



## Frequently Asked Questions

# WHAT IS 5G?

**5G is shorthand for the fifth generation of wireless technology.**

- **1G (1983)** was voice only
- **2G (1992)** was voice and text
- **3G (1998)** added data for photos, videos and internet access
- **4G (2008)** brought more speed and bandwidth for a more robust mobile experience
- **5G (20??)** promises exponential leaps in data capacity and speed of delivery

### How is it different than 4G?

In simple terms, 5G is 20 times faster than 4G: 5G is capable of peak download speeds of 20GB per second, while 4G taps out at 1GB per second. Everyday speeds tend to be slower, but 5G will still have a substantial advantage.

### How does this work?

5G uses a different set of radio frequencies than 4G. They're higher and cover a much broader spectrum than before. Plus, they're not cluttered with traffic like the lower frequencies 4G uses. 5G also transmits directionally over shorter distances (whereas 4G sends signals in all directions), creating greater efficiency.

This all adds up to vast increases in speed, data handling, reliability and the number of devices that the network can support.



### What does this mean in real-world terms?

Real-world applications for this new technology are usually referred to as use cases. And the possibilities are truly mind-boggling. Here are just a few:

- Smart homes and buildings
- Instantaneous, ultra-high definition/3D video streaming
- Self-driving cars
- Industrial robotics and automation
- Augmented reality (AR)- or virtual reality (VR)-enhanced events
- Remote healthcare, including surgery
- Smart energy grids
- Agricultural monitoring
- Smart cities
- Advanced emergency communications
- Environmental alerts

### When will 5G be available?

While it's exciting to think of what 5G may mean for our daily lives, the real impact of it is several years away. Given the way 5G works—directional signals broadcast over higher frequencies and across much shorter distances than 4G—it will require a great deal of new infrastructure to be built across the country.

There are regulatory issues that need to be navigated, standards that need to be set, new mobile devices that need to be built. All of this will take time—likely the better part of a decade. Pockets of fully enabled 5G may emerge in larger cities, but most of us will continue to rely on a network comprising mainly 4G hardware with some 5G upgrades until updated equipment is available everywhere.

**Learn about how IT leaders are preparing for 5G and what it could mean for your business.**