

## 16.4 DHCP and DNS configuration of thick AP

The AP itself can act as a DHCP service provider for the connected clients and configuration for the same is executed from this screen. A basic overview of the screen to enable thick AP as DHCP server is given below:

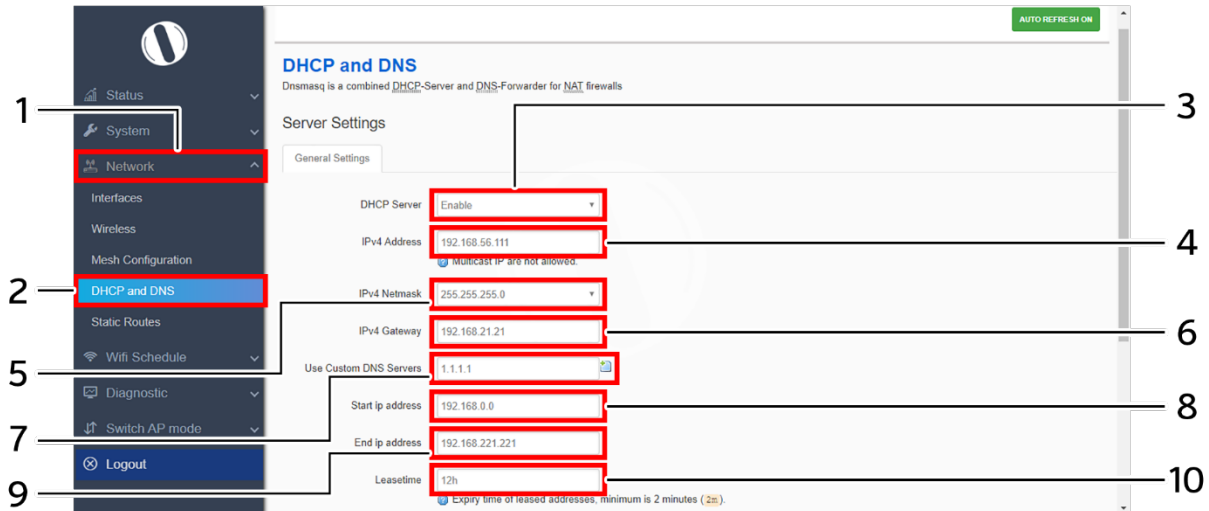


Figure 53: Basic overview of the screen to enable thick AP as DHCP server

Follow the steps given below to enable thick AP as DHCP server:

Table 43: List of actions to enable thick AP as DHCP server

Callout	Name	Description
1.	Network	Click on “Network” dropdown
2.	DHCP and DNS	Click on “DHCP and DNS” option
3.	DHCP Server	Enable the thick AP as DHCP server and enter the following parameters
4.	IPv4 Address	Enter the address in IPv4 format for the DHCP server
5.	IPv4 Netmask	Select the netmask from the dropdown list
6.	IPv4 Gateway	Enter the address in IPv4 format for the DHCP gateway
7.	Use Custom DNS Servers	Enter the IP address for DNS server. Click on add icon and multiple DNS servers
8.	Start IP Address	Enter a start IP address. The DHCP server assigns the new IP addresses to the clients from the defined start IP address
9.	End IP Address	Enter an end IP address. The DHCP server assigns the IP addresses to the clients till the defined end IP address
10.	Lease Time	Enter a value to set a limit on the lease time. New addresses will be assigned to the associated clients once the previous lease has expired as per the specified lease time

Click “Save & Apply” to enable thick AP as DHCP server or click “Reset” to configure the same again.

### 16.4.1 Static/Active lease settings

Static leases are used to assign fixed IP addresses and symbolic hostnames to DHCP clients. They are also required for non-dynamic interface configurations where only hosts with a corresponding lease are served. A basic overview of the screen to configure a static lease is given below:

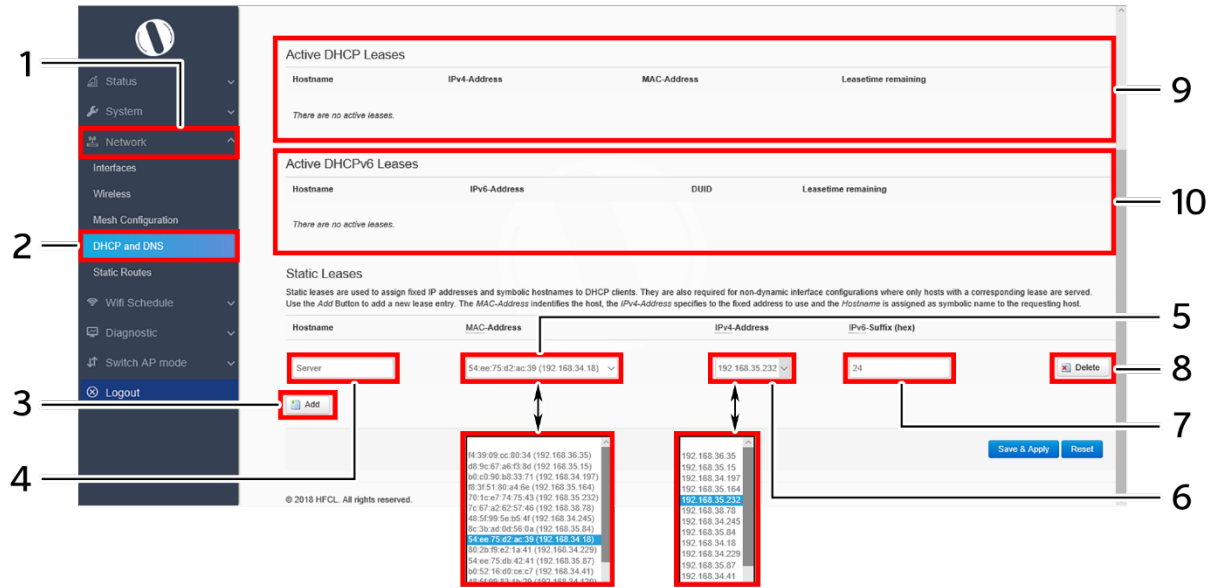


Figure 54: Basic overview of the screen to configure a static lease

Follow the steps given below to configure a static lease:

Table 44: List of actions to configure a static lease

Callout	Name	Description
1.	Network	Click on “Network” dropdown
2.	DHCP and DNS	Click on “DHCP and DNS” option
3.	Add	Click on “Add” option to add a new static lease. The user can add multiple static leases
4.	Host Name	Provide a unique name to the static lease for identification
5.	MAC-Address	Click on the dropdown and select a MAC-address from the list. The selected MAC-address identifies the host
6.	IPv4 Address	Click on the dropdown and select an IPv4-address from the list. The selected IPv4-address is assigned to the host as a fixed address
7.	IPv6-Suffix	Enter the IPv6-suffix for the host

Click “Save & Apply” to save the static lease or click “Reset” to configure the same again.

8.	Delete	Click on the “Delete” option to remove the respective static lease
9.	Active DHCP Leases	Displays all active IPv4 leases in a listed form
10.	Active DHCPv6 Leases	Displays all active IPv6 leases in a listed form

## 16.5 Static Routes

User can configure static routes and redirect packets to the destination network. A static route is a pre-determined pathway that a packet must travel to reach a specific host or network.

