

Configuring Controller to COP Communication

Introduction

This document lays out the steps to ensure full communication between Aruba controllers (MCs and MDs) and Central on Premises (COP)

Prerequisites

- HP Certificate Authority Certificate (so MCs and MDs can verify incoming https connections from COP) *Note: you will need to get the Certificate from the TAC*
- SNMP credentials (a Community Name for V2 or identity and privacy username and keys for V3)
- A admin level account configured on each MC or MD (username and password) Try to use a different account from the default "admin" account.

Procedure

Configuring MCs and MDs

1. Using the MC UI Interface
 - a. Import HP CA Certificate
 - i. Login to MC UI in a browser.
 - ii. At the "/mm" config level.
 - iii. Upload HP CA cert for MCs in "Configuration" → "System" → "Certificates".
 - iv. Import certificate as "HP_TrustedCA".
 - v. Repeat at the "/md" level.
2. Using the MC CLI
 - a. At each MD level execute the following commands:

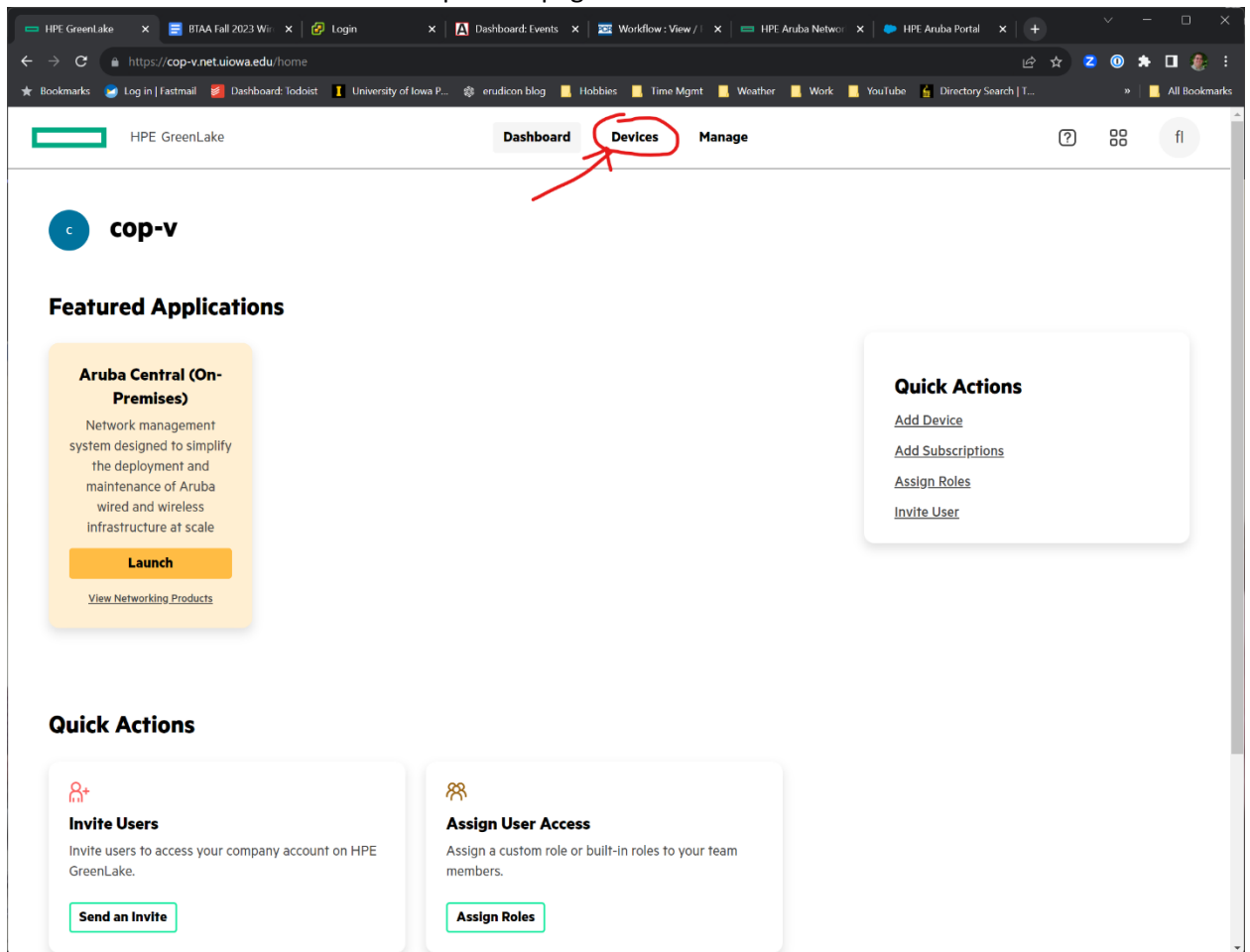
```
cd md-east-a-1
mgmt-server primary-server 128.255.211.230 profile default-amp
aruba-central server 128.255.211.230
aruba-central customca HPE_cert
write mem
```

