

Three steps for wifi happiness

APNIC28

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Three steps for wifi happiness

- Wifi for high density users can be very difficult
- You could spend much time on design, equipment, and testing - but:
- Just three things to do to make wifi happy:
 - Site survey
 - Use non-overlapping channels
 - Turn power levels down down down

Three steps for wifi happiness

- OK, this is really a fourth step :)
- Use good quality professional access points
 - Cisco APs (1200 series)
 - Proxim APs (700 series)
- Cheap APs may only handle 5-10 clients
- Good APs handle 70-100

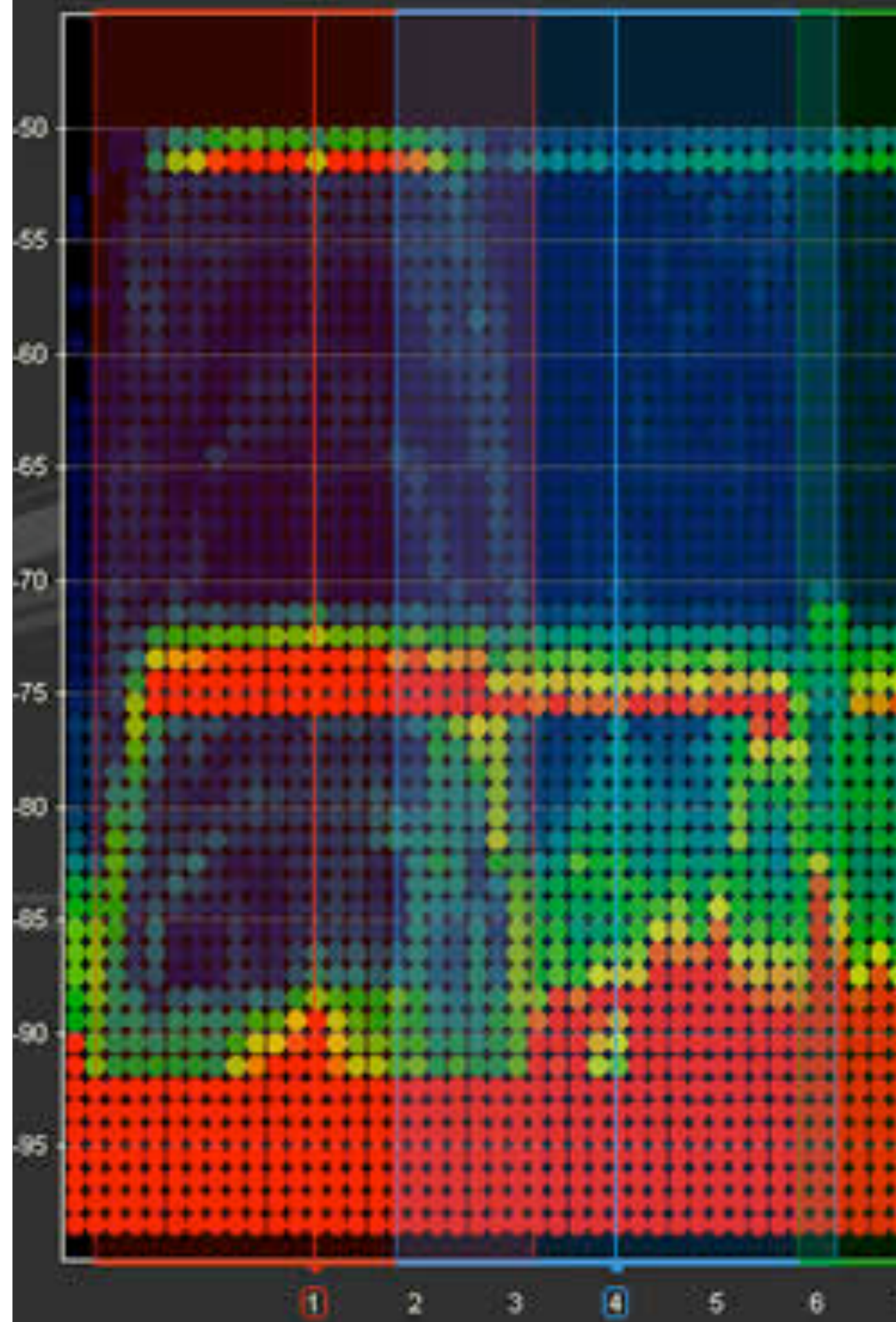
1. Site Survey

- Look at each room
- Place APs as far apart from each other as possible
- Place them high
- Check for existing APs in the building. Turn them off if possible



2. Use Non-Overlapping Channels

- 802.11b/g - use ONLY channels 1,6,11
- 802.11a - provides an additional 19 non-overlapping channels
- Use lots of 802.11a
- Prevent any locations from seeing multiple APs on the same channel



