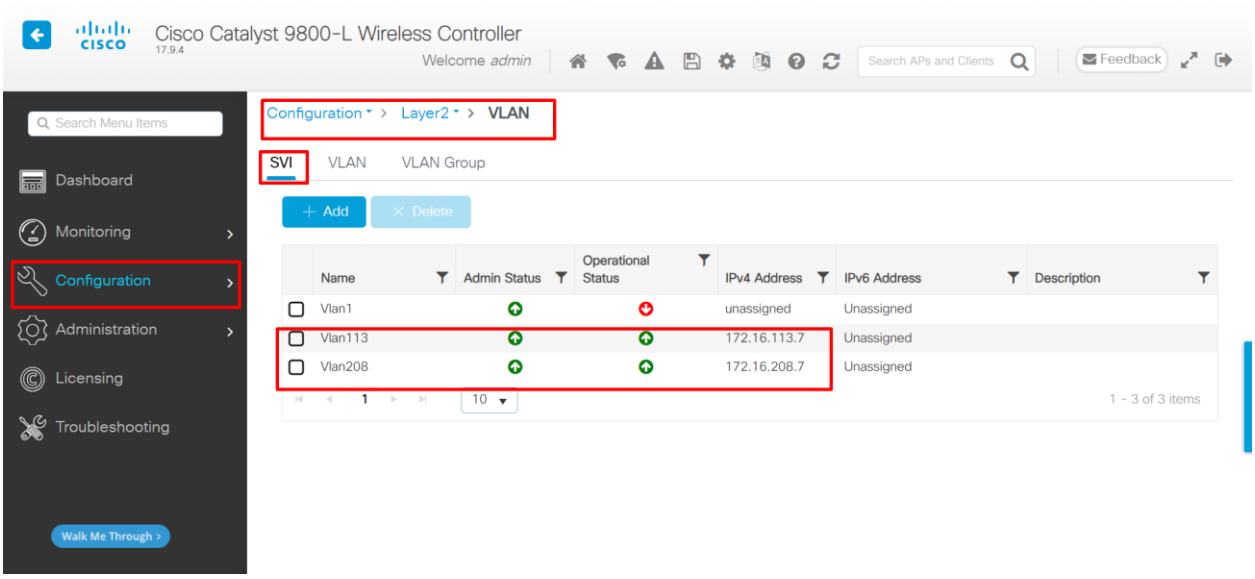





Cisco Catalyst 9800-L Wireless Controller
17.9.4
Welcome admin
Search APs and Clients
Feedback
Search Menu Items
Dashboard
Monitoring
Configuration
Administration
Licensing
Troubleshooting
Walk Me Through
Configuration
Name
TwoGigabitEtherne
TwoGigabitEtherne
TwoGigabitEtherne
TwoGigabitEtherne
TenGigabitEthernc
TenGigabitEthernet
GigabitEthernet0
1
Configure Interface TenGigabitEthernet0/1/0
General
Advanced
Interface
TenGigabitEthernet0/1/0
Description
(1-200 Characters)
Admin Status
UP
Enable Layer 3 Address
DISABLED
Switchport Mode
trunk
Allowed Vlan
All
Vlan IDs
Vlan IDs
101,104,107,113,119,15
(e.g. 1,2,4,6-10)
Native Vlan
1
Cancel
Update & Apply to Device

