

Subsea Supplier Improves Application and Data Center Performance



Executive Summary

- **Customer Name:** FMC Technologies
- **Industry:** Supplier of subsea oil and gas systems
- **Location:** Kongsberg, Norway
- **Number of Employees:** 17,000 globally

Challenge

- Support business activities globally by providing up-to-date reporting
- Virtualize and improve performance on servers running SAP applications
- Streamline data center management

Solution

- Updated data centers using Cisco UCS servers and NetApp storage in integrated FlexPod environment to achieve faster response times on SAP applications used by thousands of employees across the company

Results

- Helped enable up-to-date reporting with turnaround times improved up to 400 percent
- Improved system response time by up to 50 percent while growing from 2000 to 3500 concurrent users
- Reduced input/output congestion by as much as tenfold

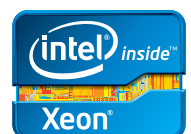
FMC Technologies uses FlexPod environment built on Cisco UCS and NetApp storage to improve SAP application performance.

Challenge

Innovative technologies and the rising price of natural resources have pushed more companies into exploring and developing offshore fields of oil and gas. Although these fields have potential for massive profits, they also pose immense logistical challenges that can only be solved with the best equipment and technologies.

FMC Technologies is the leading subsea systems supplier in the industry, developing advanced products and solutions for deployment in offshore oil and gas fields. As part of this work, the company needs to keep track of inventory, production, business processes, and people. For the past 13 years, it has relied heavily on SAP applications, including Enterprise Core Components (ECC), Business Intelligence (BI), Customer Relationship Management (CRM), Governance, Risk, and Compliance (GRC), Supplier Relationship Management (SRM), and several other enterprise applications.

The SAP applications, hosted in the company headquarters in Kongsberg, support global operations, with the capacity to serve over 4500 users during peak hours. Unfortunately, the servers used in the data center were approaching end-of-life, and data center performance could no longer keep up with FMC Technologies' sustained, global growth. At the same time, the company wanted to enhance its storage infrastructure to keep pace with an increasing volume of data, which employees worldwide needed to access as reliably and quickly as possible. With its legacy compute, networking and storage systems, the company found that activity from thousands of users was causing congestion, resulting in extended processing times.



“SAP BI loads that took up to four days to complete with our old equipment can now be completed in a few hours using Cisco UCS servers and NetApp storage in our FlexPod environment.”

— Vigbjørn Halvorsen
SAP Infrastructure Specialist,
FMC Technologies

“Given the volume of data we deal with, there was a backlog of reports to run and data to analyze. It wasn’t uncommon for some reports to take several days to load data and generate,” says Vigbjørn Halvorsen, SAP infrastructure specialist at FMC Technologies.

As early adapters of virtualization, FMC Technologies was already running its SAP applications on virtualized servers and NetApp storage for enhanced flexibility. Yet, with its existing blade solution experiencing network congestion that would lead to application performance slowing, the company knew it had to adopt a more powerful, scalable data center infrastructure. As a result, FMC Technologies set out to find a solution that would continue to support its virtualization efforts, had high-memory density, could reliably power high-performance applications such as SAP, and support business growth.

Solution

After evaluating data center solutions from Cisco, HP, Fujitsu, and IBM, FMC Technologies chose to standardize on FlexPod, a prevalidated data center solution built on proven, integrated solutions from Cisco and NetApp. With FlexPod, FMC Technologies benefited from the solid partnership between Cisco and NetApp, providing the team with strong design and implementation expertise, as well as coordinated services and execution. The flexible, shared Cisco and NetApp infrastructure offered the company a more efficient, agile, and easily managed environment that saved IT resources and helped enable faster deployment of new services to meet FMC Technologies’ changing business needs.

The company has three locations supporting SAP applications. All three locations were already equipped with NetApp FAS3000 series storage systems. To achieve a FlexPod architecture, the locations were refreshed with Cisco Unified Computing System™ (UCS®) solutions. The primary data center, used to house applications for SAP production applications, has five Cisco® UCS B230 M2 blade servers and ten Cisco UCS B200 M3 servers, along with the NetApp FAS3270 series storage systems running the NetApp Data ONTAP operating system. The data center for test and development is running with seven Cisco UCS B230 M2 blade servers and one B200 M3 blade server, also running NetApp FAS3140 systems with Data ONTAP. Finally, the company’s disaster recovery data center runs three Cisco UCS B230 M2 blade servers with NetApp FAS3270 with Data ONTAP to help ensure critical business applications and data are available anytime, anywhere to the company’s busy global employees.

