Supply-Chain Company Achieves Fast ROI with Virtualization

Toyota Tsusho America uses Cisco Data Center solutions to cut costs, reduce deployment time, and expand services.

Executive Summary

- **Customer Name:** Toyota Tsusho America, Inc.
- **Industry:** Trading
- **Location:** North America
- **Number of Employees:** 3000

Challenge
- Minimize hardware footprint
- Support combination of public and private cloud environments
- Simplify management and support of IT infrastructure

Solution
- Vblock combines Cisco UCS and Nexus 1000V, storage from EMC, and server virtualization software from VMware
- Cisco Virtual Wide Area Application Services (vWAAS) and Nexus 1000V virtual access switches
- Cisco Unified Communications Manager (CUCM) offers enterprise-class voice, video, and mobility capabilities to end users

Results
- Achieved 240 percent ROI in approximately one year
- Cut power consumption by 25 percent and maintenance costs by more than 50 percent
- Reduced server deployment time from 48 hours to 20 minutes

Challenge

Toyota Tsusho America, Inc. (TAI) is a trading and supply-chain specialist that has been operating in North America since 1961. Over the past five decades, the company has evolved from a trader with a limited number of commodities to a multibusiness enterprise.

TAI's footprint includes a 40-location Multiprotocol Label Switching (MPLS)-based environment scattered throughout the United States and Canada, each with its own IT equipment footprint. All of the IT equipment is managed through a data center in Georgetown, Kentucky. "If each server at our sites and in our data center is dedicated to a single location or a single task, you end up with an unnecessarily large physical footprint," says Chris Jones, IT manager of infrastructure and operations at TAI. "That results in a lot of operational costs that are familiar to anyone who manages a data center. There's power and cooling, of course. And then there's hardware maintenance, which goes far beyond third-party warranty repair. You need to maintain and back up a large number of physical servers at dozens of locations, and inevitably you have highly trained engineers who end up devoting their time to low-level problems like figuring out why a video card stopped working. It all becomes inefficient really fast."

Like many organizations, TAI is in the process of moving many of its business applications to the cloud, maintaining a mixture between public and private cloud environments. For instance, the company plans to use the public cloud for hosted email while reserving the private cloud for applications that are better served in house. "The public cloud option is a great advantage for us in certain instances," says Jones. "It's very difficult and expensive to manage email in-house. But the challenge comes when you need to disperse that public cloud offering to our 40 remote locations."

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>
> – Chris Jones
> IT Manager, Infrastructure and Operations, Toyota Tsusho America, Inc.

At the same time, TAI needed to deploy private cloud applications that would protect the company's most sensitive information without sacrificing application speed. "We obviously wanted to keep some of our applications private," says Jones. "But our end users require the same amount of uptime, speed, and flexibility that they would get with a public cloud offering. We, therefore, needed to put an infrastructure in place that would enable us to deploy applications quickly, and we needed to do all of that while keeping hardware and maintenance costs to a minimum."

Solution

In 2011, TAI committed to a goal of reaching 80 percent virtualization in the Georgetown data center. The company undertook a thorough review of available options using the Ringi process, a decision-making approach that requires all stakeholders, from middle managers through executives, to vet and approve any large technology purchase. Once all interested parties contributed their feedback on functionality, budget, and ease of use, TAI chose VCE Vblock, which combines Cisco Unified Computing System™ (UCS®) and Cisco Nexus® 1000V virtual access switches running on Cisco® UCS B200 M2 Blade Servers, storage solutions from EMC, and server virtualization software from VMware.

The Vblock infrastructure platform delivers fully integrated networking, computing, storage, security, and management technologies with end-to-end vendor accountability. "With competing solutions, we would need to deal with independent vendors for each component of the solution," says Jones. "So if an issue arose, we might call our storage vendor, and they might tell us that it's really an issue with switching, and the switching vendor might say just the opposite. Then we're stuck in the middle of these two vendors while our end users suffer. With Vblock, we call a single support number whenever we have a performance issue. They figure out the source of the problem, and we don't need to waste time negotiating that by ourselves."

