EXAM-2 Deploying Cisco Wireless Enterprise Networks [300-365 WIDEPLOY]

Overview: - The Deploying Cisco Wireless Enterprise Networks (WIDEPLOY) exam (300-365) is a 90-minute, 60-70 question assessment that is associated with the CCNP Wireless certification. This exam tests a candidate's knowledge of implementing wireless networks based on the applicable Cisco controller and Unified switching architectures that support high availability, QoS, multicast, and mobility services.

 The following topics are general guidelines for the content that is likely to be included on the exam. However, other related topics may also appear on any specific instance of the exam. To better reflect the contents of the exam and for clarity purposes, these guidelines may change at any time without notice. Candidates can prepare for this exam by taking the Deploying Cisco Wireless Enterprise Networks (WIDEPLOY) course.

Course Content

1.0 Implement QoS for Wireless Applications

- 1.1 Describe and implement general considerations for wired QoS
  1.1.a Configurations
  1.1.b DSCP/IP precedence to 802.1p mapping
  1.1.c Voice VLAN
  1.1.d Trust boundaries

- 1.2 Describe and implement the appropriate wireless QoS deployment schemes
  - 1.2.a 802.11e / WMM
  - 1.2.b Mapping-wired to wireless
  - 1.2.c Alloy QOS
- 1.3 Configure infrastructure QoS for wireless clients
  - 1.3.a CAC
  - 1.3.b TSPEC
  - 1.3.c EDCA parameters
  - 1.3.d Queues
  - 1.3.e Bandwidth control and override
- 1.4 Implement AVC
  - 1.4.a Configure AVC
  - 1.4.a.[i] Profiles
  - 1.4.a.[ii] Netflow/NBAR2
  - 1.4.b Monitor AVC
  - 1.4.b.[i] Controller
  - 1.4.b.[ii] PI

2.0 Implement Multicast over Wireless

- 2.1 Describe general multicast concepts
  - 2.1.a PIM
  - 2.1.b Cisco Group Management Protocol
  - 2.1.c IGMP snooping
  - 2.1.d RP
- 2.2 Describe implications for multicast in 802.11
  - 2.2.a Highest mandatory data rate
  - 2.2.b Unicast and multicast modes
  - 2.2.c Roaming
  - 2.2.d Controllers having same CAPWAP multicast group
  - 2.2.e Video stream (reliable multicast)
  - 2.2.f mDNS
- 2.3 Configure multicast in a wireless network
  - 2.3.a Infrastructure multicast group
  - 2.3.b IGMP snooping on the controller
  - 2.3.c Video stream (reliable multicast)
  - 2.3.d Switch peer group / Mobility group multicast
- 2.4 Configure mDNS
  - 2.4.a mDNS gateway
  - 2.4.b LSS
  - 2.4.c Service advertisement
  - 2.4.d MAC priority
  - 2.4.e AAA override
  - 2.4.f ISE portal
  - 2.4.g Static advertisements on converged access
  - 2.4.h mDNS profiling

3.0 Implement High Density

- 3.1 Design for High Density
  - 3.1.a High client count (high capacity)
  - 3.1.b High AP count (high density)

- 3.2 Implement RXSOP
- 3.3 Implement enhanced roaming
- 3.4 Implement AP Groups
  3.4.a RF profiles
- 3.5 Implement interface groups
- 3.6 Implement client limits
  3.6.a Per Radio
  3.6.b Per WLAN
  3.6.c Per Interface

4.0 Design and Deploy WLAN Infrastructure for Mobility

- 4.1 Describe the impact of client VLAN assignment on mobility
  4.1.a AP group VLANS
  4.1.b Identity based networking
- 4.2 Minimize inter controller roaming
- 4.3 Describe mobility control plane architectures
- 4.4 Describe mobility tunneling process
  4.4.a Formation
  4.4.a.[i] Ability to identify the tunnels created
  4.4.b Tear down
  4.4.c Messaging
  4.4.d Handoff types
- 4.5 Implementing client mobility
  4.5.a Switch Peer Group (SPG)
  4.5.b Mobility groups
  4.5.c Mobility lists
  4.5.d Anchoring
  4.5.e Virtual interface continuity
  4.5.f Mobility Optimization (11k/11v)
  4.5.g Verify resulting mobility tunneling structure

