Intel IT Center

CLOUD COMPUTING SOLUTIONS
RISC MIGRATION

RISC-to-Cloud Migration Yields 'Quantum Improvements' for Veyance Technologies

Cloud-based modernization shrinks costs and enables business transformation for the global manufacturer of Goodyear* Engineered Products

John F. Hill
CIO, Veyance Technologies

From RISC to Cloud on a Deadline

Cloud computing can dramatically improve speed, agility, and IT costs, and if your current IT environment is based primarily on legacy equipment and aging software, the benefits can be especially pronounced. Veyance Technologies is enjoying those benefits—and laying a foundation for business transformation and ongoing innovation—thanks to a comprehensive RISC-to-cloud migration that the company accomplished in less than a year.

Veyance is a USD 2.1 billion global enterprise and the exclusive manufacturer of Goodyear Engineered Products worldwide. In fall 2011, when John F. Hill joined the company as CIO, the IT environment included a 3,000-seat SAP* deployment, multiple operating systems, and more than 120 disparate applications, many running on RISC platforms at a traditional hosting center.

Working with enterprise cloud services provider Virtustream, Veyance transitioned to a robust infrastructure-as-a-service (IaaS) virtual private cloud with modern applications and services. The IaaS cloud—multi-tenanted but with such robust security and partitioning that Virtustream considers it to be virtually private—is powered by server, storage, and network technologies from Intel. It runs at Virtustream's primary data center in Virginia, with comprehensive disaster recovery services at a second Virtustream data center in San Francisco.

Veyance also replatformed, upgraded, standardized, or replaced many operating systems and applications, moved most Oracle* databases to Microsoft SQL Server*, and added a layer of agile software-as-a-service (SaaS) solutions. Veyance CIO John F. Hill says his cloud strategy has enabled Veyance to reduce infrastructure costs by approximately 30 percent while increasing capacity, enhancing agility and performance, and improving global efficiencies.

A Vision of Cloud-Enabled Transformation

Hill joined Veyance with a vision to use IT to help drive business transformation. Formerly the Engineered Products subsidiary of Goodyear Tire & Rubber Company, Veyance became part of The Carlyle Group in 2007 and is headquartered in Fairlawn, Ohio. The company name combines "convey" and "performance."

Veyance has a catalog of more than 100,000 items, which it manufactures across the United States and in Australia, Brazil, Canada, Chile, China, the Czech Republic, Mexico, Slovenia, South Africa, and Venezuela. But with more than

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At a Glance

Project

- Migrate a legacy RISC environment—including the SAP system and more than 100 applications—to a virtual private cloud.

Accomplishments

- Replatformed and moved the environment to a virtual private cloud, establishing a foundation for business agility and innovation.
- Reduced infrastructure costs by 30 percent and redirected funds to new platforms and talent.
- Improved performance, reliability, and availability and created robust disaster recovery and data replication capabilities.

Lessons Learned

- Know your environment. Make a thorough inventory to identify unknowns and dependencies.
- Choose an enterprise-focused service provider that offers robust support for the full range of enterprise cloud computing.
- Be sure the provider has the expertise to manage a complex migration and provide collocation for any workloads that can't transition to the cloud.
- Standardize on scalable, high-performance technologies for server, storage, and network infrastructure.

40 facilities worldwide, Veyance wasn't operating as efficiently as possible or gaining the economies of scale that its size could deliver.

Veyance set out to use IT innovation to become a faster, higher-performing company that operated as a true global entity rather than a siloed, multi-local organization. The upcoming expiration of Veyance's hosting contract gave them an opportunity to transition the company's data center and compute environment to a private cloud and use cloud services to drive further value.

Hill had experience as both an enterprise CIO and CTO of a global IT services firm. He was well aware of cloud computing's potential benefits as well as the possible pitfalls of an enterprise-wide RISC-to-cloud migration. He developed a cloud road map that included an IaaS cloud, issued a request for proposal (RFP), selected Virtustream from a field that included the previous hosting company, and undertook the work needed to fully transition from the legacy environment to an IaaS cloud with a new service provider. The clock was ticking, and by the time Veyance and Virtustream signed the contract, the deadline was just seven months away.

It was a bold move, according to Mike Olson, vice president of operations and service delivery at Virtustream, who led the activities to migrate Veyance onto the Virtustream xStream* platform. "Not many CIOs are going to commit to unplugging everything in seven months and being up and running in a new cloud with a new provider, but John knew what he wanted and what was possible," says Olson. "He's probably in the top one percent of CIOs we talk with in his clarity of vision, strong desire to modernize, and commitment to take an entire enterprise into the cloud."

