Converged Access Path Maximum Transmission Unit Discovery

This document describes the Path Maximum Transmission Unit (MTU) Discovery algorithm for Wireless LAN Controller (WLC) (version 6.0 and above) and Converged Access.

Supported Platforms and Releases

The information in this document is based on Cisco 5700 Series Wireless LAN Controller.

Network Diagram

Sender (Access Point) > (Multiprotocol Label Switching [MPLS] or Router) > Receiver (WLC or Converged Access)

Setting Maximum Transmission Unit

The sender detects the default MTU and sends a discovery request (Access Point [AP] to WLC). The request is for 1500 bytes with a Don't Fragment (DF) bit set. If the receiver receives the request, then it replies with a 1500 bytes packet. When the sender receives the reply from the receiver, the MTU path is set at 1500 MTU.

In cases, where the receiver does not receive the discovery request (or the sender does not receive the response from the receiver), the MTU is set to 576 and the dynamic discovery process starts.

Dynamic Path Maximum Transmission Unit Discovery

The sender or receiver if allowed, sets the MTU information available in the Internet Control Message Protocol (ICMP) as the next value for MTU.

If no information available, the sender or receiver receives an ICMP error. The initial MTU size is then set at 576 and dynamic discovery is in progress. Every 30 seconds, the sender attempts to increase the MTU to check for improvements in the path.

The sender can set the MTU values as 576, 1006, 1492, and 1500. Based on the router configuration, the customer can see the ICMP errors every 30 seconds for every AP.

ICMP Error over MPLS Example

The following example describes ICMP Error over MPLS:

```
MPLS: ICMP: dst (10.10.10.10) frag. needed and DF set unreachable sent to 192.0.2.5
```

Verifying Dynamic Path Maximum Transmission

To verify the Dynamic Path Maximum Transmission (PMTU), use the **show ap config general** command in EXEC mode.

```
Device(config)# show ap config general | b <APname>
.
CAPWAP Path MTU                                    : 1500

Device> show ap config general <APname>
.
.
CAPWAP Path MTU................................. 1500
```

Troubleshooting Dynamic Path Maximum Transmission Unit

To troubleshoot Dynamic PMTU issues, perform a packet capture on the AP switch port.