

# Useful CLI Commands

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## Enable Logging

### (Aruba3200) #configure terminal

Enter Configuration commands, one per line. End with CNTL/Z

### (Aruba3200) (config) #logging level debugging ?

```
(Aruba3200) (config) #logging level debugging ?
ap-debug          Debug an AP
network           Network logs
security          Security logs
system           System logs
user             User logs
user-debug       Debug a User
wireless         Wireless logs
```

Use the “?” to show and configure the correct logging for the process necessary

### Remember

Logging level debug network **process** dhcp (debugging a controller process)

Logging level debug network **subcat** dhcp (debug a process **NOT** from controller)

Example (to display the DHCP process from the controller)

### (Aruba3200) (config) #logging level debugging network process dhcpd

Then display the log

### (Aruba3200) (config) #show log network 50

To log user authentication issues

### (Aruba3200) (config) #logging level debugging user process authmgr (cr or ?)

## (GOOD for User troubleshooting)

**(Aruba3200) (config) #logging level debugging user-debug 00:27:10:2c:03:54**

**or**

**(Aruba3200) (config) #logging level debugging user-debug 00:27:10:2c:03:54 process authmgr subcat all**

Then display the log

**(Aruba3200) #show log user-debug 50** (50 meaning last 50 lines)

```
Sep 18 16:29:06 :501095: <NOTI> |stm| Assoc request @ 16:29:06.859581: 00:27:10:2c:03:54 (SN 2111): AP 192.168.1.24-00:24:6c:13:c6:48-AP1
Sep 18 16:29:06 :501100: <NOTI> |stm| Assoc success @ 16:29:06.863903: 00:27:10:2c:03:54: AP 192.168.1.24-00:24:6c:13:c6:48-AP1
Sep 18 16:29:06 :501065: <DEBUG> |stm| Sending STA 00:27:10:2c:03:54 message to Auth and Mobility Unicast Encr WPA2 PSK AES Multicast Encr WPA2 PSK AES
VLAN 0x1, wmm:1, rsn_cap:3c
Sep 18 16:29:06 :500511: <DEBUG> |mobileip| Station 00:27:10:2c:03:54, 0.0.0.0: Received association on ESSID: shome20 Mobility service ON, HA Discovery on
Association Off, Fastroaming Disabled, AP: Name AP1 Group shome20 BSSID 00:24:6c:13:c6:48, phy a, VLAN 1
Sep 18 16:29:06 :500010: <NOTI> |mobileip| Station 00:27:10:2c:03:54, 0.0.0.0: Mobility trail, on switch 192.168.1.45, VLAN 1, AP AP1,
shome20/00:24:6c:13:c6:48/a
Sep 18 16:29:06 :522035: <INFO> |authmgr| MAC=00:27:10:2c:03:54 Station UP: BSSID=00:24:6c:13:c6:48 ESSID=shome20 VLAN=1 AP-name=AP1
```

**(Aruba3200) #show log user all | include <user mac addr>**

**(Aruba3200) #show log user-debug all | include <user mac addr>**

**(Aruba3200) #show log wireless all | include <ap name>**

## To disable logging - example

(host) (config) #show logging level verbose

### LOGGING LEVELS

Facility Level Sub Category Process

network	warnings	N/A	N/A
security	warnings	N/A	N/A
security	debugging	N/A	l2tp
security	debugging	N/A	crypto
system	warnings	N/A	N/A
user	warnings	N/A	N/A
wireless	warnings	N/A	N/A

(host) (config) #configure t

Enter Configuration commands, one per line. End with CNTL/Z

(host) (config) #no logging level debugging security

(host) (config) #show logging level verbose

### LOGGING LEVELS

Facility Level Sub Category Process

network	warnings	N/A	N/A
security	warnings	N/A	N/A
system	warnings	N/A	N/A
user	warnings	N/A	N/A
wireless	warnings	N/A	N/A

Refer to the User Guide for the release you are using search “logging level” for additional logging abilities

## Interface

### (aruba3200) #show interface ?

```
(12103600-01) #show interface ?
cellular          Cellular Interface
counters          L2 interfaces counters information
dsl               DSL interface information
fastethernet      FastEthernet IEEE 802.3 Interface
gigabitethernet   GigabitEthernet IEEE 802.3 Interface
loopback          Loopback IP Interface
mgmt              Management Ethernet IP Interface
port-channel      Port-Channel Interface
tunnel            Tunnel interface
vlan              VLAN IP Interface
```

Overview of show interface commands

### (aruba3200) #show vlan status

```
(12103600-01) #show vlan status
Vlan Status
-----
VlanId  IPAddress          Adminstate  Operstate  PortCount  Nat Inside  Mode  Ports  AAA Profile
-----
1       unassigned/unassigned Disabled    Down       3          Disabled   Regular GE1/1-3 Pc0-7 N/A
148     N/A                N/A        N/A        2          Disabled   Regular GE1/2-3 N/A
149     N/A                N/A        N/A        2          Disabled   Regular GE1/2-3 N/A
162     N/A                N/A        N/A        2          Disabled   Regular GE1/2-3 N/A
164     192.168.164.21/255.255.254.0 Enabled     Up         2          Disabled   Regular GE1/2-3 N/A
208     192.168.208.198/255.255.255.0 Enabled     Up         3          Disabled   Regular GE1/0 GE1/2-3 N/A
```

Show vlan's, operational state, ports assigned, AAA profiles

### (aruba3200) #show interface vlan 208

```
(12103600-01) #show interface vlan 164
VLAN164 is up line protocol is up
Hardware is CPU Interface, Interface address is 00:08:86:61:BF:30 (bia 00:08:86:61:BF:30)
Description: 802.1Q VLAN
Internet address is 192.168.164.21 255.255.254.0
IPv6 is enabled, link-local address is fe80::b:8600:a461:bf30
IPv6 Router Advertisements are disabled
Routing interface is enable, Forwarding mode is enable
Directed broadcast is disabled, BCMC Optimization disabled ProxyARP disabled Suppress ARP disabled
Encapsulation 802, loopback not set
MTU 1500 bytes
IGMP Proxy is enabled on this interface
Last clearing of "show interface" counters 167 day 1 hr 13 min 0 sec
Link status last changed 167 day 1 hr 7 min 45 sec
Proxy Arp is disabled for the Interface
Tunnels Configured on this Interface:
Tunnel 0,Tunnel 0,Tunnel 0,Tunnel 0,Tunnel 0,
Tunnel 0,Tunnel 0,Tunnel 0,Tunnel 0,Tunnel 0,
Tunnel 0,Tunnel 0,Tunnel 0,Tunnel 0,Tunnel 0,
Tunnel 0,Tunnel 0,Tunnel 0,Tunnel 0
```

