



## ALSTOM Powers IT Infrastructure with VMware Software

### VMware® ESX Server, GSX Server and VirtualCenter Generate ROI in Less Than Six Months and; Reduce Operating Costs by up to 40 Percent

#### RESULTS

- 16:1 server consolidation on ESX Server
- 6:1 server consolidation on GSX Server
- Reduced annual operating costs by up to 40 percent
- ROI achieved in less than 6 months
- Cost avoidance from reuse of existing hardware
- Streamlined system management & remote diagnostics
- Application availability guaranteed at over 99.5%
- Fastest ever technology deployment

#### ALSTOM on the Lookout for IT Innovation

ALSTOM designs, builds and services technologically advanced products and systems for the world's energy and transport infrastructure. It builds power plants and has supplied around 20 percent of the world's total installed capacity in power generation. Employing 75,000 people in over 70 countries, ALSTOM also engineers and builds some of the most technologically advanced trains and ships globally including the TGV, the world's fastest train, Singapore's automatic metro and Queen Mary 2, the largest cruise ship in the world.

ALSTOM's Northern European IT Center has high standards for technology innovation and service levels and is responsible for ensuring the highest possible level of IT service in the region. The ALSTOM IT Center operates as a business unit, offering a catalogue of services ranging from the management of 45,000 desktops to supporting multiple intranets and delivering business applications. In order to meet high service level targets and continually improve efficiencies, Director of Technology for Northern Europe, Rob Jones initiated a search for an innovative way to improve the set up and management of each data centre in the region that would generate cost savings and build in flexibility.

The aims and objectives for the new approach included:

- The requirement to get more out of the existing IT infrastructure and support more users and applications
- A need to reduce the amount of time spent on routine server management tasks
- High internal targets for service level agreements demanded a new approach in order to be achieved
- An overall view of regional infrastructure was required
- Testing procedures needed to be accelerated for competitive business advantage

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*Rob Jones*  
Director of Technology, Northern Europe  
ALSTOM



#### VMWARE VIRTUAL INFRASTRUCTURE AT WORK

- 10 HP DL580 servers
- 21 HP DL380 servers
- 2 HP DL760 servers
- 161 virtual machines on VMware ESX Server
- 116 virtual machines on VMware GSX Server
- VirtualCenter and VMotion
- Host operating system: Microsoft® Windows® 2000
- Guest operating systems: Windows 2000, Windows 2003 & Red Hat Enterprise Linux guest OSes
- Applications include: Active Directory, Lotus Notes, Web applications, NetIQ AppManager, Citrix MetaFrame 3.0, Altiris, various licence servers, LiveLink, QMap
- VMware Workstation for specialist applications

### VMware ESX Server and GSX Server Create Adaptive Infrastructure

In 2002 ALSTOM began identifying how to achieve its ambitious targets for IT improvements by experimenting with the concept of virtualization. Following impressive results with the benefits of using VMware virtual infrastructure immediately obvious, Jones and his team began what has become an ever-evolving, international project to establish VMware virtual infrastructure as the standard platform for ALSTOM's data centres.

"Our ITIL based model of offering IT services to internal customers in a service catalogue means that we have a very accurate view of the cost to our business. Using VMware virtual infrastructure, we can offer the same levels of service and more flexibility for up to 40 percent lower server and operating system costs," explains Jones.

By early 2005, ALSTOM had installed VMware software on more than 30 physical servers running 277 virtual machines with ESX™ Server at its main offices and GSX™ Server at branch offices. Ninety percent of these host production systems with the remaining ten 10 percent used for testing. A recent project to migrate company intranet sites to Linux has resulted in VMware supporting a population of 40,000 users with the capacity to scale as demand rises. Virtual machines are centrally managed by systems administrators using VMware VirtualCenter and VMotion™.

Taking the virtual infrastructure approach has resulted in the following benefits:

- **Cost savings and quick ROI.** Using VMware virtual infrastructure has resulted in a reduction in annual operating costs of up to 40 percent through fewer servers, SAN and network connections, data center facilities and less administration. In addition, the software investment paid for itself within six months.
- **Existing hardware recycled.** Following the decision to base its IT infrastructure on VMware technology, ALSTOM avoided purchasing a single low- end server for the first 18 months. Instead, multiple applications that previously each required dedicated servers have been consolidated onto high-end machines, freeing up existing servers for reuse and avoiding additional costs.
- **High availability, optimum workload management & reliability.** ALSTOM retains the workloads of servers at optimum levels by allocating computing power to services regardless of where a machine is physically located. As a result, Jones can react to changing business demands quickly, without having to initiate complex buying processes. High application availability of over 99.5 percent and maximum response time of 3 hours can now be guaranteed.
- **Increased staff efficiencies.** Thanks to the management capabilities of VirtualCenter, easy provisioning and a reduction in the total number of servers, IT staff have reduced the time spent on mundane routine tasks and allocated it to services that add more value to the business. More users can be supported and services offered without additional IT staff.



## Establishing a Blueprint for the Future

ALSTOM has a strategy of establishing regional IT best practices in order to share knowledge and ease the transition to new systems throughout the organization worldwide. The Northern Europe IT team has become expert in VMware virtual infrastructure and is creating a blueprint for the rest of organization to follow.

"Typically when a new IT system is introduced it takes a time to be accepted and for staff to be fully comfortable. However, VMware has been adopted with unprecedented speed and enthusiasm by the entire team and with minimal formal training. It is now our standard platform for all server builds," says Jones.

Looking to the future, Jones plans to use a single instance of VirtualCenter to manage the entire Northern European IT infrastructure. This will enable him to have a complete view of ALSTOM's resources and will be invaluable for capacity planning and responsiveness.

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