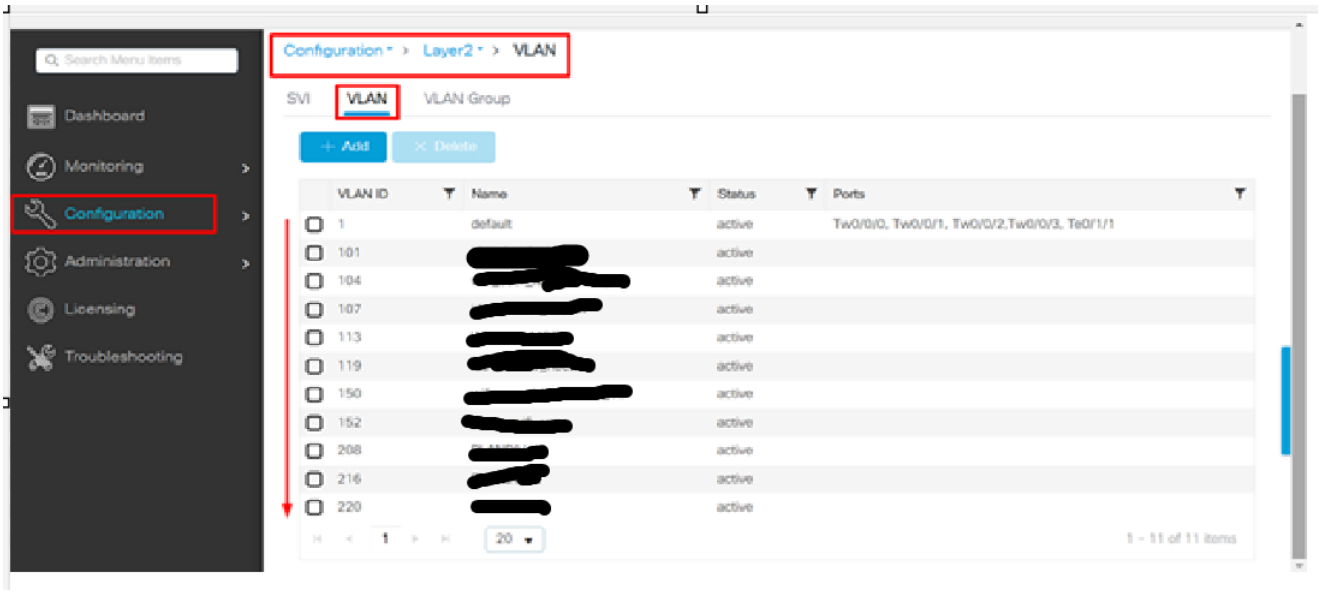
VLAN Interface Configuration: Configure VLAN 113 for AP VLAN
Configuration > Layer 2 > VLAN > SVI





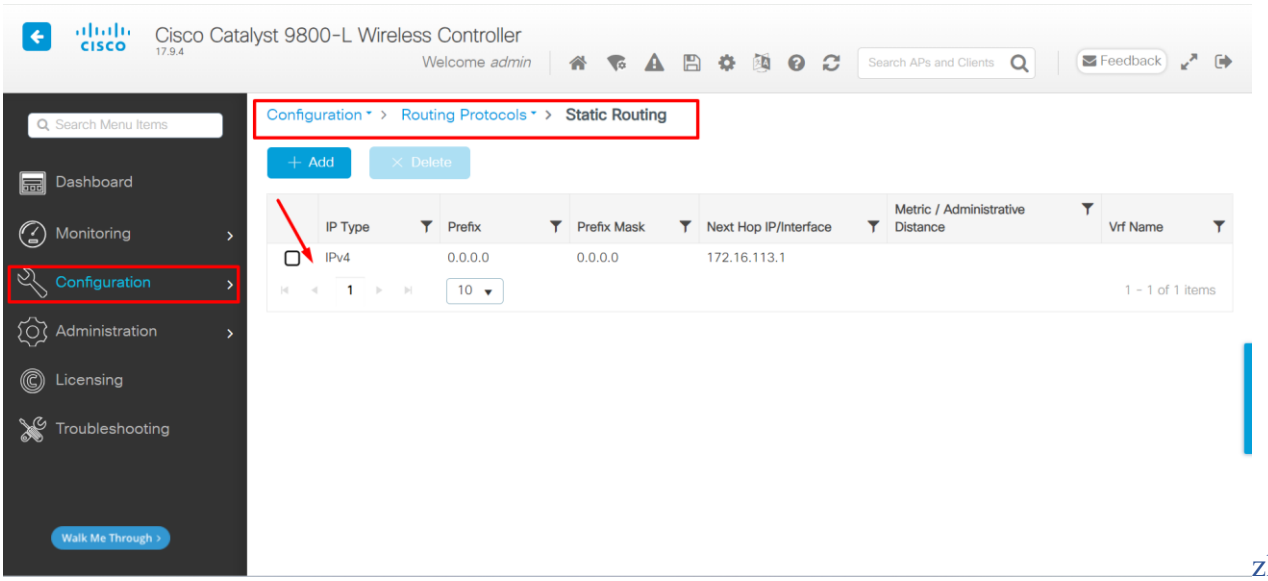
VLAN Interface Configuration: Configure Different VLAN for Multiple SSID (SSIDs have been covered for the privacy reason).

