

2-Wi-Fi MESH CONFIGURATION

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An International
Association of Technology
& Computer User Groups

**Web location for this
presentation:**

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SUMMARY

If a single Wi-Fi router is unable to cover the entire physical area of your home or business, you can use a Wi-Fi mesh configuration to extend its horizontal reach.

TOPICS

- Two

WIRELESS NETWORKING OPTIONS

- Wi-Fi 4 or 5 or 6 or 6E or 7

- Single wireless router

VERSUS wireless router plus
separate wireless extender

VERSUS

wireless mesh consisting of mesh-
capable wireless router plus one or
more separate mesh units

Broadband Internet modem provided
by Internet provider
connects to
WAN jack of (your or theirs) Wireless
Router
which has 2.45 GHz, 5 GHz, and
maybe 6 GHz "Wireless Access
Points"

ADVANTAGES OF MESH CONFIGURATIONS OF WIRELESS ROUTERS

- Automatic hand-off between mesh devices as a cell phone, tablet, or computer moves between the coverage zones pertaining to the various mesh devices

ADVANTAGES OF MESH CONFIGURATIONS OF WIRELESS ROUTERS (continued)

- End user gets a single cell phone or computer app for modifying and troubleshooting the entire collection of mesh devices

Broadband Internet modem provided
by Internet provider
connects to
WAN jack of (your or their)
mesh-branded Wireless Router
which has a LAN jack that makes a
"backhaul connection" to the WAN
jack of either a secondary Wireless
Router or to a mesh Wi-Fi device

Broadband Internet modem provided
by Internet provider
connects to
WAN jack of (Internet provider's or
your)
mesh-branded Wireless Router
which makes a Wi-Fi "backhaul"
connection to a secondary Wireless
Router or a mesh Wi-Fi device

If you make a wired "backhaul" connection to a secondary Wireless Router or a mesh Wi-Fi device, you can use one or more of the following wired local area network technologies:

Cat 5/6/7 or 8 Ethernet wires

or

Powerline networking adapters

or

Multimedia over Coax Alliance "Wave 2" (if your home has pre-installed TV RG6 coax).

MESH BRANDS:

ASUS "AiMesh

ASUS "ZenWiFi" mesh

Linksys "Velop Whole Home Mesh"

Netgear "Orbi" mesh

Netgear "NightHawk MK32" mesh

"Google Nest Wi-Fi" mesh

"Ubiquiti Amplifi HD" mesh

TP-Link "Deco" mesh

TP-Link "OneMesh"

TP-Link's implementation of "EasyMesh"

Arris "Surfboard" mesh

MESH

- A mesh is a co-operative and coordinated group of two or more of the following devices:
routers
Wi-Fi range extenders
and
mesh units
with one of the devices designated as the "Main" unit and others designated as "Satellite" units

MESH (continued)

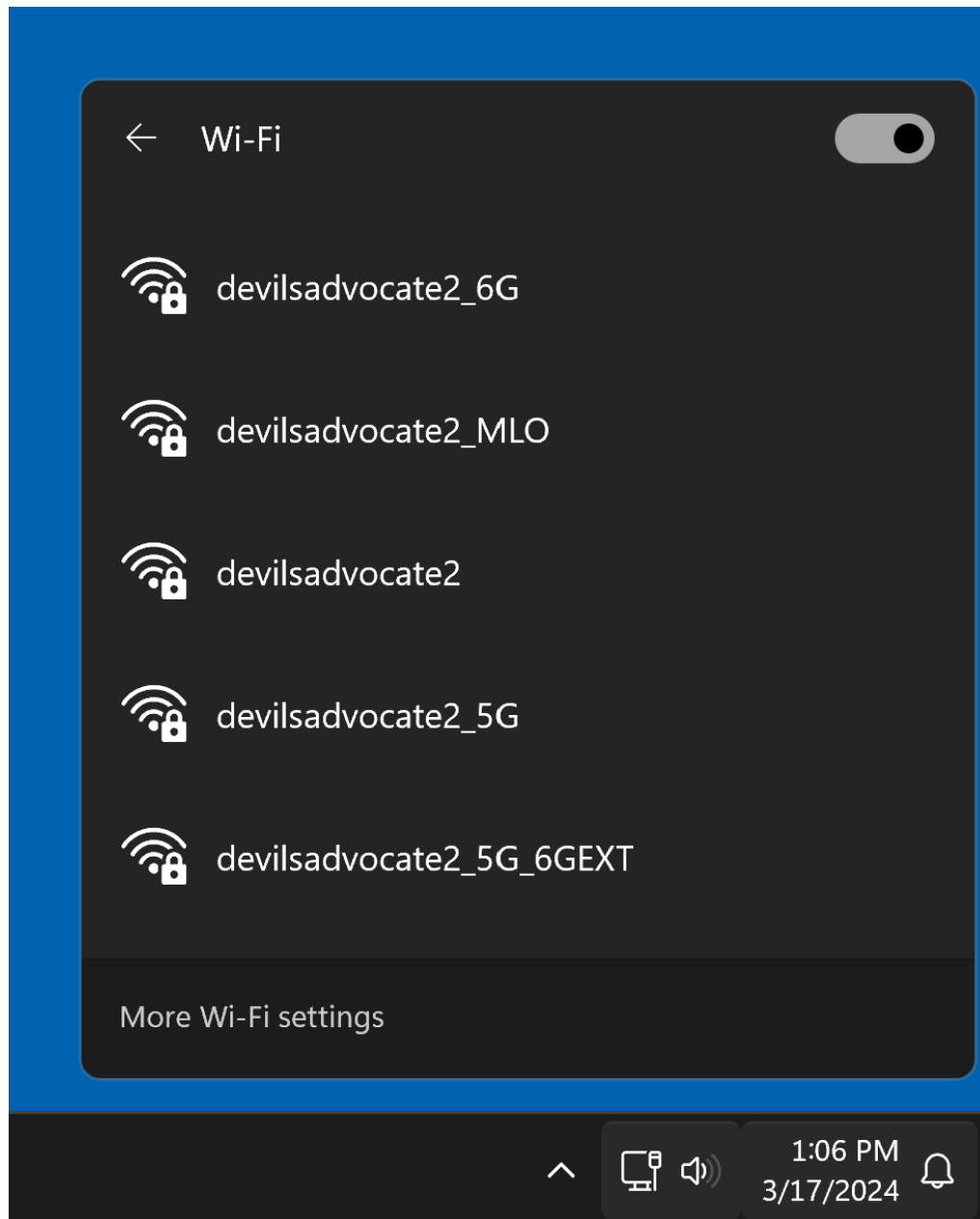
- "Mesh" has been greatly improved in "Wi-Fi 7".

