

THE NetworkGuy

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What's Inside...

Fiber to the Home:
Installation

Learn from The
Network Guy

The Network Guy
Quiz Challenge

Things That Make
You Go Hmmm...

PenTeleData is
Proud to Serve
Lake Ariel, PA

Network Fun Fact

Ten Fun Facts
about America

Tech Myth Buster



Learn from The Network Guy

What is an Adversary in the Middle Attack?

The Network Guy:

An Adversary in the Middle (AiTM) attack occurs when a cyber threat actor inserts themselves into communication between two or more network devices or parties, such as a user and a web application. A few examples of AiTM attacks include Wi-Fi eavesdropping, email hijacking, DNS spoofing, and IP spoofing. The best way to avoid an AiTM attack is to only visit trusted websites and use multifactor authentication.

Fiber to the Home: The Installation Process

Fiber Internet delivers reliable Internet that moves near the speed of light directly to your home using fiber-optic cables. These fibers are thinner than a human hair and encased in protective coatings and insulation to ensure durability during installation. These cables carry data as beams of light, offering unparalleled speed as compared to traditional coaxial cables.

Fiber to the Home (FTTH) is the way of the future, so the PenTeleData partners have begun a multi-year build to bring these fiber-optic cables into neighborhoods. These cables connect to a central hub called an Optical Line Terminal (OLT), which manages the flow of data between your area and the Internet. Depending on the location, these cables are either underground or installed along utility poles, creating the infrastructure needed for fiber-optic cables.

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The Network Guy Quiz Challenge

PenTeleData is giving one lucky winner a \$150 Amazon Gift Card. Just visit www.ptd.net/quiz-challenge by **August 31, 2026** to answer the contest question. We will select a winner at random from all correct entries. **Good Luck!**

Click the Quiz Challenge link and choose which of the statements are true about Fiber to Home.



Things That Make You Go Hmmm...

Lithium is vital for battery storage, which in turn is a key building block for the energy transition. While lithium is not a rare material, the evaporation process from brine traditionally used takes up to two years, is water-intensive and limited to specific geographies. Three-quarters of lithium production is currently concentrated in China.

Direct lithium extraction (DLE) offers a faster, flexible, and potentially more sustainable alternative to traditional lithium production. Using engineered systems, including sorbents, membranes, and solvents, DLE can extract lithium from brine within hours. The remaining water is returned underground. DLE also works with geothermal fluids, oilfield wastewater and recycled materials, reducing the dependence on naturally occurring brine and diversifying supply chains. Several plants are already in operation, including in Argentina, the United States, and Australia.

Passive radiative cooling materials are designed to reflect 95% of incoming sunlight to keep surfaces cooler than the surrounding air - without the need for electric space cooling. They can be applied as paints, coatings, films or building components and can be used both in new-builds and existing structures. Suppliers report energy savings of up to 20% in settings such as grocery and retail stores. Cool roof materials are already mandated in California and China as part of their green building standards.

Forever chemicals or PFAS (per- and polyfluoroalkyl substances) were designed to resist heat, water and chemical breakdown. Now they are causing environmental issues. PFAS have been found in locations as remote as the Arctic and in our drinking water. Traditional treatments have succeeded in removing PFAS from water but not destroying them. The only way to do so is by breaking the extremely strong carbon-fluorine bonds that make them so persistent in the environment. New methods are now emerging that superheat water, apply electrical currents or use UV-driven chemical reactions to crack PFAS bonds.

(Source: <https://www.weforum.org/stories/emerging-technologies/the-top-10-emerging-technologies-of-2026/>)

You probably know the bald eagle is the national bird, but did you know that the American bison is the national mammal? This designation was made official on May 9, 2016. Bison are the largest mammals found in North America and were nearly extinct at the end of the 19th century, with only a few hundred left. Thanks to conservation efforts, bison are thriving today. The bison can weigh up to 2,000 pounds, but they're also fast, and run at speeds up to 35 mph, so don't get too close!

PenTeleData is Proud to Serve Lake Ariel, PA

Lake Ariel, nestled in Lake and Salem Townships of Wayne County, Pennsylvania, is a vibrant village with deep historical roots and a scenic setting in the heart of the Pocono Mountains. Originally known as Jones Lake or Jones Pond, Lake Ariel is a natural, deep, spring-fed lake with a long rich history as a resort area.

In 1803 the Jones family settled at the south end of the current Lake Ariel and called their settlement Jonestown. What began as a small town with only a few farms became the area where the Pennsylvania Coal Company built its Gravity Railroad. The brought workers and soon businesses were needed to fulfil their needs, including a post office named Ariel, which would later lead to the change in name of the town.