Configuring Central on Premises

1. Login into the COP UI in a browser and click on the System icon in the upper right hand corner.

The screenshot displays the Aruba Central web interface. The browser's address bar shows the URL: https://central-cop-v.net.uiowa.edu/frontend/#/NETWORKHEALTH_SITE_SUMMARY/MAP?nc=global. The interface includes a top navigation bar with the Aruba logo, a search bar, and a user profile icon. A red arrow points to the user profile icon in the top right corner. Below the navigation bar, the main content area is titled "Network Health" and features a "Summary" tab. The "Summary" tab displays a map of Iowa with various site locations marked. A red circle with the number "2" is visible on the map, indicating a potential issue. The map also shows a green circle with the number "2" and a red circle with the number "169". The map is titled "Number of devices" and includes a legend for "NO ISSUES" (green) and "POTENTIAL ISSUES" (red). The map also displays various site names and their status (UP/DOWN). The left sidebar contains a navigation menu with options such as Overview, Devices, Clients, Applications, Security, Alerts & Events, Audit Trail, Tools, Reports, Maintain, Firmware, Organization, and System Management.

2. Click on the word “Devices” at the top of the page



3. Click on the words “Auto provisioning” on the left hand column of the page

The screenshot shows the HPE GreenLake 'Devices' management interface. In the left-hand navigation menu, the 'Auto-Provisioning' option is highlighted with a red circle and a red arrow. The main content area is titled 'Inventory' and includes a summary of device counts: 0 Require Subscriptions, 10751 Assigned & Subscribed, and 10751 Total Devices. Below this is a search bar and a table of 10751 devices.

Serial Number	Model	MAC Address	Application	Subscription Tier	Expiration Date	Tags
Ⓢ CNQFK9W3FW	AP-535	8C:79:09:C7:54:B6	Aruba Central (On-Premises)	Foundation AP	May 17, 2024	0
Ⓢ CNQCK9W1G3	AP-535	8C:79:09:C6:C9:10	Aruba Central (On-Premises)	Foundation AP	May 17, 2024	0
Ⓢ VNNVK9W593	AP-535	34:3A:20:CF:EC:3C	Aruba Central (On-Premises)	Foundation AP	May 17, 2024	0
Ⓢ VNNVK9W55Z	AP-535	34:3A:20:CF:F2:6E	Aruba Central (On-Premises)	Foundation AP	May 17, 2024	0
Ⓢ CNNBKSMDN	AP-505H	28:DE:65:31:34:9A	Aruba Central (On-Premises)	Foundation AP	May 17, 2024	0

4. Click on the “Provisioning Profiles” Tab

The screenshot shows a web browser window with the URL <https://cop-v.net.uiowa.edu/devices/auto-provisioning>. The page is titled "HPE GreenLake" and has a navigation bar with "Dashboard", "Devices", and "Manage" tabs. The "Devices" tab is active, and the "Provisioning Profiles" sub-tab is selected, highlighted with a red circle and a red arrow. The main content area is titled "Provisioning Profiles" and includes a description: "Configure connection profiles for device discovery." Below this, there are three columns for different profile types: "SNMP", "HTTPS", and "Pre-Shared Keys". Each column has an "Add" button and a list of existing profiles. The "SNMP" column shows a profile named "Controllers-v3". The "HTTPS" column shows a profile named "Controllers-https-2". The "Pre-Shared Keys" column is empty.

