The Cisco Wireless IP Phone provides effective mobile communication within an enterprise by extending advanced voice and unified communication capabilities through Cisco Unified Communications Manager. When deployed with the Meru Networks Wireless LAN, it enables users to stay in touch while roaming seamlessly throughout their facility.

Device Requirements

The following Cisco devices are supported:

- Cisco 7921
- Cisco 7925
- Cisco firmware 1.3.3 or 1.3.4

Configure the following for the phones:

- Lock each phone to a band of use:
  - Cisco 7921: 2.4 GHz or 5 GHz
  - Cisco 7925: 2.4 GHz or 5 GHz
- Enable Unscheduled Automatic Power Save Delivery (UAPSD) for each phone.

Meru Hardware and Software Requirements

Verify that you are using the following hardware and software requirements before starting configuration.

Hardware Requirements

Verify that you are using Meru AP300 series or AP1000 series access points

Software Requirements

Verify that you are using System Director Release 5.1-57 or go-to release.

VLAN Recommendations

Configure a separate VLAN for the Cisco phones.

Security Requirements

Configure the security profile to use an appropriate security mode for your network, such as WPA2 or WPA2-PSK.   For ease of deployment and operational support, it is recommended to use WPA2-PSK.

ESS Profile Requirements

Configure the ESSID by creating an ESS profile. The ESS profile must use the configuration settings listed in the following table.

ESS Profile Setting (GUI)	ESS Configuration Value
Virtual Cell	On (default) *
Virtual Port	On (default) *
Beacon Interval	100 ms (default)
Dataplane Mode	Tunneled (Bridged is supported but non-preferred)
DTIM Period	2
SSID Broadcast	On
APSD Support Flag	On
Allow Multicast	On (only for Push to Talk)
Expedited Forward Override	On
SSID Broadcast for Vport	Till-Association
BGN Base Transmit Rates	11 and 12 Mbps (lowest base rates to be used)

* For AP300, use Virtual Port for seamless roaming. For AP1000, use Virtual Cell (Virtual Cell on, Virtual Port off)

ESS-AP Requirements

The Cisco 7921 and 7925 handsets support operation in both the 2.4GHz and 5GHz bands. When possible, it is recommended to use 5GHz for voice operations. Only assign the ESS Profile to one radio or the other in the ESS-AP mapping table. Make sure that the operating band configured in System Director matches the band set on the Cisco phone.

QoS Requirements

No additional configuration is required if using a Cisco Call Manager. Setting Expedited Forward Override to On, in the ESS Profile, will correctly assign all voice packets to the AC-VO queue in the Meru WLAN system if the Dataplande Mode is configured for Tunneled.

The 7921/7925 handsets tag data frames with a DiffServe Code Point value of EF (Expedited Forwarding). You must ensure the switches and routers are configured to correctly interpret the Expedited Forwarding DSCP value. For more detailed information, refer to the Cisco 7921-7925 Deployment Guide.

Boot Script Requirements

Create a boot script that contains the following commands:

```
radio tsfresync radio0 1
radio tsfresync radio1 1
radio wmm_adaptmode radio0 off
radio wmm_adaptmode radio1 off
radio parentbeacon radio0 always
radio parentbeacon radio0 reduction 2
radio parentbeacon radio1 always
radio parentbeacon radio1 reduction 2
```

By default, radio0 is the 2.4 GHz radio, and radio1 is the 5 GHz radio. Apply the radio tsfresync and radio wmm_adaptmode commands to only the radio interface configured in the ESS-AP mapping table.