# TESTING TWO ARUBA IAP

The title may <u>sound familiar</u>. This time, I was able to test two Aruba Instant Access Points. Both come with a virtual controller, and when they are plugged in on the same network, the fun begins. But first, a rough sketch of my lab lay-out:
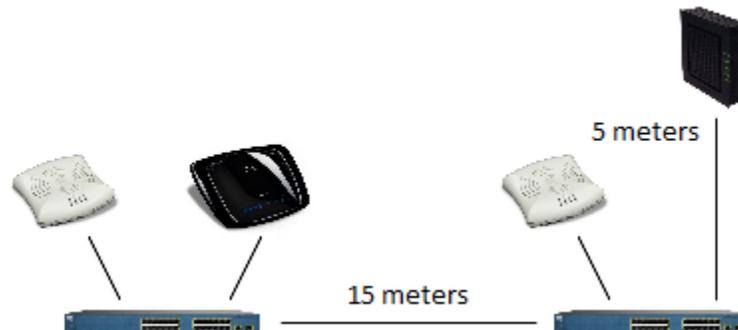
The two Aruba's are connected on different switches, 15 meters apart. Connected to the same switch as the first is a Linksys 802.11b/g AP running DD-WRT, connected to the other switch is a Motorola Docsis 3.0 802.11n. But once all devices are plugged in, I only see three wireless networks, not four: the Aruba's detect each other and automatically use the same settings. That's right: everything is the same: SSIDs, encryption,…

How did this happen? Well, the Aruba's send out probing frames on the local subnet, which search for other Aruba devices. Since these are layer 2 frames without IP address, it's somewhat similar to CDP or LLDP. Once an IAP sees such a probe frames of another IAP, ARP information is requested for layer 3 communication, and the Aruba's start communication with UDP port 8211 (both source and destination) over IP. They use the PAPI protocol, or Aruba AP control protocol. Settings are transferred from one AP to the other. Since one was configured before and the other one was not, the unconfigured one inherited the settings of the other. I'm not sure what other parameters are used to decide which settings are valid and which not.

No.	Time	Source	Destination	Protocol	Length	Info
214	59.238072	ArubaNet_cf:92:78	Broadcast	0x8ffd	60	Ethernet II
216	60.238085	ArubaNet_cf:92:78	Broadcast	0x8ffd	60	Ethernet II
220	61.238180	ArubaNet_cf:92:78	Broadcast	0x8ffd	60	Ethernet II
221	62.238253	ArubaNet_cf:92:78	Broadcast	0x8ffd	60	Ethernet II
223	63.238020	ArubaNet_cf:92:78	Broadcast	0x8ffd	60	Ethernet II
224	63.409681	ArubaNet_cf:92:9b	Broadcast	ARP	60	Who has 192.168.168.36? Tell 192
225	63.409683	ArubaNet_cf:92:78	ArubaNet_cf:92:9b	ARP	60	192.168.168.36 is at 00:0b:86:cf:
226	63.409904	192.168.168.60	192.168.168.36	PAPI	153	PAPI - Aruba AP Control Protocol
227	63.410802	192.168.168.36	192.168.168.60	PAPI	102	PAPI - Aruba AP Control Protocol
228	63.430400	192.168.168.60	192.168.168.36	PAPI	86	PAPI - Aruba AP Control Protocol
230	64.238127	ArubaNet_cf:92:78	Broadcast	0x8ffd	60	Ethernet II
232	65.238078	ArubaNet_cf:92:78	Broadcast	0x8ffd	60	Ethernet II
233	65.432492	192.168.168.60	192.168.168.36	PAPI	146	PAPI - Aruba AP Control Protocol
234	65.434577	192.168.168.36	192.168.168.60	PAPI	86	PAPI - Aruba AP Control Protocol

Since both Aruba's are now connected, I can log in to the management page on instant.arubanetworks.com, which takes me to the 'master' IAP. It shows the same information as before: how many clients are connected, which networks are giving interference,… Only, this time, it show the connected clients per IAP, and interference is also shown per IAP, allowing for some geographical tracking of the clients and access points:
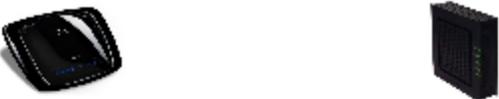
Locate Foreign AP ✕

Access Points detecting this foreign AP are listed below.

Name	Signal
00:0b:86:cf:92:78	54
00:0b:86:cf:92:9b	18

Locate Foreign AP ✕

Access Points detecting this foreign AP are listed below.

Name	Signal
00:0b:86:cf:92:9b	17

Compared to the lay-out, the stronger signal indicates the access point is closer. The Linksys is detected on both Aruba's, the Motorola is just out of reach of one, and has a weaker signal in general.

Because of the copied settings, layer 2 roaming is flawless. The only time frame errors start to occur is when closer than 1 meter from an IAP, which is normal because too close causes echo in the frame transmissions.

Well, nothing really new this time to learn, but some really interesting things about wireless, and

the closest I can get to a WLC (Wireless LAN Controller) in my home lab.

Source : http://reggle.wordpress.com/2012/02/02/testing-two-aruba-iap/