



ExtremeWireless WiNG Clustering

Abstract: This guide will cover ExtremeWireless WiNG clustering functionality for controller high availability as well as best practices on clustering setup in different deployments.

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Pre-Requisites

- Two WiNG Controllers of the same type.
- WiNG version 5.8.6.0 or above

Overview

In WiNG 5 two controllers can be part of a cluster for redundancy for services such as:

- Access Point adoption
- License Sharing
- DHCP Server redundancy
- Dynamic AP Load Balancing

Clusters are managed from a single user interface and the configuration is automatically synched between cluster members. A cluster can be configured as “Active / Active” in which both controllers are actively adopting access points, or “Active / Standby”, where one controller is a ‘standby’ device, ready to take over if the primary ‘active’ device should fail.

Access Point licensing is shared between controllers, so in an “Active / Standby” scenario, it is common to order one controller with licenses and the other as a “zero port” controller, as it will share the licensing of the active controller. If both controllers are ordered with licenses, understand that any one controller can only adopt as many AP’s as it is capable of handling in hardware. In other words, though you could order two NX7500’s with max licensing (2,048 licenses each), a single controller is not capable of adopting 4,096 access points should one controller fail. The maximum number of access points supported on the various platforms is listed below:

Device Model	Access Points Supported
VX9000	25,600
NX95X0 / NX96X0	10,240
NX7500	2,048
NX5500	512
RFS7000	1,024
RFS6000	256
RFS4000	144

Feature licenses such as Advanced Security are not shared among devices in a cluster. Those license types are applied per controller, so they must be purchased and applied for both controllers in a cluster. Currently only ADSEC license is not shared in a cluster.

Cluster Configuration

Cluster configuration in WiNG 5 can be done either manually by statically configuring each cluster member or automatically using built-in join-cluster mechanism. This guide will cover join-cluster procedure.

Step 1 – Primary / First Controller Configuration

On your first controller complete any configuration to be used for your environment. The only parameters mandatory before going to cluster configuration are:

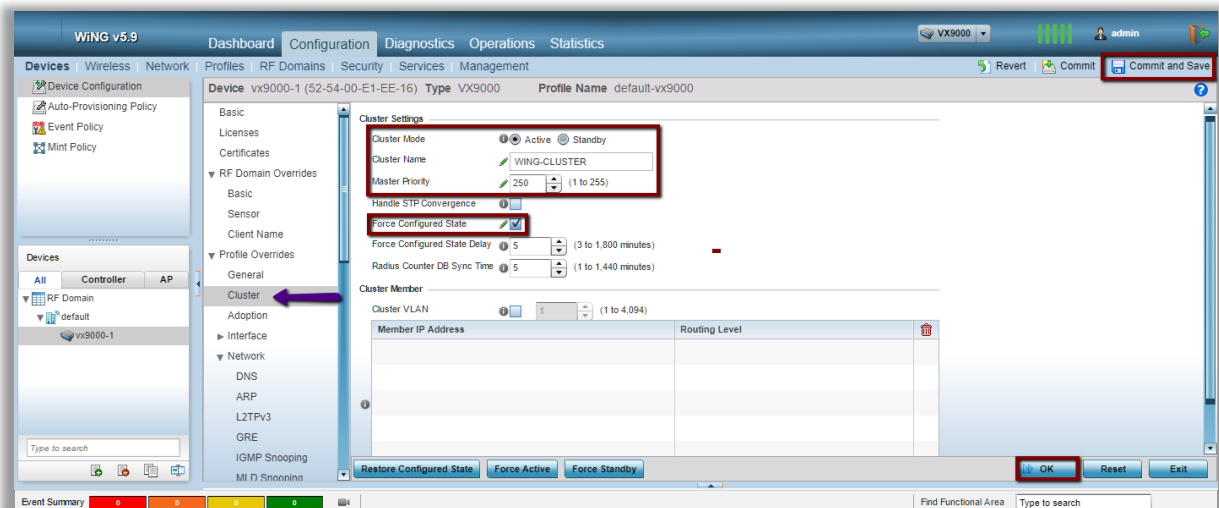
- Device IP address
- Default Gateway
- Network Connectivity

Once this is complete, you can proceed with cluster configuration. Of course, one may also opt to completely configure the primary controller prior to enabling clustering; all configurations will be synchronized after cluster configuration is complete. When ready to configure clustering, perform the following steps.

