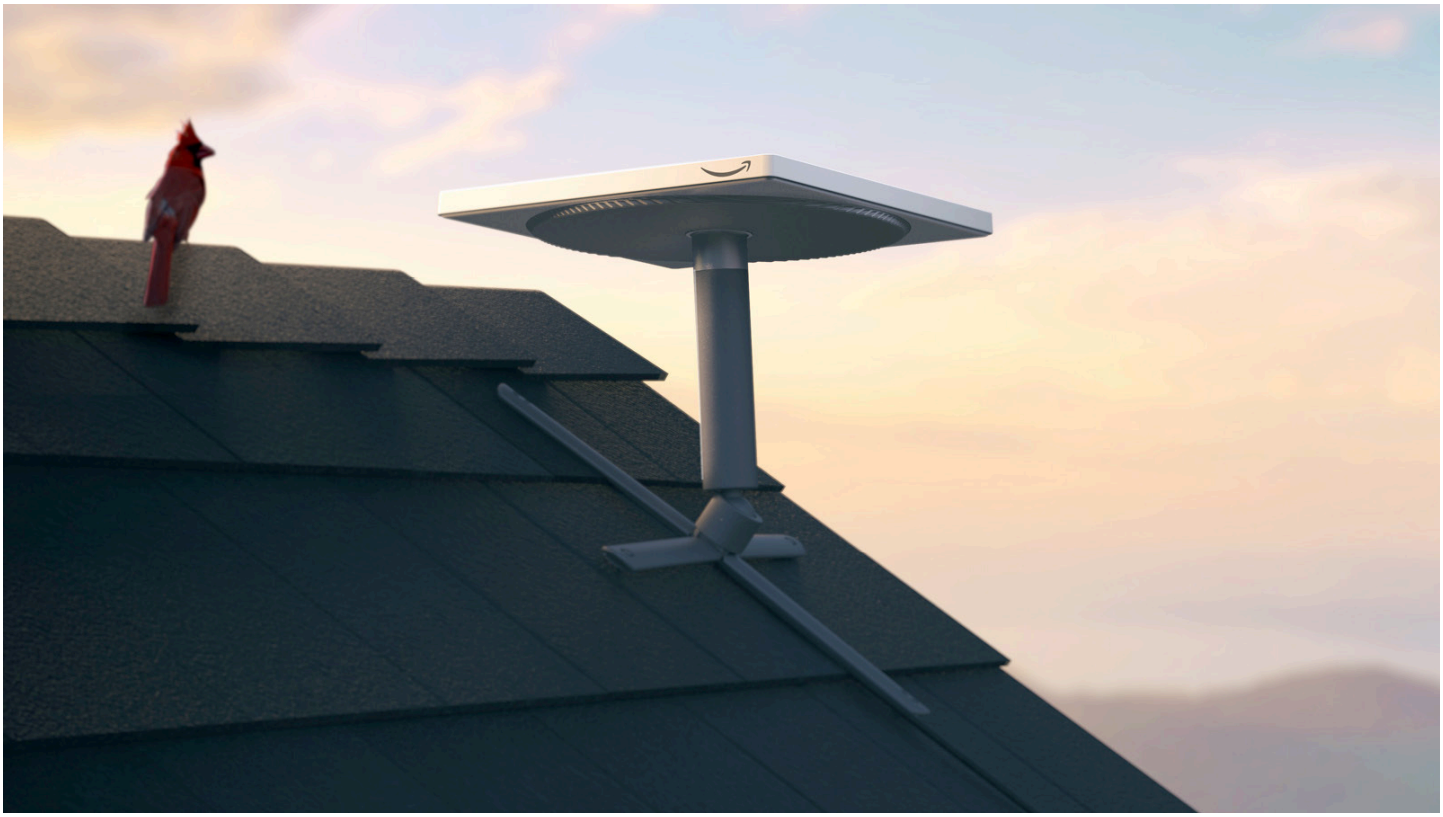
Everything you need to know about Project Kuiper, Amazon's satellite broadband network

Get answers to your questions about Amazon's big, new initiative in space.



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Project Kuiper Innovation

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Project Kuiper is Amazon's initiative to provide fast, affordable broadband to communities around the world that are currently unserved or underserved by traditional internet and communications options. To achieve this goal, Amazon will deploy thousands of satellites in low Earth orbit (LEO) linked to a global network of antennas, fiber, and internet connection points on the ground.

1.

Who will Project Kuiper help connect?

Billions of people around the world don't have reliable access to broadband. Poor connectivity means limited access to modern communications, education, health services, and other important resources, which can create an economic disadvantage for unserved and underserved communities. At the same time, the network will also serve a wide range of customers, including schools, hospitals, businesses, government agencies, and others operating in places without reliable connectivity or that need more flexible, resilient communications capabilities. Project Kuiper plans to deploy service to many countries around the globe.

2.

Why is Amazon taking this on?

