

Building AI Solutions for Telecom



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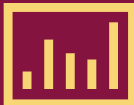
Your AI Telecom Solutions Start with Dell and AMD10




Executive Summary

Artificial intelligence (AI) is transforming the world around us, redefining how entire industries operate through real-time insights, automation and more. The Telecom industry has answered the call of AI, and the message is clear: communications service providers (CSPs) who are ready to integrate this transformative technology can stay ahead of the curve and gain significant competitive advantage.


Building an AI-ready infrastructure provides CSPs with the flexibility to:



Explore and capitalize on new revenue opportunities



Develop and deploy AI in their own organization and over their networks



Adapt to evolving customer demands to stay ahead of the market

This eGuide will illustrate how CSPs who invest in their AI journey now can innovate sooner and establish their future success.



48% of Telecom executives see AI as the industry's most transformative technology in the next five years, yet 68% feel their organization is struggling to keep pace with rapidly evolving technologies and customer needs.¹



Why CSPs are Implementing AI

As modern networks become increasingly complex, AI is proving a vital differentiator for CSPs in the thriving Telecom market. By integrating AI into their networks and processes, CSPs can achieve the following meaningful outcomes:



IMPROVED NETWORK PERFORMANCE

With humans unable to monitor, fix and optimize these vast networks in real time, 24/7, AI-powered predictive maintenance identifies potential issues to reduce unintended downtime and preserve network quality.



STREAMLINED PROCESSES

From chatbots that complete individual tasks to the automation of processes across entire business units, AI can streamline operations while reducing resource overheads. This can free up valuable time for activities that generate additional value.



CAPITALIZING ON NEW OPPORTUNITIES

Evolving customer behaviors require CSPs to remain flexible in their operations. AI-ready infrastructure provides the foundation for CSPs to remain ahead of the competition by integrating new technologies and experiences at speed.



ENHANCED DECISION MAKING

The vast quantities of data and data streams that CSPs can access offer huge opportunities for growth. AI can interpret this data at scale and extract new insights, giving business leaders the information they need to guide their business and networks.

How CSPs can Implement AI

To harness the full potential of AI, CSPs must be able to act upon their data in real time. This requires infrastructure that can handle compute-intensive AI workloads and the sheer volume of data they process. While some CSPs use cloud service providers to host these workloads, investing in data center infrastructure is a more beneficial long-term strategy.

An increasing number of CSPs are building out their own data centers, enabling them to maintain the security of their estate and ensure the data used to train their AI models remains trustworthy. There's also a considerable cost benefit: with cloud service providers charging for inferencing on a 'per instance' basis – an approach that can mount up over time, while leading to unpredictable costs – CSPs who invest in their own infrastructure today can inference freely and scale their AI workloads as their business evolves.



Dell AI for Telecom with AMD

As the need for AI solutions grows, Dell Technologies and AMD are providing the infrastructure for CSPs to deliver innovative Telecom outcomes. Dell's ecosystem of hardware, software, partners and expertise, combined with AMD's CPUs, and supporting next-gen multivendor GPUs for Gen AI and high-performance computing (HPC) workloads, enable CSPs to accelerate their AI adoption and create revenue-generating services.

DELL POWEREDGE SERVERS

Future-ready infrastructure is essential for CSPs as they integrate AI and machine learning (ML) into their operations. Dell PowerEdge servers deliver the performance and scalability needed for these challenging workloads, anchored by robust security features from concept to retirement.

DELL POWEREDGE XE7745

Purpose-built for a diverse range of accelerated AI workloads, the Dell PowerEdge XE7745 server offers flexibility and scalability for today and tomorrow's Telecom demands. The 4U air-cooled XE7745 easily integrates into current data infrastructure, with support for up to 8 double-wide or 16 single-wide PCIe GPUs and up to 192 CPU cores enabling CSPs to fine-tune their core ratio and achieve optimal performance.



2 SOCKET CAPABLE:

- M-HS compliant MB (5th Gen AMD EPYC™ processors)

ACCELERATOR OPTIMIZED:

- Up to 8x DW accelerators (600W)
- Up to 16x SW
- PCIe accelerator vendor and type flexibility

SUPPORT FOR UP TO 8 DRIVES:

- 8x E3.s direct attach
- BOSS capable

SUPPORT FOR HIGH-SPEED AND MEMORY CAPACITY:

- 32 DDR5 DIMMS

FLEXIBLE I/O:

- Up to 8x PCIe Gen5 slots
- One OCP 3.0 slot Gen5



Dell PowerEdge XE9680 Servers with AMD Instinct™ MI300X Accelerators

The Dell PowerEdge XE9680 with AMD Instinct™ MI300X accelerators is a powerful, flexible and scalable rack server purpose-built for compute-intensive workloads. The first 8x GPU platform from Dell, its superior acceleration supports:



AI, ML AND DL TRAINING:

Optimized to rapidly develop, train and deploy large model.



HIGH-PERFORMANCE COMPUTING:

Higher CPU and GPU core density per rack enables HPC simulations.

Discover how Dell and AMD are already providing the foundation for innovative AI solutions.

AMD INSTINCT™ MI300X ACCELERATOR

Offering the greatest high-bandwidth memory capacity in the GPU market, the AMD Instinct™ MI300X Accelerator provides the high performance and efficiency needed for intensive AI and HPC workloads. Equipped with 1.5 terabytes of coherent GPU-accelerated memory per server, it enables CSPs to scale their AI to the size and speed of the business.



