

Market Leader Keeps Competitive Edge with UCS Updates to Data Centers



Executive Summary

- **Customer Name:** KEMET
- **Industry:** Electronics/Capacitors
- **Location:** 53 manufacturing facilities and sales offices worldwide
- **Number of Employees:** 11,000

Challenge

- Provide high availability of critical systems to keep pace with fast-moving market
- Enhance manageability to allow expansion of systems without adding staff
- Support business agility with faster deployment of new enterprise applications and updates

Solution

- Built data centers with virtualized Cisco, VMware, Oracle, and EMC architecture to deliver business continuity and the agility to respond to rapidly changing markets

Results

- Achieved nearly 100 percent systems uptime
- Will achieve 100 percent ROI on Cisco UCS solution within three years by eliminating outsourcing of disaster recovery
- Accelerated resource provisioning from 4 hours to 15 minutes

Agility, resilience, and performance of Cisco Unified Data Center solutions are key to enhancing business success in fast-moving electronics market.

Challenge

The market for electronics is highly volatile: as products are introduced, embraced, and then dismissed as obsolete, the companies that manufacture parts for them have to scale up rapidly, keep the pipeline filled, and respond quickly to any downtick in forecasts to avoid a backlog of inventory.

Smooth collaboration with partners is key in this space, as are business agility and a tight focus on costs. Many suppliers meet demand or expand by acquiring or merging with other businesses, but the success of this strategy depends on swiftly assimilating the processes and systems of other organizations into a single smoothly functioning company.

KEMET is a provider of capacitance solutions that grows its revenues through expansion of existing manufacturing, developing new products, and mergers and acquisitions to support its strategic objectives, such as vertical integration of its supply chains. To succeed in this constantly changing market, KEMET needed powerful and flexible IT systems to support electronic data exchange (EDI) with KEMET customers and partners, deliver business continuity, enable business agility, and deliver cost savings.



“Cisco UCS has taken us from ‘disaster recovery’ to ‘business continuity.’ I can’t put a dollar cost on down time, but it’s significant because our systems are critical. We rely on them to communicate with customers, manufacture products, ship items, and process forecasts; if our infrastructure is compromised, we can’t do business.”

— Brian Burch
CIO
KEMET

Previously, KEMET’s main data center ran mostly on IBM systems and SAN storage but lacked extensive management capabilities. As KEMET started using VMware to virtualize servers and enterprise applications, it needed more flexible, higher-bandwidth network capacity.

“That’s when we first started paying close attention to Cisco Unified Data Center solutions,” says Brian Burch, CIO of KEMET. “We’re a lean staff, and we wanted to virtualize, share services, and control the communications environment with clicks and commands rather than physical fixes and moving cables around.” The company’s wish list for the new system also included enhanced performance, availability, manageability, interoperability, agility, and lower cost of operations, as well as support for the company’s longer-term plan of consolidating applications into a foundation for a private cloud.

Though the KEMET team evaluated IBM, Dell, and HP, it was most impressed by Cisco Unified Computing System™ (UCS™) solutions for its server performance, networking infrastructure, and manageability. “Plus, we liked the fact that Cisco, EMC, and VMware would commit to all sitting at the same table and working off the same plan,” says Burch. “That way, my staff didn’t have to bear all the responsibility for making sure that hundreds of pieces of hardware, software, and firmware would work together.”

Solution

Today, in KEMET’s primary data center, a unified infrastructure platform integrates industry-leading virtualization, networking, computing, storage, security, and management technologies. Six chassis full of Cisco® B200 blades link to Cisco 6120 and 6140 fabric interconnects and an environment that includes two Cisco Nexus® 7000 switches and an EMC Celerra NS-960 unified storage array.

As part of its data center strategy, KEMET brought back in house the disaster recovery services that it had contracted out to a third party. Its primary data center now replicates data to a new hosted secondary data center, which runs two chassis full of Cisco B200 and B210 blade servers. This data center also features a Vblock, EMC infrastructure, and Nexus 5000 and Nexus 1000V switches, and Cisco 6120 Fabric Interconnects, as well as leverages Cisco ASA 5520 Adaptive Security Appliances to help ensure rules-based security policies are enforced.

KEMET manufacturing facilities and some of the larger sales offices have their own data centers for a company-wide total of 28 data centers. KEMET is in the process of upgrading those data centers, too: at five of its manufacturing facilities, C210 servers now operate as standalone units.

Although a few of KEMET’s legacy applications are still running on mainframes, everything else runs on Cisco UCS and VMware. These resources include Oracle E-Business Suite, SAP, and manufacturing applications, as well as Microsoft Exchange, SharePoint, and other critical business applications.

Results

More than disaster recovery: business continuity

For KEMET, the greatest advantage of adopting Cisco UCS solutions was the improvement in resilience and availability. KEMET users now experience virtually no down time, except for planned maintenance windows; previously, KEMET averaged one outage per week due to resource constraints or other issues. Cisco UCS has eliminated those problems.