By the mid 1800's vacationers were traveling to Lake Ariel to fish, picnic and relax. The Pennsylvania Coal Company Gravity Railroad delivered guests to the north end of the lake. The railroad made its last run to Lake Ariel in 1885, but the Erie & Wyoming Valley Railroad continued its run until 1910, carrying thousands of passengers a day to the lake area during the summer.

Lake Ariel is less than twenty miles from Scranton, and the lake was the location of summer homes for Scranton's leaders. In 1964 residents bought the lake and lakefront. Lake Ariel remains a private lake today with no public access. It has evolved from a resort community to a private residential community. For residents who enjoy fishing, there are healthy populations of bass and walleye.

The town of Lake Ariel has restaurants and shopping and offers a blend of rural charm and modern amenities. Nearby Lake Wallenpaupack offers almost 6,000 acres of water for boating, waterskiing, and fishing.



Fiber to the Home (continued)

Once the initial lines from the central hub to neighborhoods are in place, individual homes are connected using a fiber line known as the "drop." This drop line links your house to the local network. This is the final bridge that brings blazing speeds to your doorstep. The fiber drop connects to a small box installed on the outside of the home, known as the Network Interface Device (NID). This box acts as the transition point that connects the outdoor equipment to the indoor equipment. From the NID, a fiber cable runs inside the home to the Passive Optical Network (PON) modem. This modem converts the light signals from the fiber cable into an Internet signal that the devices can use.

On installation day, the technician reviews the best route for the fiber drop and where to place the NID and PON modem. The installation process typically takes a few hours, depending on the complexity of the installation. The technician will run tests to ensure

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Network Fun Fact

Fiber optics use light, but they don't just "harness" the fastest thing in the universe. They transmit information at speeds extremely close to the speed of light. That means a single fiber can carry terabits of data per second, enough for thousands of HD video streams at once. Next time you stream a movie without buffering, think of physics and a bundle of glass threads!

Fiber to the Home (continued)

the connection is working and explain how to use the equipment and optimize your fiber network.

If your residence needs underground construction, our cable partner will contact 811 a few days prior to installation. They will locate and mark the lines before we lay the protective conduit. This conduit ensures that the fiber line is not exposed to weather elements. It's all very well planned, so it's easy for you and any disruption to your yard is minimal.

If you're waiting for fiber to come to your neighborhood, stay tuned for updates from our cable partner who services your area.

Tech Myth Buster

MYTH:

Everyone always needs the latest devices.

FACT:

The biggest myth is that most people need the "latest and greatest" technology. Technology has evolved, and many consumers simply don't need the latest version of devices, they just need software updates. This is especially true if those devices are used primarily for everyday applications like social media and communications.

Fun Facts about America

1. Americans eat an absurd amount of pizza! We consume roughly 100 acres of pizza a day. That's about 3 billion pizzas per year, or 350 slices per second.
2. Alaska is the largest state by far. It's bigger than Texas, California, and Montana combined. The U.S. bought it from Russia in 1867 for about 2 cents per acre, a deal once mocked as "Seward's Folly".
3. The U.S. contains all five major climate zones (tropical, dry, temperate, continental, polar) and the tallest mountain (from base). Mauna Kea is indeed the tallest mountain on Earth when measured from its underwater base to its peak. However, Mount Everest holds the title for the highest elevation above sea level. Death Valley holds the record for the hottest temperature ever recorded on Earth.
4. Tornado Alley, also known as Tornado Valley, is a loosely defined location of the central United States where tornadoes are most frequent. In fact, due to colliding air masses, most of the world's tornadoes happen in the central U.S. The United States also boasts wonders like the Grand Canyon, which is one of the Seven Natural Wonders, and vast freshwater resources like Lake Superior, which could cover North and South America in a foot of water.
5. The Corn Palace in Mitchell, South Dakota is decorated with thousands of ears of corn and other grains in elaborate murals that are redesigned each year. It's a unique roadside attraction celebrating agriculture.
6. The United States has more dinosaur fossils than anywhere else. Arid regions with exposed rock make it a paleontologist's paradise, with incredible diversity and quantity of specimens found across the country.
7. Los Angeles County has more people than 41 entire states. Its population exceeds that of most individual states, highlighting the massive urban density in parts of the country.
8. The Mississippi River once flowed backward. During the powerful 1811–1812 New Madrid earthquakes, the river temporarily reversed direction due to massive ground shifts.
9. The U.S. is home to the Venus flytrap in the wild. This carnivorous plant is native only to a small subtropical wetland area around Wilmington, North Carolina.
10. The Hoover Dam contains enough concrete to pave a road across the entire U.S. This engineering marvel on the Colorado River holds back Lake Mead and symbolizes massive 20th-century infrastructure projects.