

Extending
the cloud
to the edge
unlocks new
business value,
opportunities



Case study: CenturyLink, Dell Technologies partner to create ubiquitous enterprise IT experience with private cloud at the [network edge](#)



In this age of sweeping digitalization and ubiquitous connectivity, enterprises face a constantly-changing set of challenges. Flexibility, responsiveness and product differentiation are imperatives and delivering dynamic, impactful services will determine winners and losers in this data-driven economy.

A mega-trend that informs the trajectory of enterprise digital transformation is expanding data collection to every aspect of operations. For a manufacturer, that means harvesting telemetry from machines, constantly monitoring environmental conditions, tracking a product from assembly to point of sale, and understanding how a worker spends their time second-to-second. Parsing this data can reveal how small changes to process can have cascading effects that improve efficiency, output and, as an extension of that, profitability. And the faster the better--while cloud computing capabilities operated in centralized data centers is a mainstay in the enterprise, that same functionality placed at the source of data generation solves for the speed variable. Therein lies the value of edge computing.

“The conversation about edge has continued to grow and there’s increasing recognition that the cloud doesn’t just exist as a massively scaled centralized data center,” [Eric Vallone](#), Director of Service Provider Solutions Product Management at Dell Technologies explained. “The role of cloud over time is to stitch together data centers that exist on-prem, that exist inside of telco and service provider facilities, that exist in central offices or colo facilities, that exist in the public cloud, and create a ubiquitous environment for application developers and enterprise IT to be able to move workloads where they should be to most optimize the end experience.”

Bringing private cloud to the enterprise edge

As it continues to support its customers’ hybrid-cloud ambitions, CenturyLink worked with Dell Technologies to offer its CenturyLink Private Cloud, running VMware Cloud Foundation, on Dell EMC PowerEdge servers. This platform gives new levels of flexibility and performance and results in a fully automated software-defined data center solution.

CenturyLink developed the Private Cloud technology and service with a clear goal: “Customers in asset-intensive and interaction-rich industries have been asking us to make software-defined infrastructure resources available anywhere our network can reach, ” CenturyLink Vice President, Enterprise Technology [David Shacochis](#) said.

CenturyLink’s fiber network connects more than 2,200 public and private data centers as well as some 170,000 enterprise sites. CenturyLink Private Cloud on VMware Cloud Foundation was launched in a sub-set of those global venues, but has since expanded to any edge computing location on the network.

“As our customers continue on their digital transformation journeys, it is common to find workloads that aren’t appropriate for the public cloud, yet still require reliable automation, simple operations, and resilient data protection,” Shacochis said. The CenturyLink Private Cloud solution gives “customers more ways to tap into the power of the software-defined data center while staying connected to a range of hybrid cloud venues through our adaptive, global fiber network.”

The role of hybrid-cloud in the enterprise

For modern businesses, regardless of size, cloud computing is a fundamental business enabler that powers everything from email and collaboration tools to mission-critical systems that keep workers safe and vital assets up and running. As cloud technology, and the way businesses use it, has evolved, hybrid-cloud

models have become a dominant way to balance cloud-dependent functionality with considerations that divide workloads between on-prem computing, enterprise data centers, and public and private clouds.

Vallone said that as enterprises continue to invest in hybrid cloud, it is imperative that they consider best practices for internal management of distributed IT systems while maintaining laser focus on the business value these systems enable. “I think as the industry continues to evolve and the role of cloud continues to be foundational to the businesses that our enterprise customers are trying to drive, what they’re looking for is not just really cool technology. What they’re looking for are service providers who can operationalize cloud and bring together the on-prem, the closely aligned near-prem data centers, the public cloud, and put it together in a way that helps them achieve business outcomes.”

As its customers progress from consideration to deployment of hybrid-cloud solutions, Shacochis boiled CenturyLink’s internal process down to a four-step process: connect, migrate, manage and modernize. “Once we have visualized the end state of what the hybrid cloud solution is going to look like,” he said, “we help the customer progress through that journey.”

When it works with customers on solution development, CenturyLink follows an internal mantra to deliver an optimized, impactful hybrid-cloud experience:

- **Connect:** CenturyLink develops an adaptive networking topology appropriately linking public and private cloud venues, enterprise data centers and edge computing locations.
- **Migrate:** An analysis of workloads and the inter-dependencies between them informs a smooth migration into the new hybrid-cloud.
- **Manage:** IT operations and other managed services inform operationalization and adaptive support for a dynamic software-defined environment.
- **Modernize:** With a cloud technology in place, enterprises can improve their economics by taking advantage of new computing models, auto-scaling features and data management frameworks.

The role of the edge in driving digital transformation

Data is the new oil that keeps the engine of commerce running. But it’s much more complicated than that, and the complexity is compounding as new sources of data generate an increasing variety of information. Consider the Internet of Things--the goal is to connect sensors to the physical world and build a real-time picture of process performance; then analysis uncovers process efficiencies, which can be implemented to improve the desired outcome. To best undertake a data-driven digital transformation, the faster enterprises can go from creating a data point to taking an action, the faster they can achieve that improved outcome. And that’s why edge computing is important. With compute infrastructure sitting alongside where data is generated, near real-time decision making becomes possible.

“The way we define digital transformation inside CenturyLink is a company’s operationalization of their innovation cycle around the data they control,” Shacochis explained. The process, he said, is a virtuous cycle of acquiring, analyzing and acting on data.

“We really feel that edge computing, as it pertains to digital transformation is really sort of like a huge turbo charge to that cycle because you’re acquiring data from more places, you’re likely analyzing it in closer to real-time, and then you’re acting upon business logic a whole lot closer to the edge of the network.”

Vallone laid out three “foundational truths” that modern enterprises need to accept:

1. Data volume is going to continue to increase.
2. The number of data sources and types will continue to increase.
3. Understanding that data has clear business value.

Those truths reinforce the need for investment in edge computing. “The need to be able to move processing in closer proximity to where the information is being generated and be able to move very quickly on being able to make decisions on that data is of growing importance,” Vallone said. “We need an increasing set of really powerful technology closer to the edge.”

Dell Technologies is partnering with CSPs around the world to make emerging technologies like 5G and edge computing opportunity a reality to build new revenue streams and power innovative business models that serve new markets. Our vision is to transform the network through workload virtualization, software-defined infrastructure and open architectures, helping CSPs gain the flexibility and agility they need to compete and win today – and tomorrow.

CenturyLink is a technology leader delivering edge computing, hybrid-cloud connectivity, adaptive networking and network-embedded security solutions to customers around the world. We are dedicated to empowering people through technology, delivering an exceptional customer experience to ensure people make the most of their digital life and business.