



Manufacturer Reduces Infrastructure Cost and Conserves WAN Bandwidth for Global SAP Deployment

EXECUTIVE SUMMARY

INDUSTRY

- Electronic and Materials Manufacturing

BUSINESS CHALLENGE

- Provide all users with LAN-like performance, regardless of location, when accessing centralized Web-enabled SAP applications for ERP, CRM, and management of supply chains, product lifecycles, and supplier relationships.
- Reduce cost of WAN connections required for global business operations.
- Enable efficient use of data center resources (people, plant, and equipment) while maintaining a high level of application availability to users.
- Improve end-to-end application performance for increased user productivity and remote worker satisfaction.

NETWORK SOLUTION

Cisco for Applications/SAP platform including:

- Cisco Application Content Networking System (ACNS) software and Cisco 500 Series Wide-Area Engines (WAEs) to optimize SAP applications over the WAN
- Cisco Content Services Switches (CSSs) in the data center for high availability, scalability, and server off-load of SSL and compression processing

BUSINESS RESULTS

- Lowered costs by recovering server capacity and network bandwidth for SAP and other applications. The simplified infrastructure also lowered operating costs (power, cooling, rack space, IT time).
- Improved application availability and scalability for protection of business continuity.
- Improved satisfaction for remote users and a reduction in their WAN costs by delivering LAN-like application performance over low-cost, low-bandwidth connections.

Cisco for Applications/SAP dramatically reduces WAN costs and the number of servers needed for global application deployment.

BUSINESS CHALLENGE

The global marketplace creates opportunities for reaching large customer bases, but also imposes overhead costs on operations. Manufacturing, in particular, must be located at multiple sites, as close as possible to the customers, to minimize shipping costs, avoid import taxes, and shorten time to market.

One international manufacturer of electronic devices, polymers, and specialized industrial and consumer materials operates in more than 100 countries. The company relies on rapid deployments of technology and progressive thinking to maintain market leadership and meet its aggressive business goals. A recent deployment of a new single-instance SAP application promised to streamline many processes. SAP delivers a range of business solutions that address every aspect of a business including customer relationship management (CRM), enterprise resource planning (ERP), and management of supply chains, product lifecycles, and supplier relationships. SAP Manufacturing helps companies identify changes in demand and supply, and respond to rapidly changing requirements.

As a critical business facilitating technology, the centralized SAP applications would be accessed by company teams throughout the world. The company's WAN included major hubs in Europe, the United States, and Asia, but WAN performance was a concern for many countries, particularly in Latin America and Africa. A successful deployment of the SAP application required LAN-like application performance regardless of the WAN connections. Lowering WAN bandwidth usage was also a requirement for controlling costs, which could vary greatly from country to country.

This manufacturer, with previous experiences supporting similar enterprise software solutions, recognized the need for an application acceleration and WAN optimization solution to address the above requirements. In addition, the corporate data center team specified that the number of servers required for the SAP applications should be minimized with an efficient load-balancing solution to help ensure scalability and availability without affecting users.

CISCO FOR APPLICATIONS SOLUTION

Achieving LAN-like application performance over low-bandwidth connections was achieved by evolving to a Cisco® for Applications/SAP platform. With a combination of Cisco application optimization, server scaling, and server off-loading technologies, the new platform met the performance requirements for all employees.

Integral to the Cisco for Applications/SAP solution, the Cisco Application Content Networking System (ACNS) Software solution provides a caching and application-delivery platform, which improves operations and reduce costs. The software operates in conjunction with Cisco Wide Area Application Engines (WAE) that can be deployed in the data center or remote sites. The engines:

- Optimize Application performance over the WAN by minimizing the amount of data that must be sent over the network, thereby reducing the total bandwidth required.
- Accelerate deployment of mission-critical Web applications like SAP by pre-positioning application content at remote locations during times of low WAN utilization.
- Efficiently deliver live and on-demand business video for corporate communications applications by using a hub-and-spoke distribution methodology rather than the video server responding to every request individually.

At the major WAN hub sites, this manufacturing company had deployed the largest WAEs for accelerating video and other applications (caching). At the smaller sites (spokes), the company deployed the Cisco 510, 511, and 512 engines. Some sites configured two or three engines for scalability and redundancy. Scaling to meet the growing application demand, well over 100 WAEs have been deployed globally. But every unit, and many more, can be managed from a central location, further reducing the cost to support this global application infrastructure. With the deployment of this solution, WAN bandwidth usage was reduced by 32 percent, and end-users experienced improved quality for a variety of applications including video on demand.

