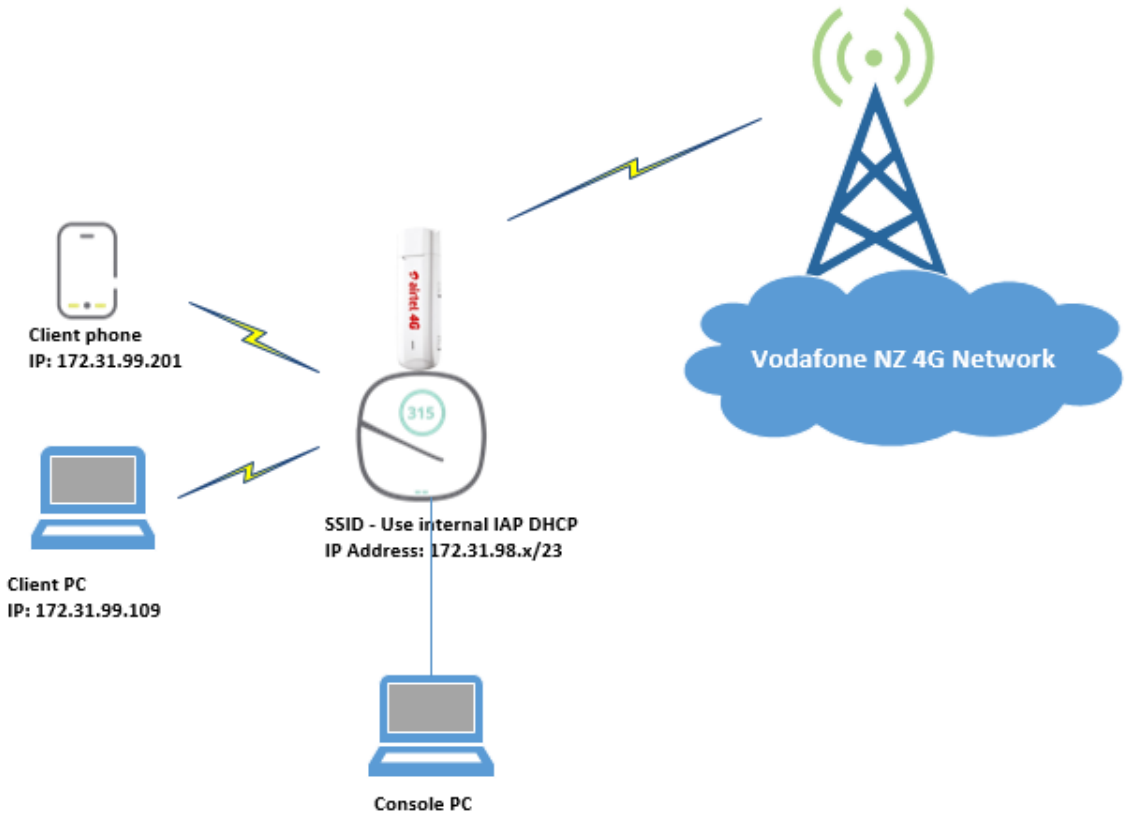
How To: Instant AP 3/4G Uplink

Instant supports the use of 3G and 4G USB modems to provide the Internet backhaul to an Instant network. The 3G or 4G USB modems can be used to extend client connectivity to places where an Ethernet uplink cannot be configured.

This network configuration setup focus on single IAP with 4G modem configuration and uplink redundancy with wired DSL and 4G modem.

Network Setup



Note: Client IP assigned by internal DHCP server.

