

Creating a Mesh in Instant

Friday, September 02, 2016 12:28 PM

<http://www.arubanetworks.com/products/networking/aruba-instant/training/instant-training/>

Alara-VC

Friday, September 02, 2016 12:57 PM

This is my test bridge in my apartment. It does work but it takes 17 minutes to find the point AP.

Config - Portal

Tuesday, September 06, 2016 7:36 PM

```
AP215-.06-portal# sh run
version 6.4.4.0-4.2.3
virtual-controller-country US
virtual-controller-key 076c9c5201f8c1dddf34e1999299935f0cb0356c8ec67eb847
name Alara-VC
virtual-controller-ip 10.0.0.201
virtual-controller-vlan 1 255.255.255.0 10.0.0.1
virtual-controller-dnsip 8.8.8.8
terminal-access
ntp-server 138.236.128.112
clock timezone Central-Time -06 00
clock summer-time CDT recurring second sunday march 02:00 first sunday november 02:00
rf-band 5.0
```

```
allow-new-aps
allowed-ap 40:e3:d6:c2:69:74
allowed-ap 84:d4:7e:c6:d2:10
```

```
arm
wide-bands 5ghz
80mhz-support
min-tx-power 18
max-tx-power 127
band-steering-mode prefer-5ghz
air-time-fairness-mode default-access
client-aware
scanning
```

```
syslog-level warn ap-debug
syslog-level warn network
syslog-level warn security
syslog-level warn system
syslog-level warn user
syslog-level warn user-debug
syslog-level warn wireless
```

```
mgmt-user admin d86e5b57a7de8dd81a86cee258477a39
```

```
wlan access-rule default_wired_port_profile
index 0
```

rule any any match any any any permit

wlan access-rule wired-instant

index 1

rule masterip 0.0.0.0 match tcp 80 80 permit

rule masterip 0.0.0.0 match tcp 4343 4343 permit

rule any any match udp 67 68 permit

rule any any match udp 53 53 permit

wlan access-rule Bridge1

index 2

rule any any match any any any permit

wlan ssid-profile Bridge1

enable

index 0

type employee

ssid Bridge1

wpa-passphrase 925e2f2b1986e414781cd4029317e7d5daf0aa035d6b799e

opmode wpa2-psk-aes

max-authentication-failures 0

vlan 1

rf-band all

captive-portal disable

dtim-period 1

broadcast-filter arp

dmo-channel-utilization-threshold 90

local-probe-req-thresh 0

max-clients-threshold 64

auth-survivability cache-time-out 24

wlan external-captive-portal

server localhost

port 80

url "/"

auth-text "Authenticated"

auto-whitelist-disable

https

blacklist-time 3600

auth-failure-blacklist-time 3600

ids

wireless-containment none

ip dhcp DHCP-Relay-L2

server-type Centralized,L2

server-vlan 1

dhcp-relay

dhcp-server 10.0.0.1

wired-port-profile wired-instant
switchport-mode access
allowed-vlan all
native-vlan guest
no shutdown
access-rule-name wired-instant
speed auto
duplex auto
no poe
type guest
captive-portal disable
no dot1x

wired-port-profile default_wired_port_profile
switchport-mode trunk
allowed-vlan all
native-vlan 1
no shutdown
access-rule-name default_wired_port_profile
speed auto
duplex full
no poe
type employee
auth-server InternalServer
captive-portal disable
no dot1x

enet0-port-profile default_wired_port_profile
enet1-port-profile default_wired_port_profile
enet2-port-profile default_wired_port_profile
enet3-port-profile default_wired_port_profile
enet4-port-profile default_wired_port_profile

wlan sta-profile
ssid Bridge1
cipher-suite wpa2-ccmp-psk
wpa-passphrase a74663227b241dac0ab98bd13afc090da42cc68144740fd7
uplink-band dot11g

uplink
no preemption
enforce none
failover-internet-pkt-lost-cnt 10
failover-internet-pkt-send-freq 30
failover-vpn-timeout 180
uplink-priority ethernet 4
uplink-priority wifi 0
uplink-priority cellular 5