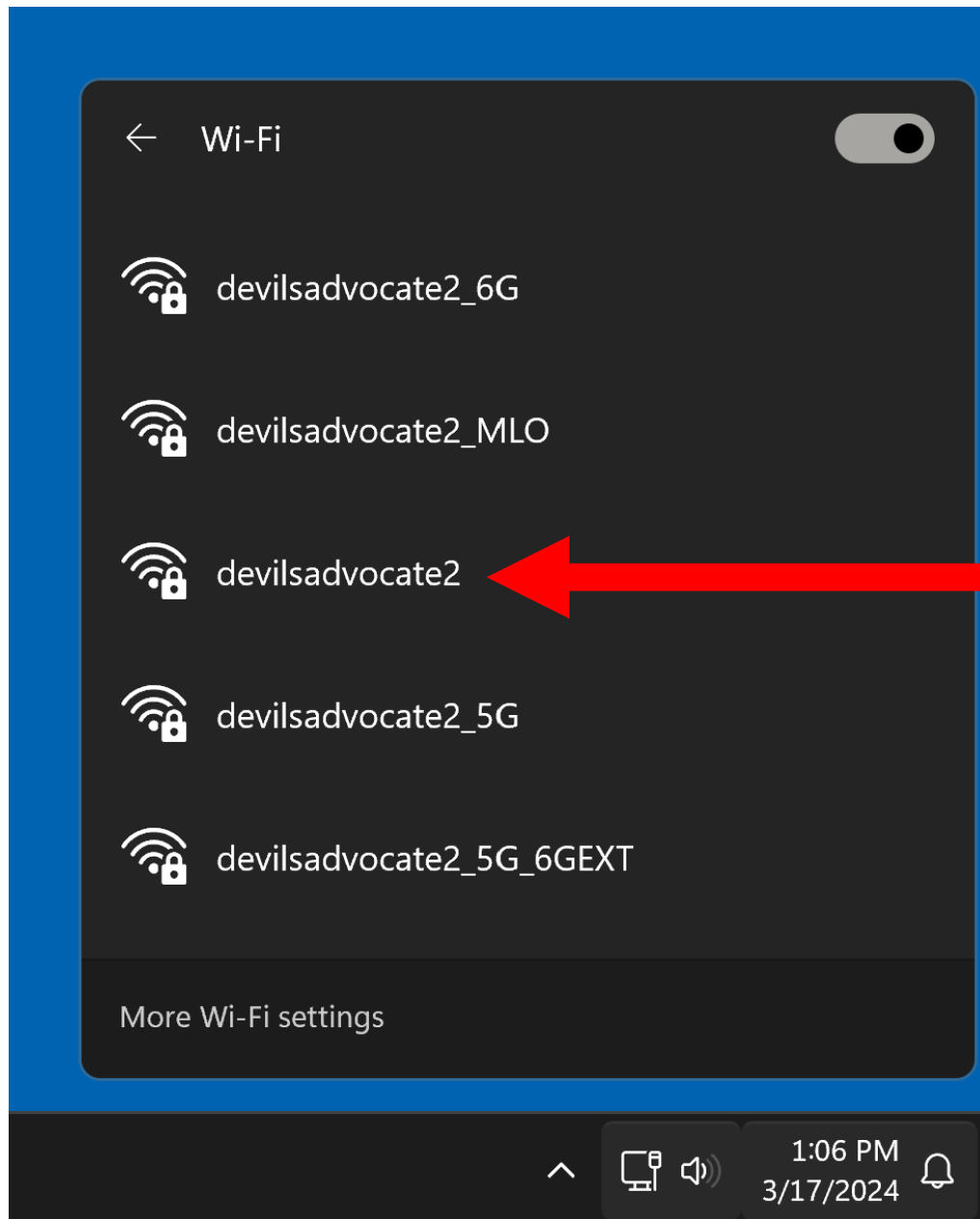
MESH (continued)

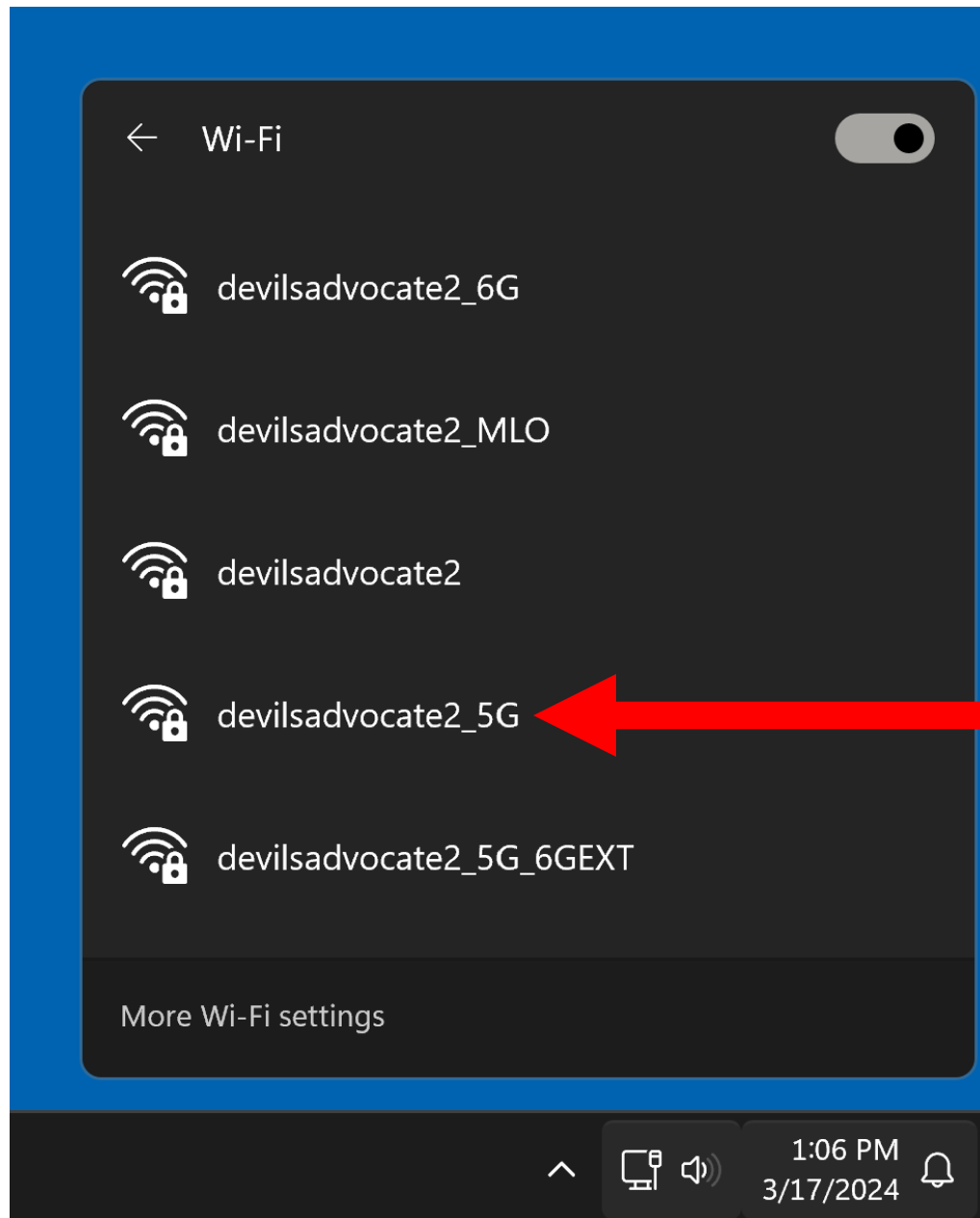
- A mesh is represented as a single "Wireless Access Point" also known as a single "Service Set Identifier" inside the wireless Wi-Fi settings in your computer, tablet, or cell phone.

