Q7) If WLC deployed in WAN,which AP mode is best for local network and how?

When the **Wireless LAN Controller (WLC)** is located in a **WAN/cloud** (rather than on the local network), the best AP mode depends on **traffic flow requirements** and **network efficiency**. The optimal choice is typically:

**✔ FlexConnect (Local Switching) Mode**

*(Also called "Hybrid Remote Edge AP" or H-REAP in older Cisco terms)*

**Why FlexConnect is the Best Choice?**

**1. Local Traffic Breakout (Avoids Backhaul Latency)**

* **Data Traffic**: Stays **local** (doesn’t tunnel to the WLC over WAN).
* **Control Traffic**: Still managed by the **remote WLC** (CAPWAP control tunnel).
* **Benefit**: Prevents unnecessary WAN traffic for local internet access.

**2. Works Even If WAN Fails (Split MAC Survivability)**

* If the **WAN link to the WLC drops**:
* APs **continue serving clients** using cached configurations.
* New clients **can still connect** (if using open/WPA2-PSK).
* **No Wi-Fi downtime** (unlike Central Switching, where APs may reboot).

**3. Optimized for Branch Offices**

Ideal for **remote sites** with:

* Limited WAN bandwidth.
* High-latency WAN links.
* No local IT staff.

**4. Supports VLAN Tagging Locally**

AP can map SSIDs to **local VLANs** without WLC involvement.

Example:

* + **Guest Wi-Fi** → Local guest VLAN (internet-only).
  + **Corporate Wi-Fi** → Local LAN VLAN.

**Comparison of AP Modes for WAN-Deployed WLC**

|  |  |  |  |
| --- | --- | --- | --- |
| Mode | Traffic Flow | WAN Dependency | Best For |
| Local (FlexConnect) | Data: Local Control: WLC | Survives WAN failure | Branch offices, remote sites |
| Central Switching | All traffic tunnels to WLC | Fails if WAN drops | HQ/campus (low-latency LAN) |
| Bridge Mode | Rarely used (legacy) | Depends | Special cases (mesh backhaul) |

**Alternatives if FlexConnect Isn’t Available**

**1. Cloud-Based APs (Meraki, Aruba Central)**

* No WLC needed (fully cloud-managed).
* Local switching by default.

**2. Autonomous APs (Standalone Mode)**

* No WLC dependency (but loses centralized management).