

Our Starlink Experience

The following article is a description of our experience with Starlink as our only Internet provider since cancelling Century Link’s DSL service. This is not meant to be a detailed, technical description of Starlink. That information is easily available via the internet, if you can get to it 😊

Ordering Starlink

I registered for Starlink “Residential Service” back in April of 2021. Since that time Starlink released an “RV” version of Starlink designed for use with RVs in May of 2022. While waiting for the residential service I ordered the RV kit moments after it was announced and received the kit a few days later. I knew that I would not be able to use the RV kit with the Residential service once I received the upgraded service and the residential kit. The Starlink kits are expensive at \$600 and I rationalized the added expense of purchasing two of these kits based on the dire situation experienced with Century Link’s DSL. As many of you know Century Links DSL service began to depreciate in speed and reliability with the onset of Covid with many more people working and schooling at home. Starlink RV was an easy expense to rationalize for me as I waited for the cheaper, faster Residential service, it allowed me to work from home vs traveling to the Tech center, ez choice. YMMV

See the following table for a description of two types of service I purchased from Starlink:

	RV	Residential
Monthly Cost	\$150*	\$120*
Kit cost	\$599	\$599
Speed	Fast, (up to 150MBPS)	Faster
WiFi Range	Average	Average, same kit
Reliability	Really good	Better

** Prices just increased for our area to \$120 monthly for residential, was originally \$110, and \$150 for RV from \$135. Increase is for our area which is now considered congested, other less congested areas for residential went down to \$90. As Starlink increases its satellite network prices are expected to go down*

Visit www.Starlink.com for more information about other services and details about each of the service’s options. At the site you’ll see the following statement related to ordering their service:

ORDER STARLINK

Order now to reserve your Starlink. Starlink expects to expand service in your area in 2023. You will receive a notification once your Starlink is ready to ship.
Alternatively, Starlink for RVs is immediately available for connectivity while traveling. Orders typically ship within 2 weeks. [Learn more here.](#)
\$110/mo for service and \$599 for hardware.

What is Starlink?