Show encapsulation, MTU, time up,

### (aruba3200) #show interface gigabitethernet 1/3

```
(12103600-01) #show interface gigabitethernet 1/3
GE 1/3 is up, line protocol is up
Hardware is Gigabit Ethernet, address is 00:08:86:61:BF:34 (bia 00:08:86:61:BF:34)
Description: GE1/3 (RJ45 Connector)
Encapsulation ARPA, loopback not set
Configured: Duplex ( AUTO ), speed ( AUTO )
Negotiated: Duplex (Full), speed (1000 Mbps)
MTU 1500 bytes, BW is 1000 Mbit
Last clearing of "show interface" counters 167 day 1 hr 22 min 8 sec
Link status last changed 83 day 3 hr 30 min 37 sec
 4238667519 packets input, 1161007889236 bytes
Received 96992334 broadcasts, 0 runs, 0 giants, 0 throttles
 2 input error bytes, 0 CRC, 0 frame
79162862 multicast, 4141675185 unicast
13621965547 packets output, 3380287708475 bytes
 0 output errors bytes, 0 deferred
 0 collisions, 0 late collisions, 0 throttles
This port is TRUSTED
```

Packets sent/received, CRC, broadcast / multicast, errors, collisions

**(Aruba3200) #show ap ?**

Generic search to show AP commands available

**(Aruba3200) #show ap active | include Aps (shows total number of AP's active)****(Aruba3200) #show ap bss-table ap-name <ap1>**

```
<shome20> #show ap bss-table ap-name ap1
fm <forward mode>: T-Tunnel, S-Split, D-Decrypt Tunnel, B-Bridge <s-standard, p-persistent, b-backup, a-always>
Aruba AP BSS Table
-----
bss          ess          s/p ip          phy  type  ch/EIRP/max-EIRP  cur-cl  ap name  in-t<s>  tot-t          mtu  acl-state  acl  fm
00:24:6c:13:c6:48 shome20  1/0 192.168.1.25 a-HT ap  36+/23/23        1      AP1      0        46d:4h:53m:38s 1500 -         49  T
00:24:6c:13:c6:40 shome20  1/0 192.168.1.25 g-HT ap  6/21/22.5        1      AP1      0        46d:4h:53m:37s 1500 -         49  T
Channel followed by "*" indicates channel selected due to unsupported configured channel.
"Spectrum" followed by "^" indicates Local Spectrum Override in effect.
Num APs:2
Num Associations:2
<shome20> #
```

Show ESS mac address, channel, current power, max power

**(Aruba3200) #show ap active**

```
<Aruba3200> #show ap active
Active AP Table
-----
Name Group IP Address 11g Clients 11g Ch/EIRP/MaxEIRP 11a Clients 11a Ch/EIRP/MaxEIRP AP Type Flags Uptime Outer
IP
AP1 HQTRS 192.168.10.254 0 AP:HT:6/22.5/22.5 0 AP:HT:153-/24/24 105 26m:55s N/A
Flags: a = Reduce ARP packets in the air; A = Enet1 in active/standby mode;
B = Battery Boost On; C = Cellular; D = Disconn. Extra Calls On;
d = Drop Mcast/Bcast On; E = Wired AP enabled; K = 802.11K Enabled;
L = Client Balancing Enabled; M = Mesh; N = 802.11b protection disabled;
P = PPPoE; R = Remote AP; X = Maintenance Mode;
2 = Using IKE version 2;
```

Shows if AP is up, name, group, max tx power and current tx power setting and active to system,

**(Aruba3200) #show ap database**

```
<Aruba3200> #show ap database
AP Database
-----
Name Group AP Type IP Address Status Flags Switch IP
AP1 HQTRS 105 192.168.10.254 Up 28m:42s 172.16.0.3
Flags: U = Unprovisioned; N = Duplicate name; G = No such group; L = Unlicensed
I = Inactive; H = Using 802.11n license; D = Dirty or no config
X = Maintenance Mode; P = PPPoE AP; B = Built-in AP
R = Remote AP; R- = Remote AP requires Auth; C = Cellular RAP; c = CERT-based RAP; 2=Using IKE version 2
M = Mesh node; Y = Mesh Recovery
Total APs:1
```

Shows AP switch ip connection (LMS)

**(shome20) #show ap database long**

```
<shome20> #show ap database long
AP Database
-----
Name Group AP Type IP Address Status Flags Switch IP Wired MAC Address Serial # Slot/Port FQLN Outer IP User
ap-internal default 651 192.168.1.45 Up 47d:16h:17m:52s IB 192.168.1.45 00:0b:86:64:a1:10 AR0001224 ?/? N/A N/A
AP1 shome20 105 192.168.1.25 Up 47d:15h:59m:39s 192.168.1.45 00:24:6c:c9:3c:64 AL0170263 1/0 N/A N/A
Flags: U = Unprovisioned; N = Duplicate name; G = No such group; L = Unlicensed
I = Inactive; H = Using 802.11n license; D = Dirty or no config
X = Maintenance Mode; P = PPPoE AP; B = Built-in AP
R = Remote AP; R- = Remote AP requires Auth; C = Cellular RAP; c = CERT-based RAP; 2=Using IKE version 2
M = Mesh node; Y = Mesh Recovery
```

Mac addr of AP, serial number of AP, AP type, port connected



## (shome20) #show ap database long inactive

```
(shome20) #show ap database long inactive
```

AP Database												
Name	Group	AP Type	IP Address	Status	Flags	Switch IP	Wired MAC Address	Serial #	Slot/Port	FQLN	Outer IP	User
ap-internal	default	651	192.168.1.45	Up 47d:16h:19m:44s	IB	192.168.1.45	00:0b:86:64:a1:10	AR0001224	??	N/A	N/A	

Flags: U = Unprovisioned; N = Duplicate name; G = No such group; L = Unlicensed  
I = Inactive; H = Using 802.11n license; D = Dirty or no config  
X = Maintenance Mode; P = PPPoE AP; B = Built-in AP  
R = Remote AP; R- = Remote AP requires Auth; C = Cellular RAP; c = CERT-based RAP; 2=Using IKE version 2  
M = Mesh node; Y = Mesh Recovery

Specify show only inactive AP's

## (Aruba3200) #show ap database-summary

```
(Aruba3200) #show ap database-summary
```

AP Database Summary								
AP Mode	Total Up	Total Down	Total Upgrading*	Total Rebooting*	RAP Up	RAP Down	RAP Upgrading*	RAP Rebooting*
Access Points	1	0	0	0	0	0	0	0
Air Monitors	0	0	0	0	0	0	0	0
Wired Access Points	0	0	0	0	0	0	0	0
Mesh Portals	0	0	0	0	0	0	0	0
Mesh Points	0	0	0	0	0	0	0	0
Spectrum Monitors	0	0	0	0	0	0	0	0

Show total AP's up, down, reboots

## (Aruba3200) #show ap association ap-name <name>

```
(Aruba3200) #show ap association ap-name AP1
```

Flags: W: WMM client, A: Active, K: 802.11K client, B: Band Steerable

PHY Details: HT: High throughput; 20: 20MHz; 40: 40MHz  
<n>ss: <n> spatial streams

Association Table												
Name	bssid	mac	auth	assoc	aid	l-int	ssid	vlan-id	tunnel-id	phy	assoc. time	n
um assoc	Flags											
AP1	00:24:6c:12:90:60	f8:7b:7a:68:f5:da	y	y	1	3	myemployee	1	0x108c	g-HT-20-1ss	9s	1

