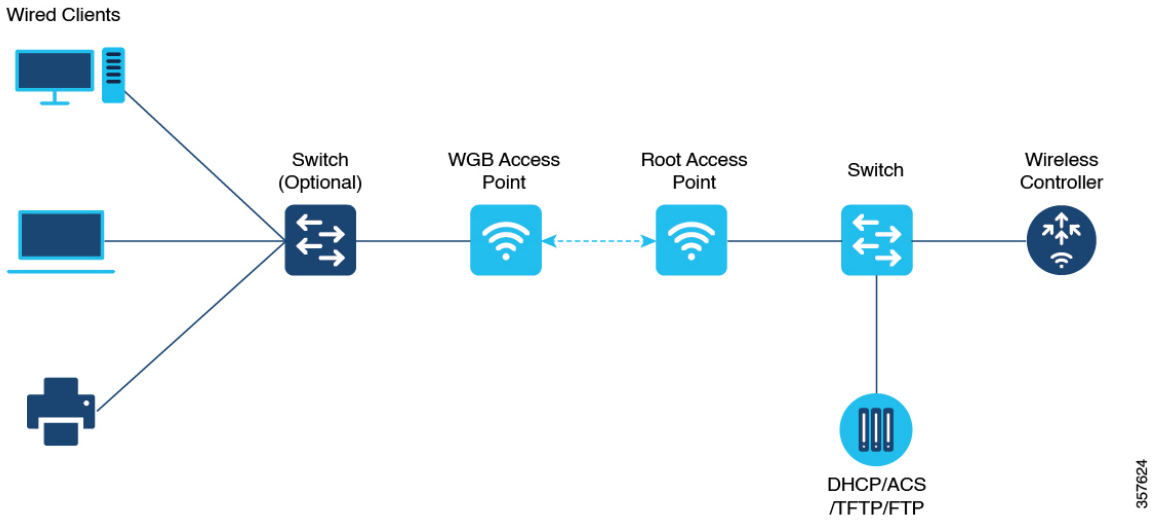
Workgroup Bridges

Cisco Workgroup Bridges

A workgroup bridge (WGB) is an Access Point (AP) mode to provide wireless connectivity to wired clients that are connected to the Ethernet port of the WGB AP. A WGB connects a wired network over a single wireless segment by learning the MAC addresses of its wired clients on the Ethernet interface and reporting them to the WLC through infrastructure AP using Internet Access Point Protocol (IAPP) messaging. The WGB establishes a single wireless connection to the root AP, which in turn, treats the WGB as a wireless client.

Figure 1: Example of a WGB



The mode supported in WGB for Embedded Wireless Controller is:

- Flex Mode: Central authentication and local switching.

Note Cenral authentication is supported on Wave 1 and Wave 2 APs, whereas local switching is supported only on Wave 2 APs.

The following features are supported for use with a WGB:

Table 1: WGB Feature Matrix

Feature	Cisco Wave 1 APs	Cisco Wave 2
802.11r	Supported	Supported
QOS	Supported	Supported
UWGB mode	Supported	Supported on Wave 2 APs
IGMP Snooping or Multicast	Supported	Supported
802.11w	Supported	Supported
PI support (without SNMP)	Supported	Not supported
IPv6	Supported	Supported
VLAN	Supported	Supported
802.11i (WPAv2)	Supported	Supported
Broadcast tagging/replicate	Supported	Supported
Unified VLAN client	Implicitly supported (No CLI required)	Supported
WGB client	Supported	Supported
802.1x – PEAP, EAP-FAST, EAP-TLS	Supported	Supported
NTP	Supported	Supported
Wired client support on all LAN ports	Supported in Wired-0 and Wired-1 interfaces	Supported in all Wired-0, 1 and LAN ports 1, 2, and 3

Table 2: Supported Access Points and Requirements

Access Points	Requirements
Cisco Aironet 2700, 3700, and 1572 Series	Requires autonomous image.
Cisco Aironet 1800, 2800, 3800, 4800, 1562, and Cisco Catalyst 9105, 9115, and 9120, IW6300 and ESW6300 Series	CAPWAP image starting from Cisco AireOS 8.8 release.

Table 3: WGB Support on APs

WGB WLAN Support	Cisco Wave 1 APs	Cisco Wave 2 APs
Central Authentication	Supported	Supported
Local Switching	Not Supported	Supported

- MAC filtering is not supported for wired clients.
- Idle timeout is not supported for both WGB and wired clients.
- Session timeout is not applicable for wired clients.
- Web authentication is not supported.
- WGB supports only up to 20 clients.
- If you want to use a chain of certificates, copy all the CA certificates to a file and install it under a trust point on the WGB, else server certificate validation may fail.
- Wired clients connected to the WGB are not authenticated for security. Instead, the WGB is authenticated against the access point to which it associates. Therefore, we recommend that you physically secure the wired side of the WGB.
- Wired clients connected to a WGB inherit the WGB's QoS and AAA override attributes.
- To enable the WGB to communicate with the root AP, create a WLAN and make sure that Aironet IE is enabled under the Advanced settings.

Configuring Workgroup Bridge on a WLAN

Procedure

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 2	**wlan** *profile-name* **Example:** `Device(config)# wlan wlan-profile`	Enters WLAN configuration submode. The *wlan-profile* is the profile name of the configured WLAN.
Step 3	**ccx aironet-iesupport** **Example:** `Device(config-wlan)# ccx aironet-iesupport`	Enables support for Aironet IEs for this WLAN.
Step 4	**no shutdown** **Example:**	Restarts the WLAN.

	Command or Action	Purpose
	`Device(config-wireless-policy)# no shutdown`	

Verifying the Status of Workgroup Bridges

- To verify the number of WGBs, use the following command:

  show wireless wgb summary

  The following is a sample output:

```
Device#show wireless wgb summary
Number of WGBs: 1
MAC Address    AP Name                          WLAN State              Clients
-------------------------------------------------------------------------------
7070.8b7a.7030 Ed2-JFW-AP1                      1    Run                1
```

- To verify WGB details, use the following command:

  show wireless wgb mac-address *MAC-address* **detail**

  The following is a sample output:

```
Device#show wireless wgb mac-address 7XXX.8XXa.7XXX detail

Work Group Bridge

MAC Address        : 7XXX.8XXa.7XXX
AP Name            : Ed2-JFW-AP1
WLAN ID            : 1
State              : Run

Number of Clients: 1

MAC Address
------------
d8XX.97XX.bXXX
```

- To view the client details on the controller, use the following command:

  show wireless client mac-address *MAC-address* **detail**

  The following is a sample output:

```
Device#show wireless client mac-address 7XXX.8bXX.70XX detail

Workgroup Bridge
Wired Client count : 1
```

- The following is a sample output:

```
Device#show wireless client mac-address d8XX.97XX.b0XX detail
Workgroup Bridge Client
WGB MAC Address : 7XXX.8bXX.70XX
```