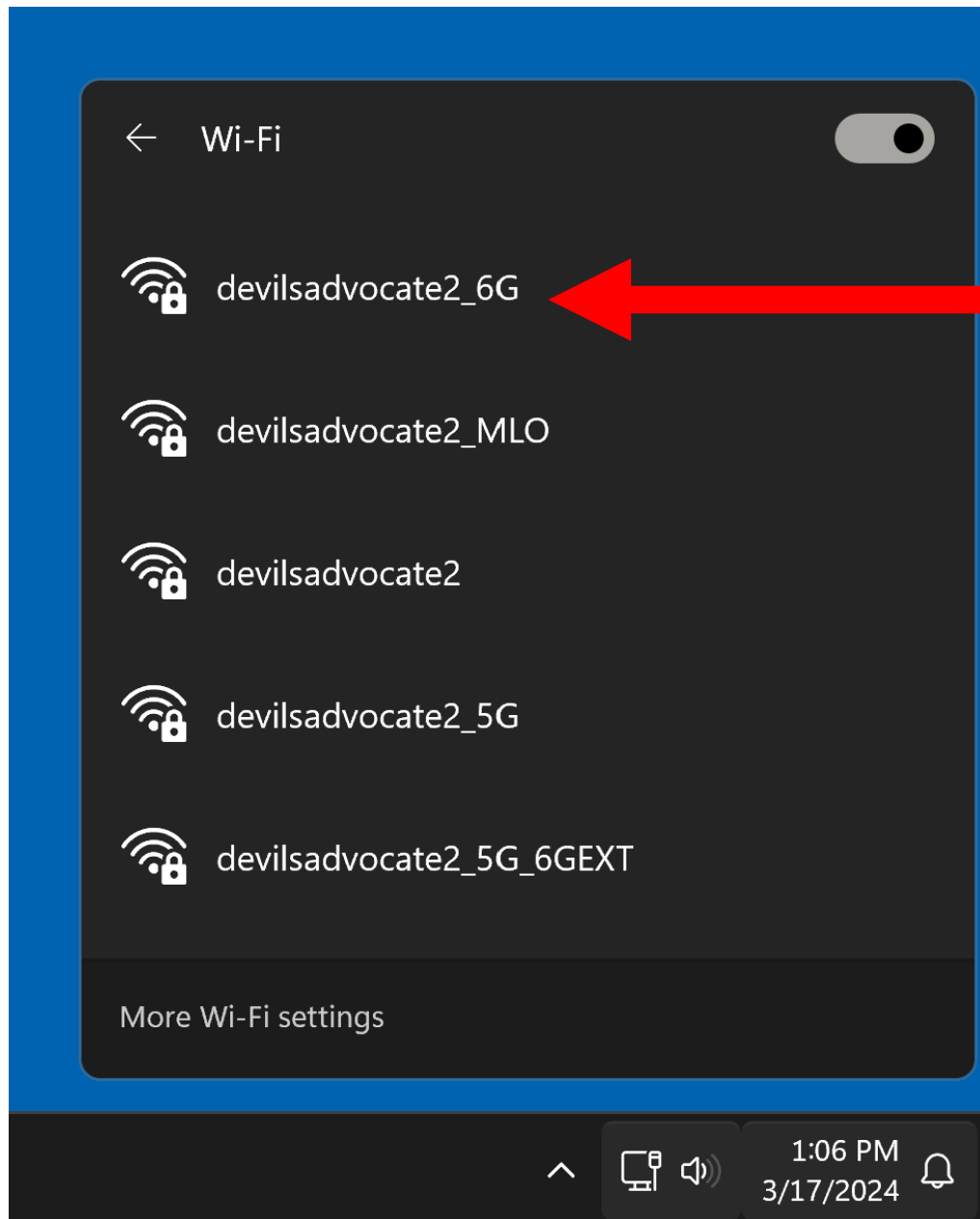
MESH (continued)

- In other words, the "Wireless Access Point" list in a computer, cell phone, or tablet does not tell you if any listing is a single transmitter/receiver in a single router or extender or mesh unit or two or more transmitter/receivers with the same SSID.









SSID	^	BSSID	Channel	Frequency	Channel wid...	Band
✓ devilsadvocate2	🔒	40:ED:00:47:B0:3C	10	2457	20	2.4
✓ devilsadvocate2	🔒	3C:52:A1:6F:43:06	10	2457	20	2.4
✓ devilsadvocate2_5G	🔒	40:ED:00:47:B0:3D	36 (50)	5180	160	5
✓ devilsadvocate2_5G	🔒	3C:52:A1:6F:43:07	36 (50)	5180	160	5
✓ devilsadvocate2_5G_6GEXT	🔒	22:52:A1:6F:43:08	133 (143)	6615	160	6
✓ devilsadvocate2_6G	🔒	7A:ED:00:47:B0:3E	165 (175)	6775	160	6
✓ devilsadvocate2_MLO	🔒	7A:ED:00:47:B0:30	165 (175)	6775	160	6
✓ devilsadvocate2_MLO	🔒	92:ED:00:47:B0:3C	10	2457	20	2.4
✓ devilsadvocate2_MLO	🔒	92:ED:00:47:B0:3D	36 (50)	5180	160	5

MESH (continued)

- "Main" device of the mesh is a TP-Link "Archer BE800" Wi-Fi 7 router
- "Satellite" device of the mesh is a TP-Link "Archer BE550" Wi-Fi 7 router

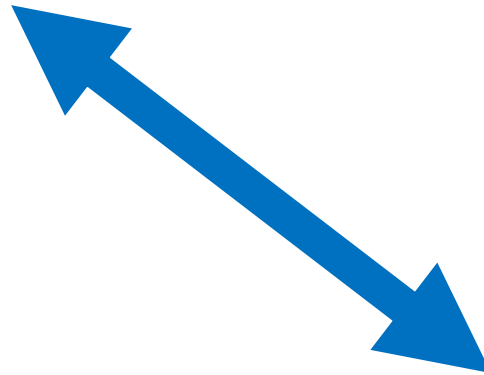


TP-Link Tri-Band BE19000 WiFi 7 Router (Archer BE800) | 12-Stream 19 Gbps | 2 × 10G + 4 × 2.5G Ports | LED Screen | 8 High-Performance Antennas | VPN, Easy Mesh, 4×4 MU-MIMO, HomeShield, Private IoT

[Visit the TP-Link Store](#)

3.9 ★★★★★ 79 ratings | [Search this page](#)

200+ bought in past month



TP-Link Tri-Band BE9300 WiFi 7 Router Archer BE550 | 6-Stream 9.2Gbps | **Full 2.5G** Ports | USB 3.0 | 6 Smart Internal Antennas VPN Clients & Server | Easy Mesh, HomeShield, Private IoT Network

[Visit the TP-Link Store](#)

4.5 ★★★★★ 17,904 ratings | [Search this page](#)

1K+ bought in past month

MESH (continued)

- The "Main" device of the mesh must be connected to either the Local Area side of an existing router that connects to an Internet service provider or to the "Point of Presence" of an existing Internet Service Provider.