3. Turn power down!

- Only need 2 - 5dBm tx power
- That's not much!
- Reduces RF noise in the room

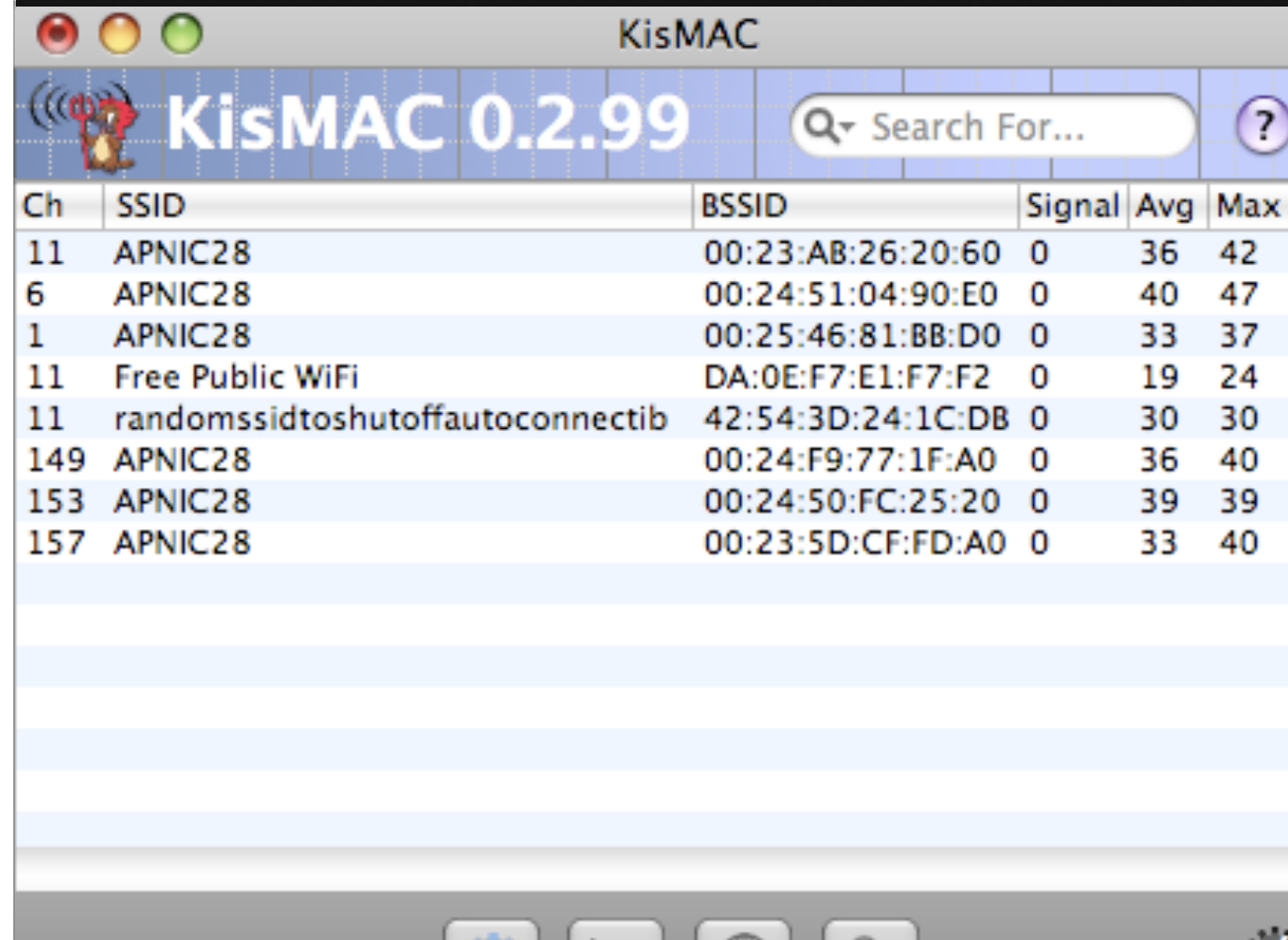


Simple Tests

- Ping across the local LAN - look for consistent and low RTT
- Use wireless scanner to check APs and their power levels
- Check all around the venue
- Confirm things are good when people and their wireless devices are present

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Terminal — bash — 80x24
57:~ jonny$ sudo ping -s 1400 -i 0.1 -c 15 169.223.7.254
PING 169.223.7.254 (169.223.7.254): 1400 data bytes
1408 bytes from 169.223.7.254: icmp_seq=0 ttl=255 time=2.897 ms
1408 bytes from 169.223.7.254: icmp_seq=1 ttl=255 time=5.191 ms
1408 bytes from 169.223.7.254: icmp_seq=2 ttl=255 time=2.209 ms
1408 bytes from 169.223.7.254: icmp_seq=3 ttl=255 time=3.455 ms
1408 bytes from 169.223.7.254: icmp_seq=4 ttl=255 time=2.451 ms
1408 bytes from 169.223.7.254: icmp_seq=5 ttl=255 time=3.162 ms
1408 bytes from 169.223.7.254: icmp_seq=6 ttl=255 time=3.742 ms