Primary Controller Configuration

Web UI:

Configuration → Devices → Device Configuration → {Select Controller}



CLI:

```
vx9000-1 (config-device-11-22-33-44-55-66) #cluster name <cluster name>
vx9000-1 (config-device-11-22-33-44-55-66) #cluster mode active
vx9000-1 (config-device-11-22-33-44-55-66) #cluster master-priority 250
vx9000-1 (config-device-11-22-33-44-55-66) #cluster force-configured-state
vx9000-1 (config-device-11-22-33-44-55-66) #commit write
```

Cluster can be formed with level 2 or level 2 MINT links, and this is dependent on the deployment type. Following are the guidelines that must be followed:

- Level 1 Links – use in small single site campus deployments when Access Points adopt via level 1 MiNT links (either at Layer 2 or Layer 3). Also use level 1 MINT links in hierarchical WING deployments at site controller level (not at the NOC controllers!).
- Level 2 Links – use in distributed deployments with centralized controllers in the NOC, as well as any distributed campus with controller managed domains and Access Points adopting over level 2 MINT.

The use of `cluster force-configured-state` will ensure that in the event of a primary controller failure, it will assume its role as the primary once it is back online, following the appropriate delay period.

Step 2 – Standby / Second Controller Configuration

Once you are all set with the configuration of the primary controller, you must determine the role of the second controller: if it will be active or standby. Then some configuration is needed on the second controller to at least get it onto the network and able to communicate with other devices.

Active / Active or Active / Standby

The configuration of your cluster will require a mode to be established for the desired operation within your environment.

In a large enterprise / NOC deployments with several thousand or more Access Points, the cluster mode must be set to Active / Standby in order to maintain statistics and other information in the UI / CLI. Active / Active should only be used in small / medium size campus deployments with MINT tunneling where Access Point load balancing will actually provide a benefit. Other deployments will not benefit from Active / Active setup whatsoever.

The general recommendation is to keep clustering in Active / Standby for most of deployments for fault tolerance, ease of troubleshooting. Note that Active / Active clustering is not supported for the NOC controllers managing remote sites.

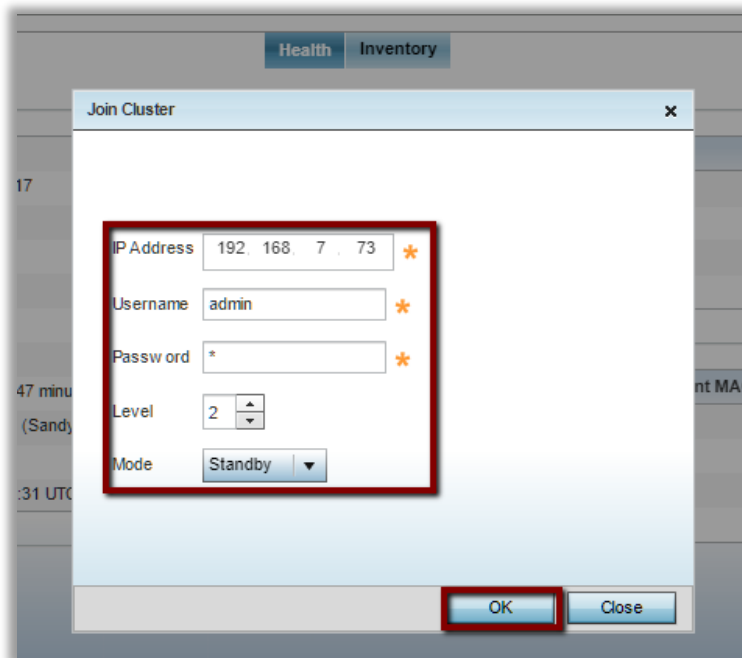
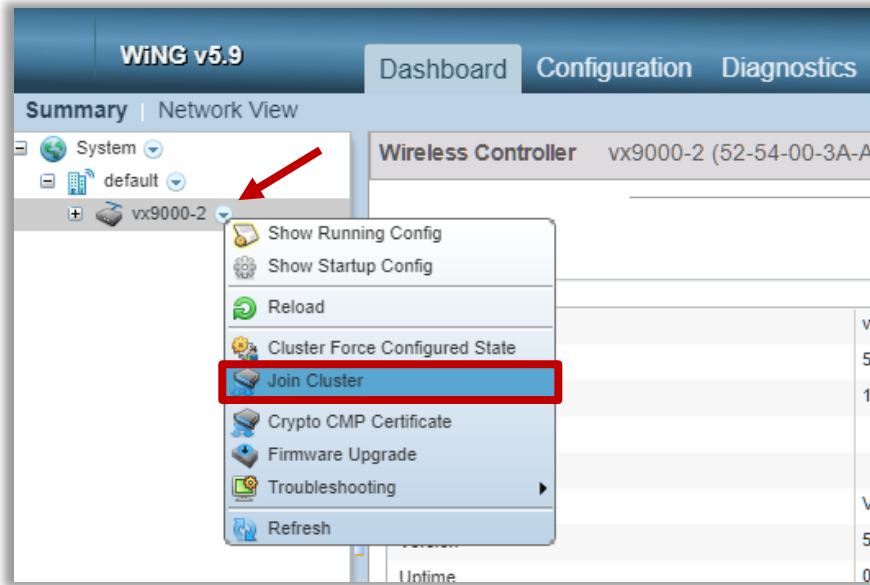
Secondary Controller Configuration