MESH (continued)

- "backhaul" connection between the two mesh devices can be
wireless Wi-Fi transmitter/receivers
on the two routers
or
a powerline networking link
or
a wired Cat 5 or 6 or 7 or 8

MESH (continued)

- If you do not provide a powerline networking link or a Cat 5/6/7/8 Ethernet cable between the satellite mesh device and the main mesh device, the the backhaul connection will default to a wireless Wi-Fi connection between one of Wi-Fi transmitter/receiver on the "Main" unit and the a similar one on the "Satellite" unit.

MESH (continued)

- "backhaul" connection between the two mesh devices can be
Wireless Wi-Fi low-band 5 GHz
transmitter/receivers on the two
routers
or
powerline networking kit link
or
wired Cat 5 or 6 or 7 or 8

MESH (continued)

- In this example, each mesh SSID shown in the client device consists of
- "Main" device of the mesh is a TP-Link "Archer BE800" Wi-Fi 7 router
- "Satellite" device of the mesh is a TP-Link "Archer BE550" Wi-Fi 7 router

MESH (continued)

- "Main" device of the mesh:
<https://www.amazon.com/TP-Link-Archer-BE800-High-Performance-HomeShield/dp/B0C4VZW7TM7/>

MESH (continued)

- "Satellite" device of the mesh:
<https://www.amazon.com/TP-Link-Tri-Band-Archer-BE550-HomeShield/dp/B0CJSNSVMR/>

MESH (continued)

- "Satellite" device of the mesh:
<https://www.amazon.com/TP-Link-Tri-Band-Archer-BE550-HomeShield/dp/B0CJSNSVMR/>

MESH (continued)

- At any single point in time and space, a client device that is connected to a mesh can only be connected to either the transmitter/receiver that is assigned to the mesh in the "Main" device of the mesh or to a transmitter/receiver that is assigned to the mesh in one single "Satellite" device of the mesh

MESH (continued)

- When the client device is moved away from the coverage area of the mesh device to the coverage area of the other mesh device, an orderly handoff is supposed to occur.

MESH (continued)

- If an orderly handoff does not occur, you can either
turn off and then back on the Wi-Fi connection from inside the client device
or you can use a Faraday bag to turn off the Wi-Fi connection for the client device
(Using a Faraday does not disrupt a Zoom meeting connection)³⁴

MESH (continued)

- https://www.amazon.com/stores/page/7460D215-9112-42D7-BCD9-D65FE3D7C198?ingress=2&visitId=d15564ef-0fd5-4c44-8ae1-7db4edddd368&store_ref=bl_ast_dp_brandLogo_sto&ref_ast_bln

MESH (continued)

- https://www.amazon.com/stores/page/7460D215-9112-42D7-BCD9-D65FE3D7C198?ingress=2&visitId=d15564ef-0fd5-4c44-8ae1-7db4edddd368&store_ref=bl_ast_dp_brandLogo_sto&ref_ast_bln

MESH BRANDS

- Each mesh brand belongs to a single router manufacturer.
- "OpenMesh" and "EasyMesh" are two emerging attempts to create a mesh system that all router manufacturers could use for interoperability
- Here are some popular mesh brands:

ASUS "AiMesh

ASUS "ZenWiFi" mesh

Linksys "Velop Whole Home Mesh"

Netgear "Orbi" mesh

Netgear "NightHawk MK32" mesh

"Google Nest Wi-Fi" mesh

"Ubiquiti Amplifi HD" mesh

TP-Link "Deco" mesh

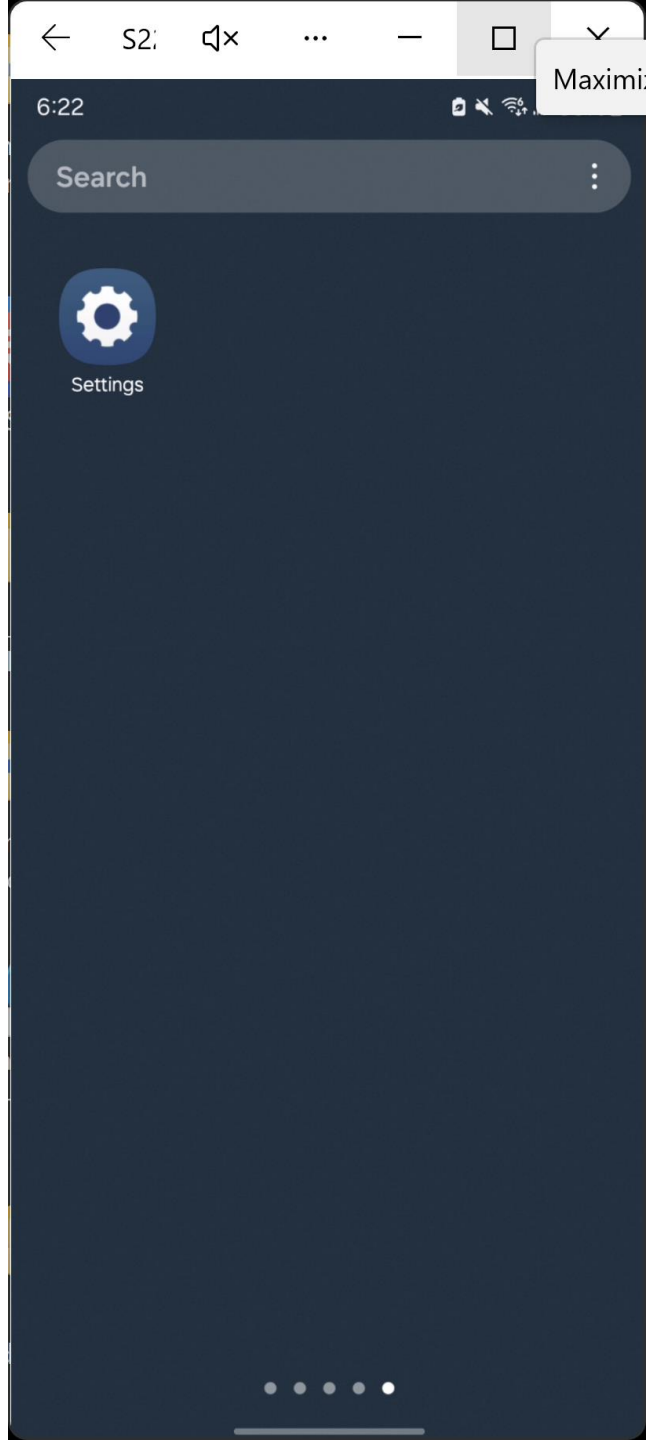
TP-Link "OneMesh"