Configuration > Layer 2 > VLAN >VLAN



Route Configuration:

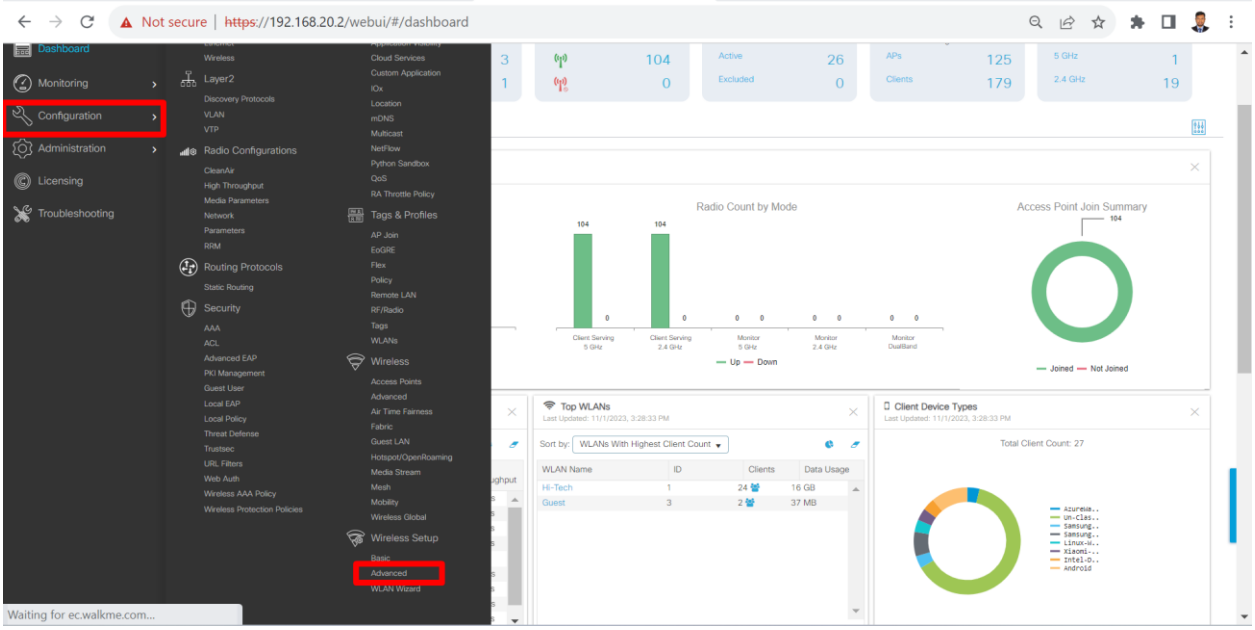
Configuration > Routing Protocols > Static Routing



