Configuring and Validating Mixed Mode (Fixed infrastructure + Fluidity) Topology

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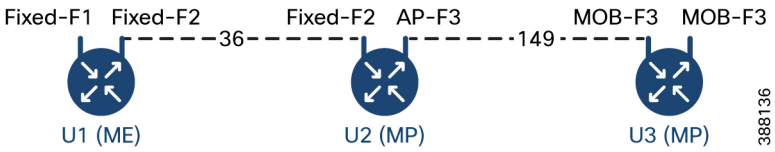
The mixed mode configuration provides flexibility of configuration on multi-radio device with different frequencies. From the image, U2 is configured with one radio as fixed infrastructure and the second radio as a Fluidity access point to accept vehicle connections simultaneously. Both radio interfaces on U1 configured as fixed infrastructure when U3 has both radio interfaces configured as Fluidity. The wireless interface can also operate in Fluidmax mode without any restriction of the P2MP (Point-to-MultiPoint) role (Primary or Secondary) if fixed infrastructure role is suitable.

Figure 1: Mixed Mode Topologies



Configuring Mixed Mode Topology from CLI

To configure a mixed mode topology, use the following CLI command:

```
Device# configure fluidity id {vehicle-auto | vehicle ID | infrastructure | wireless- relay}
```

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

```
Device# configure dot11Radio <interface>
```

Interface - <0-3> dot11Radio interface number

```
Device# configure dot11Radio <interface> {enable | disable}
```

Enable or disable - Set wireless interface admin state to enable or disable at runtime

```
Device# configure dot11Radio <interface> mode {fluidity | fixed | fluidmax}
```

Mode - Operating mode for the specified interface (Fluidity or fixed or Fluidmax)

```
Device# configure dot11Radio <interface> channel <channel id>
```

Channel - Set the operating channel id <1 – 256>

```
Device# wr
```

Example:

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
```

Validating Mixed Mode Topology from CLI

To validate a mixed mode topology, use the following show commands:

```
Device# show dot11Radio <interface>config
```

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
```