A basic overview of the static route configuration screen for thick AP is given below:

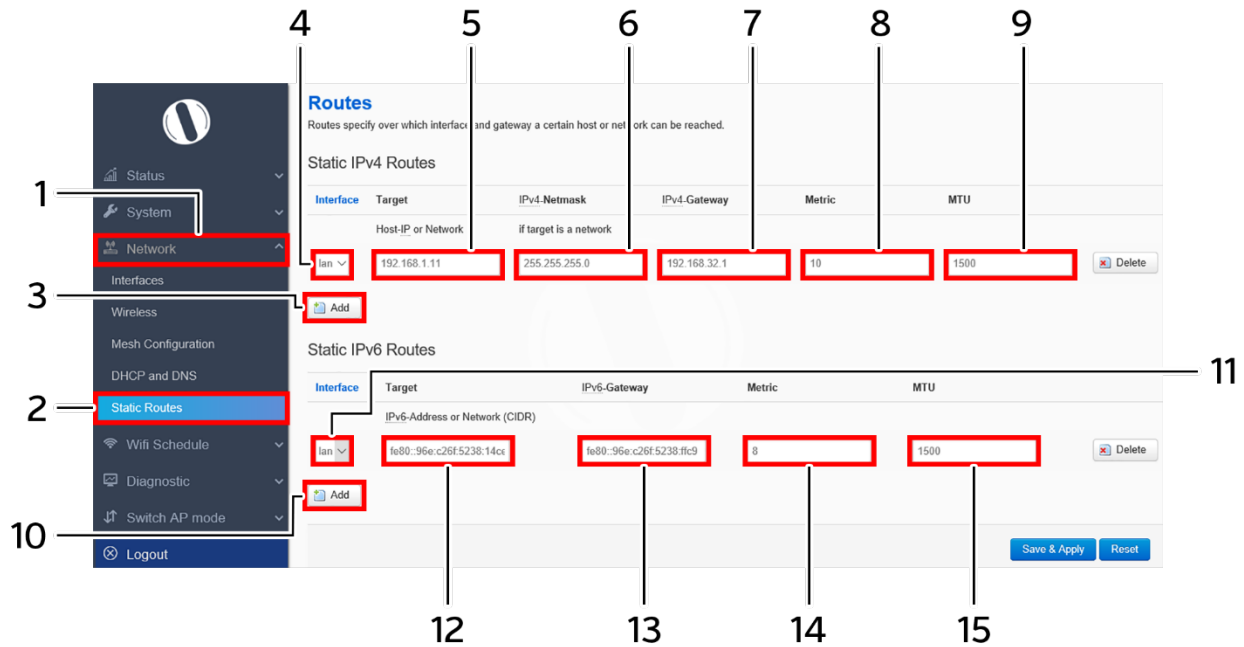


Figure 55: Basic overview of the static route configuration screen for thick AP

Follow the steps given below for static route configuration of thick AP:

Table 45: List of actions for static route configuration of thick AP

Callout	Name	Description
1.	Network	Click on “Network” dropdown
2.	Static Route	Click on “Static Route” option
Static IPv4 Routes		
3.	Add	Click on “Add” option to add a new static route in IPv4 format
4.	Interface	Select the physical network interface through which this route is accessible from the dropdown list (WAN or LAN)
5.	Target	Enter the IP address of the destination host or network in IPv4 format to which the route leads.
6.	IPv4-Netmask	Enter the IPv4 netmask for the destination host or network. By default subnet mask is set to 255.255.255.255
7.	IPv4-Gateway	Enter the IP address of the gateway in IPv4 format through which the destination host or network can be reached. If the current AP is being used to connect network with the Internet, then your gateway IP is the AP's IP address. If you



Callout	Name	Description
		have another router handling your network's Internet connection, enter the IP address of that router instead
8.	Metric	Enter a value that defines the priority of the route. If multiple routes to the same destination exist, the route with the lowest metric is chosen
9.	MTU	Enter the MTU size, by default it is set to 1500.

Click “Save & Apply” to save the static IPv4 route configuration or click “Reset” to configure the same again.

Static IPv6 Routes		
10.	Add	Click on “Add” option to add a new static route in IPv6 format
11.	Interface	Select the physical network interface through which this route is accessible from the dropdown list (WAN or LAN)
12.	Target	Enter the IP address of the destination host or network in IPv6 format to which the route leads.
13.	IPv6-Gateway	Enter the IP address of the gateway in IPv6 format through which the destination host or network can be reached. If the current AP is being used to connect network with the Internet, then your gateway IP is the AP's IP address. If you have another router handling your network's Internet connection, enter the IP address of that router instead
14.	Metric	Enter a value that defines the priority of the route. If multiple routes to the same destination exist, the route with the lowest metric is chosen
15.	MTU	Enter the MTU size, by default it is set to 1500.

Click “Save & Apply” to save the static IPv6 route configuration or click “Reset” to configure the same again.

## 17 Wi-Fi Schedule

This screen is provided with options to create, edit, or delete a Wi-Fi schedule. A basic overview of the screen is given below:

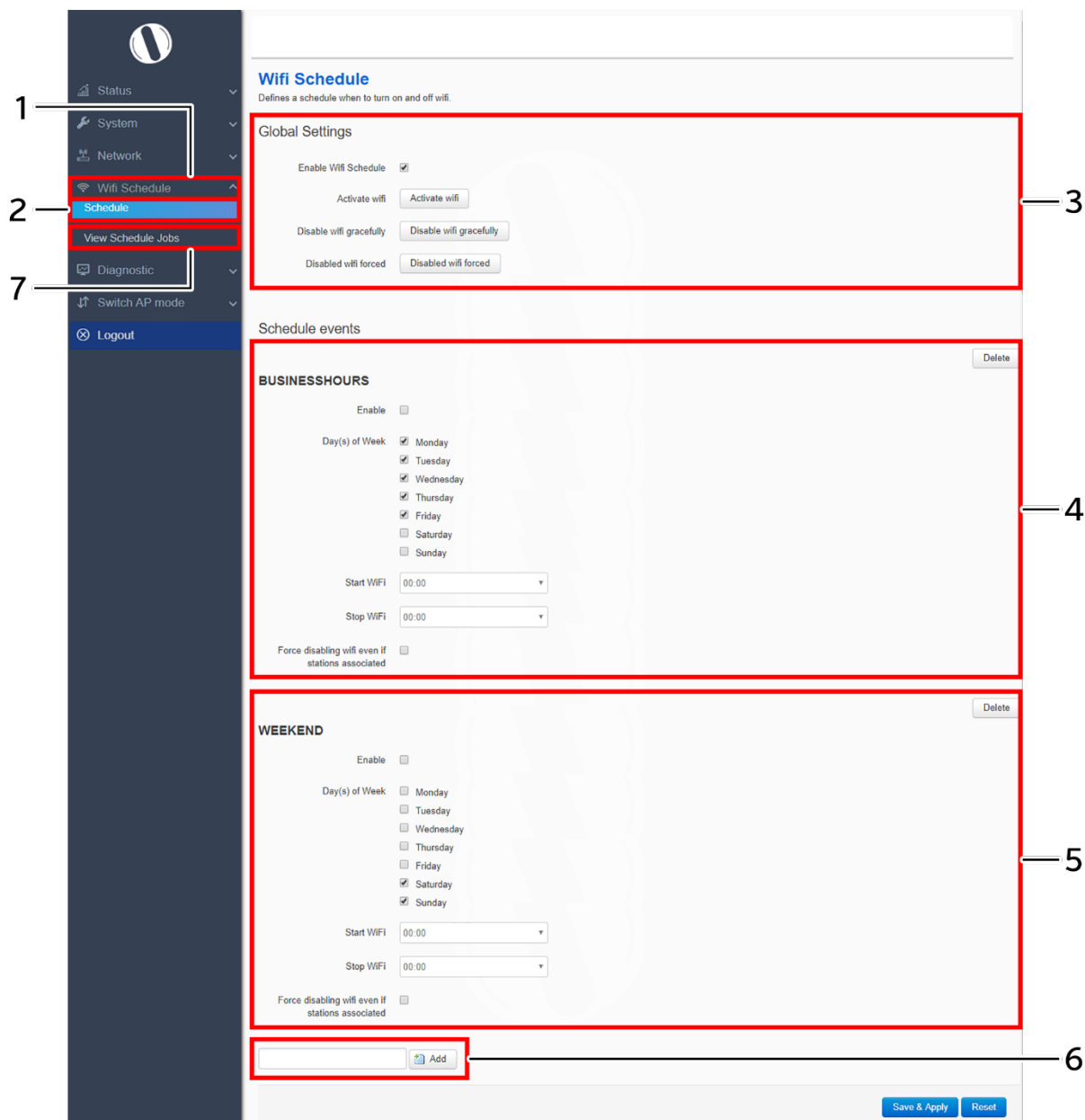


Figure 56: Basic overview of the Wi-Fi schedule screen



Follow the steps given below to create, edit, or delete a Wi-Fi schedule:

*Table 46: List of actions to create, edit, or delete a Wi-Fi schedule*

<b>Callout</b>	<b>Name</b>	<b>Description</b>
1.	Wi-Fi Schedule	Click on “Wi-Fi Schedule” dropdown
2.	Schedule	Click on “Schedule” option
3.	Global Settings	Configure the Global settings for a schedule. Refer image above for parameters
4.	Schedule Event/Business Hours	Enable and set the schedule in business hours for selected global settings. If saved, the global settings are applied at set schedule
5.	Schedule Event/Weekend Hours	Enable and set the schedule in weekend hours for selected global settings. If saved, the global settings are applied at set schedule
6.	Add	Click on “Add” option to create a new schedule
7.	View Scheduled Jobs	Click on the option to view the scheduled jobs

Click “Save & Apply” to save the static Wi-Fi schedule or click “Reset” to configure the same again.

## 18 Diagnostics

Following are the diagnostic features provided in thick AP GUI.

### 18.1 Routes

This screen is provided to view the active routes on the system. A basic overview of the screen to view the active routes is given below:

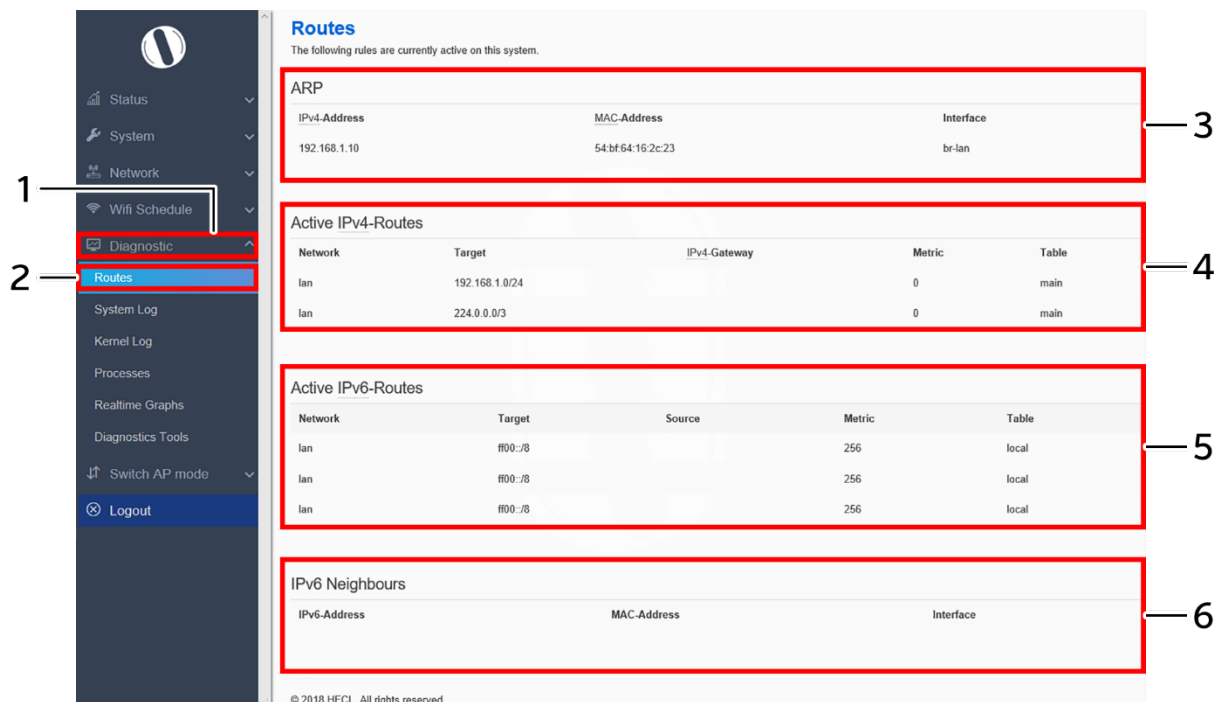


Figure 57: Basic overview of the screen to view the active routes

Follow the steps given below to view the active routes on the system:

Table 47: List of actions to view the active routes on the system

Callout	Name	Description
1.	Diagnostics	Click on “Diagnostics” dropdown
2.	Routes	Click on “Routes” option
3.	ARP	Displays the MAC addresses of all reachable IPs. The Address Resolution Protocol (ARP) is a communication protocol used for discovering the link layer address, such as a MAC address associated with a given internet layer address, typically an IPv4 address.
4.	Active IPv4 Routes	Displays all the IPv4 routes which are active at present
5.	Active IPv6 Routes	Displays all the IPv6 routes which are active at present
6.	IPv6 Neighbors	Displays neighboring IPv6 devices of NDP enabled devices. The Neighbor Discovery Protocol (NDP) is a protocol in the Internet protocol suite used with IPv6. It operates at the link layer of the Internet model, and is responsible for gathering various information

Callout	Name	Description
		to determine the link-layer address of a neighbor on the same network (local link), verify the reachability of a neighbor, and track neighboring devices

## 18.2 System Log

This screen is provided to view the AP logs if the user faces any issue or wants to view the back-end logs. Only new logs are shown in this screen. However, old logs are stored in the database but will not be shown in this screen.

A basic overview of the System Log screen is given below:

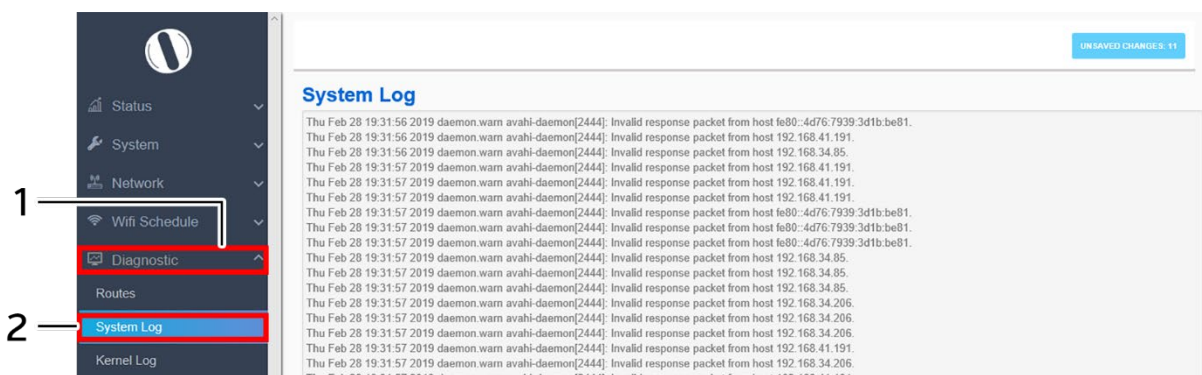


Figure 58: Basic overview of the System Log screen

Follow the steps given below to view the system log of AP:

Table 48: List of actions to view the system log

Callout	Name	Description
1.	Diagnostics	Click on “Diagnostics” dropdown
2.	System Log	Click on “System Log” option. Logs relevant to the AP application software are displayed here for monitoring purpose



### 18.3 Kernel Log

Boot logs, driver logs, Wi-Fi and firmware related logs are listed in this screen. Kernel log will be accumulated from boot up time till shut down time of the respective AP.