With its FlexPod environment, FMC Technologies now has a more reliable and easily managed data center infrastructure that requires far fewer switches and half as many management points. While its previous infrastructure required two switches and two management blades per chassis, each company data center now only requires two switches and two fabric interconnects. This number will remain consistent even if the system grows up to eight times the number of servers that it has now. The production data center and test and development data center each use two Cisco Nexus® 5548 UP switches with dual 10 gigabit links between them for capacity and redundancy. These four Nexus switches replaced eleven switches. Not only does the streamlined infrastructure make it easier to manage, but it also reduces TCO, because new blades can be added without needing to purchase expensive switches and connections for each server.



Running its SAP applications on the FlexPod platform has also helped enable FMC Technologies to accelerate back-up time and reduce system copy time. With NetApp Snapshot and NetApp SnapMirror technologies built into the NetApp storage systems, backing up data can now be done in seconds instead of hours. In addition, NetApp FlexClone technology makes it possible for the company to clone systems in less than an hour, and do refresh Test and Pilot systems with less than a day downtime, instead of the two weeks previously required. For FMC Technologies, this capability results in as much as a tenfold reduction in congestion and frees IT staff from spending too many off-hours on data refreshes, replicating data volumes, and waiting for storage allocation. Ultimately, the company's IT staff now has more time to focus on more strategic requirements rather than routine maintenance tasks.



Overall, the advanced integration across Cisco, NetApp, and VMware solutions was vital in the decision to standardize on FlexPod for SAP applications and gives FMC Technologies peace of mind to be working on a collaborative, unified, highly efficient platform. "From an enterprise perspective, it's nice to know that if any problems arise, all of the FlexPod partners work together to deliver the results we need," says Halvorsen.

Results

Accelerated performance

With FlexPod supporting all SAP applications in a fully virtualized environment, FMC Technologies has experienced a massive increase in network and storage bandwidth. Before implementation, the average response time for the ECC system had started climbing, and with 4500 concurrent users predicted at peak hours, it was estimated that response time would close in on two seconds. The Cisco UCS servers, along with the NetApp storage systems, have now accelerated application processing by removing congestion in the infrastructure, bringing the average response time for the ECC system back towards the goal of around 600 milliseconds. The improved performance of SAP applications helps the growing user base not only complete complex data analyses and monitor critical production workflows faster, but also efficiently execute routine business processes such as submitting time and travel expenses.

"SAP BI loads that took up to four days to complete with our old equipment can now be done in a few hours using Cisco UCS servers and NetApp storage in our FlexPod environment," says Halvorsen. "FlexPod is ideal for supporting a high volume of data-intensive analyses." For example, weekly manufacturing and inventory reports run in SAP Business Intelligence (BI) require vast stores of data, so reports started on Sunday night would typically finish three or four days later. After moving SAP Business Intelligence to FlexPod, data loads and subsequent analyses were finishing less than 24 hours later. The result: improved employee productivity and more on-time reporting for better decision making.

Product List

FlexPod Components

- Cisco Unified Computing System B230 M2 Blade Servers
- Cisco Unified Computing System B200 M3 Blade Servers
- NetApp FAS series storage systems running the Data ONTAP operating system

Routing and Switching

- Cisco Nexus 5548UP Switches
- Fibre Channel over Ethernet (FCoE) links
- Cisco Nexus 1000V Series Switches
- Cisco Catalyst 6500 Series Virtual Switching System

Network Management

- Cisco Unified Computing System Manager

Virtualization

- VMware

Applications

- SAP ECC, SAP EBP, SAP CRM
- SAP BI, SAP BO, SAP GRC
- SAP APO, SAP CE, SAP EP
- SAP PI, SAP LVM, SAP Java Hub
- SAP Solution Manager
- SAP KPRO/DMS
- SAP Webdispatcher, SAP Trex
- Syclo (SAP SUP)
- Readsoft
- Oracle Primavera
- Oracle Database 11g
- Microsoft SQL 2008
- Max DB

Optimizing employee and application performance

For FMC Technologies, standardizing on the FlexPod environment for SAP is optimizing the performance of both its employees and critical business applications. Faster turnaround time for reports reduces unproductive waiting periods and helps employees react to any situation faster. With less time spent waiting for responses from the network, employees can spend more time on essential, productive activities, from tracking sales and product deliveries to completing required human resource-related tasks.

For More Information

To find out more about about Cisco Unified Computing, please visit: www.cisco.com/go/ucs.

To find out more about Cisco Nexus Switches, please visit: www.cisco.com/go/nexus.

To find out more about FlexPod for SAP, please visit:

www.cisco.com/en/US/prod/collateral/ps10265/cisco_ucs_flexpod_netapp.pdf.

To see how Cisco integrates with SAP, please visit: www.cisco.com/go/sap.



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