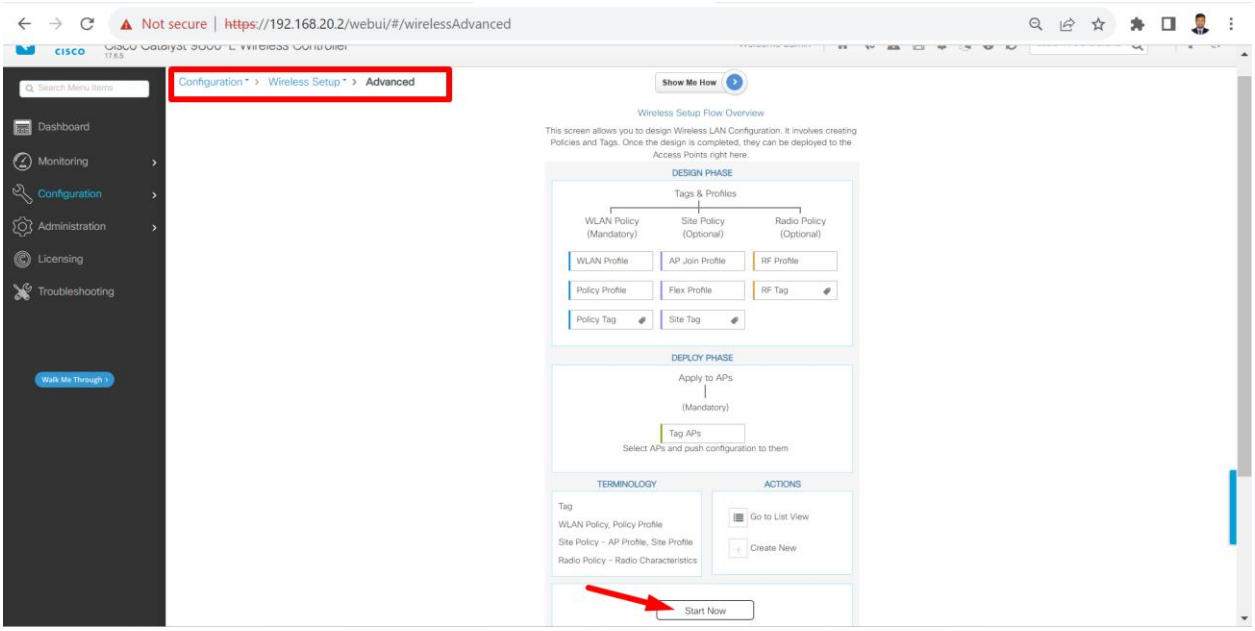
zl

Policy Configuration: Policy configuration on Cisco Wireless LAN Controllers (WLCs) is used to control how wireless clients connect to the network and how traffic is routed.

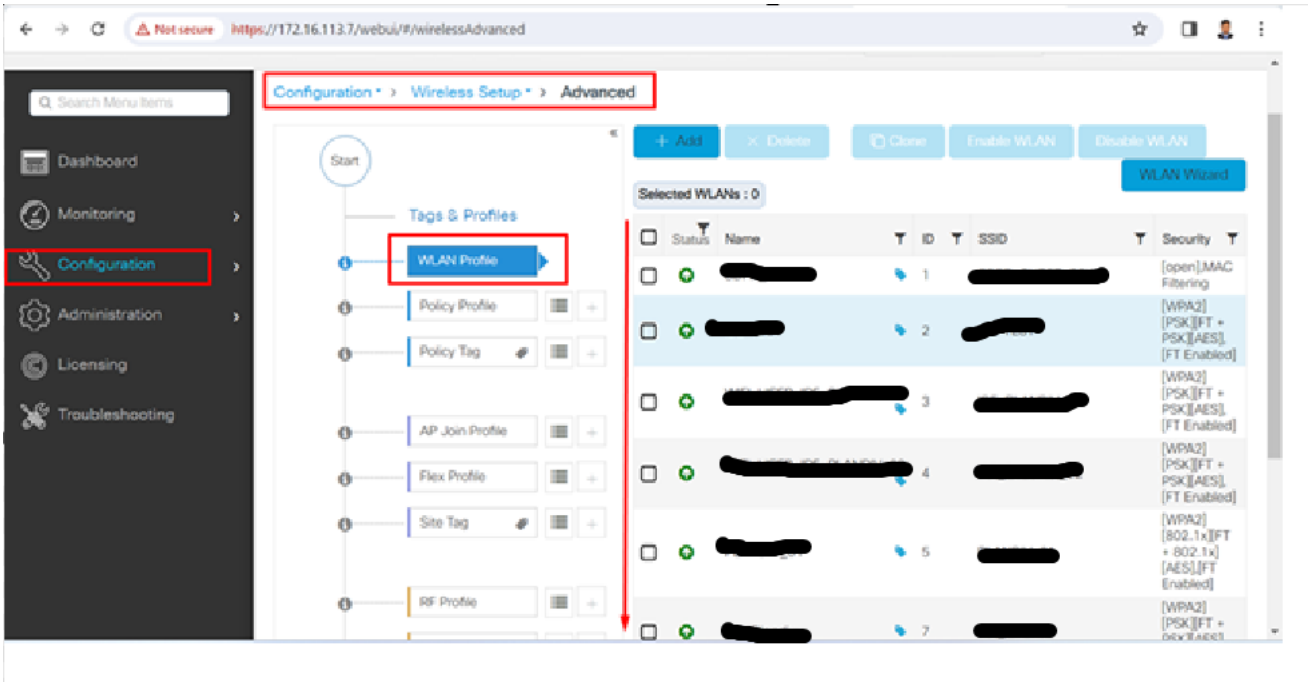
Configuration > Wireless Setup > Advanced