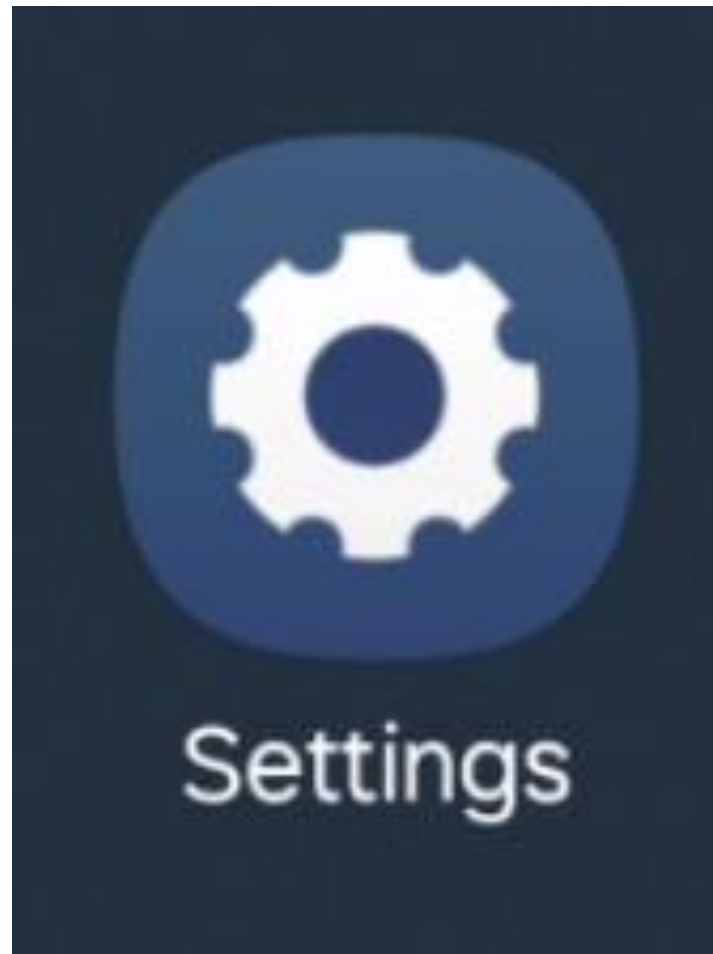
TP-Link's implementation of
"EasyMesh"