A basic overview of the Kernel Log screen is given below:



Figure 59: Basic overview of the Kernel Log screen

Follow the steps given below to view the Kernel log of the AP:

Table 49: List of actions to view the kernel log

Callout	Name	Description
1.	Diagnostics	Click on “Diagnostics” dropdown
2.	Kernel Log	Click on “Kernel Log” option

## 18.5 Real-time Graphs

The real time load/traffic graph shows the CPU load of last 3 min and the graph is refreshed at every 3 sec interval. In addition to the displayed graph the user can find the inbound and outbound traffic of the associated SSIDs, bridge interface, and Ethernet interfaces along with average and the peak traffic values. A basic overview of the Real-time graphs traffic screen is given below:

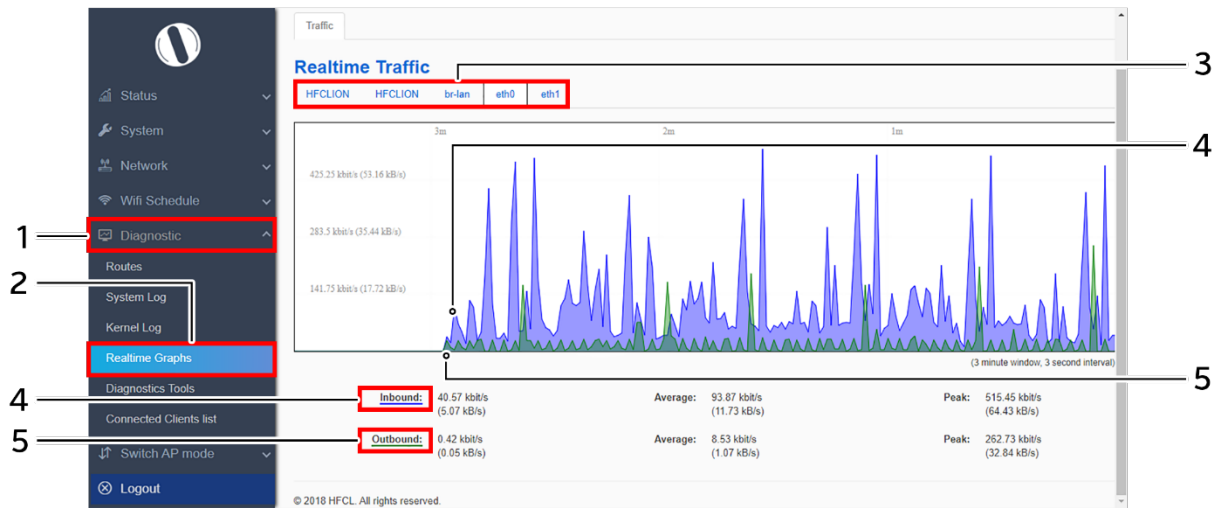


Figure 60: Basic overview of the Real-time graphs/ traffic

Follow the steps given below to view the real-time traffic graphs of the AP:

Table 50: List of actions to view real-time traffic graphs

Callout	Name	Description
1.	Diagnostics	Click on “Diagnostics” dropdown
2.	Real-time graphs	Click on “Real-time graphs” option
3.	Real-time Traffic	Select any of the interface to check the inbound and outbound traffic across it. The graphs are available to show the traffic across SSIDs, Bridge Interface, and Ethernet Interface (eth-0 and eth-1)
4.	Inbound	Displays the inbound traffic at the selected interface in color coded format
5.	Outbound	Displays the outbound traffic at the selected interface in color coded format

## 18.6 Diagnostic Tools

As part of diagnostics, the user can perform the following activities:

1. The user can check if the link connection is established or not with “Ping” option
2. The user can trace the route of the established link with “Traceroute” option

### 18.6.1 Check the network connection/status

This utility is used to test connectivity between the respective AP and another device on the network. A basic overview of the Diagnostic Tools screen to check the connection status is given below:

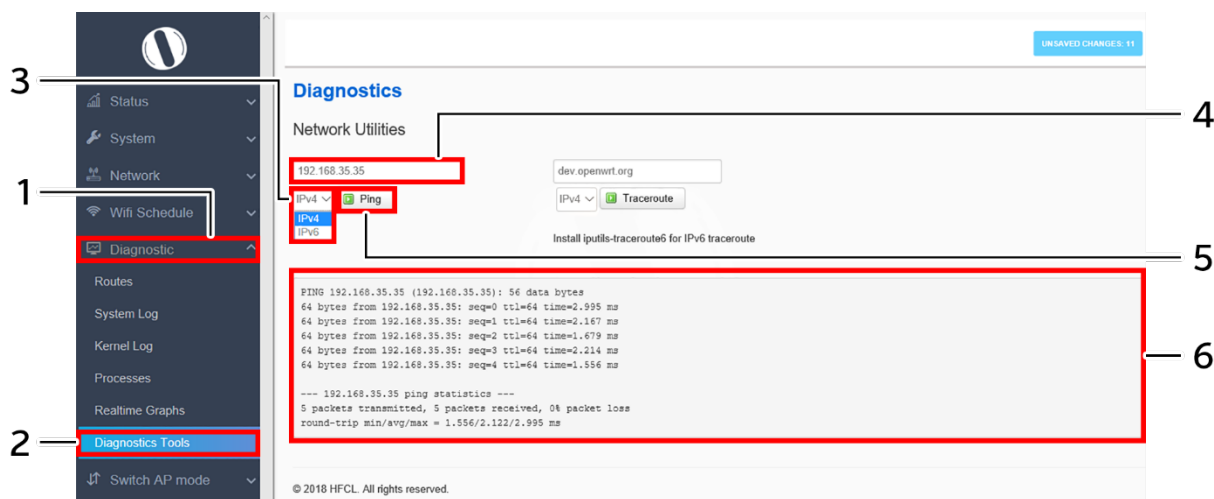


Figure 61: Basic overview of the diagnostics tool screen to check the connection status

Follow the steps given below to check the connection status:

Table 51: List of actions to check the connection status

Callout	Name	Description
1.	Diagnostics	Click on “Diagnostics” dropdown
2.	Diagnostics Tools	Click on “Diagnostics Tools” option
3.	Address type	Select the IP address type from the dropdown list (IPv4, IPv6)
4.	IP Address	Enter the IP address of the device with which the user wants to check the connection status
5.	Ping	Click on “Ping” option to check the connection status. It will check the network connection/status with entered IP address
6.	Feedback window	Check the response on the feedback window to know the connection status. The status is shown in terms of transmitted packets and received packets with packet data loss

### 18.6.2 Check the route of the established network connection

This utility will display all the routers present between the destination IP address and this AP. Up to 30 “hops” (intermediate routers) between the AP and the destination can be monitored.

