

2: Wi-Fi MESH

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TuCS COMPUTER
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An International
Association of Technology
& Computer User Groups

**Web location for this
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<http://aztcs.apcug.org>

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SUMMARY

To increase the range and signal strength of a Wi-Fi local network, router, you can use a "mesh" which consists of two or more routers working cooperatively together to provide a coordinated Wi-Fi system.

TOPICS

- Mesh Advantages

MESH ADVANTAGES

- A "mesh" is a named grouping of two or more connected Wi-Fi routers that work together to provide you with:
a larger coverage area,
self-healing recovery from router failures,
and
hand-offs when user equipment moves
between the actual coverage of each
individual router

INTERNET PROVIDER'S GATEWAY BOX

(ASUS) (MESH) ROUTER #1

STEEL STAIRWELL & METAL FURNITURE

**ASUS MESH
ROUTER #2**

**COSTLIER
NETGEAR
EXTENDER**

**CHEAPER
Wi-Fi
EXTENDER**

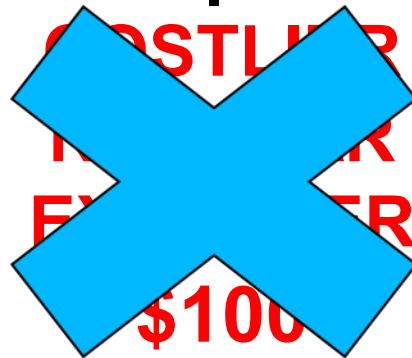
MY OFFICE AREA NOW HAS Wi-Fi COVERAGE

INTERNET PROVIDER'S GATEWAY BOX

ASUS MESH ROUTER #1 \$220
(Can be part of a mesh)

STEEL STAIRWELL & METAL FURNITURE

ASUS MESH
ROUTER #2
\$220
(Part of a mesh)


COSTLY
ROUTER
\$100


CHEAPER
ROUTER
\$60

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MESH ADVANTAGES (continued)

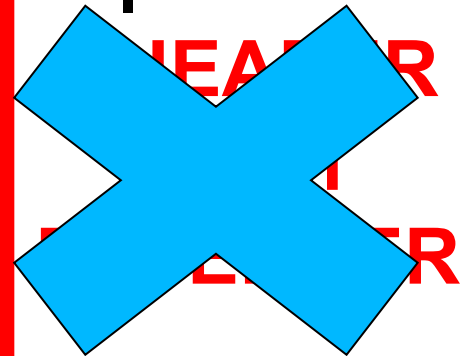
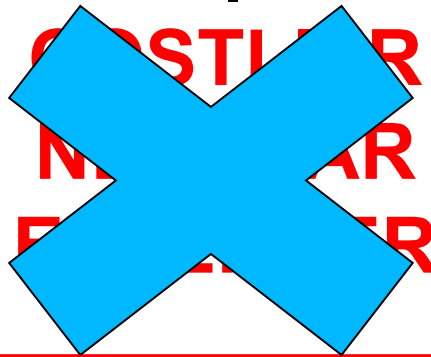
- For the mesh option, I need to have a mesh-capable router at both the North end of the house and the South end of the house and both routers have to belong to the same "mesh" system which, in practice", means that both routers have to belong to the same mesh group of the same manufacturer:

INTERNET PROVIDER'S GATEWAY BOX

ASUS MESH ROUTER #1

STEEL STAIRWELL & METAL FURNITURE

**ASUS MESH
ROUTER #2**



MY OFFICE AREA NOW HAS Wi-Fi COVERAGE

MESH ADVANTAGES (continued)

- In our live example, the two "ASUS" routers are part of a mesh. However, the Netgear Wi-Fi extender is not part of the mesh, even if it broadcasts the same "mesh1" SSID as the two "ASUS" routers.

ASUS MESH ROUTER #1

"mesh1" at 2.45 Ghz RF band

"mesh1" at 5 Ghz RF band

"mesh1" at 6 Ghz RF band

ASUS MESH ROUTER #2

"mesh1" at 2.45 Ghz

"mesh1" at 5 Ghz

"mesh1" at 6 Ghz

COSTLIER NETGEAR EXTENDER

"mesh1" at 2.45 Ghz

"mesh1" at 5 Ghz

MESH ADVANTAGES (continued)

- For the mesh option, I need to have a mesh-capable router at both the North end of the house and the South end of the house and both routers have to belong to the same "mesh" system which, in practice", means that both routers have to belong to the same mesh group of the same manufacturer:

MESH ADVANTAGES (continued)

- Mesh routers have more powerful transmitter-receivers and most have extra transmitter-receivers dedicated to backhaul communications:

In my home, the two ASUS mesh routers let me use wireless Wi-Fi **backhaul** links to "punch through" the metal stairwell where none of the extenders that I have tried are able to do so !