Num Clients:1

Shows users/clients MAC/IP address connected to AP, which SSID, vlan id,

Flags: W: WMM client, A: Active, K: 802.11K client, B: Band Steerable

PHY Details: HT: High throughput; 20: 20MHz; 40: 40MHz <n>ss: <n> spatial streams

## (Aruba3200) #show ap debug system-status ap-name <name> ( | begin "Ethernet" , "DHCP" is useful)

### Check:

Heartbeats

Interface counters

ARP cache

Interface Information

AP Uptime

Ethernet Duplex Speed Settings

LMS Information

## (Aruba3200) #show ap debug counters ip-addr / ap-name

```
(Aruba3200) #show ap debug counters ip-addr 192.168.10.254
```

AP Counters									
Name	Group	IP Address	Configs Sent	Configs Acked	AP Boots Sent	AP Boots Acked	Bootstraps <Total>	Reboots	
AP1	HQTRS	192.168.10.254	4	3	0	0	1	<1	> 1

Check for high number of reboots or bootstraps (bootstraps – GRE keepalive missing, GRE heartbeat once a second)

Check AP system profile "Bootstrap Threshold" (Reboots – check for other communications issues)

**(Aruba3200) #show ap debug counters / group <ap group name>**

(Aruba3200) #show ap debug counters

AP Counters

-----

Name	Group	IP Address	Configs Sent	Configs Aced	AP Boots Sent	AP Boots Aced	Bootstraps (Total)	Reboots
------	-------	------------	--------------	--------------	---------------	---------------	--------------------	---------

ap-internal	default	192.168.1.45	1	1	0	0	1 (1 ) 1	
AP1	shome20	192.168.1.25	21	21	0	0	1 (1 ) 1	
AP2	shomeSpec	192.168.1.18	2	2	0	0	1 (1 ) 1	

Total APs :3

(Aruba3200) #show ap debug counters group shome20

AP Counters

-----

Name	Group	IP Address	Configs Sent	Configs Aced	AP Boots Sent	AP Boots Aced	Bootstraps (Total)	Reboots
AP1	shome20	192.168.1.25	21	21	0	0	1 (1 ) 1	

Total APs :1

**Good for seeing and comparing all AP's communications with the controller**

**(Aruba3200) #show ap debug client-stats <MAC Addr>**

This shows Tx and Rx stats for that client MAC address

**Check**

Tx and Rx frames and data

Tx Frames Dropped

Tx Success With Retry

Tx Multiple Retries

Rx Data Frames Retried

Rx Duplicate Frames

Tx Dropped After Retry

Tx Dropped No Buffer

(Aruba3200) #show ap debug radio-stats ap-name AP1 radio 0 advanced (5G)

And

(Aruba3200) #show ap debug radio-stats ap-name AP1 radio 1 advanced (2.4G)

### Check

Radio resets -  
TX power changes -  
Channel changes -  
Current Noise floor - dB level of background noise  
Tx and Rx data  
Tx and Rx Drops  
CRC errors incrementing

```
(Aruba3200) #show ap debug radio-stats ap-name AP1 radio 0 advanced
```

RADIO Stats	
Parameter	Value
General Per-radio Statistics	
Total Radio Resets	0
Resets Beacon Fail	0
BB Check Positives	0
Resets BeacQ Stuck	0
Resets Fatal Intr	0
Resets RX Overrun	0
Resets RF Gain	0
Resets MTU Change	0
Resets TX Timeouts	0
POE-Related Resets	0
External Reset	0
PCI Fatal Intr Reset	0
TX Power Changes	1
Channel Changes	1
Radio Band Changes	1
Current Noise Floor	90
Dummy NF pkts on home channel	402
Dummy NF pkts on scan channel	368

(Aruba3200) #show ap ap-group ip-addr 172.16.0.253

```
(Aruba3200) #show ap ap-group ip-addr 172.16.0.253
```

AP group "80West"	
Parameter	Value
Virtual AP	testap-vir
Virtual AP	testpsk-vir
802.11a radio profile	default
802.11g radio profile	default
Ethernet interface 0 port configuration	default
Ethernet interface 1 port configuration	default
Ethernet interface 2 port configuration	shutdown
Ethernet interface 3 port configuration	shutdown
Ethernet interface 4 port configuration	shutdown
AP system profile	default
VoIP Call Admission Control profile	default
802.11a Traffic Management profile	N/A
802.11g Traffic Management profile	N/A
Regulatory Domain profile	default
RF Optimization profile	default
RF Event Thresholds profile	default
IDS profile	default
Mesh Radio profile	default
Mesh Cluster profile	N/A
--More-- (q) quit (u) pageup (/) search (n) repeat	

Display virtual AP's configured on AP and system profiles configured on AP

(Aruba3200) #show ap details ip-addr 172.16.0.253

```
(Aruba3200) #show ap details ip-addr 172.16.0.253
```

AP "AP1" Basic Information	
Item	Value
AP IP Address	172.16.0.253
LMS IP Address	172.16.0.3
Group	80West
Location Name	N/A
Status	Up
Up time	1m:34s
Installation	indoor

AP "AP1" Hardware Information	
Item	Value
AP Type	105
Serial #	AL0170263
Wired MAC Address	00:24:6c:c9:3c:64
Radio 0 BSSID	00:24:6c:13:c6:48
Radio 1 BSSID	00:24:6c:13:c6:40
Enet 1 MAC Address	N/A
Enet 2 MAC Address	N/A
Enet 3 MAC Address	N/A
Enet 4 MAC Address	N/A
Enet 5 MAC Address	N/A
Enet 6 MAC Address	N/A
Enet 7 MAC Address	N/A

AP "AP1" Operating Information	
Item	Value
AP State	Running
Entry created	2011-10-10 03:42:34
Last activity	2011-10-10 03:42:50
Reboots	1
Bootstraps	1

Shows AP details – switch IP, AP MAC address, radio MAC's, radio profiles, provisioning profiles, antenna gain

(shome20) #Show ap monitor ap-list ap-name ap1

Show ap monitor ap-list ap-name ap1

Monitored AP Table													
bssid	ssid	chan	ap-type	phy-type	dos	dt/nt	ut/it	enchr	nstas	avg-rssi	curr-r		
00:24:6c:13:c6:48	shome20	153	valid	80211a-HT-40	disable	2570851/2570851	1/0	wpa2-psk-aes	1	40	40		
00:24:6c:13:c6:40	shome20	1	valid	80211b/g-HT-20	disable	2570851/2570851	1/0	wpa2-psk-aes	1	40	40		
0c:d5:02:82:50:f4	shome12	6	valid	80211b/g	disable	217837/80151	27/0	wpa2-psk-aes	0	36	36		
00:24:b2:95:b4:9f	NETGEAR-Spock	6	interfering	80211b/g	disable	79723/9435	27/0	wpa2-psk-aes	0	42	37		
00:24:b2:95:b4:9e	NETGEAR-Kirk	44	interfering	80211a-HT-40	disable	6814/427	7/0	wpa2-psk-aes	0	34	34		
Start:0													
Length:5													
Total:5													