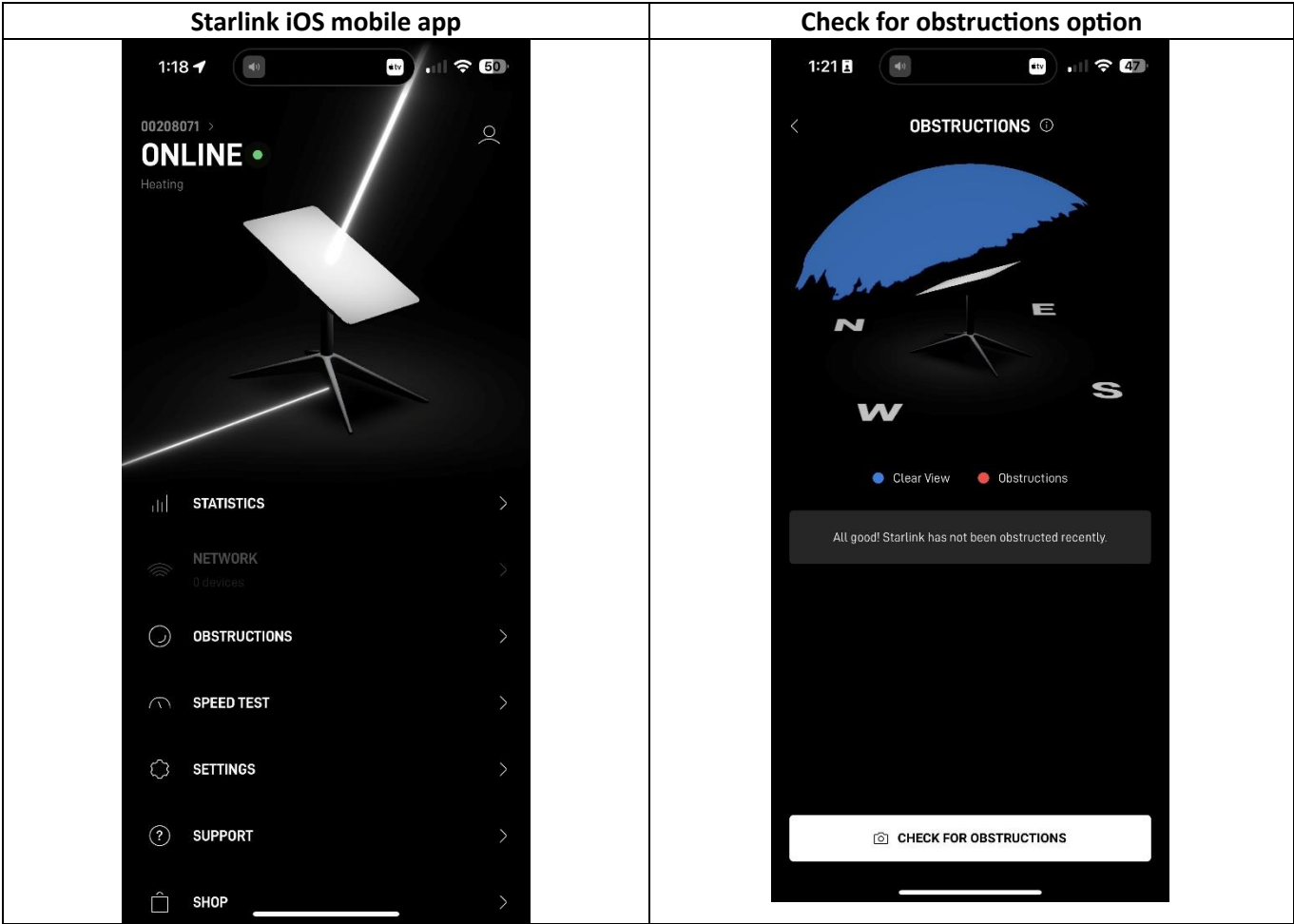
Better than I can describe, here’s ChatGPT’s description of Starlink:

Starlink is a satellite internet service developed by SpaceX that provides high-speed internet connectivity to users in remote and rural areas where traditional wired internet infrastructure may not be available or feasible. Here are some advantages of Starlink internet in rural areas:

1. High-speed internet: One of the biggest advantages of Starlink is its ability to provide high-speed internet connectivity in areas where traditional internet services are slow or non-existent. Starlink internet has an advertised speed of up to 150 Mbps, which is much faster than many rural internet services.
2. Low latency: Starlink's satellite internet technology has low latency, which means that there is minimal delay between sending and receiving data. This is especially important for activities like online gaming, video conferencing, and streaming, which require low latency to function smoothly.
3. Availability: Starlink internet is available anywhere that has a clear view of the sky, which makes it an ideal option for remote and rural areas where wired internet infrastructure is not feasible.
4. Easy to set up: Setting up Starlink internet is easy and requires only a small satellite dish and a modem. This means that users in rural areas can quickly and easily set up internet connectivity without the need for complex installation processes or infrastructure.
5. Affordable pricing: Starlink internet pricing is competitive with other rural internet options, making it an affordable option for users in remote areas. Overall, Starlink internet has the potential to transform internet connectivity in rural areas, providing high-speed and reliable internet access where it was once impossible.

Will It Work for Me?

Starlink’s reliability and speed depend upon the visibility of Starlink’s satellites from your residence and you don’t have to guess about this. Simply download the Starlink app to your mobile device and run the “**Check for obstructions**” routine. You will need to run this test from where you expect to install the Starlink Satellite dish, known as Dishy McFlatface.