airgroup
disable

airgroupservice airplay
disable
description AirPlay

airgroupservice airprint
disable
description AirPrint

Config - Point

Tuesday, September 06, 2016 7:36 PM

```
AP225-.28-point# sh run
version 6.4.4.0-4.2.3
virtual-controller-country US
virtual-controller-key 076c9c5201f8c1dddf34e1999299935f0cb0356c8ec67eb847
name Alara-VC
virtual-controller-ip 10.0.0.201
virtual-controller-vlan 1 255.255.255.0 10.0.0.1
virtual-controller-dnsip 8.8.8.8
terminal-access
ntp-server 138.236.128.112
clock timezone Central-Time -06 00
clock summer-time CDT recurring second sunday march 02:00 first sunday november 02:00
rf-band 5.0
```

```
allow-new-aps
allowed-ap 40:e3:d6:c2:69:74
allowed-ap 84:d4:7e:c6:d2:10
```

```
arm
wide-bands 5ghz
80mhz-support
min-tx-power 18
max-tx-power 127
band-steering-mode prefer-5ghz
air-time-fairness-mode default-access
client-aware
scanning
```

```
syslog-level warn ap-debug
syslog-level warn network
syslog-level warn security
syslog-level warn system
syslog-level warn user
syslog-level warn user-debug
syslog-level warn wireless
```

```
mgmt-user admin 021f74a473f60fc3e0db7ded45c1d806
```

```
wlan access-rule default_wired_port_profile
```

index 0
rule any any match any any any permit

wlan access-rule wired-instant
index 1
rule masterip 0.0.0.0 match tcp 80 80 permit
rule masterip 0.0.0.0 match tcp 4343 4343 permit
rule any any match udp 67 68 permit
rule any any match udp 53 53 permit

wlan access-rule Bridge1
index 2
rule any any match any any any permit

wlan ssid-profile Bridge1
enable
index 0
type employee
ssid Bridge1
wpa-passphrase 25e58ff3650ee9fe74fb425dbfaeb332e4e74b8d0a25eb63
opmode wpa2-psk-aes
max-authentication-failures 0
vlan 1
rf-band all
captive-portal disable
dtim-period 1
broadcast-filter arp
dmo-channel-utilization-threshold 90
local-probe-req-thresh 0
max-clients-threshold 64

auth-survivability cache-time-out 24

wlan external-captive-portal
server localhost
port 80
url "/"
auth-text "Authenticated"
auto-whitelist-disable
https

blacklist-time 3600
auth-failure-blacklist-time 3600

ids
wireless-containment none

ip dhcp DHCP-Relay-L2
server-type Centralized,L2
server-vlan 1

dhcp-relay
dhcp-server 10.0.0.1

wired-port-profile wired-instant
switchport-mode access
allowed-vlan all
native-vlan guest
no shutdown
access-rule-name wired-instant
speed auto
duplex auto
no poe
type guest
captive-portal disable
no dot1x

wired-port-profile default_wired_port_profile
switchport-mode trunk
allowed-vlan all
native-vlan 1
no shutdown
access-rule-name default_wired_port_profile
speed auto
duplex full
no poe
type employee
auth-server InternalServer
captive-portal disable
no dot1x

enet0-port-profile default_wired_port_profile
enet1-port-profile default_wired_port_profile
enet2-port-profile default_wired_port_profile
enet3-port-profile default_wired_port_profile
enet4-port-profile default_wired_port_profile

wlan sta-profile
ssid Bridge1
cipher-suite wpa2-ccmp-psk
wpa-passphrase 24c94d815f7e896ac28201f830da7c893dd7ac4881ac5b61
uplink-band dot11g

uplink
no preemption
enforce none
failover-internet-pkt-lost-cnt 10
failover-internet-pkt-send-freq 30
failover-vpn-timeout 180
uplink-priority ethernet 4
uplink-priority wifi 0
uplink-priority cellular 5

airgroup
disable

airgroupservice airplay
disable
description AirPlay

airgroupservice airprint
disable
description AirPrint

SSID-Bridge

Monday, September 05, 2016 9:50 AM

Edit Bridge1

Help

1 WLAN Settings2 VLAN3 Security4 Access

WLAN Settings

Name & Usage

Name: Bridge1

Primary usage:

Employee

Voice

Guest

Broadcast/Multicast

Broadcast filtering:ARP

Multicast transmission optimization:Disabled

Dynamic multicast optimization:Disabled

DMO channel utilization threshold:90%

Transmit Rates

2.4 GHz:Min:1Max:54

5 GHz:Min:6Max:54

802.11

Band:All

DTIM interval:1 beacon

Min RSSI for probe request:0

Min RSSI for auth request:0

Very high throughput:☒

Bandwidth Limits

☐ Airtime

☐ Each radio

Downstream:

kbps

Per user

Upstream:

kbps

Per user

WMM

Share

DSCP Mapping

Background WMM:0%

Best effort WMM:0%

Video WMM:0%

Voice WMM:0%

Traffic Specification (TSPEC):☐

TSPEC Bandwidth:2000Kbps

Spectralink Voice Protocol (SVP):☐

Miscellaneous

Content filtering:Disabled

Inactivity timeout:1000sec.

Deauth inactive clients:Disabled

SSID:

Hide

Disable

Out of service (OOS):VLAN downNone

Hide advanced options

NextCancel

Edit Bridge1

Help

1 WLAN Settings2 VLAN3 Security4 Access

Client IP & VLAN Assignment

Client IP assignment:

Virtual Controller managed

Network assigned

Client VLAN assignment:

Default

CustomDHCP-Relay-L2(vlan:1)

Instant Page 11

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Next

Cancel

Edit Bridge1

Help

1 WLAN Settings

2 VLAN

3 Security

4 Access

Security Level

More Secure

Enterprise

Personal

Open

Less Secure

Key management:

WPA-2 Personal

Passphrase format:

8-63 chars

Passphrase:

Retype

MAC authentication:

Disabled

Blacklisting:

Disabled

Enforce DHCP:

Disabled

Fast Roaming

802.11r:

802.11k:

802.11v:

Back

Next

Cancel

Edit Bridge1

Help

1

WLAN Settings

2

VLAN

3

Security

4

Access

Access Rules

More Control

- Role-based

- Network-based

- Unrestricted

Less Control

No restrictions on access based on destination or type of traffic

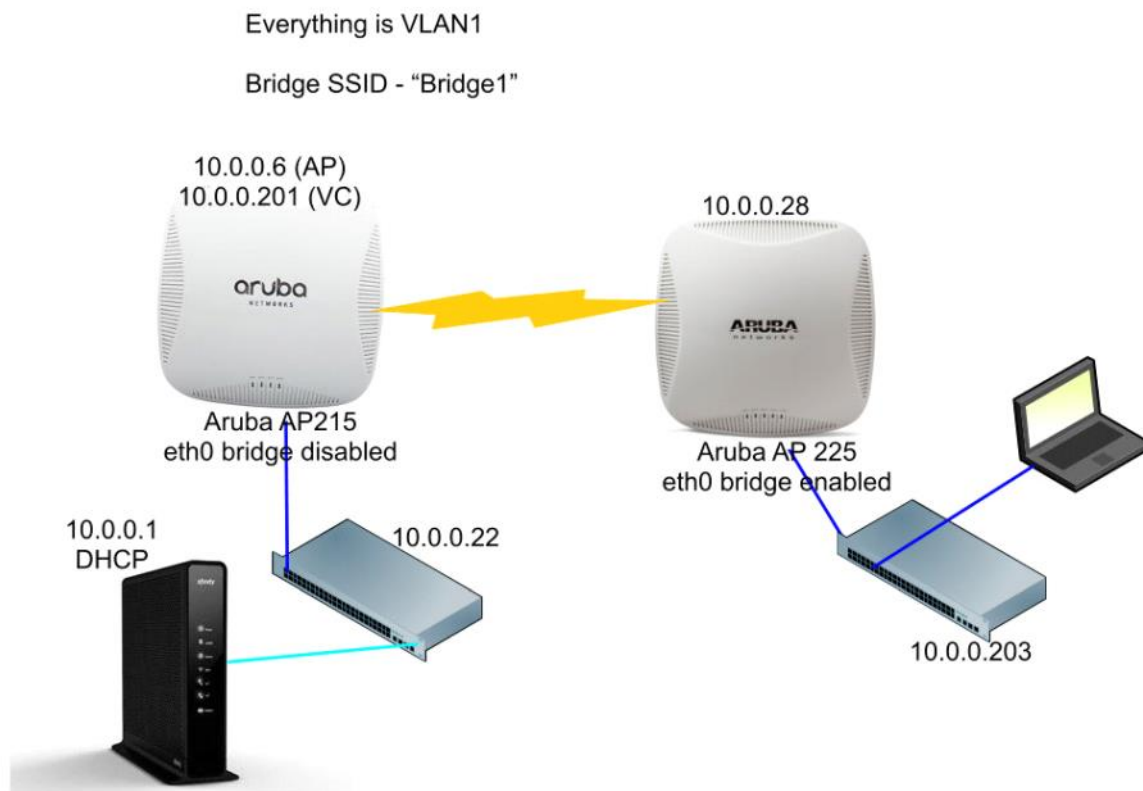
Back

Finish

Cancel

Bridge Diagram

Monday, September 05, 2016 8:41 AM



Settings - System - General

Monday, September 05, 2016 8:32 AM

System

General

Admin

Uplink

L3 Mobility

Monitoring

WISPr

Proxy

Time Based Services

Name:

Alara-VC

System location:

Virtual Controller IP:

10.0.0.201

Dynamic Proxy:

☐ RADIUS ☐ TACACS

MAS integration:

Disabled

NTP server:

138.236.128.112

Timezone:

Central-Time UTC-06

Daylight Saving Time:

☒

Preferred band:

5 GHz

AppRF visibility:

All

URL visibility:

Disabled

Virtual Controller network settings:

Custom

Virtual Controller Netmask:

255.255.255.0

Virtual Controller Gateway:

10.0.0.1

Virtual Controller DNS:

8.8.8.8

Virtual Controller VLAN:

1

Auto join mode:

Enabled

Terminal access:

Enabled

Console access:

Enabled

Telnet server:

Disabled

LED display:

Enabled

Extended SSID:

Disabled

Deny inter user bridging:

Disabled

Deny local routing:

Disabled

Dynamic CPU management:

Automatic

[Hide advanced options](#)

OK

Cancel

Settings-System-Uplink

Monday, September 05, 2016 8:35 AM

System

[Help](#)

GeneralAdminUplinkL3 MobilityMonitoringWISPrProxyTime Based Services

Management

Enforce uplink:None

Pre-emption:Disabled

VPN failover timeout:180

Internet failover:Disabled

Internet failover IP:8.8.8.8

Uplink Priority List

Wifi-sta

Eth0

3G/4G

3G/4G

WiFi

Name (SSID):Bridge1

Band:2.4 GHz

Key management:WPA-2 Personal

Passphrase format:8-63 chars

Passphrase:.....

PPPoE

AP1X

[Hide advanced options](#)

OK

Cancel

Settings-More-Wired

Monday, September 05, 2016 8:46 AM

Wired[Help](#)

Wired Networks

Wired Networks:

wired-instant
default_wired_port_profile

New Edit Delete

Network assignments:

0/0: default_wired_port_profile ▼ 0/4: default_wired_port_profile ▼

0/1: default_wired_port_profile ▼

0/2: default_wired_port_profile ▼

0/3: default_wired_port_profile ▼

Wired Users

Name	MAC address	IP Address	OS	AP	Port
	00:e0:2b:00:00:...	0.0.0.0		AP225-.28-point	0/0
	00:04:96:9a:4b:...	10.0.0.203		AP225-.28-point	0/0

OK Cancel

Settings-More-Wired-Wired Settings

Monday, September 05, 2016 8:47 AM

Edit Wired Network

Help

1

Wired Settings

2

VLAN

3

Security

4

Access

Wired Settings

Name:

default_wired_port_profile

Primary usage:

☒ Employee

☐ Guest

POE:

Disabled

Admin status:

Up

Show advanced options

Next

Cancel

Edit Wired Network

Help

1

Wired Settings

2

VLAN

3

Security

4

Access

VLAN Management

Mode:

Trunk

Client IP assignment:

Network assigned

Native VLAN:

1

Allowed VLANs:

all

VLAN Assignment Rules

New

Edit

Delete

↑

↓

Back Next Cancel

Settings-More-DHCP Servers

Monday, September 05, 2016 8:50 AM

DHCP Servers[Help](#)

Virtual Controller Assigned Networks - Default DHCP Scope

Domain name:

DNS Server(s): Lease time: **Minutes** ▼

Network: Mask:

Distributed DHCP Scopes

Distributed DHCP Scopes (0)