MESH ADVANTAGES (continued)

- The following diagram shows the extra Wi-Fi transmitter-receivers that the two ASUS mesh routers use for backhaul communications and administration of the "AiMesh" mesh group.
The "AiMesh" brand of mesh is proprietary to the ASUS company.

MESH ADVANTAGES (continued)

- These extra transmitter-receivers are not seen by my user equipment but you can see them using Wi-Fi analysis software apps:

ASUS MESH ROUTER #1

[hidden SSID] for AiMesh at 2.45 Ghz

[hidden SSID] for AiMesh at 5 Ghz

[hidden SSID] for AiMesh at 6 Ghz

ASUS MESH ROUTER #2

[hidden SSID] for AiMesh at 2.45 Ghz

[hidden SSID] for AiMesh at 5 Ghz

[hidden SSID] for AiMesh at 6 Ghz

ASUS MESH ROUTER #1

[hidden SSID] for AiMesh at 2.45 Ghz

[hidden SSID] for AiMesh at 5 Ghz

[hidden SSID] for AiMesh at 6 Ghz

ASUS MESH ROUTER #2

[hidden SSID] for AiMesh at 2.45 Ghz

[hidden SSID] for AiMesh at 5 Ghz

[hidden SSID] for AiMesh at 6 Ghz

MESH ROUTERS HAVE ADVANTAGES OVER Wi-Fi EXTENDERS (continued)

- This moderately-priced pair of Asus mesh routers is the best deal that we have been able to find.

You will need two of them for an entry-level mesh configuration:

<https://www.amazon.com/dp/B0DHWQC3FP>

(You have to have two of these to create a Wi-Fi mesh setup.)



ASUS RT-BE92U BE9700 Tri-Band WiFi 7 Router, Supports New 320MHz Bandwidth & 4096-QAM, MLO, AI WAN Detection, AiMesh Support, Subscription-Free Network Security & Comprehensive VPN Features

[Visit the ASUS Store](#)

3.3 270 ratings

500+ bought in past month

\$249⁹⁹

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Thank you for being an Amazon customer. Get \$50 off: Pay ~~\$199.99~~ \$249.99 upon approval for Amazon Visa.

Available at a lower price from [other sellers](#) that may not offer free Prime shipping.

Brand ASUS

Model Name RT-BE92U

Special Feature 320MHz channels in the 6 GHz, Alexa Compatible, Internet Security, VPN, AiProtection, WiFi 7 (802.11be), Wireless router, AiMesh Node, Access p...

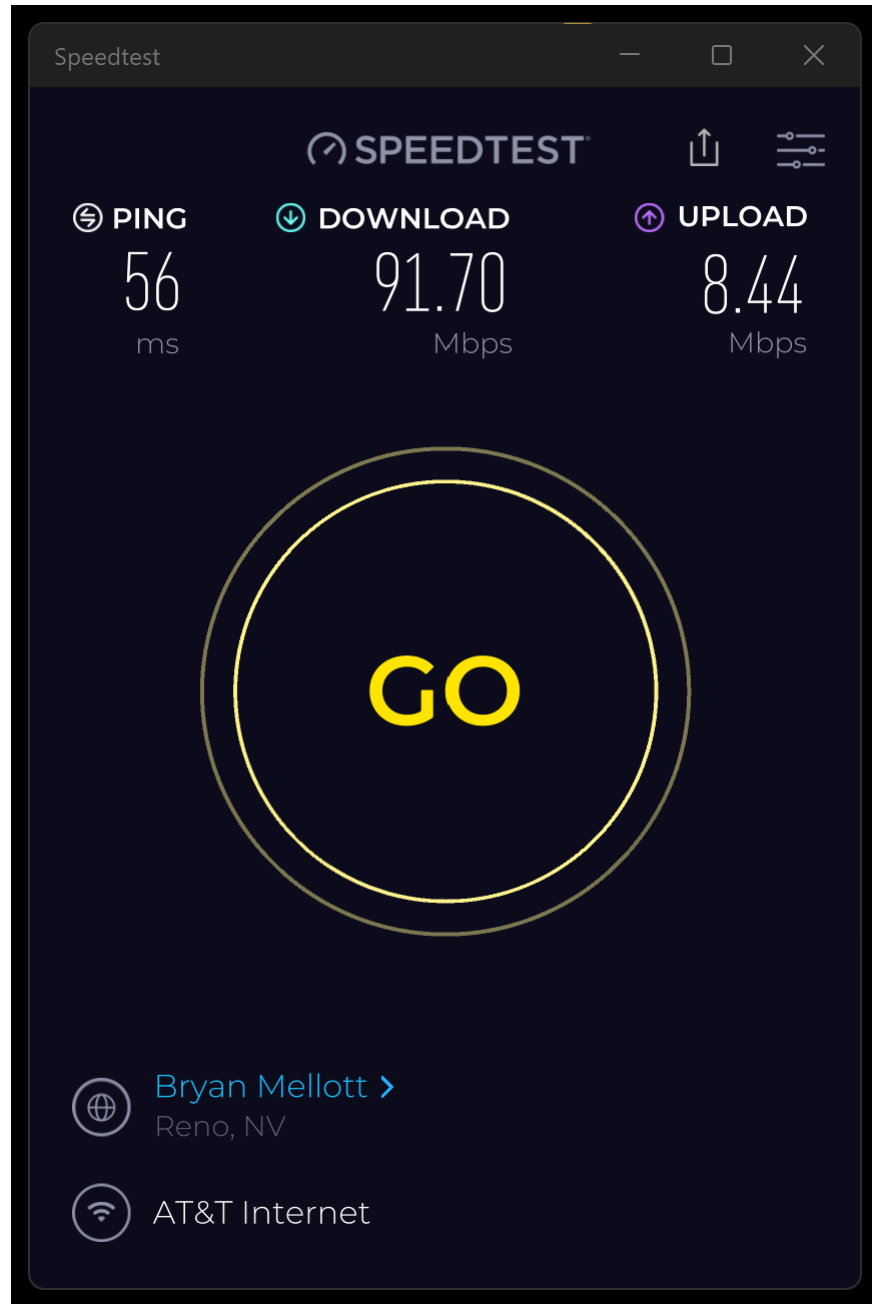
[See more](#)