You don't have to travel far from major cities to lose internet connectivity—it can happen within a 60-minute drive from Amazon's headquarters in Seattle. Cost, complexity, and geography can make it difficult to install traditional, ground-based fiber and wireless connectivity solutions in these areas.

Satellite broadband can fill many of those coverage gaps, but developing and deploying satellite technology requires significant innovation and investment. Amazon has the people and resources required to deploy and operate global satellite broadband services, and we feel a responsibility to use our success and scale to help bridge the digital divide.

3.

Is Project Kuiper part of Blue Origin?

No. Project Kuiper is an Amazon initiative, part of the same Devices and Services division responsible for Kindle, Echo, Fire TV, eero, Ring, and other tech devices. Blue Origin is a separate company founded by Jeff Bezos.

4.

When did Amazon start Project Kuiper?

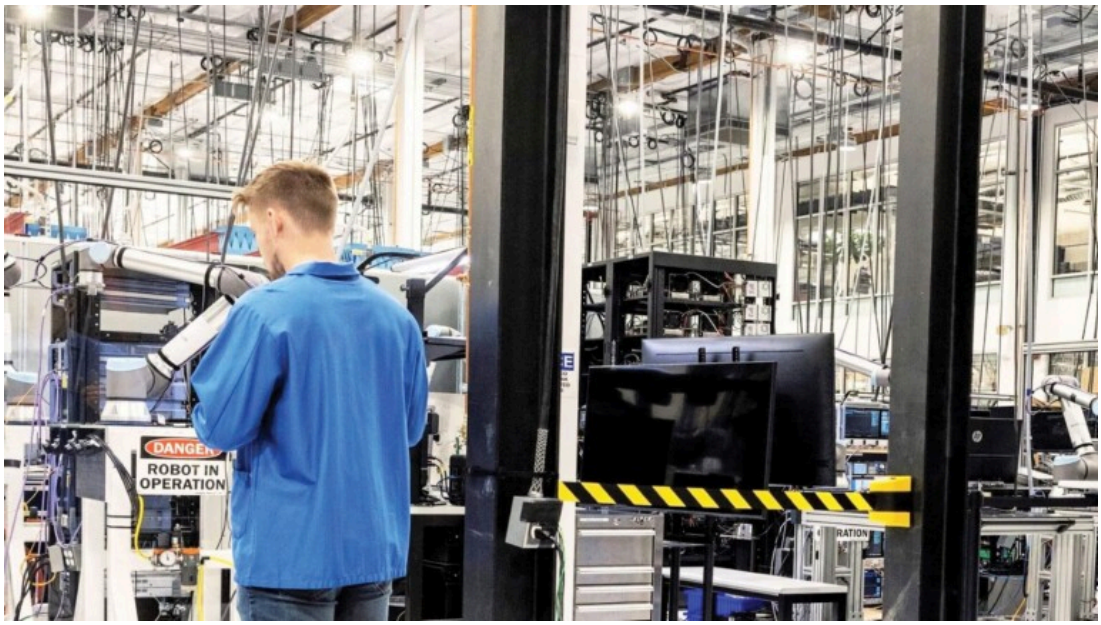
Amazon began research and development on Project Kuiper in 2018. In July 2020, the U.S. Federal Communications Commission (FCC) granted Amazon a license to deploy and operate Project Kuiper

When will Project Kuiper service be available?

Project Kuiper is a long-term initiative. We launched our first two prototype satellites on October 6, 2023, and after achieving 100% success with that mission, we expect to begin deploying our satellite constellation in early 2025 and rolling out service later in the year.

6.

Why is it called Project Kuiper?



Project Kuiper started off as an internal code name for the program—and it stuck. The name refers to the Kuiper Belt, a region of the solar system that exists beyond the eight major planets. The Kuiper Belt itself is named after the late Dutch astronomer Gerard Kuiper, who is considered by many to be the father of modern planetary science.

7.

Where is Project Kuiper based?

Project Kuiper is based out of a state-of-the-art facility in Redmond, Washington. The space is the size of more than four football fields and serves as our primary headquarters for research and development. It also handles our initial satellite manufacturing and qualification. In 2023, Project Kuiper announced a dedicated satellite production facility in Kirkland, Washington, to expand manufacturing capacity to build up to five satellites per day. Additionally, Project Kuiper began construction on a satellite-processing facility at Space Florida's Launch and Landing Facility at Kennedy Space Center, which we will use to prepare and integrate Kuiper satellites with rockets from Blue Origin and United Launch Alliance (ULA) ahead of launches.

Amazon has a team of more than 2,000 world-class engineers, programmers, and support personnel helping deliver on the vision for Project Kuiper. Team members joined from many different industries, such as space and aerospace, wireless technology, and computer networking. They work out of our labs in Redmond and Kirkland in Washington state, as well as in cities across the U.S., like New York City, Austin, Denver, San Diego, and Washington, D.C., and internationally.

9.

What kinds of technologies does Project Kuiper use?

