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Bridging and Repeating with the
Intel PRO/Wireless 2011 Access Point

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Recommended Procedure

Prerequisites:

- Two to five Intel PRO/Wireless 2011 Access Points with the *same firmware version*.

Notes:

- It's a MAC layer bridge – standard IP addressing considerations apply.
- Point to point and multi-point to point bridging is supported, as well as single and multi-point repeating. Up to four remote APs can communicate to the ROOT AP.
- For performance reasons only one hop is recommended when repeating.
- If you have the APs on the same cable segment, they will communicate over the cable rather than the wireless link. STP (Spanning Tree Protocol) is supported in the AP and it will prefer the wired link to the wireless link, if multiple links are available.

Procedure:

1. Gain access to the Access Point via either Telnet or serial cable connection.
2. Enable WLAP mode (RF configuration screen).
3. Set the WLAP priority (RF configuration screen).

    a. Each AP in the bridge or repeater set must be set to a different priority i.e. 8000, 7000, and 6000. The AP with the lowest numerical setting will become the ROOT AP, and in a repeating configuration should be the AP connected to the wired LAN.

4. Set all data rates to required (RF configuration screen).
5. In the root AP ONLY, enter the MAC address of itself in the Manual BSS_ID field (RF configuration screen).
6. Save settings and reset the AP.
7. Repeat steps 1 to 4 for all AP(s).
8. Monitor the ROOT AP (RF Stats Menu, F3 for WLAP, F2 for timed display refresh). When resetting the other AP(s) you should see activity in the ITF STATE column of the Wireless AP Interface Table portion of the screen. When the ITF STATE changes to FWD, the APs are wirelessly communicating in WLAP mode successfully.
9. Ping the near AP, then a remote AP across the wireless link, to ensure proper operation.

Advanced Capabilities:

- Specifying the WLAP Manual BSS_ID

    This can speed up the association process and minimize confusion when more than two WLAPs try to associate with each other. See the Access Point Product Reference Manual for details.

- Setting WLAP Mode to Link Required

    At power up:
    If the WLAP is the Root AP, an Ethernet connection is required.
    If the WLAP is a designated WLAP, then association to the Root AP is required.
    During normal operation:
    If the Ethernet connection is lost, the Root AP resets.
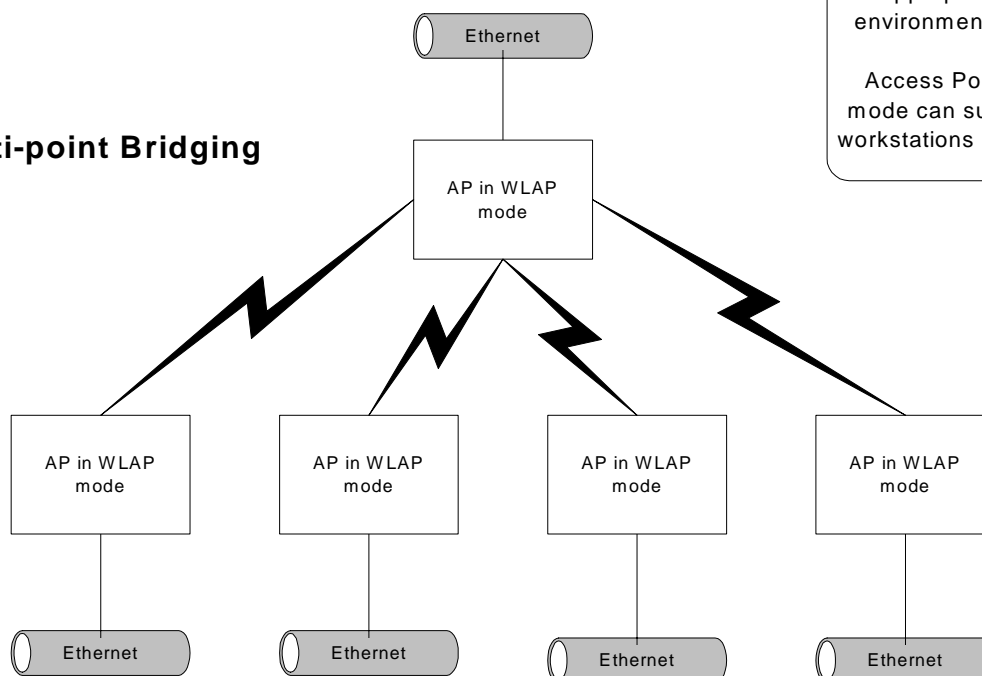   If the WLAP association is lost, the designated WLAP resets.

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Bridging and Repeating Examples
For the Intel PRO/Wireless 2011 LAN Access Points

Point to Point Bridging

| Ethernet |—| AP in WLAP mode |⚡| AP in WLAP mode |—| Ethernet |

> AP to AP distance can extent to over 2 miles given the appropriate antenna and environmental conditions.
>
> Access Points in WLAP mode can support wireless workstations simultaneously.

Multi-point Bridging

Ethernet

AP in WLAP mode

AP in WLAP mode — Ethernet
AP in WLAP mode — Ethernet
AP in WLAP mode — Ethernet
AP in WLAP mode — Ethernet

Repeating

| AP in WLAP mode |⚡| AP in WLAP mode |—| Ethernet |