Name	Type	VLAN	Branch Subnet
------	------	------	---------------

New Edit Delete

Centralized DHCP Scopes

Centralized DHCP Scopes (1)

Name	Type	VLAN
DHCP-Relay-L2	Centralized, L2	1

New Edit Delete

Local DHCP Scopes

Local DHCP Scopes (0)

Name	Type	VLAN	Network
------	------	------	---------

New Edit Delete

OK Cancel

Edit DHCP Scope

Name:

Type: ▼

VLAN:

Split tunnel: ▼

DHCP relay: ▼

Helper address:

Option 82: ▼

OK Cancel

AP Mesh Settings

Monday, September 05, 2016 8:55 AM

Portal AP

The screenshot shows a web-based configuration window titled "Edit Access Point IAP-215-.06" with a "Help" link in the top right corner. The window has three tabs: "General", "Radio", and "Uplink", with the "Uplink" tab currently selected. The "Uplink" tab contains the following fields and controls:

- "Uplink management VLAN:" followed by a text input field containing the value "0".
- "Eth0 bridging:" followed by a dropdown menu showing "Disabled".
- "USB port:" followed by a dropdown menu showing "Enabled".
- A section header "PEAP User" followed by a horizontal line separator.
- "Username:" followed by a text input field.
- "Password:" followed by a text input field.
- "Retype:" followed by a text input field.
- A section header "Upload Certificate" followed by a horizontal line separator.
- A button labeled "Upload New Certificate".

At the bottom right of the window are "OK" and "Cancel" buttons.

In the General Tab, set IP address of the AP.

Point AP

Edit Access Point AP225-.28-point

Help

GeneralRadioUplink

Uplink management VLAN:

0

Eth0 bridging:

Enabled

▼

USB port:

Enabled

▼

PEAP User

Username:

Password:

Retype:

Upload Certificate

Upload New Certificate

OK

Cancel

In the General Tab, set IP address of the AP.

Steps

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AP comes online in same switch
Find IP of AP, usually the default

In 1 Network window

Click NEW

1 WLAN Settings

Type name of bridge SSID

Tick Employee

2 VLAN leave as is for now

3 Security

Personal

Give strong password

4 Access

Unrestricted

Click Finish

Delete Instant SSID is still there.

In 2 Access Points Window

Click an AP then Edit

In General, Name the AP

Tick Specify Statically

Enter info

Go to Uplink, eth0 bridging will be enabled on the POINT, not PORTAL AP. Wait until everything is setup.

Reboot all APs once everything is setup.

When looking at the AP via console, the counter will get to around 70 before it's ready.

Moving to the top right of the screen

SYSTEM

Click Advanced Options

General Tab

Name the system

VC IP

NTP Server

Time Zone

Daylight Saving

Preferred Band

Netmask

Gateway

DNS02.

Extended SSID is DISABLED

Uplink Tab

Internet Failover - Enabled

WiFi - bridge name, good password

Make sure in uplink priority WiFi-sta is second. Come back to this later.

Done with System

Hover over More, choose Wired
Set all ports to default_wired_port_profile
Highlight it in the left and choose EDIT
1 Wired - Admin State UP
2 VLAN - Trunk
Leave 3 and 4 as is
Finish, OK

Hover over More, choose DCP Servers
Go to Centralized DHCP servers
Click New
Name it
Centralized, L2
VLAN ID
Enabled
Enabled
DHCP Server address
None
OK
OK
Reboot APs to make sure settings stick

Time to make sure the POINT is set correctly.
Login to the VC Controller address to make sure it works

Click on the SSID, Edit
2 VLAN
Choose VC Managed
Choose Custom
Choose your relay
Next, next, finish

Click on the AP that will become the Point, edit
Click Uplink tab
Eth0 bridging, enabled
OK
OK the message
OK

Go to System, top right
Click Advanced options
Click Uplink tab
Make sure in uplink priority WiFi-sta is second.
OK

Reboot APs
After issuing the command waiting a few seconds then unplug Point AP
Move to new switch that isn't connected to the network

It will take 17 minutes to form the bridge
10:59
11:16

You will be able to log into the VC sooner, around 2 minutes

You will not see the second, point, AP yet.

In Console, the point reaches

<<<< Welcome to the Access Point >>>>

At about 140 on the counter.

It will give up around 800 and reboot

Two minutes after that the bridge should show.