Once you engage the “check for obstructions” routine you will be directed to scan the entire sky. I asked Julie to do this from the roof where the dish would be installed because roofs are dangerous, and Julie is brave 😊



Installing the Starlink Dish

Installing the Starlink dish can be as easy as placing it on the ground or as complicated as installing it on your roof. The installation choice will depend on your home’s view of the Starlink satellites as determined by what you found when ‘checking for obstructions’ from the app. The Starlink kit contains the following hardware:

- Dish
- Mount for Dish
- 75’ cable

- Router and power adapter

I chose installation on the roof for several reasons; unobstructed view, more secure location in terms of wind and animals, and I have a ladder. I had to order the roof “pivot” mount and roof “flashing mount” from Starlink.com. You’ll find other types of mounts, poles and longer cables if needed and other accessories on their website. Luckily the 75’ cable was long enough to reach my network room. You’ll also need roof grade silicone to achieve a watertight installation.

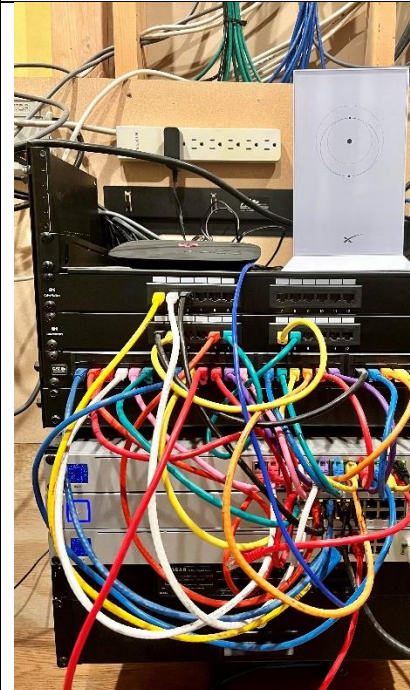
The installation is straightforward however, depending on your skills and your tolerance for heights you can always hire someone to do this for you.

Lighting Up Starlink

Once your Starlink dish is installed you will need to connect the dish to the provided Starlink router using the provided cable, or a longer one if needed. This is simple plug and play but only if the Wi-Fi is strong enough to reach all your devices and only if you’re relying only on Wi-Fi for connectivity. This was not my case.

Though the Wi-Fi signal was mostly usable throughout my house it didn’t reach all of my devices and many of my devices are “hard wired.” I have a lot of devices! My existing WAP (wireless access point) is much more capable and is integrated into my whole house network. For that reason I had to order the “ethernet adapter” as the provided router does not provide a LAN, or CAT6 type port for connectivity to external network equipment. I also had to configure my network for use with the router essentially disabling the onboard Wi-Fi of the router. This process is out of scope for this article and would depend on the type of network equipment you own but the difference in capability and useability with Starlink is significant. Being a network engineer by trade also helps 😊