DELL POWEREDGE XE9680



Use Cases



1. AI Agent for Telecom Infra Monitoring

Telecom challenge:

The explosive growth in human and machine data volumes is placing significant strain on cellular networks. Geographically dispersed Telecom infrastructure must remain robust and resilient while handling the growing demand for low-latency, high-throughput services, with any network downtime being costly and time-sensitive.

AI Solution:

Metrum AI, running on Dell PowerEdge XE9680 servers equipped with eight AMD Instinct™ MI300X accelerators.

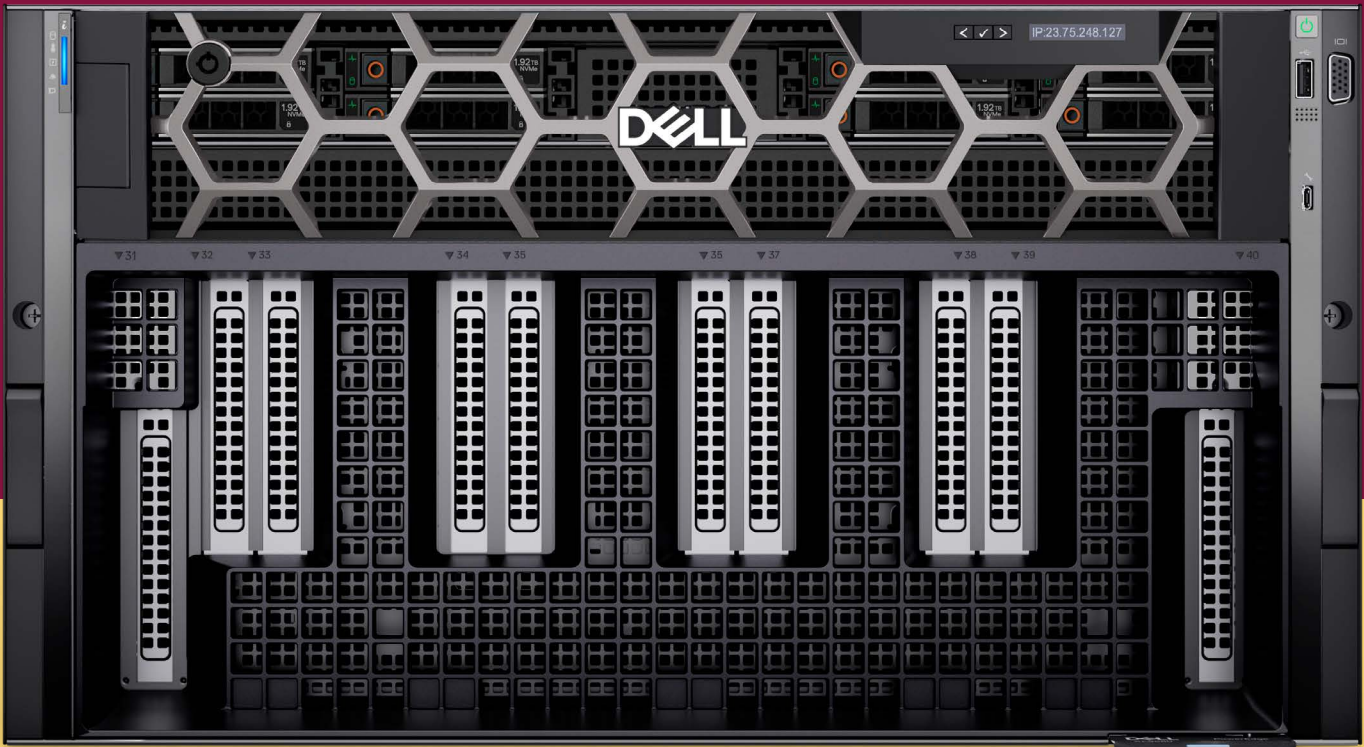
Metrum AI's Telecom Issue Management solution helps CSPs and their enterprise clients to optimize network operations. It uses Generative AI to enhance the monitoring and management of Telecom services in real time, creating detail incident reports as they occur while recommending appropriate responses. Telecom providers can leverage rich multimodal and model-intensive use cases such as LLM agents, while ensuring the privacy of their proprietary data and workflows – helping them provide more efficient network services that support rising data volumes.

METRUM AI

DELLTechnologies AMD

Benefits:

- **Minimizes** service disruptions thanks to a real-time dashboard that recommends actions for Telecom issues, with a focus on base station performance.
- **Maintains** consistent quality of service despite challenges including signal degradation, misconfigurations and congestion from unexpected traffic spikes.
- **Enhances** decision making by enabling Telecom operators to make informed decisions about network investments and improvements.



DELL POWEREDGE XE9680



DELL PROSUPPORT DELL PRODEPLOY



Your AI Telecom Solutions Start with Dell and AMD

AI is becoming a key differentiator in today's competitive Telecom market, helping CSPs to optimize their operations and generate competitive advantage. Before this can happen, they need the right technology, expertise, experience, and partnerships to guide their AI journey.

The **Dell AI Factory with AMD** combines these into a tailored and validated turnkey solution for CSPs to simplify their AI adoption. Its proven, secure on-prem stack protects data while handling complex deployments that demand power, flexibility and scale. By leveraging Dell and AMD's purpose-built ecosystem of AI and Telecom solutions, CSPs can:



Monitor, optimize and fix network and business functions in real time, 24/7



Accelerate AI deployments



Turn innovative ideas into tangible ROI

Discover how CSPs can harness the power of AI to create innovative solutions that drive Telecom progress:

[Learn More](#)



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[1] <https://investors.delltechnologies.com/news-releases/news-release-details/dell-technologies-propels-telecommunications-ai-era>