Devices
Manage your devices and their subscriptions.

Inventory
Auto-Subscribe
Auto-Provisioning
Third Party Devices

Auto-Provisioning
Provisioning Profiles
Controller Profiles

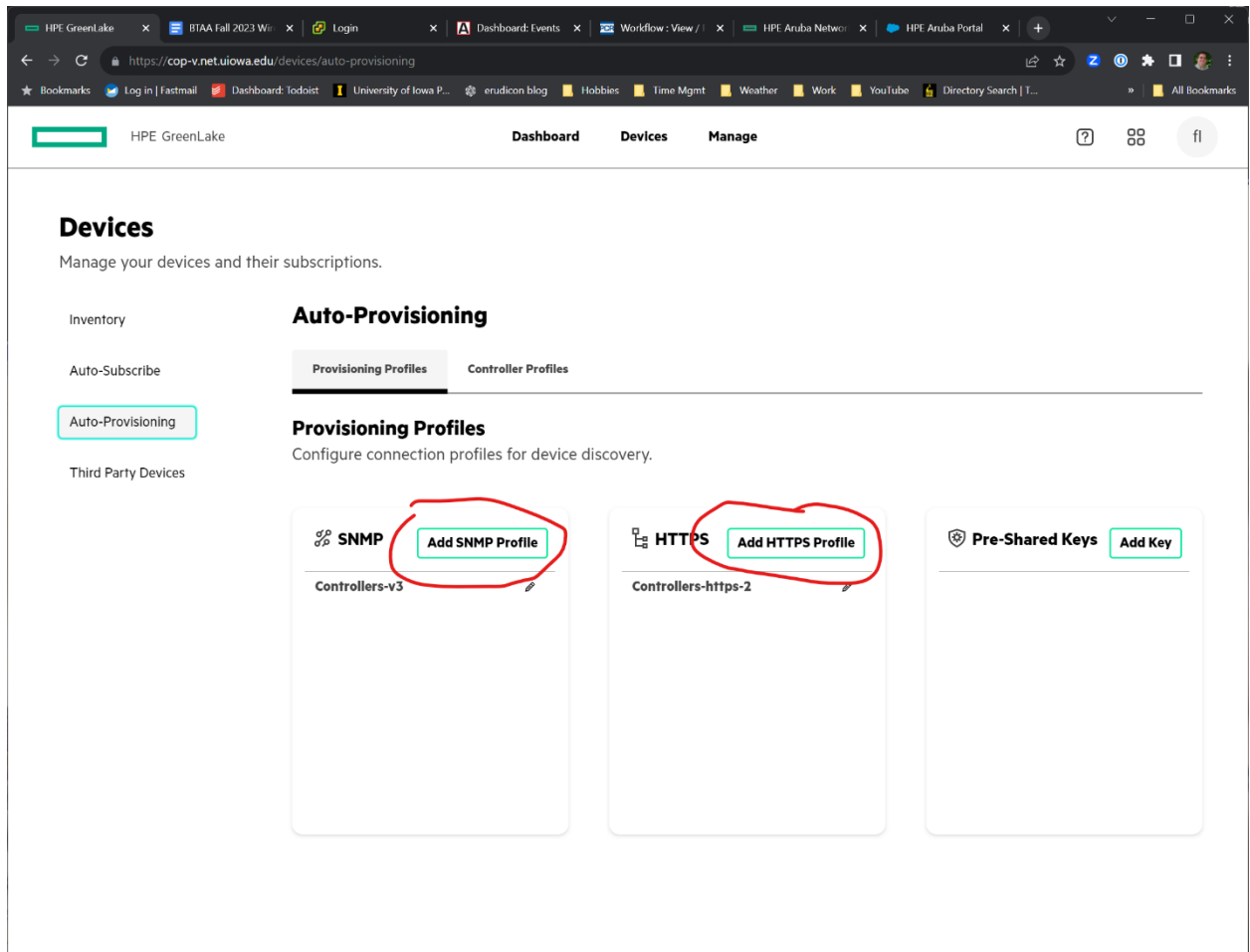
Provisioning Profiles
Configure connection profiles for device discovery.