A basic overview of the Diagnostic Tools screen to check the route of established connection is given below:

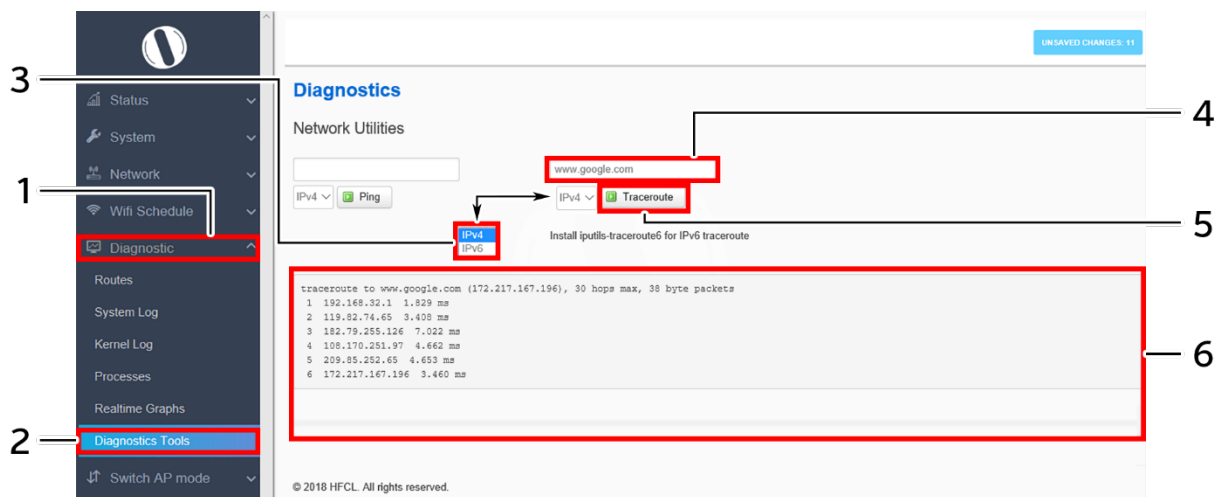


Figure 62: Basic overview of the diagnostics tool screen to check the route of established connection

Follow the steps given below to check the route of established connection:

Table 52: List of actions to check the route of established connection

Callout	Name	Description
1.	Diagnostics	Click on “Diagnostics” dropdown
2.	Diagnostics Tool	Click on “Diagnostics Tool” option
3.	Address type	Select the IP address type from the dropdown list (IPv4, IPv6)
4.	IP Address	Enter the IP address or the domain name of the destination with which the user wants to check the connection route
5.	Traceroute	Click on “Traceroute” option to check the connection route. It traces the network path/route to the entered IP address or domain name
6.	Feedback window	Check the response on the feedback window to know the connection route.

## 18.7 Connected Clients

The list of connected clients along with the relevant information in respective information columns is populated in this screen. A basic overview of the screen to show connected clients is given below:

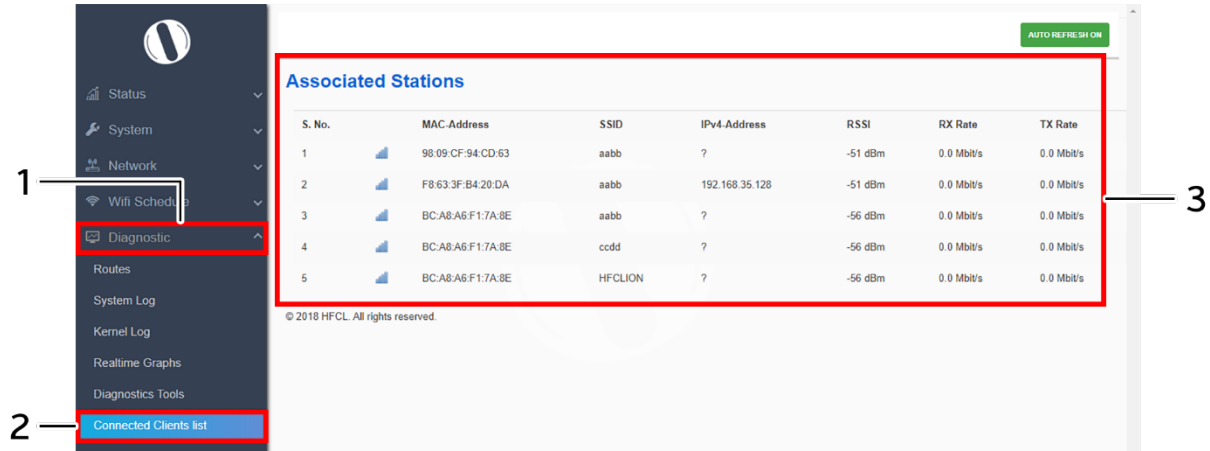


Figure 63: Basic overview of the screen to show connected clients

Follow the steps given below to view connected clients:

Table 53: List of actions to view connected clients

Callout	Name	Description
1.	Diagnostics	Click on “Diagnostics” dropdown
2.	Connected Clients	Click on “Connected Clients” option
3.	Client List	Displays all connected clients a listed form. Refer the above image for more information on relevant information with respect to connected clients

## 19 Switch AP Mode

A basic overview of the screen to switch mode from thick AP to thin AP is given below:

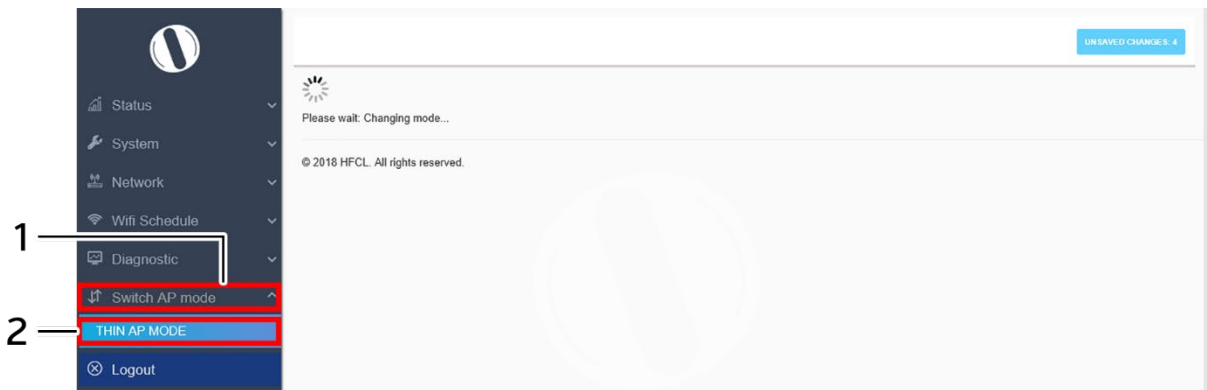


Figure 64: Basic overview of the screen to switch mode from thick AP to thin AP

Follow the steps given below to switch mode from thick AP to thin AP:

Table 54: List of actions to switch mode from thick AP to thin AP

Callout	Name	Description
1.	Switch AP Mode	Click on “Switch AP Mode” dropdown
2.	Thin AP Mode	Click on “Thin AP Mode” option

The screen displays the message as “Please wait changing mode”

## 20 Logout

Click on the logout option to terminate the user session.