1408 bytes from 169.223.7.254: icmp_seq=7 ttl=255 time=2.318 ms
1408 bytes from 169.223.7.254: icmp_seq=8 ttl=255 time=6.400 ms
1408 bytes from 169.223.7.254: icmp_seq=9 ttl=255 time=2.447 ms
1408 bytes from 169.223.7.254: icmp_seq=10 ttl=255 time=6.999 ms
1408 bytes from 169.223.7.254: icmp_seq=11 ttl=255 time=2.340 ms
1408 bytes from 169.223.7.254: icmp_seq=12 ttl=255 time=6.662 ms
1408 bytes from 169.223.7.254: icmp_seq=13 ttl=255 time=2.228 ms
1408 bytes from 169.223.7.254: icmp_seq=14 ttl=255 time=3.838 ms

--- 169.223.7.254 ping statistics ---
15 packets transmitted, 15 packets received, 0% packet loss
round-trip min/avg/max/stddev = 2.209/3.756/6.999/1.662 ms
57:~ jonny$
```



KisMAC 0.2.99

Ch	SSID	BSSID	Signal	Avg	Max
11	APNIC28	00:23:AB:26:20:60	0	36	42
6	APNIC28	00:24:51:04:90:E0	0	40	47
1	APNIC28	00:25:46:81:BB:D0	0	33	37
11	Free Public WiFi	DA:0E:F7:E1:F7:F2	0	19	24
11	randomssidtoshutoffautoconnectib	42:54:3D:24:1C:DB	0	30	30
149	APNIC28	00:24:F9:77:1F:A0	0	36	40
153	APNIC28	00:24:50:FC:25:20	0	39	39
157	APNIC28	00:23:5D:CF:FD:A0	0	33	40