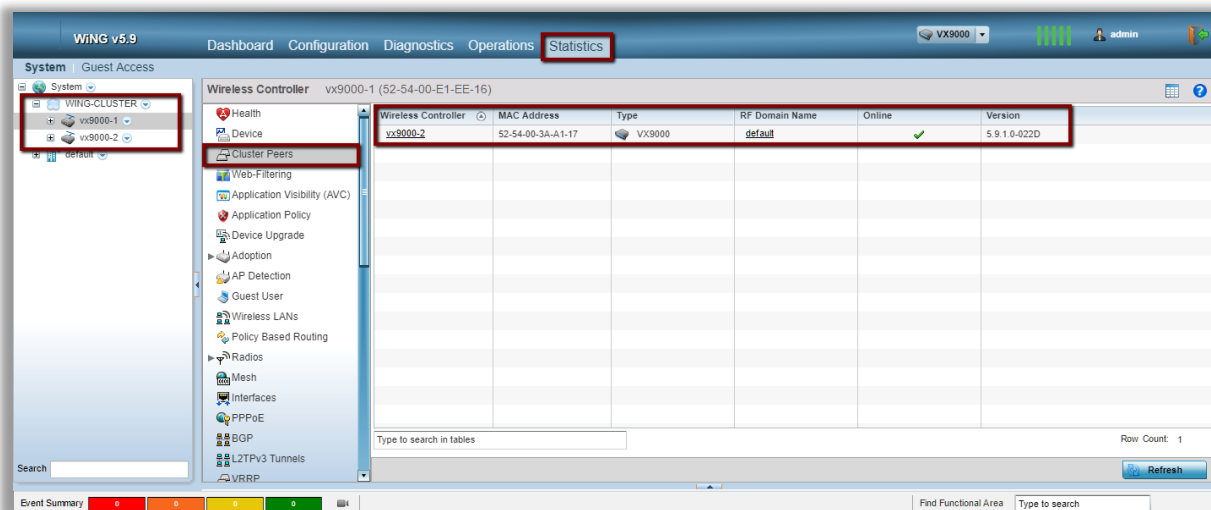
On the second controller, all that is needed is basic network connectivity information so that the device can communicate with the primary / first controller, as well as the mode and mint link level. The following list details the secondary controller requirements prior to using join-cluster feature:

- IP address / mask
- Default Gateway

Important Note: for join-cluster operation to work, TCP port 5349 must be open as destination on the primary controller (only required for join-cluster command to finish, no need to keep it open afterwards), while MINT UDP port 24576 must be permanently opened between both controllers for cluster establishment and synchronization.