(Aruba3200) #show ap image version ap-name <name> (Good for RAPs)

```
(Aruba3200) #show ap image version ap-name jsmithrap
```

AP Image Versions On Controller													
5.0.4.3(p4build@corsica)#31056	Wed Nov 9 14:46:42	PST 2011											
5.0.4.3(p4build@corsica)#31056	Wed Nov 9 14:41:32	PST 2011											

Access Points Image Version													
AP	Running Image Version String	Matches	Num Matches	Num Mismatches	Bad Checksums	Bad Provisioning Checksums	Image Load Status	Flash (Production) Image Version String					
1.1.1.5	5.0.4.3(p4build@corsica)#31056	Wed Nov 9 14:41:32	PST 2011	0	0	0	Done	5.0.4.3(p4build@corsica)#31056	Wed Nov 9 14:41:32	PST 2011	0	0	0
2	5.0.4.3(p4build@corsica)#31056	Wed Nov 9 14:41:32	PST 2011	0	0	0	Done	5.0.4.3(p4build@corsica)#31056	Wed Nov 9 14:41:32	PST 2011	0	0	0

Shows RAP version image running and backup



## (Aruba3200) #show ap arm history ap-name &lt;ap name&gt;

```
(Aruba3200) #show ap arm history ap-name AP1
Interface :wifi0
Interface :wifi1
I: Interference, R: Radar detection, N: Noise exceeded, E: Error threshold exceeded, INU: Invalid Channel, G: Rogue AP Containme
nt, M: Empty Channel, P+: Increase Power, P-: Decrease Power, OFF: Turn off Radio, ON: Turn on Radio
```

## (Aruba3200) #show ap arm rf-summary ap-name &lt;ap name&gt;

```
(Aruba3200) #show ap arm rf-summary ap-name AP1
Channel Summary
```

channel	retry	phy-err	mac-err	noise	cov-idx	intf_idx
161	0	0	0	91	0/0	0/0/0/0
1	0	0	0	88	0/0	149/19/0/0
48	0	0	0	92	0/0	0/9/0/0
165	0	0	0	91	0/0	0/0/0/0
5	0	0	0	87	0/0	0/125/0/0
6	0	0	3	91	8/0	88/42/0/0
7	0	0	0	88	0/0	0/114/0/0
11	0	0	0	88	0/0	90/17/0/0
149	0	0	0	90	0/0	0/0/0/0
36	0	0	0	92	0/0	0/0/0/0
153	0	0	0	90	8/0	0/0/0/0
40	0	0	0	91	0/0	0/9/0/0
157	0	0	0	90	0/0	0/0/0/0
44	0	0	0	91	0/0	27/0/0/0

HT Channel Summary

## (Aruba3200) #show ap arm scan-times ap-name AP1

```
(shome20) #show ap arm scan-times ap-name AP1-b
Channel Scan Time
```

channel	assign-time(ms)	scans-attempted	scans-rejected	dos-scans	flags	timer-tick
1	45963180	138	4	0	DVACL	196372
2	10120	92	1	0	DCL	195663
3	2860	26	1	0	DCL	185217
4	2750	25	0	0	DCL	186241
5	33220	302	1	0	DVCLU	188413
6	94831050	155	5	0	DVACLU	196587
7	21560	196	2	0	DVCLU	192874
8	3190	29	0	0	DCU	193880
9	3630	33	2	0	DACU	196178
10	5170	47	3	0	DACU	196310
11	55880370	167	4	0	DVACU	196646
12	660	6	0	0	D	127698
13	220	2	0	0	D	128743
14	220	2	0	0	D	129859
34	220	2	0	0	D	130898
36	2970	27	0	0	DVCL	176037
38	220	2	1	0	D	133031
40	3300	30	0	0	DVCLU	176997
42	220	2	0	0	D	136447

```
161 3080 28 3 0 DVCLU 181902
165 1540 14 0 0 DUCU 182985
Channel Flags: D: All-Reg-Domain Channel, C: Reg-Domain Channel, A: Activity Present
L: Scan 40MHz Lower, U: Scan 40MHz Upper, Z: Rare Channel
V: Valid, I: Valid 20MHz Channel, F: Valid 40MHz Channel,
O: DOS Channel, K: DOS 40MHz Upper, H: DOS 40MHz Lower
R: Radar detected in last 30 min, X: DFS required
```

## WIF Scanning State

channel	current-scan-channel	last-dos-channel	timer-milli-tick	next-scan-milli-tick
11	6+	0	19664660	19670160

**(Aruba3200) #show ap arm state**

(need good example)

**(Aruba3200) #show ap arm neighbors ap-name <name>**

(need good example)

## User

### (Aruba3200) #show user

```
<Aruba3200> #show user
```

Users											
IP profile	MAC Forward mode	Type	Name	Role	Age(d:h:m)	Auth	UPN link	AP name	Roaming	Essid/Bssid/Phy	Pr
172.16.0.254	f8:7b:7a:68:f5:da	tunnel	myguest-aaa	Android	myguest-logon	00:00:00		AP1	Wireless	myguest/00:24:6c:12:90:61/g-HT	m

User Entries: 1/1

Showing user in pre-authenticated role 'myguest-logon'

```
<Aruba3200> #show user
```

Users											
IP profile	MAC Forward mode	Type	Name	Role	Age(d:h:m)	Auth	UPN link	AP name	Roaming	Essid/Bssid/Phy	Pr
172.16.0.254	f8:7b:7a:68:f5:da	tunnel	myguest-aaa	Android	myguest-auth	00:00:01	Web	AP1	Wireless	myguest/00:24:6c:12:90:61/g-HT	my

User Entries: 1/1

Showing user in post-authenticated role 'myguest-auth'

### (Aruba3200) #show user mac 00:27:10:2c:03:54

```
<shome20> #show user mac 00:27:10:2c:03:54
```

Datapath Session Table Entries												
Flags: F - fast age, S - src NAT, N - dest NAT D - deny, R - redirect, Y - no syn H - high prio, P - set prio, I - set ToS C - client, M - mirror, U - UOIP Q - Real-Time Quality analysis I - Deep inspect, U - Locally destined E - Media Deep Inspect, G - media signal												
Source IP	Destination IP	Prot	SPort	DPort	Cntr	Prio	ToS	Age	Destination	TAge	Flags	
192.168.1.27	10.6.7.22	17	57599	161	0/0	0	96	0	tunnel 12	b	FC	
192.168.1.27	10.6.7.21	17	57599	161	0/0	0	96	0	tunnel 12	b	FC	
192.168.1.27	192.168.1.45	6	1062	22	0/0	0	96	0	tunnel 12	18d	C	
10.6.7.22	192.168.1.27	17	161	57599	0/0	0	96	1	tunnel 12	b	FY	
10.6.7.21	192.168.1.27	17	161	57599	0/0	0	96	1	tunnel 12	b	FY	
192.168.1.255	192.168.1.27	17	137	137	0/0	0	96	0	tunnel 12	2	FY	
192.168.1.27	192.168.1.255	17	137	137	0/0	0	96	0	tunnel 12	2	FC	
192.168.1.45	192.168.1.27	6	22	1062	0/0	0	96	0	tunnel 12	18d		