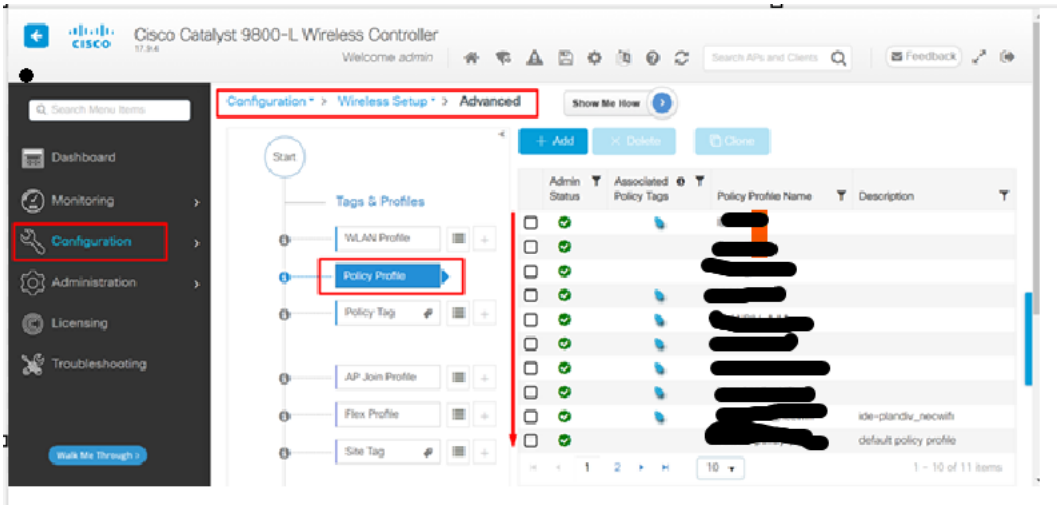
Configuration > Wireless Setup > Advanced > Start Now



