

Mixed Mode (Fixed infrastructure + Fluidity) Topology

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Mixed mode topology

A mixed mode topology is a wireless configuration that

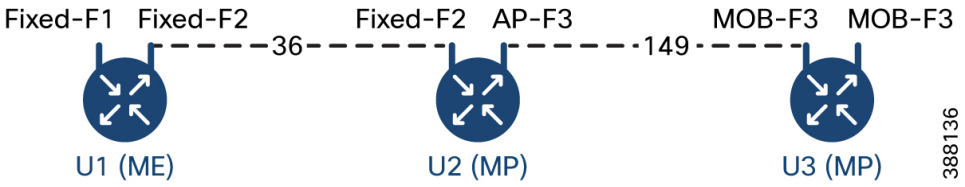
- provides flexibility of configuration on multi-radio device with different frequencies
- allows one radio to operate as fixed infrastructure while the second radio functions as a Fluidity access point to accept vehicle connections simultaneously, and
- enables wireless interfaces to operate in Fluidmax mode without any restriction of the P2MP (Point-to-MultiPoint) role (Primary or Secondary) if fixed infrastructure role is suitable.

Mixed mode configuration examples

The mixed mode topology demonstrates different radio configuration scenarios across multiple devices.

- U2: One radio configured as fixed infrastructure and the second radio as a Fluidity access point to accept vehicle connections simultaneously
- U1: Both radio interfaces configured as fixed infrastructure
- U3: Both radio interfaces configured as Fluidity

Figure 1: Mixed mode topologies



Configure mixed mode topology from CLI

Configure a mixed mode topology to establish different device roles and wireless interface settings for network deployment scenarios.

Mixed mode topology allows devices to operate in different roles, such as vehicle mode, infrastructure mode, and wireless relay mode. Each configuration requires specific CLI commands to set the corresponding parameters.

Procedure

Step 1 Use the **configure fluidity id** {**vehicle-auto** |**vehicle ID** |**infrastructure** |**wireless-relay**} command to configure the fluidity role for the device using the appropriate mode.

Example:

```
Device# configure fluidity id infrastructure
```

- Fluidity ID – configure Fluidity role for the device.
- Vehicle-auto - vehicle mode with automatic vehicle ID selection.
- Vehicle ID (alphanumeric) - vehicle mode with manual ID.
- Infrastructure - configure Infrastructure mode for the device.
- Wireless-relay - wireless infrastructure with no ethernet connection to the backhaul.

Step 2 Use the **configure dot11Radio** *interface* command to configure the dot11Radio interface.

Example:

```
Device# configure dot11Radio 1
```

interface values range from 0-3.

Step 3 Use the **configure dot11Radio** *interface*{**enable** | **disable**} command to enable or disable the wireless interface admin state.

Example:

```
Device# configure dot11Radio 1 enable
```

Step 4 Use the **configure dot11Radio** *interface*{**fluidity** | **fixed**| **fluidmax**} command to set the operating mode for the specified interface.

Example:

```
Device# configure dot11Radio 1 mode fluidity
```

Step 5 Use the **configure dot11Radio** *interface***channel** *channel-id* command to set the operating channel for the interface.

Example:

```
Device# configure dot11Radio 1 channel 10
```

The operating channel ID values range from 1 to 256.

Step 6 Use the **write** command to save the configuration.

Example:

```
Device# write
```

Configuration examples: mixed mode topology

U1 Configuration

```
Device# configure dot11Radio 2 enable
Device# configure dot11Radio 2 mode fixed
Device# configure dot11Radio 2 channel 36
```

U2 Configuration

```
Device# configure dot11Radio 1 enable
Device# configure dot11Radio 1 mode fixed
Device# configure dot11Radio 1 channel 36
Device# configure dot11Radio 2 enable
Device# configure dot11Radio 2 mode fluidity
Device# configure dot11Radio 2 channel 149
Device# configure fluidity id infrastructure
```

U3 Configuration

```
Device# configure fluidity id vehicle-auto
Device# configure dot11Radio 1 enable
Device# configure dot11Radio 1 mode fluidity
Device# configure dot11Radio 1 channel 149
```

Validate mixed mode topology from CLI

To validate a mixed mode topology, use the show commands to check the configuration of dot11 radio interfaces and verify the mode settings for each unit.

Use the **show dot11Radio** *interface* **config** command to validate a mixed mode topology:

U1 Statistics:

```
Device# show dot11Radio 2 config
Interface : enabled
Mode : fixed infrastructure
Frequency : 5180 MHz
Channel : 36
……
Passphrase : Cisco
AES encryption : enabled
AES key-control : enabled
```

U2 Statistics:

```
Device# show dot11Radio 1 config
Interface : enabled
Mode : fixed infrastructure
Frequency : 5180 MHz
Channel : 36
……
Passphrase : Cisco
AES encryption : enabled
```

```
AES key-control : enabled
Device# show dot11Radio 2 config
Interface : enabled
Mode : fluidity
Frequency : 5745 MHz
Channel : 149
……
Passphrase : Cisco
AES encryption : enabled
AES key-control : enabled
```

U3 Statistics:

```
Device# show dot11Radio 1 config
Interface : enabled
Mode : fluidity
Frequency : 5745 MHz
Channel : 149
……
Passphrase : Cisco
AES encryption : enabled
AES key-control : enabled
```