cellnex
driving telecom connectivity

Cellnex Telecom

Building a next-generation network at the edge.

Lenovo

Cellnex teamed up with Lenovo and Nearby Computing to build a turnkey edge computing solution for the telco industry. Based on rugged Lenovo ThinkSystem SE350 Edge Servers, this partnership moves network capabilities closer to users, improving performance and cutting costs.

Cellnex Telecom is Europe's leading operator of wireless telecommunications with a portfolio of 61,000 sites in Spain, Italy, Netherlands, France, Switzerland, Ireland, Portugal and the United Kingdom. Cellnex's business is structured in four major areas: telecommunication infrastructures services; audiovisual broadcasting networks; security and emergency service networks; and solutions for smart urban infrastructure and services management.

Pushing the boundaries

Streaming, gaming, video calling—everyday activities that consume a huge amount of data. Ericsson predicts that by 2025, global mobile data traffic will reach around 160 exabytes per month.[1] The growing popularity of Internet of Things (IoT) devices—from smart TVs and fitness trackers to industrial sensors—will put enormous additional pressure on telecommunication networks.

To meet soaring demand for data while keeping bandwidth and latency issues at bay, mobile network operators (MNOs) are increasingly looking to edge computing as solutions. By moving network capabilities away from a few data centers at the center and onto a much larger number of devices at the edge, MNOs can bring their services closer to the end users and systems who actually generate the data—reducing traffic load, improving performance, increasing scalability and shrinking total cost of ownership (TCO).

Edge computing presents a compelling solution to the challenges that MNOs are facing today. But building, deploying and managing a vast, geographically dispersed edge computing ecosystem is far from simple. That's where Cellnex comes in.

[1] Source: "Ericsson Mobility Report," Ericsson, November 2019 (https://wcm.ericsson.net/4acd7e/assets/local/mobility-report/documents/2019/emr-november-2019.pdf?_ga=2.190125922.851392028.1592404548-436722737.1592404548)

Calling in the experts

Cellnex has partnered with Lenovo and Nearby Computing to architect a converged edge solution that brings together operational and information technology workloads on a single, compact platform.

Cellnex selected Lenovo ThinkSystem SE350 Servers and prototype Lenovo ThinkSystem SE650 Servers as building blocks for the solution. The Lenovo servers offer the performance and flexibility to implement 5G, smart city, autonomous vehicles, and other emerging use cases.

Besides its compact footprint, the Lenovo ThinkSystem SE350 offers robust construction, connectivity and physical security. Tailored specifically for the edge environment, the Lenovo ThinkSystem SE350 can be deployed practically anywhere as it does not require networking points or specialized power supplies. The solution can also handle wide operating temperature ranges of between 0-55°C, as well as dust and vibration.

The Lenovo ThinkSystem SE650—currently a prototype—is a 2U-high modular system designed for applications that need significant processing power such as vRAN, multi-access edge computing (MEC) and NFV infrastructure (NFVI).

Physical and data security are important elements of the Lenovo ThinkSystem SE350 and SE650 servers, which both provide protection against unauthorized data access, a dedicated management port, and the ability to detect hardware tampering and unauthorized movement.

The Lenovo servers also offer extremely high availability, ensuring 24/7 uptime for edge computing networks. This is vital to keeping telecom services running seamlessly around the clock as customers expect.

Because edge computing solutions are deployed over hundreds or even thousands of sites, availability and reliability are key. MNOs will only have a relatively small number of engineers supporting a large, geographically dispersed network, so the fewer outages they need to deal with, the better. The Lenovo servers offer simple serviceability and extremely high availability, with 99.999% uptime over seven years according to Information Technology Intelligence Consulting.[2] This helps to ensure 24/7 uptime and keep telecom services running seamlessly around the clock as customers expect.

Lenovo Open Cloud Automation (LOC-A) software enables MNOs to rapidly deploy, optimize and manage cloud infrastructure on the ThinkSystem SE350 Edge Servers with support for Kubernetes, Red Hat OpenShift, OpenStack and VMware Cloud Foundation.

NearbyOne, an edge-specific end-to-end orchestration tool from Nearby Computing, automates configuration and lifecycle management, enabling users to set up and operate edge computing networks cost-effectively and at scale.

Cellnex acts as a neutral host for the joint solution. Cellnex can deploy the turnkey edge solution across its 61,000 sites and manage dedicated edge computing ecosystems, offering the full end-to-end edge solution as a service to its MNO clients.

Why Lenovo? Robust, rugged, reliable Edge infrastructure

The joint solution from Cellnex, Lenovo and Nearby Computing makes edge computing an accessible, affordable managed service for MNOs.

By moving some network capabilities to the edge, MNOs will reduce the amount of data they have to backhaul to data centers, improving performance for end-users and shrinking operational costs. The solution also has the potential to open up exciting new revenue streams.

For example, Cellnex is working with some important partners in the edge ecosystem to develop and trial several Smart City use cases. These include using IoT devices to monitor and optimize traffic flows on the city's roads, reducing congestion and improving public transport services.

Óscar Pallarols, Global Commercial Director at Cellnex, concludes: "This edge computing solution is designed to help mobile operators lower their TCO, while supporting exciting new visual use cases for different vertical segments. As a scalable and modular solution, it can cover many different scenarios, from dedicated on-premises deployments, to distributed telco edge services for the consumer market."

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[2] Source: "ITIC 2020 Global Server Hardware, Server OS Reliability Report," February/March 2020 (https://www.lenovo.com/us/en/resources/data-center-solutions/analyst-reports/itic-2020-global-server-reliability-report/)

CS00129-01