Name: , IP: 192.168.1.27, MAC: 00:27:10:2c:03:54, Role:shome20-user, ACL:49/0, Age: 00:00:12  
Authentication: No, status: not started, method: , protocol: , server:  
Role Derivation: AAA profile default role  
ULAN Derivation: unknown  
Idle timeouts: 0, ICMP requests sent: 0, replies received: 0, Valid ARP: 0  
Mobility state: Wireless, HA: Yes, Proxy ARP: No, Roaming: No Tunnel ID: 0 L3 Mob: 0  
Flags: internal=0, trusted\_ap=0, l3auth=0, mba=0  
Flags: innerip=0, outerip=0, guest=0, download=1, nodatapath=0, wispr=0  
Auth fails: 0, phy type: a-HT, reauth: 0, BW Contract: up:0 down:0, user-how: 1  
Ulan default: 1, Assigned: 0, Current: 1 ulan-how: 0  
Mobility Messages: L2=0, Move=0, Inter=0, Intra=0, ProxyArp=0, Flags=0x0  
Tunnel=0, SlotPort=0x1020, Port=0x10cc <tunnel 12>  
Role assignment - L3 assigned role: n/a, Dot1x cached role : n/a  
Current Role name: shome20-user role-how: 10  
Essid: shome20, Bssid: 00:24:6c:13:c6:48 AP name/group: AP1/shome20 Phy-type: a-HT  
RadAcct sessionID:n/a  
RadAcct Traffic In 276880340/1189193100698901460 Out 2146063312/3116881183145574348 <4224:5627  
Timers: ping\_reply 0, spoof\_reply 0, reauth 0  
Profiles AAA:shome20-aaa, dot1x:default-psk, mac: CP: def-role:'shome20-user' sip-role:'' via-ncfg flags udr 0, mac 0, dot1x 1, RADIUS interim accounting 0  
Born: 1332041776 <Sat Mar 17 22:36:16 2012>  
Upstream AP ID: 0, Downstream AP ID: 0  
Device Type: Mozilla/4.0 <compatible; MSIE 7.0; Windows NT 6.1; Trident/5.0; SLCC2; .NET CLR 2

```
<shome20> #
```

FLAGS - D flag = traffic deny (check firewall rules), Y flag = no route, no full path



### (Aruba3200) #show acl hits role myguest-auth

```
<Aruba3200> #show acl hits role myguest-auth
```

User Role ACL Hits									
Role	Policy	Src	Dst	Service	Action	Dest/Opcode	New Hits	Total Hits	Index
myguest-auth	myguest-auth	user	mydns	any	permit		19	31	8205
myguest-auth	myguest-auth	user	any	svc-https	permit		1	1	8207
myguest-auth		any	any	0	deny		3	3	8210

Port Based Session ACL									
Policy	Src	Dst	Service	Action	Dest/Opcode	New Hits	Total Hits	Index	

Port ACL Hits				
ACL	ACE	New Hits	Total Hits	Index

Show the specific roles firewall / acl hits

### (Aruba3200) #show ap association ap-name ap1

```
<Aruba3200> #show ap association
```

Flags: W: WMM client, A: Active, K: 802.11K client, B: Band Steerable

PHY Details: HT: High throughput; 20: 20MHz; 40: 40MHz  
<n>ss: <n> spatial streams

Association Table												
Name	bssid	mac	auth	assoc	aid	l-int	ssid	vlan-id	tunnel-id	phy	assoc. tim	
AP1	00:24:6c:13:c6:40	f8:7b:7a:68:f5:da	y	y	1	3	testeap	1	0x108a	g-HT-20-1ss	34s	
1	WA											

Num Clients:1

Show clients associated to particular AP name, which SSID, VLAN and physical and Spatial Stream connection

### (Aruba3200) #show auth-tracebuf mac f8:7b:7a:68:f5:da

```
<Aruba3200> #show auth-tracebuf mac f8:7b:7a:68:f5:da
```

Auth Trace Buffer									
Jun 16 10:43:50	station-up	*	f8:7b:7a:68:f5:da	00:24:6c:12:90:60	-	-	wpa2	aes	
Jun 16 10:43:50	station-term-start	*	f8:7b:7a:68:f5:da	00:24:6c:12:90:60	1	-			
Jun 16 10:43:50	client-finish	->	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-			
Jun 16 10:43:50	server-finish	<-	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-			
Jun 16 10:43:50	server-finish-ack	->	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-			
Jun 16 10:43:50	inner-eap-id-req	<-	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-			
Jun 16 10:43:50	inner-eap-id-resp	->	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-	jsmith		
Jun 16 10:43:50	eap-mschap-chlg	<-	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-			
Jun 16 10:43:50	eap-mschap-response	->	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	9	49			
Jun 16 10:43:50	mschap-request	->	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	9	-	jsmith		
Jun 16 10:43:50	mschap-response	<-	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/Internal	-	-	jsmith		
Jun 16 10:43:50	eap-mschap-success	<-	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-			
Jun 16 10:43:50	eap-mschap-success-ack	->	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-			
Jun 16 10:43:50	eap-tlv-rslt-success	<-	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-			
Jun 16 10:43:50	eap-tlv-rslt-success	->	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-			
Jun 16 10:43:50	station-data-ready	*	f8:7b:7a:68:f5:da	00:00:00:00:00:00	1	-			
Jun 16 10:43:50	eap-success	<-	f8:7b:7a:68:f5:da	00:24:6c:12:90:60/myemployee-1x	-	-			
Jun 16 10:43:50	wpa2-key1	<-	f8:7b:7a:68:f5:da	00:24:6c:12:90:60	-	117			
Jun 16 10:43:51	wpa2-key2	->	f8:7b:7a:68:f5:da	00:24:6c:12:90:60	-	119			
Jun 16 10:43:51	wpa2-key3	<-	f8:7b:7a:68:f5:da	00:24:6c:12:90:60	-	151			
Jun 16 10:43:51	wpa2-key4	->	f8:7b:7a:68:f5:da	00:24:6c:12:90:60	-	95			

Displays the user authentication trace (802.1x)



(Aruba3200) #show dot1x supplicant-info f8:7b:7a:68:f5:da 00:24:6c:13:c6:40

```
(Aruba3200) #show dot1x supplicant-info f8:7b:7a:68:f5:da 00:24:6c:13:c6:40

Detailed 802.1x Supplicant Information

Name                               mrube
MAC Address                       f8:7b:7a:68:f5:da
AP MAC Address                    00:24:6c:13:c6:40
Status                           Authentication Success
Unicast Cipher                    WPA-AES
Multicast Cipher                  WPA-AES
EAP-Type                          EAP-MSCHAPV2

Packet Statistics:
EAPOL Starts                      0
EAP ID Requests                  0
EAP ID Responses                  0
EAPOL Logoffs from station       0
Ignored EAPOL Starts             0
EAP pkts to the station          3
EAP pkts from station            3
Unknown EAP pkts from station    0
EAP Successes sent               1
EAP Failures sent                0
Station failed to respond        0
Station NAKs                     0
Radius pkts to the server        0
Radius pkts from the server      0
Server failed to respond         0
Server rejects                   0
WPA/WPA2-Key Message1           1
WPA/WPA2-Key Message2           1
WPA/WPA2-Key Message3           1
WPA/WPA2-Key Message4           1
WPA-GKey Message1               1
WPA-GKey Message2               1
ID of the last EAP request       0
Length of the last EAP request   119
ID of the last EAP response      0
Length of the last EAP response  0
ID of the last radius request    0
```

