



## Primary AP Failover and Electing a new Primary

Cisco Mobility Express is supported on Cisco 1560, 1815I, 1815M, 1815W, 1830, 1850, 2800 and 3800 series Access Points. If you have a mix of these Access Points in a Cisco Mobility Express deployment, the Primary AP election process determines which of the supported Access Point will be elected to run Mobility Express controller function in case of a Failover of the Active Primary AP. VRRP is used to detect the failure of Primary AP which initiates the election of a new Primary.



**Note** Mobility Express uses MAC 00-00-5E-00-01-VRID where VRID is 1 so if there are other instances of VRRP running in the environment, use VRID other than 1 for those instances.

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## Primary AP Failover

To have redundancy in the Mobility Express network, it must have two or more Mobility Express capable Access Points. These Access Points should have AP Image type as MOBILITY EXPRESS IMAGE and AP Configuration as MOBILITY EXPRESS CAPABLE. In an event of a failure of Primary AP, another Mobility Express capable AP is elected as a Primary automatically. The newly elected Primary AP has the same IP and configuration as the original Primary AP.



**Note** Given Access Point models support different scale limits in terms of the number of Access Points supported, it is highly recommended to have at least two or more Access Points which support the same scale limits. For example, if you need to support scale of 100 Access Points, you should have at least two or more of either 3800, 2800 or a combination of both.



**Note** Access Points, which have the Mobility Express Image but **AP Configuration**, is **NOT MOBILITY EXPRESS CAPABLE**, will not participate in the Primary AP election process.

# Electing a new Primary Access Point

Primary election process is based on a set of priorities. When an active Primary Access Point fails, the election process gets initiated and it elects the Access Point with the highest priority as the Primary AP.



**Note** During the Primary Election process, even though the Primary AP running the controller function is down, the remaining Access Points will fall into Standalone mode and will continue to service connected clients and switch data traffic locally. After the new Primary is elected, the Standalone Access points will move to connected mode.

As mentioned above, Primary Access Point election is based on a set of priorities. The priorities are as follows:

## Procedure

**Step 1 User Defined Master**—User can select an Access Point to be the Primary Access Point. If such a selection is made, no new Primary will be elected in case of a failure of the active Primary. After five minutes, if the current Primary is still not active, it will be assumed dead and Primary Election will begin to elect a new Primary. To manually define a Primary, follow the procedure below:

- a) Navigate to **Wireless Settings > Access Points**.
- b) From the list of Access Points, click **Edit** icon of the Access Point which you would like to select as the Primary AP.
- c) Under the **General** tab, click on **Make me Controller** button.
- d) Click **Yes** on the Confirmation window.

**Note** The previous Primary will reboot and the selected Access Point will immediately launch the controller and become the active Primary.

**Step 2 Next Preferred Master** - Admin can configure the **Next Preferred Master** from CLI. When this is configured and the active Primary AP fails, the one configured as the **Next Preferred Master** will be elected as a Primary. To configure the **Next Preferred Master**, follow the procedure below:

- a) Login to the CLI of the controller.
- b) Execute the following CLI:

To configure the Next Preferred Master, execute the following CLI:

```
(Cisco Controller) >config ap next-preferred-master <Cisco AP>
<Cisco AP> Enter the name of the Cisco AP
```

To see the Next Preferred Master, execute the following CLI:

```
(Cisco Controller) >show ap next-preferred-master
```

To clear the Next Preferred Master, execute the following CLI:

```
Cisco Controller) >clear ap next-preferred-master
```

**Step 3 Most Capable Access Point**— If the first two priorities are not configured, Primary AP election algorithm will select the new Primary based on the capability of the Access Point. For example, 3800 is the most capable followed by 2800, 1850, 1830 and finally the 1815 Series.

**Note** All 1815 Series Access Points have the same capability.

- Step 4** **Least Client Load**– If there are multiple Access Points with the same capability i.e. multiple 3800 Access points, the one with least client load is elected as the Primary Access Point.
- Step 5** **Lowest MAC Address**–If all of the Access Points are the same and have the same client load, then Access Point with the lowest MAC will be elected as a Primary.
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