SNMP Add SNMP Profile
Controllers-v3

HTTPS Add HTTPS Profile
Controllers-https-2

Pre-Shared Keys Add Key

5. Create SNMP and HTTPS profiles by clicking the “Add SNMP Profile” for “Add HTTPS Profile” buttons.



6. Fill out the Appropriate parameters, depending if you are adding a SNMP or HTTPS profile (see this page and the next). When finished click the “Create” button.

Create SNMP Profile

Enter the details below to create a SNMP Profile.

Name*

SNMP Version*



SNMPv3 Username*

SNMPv3 Auth Protocol*



Auth Password*

Confirm Auth Password

SNMPv3 Privacy Protocol*



Privacy Password*

Confirm Privacy Password

Cancel

Create

Create HTTPS Profile

Enter the details below to create a HTTPS Profile.

Name*

User*

Password*

Confirm Password

Cancel

Create

7. Click on the “Controller Profile” tab

The screenshot shows a web browser window with the URL <https://cop-v.net.iowa.edu/devices/auto-provisioning>. The page is titled "HPE GreenLake" and has navigation tabs for "Dashboard", "Devices", and "Manage". The "Devices" tab is active, and the "Auto-Provisioning" sub-tab is selected. Under "Auto-Provisioning", there are three main sections: "Inventory", "Auto-Subscribe", and "Auto-Provisioning". The "Auto-Provisioning" section is further divided into "Provisioning Profiles" and "Controller Profiles". The "Controller Profiles" tab is circled in red, and a red arrow points to it. Below the tabs, the "Provisioning Profiles" section is visible, with the heading "Provisioning Profiles" and the subtext "Configure connection profiles for device discovery." There are three cards for different protocols: "SNMP", "HTTPS", and "Pre-Shared Keys". Each card has an "Add" button and a list of existing profiles. The "SNMP" card shows a profile named "Controllers-v3". The "HTTPS" card shows a profile named "Controllers-https-2". The "Pre-Shared Keys" card is empty.

Devices
Manage your devices and their subscriptions.

