WING 5 Best Practices Quick Reference

For the most part we can break customer installs down into 4 categories. I will describe the 4 categories below but first here are a few definitions to consider…

- Local – When we say a deployment is "**Local**", we mean all of the APs and the RFS reside in one physical location and they all belong to the same RF Domain. It could be Layer 2 adoption or Layer 3 adoption but the key is that there is only one RF Domain.

- Distributed – When we say a deployment is "**Distributed**" what we are saying is that the RFS and the APs are in different RF Domains. Both Campus and NOC deployments are distributed, where each building or each remote location represents a unique RF Domain.

Small Deployment

Small number of APs
Local Deployment / Single RF Domain
RFS is the RF Domain Controller for the single RF Domain
Layer 2/3 Adoption
Level 1 MINT
If using IP (AP) with DHCP OPTION (191) and/or Controller Host/Controller VLAN, even if network is flat/L2, disable MINT MLCP VLAN
Cluster LEVEL 1 (VLAN or IP, not both)
No Control VLAN (on RF-Domain)

Other considerations for a Small Deployment…

- A Controller VLAN (Don't confuse this with a Control VLAN) is typically only used for small scale deployments. The Controller VLAN (when multiple VLANs are configured on network) setting creates a mint level 1 link from the APs to the controller when set. It shouldn't be used anywhere else.

Mid Size Deployment

100 APs or more
Local Deployment / Single RF Domain
RFS is the RF Domain Controller for the single RF Domain
Layer 3 Adoption (preferred but not necessarily required)
Level 1 MINT
No Control VLAN (on RF-Domain)

Other considerations for a Mid Size Deployment…

- If Layer 3 adoption is used you can implement "**No MINT MCLP VLAN**" on the APs to stop them from seeing each other. According to ECRT, eliminating "**MINT MLCP VLAN**" with Layer 3 Adoption is a cleaner way to go. This can be done whether the WLANs are Tunneled or Local. The APs will still form Level 1 MINT links with each other; they will just do it using IP instead of VLAN.

Campus Deployment (Universities, multiple buildings, one location)

Large scale deployment. No WAN.
Distributed/Multiple RF Domains
Layer 3 Adoption
Level 2 MINT
Control VLAN for every AP RF Domain
Tunneled WLANs require WING 5.5.x or later
Cluster Controllers should be MINT LEVEL 2

Other considerations for a Campus Deployment

- General rule of thumb. If there are multiple RF Domains we should be using MINT Level 2 and we need a Control VLAN for each RF Domain.

- If there are tunneled WLANs they should be running WING 5.5 or later because this is when we first started to support tunneled WLANs over MINT Level 2. Also use the Feature Matrix or Decoder Ring to make sure that tunneled WLANs are supported with the number of APs that they have deployed.

- If Layer 3 adoption is used you can implement "**No MINT MLCP VLAN**" on the APs to stop them from seeing each other. According to ECRT, eliminating "**MINT MLCP VLAN**" with Layer 3 adoption is a cleaner way to go. This can be done whether the WLANs are tunneled or local. The APs will still form Level 1 MINT links with each other; they will just do it using IP instead of VLAN.

NOC

Large scale deployment. With WAN.
Distributed/Multiple RF Domains
Layer 3 Adoption
Level 2 MINT
Control VLAN for every AP RF Domain
Tunnel WLANs require WING 5.5.x or later (VX9000 does not support tunnel WLANs)
If there is a cluster, it must be "**Active/Standby**" in a NOC deployment. No exceptions. Cluster should be MINT LEVEL 2.

Consideration's for a NOC deployment.

- A NOC deployment pretty much follows the same rules and considerations as a campus deployment. The main difference is that in a Campus the AP RF Domains usually represent different buildings on a campus but no WAN connection is involved. With a NOC deployment the AP RF Domains represent remote locations separated from the RFS by a WAN connection

- General rule of thumb. If there are multiple RF Domains we should be using MINT Level 2 and a Control VLAN for each RF Domain.

- If there are tunneled WLANs they should be running WING 5.5 or later because this is when we first started to support tunneled WLANs over MINT Level 2. Also use the "**Feature Matrix**" to make sure that tunneled WLANs are supported with the number of APs that they have deployed.

- If Layer 3 adoption is used you can implement "**No MINT MCLP VLAN**" on the APs to stop them from seeing each other. According to ECRT, eliminating "**MINT MLCP VLAN**" with Layer 3 adoption is a cleaner way to go. This can be done whether the WLANs are Tunneled or Local. The APs will still form Level 1 MINT links with each other; they will just do it using IP instead of VLAN.

- Tunnel WLANs require "Bridging VLAN/Bridge Mode Tunnel/Tunnel Over L2" on AP Profile. This is supported on v5.5 and higher. If running firmware lower than v5.5, L2TPv3 required.

What ECRT checks first…

- Searches for RF Domains to see how many are there
- Multiple RF Domains? We should have Control VLANs.
- Single RF Domain? We should not have a Control VLAN.
- Tunneled WLANs or Local?
- Tunnel needs Bridging VLAN/Bridge Mode Tunnel/Tunnel Over L2 on AP Profile
- Are the WLAN VLANs on the right device? Tunneled WLAN VLANs need to be on the RFS only. Local WLAN VLANs need to be on the APs only.

Side Notes

If using Controller VLAN and Controller Hostnames (by IP), it will also default to Controller VLAN, which will default to MINT LEVEL 1, even if AP Profiles are configured for MINT LEVEL 2.

Under WiNG v5.5: Before, cluster could have been at level 1, but with WiNG 5.5 or higher – it doesn't work anymore. So for now the solutions is going to be:

1. If all adoption is at level 2 – match cluster to be at level 2 (different RF-Domains for APs and Controllers)
2. If some APs are at level 2 and some are at level 1 – put DIS priority (Advanced/MINT Protocol). The DIS priority adjustment should be configured to ensure that the active RFS "always" becomes the DIS and all tunneled WLAN traffic flows through it. We should be setting the RFDM priority also to be highest so that the active controller is the RFDM all the time.