5.0 Implement Cisco MSE Architecture

- 5.1 Describe Cisco MSE capabilities and integration with wireless network architecture
  5.1.a Context aware
  5.1.b Adaptive wireless IPS
  5.1.c Analysis
  5.1.d CleanAir
  5.1.e Scalability
- 5.2 Describe location techniques
  5.2.a Angulation
  5.2.b Cell of origin
  5.2.c TDoa and ToA lateration
  5.2.d RSS lateration
  5.2.e Pattern recognition
  5.2.f RF Fingerprinting
  5.2.g Compare probe based location vs data frame based location
  5.2.h Bluetooth Low Energy (BLE)
- 5.3 Identify the relevant parameters required Initialize MSE for network operations
- 5.4 Implement base location services
  5.4.a Calibration procedure

5.4.a.[i] PI based
5.4.a.[ii] Ekahau based
5.4.b Complex environments
5.4.b.[i] Mixed use environments
5.4.b.[ii] Complex RF environments
5.4.b.[iii] Small areas (i.e new presence capabilities)
5.4.b.[iv] Multi-floor facilities
5.4.b.[v] Recalibration
5.4.c NMSP
5.4.d Synchronization
5.4.e History parameters
5.4.f Tracking parameters
5.4.f.[i] Active RFID tag
5.4.f.[ii] WiFi-Devices
5.4.f.[iii] Active Interferes
5.4.f.[iv] Rogue devices
- 5.5 Implement advanced location services
5.5.a Analytics
5.5.a.[i] Location (zone based)
5.5.a.[ii] Presence (site based)
5.5.b Visitor connect
5.5.c Describe AppEngage
5.5.d Facebook for Wi-Fi
- 5.6 Integrate MSE with PI
5.6.a Identify the relevant components to integrate the MSE with PI
5.6.b Identify the relevant steps to Integrate MSE with PI
5.6.c Identify the relevant steps required to Maintain MSE

6.0 Design and Implement FlexConnect Architecture

- 6.1 Compare and contrast the components of FlexConnect architecture
6.1.a Local switching vs Central switching
6.1.b Local Auth vs Central Auth
6.1.c Connected mode vs Standalone mode
- 6.2 Describe and implement the capabilities of a FlexConnect group
6.2.a VLAN mapping
6.2.b ACLs
6.2.c AP Image upgrade
6.2.d Authentication and key management
6.2.e Central vs Local DHCP
- 6.3 Describe the impact of FlexConnect architecture on roaming
6.3.a ACLs
6.3.b Authentication
6.3.c Key management
6.3.d Real time application
- 6.4 Describe and implement Office Extend operation
6.4.a Configuration
6.4.a.[i] Controller
6.4.a.[ii] AP
6.4.b Split tunneling for printing and general traffic

7.0 Implement Controller and AP High Availability

- 7.1 Configure the wireless network for high availability
  - 7.1.a LAG vs Port based
  - 7.1.b Backup primary and backup secondary outside of mobility group
  - 7.1.c Anchor controller redundancy
- 7.2 Configure high availability for the AP
  - 7.2.a AP fallback
  - 7.2.b AP prioritization
  - 7.2.c Legacy primary ,secondary, and tertiary
- 7.3 Configure high availability for the Controller
  - 7.3.a AireOS
  - 7.3.a.[i] Stateful switch over (SSO)
  - 7.3.b IOS-XE
  - 7.3.b.[i] Stateful switch over (SSO)
  - 7.3.b.[ii] Stacking

8.0 Wireless Bridging (MESH)

- 8.1 Describe the following MESH AP modes of operation
  - 8.1.a RAP
  - 8.1.b MAP
  - 8.1.c Flex on MESH
- 8.2 Describe the considerations for a MESH deployment
  - 8.2.a Hop count
  - 8.2.b Backhaul caveats
  - 8.2.c AP authorization
  - 8.2.d Outdoor RF considerations
  - 8.2.e VLAN transparent bridging
- 8.3 Describe the convergence of a MESH network
  - 8.3.a Cisco AWPP
  - 8.3.b Bridge group names
  - 8.3.c Parent selection
  - 8.3.d Fast convergence modes
  - 8.3.e Re-convergence
- 8.4 Implement workgroup bridge
  - 8.4.a Proprietary
  - 8.4.a.[i] Reliable multicast
  - 8.4.a.[ii] Roaming
  - 8.4.b Universal
- 8.5 Describe the passive client feature
  - 8.5.a No IP address learning
  - 8.5.b Third party WGB support

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