Chapter 19: Quiz – Understanding Wireless Roaming and Location Services (Answers) CCNPv8 ENCOR

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25. What is a reason to specify lightweight APs and a WLAN controller as the major elements in a WLAN design?

- Lightweight APs can be controlled wirelessly.
- The design provides a user-friendly standalone operation.
- **The design simplifies the deployment of roaming features.**
- The design uses a single end-to-end VLAN to provide wireless roaming features.

Explanation: A lightweight AP and a wireless LAN controller are used in a corporate wireless design. Multiple APs are controlled by a wireless LAN controller that can support wireless VoIP, wireless roaming, network management, and AP upgrades.

26. What is the minimum number of APs to be used to achieve an accurate location of wireless clients based on RSS values?

- 2
- **3**
- 4
- 5

Explanation: To locate a device more accurately, an AP can use the received signal strength (RSS) of a client device as a measure of the distance between the two. However, if the distance is measured from a single AP only, it is difficult to determine where the client is situated in relation to the AP. A better solution is to obtain the same measurement from three or more APs, then correlate the results and determine where they intersect.

27. Which technique is used by Cisco WLCs to minimize the time required on key exchanges during roaming by using an amendment to WLAN standards to address fast roaming or fast BSS transition?

- key caching
- **802.11r support**
- intercontroller roaming
- Cisco Centralized Key Management (CCKM)

Explanation: Cisco controllers offer three techniques to minimize the time and effort spent on key exchanges during roams:

- **Cisco Centralized Key Management (CCKM):** One controller maintains a database of clients and keys on behalf of bound APs and provides them to other controllers and bound APs as needed during client roams.
- **Key caching:** Each client maintains a list of keys used with prior AP associations and presents the keys as it roams.
- **802.11r:** This 802.11 amendment addresses fast roaming or fast BSS transition. A client can cache a portion of the key of the authentication server and present that to future APs as it roams.

28. A company deploys a wireless network on campus. The network analysts use multiple APs to locate wireless clients based on the RSS values received by the APs. What is a reason that the method may not provide accurate location information all the time?

- The method assumes that the APs and client devices are Cisco products.
- The method assumes that the client devices are using intercontroller roaming.
- The method assumes that the client devices are using intracontroller roaming.
- **The method assumes that the APs and client devices are in open free space with no physical obstacles.**

Explanation: The method to obtain the RSS values from three or more APs and correlate the results and determine where they intersect is based on the assumption that the APs and client devices are located in open free space, with nothing but free space path loss to attenuate the RF signal. In a normal environment, the APs and clients exist in buildings where physical objects, such as walls, doors, windows, furniture, cubicles, and shelving, also exist and get in the way of the RF signals. Usually the signals can pass through various materials but get attenuated along the way. That further complicates determining device location accurately.

29. What is a difficulty in locating a wireless client according to the location of the AP to which the client is currently joined?

- The client may roam away from the AP.
- The client may fail to associate with the AP.
- The client may fail to authenticate with the AP.
- **The client location target may not be granular enough.**

Explanation: Before each wireless client can use the network, it must first be authenticated and associated by an AP. Thus, a client can be located according to the AP to which it is currently joined. However, that may not be granular enough for every use case because one AP might cover a large area.

30. A company is deploying a wireless network on campus using the lightweight AP topology. Which two types of roaming could occur? (Choose two.)

- end user roaming
- enterprise roaming
- autonomous roaming
- **intercontroller roaming**
- **intracontroller roaming**

Explanation: In a lightweight AP topology, APs are bound to a wireless LAN controller. The WLC performs the management functions such as roaming management. When a wireless client is roaming among APs that are bound to the same WLC controller, the roam occurs entirely within the controller. This is known as intracontroller roaming. Intercontroller roaming occurs when a client is roaming among APs that are bound to different WLC controllers.

31. When wireless clients move from one AP to another, which device determines when a roaming session starts?

- WLC
- **wireless client**
- AP to which the client will move
- switch to which the current AP is connected

Explanation: A wireless client continuously evaluates the quality of the wireless connection, whether it is moving around or not. If the signal quality degrades, the client will begin looking for a different AP that can offer a better signal.

32. Which two Cisco management platforms can integrate with APs and WLCs along with location servers to provide real-time location services for a wireless network? (Choose two.)

- DNA Space
- **DNA Center**
- **Prime Infrastructure**
- Mobility Services Engine
- Connected Mobile Experiences

Explanation: Cisco APs and WLCs can integrate with management platforms like Cisco Prime Infrastructure or DNA Center, along with location servers like Cisco Mobility Services Engine (MSE), Cisco Connected Mobile Experiences (CMX), or Cisco DNA Spaces to gather location information in real time and present that information in a relevant way.

33. What is the purpose of a wireless client sending an association request to an AP?

- to find the SSID of the AP

- **to form a new association with the AP**
- to roam from current AP to another AP
- to respond to the beacon signal sent by the AP

Explanation: When a client wants to join the BSS of an AP, it actively scans channels and sends probe requests to discover candidate APs. The client then selects one and tries to associate with it. A wireless client can send *association request* and *reassociation request* frames to the AP selected. Association requests are used to form a new association, whereas reassociation requests are used to roam from one AP to another, preserving the original association status of the client.

34. What is a characteristic of mobility groups?

- Mobility groups are organized in a tree structure.
- Members of a mobility group can be dynamically joined.
- A mobility group consists of one centralized WLC and several connected APs.
- **A mobility group is a group of WLCs in a network with the same mobility group name.**

Explanation: Cisco controllers can be organized into mobility groups to facilitate intercontroller roaming. A mobility group is a group of WLCs in a network with the same mobility group name. A mobility group is configured manually.

35. A company deploys a lightweight AP topology on campus. Which scenario is an example of Layer 2 intercontroller roaming?

- A client roams from one AP to another AP that is in autonomous mode.
- A client roams from one AP to another AP that is bound to the same WLC.
- A client roams from one AP to another AP that is configured with a private IP address subnet.
- **A client roams from one AP to another AP that is configured with the same VLAN and IP subnet.**

Explanation: In intercontroller roaming, a client roams from one AP to another AP that is bound to a different WLC. If both APs are configured with the same VLAN and IP address subnet, the client has made a Layer 2 intercontroller roam and it stays on the same VLAN and subnet.

36. Which type of wireless client roaming is associated with an anchor and a foreign controller?

- Layer 2 roaming
- **Layer 3 roaming**
- intracontroller roaming

- user-to-internet roaming

Explanation: A Layer 3 intercontroller roam consists of an extra tunnel that is built between the original controller that the client was associated with (called the anchor controller) and the controller it has roamed to (called the foreign controller).