Frequency Tri-Band

Band Class

[See more](#)

ASUS



FOR GREATER AREA COVERAGE, YOU CAN USE THE NETGEAR'S VARIOUS MESH CONFIGURATIONS

- https://www.amazon.com/stores/page/54AA6656-F644-4E52-B9CC-7F8ADDF0921B/?_encoding=UTF8&pd_rd_plhdr=t&pd_rd_i=B0D4JB6QJD

FOR GREATER AREA COVERAGE, YOU CAN USE THE NETGEAR'S VARIOUS MESH CONFIGURATIONS (continued)

- We do not recommend the lowest option that Netgear offers (the rightmost option) because it is unable to communicate at the most current Wi-Fi 7 (802.11be) level of Wi-Fi capability



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The ultimate WiFi experience

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Speed: **Up to 27 Gbps**

Coverage: **Up to 10,000 sq. ft.**

Devices: **Up to 200**

Internet Port: **10 Gig**

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highly-connected households

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Coverage: **Up to 9,000 sq. ft.**

Devices: **Up to 150**

Internet Port: **10 Gig**

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Coverage: **Up to 8,000 sq. ft.**

Devices: **Up to 100**

Internet Port: **2.5 Gig**

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Technology: **WiFi 7 Dual-band**

Speed: **Up to 5 Gbps**

Coverage: **Up to 6,000 sq. ft.**

Devices: **Up to 70**

Internet Port: **2.5 Gig**

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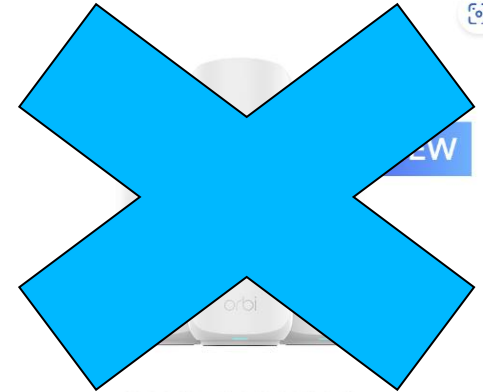
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Wi-Fi MESH UNITS, AND Wi-Fi EXTENDERS

(continued)

Wi-Fi mesh brands:

- Amazon's "Eero 6"
- Amazon's "TruMesh"
- ASUS's "AiMesh"
- ASUS's "ZenWiFi"
- Google's "Nest Wifi"

Wi-Fi MESH UNITS, AND Wi-Fi EXTENDERS (continued)

Wi-Fi mesh brands (continued):

- Linksys' "Atlas"
- Linksys' "Velop"
- Netgear's "Orbi"
- (TP-Link's "Deco")
- (TP-Link's "EasyMesh")

SECURITY CONCERNS FOR TP-LINK ROUTERS

- <https://nationalinterest.org/blog/techland/states-have-a-tp-link-problem>
- <https://www.wired.com/story/tp-link-router-ban-investigation/>

SECURITY CONCERNS FOR TP-LINK ROUTERS (continued)

- <https://www.digitaltrends.com/computing/tp-link-router-alternatives/>
- <https://www.slashgear.com/1855885/tp-link-router-ban-explained-is-it-safe-to-buy/>

SECURITY CONCERNS FOR TP-LINK ROUTERS (continued)

- <https://www.msn.com/en-us/news/technology/where-are-tp-link-routers-made-and-why-does-the-us-government-want-to-ban-them/ar-AA1HcCBY>
- <https://www.micklerandassociates.com/blog/should-i-remove-tp-link-devices>