Show user MAC address (in red) on AP MAC address (in blue) dot1x configuration details, retires,

^^^^

(Aruba3200) #show dot1x supplicant-info list-all | include <MAC addr> (of user)

Overview of previous command

(Aruba3200) #show station-table verbose | include f8:7b:7a:68:f5:da

```
(Aruba3200) #show station-table verbose | include f8:7b:7a:68:f5:da
f8:7b:7a:68:f5:da mrube      EAP-employee 00:00:13 Yes AP1      testeap g-HT No      testeap-aaa
(Aruba3200) #
```

Show user authentication detail – mac, name, role, ssid, aaa profile

(Aruba3200) #show ap debug client-stats <MAC Addr>

Check Tx and Rx frames and data

Tx Frames Dropped  
Tx Success With Retry  
Tx Multiple Retries  
Rx Data Frames Retried  
Rx Duplicate Frames  
Tx Dropped After Retry  
Tx Dropped No Buffer

```
(shome20) #show ap debug client-stats 00:27:10:2c:03:54
```

Station Stats	
Parameter	Value
General Per-radio Statistics	
Transmit Specific Statistics	
Tx Frames Rcvd	8550
Tx Frames Dropped	140
Tx Frames Transmitted	6625
Tx Fragments Transmitted	6625
Tx Bytes Rcvd	6667057
Tx Bytes Transmitted	4245317
Tx Time Frames Rcvd	1397252
Tx Time Frames Dropped	99682
Tx Time Frames Transmitted	1296238
Tx Success With Retry	1336
Tx Multiple Retries	1321
Tx Mgmt Frames	321
Tx Probe Responses	0
Tx Data Transmitted Retried	1098
Tx Data Transmitted	6180
Tx Data Frames	8090
Tx Data Bytes Transmitted	4232166
Tx Data Bytes	6653593
Tx Time Data Transmitted	1025046
Tx Time Data dropped	51570
Tx Time Data	1077948
Tx RTS Success	0
Tx RTS Failed	719
Tx CTS Frames	0
Tx Dropped After Retry	140
Tx Dropped No Buffer	0
Tx Missed ACKs	3420
Tx Long Preamble	1
Tx Short Preamble	8549
Tx EAPOL Frames	2
TX STBC Frames	358
TX LDPC Frames	0
Tx Data Priority [BE]	6179
Tx Data Priority [UO]	1
Receive Specific Statistics	
Rx Last SNR	32
Rx Last SNR CIL0	27
Rx Last SNR CIL1	30
Rx Last SNR CIL2	-128
Rx Last ACK SNR	36
Rx Last ACK SNR CIL0	29
Rx Last ACK SNR CIL1	35
Rx Frames Received	18684
Rx Data Frames Retried	0
Rx Data Frames	17071
Rx Data Bytes	1763524
Rx Time Data	2253136
Rx Duplicate Frames	0
Rx Null Data Frames	8919
Rx Mgmt Frames	643
Rx Frames To Me	0
Rx Bytes To Me	1815562
Rx PS Poll Frames	0
Rx STBC Frames	0
Rx LDPC Frames	0
Rx Data Priority [BE]	8152
Rx Data Priority [UO]	0

(shome20) # Show ap debug client-table ap-name ap1 (GOOD)

```
(shome20) # Show ap debug client-table ap-name ap1
```

Client Table														
MAC	ESSID	BSSID	Assoc_State	HT_State	AID	PS_State	UAPSD	Tx_Pkts	Rx_Pkts	PS_Qlen	Tx_Retries	Tx_Rate	Rx_Rate	Las
t_ACK_SNR	Last_Rx_SNR	TX_Chains	Tx_Timestamp	Rx_Timestamp										
00:27:10:2c:03:54	shome20	00:24:6c:13:c6:48	Associated	WRSMB	0x1	Awake	<0,0,0,0,N/A,0>	17433	75795	0	337	270	150	48
43	2[0x3]	Wed Dec 28 19:01:43 2011	Wed Dec 28 19:01:44 2011											
00:21:00:39:d0:58	shome20	00:24:6c:13:c6:40	Associated	None	0x1	Awake	<0,0,0,0,N/A,0>	40212	30905	0	3458	54	54	53
52	2[0x3]	Wed Dec 28 19:01:40 2011	Wed Dec 28 19:01:40 2011											
UAPSD:<UO,UI,BK,BE,Max SP,Q Len>														
HT Flags: A - LDPC Coding; W - 40Mhz; S - Short GI HT40; s - Short GI HT20														
D - Delayed BA; G - Greenfield; R - Dynamic SM PS														
Q - Static SM PS; N - A-MPDU disabled; B - TX STBC														
b - RX STBC; M - Max A-MSDU; I - HT40 Intolerant														
(shome20) #														

Check client data rates, errors, retries, SNR

(shome20) #show datapath session table 192.168.1.33 <ip address of client>

```
(shome20) #show datapath session table 192.168.1.33
```

Datapath Session Table Entries

Flags: F - fast age, S - src NAT, N - dest NAT  
D - deny, R - redirect, Y - no syn  
H - high prio, P - set prio, T - set ToS  
C - client, M - mirror, U - UOIP  
Q - Real-Time Quality analysis  
I - Deep inspect, U - Locally destined  
E - Media Deep Inspect, G - media signal

Source IP	Destination IP	Prot	SPort	DPort	Cntr	Prio	ToS	Age	Destination	TAge	Flags
10.6.7.21	192.168.1.33	17	161	52342	0/0	0	96	0	tunnel 10	6	FY
216.31.249.253	192.168.1.33	6	443	1116	0/0	0	96	2	tunnel 10	bab	
216.31.249.253	192.168.1.33	6	443	1117	0/0	0	96	3	tunnel 10	baa	
216.31.249.253	192.168.1.33	6	443	1104	0/0	0	96	0	tunnel 10	bd4	
216.31.249.253	192.168.1.33	6	443	1105	0/0	0	96	2	tunnel 10	bd3	
216.31.249.253	192.168.1.33	6	443	1098	0/0	0	96	0	tunnel 10	bef	
216.31.249.253	192.168.1.33	6	443	1097	0/0	0	96	1	tunnel 10	bef	
216.31.249.253	192.168.1.33	6	443	1092	0/0	0	96	1	tunnel 10	c03	
216.31.249.253	192.168.1.33	6	443	1090	0/0	0	96	1	tunnel 10	c04	
192.168.1.33	10.6.7.21	17	52342	161	0/0	0	96	0	tunnel 10	6	FC
192.168.1.33	192.168.1.45	6	1337	22	0/0	0	96	0	tunnel 10	1e9	C
192.168.1.33	216.31.249.253	6	1104	443	0/0	0	96	1	tunnel 10	bd4	C
192.168.1.33	216.31.249.253	6	1105	443	0/0	0	96	2	tunnel 10	bd3	C
192.168.1.33	216.31.249.253	6	1116	443	0/0	0	96	3	tunnel 10	bab	C
192.168.1.33	216.31.249.253	6	1117	443	0/0	0	96	3	tunnel 10	baa	C
192.168.1.33	216.31.249.253	6	1090	443	0/0	0	96	2	tunnel 10	c04	C
192.168.1.33	216.31.249.253	6	1092	443	0/0	0	96	2	tunnel 10	c03	C
192.168.1.33	216.31.249.253	6	1098	443	0/0	0	96	0	tunnel 10	bef	C
192.168.1.33	216.31.249.253	6	1097	443	0/0	0	96	1	tunnel 10	bef	C
192.168.1.255	192.168.1.33	17	137	137	0/0	0	96	1	tunnel 10	1a	FY
192.168.1.33	192.168.1.255	17	137	137	0/0	0	96	0	tunnel 10	1a	FC
192.168.1.45	192.168.1.33	6	22	1337	0/0	0	96	0	tunnel 10	1e9	
192.168.1.33	239.255.255.250	17	57343	1900	0/0	0	96	1	tunnel 10	1e	FC

```
(shome20) #
```

