

Global Manufacturing Company

Unlocking the Power of Automation:
Deploying a High-Performance Network
Solution using Cisco ACI

A WhiteSpider Case Study





Cisco ACI

Cisco Application Centric Infrastructure (ACI) is Cisco's software-defined networking offering. An ACI fabric is based on Spine/Leaf topology built using the powerful Nexus 9000 switching family. In this network design, Leaf switches can only be connected to Spine switches and vice versa. The fabric is designed to be highly scalable – a single ACI fabric can contain 300 Leaf switches – and handle large volumes of east-west traffic.



A Spine/Leaf Network Architecture

The entire ACI fabric is controlled from an APIC (Application Policy Infrastructure Controller). This provides centralised management and automation; fabric discovery, applying policies, and scripting are all centrally configured using the APIC.

WhiteSpiders Approach ea4

This project was completed according to WhiteSpider's ea4 framework, the model used on all WhiteSpider's projects. The ea4 framework comprises four stages: Audit, Architecture, Alignment, Assessment.

Situation

A UK-based manufacturing firm, employing over 3,500 people in 14 countries, is currently undergoing a period of rapid expansion. During the next few years, its workforce is expected to double and it is planning to open another large technology campus in the UK.

To cope with the increased demand, the company have constructed a new Data Centre. Located at their headquarters in UK, this new Data Centre was built to host high-performance workloads, including applications used by research and development teams.

To support the new Data Centre, the firm needed to construct a state-of-the-art network. As well as increased network performance, they were also looking for a cost-effective solution that simplified operations and used automation. The solution also needed to add value to the business, allowing engineers to focus on delivering critical applications rather than repetitive administrative tasks.

In order to meet these requirements, the manufacturing company – in collaboration with an existing IT partner – began to investigate a solution based on Cisco's Application Centric Infrastructure (ACI) platform. Recommended by Cisco, WhiteSpider – a flexible Subject Matter Expert with considerable experience and skills in ACI – were approached to assist with the delivery of the project.

“ WhiteSpider have been consummately professional throughout the entire project. They have worked closely with our technical teams to design, build and migrate the ACI solution. We have been very happy with the work they produced ”

Infrastructure Architect



Solution

WhiteSpider worked with IT teams and key business stakeholders to understand their existing Data Centre infrastructure and wider IT strategy. Based on this audit process and a series of technical workshops, WhiteSpider produced comprehensive documentation and worked closely with the business to refine the scope of the project, setting clear objectives: the project needed to be delivered in an agile way, to tight deadlines and with no disruption to business productivity.

Once the initial scope of the project was agreed, the design stage began. Based on the information gathered, WhiteSpider produced detailed High and Low-Level designs of the proposed ACI Fabric. Again, there was a comprehensive review process and the designs were modified so the solution achieved the business's strategic vision for their new data centre network.

On site, WhiteSpider worked with technical teams to install and configure their new ACI network, converting the Nexus 9000 switches into 'ACI Mode'. This included: configuration of the APIC Controller and End-Point Groups, Fabric Discovery, and SAT testing. WhiteSpider also provided extensive knowledge transfer and documentation.

Outcome

This project was successfully completed in line with the business's requirements; WhiteSpider successfully installed a fully-functional ACI Fabric in time for the final build of the new data centre to be completed.

This project provided many benefits to the business, adding considerable value to their organisation:

- **Improved Business Efficiency and Reduced Operational Cost.** Project performance is enhanced by rapidly delivering IT resources to the business as needed.
- **High Performance Network.** Allows critical applications to run effectively, adding value to the business; for example, research and development applications can run efficiently, improving the time to produce the final product.
- **Simplified Network Topology.** ACI is based on a Spine/Leaf topology, which is more efficient and simple to manage than traditional network models.
- **Automation of Repetitive Tasks.** Configuration of new devices and end point groups can be automated, reducing the time IT staff spend on menial, administrative tasks.

Since this project was successfully completed, WhiteSpider has continued to work with the firm's technical teams, providing ongoing services and support for their new network platform and Data Centre migration.

About WhiteSpider:

Established in 2012, WhiteSpider specialises in providing consultancy, strategic advice, and practical support in enterprise service architectures. The company helps organisations to standardise their IT and communications infrastructures by using a unique new service framework - ea⁴ - developed specifically with the needs of global enterprises in mind. Head-quartered in the UK, WhiteSpider works with global companies across 12 industry sectors, including Financial Services, Pharmaceuticals, Healthcare, Construction and Motor Sports.

Contact details:

 +44 (0) 203 773 2380

 info@whitespider.eu

 www.whitespider.eu

Find us on:

 <https://www.linkedin.com/company/whitespider>

 @WhiteSpiderEA4