

DRIVING INNOVATION

Global technology leader PACCAR increased speed to market for new application provisioning by almost 30 days and realized TCO benefits of approximately 50 percent



Founded in 1905 as a railway and logging equipment manufacturer, today PACCAR is a US\$17 billion global business that manufactures premier truck brands, including Kenworth, Peterbilt, and DAF. Beyond making and selling trucks, the company also provides customized financial services, aftermarket parts, and customer support for its products. To differentiate its services from those of its competitors, PACCAR has integrated a diverse array of technologies into nearly every aspect of the company's operations.

SOLUTIONS

- BACKUP/RECOVERY/ARCHIVING
- CONSOLIDATION
- VIRTUALIZATION

PACCAR

CUSTOMER PROFILE

COUNTRY: United States

INDUSTRY: Transportation

FOUNDED: 1905

NUMBER OF EMPLOYEES: 21,800

WEB ADDRESS: www.paccar.com

CHALLENGE

Simplify the IT environment to direct more resources toward innovation, increase IT responsiveness to business needs, and reduce the total cost of infrastructure ownership.

SOLUTION

Dell Global Infrastructure Consulting Services (GICS) helped PACCAR create a simplified infrastructure with VMware® virtualization software on Dell™ PowerEdge™ servers integrated with Dell/EMC storage area networks (SANs).

BENEFITS

Get IT Faster

- Virtualizing on Dell hardware accelerates application deployment time from 30 days to about 20 minutes, enabling quicker response to new service requests

Run IT Better

- Dell/EMC SANs help accelerate application recovery time from five hours to about 20 minutes, enabling faster backup and recovery
- Consolidating on Dell PowerEdge servers helps reduce the total number of servers by approximately 50 percent, freeing IT staff to focus on new initiatives

Grow IT Smarter

- Dell PowerEdge servers offer more processing power, enhancing the value of future consolidation





HOW IT WORKS

HARDWARE

- Dell™ PowerEdge™ 2950 servers with dual-core Intel® Xeon® processors
- Dell PowerEdge 6850 servers
- Dell/EMC CX700 storage area networks (SANs)

SOFTWARE

- VMware® VirtualCenter
- VMware Virtual Infrastructure 3.1 virtualization software
- VMware VMotion™

SERVICES

- Dell Global Infrastructure Consulting Services

“THE DELL TEAM HELPED US SELECT THE RIGHT PRODUCTS, TEST AND VALIDATE TECHNOLOGY, DEPLOY THE COMPONENTS, AND MAKE ADJUSTMENTS AS NEEDED. WITH ASSISTANCE FROM THE DELL TEAM, WE CREATED AN EXTREMELY EFFECTIVE ENVIRONMENT.”

Kyle Quinn, CIO and GM, PACCAR

“PACCAR is dedicated to developing innovative technologies that increase the efficiency of the business and help us retain a competitive edge,” says Nick Eshkenazi, senior director of global technology and architecture for PACCAR. “Increasingly, we are viewed as a global technology company that manufactures trucks and provides services.”

After years of rapid IT growth, the company’s infrastructure had become large, complex, and costly to manage. “We had nearly 1,000 servers in several locations throughout the world, with a growth rate between 15 and 25 percent per year,” says Rob Branson, director of the PACCAR infrastructure technology team. “A considerable

amount of time and money was being spent on maintaining the systems. It was clear that we needed to streamline our infrastructure and focus more on innovation.”

DELL GICS PUTS PACCAR ON THE ROAD TO IT SIMPLIFICATION

Three years ago, the PACCAR IT group asked Dell GICS to help develop a plan for IT simplification that includes servers, storage, software, and support. “Dell is much more than just a hardware vendor,” says Branson. “The Dell team understands our business and our goals. Even though we asked our Dell representatives to help us reduce our server footprint—which might have reduced the number of servers we bought—they were eager to help.”

The Dell team began by assisting the PACCAR IT staff with its server utilization assessment. “We found that our application servers were underutilized,” says Branson. “We saw an opportunity to consolidate several of those applications onto a single physical server. We knew that server consolidation would have a very positive impact on our cost structure by reducing equipment and operating costs and enhancing administrative productivity, allowing us to shift resources to new initiatives.”

The Dell team introduced the PACCAR IT group to server virtualization, which at the time was an emerging concept. “Even back then, the Dell team was very knowledgeable about virtualization,” says Branson. “To help us understand how virtualization



“DELL HELPED US BUILD A SIMPLIFIED YET FLEXIBLE IT FOUNDATION THAT WILL DRIVE INNOVATION THROUGHOUT THE BUSINESS FOR YEARS TO COME.”

Nick Eshkenazi, senior director of global technology and architecture, PACCAR

worked, the Dell team demonstrated VMware software at the Dell labs in Austin. We were intrigued with the concept of consolidating servers using virtualization and impressed with the VMware software itself. Shortly after the visit, we committed to server virtualization in our data centers.”

The PACCAR IT team asked Dell to help design and implement the new environment. “The Dell team helped us develop an overall strategy for server virtualization,” says Branson. “They also helped us with the setup and testing as well as the validation phases of the project. Because virtualization was really new then, the Dell team educated us, which gave us the confidence we needed to aggressively pursue this avenue.”