## 21 Installation Setup

IO Indoor AP can be mounted onto the wall or ceiling, whereas the outdoor AP can be wall-mounted or pole mounted. Perform the steps discussed in below sections for the appropriate installation of indoor and outdoor APs:

### 21.1 Mounting of Dual Band 2x2:2 Indoor Access Point (Wall and Ceiling)

1. Refer the image below for attaching parts required for wall/ceiling mounting of AP:

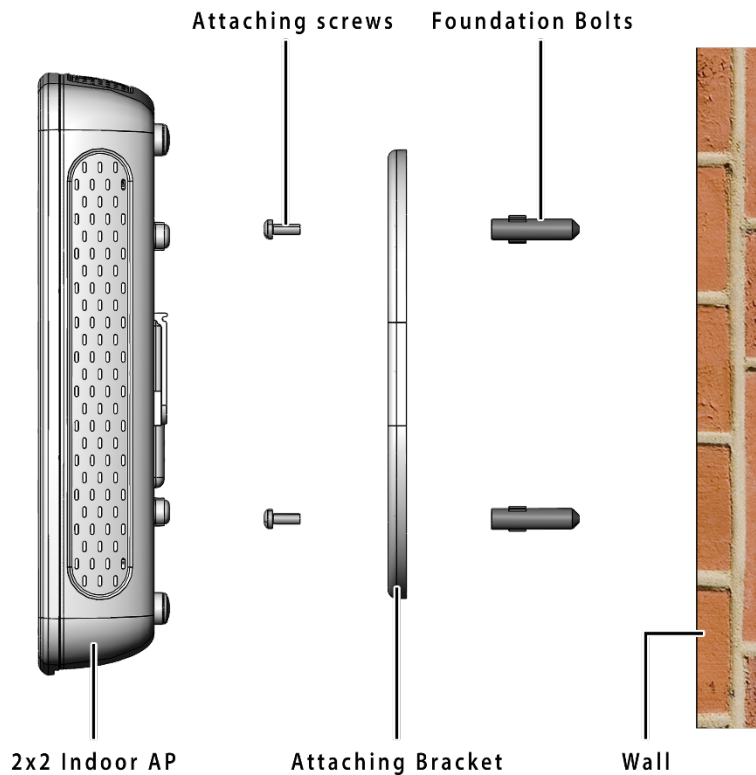


Figure 65: Attaching parts for wall/ceiling mounting of indoor AP

2. Place the attaching bracket on to the wall or ceiling and mark the holes to drill. Drill holes of appropriate size.
3. Insert the foundation bolts in the drilled holes of wall/ceiling.

4. Use the supplied screws and mount the attaching bracket on to the wall or ceiling as shown below:

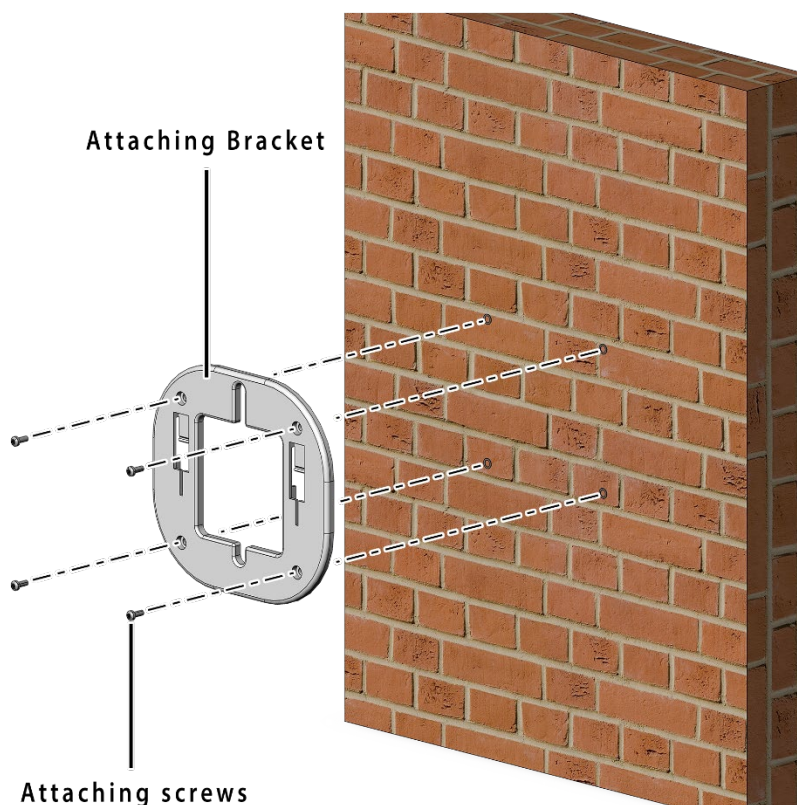


Figure 66: Attaching bracket on to the wall or ceiling for indoor AP

**Note:** Make sure that the attaching bracket is tightly installed before mounting the access point on the wall or ceiling.