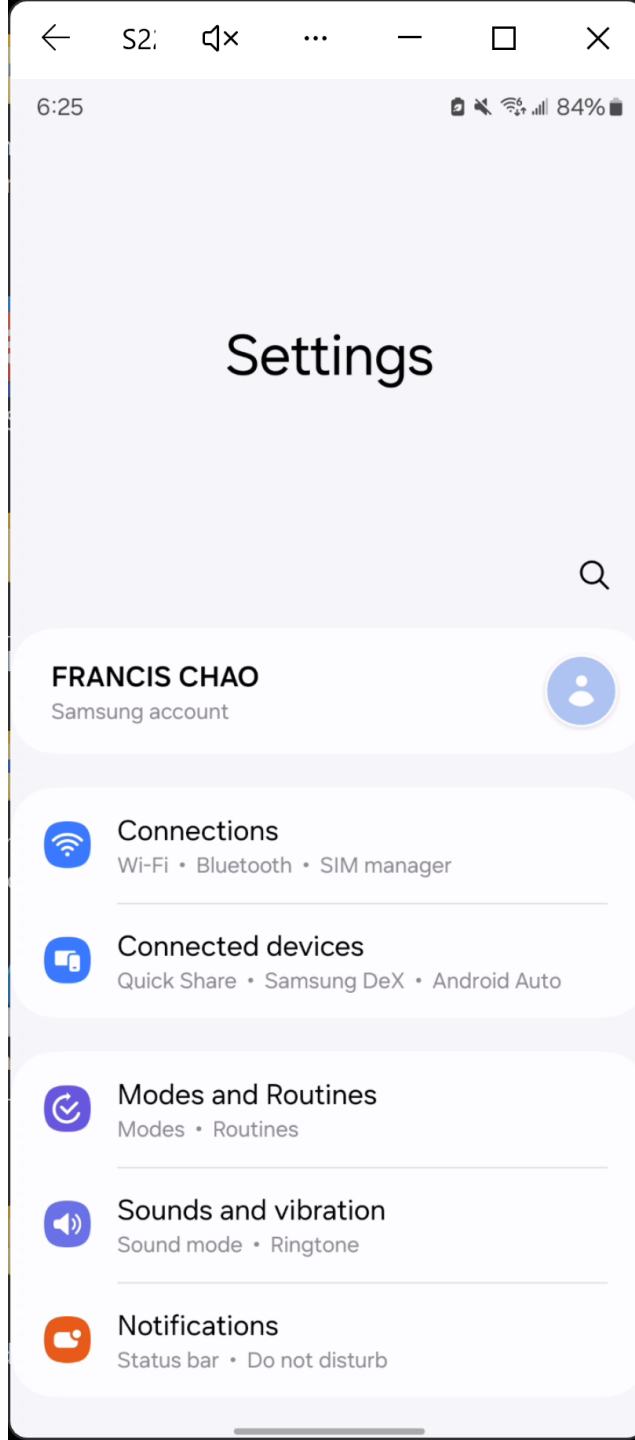
Arris "Surfboard" mesh

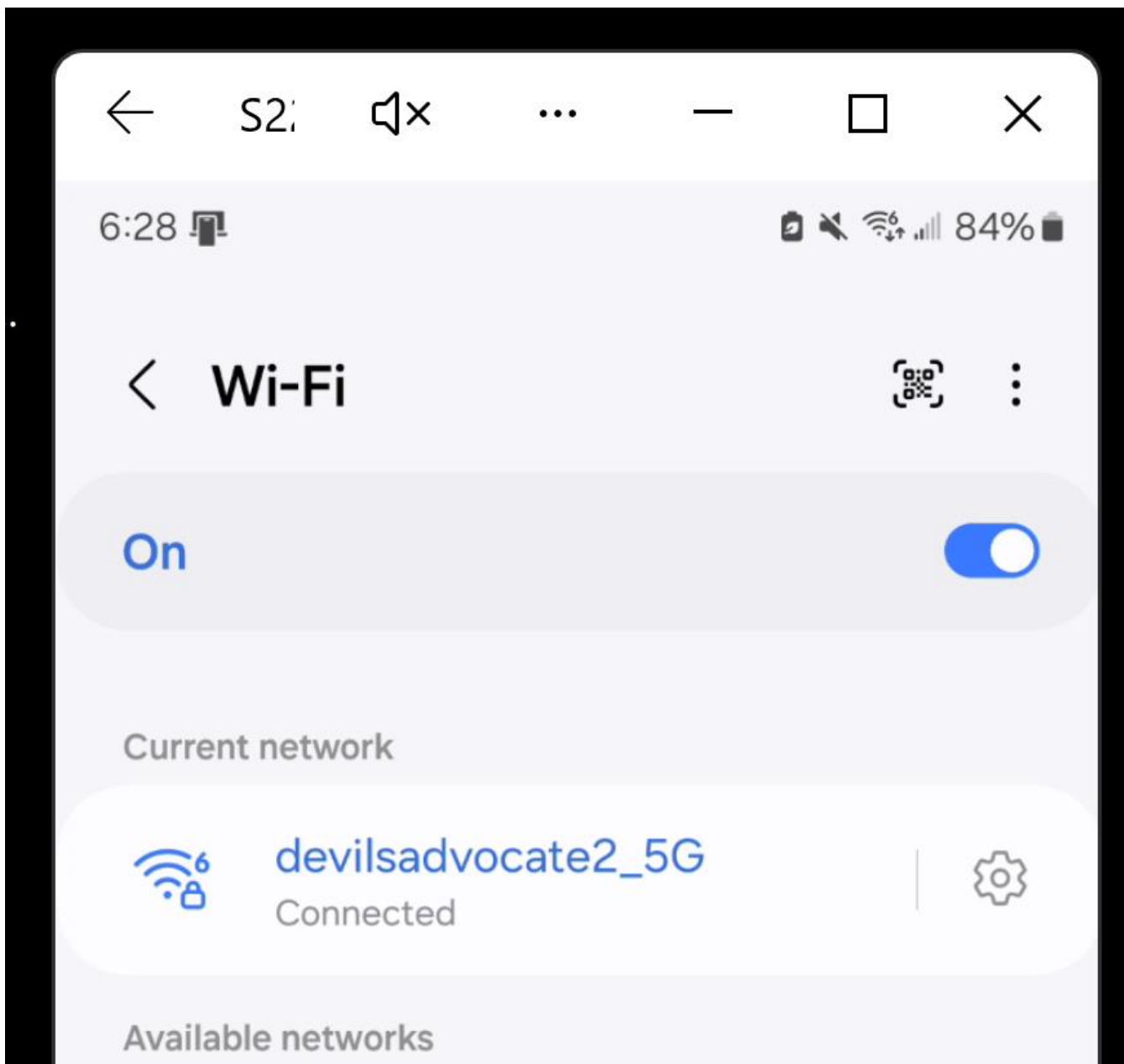
EXAMPLE OF A MESH GROUP

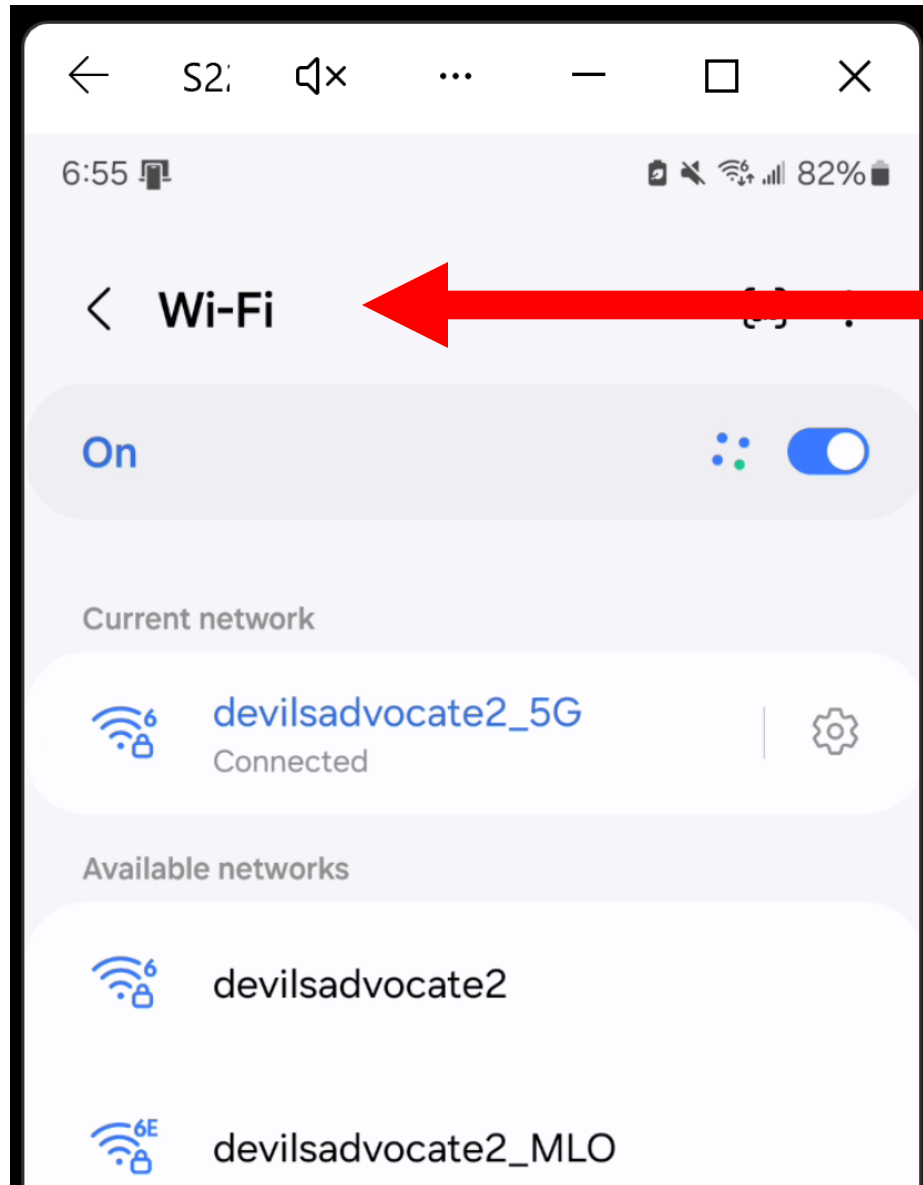
- In order to use TP-Link's "Tether" app to configure or troubleshoot this mesh group, your cell phone must be wirelessly connected to the mesh group:

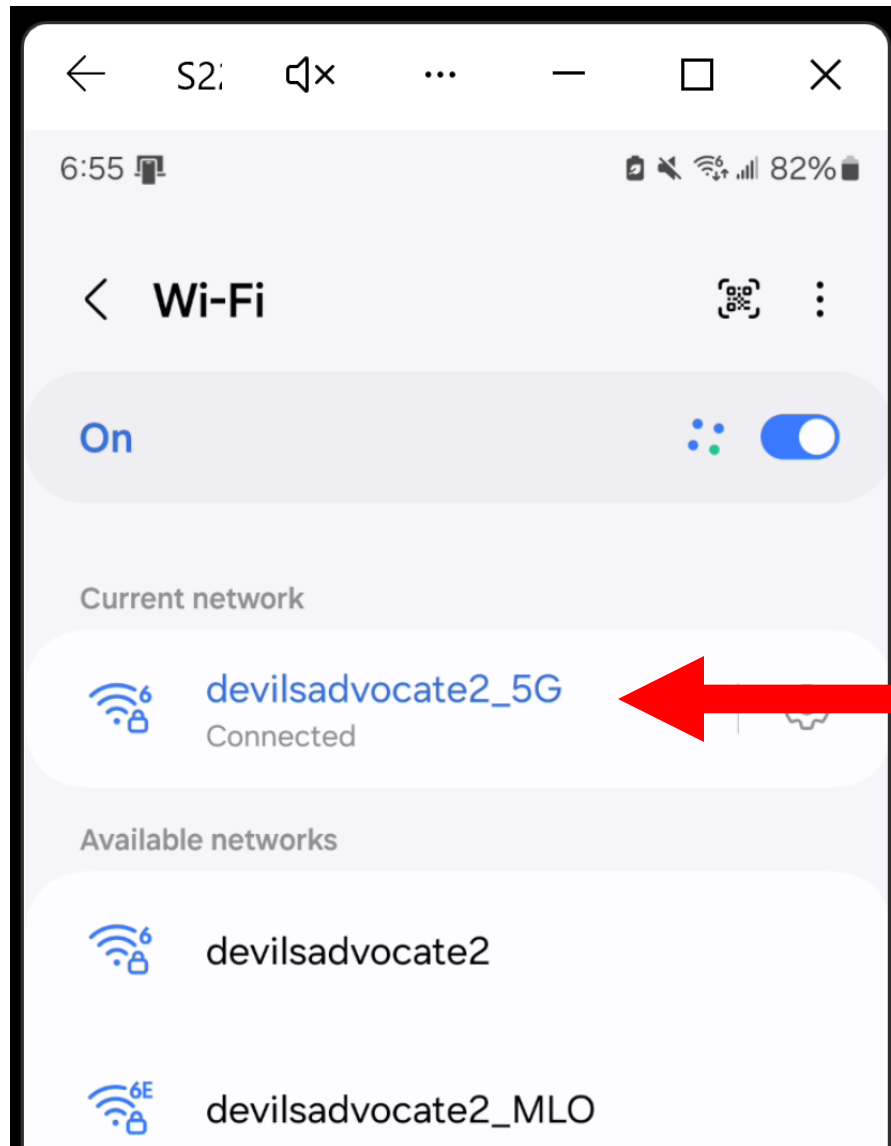












EXAMPLE OF A MESH GROUP

- "Main" mesh unit has a high-band 5 GHz transmitter/receiver that has an SSID of **devilsadvocate2_5G**
- "Satellite" mesh unit has a high-band 5 GHz transmitter/receiver that has a SSID of **devilsadvocate2_5G**
- TP-Link's cell phone "Tether" app



Tether



My Devices



 Local Device



Archer BE800

40-ED-00-47-B0-3A



[Can't Find Your Device?](#)

Archer BE800



• Working Well



Office

Download Rate

↓ 0 Kbps

Upload Rate

↑ 1 Kbps



Network Status

Online



Clients

2 Online



Network



Security



Family



More



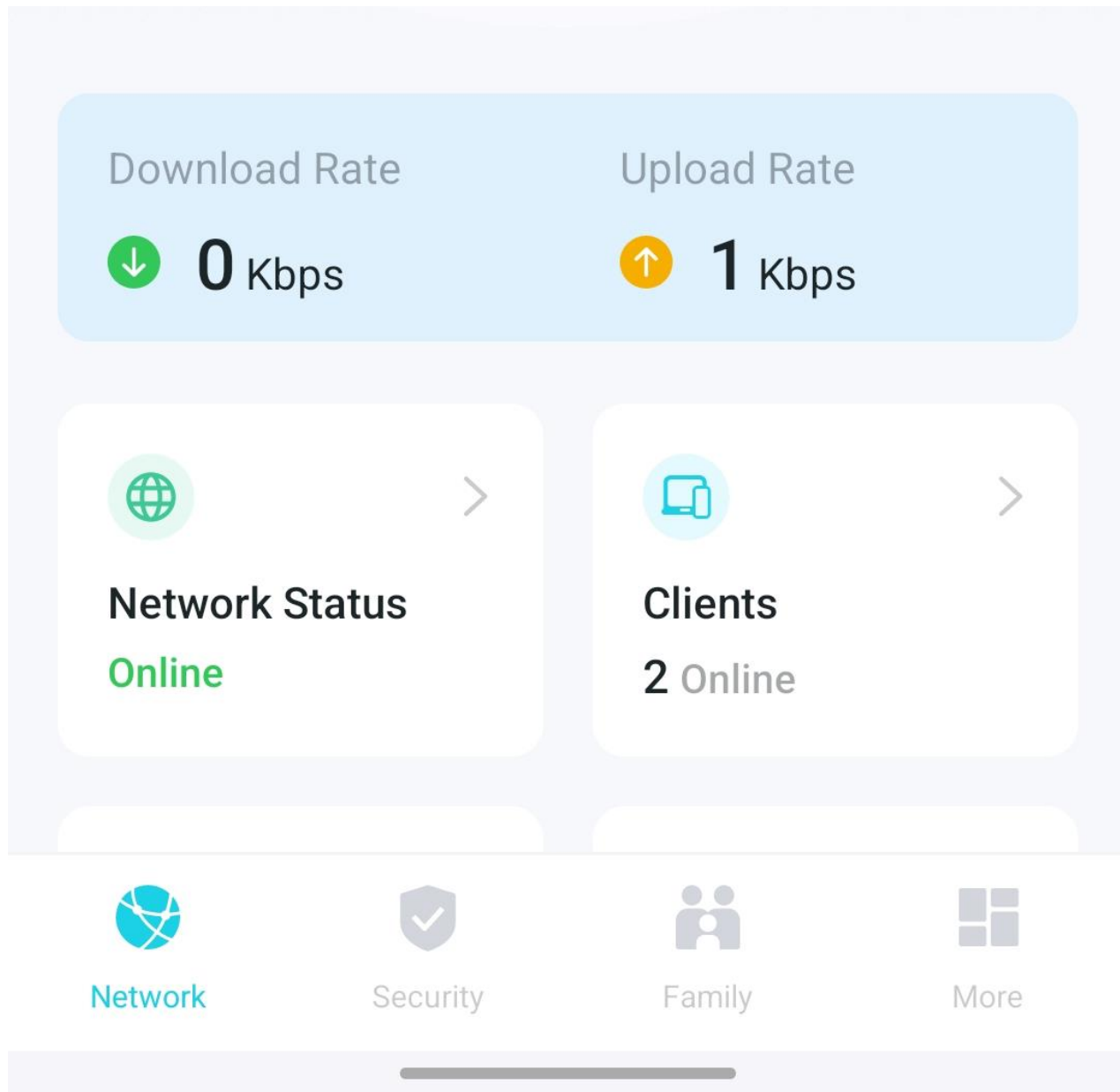
Archer BE800



• Working Well



Office






Office


Model: Archer BE550

Connected to: Archer BE800(2.4GHz)

MAC: 3C-52-A1-6F-43-04

IP: 192.168.1.215

Download 
0 Kbps

Upload 
0 Kbps

Signal
Strong

Connected Clients (0)



No clients connected



Office



Model: Archer BE550

Connected to: Archer BE800(2.4GHz)

MAC: 3C-52-A1-6F-43-04

IP: 192.168.1.215

Download



0 Kbps

Upload



0 Kbps

Signal

Strong

3:33



91%



Office



Model: Archer BE550

Connected to: Archer BE800(2.4GHz)

EXAMPLE OF A MESH GROUP (continued)