Web UI:





CLI:

```

vx9000-2 (config-device-11-22-33-44-55-67) #interface vlan <X>
vx9000-2 (config-device-11-22-33-44-55-67-if-vlan<X>) #ip address x.x.x.x/m
vx9000-2 (config-device-11-22-33-44-55-67-if-vlan<X>) #exit
vx9000-2 (config-device-11-22-33-44-55-67) #ip default-gateway x.x.x.x
vx9000-2 (config-device-11-22-33-44-55-67) #commit write
vx9000-2 (config-device-11-22-33-44-55-67) #end
vx9000-2 #join-cluster <primary controller ip> user <management username> password
<management user password> level <1|2> mode <active|standby>
... connecting to 192.168.7.73
... applying cluster configuration
... committing the changes
... saving the changes
[OK]

vx9000-2 #show cluster status

Cluster Runtime Information
Protocol version           : 1
Cluster operational state  : standby
AP license                 : 0
AAP license                : 128
AP count                  : 0
AAP count                  : 0
Max AP adoption capacity  : 25600
Number of connected member(s) : 1
    
```


Troubleshooting

Most problems with the cluster forming are caused by configuration errors. Verify the following:

1. Version mismatch: cluster can only be established between controllers running exact same WiNG release.
2. Controllers must be of the same model, i.e. you cannot cluster VX9000 with NX9500 or NX7500 with NX5500
3. MiNT Link level mismatch: make sure both controllers will establish cluster at the same MiNT Link level and make sure you follow the guidelines outlined in this document.
4. MiNT link type mismatch: in general, never use Cluster VLAN links to establish a cluster. When troubleshooting make sure that you did not accidentally enable Cluster Member VLAN. Only Cluster IP links are allowed.

The following commands will help you determine the state of the configuration and cluster:

```
vx9000-1#show cluster configuration
```

```
Cluster Configuration Information
Name                : WING-CLUSTER
Configured Mode     : Active
Master Priority      : 250
Force configured state : Enabled
Force configured state delay : 5 minutes
Handle STP          : Disabled
Radius Counter DB Sync Time : 5 minutes
```

```
vx9000-2#show cluster configuration
```

```
Cluster Configuration Information
Name                : WING-CLUSTER
Configured Mode     : Standby
Master Priority      : 128
Force configured state : Disabled
Force configured state delay : 5 minutes
Handle STP          : Disabled
Radius Counter DB Sync Time : 5 minutes
```

```
vx9000-1#show cluster members
```

HOSTNAME	MEMBER-ID	MAC	MASTER	OPERATIONAL-STATE	LAST-SEEN
vx9000-1	12.E1.EE.16	52-54-00-E1-EE-16	True	active	self
vx9000-2	12.3A.A1.17	52-54-00-3A-A1-17	False	standby	00:01:31 ago

```
vx9000-2#show cluster members
```

HOSTNAME	MEMBER-ID	MAC	MASTER	OPERATIONAL-STATE	LAST-SEEN
----------	-----------	-----	--------	-------------------	-----------

```

vx9000-1  12.E1.EE.16  52-54-00-E1-EE-16  True  active  00:01:58 ago
vx9000-2  12.3A.A1.17  52-54-00-3A-A1-17  False standby  self
    
```

vx9000-1#show cluster status

Cluster Runtime Information

```

Protocol version      : 1
Cluster operational state : active
AP license            : 0
AAP license           : 128
AP count              : 0
AAP count             : 0
Max AP adoption capacity : 25600
Number of connected member(s): 1
    
```

vx9000-2#show cluster status

Cluster Runtime Information

```

Protocol version      : 1
Cluster operational state : standby
AP license            : 0
AAP license           : 128
AP count              : 0
AAP count             : 0
Max AP adoption capacity : 25600
Number of connected member(s): 1
    
```

vx9000-1#show cluster history

HOSTNAME	MEMBER-ID	EVENT	TIME-STAMP	REASON
vx9000-2	12.3A.A1.17	config-update-success	2017-08-28 20:40:24	successfully applied config
vx9000-3AA117	12.3A.A1.17	is-standby	2017-08-28 20:40:24	Configured for standby, become standby
vx9000-1	12.E1.EE.16	config-update-success	2017-08-28 20:40:21	config sync succeeded
vx9000-1	12.E1.EE.16	is-active	2017-08-28 20:40:21	Configured for active, stay active
vx9000-1	12.E1.EE.16	start-config-sync	2017-08-28 20:40:20	12.E1.EE.16 won election and is the cluster master
vx9000-1	12.E1.EE.16	is-active	2017-08-28 20:40:16	Primary down, Failed over to active
vx9000-E1EE16	12.E1.EE.16	start-election	2017-08-28 20:39:50	new member 12.3A.A1.17 joined
vx9000-3AA117	12.3A.A1.17	start-election	2017-08-28 20:39:39	new member 12.3A.A1.17 joined
vx9000-E1EE16	12.E1.EE.16	is-active	2017-08-28 20:39:31	stay active
vx9000-E1EE16	12.E1.EE.16	start-election	2017-08-28 20:38:46	new member 12.E1.EE.16 joined