Hardware Tested:

- **IAP – IAP-315,305 and 205H**
    - Version 6.5.2.0-6.5.2.0_59123
    - DC powered.
- **4G Modem – Huawei E3372h-607**

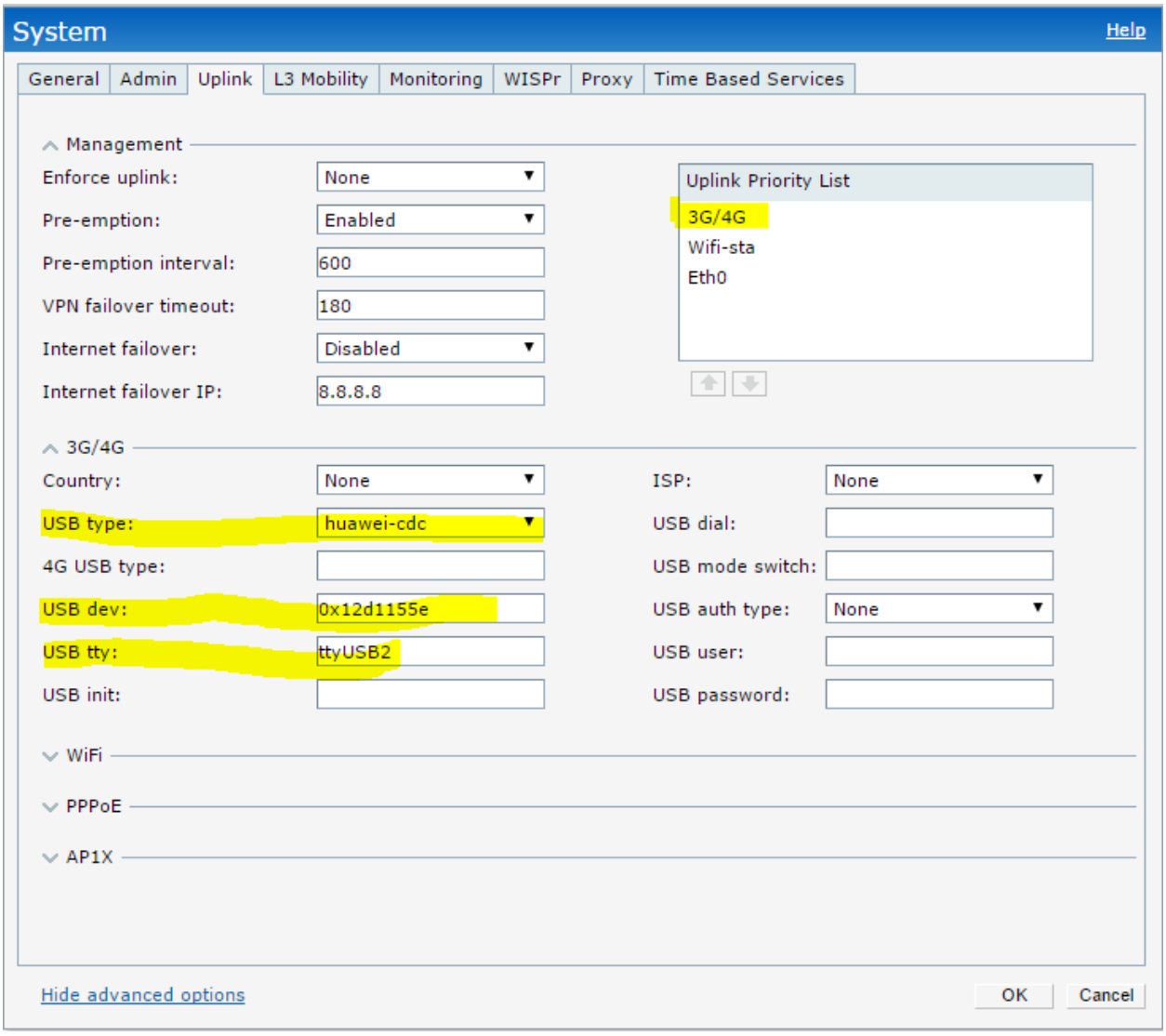
- List of supported 4G modems http://www.arubanetworks.com/support-services/interoperability/#4g-usb-instant

- **SIM card – Vodafone NZ**

WEBUI Configuration:

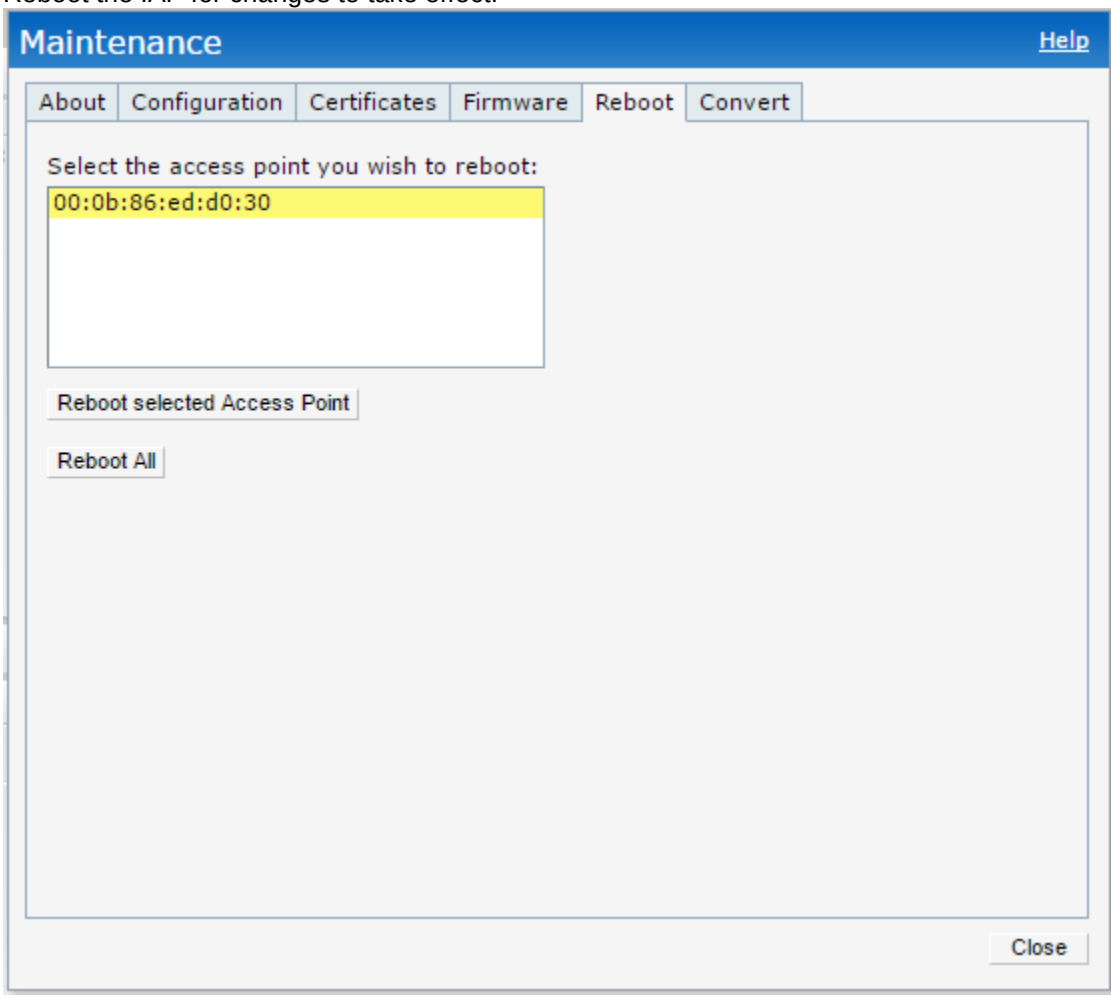
Note: In this case, already created SSID on IAP with client ip assignment provided by VC.

1. Click the **System** link on the Instant main window.
2. In the **System** window, click the **show advanced option** settings link.
3. Click the **Uplink** tab.
4. Click **3G/4G** and **Uplink Priority List** and configure the following parameter as shown in Figure below.