Selecting an Enterprise-Focused Cloud Services Provider

In Virtustream, Veyance chose an enterprise-focused cloud services provider and Intel® Capital portfolio company with extensive experience running large-scale, mission-critical computing environments in the cloud. Virtustream's IaaS, powered by xStream, the company's enterprise-class cloud management software, provides full cloud capabilities along with the flexibility that helps enterprises adopt the cloud at their own pace.

"I was looking for the best providers out there who had a highly robust IaaS platform and also had the ability to run SAP in the cloud," Hill says. "A lot of service providers focus on moving individual workloads to the cloud. Virtustream is a true enterprise cloud services provider that has enterprise-class infrastructure, management, security, and process management. They're able to collocate applications that aren't able to move into the cloud environment, and they are experienced at managing complex migrations."

To assess security and management capabilities, Hill's team created typical what-if scenarios and asked vendors to show how they would handle these use cases with their portal and cloud offering. "It was a great way to see how each vendor's technology really works," says Hill. "It lets you uncover any weaknesses and helps you make sure the vendor is offering a true cloud and not just hosted virtualization. Virtustream was able to go through all our use cases completely, whereas the others—and we're talking about some serious vendors—were not able to do that."

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>
> Henry Tran,
> Vice President of Platform Operations, Virtustream

Complex Cloud Migration

The Veyance migration would be one of the most complex ones Olson has worked on, not only because of the schedule but also due to the complexity and diversity of the legacy environment and the large number of unknowns. Teamwork was crucial, and Veyance and Virtustream collaborated closely to map the migration, adjust the plan as needed, implement it, and move into active operations. At Hill's urging, the outgoing hosting company committed to the transition and worked hard with Virtustream and Veyance to create success. The core team consisted of about a dozen people. At key points in the project, nearly 100 people were contributing and being tracked.

To prepare for the migration, the companies conducted an in-depth discovery using Virtustream Advisor*, a data-gathering and analysis framework. Virtustream led deep-dive workshops where the team examined application interdependencies, regulatory and security requirements, data archiving practices, network connectivity, change management processes, and other factors that would affect the success of the migration process, the resulting cloud, or its management. Veyance implemented Information Technology Infrastructure Library (ITIL) practices using ServiceNow*, and the companies defined joint processes for incident management, release management, and other processes.

The resulting road map slotted each application and server into one of three major migration methods, depending on factors such as the existing architecture, need for replatforming, amount of data, interdependencies, and criticality:

- Physical-to-virtual migration
- Virtual-to-virtual migration
- Heterogeneous migration (database export and replatforming the operating system, database, or both)

In a few cases, such as the electronic data interchange (EDI) solution, the technical difficulties or high software licensing costs made migration impractical. Instead, the team simply backed up the servers and physically relocated them to collocation racks at the Virtustream data center.

The migration itself proceeded in phases with iterative test runs and tuning to ensure a smooth go-live. The team completed the project on time, on budget, and with no unplanned downtime. Those feats would have been impossible without the flexibility of cloud computing and the experience and commitment all parties brought to the table, according to Hill. "What we got done in under a year could have taken up to three years in a traditional environment," he comments. "The speed of transformation was truly impressive."

Intel Technologies for High-Performance IaaS

Virtustream makes extensive use of data center technologies from Intel to give enterprise customers like Veyance the price/performance, availability, and scale for mission-critical cloud computing. The Veyance cloud runs on Cisco Unified Computing System* (UCS*) servers based on the Intel® Xeon® processor E7-2800 product family. Veyance also standardizes on Intel technologies for its remaining on-premises and hybrid cloud platforms.

"Standardizing on Intel gives us increased power and capability, much better price/performance than any other platform, the flexibility to run Linux* and Windows* applications, plus the flexibility that has come from the massive industry investment Intel has made in the advancement of virtualization on the x86 platform," Hill says. "We're able to create very large virtual machines to run very large workloads, or very small virtual machines to run small workloads, and to have the flexibility to bring them up and down as needed. It's the Intel technology that supports a lot of that capability. We're also not in any way capacity-constrained."

The Veyance cloud at Virtustream uses Cisco routing and switching, including Intel® 10 Gigabit Ethernet Converged Network Adapters that support unified data and storage networking. "These reliable adapters reduce cost, power, and server slots by eliminating the need for dedicated storage and network adapters," says Henry Tran, vice president of platform operations at Virtustream. "In addition, the collaboration between Intel and Cisco helps ensure high-performance, high-availability, and cost-effective networking solutions for not only the routers, switches, and storage but also the Cisco UCS servers."