5. Refer the image below for wall mounted attaching bracket:

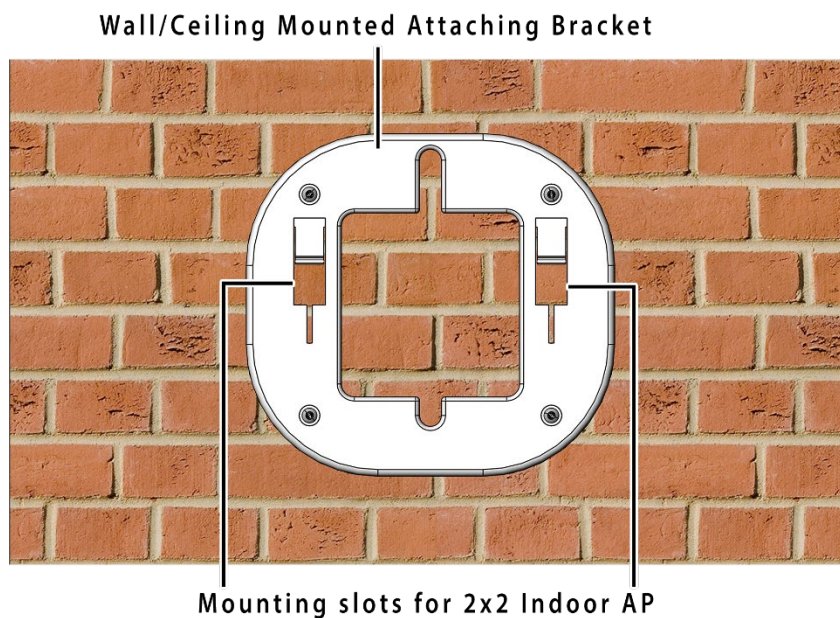


Figure 67: Wall/ceiling mounted attaching bracket



6. Align the mounting slots of indoor AP and attaching bracket as shown below:

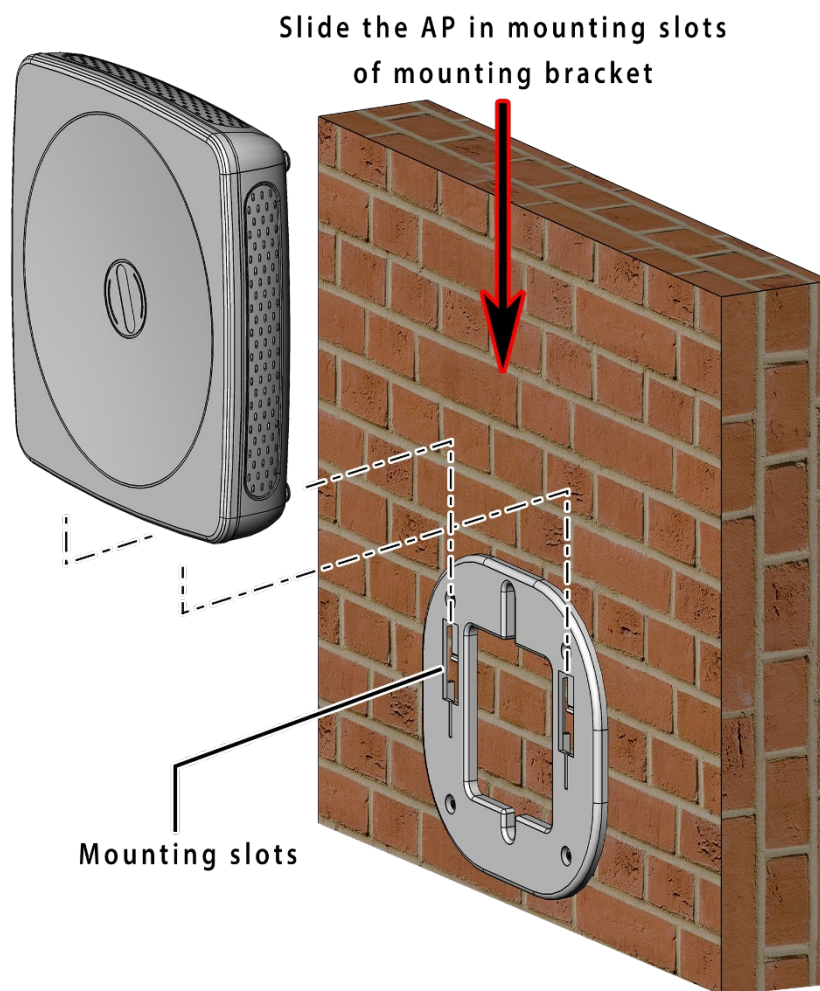


Figure 68: Alignment of mounting bracket with indoor AP

7. Refer the image below for backside view of wall/ceiling mounted AP:

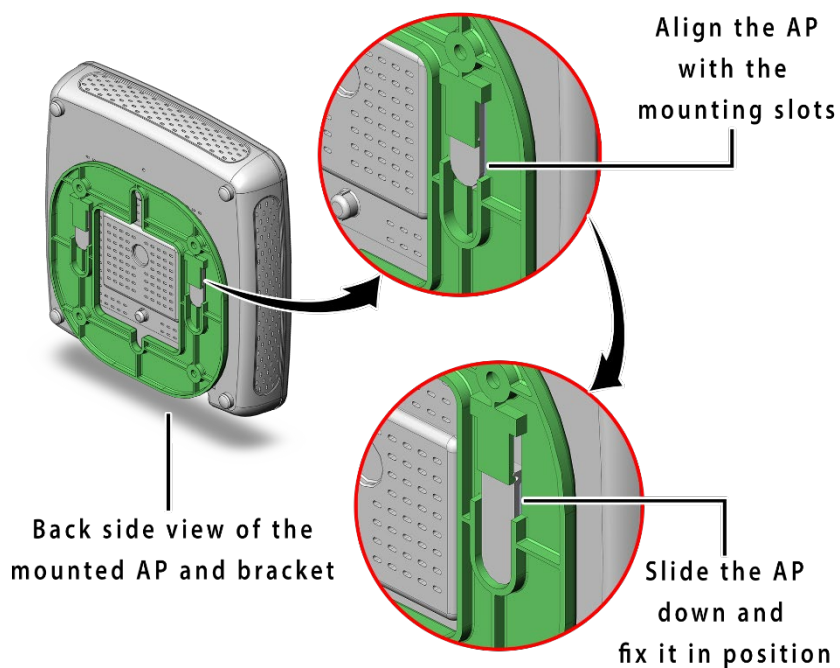


Figure 69: Backside view of attaching bracket with indoor AP

8. The wall or ceiling mounted AP is shown below:

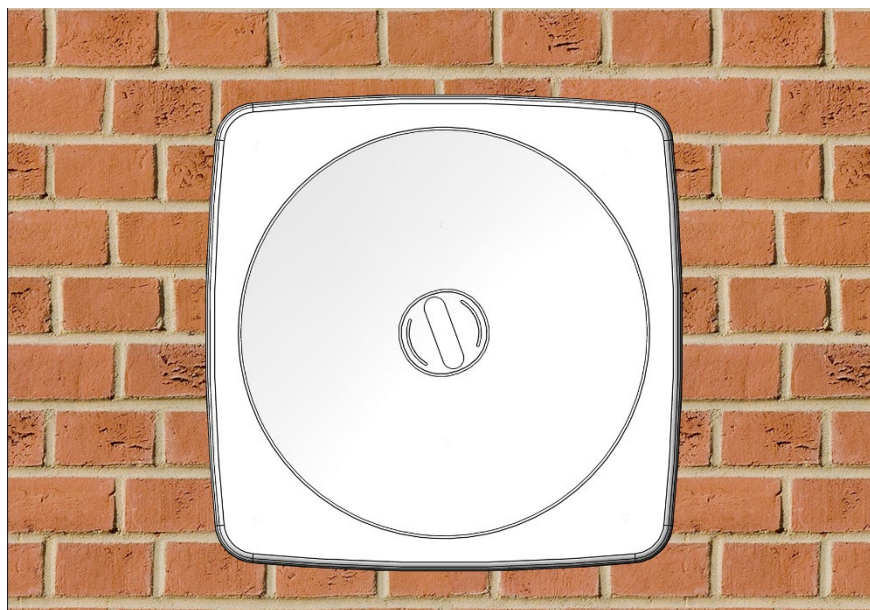


Figure 70: Wall/ceiling mounted indoor AP

9. Slightly push and slide the access point out from the mounting slots of attaching bracket to unmount the AP.

## 21.2 Mounting of Dual Band 2x2:2 Outdoor Access Point (Pole and Wall)

2x2 outdoor AP has four holes on its back side for the attachment of mounting bracket, as shown in “Figure 7: Back view of the outdoor AP” of this document. The mounting bracket is designed in such a way that the AP can be mounted on the wall as well as on the pole with the help of its attaching parts. It provides the freedom of movement to the AP even after the mounting.

