ALSTOM

Alstom protects Beijing Metro Maintenance System with SIOS Protection Suite

Alstom Transport implemented SIOS software to safeguard maintenance system services for Beijing Metro

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Alstom Transport, a global leader in equipment and services for power generation and rail transport, has selected SIOS Technology Corp. to protect data and mission-critical applications used in the maintenance system services for Beijing Metro Line 2. Line 2 is a 16 kilometer circle line surrounding central Beijing and connecting the Olympic Centre to the Airport Express Line, which runs from the town centre to Beijing's Capital Airport.

SIOS Protection Suite controls and manages high availability and potential faults to ensure the continuous availability of maintenance services for these crucial metro lines in China's capital.

The Challenge

Alstom integrates the Urbalis™ solution, the most advanced signalling system in the world. It is the brain and the nervous system of a mass transit network and its function is to control train movement, ensure train safety and optimize traffic operations, while providing system maintenance. In addition, its Maintenance Supervision System (MSS) centralizes detection of failures in trackside equipment, providing remote diagnostics to forecast train stopping with swift and efficient replacement of faulty equipment.

To manage these sophisticated maintenance systems, the Alstom Transport Urbalis R&D team needed a Linux environment virtual solution to give its client continuity and high availability, while optimizing the cost of ownership throughout the lifetime of the urban transport system.

Historically, Alstom Urbalis R&D based its maintenance system on an open source architecture. However, this solution did not meet the stability or high availability requirements for optimal performance.

The Alstom IT team even considered developing a data and application protection solution internally.

Selection criteria included regular upgrades to ensure an efficient centralized long-term maintenance system solution and the feasibility of implementing identical solutions for other worldwide metro lines. Hence, it was also important to be able to transfer configuration knowhow.

The Solution

After conducting extensive and thorough research for the best solution to meet their requirements, the Alstom IT team selected SIOS Protection Suite for Linux. A software

SIOS

application that ensures the continuous availability of applications and data by creating a fault resilient environment for virtual machines, SIOS software monitors applications to ensure that any fault is automatically detected and rectified while maintaining uninterrupted services.

Maurice Guizard, R&D Manager for Alstom Urbalis platform centralized maintenance said; "In 2009, a centralized maintenance system shouldn't add maintenance issues to operations. We implemented SIOS Protection Suite for its simplicity of use and its efficiency. High availability is key for the maintenance of modern transport systems because there isn't much staff on the ground to understand and take action. With SIOS, our software applications are centralized and managed 24/7 to ensure that an alert will be sent to the most skilled individual to resolve an issue."

The solution was distributed by iO Partner, an authorised SIOS Solution Centre in France. The system was configured by Adelux, and deployed by the Alstom TIS (Transport Information Solution) team. Once the configuration was complete, the installation of SIOS software required only two hours for each server. iO Partner and Adelux engineers provided the appropriate support for a successful implementation.

François Samarcq, Managing Director of iO Partner said; "The fact that Alstom chose to integrate SIOS software within a highly complex urban transport infrastructure project demonstrates Alstom's confidence in for its reliable solutions and the quality of its deployment and technical support."

Benefits

SIOS Protection Suite enables continuous operations of the Alstom maintenance system during planned downtime for maintenance or upgrades, as well as in the event of a system failure or if an application ceases to respond. Alstom determined that it could reach a 99.995% uptime rate for their business critical applications.

If the first server goes down due to an electrical outage or to unavailability of a network connection, data will be protected while applications failover to the second server.

This failover capability provides a service window for maintenance to be conducted on the first server while the second server continues to operate, which means Alstom can plan for a maximum downtime of only two minutes (the time it takes to complete a failover).

The SIOS solution also enables fault diagnostics to be sent remotely to operators. Therefore, it is no longer necessary for the Alstom team to ask operators to proactively check each deployed server individually.

Maurice Guizard added, "Once SIOS software is fully tested for the two Beijing metro lines, it will be very easy to replicate the implementation of an identical solution to future projects with similar requirements. Our objective is to use SIOS software to ensure continuity of the maintenance system for metro lines we have won the tender for, including Milan line 1, São Paulo lines 1, 2, 3 and the Marmaray line, linking European and Asian sides of Istanbul across the Bosporus. Alstom Transport is capable of managing an entire transport system, from rolling stock to signalling and infrastructure, as well as offering turnkey solutions.

About SIOS

SIOS delivers innovative software solutions that provide application availability and disaster protection for Windows and Linux environments.

Clusters Your Way.™

An essential ingredient in any cluster solution, SIOS SAN and #SANLess clustering software provides the flexibility to build clusters your way to protect your choice of Windows or Linux environment – and any configuration (or combination) of physical, virtual and cloud (public, private, and hybrid) storage – without sacrificing performance or availability. SIOS provides unique #SANLess clustering software that eliminates both the cost and the single-point-of-failure risk of traditional SAN-based cluster solutions.

Founded in 1999, SIOS Technology Corp., is headquartered in San Mateo, California, and has offices throughout the United States, United Kingdom, and Japan.

About Alstom Transport

With sustainable transport in mind, Alstom Transport develops and offers the most complete range of systems, equipment and service to the rail market.

Alstom Transport is capable of managing an entire transport system, from rolling stock to signalling and infrastructure, as well as offering turnkey solutions. In 2007-2008, Alstom Transport's turnover was €5.5 billion and its orders increased by 39% over the previous financial year.

Alstom Transport is present in over 60 countries and has 26,000 employees. The company recruited 4,000 people worldwide in 2007, including 1,500 engineers and executives.

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