

DELL TECHNOLOGIES

Speeding innovation at the tactical edge

In high-risk, hostile environments, real-time information and fast decision-making are crucial for mission success



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Edge computing enables data processing and analysis right where data is gathered, reducing the time to insight to ensure fast decision-making. As a result, edge computing has a pivotal role to play in speeding government innovation.

Many agencies can benefit from edge computing, but for some, the edge is a difficult and unpredictable place. The Defense Department in particular faces unique challenges. Military activities happen in rapidly changing, often hostile environments where connectivity might be sporadic but where the ability to make informed decisions quickly is essential. DOD has tactical operations that execute globally, and personnel must be able to deploy to environments that range from arid deserts to dense jungles to suburban locations.

Such demanding environments are referred to as the tactical edge, and they require paying close attention to the need for secure, resilient and reliable IT systems. At the tactical edge, vast amounts of data are generated in real time from a variety of sources, ranging from sensor readings to communication logs. Rapid analysis and application of this information can mean the difference between success and failure in critical operations.

Designing systems for ruggedness and reliability

From an IT perspective, the tactical edge is where the mission is executed.

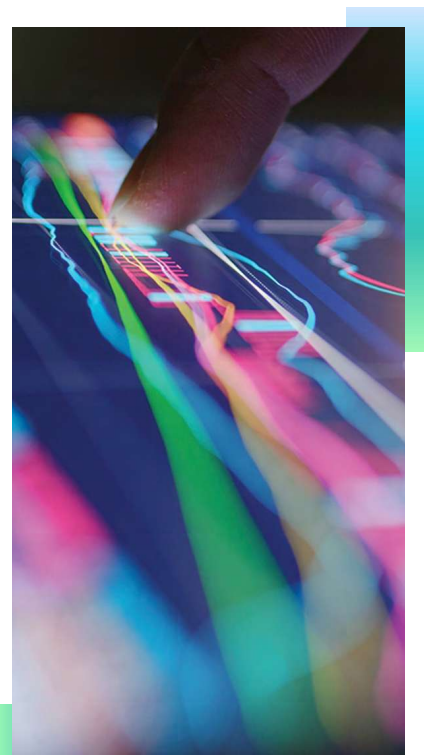
It is where technology meets people to deliver an outcome. When designing systems that will be deployed to such varied environments in support of mission-critical capabilities, DOD leaders must take into account the heating, cooling and power requirements of those systems.

In addition, systems must not only support the core mission but also address tertiary needs. For example, gathering a large amount of data at the edge necessitates taking an inventory of all the people, processes and systems that generate data and could aid leaders in making better decisions. Tertiary considerations include ensuring that the data is valid, protected and usable for effective analysis.

Another critical tertiary element is the speed of analysis. Systems must have the capabilities to quickly ingest, collate and analyze data to provide actionable outcomes while operating in challenging environments.

Making the most of the latest edge technologies

To help DOD take advantage of computing at the tactical edge, Dell Technologies has developed high-performance PowerEdge servers that are certified for military use and built to withstand extreme heat, dust, shock and vibration. They come with scalable power and cooling solutions that reduce the risk of overheating while improving reliability,





lowering energy costs and maximizing performance.

PowerEdge servers deliver powerful, low-latency performance for demanding edge workloads thanks to GPUs and Intel Xeon processors. In addition, IT leaders can manage edge computing remotely and scale and automate edge operations securely with Dell NativeEdge. This software platform enables users to seamlessly centralize the deployment and management of diverse edge infrastructure and applications.

Furthermore, Dell's solutions allow agencies to harness zero trust security and multi-cloud orchestration to strengthen operations at the tactical edge. Our solutions also incorporate next-generation artificial intelligence, which has become a strategic necessity at the tactical edge because of its

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ability to facilitate real-time data processing for rapid decision-making.

By pairing AI with edge computing, DOD can sharpen its focus on computing at the tactical edge to enhance situational awareness, improve response times, and maintain a strategic advantage in complex and fast-paced scenarios. ■

John Garrett is vice president of the Department of Defense and intelligence at Dell Technologies.