vx9000-2#show cluster history

HOSTNAME	MEMBER-ID	EVENT	TIME-STAMP	REASON
vx9000-2	12.3A.A1.17	config-update-success	2017-08-28 20:40:24	successfully applied config
vx9000-3AA117	12.3A.A1.17	is-standby	2017-08-28 20:40:24	Configured for standby, become standby
vx9000-1	12.E1.EE.16	config-update-success	2017-08-28 20:40:21	config sync succeeded
vx9000-1	12.E1.EE.16	is-active	2017-08-28 20:40:21	Configured for active, stay active
vx9000-1	12.E1.EE.16	start-config-sync	2017-08-28 20:40:20	12.E1.EE.16 won election and is the cluster master
vx9000-1	12.E1.EE.16	is-active	2017-08-28 20:40:16	Primary down, Failed over to active
vx9000-E1EE16	12.E1.EE.16	start-election	2017-08-28 20:39:50	new member 12.3A.A1.17 joined
vx9000-3AA117	12.3A.A1.17	start-election	2017-08-28 20:39:39	new member 12.3A.A1.17 joined
vx9000-E1EE16	12.E1.EE.16	is-active	2017-08-28 20:39:31	stay active
vx9000-E1EE16	12.E1.EE.16	start-election	2017-08-28 20:38:46	new member 12.E1.EE.16 joined

