Google fiber

Google Fiber is an Internet and TV service that provides Internet speeds up to one gigabit per second—that's 1,000 Megabits per second, compared to the average Internet speed in America today of 11.5 Mbps—along with hundreds of HD TV channels.

What is Google Fiber?

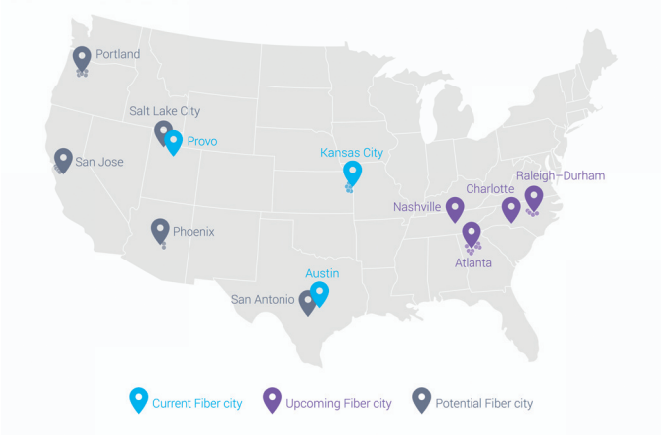
Google Fiber gets its name from the thousands of miles of brand new fiber-optic cable we're building, right to people's homes. There's plenty of fiber-optic cable in America already, but very very little of it goes directly to people's homes—so this means your Internet signal travels at Autobahn speeds for most of its journey, but then slows down as it gets near your house. Google Fiber aims to change that.

Fiber-optic cables are made of fragile glass, so they're protected by many layers (made of a kevlar-like material) to keep them from breaking.

Google Fiber delivers Internet speeds at one gigabit per second. (Internet speeds are measured in bits per second—i.e. how many bits of data can be passed along the network each second.) That's up to 1,000 Megabits per second, compared to the average Internet speed in America today of 11.5 Mbps (Akamai, Q3 2014).

Fiber-optic cables are much better suited to 21st century communications demands than the copper cables that currently carry Internet signals to and from most American homes. Copper just wasn't built for what we're trying to use it for today. Fiber is far better than copper at transmitting information, such as the bits that make up your favorite websites, YouTube videos, video chats, or online games. In fact, it can carry data close to the speed of light!

Internet speeds matter—faster speeds drive innovation, and they've been linked to economic growth and job creation. We believe the next chapter of the Internet will be built on gigabit speeds—just as the shift from dial-up to broadband brought us a wave of innovation (e.g. video, e-commerce) that we could never have imagined.



The 34 cities include: Arizona—Phoenix, Scottsdale, Tempe; California—San Jose, Santa Clara, Sunnyvale, Mountain View, Palo Alto; Georgia—Atlanta, Avondale Estates, Brookhaven, College Park, Decatur, East Point, Hapeville, Sandy Springs, Smyrna; Tennessee—Nashville-Davidson; North Carolina—Charlotte, Carrboro, Cary, Chapel Hill, Durham, Garner, Morrisville, Raleigh; Oregon—Portland, Beaverton, Hillsboro, Gresham, Lake Oswego, Tigard; Texas—San Antonio; Utah—Salt Lake City

The impact of Google Fiber

Already there are companies moving to the "Silicon Prairie" to use a gig to build the apps of the future—for instance, SightDeck moved from California to Kansas City to build next-generation video-conferencing. A French cloud computing company, BIME Analytics, said they chose Kansas City as their North American HQ in part because of Google Fiber. And we hear regularly about the impact of Fiber from our customers, like the small businesses in Kansas City who've seen their workplaces transformed.

What's new today?

In 2014, we announced that we were working side-by-side with 34 cities in 9 metropolitan areas to explore bringing Google Fiber to their community. Today, we're announcing that Google Fiber is coming to 18 new cities across four metro areas: Atlanta, Charlotte, Raleigh-Durham and Nashville. We've completed the exploration phase, and now people across the Southeast are a big step closer to having access to superfast speeds. We will begin designing our fiber network in each of these metro areas.

Quick facts and stats

Sources: Akamai Q3 2014, OECD Broadband Portal

11.5
Mbps average connection speed

14th
in the world average connection speed

13%
of connections are fiber (compare to 86% in Japan, 67% in Korea)

61%
of Americans have connections slower than 10Mbps

What about the other cities that Google is considering?

Since our initial announcement in February, all 34 cities have made great progress in the exploration phase. We continue to work with the five remaining metro areas—Phoenix, Portland, San Jose, San Antonio, and Salt Lake City. We hope to bring Google Fiber to additional metro areas, and we expect to share an update on progress later this year.

What happens next in Atlanta, Charlotte, Raleigh-Durham, and Nashville?

Building a new fiber network is a measure-twice-cut-once type of project. We want to make construction within cities as smooth and speedy as possible, so we will be working alongside all of the cities in these areas over the next several months to complete a detailed design of our fiber-optic network before we begin any construction.

Exploration
Work alongside city leaders to explore bringing Google Fiber to their area

Design
Use the data cities have shared to create a plan for where we will build our network

Construction
Start building our network, eventually stringing and laying thousands of miles of fiber-optic cables

Sign-up
Open sign-ups for small communities we call fiberhoods

Installation
Connect fiberhoods that meet their sign up goal and install service in homes

How Google designs the network

We need to build thousands of miles of fiber—but we can't just put it wherever we want. We take all of the information the cities have submitted during the checklist process, as well as the information from our detailed study, to design a comprehensive plan for building our network, so construction happens much more speedily once we get going.

First, we figure out where our fiber routes will go, using the infrastructure data the city has shared to create a map of where we can put our fiber (e.g. existing utility poles, conduit) and areas we should avoid (e.g. water, sewer, electric lines). Then, a team of surveyors and engineers hits the streets to fill in any missing details. You may see our crews out doing detailed surveying work—lots of staring up at poles and even a bit of geological rock-testing. We take this information back to the office and create detailed network design maps, prepare permitting packages, and work with cities to locate network infrastructure and fiber huts. Then we design the network, street by street.

Where else is Google Fiber right now?

Google announced in the spring of 2011 that Kansas City, Kansas, and Kansas City, Missouri, would be the first cities to receive Google Fiber. In April 2013, we announced two more cities—Austin, Texas, and Provo, Utah. In Provo, where we bought and upgraded an existing network, we have customers up and running at gigabit speeds. We opened sign-ups and connected our first customer in Austin in December 2014.

More information

Google Fiber website: www.google.com/fiber

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