The Veyance infrastructure uses NetApp FAS-6200* series storage systems, also powered by the Intel Xeon processor E5-2600 product family and running the NetApp Clustered Data OnTap* operating system to provide nondisruptive operations, proven efficiency, and seamless scalability.

"NetApp FAS hardware platforms take advantage of Intel features to provide high storage performance at a very large scale," Tran observes. "We use Intel processors for networking (where they offer cost-effective, high-performance connectivity between storage elements) and storage processors (where they offer high-performance data management and storage optimization). NetApp and Intel also deliver scale-out storage that effectively manages today's growth and pace of business and a high-availability infrastructure that helps Virtustream meet and exceed demanding service-level agreement (SLA) parameters required by Veyance and other enterprise customers."

Key Technologies

- Virtustream IaaS, powered by xStream, Virtustream's enterprise-class cloud management software
- Cisco UCS C-series rack servers with the Intel Xeon processor E7-2800 product family and Intel Ethernet 10 Gb Converged Network Adapters
- NetApp FAS-6200 series storage systems with Cluster Mode (C-Mode), based on the Intel Xeon processor E5-2600 product family
- VMware ESX* virtualization
- ServiceNow IT service management

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These technologies add value for Veyance's workloads. "The Intel 10 Gigabit Ethernet networking really allows for increased speed within the cluster for the virtual machines and the compute, and certainly for the communications externals," Hill comments. "We take advantage of the Intel Xeon processors in the NetApp storage systems to improve provisioning and enable disaster recovery and data replication."

Virtustream also offers advanced security capabilities such as data encryption, accelerated by Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI), and increased trust via support for Intel® Trusted Execution Technology (Intel® TXT). "Intel TXT in particular gives Virtustream and our enterprise customers important capabilities in meeting security and compliance requirements," says Tran.

Cost Reductions, Business Agility, and More

The return on investment (ROI) for the Veyance cloud project has been massive. "We have achieved quantum improvements in availability and reliability, and the ROI has been really substantial in terms of reducing the cost of technology," says Hill. "We have saved probably 30 percent of what we had been spending with our traditional hosting company, and we gained substantially more capacity."

Savings have resulted from more affordable equipment and licensing, as well as lower labor costs thanks to the cloud's automated provisioning. In addition, the IaaS environment provides the predictability of consumption-based pricing as well as the business agility of rapid deployment.

The project also reduces Veyance's risk profile. "Instead of a return to production in three days that we had with our traditional outsourcing relationship, we have real disaster recovery, with a recovery point objective of under an hour," Hill says. "We also have active data replication of the environment and backups to a secondary data center, all of which are fundamentally enabled by the cloud technology."

Above all, the project is meeting the objective of accelerating business transformation. "We're enabling the business to streamline and coordinate global operations, capture efficiencies and economies of scale, and respond to business needs much more rapidly," Hill says. Using the IaaS cloud, Veyance has added a layer of agile, global applications and cloud services that improve productivity and collaboration and eliminate previous information silos.

IT as a Knowledge Industry

Veyance continues to extend the benefits of cloud computing. With the IaaS cloud well established, the company is using the hybrid cloud model to help unify and standardize operations around the world. Rolling out what Hill calls a "plant in a box," these hybrid clouds combine centralized management from the enterprise IaaS cloud at Virtustream with on-premises local clouds at operations around the world. The benefits include improvements in manageability, consistency, efficiency, productivity, and costs at local manufacturing facilities.

Software modernization continues to move forward with an upgrade to SAP ERP* 6.0 and a wide range of global applications and services including Microsoft Office 365*, Microsoft Outlook*, Microsoft Exchange*, and Microsoft Lync* for communications and collaboration; Salesforce Sales Cloud* for customer relationship management; Salesforce Service Cloud* for customer service; and Workday* human resource management.

Hill is also working to modernize the handful of applications and workloads that would have been too expensive or unsuitable for cloud operations. Migration of the EDI platform is an example of this.

With the cloud savings, Veyance IT is freeing funds to invest in new platforms and talent that will drive continued innovation into the business. "IT is a knowledge industry, and expertise is what creates value," Hill concludes. "Like any tool, the value comes from the intelligence and expertise of people who use it. With our cloud strategy, we're giving everybody in the company the tools that can enable them to be more productive and competitive and to collaborate more effectively as an organization. We're investing our cloud savings in talent and people who can drive the creation of business solutions and further enable the business. Our overall spending is somewhat similar, but we've seen a radical reapportionment of where the investment is."

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