Final Install of Router



Network Device Management

Network

Search

Client Devices

NAME	MAC ADDRESS	VENDOR	CONNECTION	IP ADDRESS	24HR U
Echo Office	68dbf581da06	Amazon	5 GHz, WIFI 5	192.168.1.13	-
Logitech HARMONY Hub	00:04:20e944e1	Logitech	2.4 GHz, WIFI 4	192.168.1.19	-
Meross_Smart_Garage	48e1e910aaac	Meross	2.4 GHz, WIFI 4	192.168.1.20	-
amazon-ab2106c44	a0d2b1bdf381	Apple, Inc.	5 GHz, WIFI 5	192.168.1.21	-
Exercise-Room	c869cd2c9500	Apple, Inc.	5 GHz, WIFI 5	192.168.1.22	-
Lutron-01e53c65	f45eab4af4dd	Lutron	Wired	192.168.1.26	-
Meross Smart WIFI Garag...	48e1e9520140	Meross	2.4 GHz, WIFI 4	192.168.1.33	-
Echo Bathroom	0cee9906b956	Amazon	2.4 GHz, WIFI 4	192.168.1.38	-
WIFI Camera Roof	146b9c163d94	Ubiquiti	2.4 GHz, WIFI 4	192.168.1.42	-
Meross Smart Home	48e1e991096f	-	2.4 GHz, WIFI 4	192.168.1.54	-
Sony TV Kitchen	94db565e660f	Apple, Inc.	Wired	192.168.1.56	-
Theater	f0b3ec0b9d8d	Apple, Inc.	Wired	192.168.1.64	-
AvCloset 2 HdBaseT	5cccf7f73233e	CE	2.4 GHz, WIFI 4	192.168.1.67	-
Apple Watch 5	66b3a5b03d78	Apple, Inc.	2.4 GHz, WIFI 4	192.168.1.68	-
IPCAM	005d32c67c3c	Foscam Home Security	Wired	192.168.1.69	-
Nest thermostat	64166634215f	Nest	2.4 GHz, WIFI 4	192.168.1.72	-
Casa-Bonita	90dd5daad6ac	Apple, Inc.	Wired	192.168.1.73	-
TIZEN	88571d931ba9	LG Corporation	5 GHz, WIFI 5	192.168.1.76	-
IPCAM	00eb87499ad2	Foscam Home Security	Wired	192.168.1.79	-
Foscam G4	005e9d0494c	Foscam Home Security	Wired	192.168.1.84	-
Tesla_Model_X	cc88263df11f	Apple, Inc.	2.4 GHz, WIFI 4	192.168.1.86	-
Echo Theater	fca183f196b6	Amazon	5 GHz, WIFI 4	192.168.1.88	-

The Results

While Starlink is a growing provider with satellites being launched constantly, it is still growing. SpaceX, the company deploying these satellites, currently has about 4,000 birds up there but they intend to complete the Starlink satellite network with as many as 40,000+ satellites. They are a long ways away but I’ve already seen improvements since I began using their service, for nearly a year. And it’s night and day difference compared to my previous internet provider in terms of speed an reliability. For example, prior to Starlink I was lucky to be able to stream in 1080P to my televisions with many pauses, timeouts and total failure often requiring rebooting my router with varied results. Internet video based meetings were simply not a reliable option based on minuscule ‘upload’ speeds with DSL.

We, in Woodside, are in a waitlisted area as there are not enough satellites yet to accommodate everyone. We do have the required “ground station” close enough to us but it too needs to be upgraded to accommodate Starlink’s rapidly growing user base. Here’s a comparison of my previous DSL and current Starlink. You’ll notice speeds are all over the place in both:

CenturyLink DSL

←

RESULTS

×

Speed

Video

Type	Date	↓ Mbps	↑ Mbps	
📶	8/6/21 12:10 PM	3.07	0.41	>
📶	8/6/21 9:47 AM	3.50	0.38	>
📶	8/6/21 9:32 AM	1.68	0.42	>
📶	8/6/21 9:25 AM	3.54	0.41	>
📶	8/6/21 9:14 AM	2.57	0.44	>
📶	8/6/21 9:13 AM	3.42	0.56	>
📶	8/4/21 3:36 PM	3.18	0.40	>
📶	8/4/21 2:49 PM	3.28	0.54	>
📶	8/4/21 2:35 PM	2.40	0.27	>
📶	8/3/21 1:38 PM	3.00	0.25	>
📶	8/3/21 1:34 PM	2.87	0.26	>
📶	8/1/21 11:36 AM	3.09	0.47	>
📶	7/31/21 5:45 PM	3.14	0.41	>
📶	7/30/21 8:50 AM	1.35	0.33	>

