Mesh WiFi Performance Ethernet Wire vs. Wireless

- **Test Takeaway**:
  When the Mesh WiFi system was wired with the Ethernet, the Internet speed was much faster and reliable throughout the house than not wired.

- Please see next slides for the experiment details.

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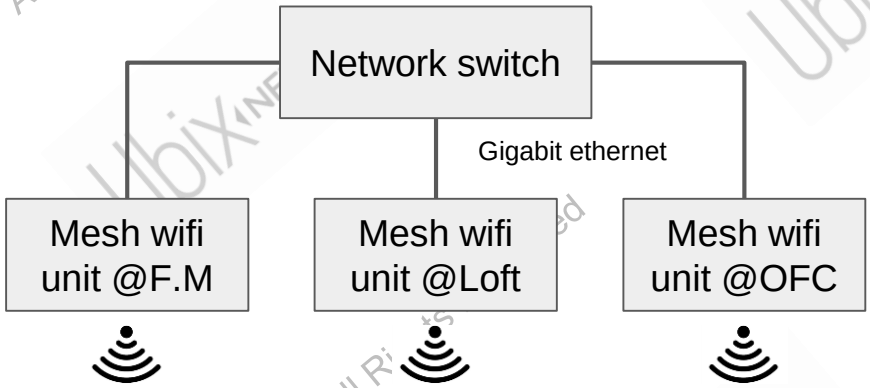
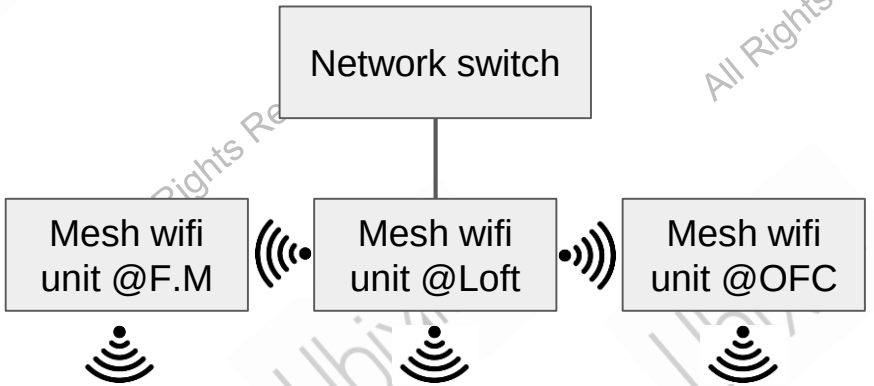
1. This experiment is to show the performance of mesh wifi system in various connection methods (backhaul). One methods is to connect all units with ethernet wires through network switch and the other one with wireless connection between units.
2. Experiment setup
    a. Mesh wifi system : TP-Link M5, 3 units
    b. Placements of wifi units : Loft , Family room, Office (The area of the house: 3,500 Sq.Ft.)
    c. Internet speed from ISP : 235Mbps
    d. Experiment Case 1 : All three units are connected to network switch with Gigabit ethernet cable
    e. Experiment Case 2 : Only a unit in Loft is connected to network switch with Gigabit ethernet cable and rest of units are connected with wireless.





1. Experiment results
   a. Case1(wired) shows top speed at 235Mbps in all locations.
   b. Case2(wireless) shows slower speed and dependency on the location. For example, office is further away from loft than the family room and measured slowest speed.
   c. Mesh wifi units should be carefully placed in case of wireless connection.
2. Summary
   a. Wired connection shows supreme performance with mesh wifi system than wireless connection

	CASE1 (wire)	CASE2 (wireless)
Loft	235 Mbps	235 Mbps
Family Room	234 Mbps	175 Mbps
Office	235 Mbps	23 Mbps