

Lenovo Unveils Eco-Friendly Telco Powerhouse Edge Server for 5G vRAN

Article

Announcing Lenovo's ThinkEdge SE455 V3 with an AMD EPYC 8004 Processor

In the ever-evolving telecommunication landscape, operators must stay ahead of the curve for profitable growth. Surging growth in media-rich 5G content, edge delivered application and high expectations from subscribers are exhausting available mobile networks capacity and creating choke points leading to customer dissatisfaction.

With the adoption of new eco-systems, telecommunication operators are facing a pivotal moment in their network modernization journey. The adoption of 5G technology has led Telcos into a significant network transformation, with a focus on virtualization and cloud-native technologies that support automation while striving to lower emissions and reduce overall power consumption.



Figure 1. Lenovo ThinkEdge SE455 V3 Edge Server

Key Advantages of Virtualized RAN (vRAN)

One of the key areas where this transformation is occurring is in the Radio Access Network (RAN), where virtualized RAN (vRAN) architectures are gaining traction due to their numerous advantages. By disaggregating software from hardware and optimizing critical tasks such as signal processing and radio resource management, Telco operators can improve network performance and subscriber experience.

vRAN can provide up to 50% energy savings through more efficient hardware and intelligent power management. With vRAN, Telcos can reduce hardware capital expenditures (CapEx) and operating (OpEx) expenses by leveraging Lenovo XClarity and Lenovo's LOC-A automation and remote provisioning.

SE455 V3 Does More with High Core Count

With a core count of up to 64, ThinkEdge SE455 V3 server is primed to redefine the benchmarks of performance. Telecom Operators can expect a seamless experience engineered to handle elevated bandwidth needs for network traffic, network automation and optimization, and support ever-increasing subscriber demands, delivering 34% improved compute performance¹ to support a higher number of subscribers per system.

Redefined Efficiency With 50% Increased Performance Per Watt²

In a world where efficiency drives progress, power-efficient cores are the heroes we need. Lenovo's ThinkEdge SE455 V3 with AMD EPYC 8004 Series Processors boasts power-efficient cores that pack double the orchestrated workloads per socket while achieving a 50% reduction in overall vRAN power consumption. This not only translates to a remarkable reduction in operational costs but also empowers operators to fulfill subscribers' escalating performance expectations without straining the energy grid.

Adaptability at its Core

The modular, ruggedized platform design of this server speaks to its adaptability. It's a technology that embraces diversity, accommodating multiple RAN accelerator technologies and deployment options. Whether it's the lookaside, inline, or software-based accelerators, or deployment choices, like mu-MIMO and mmWave, this system seamlessly integrates them all. Agile adaptability ensures that operators can tailor their network infrastructure to suit specific needs, driving efficiency and performance to new levels.

Redefining Deployment

Up to 81% Reduction in Time to Deploy with Lenovo's LOC-A Zero-Touch Automated Provisioning ³.

Time is of the essence, especially in a world where agility defines success. With XClarity energy management and reporting and Lenovo's Open-Cloud Automation (LOC-A) zero-touch provisioning, the deployment of technology is rapid, automated, and requires minimal manual intervention. Operators can remotely manage and deploy systems across thousands of locations without the traditional complexities and delays. This not only saves valuable time but also paves the way for large-scale deployments with ease.

An AvidThink study estimated that Communication Service Provider's leveraging Lenovo's LOC-A can enjoy:

- ROI of \$1.36 NPV over three years on every dollar spent;
- Reductions of up to 81% on initial deployment lead times; and
- Labor reduction for cloud implementations of up to 11X.

Fortress of Security

In the digital age, protecting data is non-negotiable. Lenovo's ThinkEdge SE455 V3 takes security to heart with an array of measures that safeguard both system and data. From tamper protection and intrusion detection to hardware root of trust and encryption, every corner of this technology is fortified against threats. It's a secure haven where operators and subscribers alike can have the confidence that their data is shielded from vulnerabilities.

Sustainable Progress

As the world collectively marches towards sustainability, every step counts. Lenovo's ThinkEdge SE455 V3 with AMD EPYC 8004 Series Processors does its part by significantly reducing power consumption and customers have the option to purchase simple CO2 Offset services at point of purchase. By prioritizing energy efficiency, it aligns with operators' sustainability goals while minimizing the carbon footprint. It's a stride towards a more sustainable future, where cutting-edge technology and environmental responsibility coexist harmoniously.

Conclusion

The telecommunications landscape is at a crossroads, and innovation is the only path forward. Lenovo's ThinkEdge SE455 V3 with an AMD 8004 Series processor offers superior performance, power efficiency, adaptability, security measures and a path toward sustainability, helping operators deliver unmatched network experiences. It's not just a technological leap; it's a revolution that sets the stage for a future where efficiency, security, and sustainability reign supreme.

For more information, see these resources:

- Lenovo-AMD alliance page:
<https://www.lenovo.com/us/en/servers-storage/alliance/amd/>
- ThinkEdge SE455 V3 product page:
<https://www.lenovo.com/us/en/p/servers-storage/servers/edge/thinkedge-se455-v3/len21te0003>

Notes:

1. Compared to our previous-generation product
2. Based on third-party testing
3. Based on AvidThink Report, "Improving the Economics of Private Clouds: Lenovo Open Cloud Automation - A Cost Comparison"
<https://www.lenovo.com/us/en/resources/data-center-solutions/analyst-reports/avdthink-lenovo-open-cloud-automation-cost-comparison-2020/>

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Hapsara Sukasdadi is a seasoned telecommunications industry expert. Serving as a Telco solutions architect, Hapsara currently spearheads Lenovo's Telco client engagements, focusing on the critical task of 5G network modernization. In this role, Hapsara collaborates closely with telecom partners and ecosystem providers hailing from various corners of the world. Hapsara's primary mission is to deliver comprehensive solutions, encompassing design, planning, and integration across a spectrum of critical areas, including Policy Control, AI, 4G/5G technologies, mobile Packet Core, RAN/vRAN infrastructure, as well as cutting-edge Cloud and Edge solutions.

Related product families

Product families related to this document are the following:

- [Edge Servers](#)
- [ThinkEdge SE455 V3 Server](#)

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