Cluster Debugging

Debugging during the cluster joining process is recommended as it is the easiest way to determine what may be wrong with the cluster configuration. Run a debug on primary controller and log to monitor when executing join-cluster from the secondary controller. The output below shows an example from a successful join:

```
vx9000-1#debug cfgd cluster
vx9000-1#logging monitor debugging

Aug 28 21:03:24 2017: USER: main.pyo: CS server (cluster join) connection from 192.168.7.68
Aug 28 21:03:24 2017: USER: main.pyo: CS_Server - cluster join from host 192.168.7.68
Aug 28 21:03:24 2017: USER: main.pyo: cluster join, cluster member ip vlan configured in profile default-vx9000
Aug 28 21:03:24 2017: USER: main.pyo: cluster join, cluster member ip of [52-54-00-E1-EE-16] is NOT configured in profile default-vx9000, create override
Aug 28 21:03:24 2017: vx9000-1 : %CFGD-6-ACL_ATTACHED_ALTERED: USER: cfgd session 13: ACL attached to interface vlan1 is getting altered
Aug 28 21:03:34 2017: USER: main.pyo: master-updater woke up - 1 changes in the list
Aug 28 21:03:34 2017: vx9000-1 : %SYSTEM-6-CONFIG_COMMIT: Configuration commit by user 'cfgd' (cluster join) from '127.0.0.1'
Aug 28 21:03:34 2017: USER: main.pyo: tx_update CS_ACT_CFG_UPDATE revision 23 originator Master
Aug 28 21:03:34 2017: USER: main.pyo: publish own cluster status=[active] internally
Aug 28 21:03:34 2017: USER: main.pyo: handle_cluster_member_update members: ['12.E1.EE.16']
Aug 28 21:03:34 2017: USER: main.pyo: handle_cluster_member_update new members, start election immediately cluster_member_update_count=7
Aug 28 21:03:34 2017: USER: main.pyo: start_election(): the_election.candidate_members: [] members: ['12.E1.EE.16']
Aug 28 21:03:34 2017: USER: main.pyo: no change in master, member list changed
Aug 28 21:03:34 2017: USER: main.pyo: check if cluster state transition is required, mcount 0 member_id 00.00.00.00 member_changed_state 0
Aug 28 21:03:34 2017: USER: main.pyo: wait till cluster configuration is played
Aug 28 21:03:34 2017: USER: main.pyo: dequeue - need to run election
Aug 28 21:03:34 2017: USER: main.pyo: starting election forced=False immediate_master_election=False
Aug 28 21:03:34 2017: USER: main.pyo: created new local pkt: CANDIDATE ver 1 prio 250 master period 192 rank 220 dc 1 id 12.E1.EE.16
Aug 28 21:03:34 2017: USER: main.pyo: created new local pkt: START_ELECTION ver 1 prio 250 master period 192 rank 220 dc 1 id 12.E1.EE.16
Aug 28 21:03:34 2017: USER: main.pyo: broadcasting election start
Aug 28 21:03:34 2017: vx9000-1 : %SYSTEM-6-CONFIG_REVISION: Configuration revision updated to 24 from 23
Aug 28 21:03:34 2017: USER: main.pyo: announcing self as candidate
Aug 28 21:03:34 2017: USER: main.pyo: publish own cluster status=[active] internally
Aug 28 21:03:34 2017: USER: main.pyo: handle_cluster_member_update members: ['12.E1.EE.16']
Aug 28 21:03:34 2017: USER: main.pyo: canceling force_conf_state_timer
Aug 28 21:03:34 2017: USER: main.pyo: adding device 12.E1.EE.16 [52-54-00-E1-EE-16] as cluster member
Aug 28 21:03:34 2017: USER: main.pyo: canceling ask_msg_update_timer
Aug 28 21:03:34 2017: vx9000-1 : %DIAG-6-NEW_LED_STATE: LED state message LED_ACTIVE_ADOPTING from module CFGD
Aug 28 21:03:34 2017: USER: main.pyo: sending OK with config
Aug 28 21:03:34 2017: vx9000-1 : %SYSTEM-6-CONFIG_REVISION: Configuration revision updated to 25 from 24
Aug 28 21:03:36 2017: USER: main.pyo: Peer 12.3A.A1.17 connected
Aug 28 21:03:36 2017: USER: main.pyo: received packet CANDIDATE ver 1 prio 128 master period 0 rank 220 dc 1 id 12.3A.A1.17
```

```

Aug 28 21:03:36 2017: USER: main.pyo: received packet from unknown member CANDIDATE ver 1
prio 128 master period 0 rank 220 dc 1 id 12.3A.A1.17
Aug 28 21:03:36 2017: USER: main.pyo: received packet START_ELECTION ver 1 prio 128
master period 0 rank 220 dc 1 id 12.3A.A1.17