- In this case, the mesh group of routers decided to make the backhaul via a connection between the 2.45 transmitter/receiver of the "Main" router to the 2.45 transmitter of the "Satellite" router named "Office":

3:33

91%



Office



Model: Archer BE550

Connected to: Archer BE800(2.4GHz)



ADDING A NEW ROUTER OR MESH-CAPABLE Wi-Fi EXTENDER TO AN EXISTING MESH GROUP

- Connect your cell phone to any of the SSIDs of your existing mesh group
- Download the "TP-Link Tether" app
- Start the "TP-Link Tether" app.
- Tap on the "Main" router of the existing mesh group



Tether



My Devices



 Local Device



Archer BE800

40-ED-00-47-B0-3A



[Can't Find Your Device?](#)

Archer BE800



• Working Well



Office

Download Rate

↓ 0 Kbps

Upload Rate

↑ 1 Kbps



Network Status

Online



Clients

2 Online



Network



Security



Family



More



Archer BE800



• Working Well



Office

Download Rate



0 Kbps

Upload Rate



1 Kbps



Network Status

Online



Clients

2 Online



Network



Security



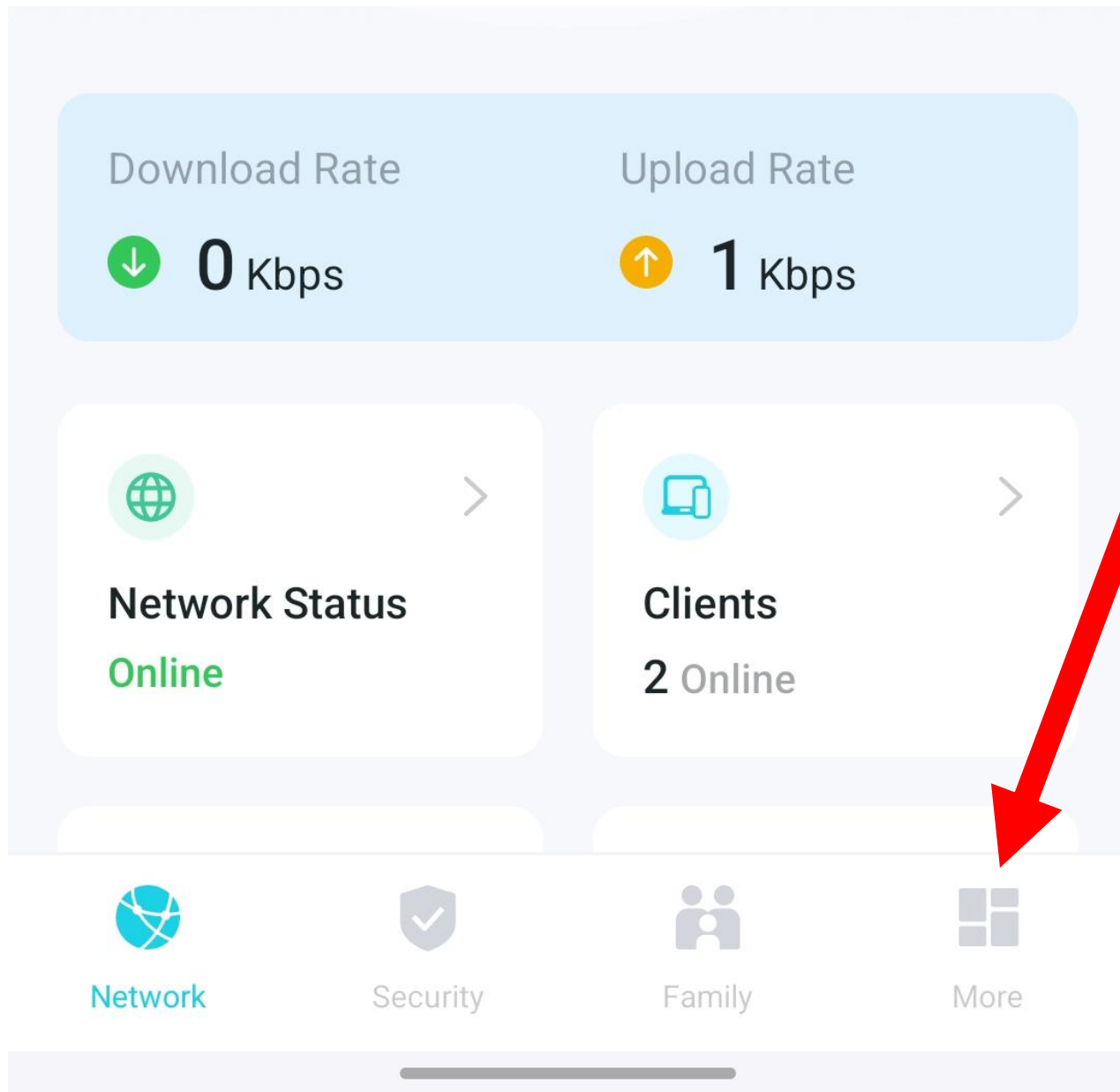
Family



More


ADDING A NEW ROUTER OR MESH-CAPABLE Wi-Fi EXTENDER TO AN EXISTING MESH GROUP (continued)

- Tap on the fuzzed-out "More" button at the bottom of the screen:



ADDING A NEW ROUTER OR MESH-CAPABLE Wi-Fi EXTENDER TO AN EXISTING MESH GROUP (continued)

- Tap on "EasyMesh":

 More SearchWi-Fi
SettingsScreen
Display

QoS



Block List



Quick Setup



Internet Connection



Guest Network



IoT Network



EasyMesh



Network Optimization



Network Diagnostics



Operation Mode



Network



Security



Family



More

ADDING A NEW ROUTER OR MESH-CAPABLE Wi-Fi EXTENDER TO AN EXISTING MESH GROUP (continued)

- Tap on "Add Satellite Devices":

< EasyMesh



EasyMesh



Mode

Main Router

Show List



Archer BE800



Office

Add Satellite Devices

[Need Help](#)

ADDING A NEW ROUTER OR MESH-CAPABLE Wi-Fi EXTENDER TO AN EXISTING MESH GROUP (continued)

- Follow the displayed instructions. Then click on "Next".



Prepare your TP-Link satellite routers

1. Make sure your routers support EasyMesh or OneMesh. A firmware update may be required for earlier OneMesh models.

[View EasyMesh Device List](#)

[View OneMesh Device List](#)

2. Plug in the satellite router near your main router.



Next

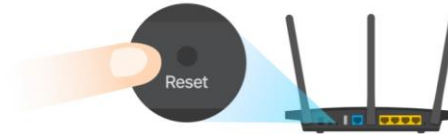
ADDING A NEW ROUTER OR MESH-CAPABLE Wi-Fi EXTENDER TO AN EXISTING MESH GROUP (continued)

- Use a small tool to reset the new mesh device.
Then click on "Next" in the Tether app:



Reset the satellite router

1. Disconnect the Ethernet cable if any, then press the reset button to restore its factory settings.
2. Wait until the Power LED is solid on.



Next

Power LED not solid on?

Searching for devices...



This may take about 2 minutes. Please wait.

