Joining forces to deliver performance, durability and reliability in any environment

Tracewell Systems supports today's workloads with a compact, rugged solution and accelerates time-to-market by working with Dell OEM Solutions

For more than four decades, Tracewell Systems has been designing and building standard and custom hardware solutions for military and aerospace customers. Recently, more customers began asking the company for help supporting new workload requirements. "Our customers now need systems for virtualization, big data analytics, database systems and high-performance computing clusters," says Matt Tracewell, the company's vice president.

But many of those customers faced the same dilemma: they needed to deploy systems in harsh environments where traditional data center solutions won't work. "Our military customers in particular want to install compute solutions in environments with size, weight and power constraints, such

as command centers or aircraft," Tracewell says. "The U.S. Army, for example, wanted us to create a hardware infrastructure on the back of a vehicle."

In addition to addressing these customer issues, Tracewell Systems wanted to accelerate its business growth and expand product availability. "There have been issues with the secure supply of commercial server–class hardware," says Tracewell. "Our challenge was to find that secure supply chain and get the latest, best-of-breed technology, and then get it into some of these modern programs." Tracewell Systems knew that solving both its customers' space constraint challenges and its own supply chain challenges would require working with the right technology partner.

Business need

Tracewell Systems needed to help its military and aerospace customers deploy compute systems in smaller, nontraditional data center environments and expand the availability of its product offerings.

Solution

The organization worked with Dell OEM engineers to develop the Tracewell T-FX2, a compact and durable server based on the Dell PowerEdge FX converged architecture.

Benefits

- Meets customers' needs for rugged, high performance solutions deployed in harsh environments
- Helps U.S. Army support database systems from tactical command centers
- Takes advantage of global supply chain to get solutions to customers faster

Solutions at a glance

- Converged Infrastructure
- OEM Solutions

> "The Tracewell T-FX2 is perfect for our customers who want to put big data analytics or HPC computer clusters in very small spaces. We can help them do that by taking advantage of the Dell PowerEdge FX converged architecture and working with Dell OEM engineers."
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Customizing a Dell converged architecture solution

The company considered several top technology vendors including HP, Cisco and Dell. "They all offer robust hardware, but Dell stood out for other reasons," says Tracewell. "They also provide a large software footprint, and their services business is doing data center migrations with these modern workloads and using that to drive their hardware vision. On top of all that, Dell offers rich management capabilities for its hardware solutions, and they provide strong support and a global footprint."

Tracewell Systems chose to partner with Dell OEM Solutions, which offers a worldwide manufacturing, engineering, distribution and support network. Dell OEM works with organizations to accelerate their time-to-market by integrating Dell hardware, software and services into their own products. "We liked the fact that Dell OEM could provide what we needed in terms of product manufacturing and delivery for our customers," says Tracewell.

Collaborating with Dell OEM engineers, Tracewell Systems built the Tracewell T-FX2, a compact, 23.7-inch server that takes advantage of the Dell PowerEdge FX converged architecture. The FX architecture provides the ability to add or swap servers, storage and I/O modules with different processors and memory sizes into a 2U converged infrastructure chassis.

Based on the PowerEdge FX2 enclosure, the Tracewell T-FX2 is an even lighter 3U system that combines the unified management, workload-optimized compute sleds, integrated switches, and storage modules in Dell FC430 and FC630 blade servers with Intel® Xeon® processor E5 family. "With PowerEdge FX2, we can deliver modular building blocks that are configurable in multiple combinations of compute and storage nodes, and combine the density and flexibility of blades with the advantages of rack-based systems," says Tracewell.

Additionally, the T-FX2 can be managed through the integrated Dell Remote Access Controller (iDRAC) or Dell OpenManage Essentials management console.

The T-FX2 offers all these capabilities in a single form factor that can be deployed in harsh, compact environments such as those encountered by military, aerospace and telecom customers. In the near future, Tracewell Systems also plans to integrate full-height, high-powered PCIe cards into the T-FX2.

Meeting customers' needs for big performance in nontraditional data center environments

Using the flexible PowerEdge FX architecture and engineering support from Dell OEM, Tracewell Systems is meeting its customers' needs for high-end computing solutions deployed in smaller nontraditional environments. "The Tracewell T-FX2 is perfect for our customers who want to put big data analytics or HPC computer clusters in very small places," says Tracewell. "We can help them do that by taking advantage of the Dell PowerEdge FX converged architecture and working with Dell OEM engineers who helped us create an even smaller form factor version of the PowerEdge FX2."

The U.S. Army is using the Tracewell T-FX2 to support database systems

Products & Services

Software
Dell Remote Access Controller (iDRAC)
Dell OpenManage Essentials

Hardware
Dell PowerEdge FX2
Dell PowerEdge FC430 and FC630 servers with Intel®Xeon® processor E5 family

DELL

from tactical command centers on vehicles. "The Army had an older, larger system, but they needed to bring up modern workloads in a rugged hardware solution that fit in a small footprint," says Tracewell. "Our solution was the right one for their needs, and it gives them the capabilities they need to optimize those workloads for years to come." Tracewell Systems can also easily customize the solution for the Army or any other customer. "Some customers might need to put shock pins on the rear of the unit to secure it, or they might need air filtration or other components added. We can put all those things into the T-FX2," says Tracewell.

Increasing cooling capacity by 20 percent, simplifying management

The Tracewell T-FX2 also helps the organization's customers save money on power and cooling. "Our customers with mobile solutions often need to use generator power, which is very expensive. Being able to use less power in a high workload environment is important to them," says Tracewell. "The T-FX2 is about 12 pounds lighter than the standard commercial Dell FX2 chassis. It draws 170 watts less system power and provides 20 percent more cooling capacity for customers."

T-FX2 customers can also manage the converged infrastructure solution easily with the Dell Remote Access Controller (iDRAC) or Dell OpenManage Essentials management console. "Our customers can save management time with the Dell iDRAC and Dell OpenManage technology which provide intuitive, simplified tools for managing the entire solution, from networking to storage to servers," Tracewell says.

Collaborating on product development and accelerating time-to-market

Tracewell Systems also benefits from its working relationship with Dell OEM. "I'd never been able to reach into a similar organization and have such a collaborative technical interchange until I started working with Dell OEM," says Tracewell. "Our company has deep expertise in the embedded computing marketplace, and Dell OEM can have a very robust technical dialogue with us while providing the engineering capacity to help us drive specific features into our solution. If customers have a problem, and they recognize Dell is the right technology for them but can't make it work, we can modify the form factor to make it work because of our relationship with Dell OEM. We fit very well together."

The relationship also helps Tracewell Systems get its solutions to customers faster. "We've been able to grow our market share and expand our product availability by working with Dell OEM," says Tracewell. "We can take advantage of the Dell global supply chain for manufacturing, distribution, and warranty and support, all of which give us the rapid refresh cycle we need to respond to business demands."

Tracewell Systems looks forward to collaborating with Dell OEM on future products for the Army and other government customers. "We like the fact that Dell is so committed to the federal space," Tracewell says. "And Dell also has a unique approach in that they actively engage their customers and are willing to provide demonstration products so customers can see how the products work before buying. Between that approach, the Dell OEM partnership and the state-of-the-art Dell technology, we have some strong reasons to continue to work together with Dell in the future."

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