Inventory
Auto-Subscribe
Auto-Provisioning
Third Party Devices

Auto-Provisioning

Provisioning Profiles
Controller Profiles

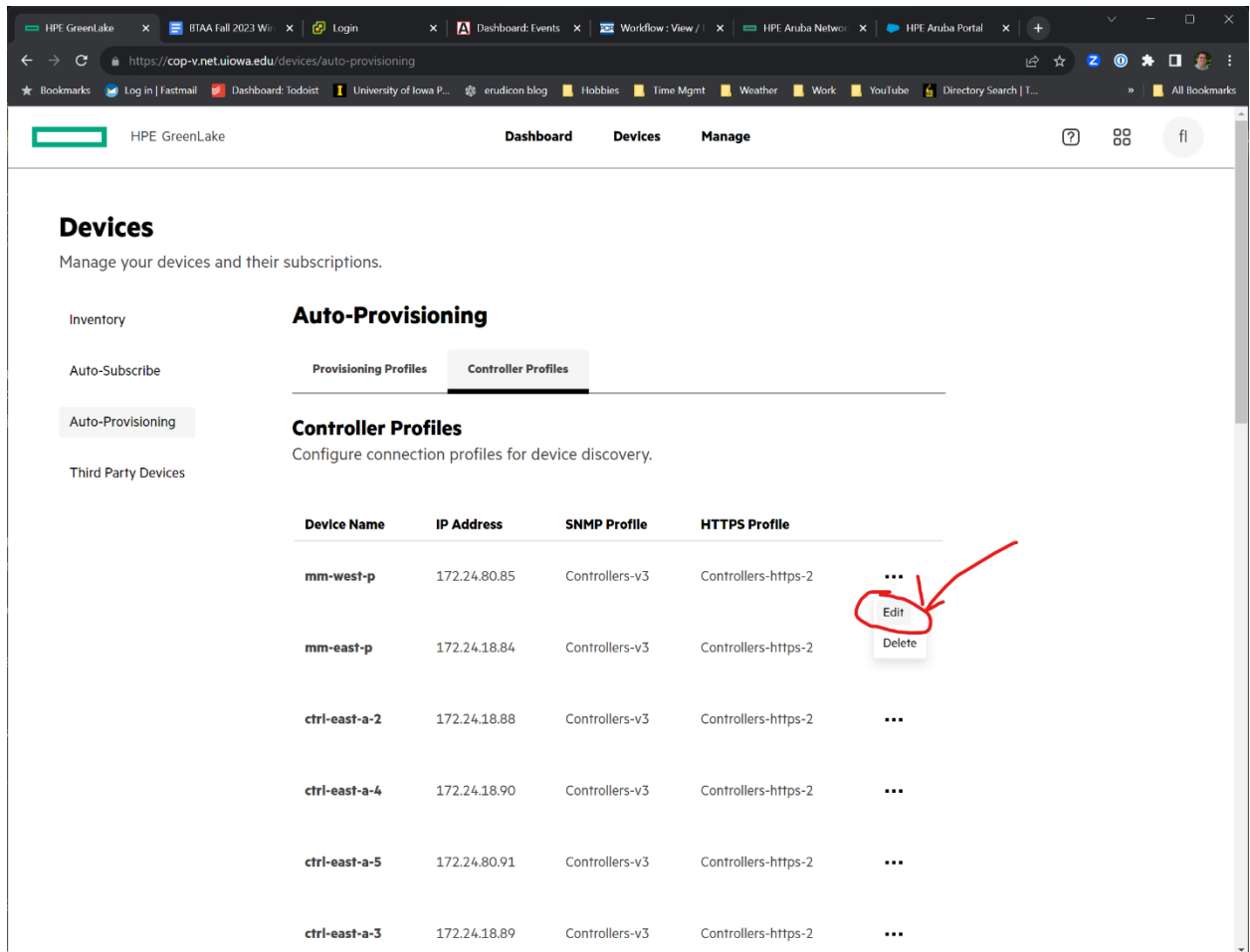
Provisioning Profiles
Configure connection profiles for device discovery.

SNMP Add SNMP Profile
Controllers-v3

HTTPS Add HTTPS Profile
Controllers-https-2

Pre-Shared Keys Add Key

8. A list of MCs and MDs should appear. For each MD or MC click on the three dots to the right of the line and select “EDIT”