With Vblock in place, TAI needed to make sure that the costs of the MPLS network would remain stable. The company, therefore, selected Cisco Virtual Wide Area Application Services (vWAAS) to deliver comprehensive application performance and fast access to centralized data using the Nexus 1000V's vPath virtual services datapath technology. Cisco vWAAS Central Manager, installed easily on UCS servers, gives administrators the tools that they need to manage policies and monitor the network. To further support streamlined management and operations, TAI deployed additional Cisco WAAS appliances at remote locations, including Cisco WAVE 274, Cisco WAVE 294, Cisco WAVE 694, and WAAS Express.

In addition to the MPLS network at TAI's 40 North American locations, 20 sites require enterprise-class IP communications. Jones and his team address that need with Cisco Unified Communications Manager (CUCM) to offer not just voice but also video and mobility capabilities. Prior to the Vblock implementation, TAI ran CUCM, Cisco CallManager, Cisco Unity® Connection, and Cisco Unified Contact Center Express on physical servers.

Now, however, the company can offer its collaboration solutions at a much higher level of availability, thanks in large part to the superior failover capabilities offered by Vblock. "Prior to virtualization, we had the licenses to bring more phones and mailboxes into our CUCM environment, but we didn't have the power to do it," says Jones. "With UCS, it's easy for us to add memory and processing power. As long as we have the licenses, we're good to go."

Results

Since the move to Vblock, TAI has achieved impressive cost savings across the business, with an estimated ROI (return on investment) of 240 percent in approximately a year. "We were in real trouble. We were basically facing a costly hardware refresh of every physical server we owned during the next 18 months and a very expensive data center expansion. The cost avoidance of that alone paid for the Vblock." The company reduced its utilization of physical servers from 95 percent to less than 5 percent, cutting approximately one-quarter of its server-related power consumption while also slashing costs associated with cooling. "We can now cool our data centers with half of our equipment," says Jones. "That way, we can keep the other half on standby, giving us a significant buffer in case our primary cooling units fail."

Cisco UCS management tools make it easy to manage TAI's virtualized environment through a single interface, whereas previously the IT staff depended on seven or eight different management applications to perform the same tasks. In addition, virtualization has decreased the amount of time that engineers need to devote to production support. "Before we moved to UCS, we could only spend about 10 percent of our time on implementations, with the remainder of our time spent on production support," says Jones. "Now we have 20 percent more time to spend on implementations, and we can deploy highly trained engineers on tasks that go beyond simple troubleshooting. That means we can make far better use of our staff's valuable time."

By moving away from a physical server environment, TAI has maintained consistent hardware and software maintenance expenses over the last 18 months even with a significant increase in the number of enterprise applications, end users, and other new IT capital investment initiatives. "We really took advantage of Microsoft SQL server licensing as a result of this implementation," says Jones. "Instead of licensing per instance, we can create a SQL server farm and license it based on the sockets and blades we use. Our per-instance SQL licensing costs will drop significantly over the next three years as a result."

Meanwhile, deployment times have accelerated. Jones's team once required 24 to 48 hours to build out a server, but now they can perform the same task in just 20 minutes. Applications can be deployed much more quickly than before as well, due in large part to the WAN acceleration capabilities of Cisco vWAAS. WAN acceleration has also contributed significantly to a noticeable acceleration in the performance of JDE, WTX, Red Prairie, Microsoft Dynamics, VMWare View, Microsoft Terminal Services, Prophix (financial forecast and budgeting), Caseware (internal audit application), printing, file sharing, and web traffic.

"We might have a certain application that needs a lot of processing power during deployment," says Jones. "With Vblock, we are able to support the business strategy and vision, while dynamically responding to the technology challenges associated with the complex business environment."

