Who: Dell OEM Group and Emerson Process Management

What: Emerson’s DeltaV* virtualization solution harnesses the Dell PowerEdge* VRTX shared infrastructure platform with Intel® Xeon® processor server nodes and Intel® Virtualization Technology (Intel® VT) to bring virtualization to industrial environments

Why: The virtualized system enables consolidation and delivers proven cost savings and reduced latency, yet is quick and easy to implement and manage.

More: Read the complete Dell PowerEdge VRTX case study here.

CHALLENGE: Delivering Virtualization to the Industrial Environment

Datacenters and enterprise customers have long benefited from virtualization, but industrial environments have been slow to adopt the technology, citing concerns about latency and system reliability. On the factory floor, unplanned downtime can cost millions, and manufacturers are concerned with keeping production simple and uninterrupted.

In an effort to help industrial solution providers like Emerson bring the cost savings and high availability of virtualized, consolidated systems to their customers, Dell developed a solution that would overcome these concerns:

Latency. Latency impacts industrial process automation by slowing operations with compute or network delays.

Downtime. Whether a planned upgrade or an unplanned interruption, downtime represents a significant cost in industrial settings. As a result, manufacturers tend to put off software and system updates until they need to replace the hardware.

Complexity and cost. Complex systems require additional time to deploy and maintain, increasing operational expenditures for ongoing management.

SOLUTION: The Emerson DeltaV* Digital Automation System Brings Virtualization Designed for Industry

Combining the Dell PowerEdge VRTX using Intel Xeon processors and their custom virtualization solutions, Emerson delivered the DeltaV Digital Automation System specifically for virtualization of industrial process control. The solution integrates servers, storage, networking, and management, enabling manufacturing facilities to quickly deploy a virtualized infrastructure. The consolidated system can run multiple operating systems simultaneously on a single platform, so new and legacy software can run together on a system that shares network, storage, and other resources to further reduce costs. And low-latency Intel Virtualization Technology (Intel VT) helps speed the system, overcoming processing overhead and latency issues inherent in virtualization hypervisors.

Fast processing. Intel Xeon processors on up to four compute nodes coupled with Intel VT means the consolidated system can easily deliver the dense, high-performance processing required without latency issues. This is aided by Intel® APIC virtualization technology, which offloads interrupt management from the hypervisor.

Reliable uptime. The Dell PowerEdge VRTX reduces downtime with high-availability features such as RAID and redundant components. And virtualization technology allows industrial customers to easily update operating systems and software without interruption, and without waiting to replace the hardware.

Ease of use and lower costs. A consolidated system with shared storage and other resources reduces complexity by requiring fewer hardware components and cables. It also reduces costs associated with power and cooling, and is easy to manage and maintain.
The Dell PowerEdge* VRTX process automation solution delivers the edge that industrial solution providers need to compete in today's market.

RESULT:
Faster Time to Market for Reliable Industrial Systems, Lowering Cost, Complexity

Through an integrated virtualization solution tailored to process automation, Emerson, Dell, and Intel are accelerating the time to market for virtualized, consolidated systems in industrial settings. Not only does the solution lower costs, it allows manufacturers to continue running important legacy software, even while keeping their hardware up to current standards and supporting newer software investments. The result is a process automation solution that delivers greater uptime, more speed, and the edge that industrial environments need to compete in today's market.

System Consolidation Solutions from Intel and Dell

Consolidating systems is not a new concept, but it is relatively new in the industrial setting, due in part to perceived risks associated with virtualization. Dell OEM developed the PowerEdge VRTX solution with their industrial customers in mind. This easy-to-use integrated system addresses concerns about speed with Intel Xeon processors. Customer concerns about latency are addressed by Intel Virtualization Technology with Intel APIC virtualization technology. The virtualized PowerEdge VRTX allows customers to run multiple operating systems on a single system, which means software upgrades can happen any time, with no downtime; making it a system that industrial customers can integrate at any time—even if they need to run legacy software. Dell OEM is a Premier member of the Intel® Internet of Things Solutions Alliance, which provides collaboration and access to the latest Intel® technologies.

Learn More

Contact your Intel sales representative for more information, and learn more about system consolidation using multicore Intel® processors and Intel VT at intel.com/industrialconsolidation

Read the complete Dell PowerEdge VRTX case study here.