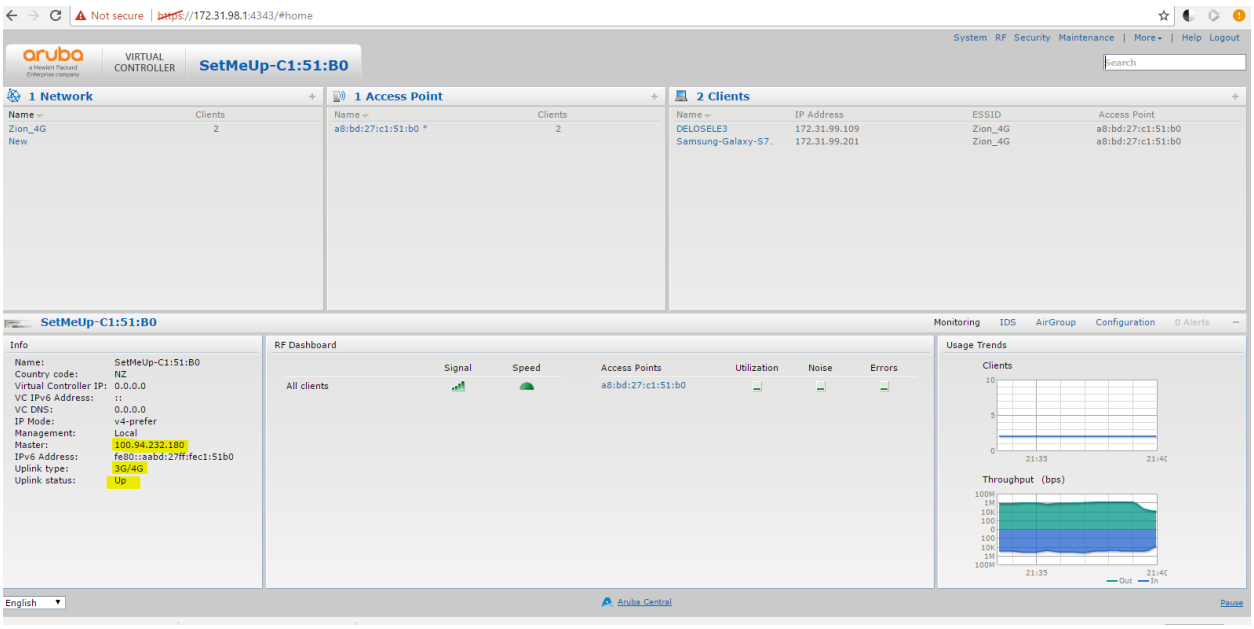


5. Click **OK.**

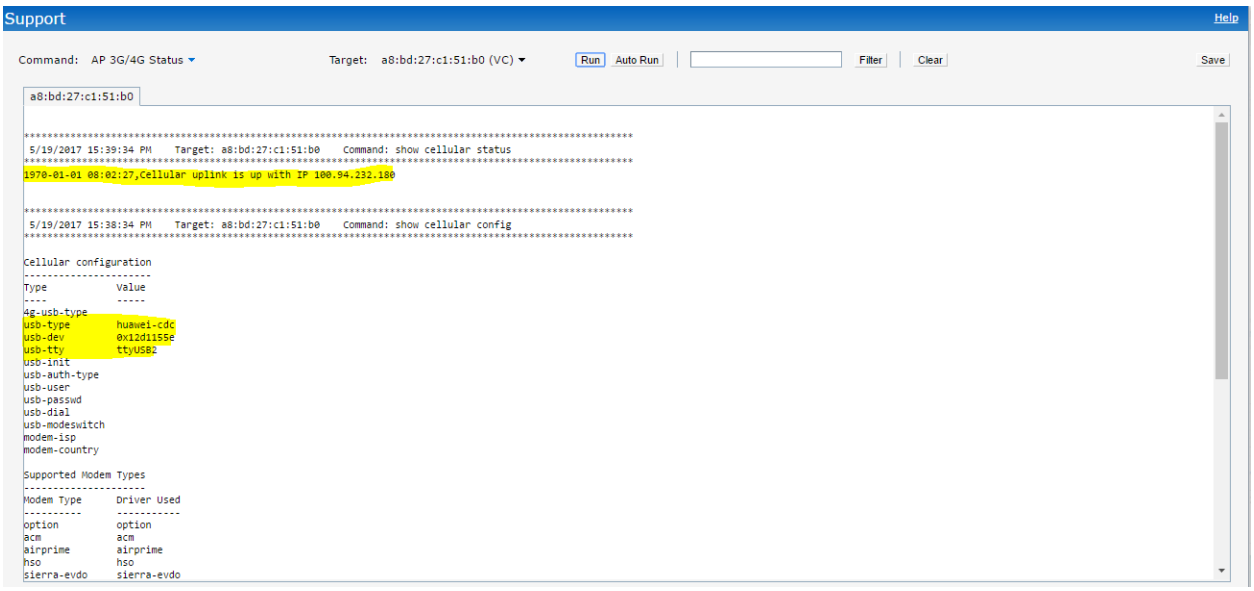
6. Reboot the IAP for changes to take effect.



