

Data Centers 101

Understanding the critical infrastructure that supports a digital future

The world has become highly digitized, providing on-demand access to entertainment, health records, collaboration tools and financial information with the click of a button. These workloads, combined with the growing use of artificial intelligence (AI), are creating an unprecedented demand for secure data storage, power and internet connectivity. This critical infrastructure needs somewhere to live. This place is the data center.

What is a data center?

A data center is a large purpose-built building that stores large amounts of digital data. This data—and the applications used to create, process and share it—is housed in servers that reside within the data center. Think of a data center like a high-tech library. Just as libraries provide physical space to store rows of books on shelving units, data centers provide the physical space to house rows of servers in large cabinets called racks. Data centers also supply the reliable power, cooling and internet connectivity to operate and connect servers, allowing users to access data and applications, when needed.

What is a data center's purpose?

Data centers play a crucial role for businesses and communities, enabling digital workloads that support education, social interactions and healthcare, while connecting people to the economy. Without data centers, life-saving services could not be delivered, credit cards could not be processed, social media platforms could not connect users, and AI could not devise solutions, improve workflows and drive efficiencies. The widespread dependence on digital tools makes data centers as vital of an infrastructure as bridges and roadways.

Data centers have three primary responsibilities: ensuring unwavering availability, providing lowest latency connections and controlling access to the physical servers.



Always Available. To build resiliency that enables uninterrupted access to data and digital tools, data centers employ redundant power and cooling systems, ensuring no single point of failure. Data centers also properly manage and maintain critical systems to bolster reliability and ensure servers can be cooled sufficiently to avoid service outages caused by overheating. Additionally, data centers are purposefully designed to withstand or minimize the impact of natural disasters that can affect availability.

Always Connected. Data centers serve as connectivity hubs, linking the world to the data it needs. To avoid service lags, data centers are generally located near concentrations of users for lowest latency connections. Data centers also provide multiple connectivity options and paths, allowing traffic to be rerouted during a failure.

Always Secure. Data centers protect the private information stored within their walls through a series of physical security measures designed to limit access to the building and data halls. These security features may include perimeter fencing, 24×7×365 onsite security guards, multi-factor authentication and video surveillance systems.

QTS Data Centers Bring Value to Communities

QTS is the digital infrastructure leader: Powered by People, driven by purpose and fueled by a spirit of innovation. With a 20-year track record of designing, building and operating world-class data centers, QTS delivers the critical infrastructure for the world's largest and fastest growing companies. Guided by its core values and people-oriented culture, QTS invests in the communities it calls home, serving as a community steward and making a long-term commitment to bring economic and social value that enhances residents' quality of life.

QTS is a responsible neighbor.

As a conscientious, purpose-driven organization, QTS utilizes its best-in-class standards for site development, construction and operations. The company's innovative data center design incorporates sound attenuating measures to limit noise and various fenestration elements to blend its campuses with the aesthetics of the community. QTS also abides by all local ordinances to ensure it operates as a trusted and responsible neighbor.

QTS helps grow the local economy.

QTS brings an ecosystem of jobs, tax revenue and economic development to each community. Through the building and operations of its facilities, QTS generates thousands of long-term construction, manufacturing and technology jobs. According to a [2023 PwC report](#), each job directly created by a data center, produces more than six other jobs in related industries. By integrating skilled workforces with road and telecommunication infrastructure, data centers also build

U.S. DATA CENTER INDUSTRY IMPACT

- 2.9–3.5 million annual jobs (2017–2021)
- That amounts to \$209–\$294 billion in annual labor income
- In 2021, that equated to 72,210 jobs in Arizona, 61,740 in Ohio and 86,290 in Virginia

SOURCE: [2023 PWC REPORT](#)

technology ecosystems that attract more technology and infrastructure companies to the area to introduce more high-wage technology jobs.

QTS also participates in multiple workforce development programs, including SkillBridge for service members transitioning to the corporate workforce and YearUp for young adults seeking skill-building opportunities. To strengthen the pipeline of local students into high-quality tech jobs, QTS has also established workforce development programs in Virginia, Georgia, Arizona and Illinois.

Data centers also generate millions of dollars in tax revenue for local communities to advance community initiatives, such as school overcrowding and affordable housing, while helping to fight the rising cost of living and significantly reducing citizens' tax burdens. The QTS Fayetteville, GA data center campus project is estimated to contribute \$1 billion+ in state and local taxes over the next 15 years.

*Nationally, data centers generate **\$10+** in tax revenues for every **\$1** they require in county services.*

PRINCE WILLIAM COUNTY, VA
\$13 to \$1

LOUDOUN COUNTY, VA
\$26 to \$1

*The QTS Fayetteville, GA data center campus project is estimated to contribute **\$1+ billion** in state and local taxes over the next 15 years.*

SOURCE: [2024 NORTHERN VIRGINIA TECHNOLOGY COUNCIL REPORT](#)

QTS advances sustainability.

QTS believes that how it delivers its data center services is just as important as what it delivers. To serve as responsible stewards of the environment and community resources, QTS employs sustainable choices across all aspects of its operations—from carbon-free energy sources and operational efficiency to water conservation and environmental protection.

By prioritizing clean energy, QTS minimizes its carbon footprint and introduces green energy to the grid. QTS has signed long-term contracts for solar- and wind-generated energy in multiple states and is investing in a portfolio of onsite power generation solutions to reduce demand on the power grid and lower or stabilize utility rate increases to the community. Using its advanced data center design and innovative technology, QTS also operates sustainable, highly efficient facilities and lowers its carbon emissions, conserves energy and reduces its environmental impact to support future generations. Its water-free cooling system also saves more than 48 million gallons of water annually per data center. To protect the natural environment, QTS leverages its Tree Replacement Program, aiming to replant more trees than are cleared during the construction of its data centers.

QTS water-free cooling system saves more than 48 million gallons of water annually per data center—the equivalent of water use from more than 2,200 U.S. homes per year.

QTS supports community prosperity.

To enrich its communities and help improve lives, QTS contributes time, talent and resources to local programs and agencies. Its diverse giving programs include individual employee volunteerism and matched donations, corporate-sponsored events, grants to charitable organizations and success-based giving.

Success based giving partners:



The QTS Way

As digital demand continues to surge, QTS remains committed to providing best-in-class infrastructure and making a positive impact on its communities. Through a combined focus on innovation and community, QTS helps build a better, more connected future for all.

About QTS Data Centers

QTS Realty Trust, LLC is a leading provider of data center solutions across a diverse footprint with over two gigawatts of critical power capacity under customer contract in North America and Europe. Through its software-defined technology platform, QTS delivers secure, compliant infrastructure solutions, robust connectivity and premium customer service to leading hyperscale technology companies, enterprises, and government entities. QTS is a Blackstone portfolio company. Visit QTS at www.qtsdatacenters.com, call toll-free 877.QTS.DATA or follow on X @DataCenters_QTS.