Aug 28 21:03:36 2017: USER: main.pyo: received packet from unknown member START_ELECTION
ver 1 prio 128 master period 0 rank 220 dc 1 id 12.3A.A1.17
Aug 28 21:03:36 2017: USER: main.pyo: received packet CANDIDATE ver 1 prio 128 master
period 0 rank 220 dc 1 id 12.3A.A1.17
Aug 28 21:03:36 2017: USER: main.pyo: received packet from unknown member CANDIDATE ver 1
prio 128 master period 0 rank 220 dc 1 id 12.3A.A1.17
Aug 28 21:03:49 2017: USER: main.pyo: publish own cluster status=[standby] internally
Aug 28 21:03:49 2017: USER: main.pyo: election rcv timeout
Aug 28 21:03:49 2017: USER: main.pyo: Announcing self as master
Aug 28 21:03:49 2017: USER: main.pyo: created new local pkt: ELECTION_WINNER ver 1 prio
250 master period 207 rank 220 dc 1 id 12.E1.EE.16
Aug 28 21:03:51 2017: USER: main.pyo: received packet START_ELECTION ver 1 prio 128
master period 0 rank 220 dc 1 id 12.3A.A1.17
Aug 28 21:03:51 2017: USER: main.pyo: received packet from unknown member START_ELECTION
ver 1 prio 128 master period 0 rank 220 dc 1 id 12.3A.A1.17
Aug 28 21:03:51 2017: USER: main.pyo: received packet CANDIDATE ver 1 prio 128 master
period 0 rank 220 dc 1 id 12.3A.A1.17
Aug 28 21:03:51 2017: USER: main.pyo: received packet from unknown member CANDIDATE ver 1
prio 128 master period 0 rank 220 dc 1 id 12.3A.A1.17
Aug 28 21:03:52 2017: USER: main.pyo: publish own cluster status=[standby] internally
Aug 28 21:03:52 2017: USER: main.pyo: handle_cluster_member_update members:
['12.E1.EE.16', '12.3A.A1.17']
Aug 28 21:03:52 2017: USER: main.pyo: handle_cluster_member_update new members, start
election immediately cluster_member_update_count=8
Aug 28 21:03:52 2017: USER: main.pyo: start_election(): the_election.candidate_members:
['12.E1.EE.16'] members: ['12.E1.EE.16', '12.3A.A1.17']
Aug 28 21:03:52 2017: USER: main.pyo: updating new members
Aug 28 21:03:52 2017: USER: main.pyo: Updating new members ['12.3A.A1.17']
Aug 28 21:03:52 2017: USER: main.pyo: created new local pkt: MASTER_UPDATE ver 1 prio 250
master period 209 rank 220 dc 0 id 12.E1.EE.16
Aug 28 21:03:52 2017: USER: main.pyo: membership change - restarting election
Aug 28 21:03:52 2017: USER: main.pyo: created new local pkt: CANDIDATE ver 1 prio 250
master period 209 rank 220 dc 1 id 12.E1.EE.16
Aug 28 21:03:52 2017: USER: main.pyo: best set to 12.E1.EE.16 (CANDIDATE ver 1 prio 250
master period 209 rank 220 dc 1 id 12.E1.EE.16)
Aug 28 21:03:52 2017: USER: main.pyo: created new local pkt: START_ELECTION ver 1 prio
250 master period 209 rank 220 dc 1 id 12.E1.EE.16
Aug 28 21:03:52 2017: USER: main.pyo: broadcasting election start
Aug 28 21:03:52 2017: USER: main.pyo: announcing self as candidate
Aug 28 21:03:52 2017: USER: main.pyo: received packet CANDIDATE ver 1 prio 128 master
period 0 rank 220 dc 2 id 12.3A.A1.17
Aug 28 21:03:52 2017: USER: main.pyo: Local election score improved, 2 known configs
Aug 28 21:03:52 2017: USER: main.pyo: created new local pkt: CANDIDATE ver 1 prio 250
master period 209 rank 220 dc 2 id 12.E1.EE.16
Aug 28 21:03:52 2017: USER: main.pyo: best set to 12.E1.EE.16 (CANDIDATE ver 1 prio 250
master period 209 rank 220 dc 2 id 12.E1.EE.16)
Aug 28 21:03:52 2017: USER: main.pyo: retaining old candidate 12.E1.EE.16 as best, not
12.3A.A1.17
Aug 28 21:03:52 2017: USER: main.pyo: received packet CANDIDATE ver 1 prio 128 master
period 0 rank 220 dc 2 id 12.3A.A1.17
Aug 28 21:03:52 2017: USER: main.pyo: retaining old candidate 12.E1.EE.16 as best, not
12.3A.A1.17
Aug 28 21:04:07 2017: USER: main.pyo: election rcv timeout
Aug 28 21:04:07 2017: USER: main.pyo: Announcing self as master
Aug 28 21:04:07 2017: USER: main.pyo: created new local pkt: ELECTION_WINNER ver 1 prio
250 master period 224 rank 220 dc 2 id 12.E1.EE.16
Aug 28 21:04:22 2017: USER: main.pyo: election rcv timeout
Aug 28 21:04:22 2017: USER: main.pyo: completed election master is 12.E1.EE.16
Aug 28 21:04:22 2017: USER: main.pyo: new member 12.E1.EE.16

