



REAL-WORLD USE CASES FOR MLO (OR LACK THEREOF) IN ENTERPRISE WI-FI

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MLO TYPES

MLO Mode	Radios Required	Functionality	Requirements	Notes
MLSR	1 (2.4, 5, 6)	TX/RX 1 Link at a time	AP: Mandatory Non-AP: Optional	Most Common Typical Client Devices
EMLSR	1 (2.4, 5, 6)	Listen on multiple Bands TX/RX 1 Link at a time	AP: Optional Non-AP: Optional	IoT/Battery Optimized
STR	2+ (2.4, 5, 6)	Flexible on All Bands TX/TX, RX/RX, TX/RX	AP: Mandatory Non-AP: Optional	Complex Requires EMF Protection
NSTR	2+ (2.4, 5, 6)	Multi-Band Half Duplex TX/TX, RX/RX	AP: Optional Non-AP: Optional	Lack EMF Protection Highly Complex/Impractical
EMLMR	2+ (2.4, 5, 6)	2x2:2 + 2x2:2 or 4x4:4 Dynamic	AP: Optional Non-AP: Optional	Resource Intensive Highly Complex/Impractical

Source: Wi-Fi 7 In Depth, Chapter 5. Henry, Hart, Gupta, Smith

POLL

- How many people in the room are building or maintaining Large Enterprise Environments? (>10,000 APs)
- Follow up- How many are reserving 2.4GHz Spectrum for IoT and low-complexity devices?

SECURING ENTERPRISE INFRASTRUCTURE

Pre-Shared Keys (WPA3-SAE)

- Cumbersome to manage
- Require heavy lifts when updating/rotating Keys
- Lack ability to manage at per device level

Cert-based EAP-TLS required for Windows machines running 192 bit Encryption
Credential-based EAP-PEAP (WPA3-ENT) will work for some devices like iPhones

- Requires PKI/Directory Infrastructure
- Allows granular control
- May require future OS/Firmware enhancements for APs/STAs

EARLY OPTIONS FOR MLO

Prosumer Home Use

- Phones, Gaming Devices

OWE Guest Networks

- May confuse older clients
- Transition Mode recommended

Device or Function Specific Networks

- May be built for latency sensitive applications

MAIN CONCERNS

- Windows devices just aren't ready for MLO in the Enterprise
- Linux devices have difficulty with drivers/features connecting to Wi-Fi 7 Enterprise
- AP Devices are still in their infancy and firmware is still being released to provide so-called Minimum Requirements for 80211be

CONCLUSION

- IEEE and WFA have different requirements for MLO features
- IoT type devices may have no practical application for MLO (2.4 only)
- Guest networks may be an option with OWE and MLO, but may introduce interoperability issues with legacy clients if not on a discrete WLAN
- WPA3-ENT using 802.1X is not ubiquitous in Wi-Fi 7, limited MLO available



THANK YOU