7. After Reboot access the WEBUI via the ip address of your VC (it can be using the special ip address provided by your 4G modem link provider or gateway ip address which is IAP internal DHCP server).



8. Check the cellular status and configuration under **support** tab. Cellular uplink must be up with IP address provide by ISP. You can check your 4G connection status by issuing **show log lte** in CLI.



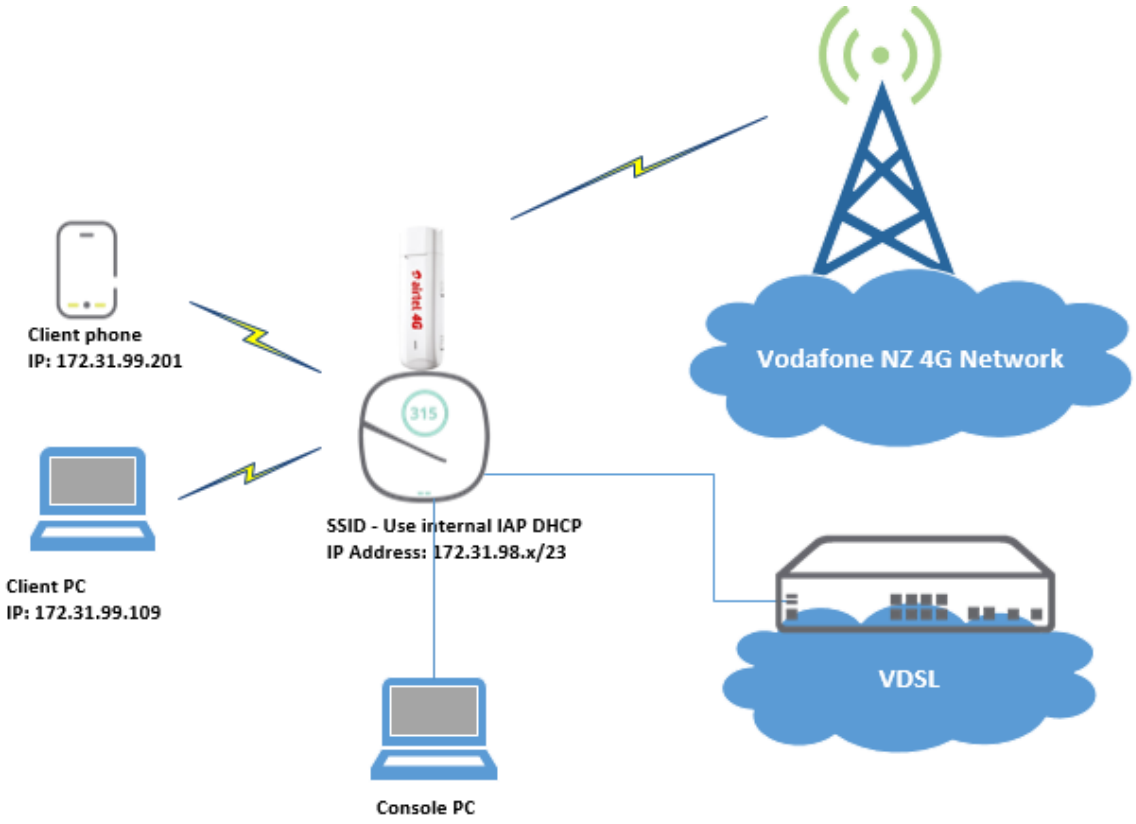
```
305# show log lte
Setting up data connection...


^RSSI:16



^HCSQ:"LTE",41,37,136,32

AT^CURC=0


OK

AT^CERSSI=0


OKget modem mode:
AT^SYSCFGEX?


^SYSCFGEX:"00",3FFFFFFF,1,2,7FFFFFFFFFFFFFFF



OKUSB Uplink RSSI(in dBm) :  -81 81
2017-05-19 21:22:24 Current Network Service:NKT 3
Automode nkt & SSL - 3 & 2
Wait for CONNECTED status - 0 ...
Connecting to the modem E3372
AT+CGDCONT=1,"IP",""


OK

AT^NDISDUP=1,1


OKLTE successful...
Starting DHCP to get IP address...
Trying udhcp & waiting @  0.
100.90.162.17 255.255.255.252 100.90.162.18
USB Details is queried and updated
```

