

Siemens

Hyperconvergence signals new era for Siemens Rail Automation

Siemens Rail Automation is headquartered in Berlin and provides signalling and control systems for mass transit and mainline rail services. The company's main UK base is in Chippenham, which provides a regional manufacturing and R&D centre supporting both global development activities and local specific initiatives.



Summary

Name
Siemens

Industry
Manufacturing

Location
United Kingdom

Number of employees
2000+

Innovation drives innovation

Automation and IT are seen as key drivers for increasing rail capacity and improving energy consumption for the modern-day railway. Development of new products that use emerging technology in an agile and flexible way is vital to securing business in a sector where billions of pounds are being invested in major rail projects.

With its shorter-term focus being to maintain existing systems installed at the UK's many rail infrastructure organisations, Siemens Rail Automation must ensure continuity on its wide range of equipment and the infrastructure it supports, while driving the innovation the rail industry demands.

Forming the hub of its R&D and engineering network in the UK, the IT infrastructure in Chippenham is operated independently of the corporate network. It serves multiple remote sites around the country and hosts the majority of the legacy applications and operating systems that remain vital to supporting the signalling and safety critical work the company undertakes.

When its server estate came up for renewal, Siemens Rail Automation saw the opportunity to replace it with hyperconverged infrastructure. The next step in the evolution of business computing, hyperconvergence combines compute, storage and network in a single appliance to deliver the speed, simplicity and agility businesses need.

"Speed of provisioning is critical for us because we only have a small window of opportunity to update our systems in-between peak periods of engineering work," says Adam Stead, Infrastructure Support Lead, Siemens Rail Automation. *"We liked the idea of hyperconverged because it's all-encompassing in one box. There's no need to operate multi-vendor storage, networks and servers, and it's supported end-to-end."*

Keeping IT on track

Prior to deploying hyperconverged, Siemens Rail Automation's R&D network infrastructure was managed by a 3rd-party service provider. The legacy apps and operating systems could not be migrated to the corporate network due to compliance requirements so, with the server estate and core switch due to be refreshed and the contract also up for renewal, the decision was taken to bring ownership back in-house.

"We were building a new server facility in Chippenham and looking to consolidate our IT estate across multiple remote sites, so we worked closely with our supplier to explore the options available," Adam continues. *"We wanted to find the easiest solution for spinning up new hardware. We didn't want to be building lots and lots of hypervisors and storage arrays and we were working to a tight timeframe to complete the project and exit our managed service contract."*

Following a thorough evaluation of several hyperconverged solutions, Adam and his team chose Cisco HyperFlex – a next-generation solution combining compute, network, storage, virtualisation and data protection into a single platform. One that's deployed in under an hour and managed using a widely adopted, common toolset.

Performance gains without limits

With its subscription-based software model and support for independent scaling of compute, storage performance and capacity, Cisco HyperFlex provides Siemens Rail Automation with a pay as you grow, scale as you go infrastructure able to support the dynamic needs of its R&D team in the UK and globally.

"One of the advantages of HyperFlex is that we can support a lot of people and applications, plus about 77Tb of data on our 8-node, all-flash cluster," confirms Adam. *"As a result, we're expecting to offer strong performance enhancements for our users. A further advantage is that we have the capacity to grow even further if we ever start hitting the limits of our current cluster."*

According to Adam, one of the biggest benefits of HyperFlex is the speed and agility it brings. "We can use HyperFlex to update our infrastructure, our hosts, and all the security fixes. Crucially, we can do all of this faster and more easily without having an impact on production."

Adam Stead
Infrastructure Support Lead, Siemens Rail Automation

The specs

Siemens Rail Automation deployed:

- 8x HyperFlex all-flash C220 server nodes
- 3x HyperFlex hybrid C220 server nodes for VDI/Citrix
- Cisco Unified Computing System (UCS) Series Fabric Interconnects (FIs)
- Cisco Nexus 9318 to refresh its core switching infrastructure

The company recently achieved ISO 27001 accreditation so aspects such as high availability with back-up and recovery, as well as security and compliance influenced the design and specification.

"Network performance is going to improve because we're running storage with all flash," says Adam. "We have also achieved a good level of high availability and back up with a robust UPS and generators."