Display traffic from client/user IP address – protocols, ports, IP addresses

FLAGS - **D** flag = traffic deny (check firewall rules), **Y** flag = no route, no full path Tx and Rx

(shome20) #show datapath session table | include <string>

```
(shome20) #show datapath session table | include 17
```

192.168.1.255	192.168.1.42	17	17500	17500	0/0	0	0	0	1/4	e	FY
192.168.1.42	192.168.1.255	17	17500	17500	0/0	0	0	0	1/4	e	FC
192.168.1.42	255.255.255.255	17	17500	17500	0/0	0	0	0	1/4	e	FC
192.168.1.45	192.168.1.46	17	56444	2	0/0	0	0	1	local	17	FC
10.6.7.21	192.168.1.33	17	161	52342	0/0	0	96	2	tunnel 10	27	FY
192.168.1.45	192.168.1.30	17	8211	8211	0/0	0	0	0	1/1	8	F
192.168.1.30	192.168.1.45	17	8211	8211	0/0	0	0	0	1/1	8	FC
192.168.1.46	192.168.1.45	17	8211	8211	0/0	0	0	1	local	17	FY
216.31.249.253	192.168.1.33	6	443	1117	0/0	0	96	2	tunnel 10	cf0	
192.168.1.45	192.168.1.46	17	8211	8211	0/0	0	0	1	local	17	FYC
192.168.1.33	10.6.7.21	17	52342	161	0/0	0	96	1	tunnel 10	27	FC
192.168.1.30	192.168.1.45	17	65369	2	0/0	0	0	0	1/1	7	FC
192.168.1.33	216.31.249.253	6	1117	443	0/0	0	96	2	tunnel 10	cf0	C
192.168.1.46	192.168.1.45	17	514	514	0/0	0	0	3	local	39	FY
192.168.1.45	192.168.1.46	17	514	514	0/0	0	0	1	local	39	FC
192.168.1.1	192.168.1.47	17	137	137	0/0	0	0	1	1/4	13	FC
192.168.1.15	192.168.1.1	17	137	137	0/0	0	0	2	1/4	28	FY
192.168.1.1	192.168.1.15	17	137	137	0/0	0	0	1	1/4	28	FC
192.168.1.47	192.168.1.1	17	137	137	0/0	0	0	1	1/4	13	FY
255.255.255.255	192.168.1.42	17	17500	17500	0/0	0	0	1	1/4	e	FY
192.168.1.33	239.255.255.250	17	57343	1900	0/0	0	96	0	tunnel 10	3	FC
127.1.0.1	192.168.1.45	47	0	0	0/0	0	0	178	local	e055	F

Use to display datapath data on only *include* string such as protocol, port, IP address of destination



## Client Troubleshooting – Typical

(Complaints of connection issues, low throughput)

**show user**

**show ap association client-mac**

**show ap debug client-table ap-name**

**show ap debug client-stats**

**Show ap monitor ap-list ap-name**

(EXAMPLES UNDER CONSTRUCTION)

## Radio Tests (rft)

NOTE – you are running tests to a client connected to a specific AP radio (A-band or G-band)

First run test

**(shome20) #rft test profile link-quality ap-name ap1 dest-mac 00:27:10:2c:03:54 phy a**

Then show results (for the transaction ID returned)

**(shome20) #show rft result trans-id 5201**

```
(shome20) #
(shome20) #rft test profile link-quality ap-name ap1 dest-mac 00:27:10:2c:03:54 phy a
Transaction ID: 5201

(shome20) #show rft result trans-id 5201

Profile LinkQuality, TransID 5201, AP 192.168.1.25, Dest 00:27:10:2c:03:54, Radio 0, Num Packets 100
-----
Data Rate      Success Rate
-----
6.0 Mbps      100%
9.0 Mbps      99%
12.0 Mbps     100%
18.0 Mbps     100%
24.0 Mbps     99%
36.0 Mbps     100%
48.0 Mbps     100%
54.0 Mbps     100%

Destination went into power-save during the test. Results may not be
accurate. For accurate results, disable power-save on the destination.

(shome20) #
(shome20) #
```

80 – 90's = good

70 and below could be RF interference issues

First run test

**(shome20) #rft test profile antenna-connectivity ap-name ap1 dest-mac 00:27:10:2c:03:54 radio 0**

Then show results (for the transaction ID returned)

**(shome20) #show rft result trans-id 6401**



```

(shome20) #rft test profile antenna-connectivity ap-name ap1 dest-mac 00:27:10:2c:03:54 radio 0
Transaction ID: 6401

(shome20) #show rft result trans-id 6401

Profile AntennaConnectivity, TransID 6401, AP 192.168.1.25, Dest 00:27:10:2c:03:54, Radio 0
-----
Antenna Connectivity Test Result
-----
Antenna 1: Avg S/N ratio: 30    Success Rate: 99%
Antenna 2: Avg S/N ratio: 30    Success Rate: 100%
Difference:      0              1%

Destination went into power-save during the test. Results may not be
accurate. For accurate results, disable power-save on the destination.

(shome20) #
(shome20) #

```

S/N - What client is reporting to AP that it's sees from AP – S/N ratio in 40 – 50 preferred,

First run test

(shome20) # rft test profile raw ap-name ap1 dest-mac 00:27:10:2c:03:54 phy a

Then show results (for the transaction ID returned)

(shome20) #show rft result trans-id 6601

```

(shome20) #
(shome20) #rft test profile raw ap-name ap1 dest-mac 00:27:10:2c:03:54 phy a
Transaction ID: 6601

(shome20) #show rft result trans-id 6601

Profile RAW, TransID 6601, AP 192.168.1.25, Dest 00:27:10:2c:03:54, Radio 0
-----
Measurement      Value
-----
Total Packets     100
Tx Success        100
Tx Failure        0
Excessive Retries 0
Total Retries     1
Avg S/N ratio     29
Tx by Antenna 1   100
Tx by Antenna 2   0

Destination went into power-save during the test. Results may not be
accurate. For accurate results, disable power-save on the destination.

(shome20) #