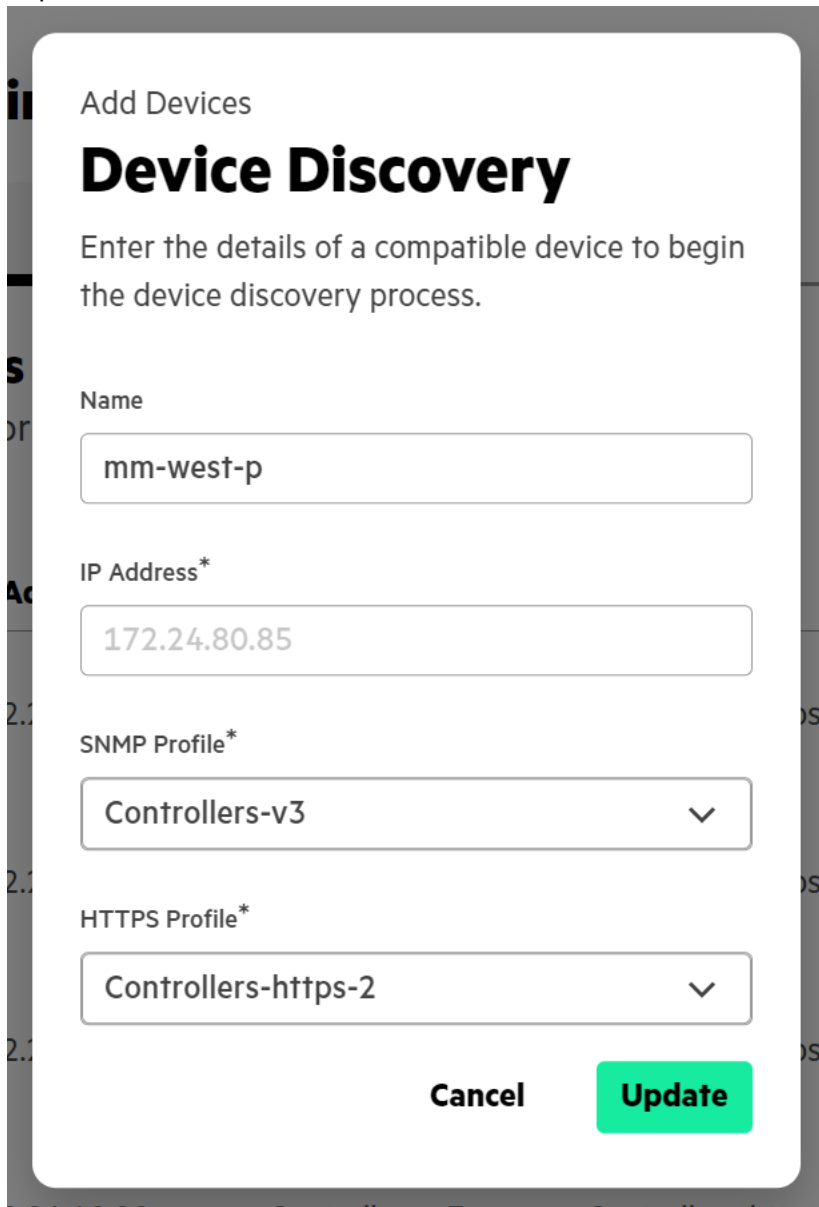


The screenshot shows the HPE GreenLake web interface. The top navigation bar includes 'Dashboard', 'Devices', and 'Manage'. The left sidebar has 'Inventory', 'Auto-Subscribe', 'Auto-Provisioning' (selected), and 'Third Party Devices'. The main content area is titled 'Auto-Provisioning' and 'Controller Profiles'. Below this is a table of controller profiles.

Device Name	IP Address	SNMP Profile	HTTPS Profile	
mm-west-p	172.24.80.85	Controllers-v3	Controllers-https-2	...
mm-east-p	172.24.18.84	Controllers-v3	Controllers-https-2	...
ctrl-east-a-2	172.24.18.88	Controllers-v3	Controllers-https-2	...
ctrl-east-a-4	172.24.18.90	Controllers-v3	Controllers-https-2	...
ctrl-east-a-5	172.24.80.91	Controllers-v3	Controllers-https-2	...
ctrl-east-a-3	172.24.18.89	Controllers-v3	Controllers-https-2	...

A red arrow points to the 'Edit' button in the actions column for the first row (mm-west-p).

9. Fill out the fields, select the SNMP and HTTPS profile appropriate for the MC or MD. Click the "Update" Button when done.

A screenshot of a 'Device Discovery' form. The form is titled 'Add Devices' and 'Device Discovery'. It contains four input fields: 'Name' with the value 'mm-west-p', 'IP Address*' with the value '172.24.80.85', 'SNMP Profile*' with a dropdown menu showing 'Controllers-v3', and 'HTTPS Profile*' with a dropdown menu showing 'Controllers-https-2'. At the bottom right, there are two buttons: 'Cancel' and 'Update' (which is highlighted in green).

Add Devices

Device Discovery

Enter the details of a compatible device to begin the device discovery process.

Name

mm-west-p

IP Address*

172.24.80.85

SNMP Profile*

Controllers-v3

HTTPS Profile*

Controllers-https-2

Cancel Update

10. Repeat steps 8-9 for each MC or MD

Verification

1. Browse back to the main COP screen, Click on “Devices” in the left hand column

The screenshot shows the Aruba Central web interface. The left-hand navigation menu is visible, with the 'Devices' option highlighted by a red circle. The main content area displays a map of Iowa with various locations marked, including Cedar Rapids, Iowa City, and Davenport. A red circle with the number '169' is visible on the map. The top navigation bar includes tabs for 'Network Health', 'Summary', 'Wi-Fi Connectivity', and 'AI Insights'. The 'Network Health' tab is currently selected.