With the scalable power of UCS at its disposal, TAI is in a much stronger position to provide IT services to subsidiaries that might otherwise depend on outside vendors. The company can now offer email, network security, and other web-based services to subsidiaries outside of its immediate support area. "Before we built our private cloud, we would often find opportunities to work with some of these companies, but we didn't have the hardware capability or data center capacity to do it," says Jones. "Now we do. We now have the physical space and compute capacity to support a far greater number of users and endpoints. Our subsidiaries love that we can provide them with enterprise-

Product List

Data Center Solutions
VCE Vblock
- Cisco UCS B200 M2 Blade Servers
- EMC
- VMware vSphere and ESX Hypervisor

Routing and Switching
- Cisco Nexus 7000, 5000, 2000, and 1000V Series Switches
- Cisco 3800, 2900, 2800, 800 Series Integrated Services Routers
- Cisco MDS 9148 Multilayer Fabric Switch

CISCO

WAN Optimization
- Cisco Virtual Wide Area Application Services
- Cisco Wide Area Virtualization Engine
- Cisco Virtual Wide Area Application Services Central Manager

Collaboration Solutions
- Cisco Unified Communications Manager 8.5
- Cisco Unity Connection 8.5
- Cisco Unified Contact Center Express
- Cisco Unified IP Phones
- Cisco Jabber™ for Everyone
- Cisco WebEx®

Security and VPN
- Cisco Secure Access Control Server for Windows
- Cisco Adaptive Security Appliances

Wireless
- Cisco 5508 Wireless Controllers
- Cisco Network Control System (NCS)
- Cisco Aironet® 3502 Clean Air™, 1242AG, and 1142 Series Access Points

Applications
- Microsoft Exchange, Red Prairie Warehouse Management, JD Edwards, SAP, Microsoft Dynamics, VMWare Virtual Desktop, Prophix, and Caseware

class services at a competitive price. And of course we love it, too, because they're coming to us rather than paying third parties. We reduce the risk of IT governance issues and we reduce our subsidiaries' IT costs."

All of these capabilities enable Jones and his team to achieve their overarching goal of bringing as much data as possible back into the data center. "If we can manage the data centrally, then we have more control over security," says Jones. "We have more control over backup. We can reduce our physical equipment burden, and we can lower costs. It's a winning proposition all around."

Next Steps

TAI is pursuing an aggressive virtual desktop infrastructure (VDI) initiative to replace field PCs and laptops with virtual machines. "We don't want valuable data sitting on a laptop that someone can steal," says Jones. "It's primarily a security issue, but we also face the challenge that many of our users work in harsh industrial and nontraditional workplace environments. We don't want our data subject to those conditions, either. I foresee our VDI infrastructure tripling in size this year alone. If it weren't for our WAAS and Vblock optimized environment, this would also require a concurrent tripling of our bandwidth at many of our locations across North America. The cost avoidance performance of WAAS and the Vblock is one of the main reasons we'll be able to move forward with the VDI initiative."

Jones and his team are also ramping up their collaboration technology to enhance productivity across TAI. "Like just about everyone in a corporate environment, we rely too much on email," says Jones. "It's slow, ineffective, and causes a retention, governance and storage nightmare. I'd like to see us move to a model where our primary forms of communication are video and voice, IM, and corporate social media. Email should be a last resort. So we've implemented WebEx, took advantage of Cisco Jabber for Everyone offering, and are in the process of designing our TelePresence environment. We'll integrate all of this into our existing Cisco Unified Communications Manager environment to provide our users with one seamless communications platform."

TAI currently has a legacy video environment in place, and Jones plans to replace it entirely in 2012. "We've calculated that we can replace our entire video environment for less money than we're currently spending on monthly recurring telco costs," he says. "That's going to be a massive video investment, but we fully expect an aggressive ROI period. And I expect Cisco technology to be with us all the way."

For More Information

To find out more about Cisco Unified Data Center solutions, go to: www.cisco.com/go/dc.