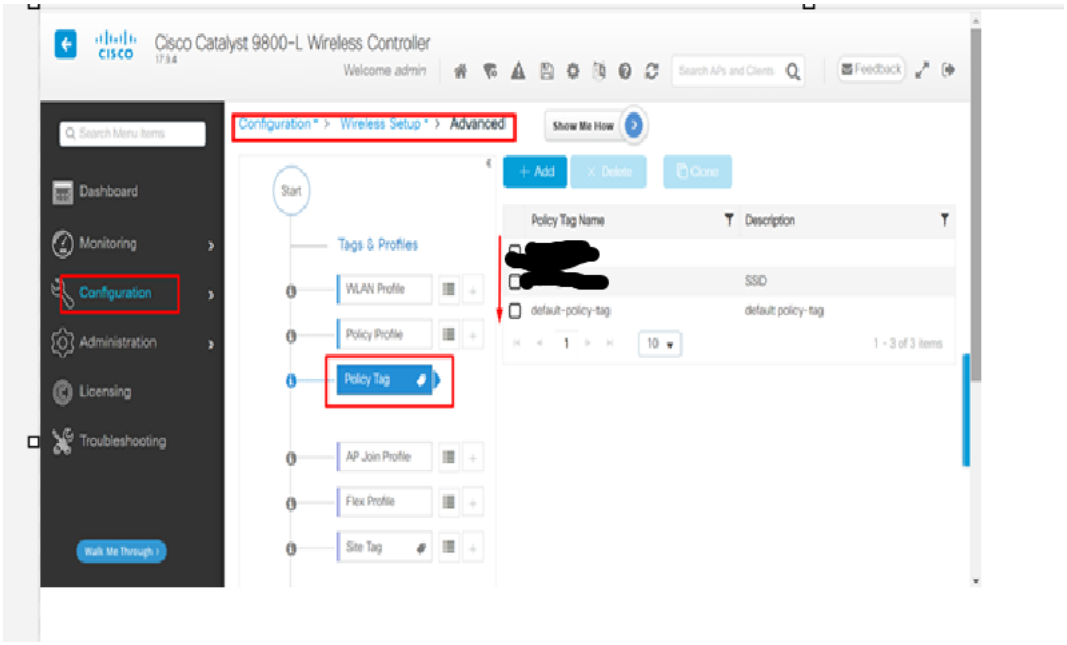
<u>WLAN Profile Configuration:</u> A WLAN profile on a Cisco Wireless LAN Controller (WLC) is a set of parameters that define how a WLAN will operate. This includes parameters such as the SSID, security settings, and bandwidth allocation.



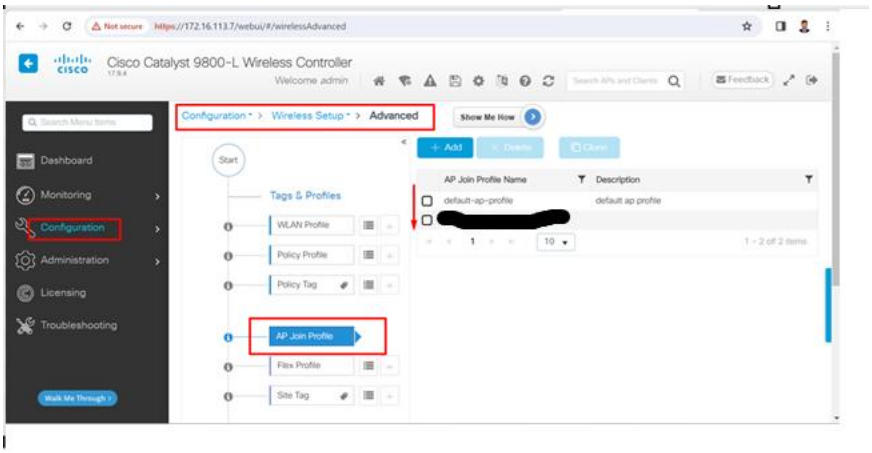
Policy Profile Configuration: A policy profile on a Cisco Wireless LAN Controller (WLC) is a set of parameters that define how traffic from wireless clients will be handled. This includes parameters such as the VLAN assignment, QoS settings, and DHCP configuration.



Policy Tag: Policy tags on a Cisco Wireless LAN Controller (WLC) are used to group WLAN profiles and policy profiles together. This can be useful for simplifying the management of your wireless network and for ensuring that wireless clients are always connected to the appropriate WLAN and policy profile.