“Connection costs and network performance vary dramatically around the world. For global companies, the Cisco for Applications platform gives users excellent application performance regardless of their location. The application delivery technology, combined with effective server load balancing and off-load capability for increased availability and scalability, allows companies to get the best returns on their investments for critical business applications like SAP.”

—Doug Gourlay, Senior Director, Data Center Solutions Marketing, Cisco Systems

Within the data center, the Cisco Content Services Switch (CSS) minimizes the number of servers required to host the modularized SAP applications. Since the number of enterprise applications is growing exponentially, the Cisco CSS is a vital component of the solution for this SAP and other application deployments. The Cisco CSS benefited the SAP deployment with:

- **Scalable application performance** – An integrated, high-capacity Secure Sockets Layer (SSL) module allows off-loading of SSL processing, which significantly improved the overall performance of the Web and application servers, enabling greater scalability and performance.
- **Optimized application response times** – The Cisco CSS provides a high-capacity Web application (Hypertext Transfer Protocol, HTTP) compression module that improves application response times by 20 to 50 percent. This feature also off-loads compression from the server, which further reduces server workload and decreases WAN traffic.
- **Investment protection** – More than any other content switch in its class, the Cisco CSS allows flexibility with customizable combinations of ports, performance, and services.

- **Availability and transaction integrity** – The industry-standard Adaptive Session Redundancy capability supports stateful failover, improving the overall availability of the applications should there be a failure in the network. Services Keepalives help ensure application availability by checking if the application or server is still functioning. If the application or server has failed, the user is routed to a healthy or working application server.

The deployment of the Cisco CSS helps ensure that productivity can be maximized by off-loading the SSL and compression tasks from the SAP application servers. This improves response times for user requests. Simultaneously, compressing the traffic minimizes the consumed bandwidth, which lowers total cost of ownership for the SAP applications deployment.

The strength of the Cisco CSS gives the manufacturer an extremely scalable architecture. The modular design of the CSS protects the customer’s investment by easily enabling upgrades of performance, ports, and services to meet future application demands. If more server throughput is needed in the future, additional units can be easily added to the deployment.

PRODUCT LIST

Cisco for Applications/ SAP:

WAN Application Optimization and Delivery

- Cisco ACNS

High Availability, Scalability, Acceleration, SSL Offloading, and Compression

- Cisco 11500 Series CSS

BUSINESS RESULTS

All of the company’s manufacturing processes, and therefore their revenues, are dependent on efficient access to the SAP applications. The efficient delivery of the information relating to these applications greatly affects employee productivity and lowers overall WAN costs. “Connection costs and network performance vary around the world,” says Doug Gourlay, senior director of data center solutions marketing at Cisco. “For global companies, the Cisco for Applications platform gives users excellent application performance regardless of their location. The application delivery technology,

combined with effective server load-balancing and off-load capability for increased availability and scalability, allows companies to get the best returns on their investments for critical business applications like SAP.

The combination of WAN application optimization and server off-loading, availability, and scalability solutions gives the manufacturer several immediate and long-term benefits of Cisco for Applications/SAP:

- **Improved WAN utilization and investment protection** – Initial bandwidth reductions were well over 30 percent. The efficient application caching solution allows the WAN to support the increase in SAP traffic and any other traffic resulting from new applications added in the future.
- **Satisfied users** – Regardless of an employee’s location, the remote WAN optimization solution helps ensure LAN-like performance of the SAP applications.
- **Cost-effective supportable solution** – This manufacturer quickly gained proficiency on the new deployment. Cisco for Applications/SAP—including the Cisco ACNS software, WAE content engine, and CSS products—requires minimal support efforts going forward, with the ability to add new sites and systems as needed without disruption to the overall SAP applications or users. These attributes, combined with the efficient use of network and server resources, gives them a solution with the lowest possible total cost of ownership.

FOR MORE INFORMATION

To find out more about the Cisco Data Center Solutions including Cisco for Applications solutions, go to:

<http://www.cisco.com/go/applicationservices>.



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