```

```

Aug 28 21:04:22 2017: USER: main.pyo: adding device 12.E1.EE.16 [52-54-00-E1-EE-16] as
cluster member
Aug 28 21:04:22 2017: USER: main.pyo: new member 12.3A.A1.17
Aug 28 21:04:22 2017: USER: main.pyo: adding device 12.3A.A1.17 [52-54-00-3A-A1-17] as
cluster member
Aug 28 21:04:22 2017: USER: main.pyo: adding device 12.3A.A1.17 [Unknown] as cluster
member
Aug 28 21:04:22 2017: USER: main.pyo: send update message to member 12.3A.A1.17
Aug 28 21:04:22 2017: USER: main.pyo: got cluster msg 3 from (305832215, 0, ('i', 24576,
'192.168.7.68'))
Aug 28 21:04:22 2017: USER: main.pyo: handle member up for device 12.3A.A1.17
Aug 28 21:04:22 2017: USER: main.pyo: member 12.3A.A1.17 cluster state change from 1 to 0
; check state transition
Aug 28 21:04:22 2017: USER: main.pyo: check if cluster state transition is required,
mcount 2 member_id 12.3A.A1.17 member_changed_state 1
Aug 28 21:04:22 2017: USER: main.pyo: wait till cluster configuration is played
Aug 28 21:04:22 2017: USER: main.pyo: send update req message to member 12.3A.A1.17
Aug 28 21:04:22 2017: USER: main.pyo: all cluster members are connected; force-
configured-state is enabled, start timer
Aug 28 21:04:22 2017: USER: main.pyo: master-updater woke up - 1 changes in the list
Aug 28 21:04:22 2017: USER: main.pyo: tx_update CS_ACT_CFG_FULL - revision 25
Aug 28 21:04:22 2017: USER: main.pyo: tx_update member rev is 0
Aug 28 21:04:22 2017: USER: main.pyo: tx-update send update raw to 12.3A.A1.17
Aug 28 21:04:22 2017: USER: main.pyo: sending UPDATE revision: 25 hdr size: 20, data
size: 98058
Aug 28 21:04:22 2017: USER: main.pyo: CS_Send() connecting to 12.3A.A1.17
Aug 28 21:04:22 2017: USER: main.pyo: got cluster msg 3 from (305832215, 0, ('i', 24576,
'192.168.7.68'))
Aug 28 21:04:22 2017: USER: main.pyo: handle member up for device 12.3A.A1.17
Aug 28 21:04:22 2017: USER: main.pyo: member 12.3A.A1.17 cluster state not changed
Aug 28 21:04:22 2017: USER: main.pyo: got cluster msg 3 from (305832215, 0, ('i', 24576,
'192.168.7.68'))
Aug 28 21:04:22 2017: USER: main.pyo: handle member up for device 12.3A.A1.17
Aug 28 21:04:22 2017: USER: main.pyo: member 12.3A.A1.17 cluster state change from 0 to 1
; check state transition
Aug 28 21:04:22 2017: USER: main.pyo: got cluster msg 4 from (305832215, 0, ('i', 24576,
'192.168.7.68'))
Aug 28 21:04:22 2017: USER: main.pyo: send update message to member 12.3A.A1.17
Aug 28 21:04:22 2017: USER: main.pyo: check if cluster state transition is required,
mcount 2 member_id 12.3A.A1.17 member_changed_state 1
Aug 28 21:04:22 2017: USER: main.pyo: this cluster member is active and have aps adopted
or no aps adopted to standby; stay active
Aug 28 21:04:22 2017: vx9000-2 : %DIAG-6-NEW_LED_STATE: LED state message
LED_ACTIVE_FAILEDOVER from module CFGD
Aug 28 21:04:22 2017: USER: main.pyo: CS_Send() connected
Aug 28 21:04:22 2017: USER: main.pyo: publish own cluster status=[active] internally
Aug 28 21:04:22 2017: USER: main.pyo: got cluster msg 3 from (305832215, 0, ('i', 24576,
'192.168.7.68'))
Aug 28 21:04:22 2017: USER: main.pyo: handle member up for device 12.3A.A1.17
Aug 28 21:04:22 2017: USER: main.pyo: member 12.3A.A1.17 cluster state change from 1 to 0
; check state transition
Aug 28 21:04:22 2017: USER: main.pyo: check if cluster state transition is required,
mcount 2 member_id 12.3A.A1.17 member_changed_state 1
Aug 28 21:04:22 2017: USER: main.pyo: wait till cluster configuration is played
Aug 28 21:04:23 2017: USER: main.pyo: Ignore Exception
Aug 28 21:04:23 2017: USER: main.pyo: cluster config update OK, current revision: 25,
expected revision: 25
Aug 28 21:04:23 2017: USER: main.pyo: tx_update CS_ACT_CFG_FULL - revision 25 host
12.3A.A1.17 is OK
Aug 28 21:04:23 2017: vx9000-2 : %SYSTEM-6-CONFIG_REVISION: Configuration revision
updated to 25 from 22
Aug 28 21:04:37 2017: USER: main.pyo: publish own cluster status=[active] internally
Aug 28 21:04:37 2017: USER: main.pyo: publish own cluster status=[active] internally

```

```
Aug 28 21:04:47 2017: USER: main.pyo: ClusterGenerator: klist=['52-54-00-3A-A1-17', '52-54-00-E1-EE-16']
```

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Revision History

Date	Revision	Changes Made	Author
28 th August 2017	1.1	Cluster How To Guide updated from 5.4 to 5.8.6 and above releases	Slava Dementyev