Ultimately, the PACCAR IT group acquired all of the components of the new solution from Dell, including Dell servers, VMware software, and Dell/EMC storage. “Working with a single vendor greatly simplified acquisition and deployment of our new infrastructure, plus on an ongoing basis, it simplifies support,” says Kyle Quinn, CIO and GM of PACCAR. “The Dell team helped us select the right products, test and validate technology, deploy the components, and make adjustments as needed. With assistance from the Dell team, we created an extremely effective environment.”

DELL POWEREDGE SERVERS ARE THE ENGINE FOR VIRTUALIZATION

The PACCAR IT team chose to run VMware Virtual Infrastructure software on Dell PowerEdge 2950 and PowerEdge 6850 servers, which provide the value, performance, and reliability the company requires. “Dell PowerEdge servers offer the right price/performance ratio for virtualization,” says Branson. “With two dual-core processors in each server, we gain the performance needed to run multiple virtualized applications while also reducing our operating costs.”

With an easy upgrade path to quad-core processors, the PowerEdge servers offered a road map to enhance the value of consolidation in the future. “Quad-core processors give us even more processing power, so we can further reduce real estate, power, and cooling costs,” says Branson.

With a full complement of redundant components, Dell PowerEdge servers can provide the reliability needed to maintain high availability for critical applications. “The reliability of these products is essential, especially given the number of applications we run on each physical server,” says Branson. “Redundant hot-plug power supplies and cooling—all of these components help to ensure the server will keep running. Our experience with Dell servers has been extremely positive. After running several hundred virtual machines on the Dell servers, we have not had a single hardware-related outage in two years.”

PACCAR REDUCES TOTAL NUMBER OF SERVERS BY APPROXIMATELY 50 PERCENT

By creating 15 to 20 virtual machines on each new Dell server, the PACCAR IT group reduced the total number of servers by approximately 50 percent. “Virtualization has helped us dramatically simplify our IT infrastructure and enhance IT flexibility,” says Branson. “We now have fewer servers to manage and maintain, and VMware tools have further improved the productivity of our staff. We now can get more work done with less cost, and we have shifted resources to focus on business goals.”

After virtualizing the primary data center, the IT team extended virtualization to several other key sites around the world. “We saw the benefits of virtualization immediately,” says Branson. “It was easy to justify virtualization throughout our global IT environment.”

VIRTUALIZATION CUTS ALMOST 30 DAYS FROM APPLICATION DEPLOYMENT TIMES

By provisioning test and development servers as virtual machines, the PACCAR IT team has improved IT responsiveness and reduced server sprawl. “Previously, we created a development environment and a certification environment for each new project,” says Branson. “Now we can cost-effectively create a virtual test and development environment in just a few minutes.”

In the same way, the PACCAR IT group has also accelerated the provisioning of production servers. "It used to take us up to 30 days to respond to requests for new services," says Branson. "We had to order a server, set it up, and provision it. Today, we use VMware VirtualCenter software for provisioning. It takes just a few mouse clicks to create a new virtual server. Consequently, we can be much more responsive to requests for new applications or additional capacity. That can help the business grow and adapt to changing market conditions."

DELL/EMC SANs HELP ACCELERATE APPLICATION RECOVERY TIME FROM FIVE HOURS TO 20 MINUTES

To help simplify storage, PACCAR worked with Dell GICS to deploy multiple Dell/EMC CX700 SANs at key global sites. "Keeping data in centralized, shared systems greatly simplifies storage management, especially compared with server-attached storage," says Branson. "With fewer storage systems, tasks such as backup and recovery are faster and easier. We also plan to replicate our data center for disaster recovery, and we expect the SANs will make that process simpler."

In combination with the Dell servers and VMware software, the Dell/EMC SANs are also helping to improve the availability of virtualized applications. "The SAN helps us enhance application availability by maintaining virtual machine data on a highly available storage system instead of on server-attached storage," says Branson. "If a physical server fails, we can easily use VMware VMotion software to move the virtual machine to a new server that accesses the same application data on the shared SAN. It used to take up to five hours to

restore an application after a failure. With VMware tools, it would take about 20 minutes to move the virtual machine and get the application back up and running. With clusters using both physical and virtual servers, we reduced the downtime associated with a failure down to minutes."

PACCAR ENHANCES OWNERSHIP BENEFITS WITH DELL

With its new, consolidated infrastructure, the PACCAR IT team has significantly reduced its total cost of server ownership. "When you include the costs of hardware acquisition, software, power, cooling, and floor space, adding a new server can be costly," says Branson. "Taking into account all those elements, the cost of a virtual server is less than half."

The savings can add up quickly. "The new virtualized environment based on Dell servers has paid for itself within the first two years," says Branson.

Ultimately, the IT simplification project has better positioned PACCAR's IT group to apply innovative technologies to the needs of the business. "This is a competitive business, and IT is an important element of the company's performance," says Eshkenazi. "Dell helped us build a simplified yet flexible IT foundation that will drive innovation throughout the business for years to come."

For more information on this case study or to read additional case studies, go to DELL.COM/CaseStudies.

PACCAR



SIMPLIFY YOUR TOTAL SOLUTION AT DELL.COM/Simplify

January 2009. © 2009 Dell, Inc. Dell is a trademark of Dell Inc. Intel, the Intel logo, and Intel Xeon are registered trademarks of the Intel Corporation or its subsidiaries in the United States and other countries. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. This case study is for informational purposes only. DELL MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS CASE STUDY.