Project Kuiper has three main parts: ground infrastructure, satellites, and customer terminals. Amazon's ground infrastructure includes gateway antennas that securely send and receive customer data to and from satellites, along with telemetry, tracking, and control (TT&C) antennas that keep the satellites properly operating. Global networking connects those gateway antennas to the internet, public cloud, or private networks.

Satellites make up the second part of the project. They operate in low Earth orbit (LEO) and relay data traffic to and from our gateway antennas and customers. Lastly, customer terminals are the technology that Project Kuiper customers use to receive broadband service. The terminals combine antennas and processors into a single, compact system to deliver connectivity.

10.

How many satellites will Project Kuiper have?

Project Kuiper's initial satellite constellation design includes 3,232 satellites. The term "constellation" refers to a group of similar satellites working together with tightly coordinated movements to achieve a common purpose—in this case, providing reliable broadband coverage.

11.

What is low Earth orbit (LEO)?

LEO is an area of space that extends up to 2,000 kilometers (about 1,243 miles) above Earth. Project Kuiper satellites will orbit between 590 and 630 kilometers (about 367 and 392 miles). Our satellites' proximity to the surface of the Earth means they can deliver fast service to customers, making Project Kuiper connectivity effective for uses like video calls, gaming, and high-definition streaming.

12.

How do the satellites get into space?

Amazon works with commercial launch providers to send Project Kuiper satellites into space. We've secured 80 heavy-lift launches with commercial launch providers Arianespace, ULA, SpaceX, and Blue Origin, and we have options for additional launches with Blue Origin, which give us the capacity to deploy the majority of our satellite constellation. Together, these agreements represent the largest commercial procurement of launch vehicles in history.

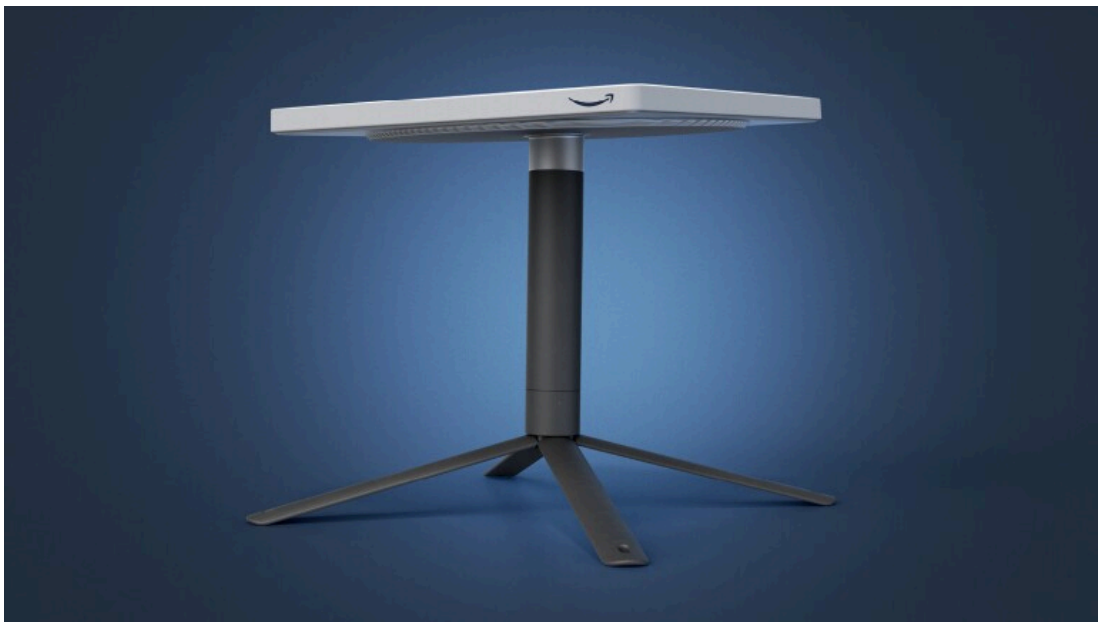
13.

Is it safe to have so many satellites in space?

stakeholders like scientists and other space operators.

14.

How fast will Project Kuiper internet be?



We're designing the system to balance performance and affordability, and we plan to provide choice and flexibility by offering a range of options for customers. In March 2023, we revealed early engineering models of three customer terminals that strike that balance. Our ultra-compact model provides speeds of up to 100 megabits per second (Mbps), our standard model delivers up to 400 Mbps, and our largest model, which is intended for enterprise, government, and telecommunications applications, delivers up to 1 gigabit per second (Gbps).

15.

How much will Project Kuiper service cost?

Amazon hasn't announced pricing details yet, but affordability is a key principle of Project Kuiper. Amazon has a longstanding commitment to low prices, and lots of experience building popular, low-cost devices like Echo Dot and Fire TV Stick. We're applying a similar approach with Project Kuiper. We also know customer needs will vary quite a bit around the world, and our service offerings may vary from country to country with the right pricing and service for customers in each region.

Learn more about Project Kuiper.

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