```

Send a fix number of NULL packets to client under test

(shome20) show audit-trail | include *MAC address / IP address*

Will show the audit trail for that user MAC or IP address

## Windows Client data (Windows 7)

Run from the Windows Command Line – will show all the wifi seen by the Windows machine and other data – signal rates, signal strength, radio, channel, etc.

```
netsh wlan show all
```

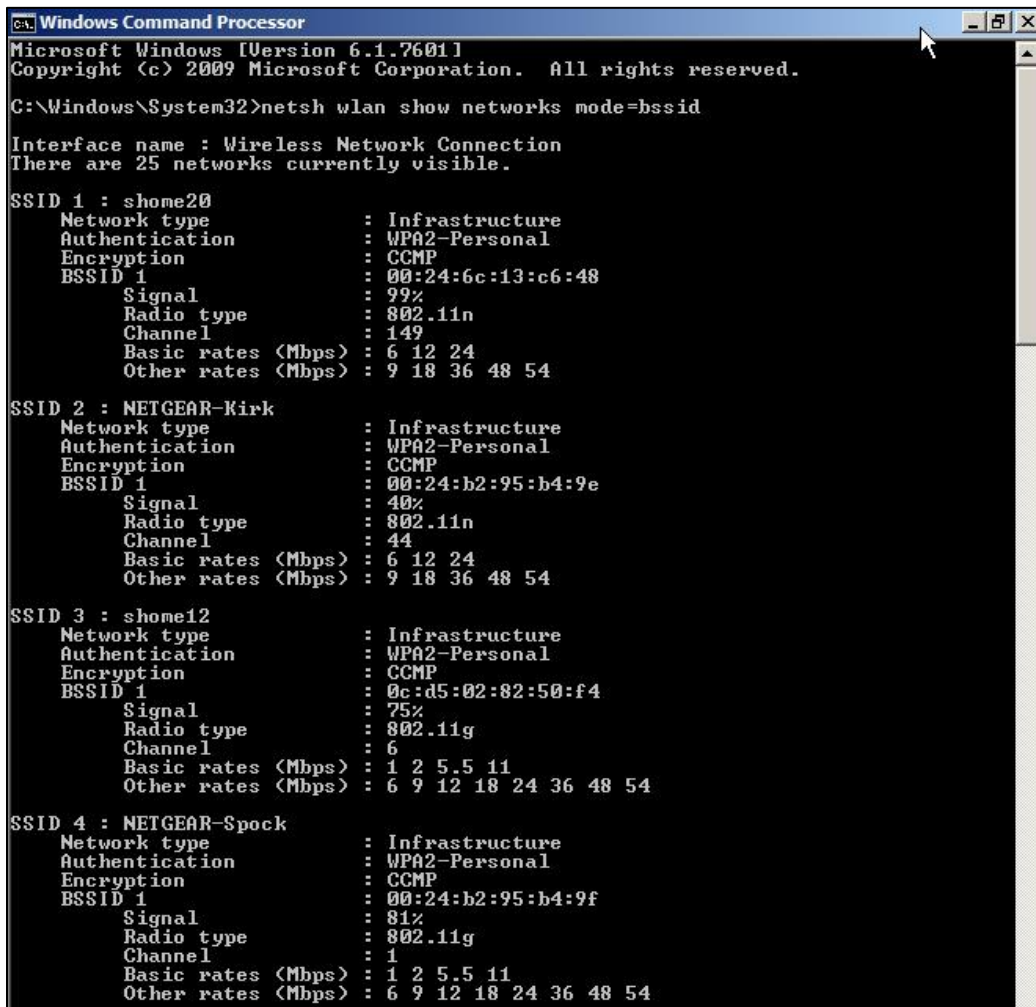
```
netsh wlan show drivers
```

```
netsh wlan show networks interfaces
```

```
netsh wlan show networks mode=bssid
```

```
netsh wlan show networks mode=bssid >> c:\releases\clientdata
```

(redirects output to c: drive \ FOLDER <releases> \ FILENAME <clientdata>)

A screenshot of a Windows Command Processor window. The title bar reads "C:\ Windows Command Processor". The window contains the following text:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Windows\System32>netsh wlan show networks mode=bssid

Interface name : Wireless Network Connection
There are 25 networks currently visible.

SSID 1 : shome20
  Network type      : Infrastructure
  Authentication    : WPA2-Personal
  Encryption        : CCMP
  BSSID 1           : 00:24:6c:13:c6:48
    Signal          : 99%
    Radio type      : 802.11n
    Channel         : 149
    Basic rates (Mbps) : 6 12 24
    Other rates (Mbps) : 9 18 36 48 54

SSID 2 : NETGEAR-Kirk
  Network type      : Infrastructure
  Authentication    : WPA2-Personal
  Encryption        : CCMP
  BSSID 1           : 00:24:b2:95:b4:9e
    Signal          : 40%
    Radio type      : 802.11n
    Channel         : 44
    Basic rates (Mbps) : 6 12 24
    Other rates (Mbps) : 9 18 36 48 54

SSID 3 : shome12
  Network type      : Infrastructure
  Authentication    : WPA2-Personal
  Encryption        : CCMP
  BSSID 1           : 0c:d5:02:82:50:f4
    Signal          : 75%
    Radio type      : 802.11g
    Channel         : 6
    Basic rates (Mbps) : 1 2 5.5 11
    Other rates (Mbps) : 6 9 12 18 24 36 48 54

SSID 4 : NETGEAR-Spock
  Network type      : Infrastructure
  Authentication    : WPA2-Personal
  Encryption        : CCMP
  BSSID 1           : 00:24:b2:95:b4:9f
    Signal          : 81%
    Radio type      : 802.11g
    Channel         : 1
    Basic rates (Mbps) : 1 2 5.5 11
    Other rates (Mbps) : 6 9 12 18 24 36 48 54
```

**Netsh wlan show profiles <name of wifi profile>**

Will show the wifi profile details

```
Windows Command Processor
C:\Windows\System32>netsh wlan show profiles ethersphere-wpa2
Profile ethersphere-wpa2 on interface Wireless Network Connection:
=====
Applied: Group Policy Profile
Profile information
-----
Version           : 1
Type              : Wireless LAN
Name              : ethersphere-wpa2
Control options   :
    Connection mode : Connect automatically
    Network broadcast : Connect only if this network is broadcasting
    AutoSwitch      : Switch to more preferred network if possible
Connectivity settings
-----
Number of SSIDs    : 1
SSID name          : "ethersphere-wpa2"
Network type       : Infrastructure
Radio type         : [ Any Radio Type ]
Vendor extension   : Not present
Security settings
-----
Authentication     : WPA2-Enterprise
Cipher             : CCMP
Security key        : Absent
802.1X             : Enabled
EAP type           : Microsoft: Protected EAP (PEAP)
802.1X auth credential : Machine or user credential
Cache user information : Yes
C:\Windows\System32>_
```