Starlink

←

RESULTS

×

Speed

Video

Type	Date	↓ Mbps	↑ Mbps	
📶	2/17/23 8:05 AM	135	8.76	>
📶	2/16/23 8:05 AM	72.0	3.76	>
📶	2/15/23 9:13 PM	9.29	2.81	>
📶	2/4/23 1:00 PM	163	7.29	>
📶	2/1/23 11:01 AM	145	10.1	>
📶	1/31/23 4:34 PM	60.7	9.83	>
📶	1/13/23 9:59 PM	70.7	5.94	>
📶	12/29/22 11:53 AM	128	14.7	>
📶	12/28/22 8:10 PM	15.7	0.35	>
📶	12/16/22 10:24 AM	152	8.40	>
5G	12/10/22 4:24 PM	8.59	1.99	>
📶	11/24/22 5:01 PM	16.3	11.2	>
📶	11/18/22 12:13 AM	37.0	20.2	>
📶	11/8/22 7:22 PM	63.9	7.69	>
📶	11/6/22	122	11	>

The reason for the varied speeds is based on time of day and many other factors such as how many devices of mine are asking for data during the tests but the speed does not appear to be affected much by the weather, amazingly! The dish has a “snow melt” feature that keeps it clean of snow and ice. The engineering of this stuff is simply amazing, and the cost of the kit is actually incredibly reasonable. Starlink is not making a profit on the hardware, they’re actually losing money on it. Suffice it say we can now reliably enjoy high-definition streaming, video calls and no longer require a landline, Dish satellite and we don’t have cell service! All of our comms are internet based, like they should be in the 21st century! It truly is a life saver.

Pro, Cons and Tidbits:

As with any invention by mankind there are caveats. Here are a few that may apply to you, or not:

- Datacap!** Yes, it’s new and no, it’s not all that bad, yet. From: www.starlinkhardware.com
Yes, Starlink has a soft data cap of 1 TB for Residential customers. Each month, you will get 1 TB of ‘Priority Access’ data. After that balance is exhausted, you will still have unlimited ‘Basic Data’. There is no hard limit on the amount of data you can use, but since it is a soft cap, speeds will be throttled if you use all your Priority Access data.
- So far this has not affected us or, if it has we have not noticed. We do use just a bit under 1 Terabyte a month. But as more streaming providers increase more content to 4k, (most is still HD or 1080p), this will be an issue. I fully expect Starlink’s growth to accomodate this.
- You can’t sell or reuse your kit for a different Starlink service!** If like me, you buy Starlink RV now while you wait for the Residential service you’re stuck with two sets of equipment. You can’t sell the RV kit on eBay and you can’t use it with the Residential service. Starlink will buy it back from you for \$200 within the first year but you will need to swap out all but the cable with the new hardware. I confirmed this with Starlink support, who is very quick to respond, who was apologetic about this but indicated that the technology does not allow for transfers of equipment to different users.
- Varied speeds based on time of day.** Much like Core electrics “peak usage” fees from 4-8PM, which are higher for solar users, Starlink throttles speeds in prime time hours, 5-11PM last I checked. While this is not completely debilitating it occasionally surfaces while streaming high def content. We notice resolution can suffer but it, so

far, quickly recovers. This *should* be a non-issue once Starlink's network of satellites grows. For now, it's bearable.

- **Its reliable!** I am not rebooting my DSL gear 10 times a day or writing letters to my elected officials and filing complaints! Yes, I've done that, much more than I cared for.
- **It's a Money Saver.** When I added up what I was spending on a Landline, Dish satellite, multiple DSL lines and compare that to what I spend now on YouTube TV, (Dish Replacement), we're spending about half of what we did previously.
- **IP based phone calls can drop or be choppy.** It's getting better but it happens. If you're using internet for phone calls and txts on your mobile device you'll occasionally get dropped or hear digitized voices, no, they're not in your head, it's a satellite to dish signaling issue. Just wait a moment, no need to reboot anything and it will recover.

Conclusion

While Starlink has been a great improvement compared to what we previously used for connectivity it's not perfect, yet. It's expensive, albeit NO CONTRACTS, and it's in its growing stage. Personally, I think it's a major disruptor to wire or fiber based services, nothing to break and no need to tear up our roads. If you're pulling your hair out with what you have now it might be to your benefit to get on the waiting list, I think it's free.