"Before, with our third-party provider, we could only recover a small subset of servers in 72 hours," says Tammy Rasnake, director of IT infrastructure at KEMET. With UCS, KEMET can recover all servers within eight hours if a disaster were to happen, and many of them in less than one hour. IT can also deal with individual server failures much more swiftly and smoothly. "Cisco UCS has taken us from 'disaster recovery' to 'business continuity,'" says Burch. "I can't put a dollar cost on down time, but it's significant because our systems are critical. We rely on them to communicate with customers, manufacture product, ship items, and process forecasts; if our infrastructure is compromised, we can't do business."

Decreased infrastructure costs

Transforming disaster recovery into business continuity with UCS adds value and reduces costs. Bringing disaster recovery back in house saved enough in three years to pay for the entire data center upgrade. In addition, the Cisco UCS blades take up half the floor space of conventional servers, yielding additional substantial savings in facility costs. Other valuable advantages, such as avoidance of disruption and the ability to recover more data faster with fewer staff also offer significant operational savings.

Interoperability simplifies management for reduced operating expenses

Another major advantage of the Cisco Unified Data Center is that it simplifies management by bringing together many different components under a single management system: Cisco UCS Manager (UCSM). The advanced Cisco UCSM offers features such as automated server provisioning, server profiles, and a network interface that accelerate maintenance.

Cisco unified fabric is a big management timesaver, too. "Nexus 1000v switches create a unified, flexible fabric that enables IT to move devices and virtual machines around and have the network simply flow along with them," says Rasnake. "This is much more effective than having IT staff follow in the wake of every change to reconfigure network components and move cables."

The integration of compute, network, and management capabilities in the Cisco solution also facilitates manageability and helps reduce support needs, making it much easier for the KEMET IT team to handle any issues that arise. For example, both VMware and the blades themselves have built-in failover capabilities. Plus, with KEMET booting all its blades from the SAN, processing can switch from blade to blade without having a person in the data center. An IT staff member can just move a server profile over to another server and the new server comes up right away.

With Cisco UCS, the job of the KEMET data center team (five managing the servers globally and two network engineers supporting the UCS servers, storage, and global network infrastructure) has changed. Team members have reduced the amount of time spent on troubleshooting and now focus more on new projects and improvements to service levels.

Better application performance and agility through accelerated application deployment

KEMET has noticed substantial increases in speed, both on the networking side and on the processor side. In particular, Burch comments that the heavily used Oracle Real Application Clusters (RAC) servers can now tap into the higher-density memory capabilities of Cisco B200 Series blades, delivering faster responses to users.

The IT group at KEMET can now respond faster to business requests for new servers or application upgrades. In the past, four hours were needed to get a server up and running, but now, provisioning takes just 15 minutes. On a larger scale, when KEMET makes a new acquisition, staff can leverage UCS to rapidly expand the data center capacity, reconfigure components, and spin up temporary servers for a migration or integration.

Product List

Data Center Solutions

- Cisco Unified Computing System Servers
- Cisco UCS B200 M2 Blade Servers
- Cisco UCS B210 Blade Servers
- Cisco UCS C210 M2 Servers

Routing and Switching

- Cisco Nexus 7000 Switches
- Cisco Nexus 5000 Switches
- Cisco Nexus 1000v Switches

Fabric Interconnects

- Cisco UCS 6120 and 6140 Fabric Interconnects

Network Management

- Cisco Unified Computing System Manager
- Cisco Wireless Access Control Server
- Cisco 5500 Series Wireless Controller

Hypervisor and VM Management

- VMware/VMware vCenter

Security and VPN

- Cisco ASA 5520 Adaptive Security Appliances

Applications

- Oracle E-Business Suite
- Oracle RAC
- SAP ERP
- Google Enterprise

Storage

- EMC SAN Systems

KEMET has also made strides towards its longer-term goal of creating a private cloud infrastructure. Cisco UCS has helped to virtualize the majority of its infrastructure, and automated many management tasks. The data center team continues the consolidation effort, reducing OS instances and application footprint, with the goal of compressing it into as streamlined and logical a form as possible.

With the Cisco UCS infrastructure delivering performance and reliability in its main data centers, KEMET is now converting some of its largest manufacturing facilities to the same infrastructure of Cisco Nexus 7000 and 5000 series switches and B-series blades or C-series rack mount servers.

The integrated infrastructure of Cisco Unified Data Center solutions has delivered everything that the company hoped for, has had an unexpected change in the way that KEMET's teams operate, too. "Our separate teams (for storage, network, virtualization, and support) are now working together like never before," Burch says. "We're seeing them optimize resources and productivity, creating synergies and sharing staff in a way that's completely new. It confirms our belief that Cisco solutions were the ideal choice for KEMET."

For More Information

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

To learn more about Oracle and Cisco UCS, visit: www.cisco.com/go/oracle.

To find out more about Cisco Unified Data Center, visit: www.cisco.com/go/unifieddatacenter.



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