

# 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 14.2 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 the U.S. already, but very little of it goes directly to 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.

Google Fiber delivers Internet speeds up to 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 14.2 Mbps (Akamai, Q4 2015).

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 U.S. 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.

Speed matters—access to faster Internet can drive innovation, economic growth, and job creation. We believe the next chapter of the Internet will be built on fiber speeds—just as the shift from dial-up to broadband brought us a wave of innovation that we could never have imagined.



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



● Current ● Upcoming ● Potential

Google Fiber is operating, building, or exploring expansion in 23 metro areas across the U.S.—Atlanta, GA, Austin, TX, Charlotte, NC, Chicago, IL, Dallas, TX, Huntsville, AL, Irvine, CA, Jacksonville, FL, Kansas City, KS and Kansas City, MO, Los Angeles, CA, Louisville, KY, Nashville, TN, Oklahoma City, OK, Phoenix, AZ, Portland, OR, Provo, UT, Raleigh-Durham, NC, Salt Lake City, UT, San Francisco, CA, San Antonio, TX, San Diego, CA, San Jose, CA and Tampa, FL.

## The impact of Google Fiber

Already there are companies moving to the "Silicon Prairie" to use fiber speeds 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 that have seen their workplaces transformed.

## What's new with Google Fiber's expansion?

Starting today, we're exploring bringing Google Fiber to Dallas, TX. Dallas will complete a checklist of items that will help the city prepare for a project of this scale and speed. This checklist will help us decide whether we can bring Google Fiber to residents and businesses in each area. If we decide to bring Google Fiber to these cities, they'll join our current Google Fiber metro areas—Kansas City, Austin, Provo, Atlanta, Nashville, Charlotte, Raleigh-Durham, Salt Lake City, and San Antonio.

Stats about broadband  
in the U.S.

Source: Akamai, Q4 2015

14.2  
Mbps average  
connection speed

14th  
in the world average  
connection speed

47%  
of Americans have  
connections slower  
than 10 Mbps

## Where is Google Fiber currently available?

Google announced in the spring of 2011 that Kansas City, Kansas and Kansas City, Missouri would be the first cities to receive Google Fiber. Residents and businesses are connected across Kansas City, and we're continuing to sign up more customers. 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 speeds up to 1,000 Mbps. Meanwhile, we opened sign-ups and connected our first customers in Austin in December 2014.

Earlier this year, Google Fiber also started serving some customers in Atlanta, Georgia and Nashville, Tennessee. In Atlanta, we've tapped into existing fiber to deliver service to a select number of apartment buildings. In Nashville, we've also started to connect select apartment buildings as we continue building our brand-new fiber network across the city. We're making great progress on construction in both cities, and hope to share an update on when we'll connect more customers soon.

## What's the status of Google Fiber in other metro areas?

In addition to Atlanta and Nashville, we're in the process of constructing our Fiber network in four other metro areas—Charlotte, Raleigh-Durham, Salt Lake City, and San Antonio. And, we're actively working with city leaders in Dallas, Portland, Phoenix, San Jose, Louisville, Irvine, San Diego, Jacksonville, Tampa, Oklahoma City, Los Angeles and Chicago to potentially bring Fiber to their areas.

We hope to have updates to share soon about Huntsville, where we're tapping into the city's planned municipal fiber network, and San Francisco, where we'll bring service to some apartments, condos, and affordable housing properties, using existing fiber.

## How does Google Fiber design and construct its fiber network?

We need to install thousands of miles of fiber—but we can't just put it wherever we want. First, we have to design the network, street-by-street, using information cities submitted during the checklist process and our own detailed study. Then, we create a map of where we can put our thousands of miles of fiber, accounting for existing infrastructure, such as utility poles and underground conduit.

After that, we can start constructing our fiber network. You can think of it as a hub-and-spoke design: we first build the fiber ring, or backbone, all the way around the city, making it easier for us to connect fiber to any service area. Next, we install fiber huts along the fiber ring. These huts act as a kind of switchboard that transmits and receives signals between your home and the Internet. Finally, we connect these huts to telecom cabinets, which divide our fiber strands into smaller bundles that we can then pull the last mile or so to homes and businesses.

## How does Google Fiber approach digital inclusion?

More people should have access to fast Internet. This year, we're exploring new ways to make that happen. As part of our ConnectHome partnership, we're working with local partners across Fiber cities to get more families in public housing online with Fiber Internet for \$0/month. Residents at Kansas City's West Bluff public housing community recently became the first in the country to activate this service. We've also expanded our Digital Inclusion Fellowship to its second year. In partnership with the Nonprofit Technology Network (NTEN), the Digital Inclusion Fellowship pairs fellows with community organizations to help build digital inclusion programs in Fiber cities.

In addition to our ConnectHome partnership and Digital Inclusion Fellowship, we recently introduced a new affordable Internet option that will be available in some cities—a low-cost broadband connection that's fast enough to make video calls and stream HD content. This plan will be available in the most digitally divided areas we serve, determined using publicly-available data from the U.S. Census, FCC, and other sources.

You can learn more about our approach to digital inclusion here: [fiber.google.com/community](http://fiber.google.com/community)

## More information

Google Fiber website: [google.com/fiber](http://google.com/fiber)

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