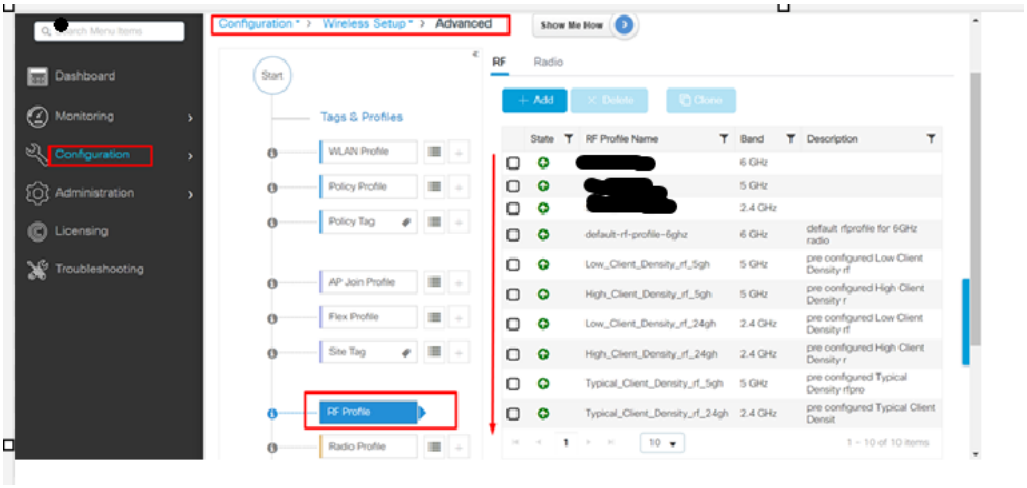


AP Join Profile: AP join profiles on a Cisco Wireless LAN Controller (WLC) are used to configure the parameters that access points (APs) use to join the WLC. This includes parameters such as the WLC's IP address, the AP's name and password, and the AP's role in the wireless network.

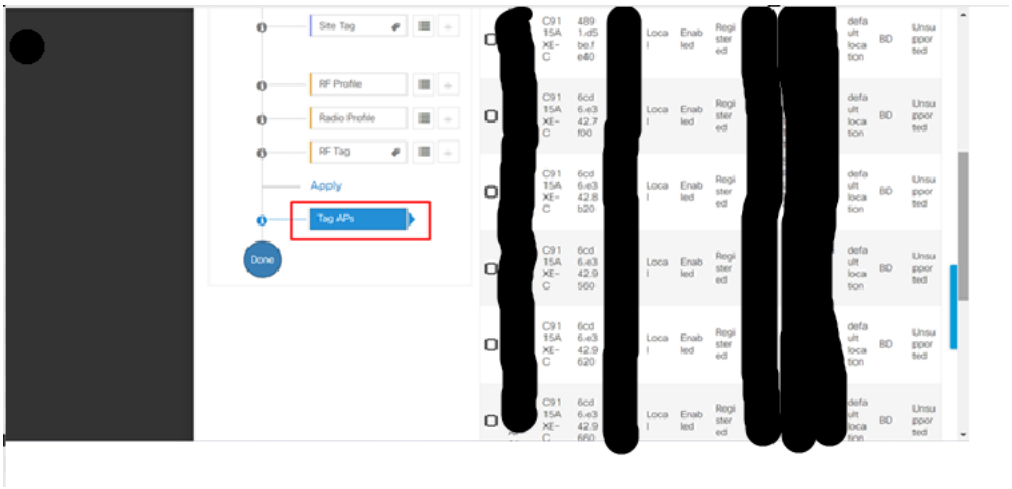


RF Profile:

RF profiles on a Cisco Wireless LAN Controller (WLC) are used to group access points (APs) together and configure their radio frequency (RF) settings. This can be useful for tailoring the RF performance of the wireless network to the specific needs of the environment.



Tag Aps: Tag AP configuration on a Cisco Wireless LAN Controller (WLC) is used to group access points (APs) together and apply policy tags to them. This can be useful for simplifying the management of the wireless network and for ensuring that APs are configured with the correct policy tags. (N.B : AP hostname, Serial Number, Policy and Profile tags are covered)


Site Tag
RF Profile
Radio Profile
RF Tag
Apply
Tag APs
Done