9. Verify that Client get an ip address and connect to the internet using 4G modem uplink.

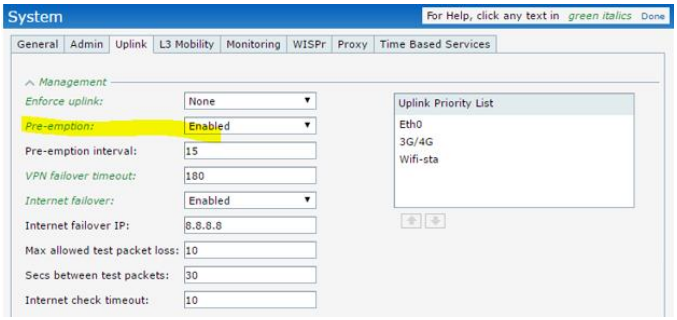
Uplink Redundancy: 4G Modem and Wired DSL.

In this testing we will be using 4G modem as backup link for the Ethernet-based Instant network.

Preemption is enabled and if the current Ethernet uplink fails, the IAP tries to find a available uplink based on the priority configured. If current uplink is active, the IAP periodically tries to use higher-priority uplink and switches to the higher-priority uplink even if the current uplink is active.



1. Both Ethernet and 4G modem uplinks connected to IAP.
2. Configure Uplink priority where Ethernet uplink use higher priority than 4G modem.



3. Verify uplink priority in CLI:

```
305# show uplink status

Uplink preemption             :disable
Uplink preemption interval    :600
Uplink enforce                :none
Ethernet uplink bond0        :DHCP
Uplink Table
------------
Type      State  Priority  In Use
----      -----  --------  ------
eth0      UP     0         Yes
Wifi-sta  INIT   2         No
3G/4G     LOAD   1         No
Internet failover             :enable
Max allowed test packet loss  :10
Secs between test packets     :30
VPN failover timeout (secs)   :180
Internet check timeout (secs) :10
ICMP pkt sent        :5
ICMP pkt lost        :0
Continuous pkt lost  :0
VPN down time        :0
AP1X type:NONE
Certification type:NONE
Validate server:NONE
```

4. Pull out the Ethernet Cable on IAP and uplink failover to 4G modem (base on my test setup less than 30 seconds). Verify in CLI if 4G modem is In Use by using the command **show uplink status.**

```
305# show uplink status

Uplink preemption             :disable
Uplink preemption interval    :600
Uplink enforce                :none
Ethernet uplink bond0        :DHCP
Uplink Table
------------
Type      State  Priority  In Use
----      -----  --------  ------
eth0      DOWN   0         No
Wifi-sta  INIT   2         No
3G/4G     UP     1         Yes
Internet failover             :enable
Max allowed test packet loss  :10
Secs between test packets     :30
VPN failover timeout (secs)   :180
Internet check timeout (secs) :10
ICMP pkt sent        :2
ICMP pkt lost        :0
Continuous pkt lost  :0
VPN down time        :0
AP1X type:NONE
Certification type:NONE
Validate server:NONE
```

5. Insert the Ethernet cable on IAP and in 15 seconds it will go back to Ethernet uplink. (Uplink preemption time is configurable at minimum of 15 seconds).