2. Select the “Controllers” tab

The screenshot shows the Aruba Central web interface with the 'Controllers' tab selected in the top navigation bar. The 'Access Points' table is displayed below the navigation bar. The table has columns for Device Name, Status, IP Address, Model, Serial, Clients, MAC Address, and Controller. The table lists several access points, all of which are 'Offline'.

Device Name	Status	IP Ad...	M...	Serial	Clients	MAC Addr...	Controller
ap-lab-367-1	Offline	172.30.97.204	AP-367	CNDQJSX0MZ	-	44:48:c1:ca:70:36	ctrl-lab-2
ap-h-s302	Offline	172.24.210.60	AP-505H	CNLFKSM35J	-	20:4c:03:d6:1d:37	ctrl-west-b-1
ap-h-s107	Offline	172.24.209.55	AP-505H	CNLFKSM1JR	-	20:4c:03:d5:f8:98	ctrl-west-b-3
ap-h-c306	Offline	172.24.209.232	AP-505H	CNLFKSM64B	-	20:4c:03:d7:67:d2	ctrl-west-b-2
ap-h-c500	Offline	172.24.210.143	AP-535	VNL3K9W03Q	-	d0:d3:e0:c3:09:60	ctrl-west-b-1
ap-h-s116	Offline	172.24.209.64	AP-505H	CNLFKSM5YH	-	20:4c:03:d7:69:ad	ctrl-west-b-3

3. On the controllers screen check for every MD that there is something specified in the “Mobility Conductor” and “Cluster Name” Columns.

The screenshot shows the Aruba Central web interface. The left sidebar contains navigation options: Global, Manage, Overview, Devices, Clients, Applications, Security, Alerts & Events, Audit Trail, Tools, Reports, Maintain, Firmware, Organization, and System Management. The main content area is titled "controllers (30)" and includes a summary bar with filters: All (30), Online (26), Offline (4), Clusters (6), and Mobility Conductor (6). Below this is a table of controllers. The first three columns are highlighted with a red box: Controller Name, Mobility C..., and Cluster Name. The table lists various controllers, including ctrl-east-a-1 through ctrl-east-b-5, with their respective AP status and IP addresses.

Controller Name	Mobility C...	Cluster Name	Total	Down	Active	Standby	Client	Model	Sta...	IP Address	MAC Address
ctrl-east-a-1	mm-east-p	E-Cluster-A	573	0	573	553	2923	A7240XM-US	Up	172.24.18.87	00:1a:1e:0...
ctrl-east-a-2	mm-east-p	E-Cluster-A	557	2	555	571	2990	A7240XM-US	Up	172.24.18.88	00:1a:1e:0...
ctrl-east-a-3	mm-east-p	E-Cluster-A	553	1	552	573	2054	A7240XM-US	Up	172.24.18.89	00:1a:1e:0...
ctrl-east-a-4	mm-east-p	E-Cluster-A	554	2	552	553	2973	A7240XM-US	Up	172.24.18.90	00:1a:1e:0...
ctrl-east-a-5	mm-east-p	E-Cluster-A	576	3	573	554	3013	A7240XM-US	Up	172.24.18.91	00:1a:1e:0...
ctrl-east-a-6	mm-east-p	E-Cluster-A	553	1	552	553	3063	A7240XM-US	Up	172.24.18.92	00:1a:1e:0...
ctrl-east-b-1	mm-east-p	E-Cluster-B	491	0	491	472	1173	A7240XM-US	Up	172.24.18.12	00:1a:1e:0...
ctrl-east-b-2	mm-east-p	E-Cluster-B	491	0	491	471	1326	A7240XM-US	Up	172.24.18.13	00:1a:1e:0...
ctrl-east-b-3	mm-east-p	E-Cluster-B	473	0	473	489	1212	A7240XM-US	Up	172.24.18.14	00:1a:1e:0...
ctrl-east-b-4	mm-east-p	E-Cluster-B	471	0	471	490	1200	A7240XM-US	Up	172.24.18.15	00:1a:1e:0...
ctrl-east-b-5	mm-east-p	E-Cluster-B	471	0	471	475	1232	A7240XM-US	Up	172.24.18.16	00:1a:1e:0...