1. The mounting bracket is fixed onto the mounting holes of 2x2 outdoor AP as shown in the figure below:

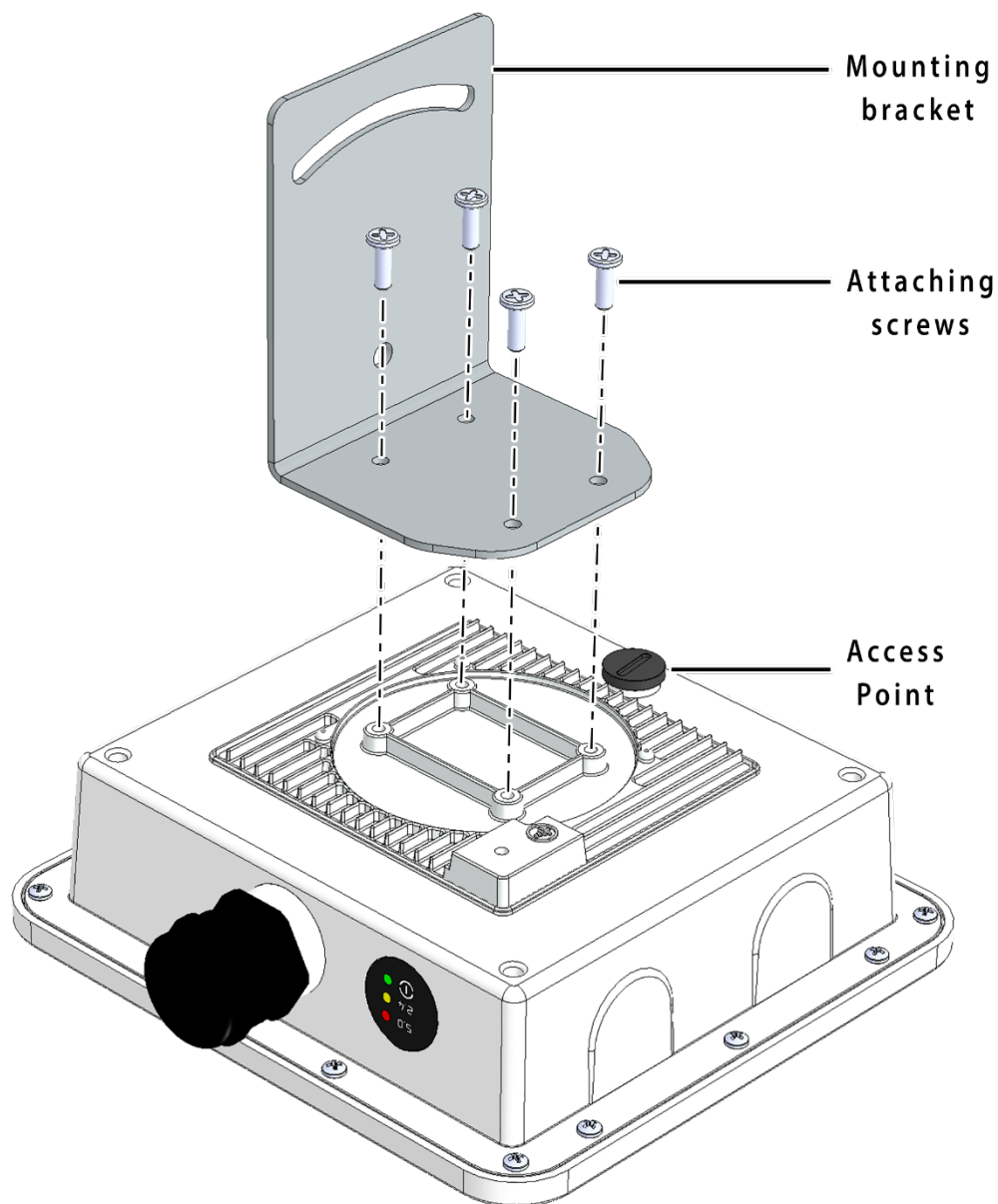
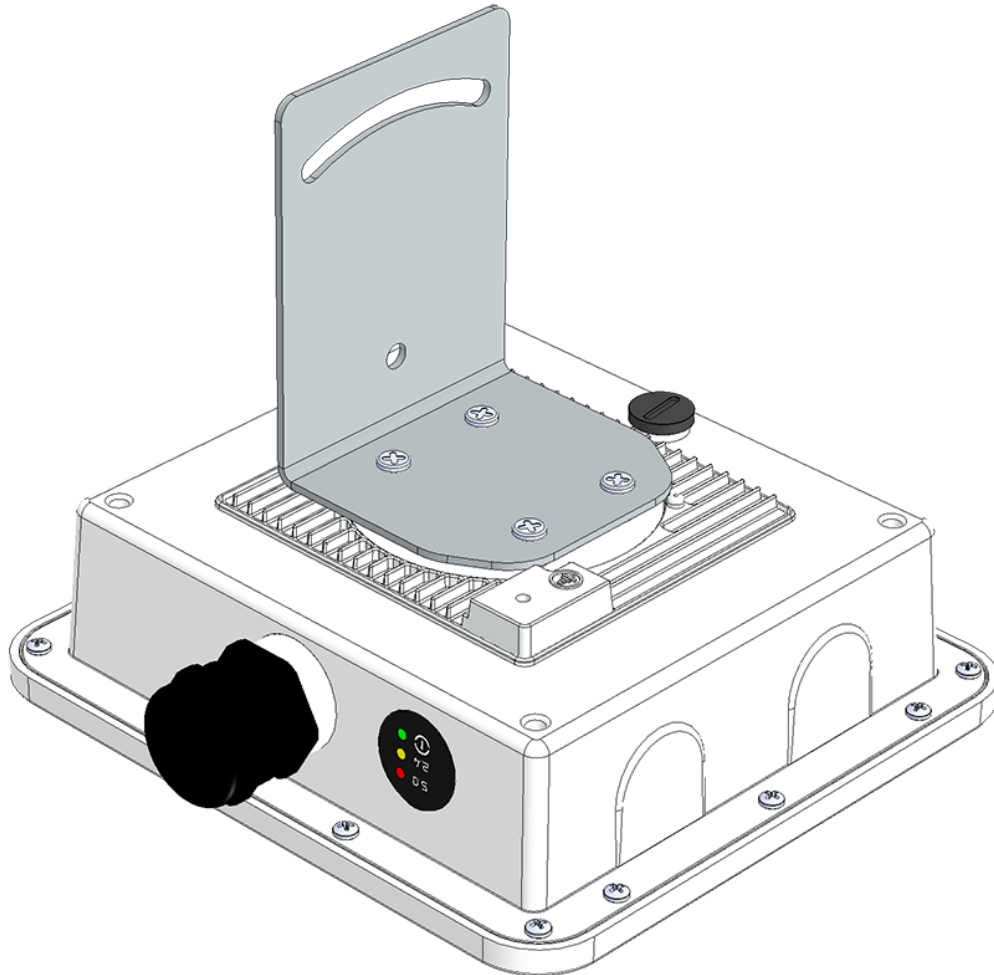


Figure 71: Mounting bracket attachment with the 2x2 outdoor AP

- Final alignment of the mounting bracket with 2x2 outdoor AP is as shown below:



*Figure 72: Mounting bracket alignment with the 2x2 outdoor AP*

The mounting instructions of 2x2 outdoor AP is detailed in further sections below.

### 21.2.1 2x2 outdoor AP mounting to the Pole

Follow the steps given below and mount the device onto the pole:

1. Align the bracket mounted AP with pole holder and U-bolt as shown below:

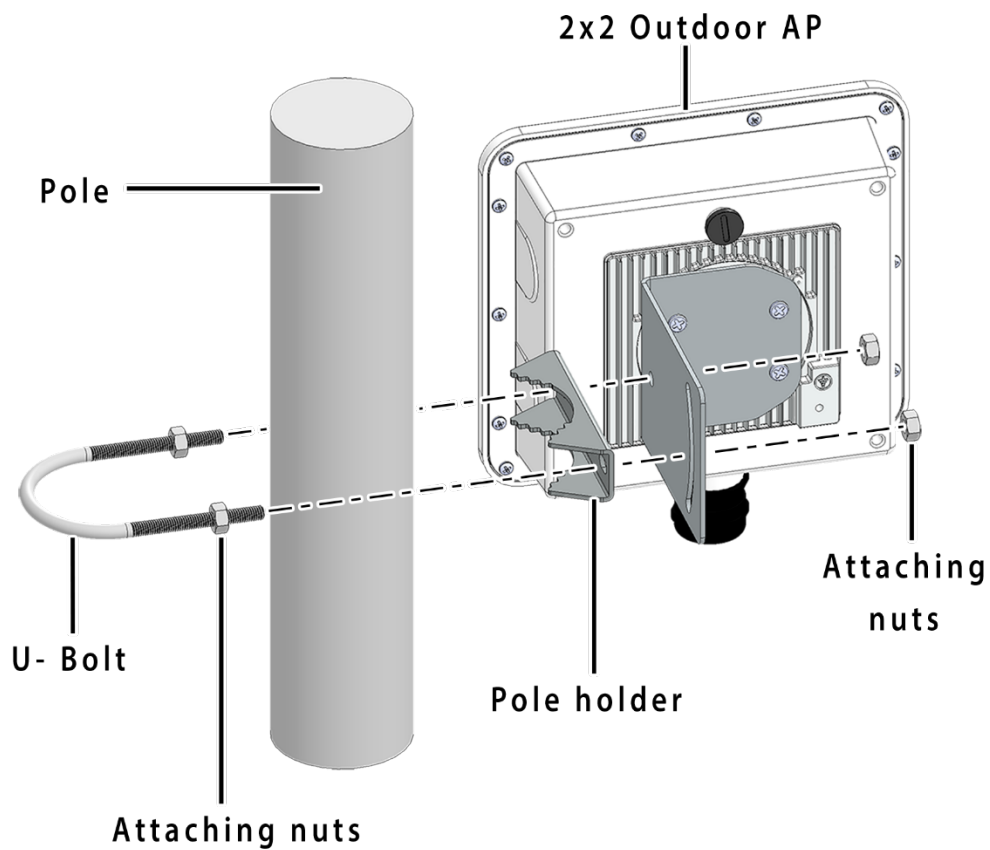


Figure 73: Overview of the 2x2 outdoor AP with pole and mounting bracket attaching parts