Highlights from a recent Webcast on Hyperconverged Technology

THE NEXT GENERATION OF TACTICAL DATA CENTERS

Nutanix and Klas Telecom can change the way the military operates in theater.

When the Defense Department sends warfighters into the field, battlefield information dominance and operational agility are necessities. Information is an essential weapon. Soldiers need lightweight and rugged infrastructure to support their mission-critical applications in theater. Of course, this isn't always a straightforward process or technology.

There is a new solution that is changing the game, however. During a recent webcast titled "Transforming Datacenter Operations at the Tactical Edge," experts discussed how the new Klas Telecom Voyager Tactical Data Center (Voyager TDC), powered by Nutanix, is revolutionizing field operations in a compact package that can fit in an airplane's carry-on compartment and be hand rolled on scene.

The Voyager TDC delivers enterprise-grade storage and compute resources, with either traditional or hyperconverged infrastructure in an airline carry-on compliant rollaway case. It provides Intel Xeon Processor D processing, up to 512 gigabytes of RAM, 32 CPU cores, 32 terabytes of raw storage, and a ruggedized 10 Gigabit Ethernet switch. Soldiers can also combine it with existing Voyager route/switch, land mobile radio, and cellular/Wi-Fi platforms. And, it's designed to meet MIL-STD 810G, a military ruggedization standard for equipment.

The company launched the Voyager TDC to meet the emerging requirements to bring high volumes of data forward in the field rather than having to rely on reach back into an offsite data center, says David Huisenga, President and Chief Executive Officer of Klas Telecom Government.

"The way we fight has changed," says Huisenga, "We're sending smaller teams out to locations. That requires solutions that are truly mobile and modular, that can scale to support a couple of users up to hundreds of users, while at the same time being cognizant of size, weight, and power. These units deploy around the world so they must be able to be powered anywhere in the world."

DEFINING 'TACTICAL' IN THE CONTEXT OF VOYAGER

Klas Telecom's Voyager Tactical Data Center (Voyager TDC) is the first rugged enterprise-grade compute and data storage network that fits in an airline carry-on size rollaway case, simplifying deployments and reducing overhead costs. Voyager TDC provides the highest compute performance per watt and storage per cubic inch available in the tactical market. Paired with the Nutanix Enterprise Cloud Platform, it easily scales to support any size team, workload or mission critical application. The robust, compact form factor meets today's warfighters' tactical needs:

- Easily transportable—fits in an airline carry-on compartment and can be hand carried.
- Lightweight and compact—A single 63 lb. case replaces hundreds of pounds of equipment
- Significant size, weight and power (SWaP) savings
- Built-in uninterruptible power supply (UPS) capabilities with flexible charging options.
- Designed to meet military ruggedization standards.
- Modular and scalable to support first-in to command post communications

The New Tactical Advantage

Klas Telecom defines tactical as something that is: rapidly deployed and set up, moved and transported easily by hand, modular and scalable, inherently rugged, lightweight, battery backed with hot swappable modules, and provides a built-in UPS and flexible charging options all streamlined into a single "fly away" case. Tactical also means scalable and reusable in each deployment, says Huisenga.

"It saves money, time and resources in the deployment by reducing expensive costs for dedicated military aircraft shipping, or

> "When considering the total cost of ownership, the purchase price plus the lifecycle costs to install, deploy, use, upgrade, and maintain a system, the Voyager TDC is the smart choice."
> *—David Huisenga, President and Chief Executive Officer of Klas Telecom Government*

slow palletized maritime transport, and it's ruggedized and won't break when it gets there," he says. "When considering the total cost of ownership, the purchase price plus the lifecycle costs to install, deploy, use, upgrade, and maintain a system, the Voyager TDC is the smart choice."

In fact, this portable data center is a module in itself, which Huisenga calls "the key to this data center." The Voyager TDC case comes with standard, or the new 83-watt, BB-2590 batteries, which are widely used throughout DoD and hot-swappable. The inner chassis can be removed and mounted in a standard 19" rack for installation in vehicles or aircrafts, or mounted temporarily inside tactical data centers. Then, it can be pulled off of the rack, and put into the Voyager 8 transit case and rolled away.

Today, it's common to see customers deploy four or more large cases with: multiple non-rugged, traditional enterprise servers and switches along with multiple UPS and additional cases for batteries and cables. "This load of equipment is reduced to the airline carry-on-sized Voyager TDC that provides easy transport, storage, network and UPS all in one chassis," says Huisenga.

The first DoD organization to adopt the Voyager TDC powered by Nutanix was a special operations group based in Tampa, FL. "When they're looking at a system such as this, they're looking at how quickly they can deploy it," he says. "It can be built up and continue running in their data centers while they're waiting to deploy. When they need to deploy, you can unplug and go. It's easy to transport."

Nutanix: Invisible Infrastructure

Tactical markets demand reduced logistical complexity, minimal physical footprint, and simplified operations in all aspects of IT deployments. As a result, a new generation of software-defined solutions is required.

The Nutanix Enterprise Cloud Platform brings the robust, elegant, and highly scalable IT infrastructure to the field, while the Voyager TDC provides the highly mobile, ruggedized, compact form factor, providing more storage per cubic inch than any other offering, whether tactical or enterprise.

At the heart of the Nutanix platform is the industry-leading hyperconverged infrastructure, Acropolis, which delivers 100 percent software-driven compute, virtualization, networking and storage resources to run nearly any application in a turnkey solution. In Acropolis, virtualization is built into the infrastructure stack with the Acropolis Hypervisor (AHV), instead of a standalone product that is bought, deployed, and managed separately.

The result is reduced complexity, SWaP, lower virtualization costs, and simplified management. This software-driven solution allows capacity and resources to be added on-demand, with no disruption to mission-critical applications.

"We scale in a linear fashion," says Chris Howard, Vice President of Federal at Nutanix. "We're a compute node with SSD and/or spinning disk directly attached to that compute node. Every time you add a node into a Nutanix environment, you're adding all of those resources. So compared to a traditional three-tiered infrastructure, it would be very difficult to scale out your network, compute and storage simultaneously…you're going to see the same performance with three nodes as you will with hundreds of nodes based on just having all of those capabilities built in."

The Nutanix Enterprise Cloud Platform is ideal for operational deployments due to the ease of use and one-click operations, managed by the Prism user-interface. The HTML5-based management console provides a single, holistic view of the environment and actionable operational insights. Prism also lets users manage the entire deployment, spread across geographic locations from a central point with one-click simplicity.

Regardless of where Nutanix is deployed, data is protected by the same robust security features in the field as an enterprise data center environment. "We have a security-first design around our software," says Howard. "Security is part of our software development lifecycle, so as we're developing code and writing patches, we're constantly running that code against common DoD scanning tools like retina and Nessus [also known as DISA's Assured Compliance Assessment Solution]. We do that in the factory before the code is shipped so when the product shows up onsite to the customer, it's already hardened."

Nutanix's platform is an ideal complement to Voyager TDC, says Howard, because "any application that can be virtualized is the perfect use case for our environment."