



Micro Inks Virtualizes Business-Critical SAP and Microsoft Exchange Server Systems to Meet Commercial Targets

INDUSTRY
Manufacturing

LOCATION
Vapi, India

KEY CHALLENGE
Minimize the risk of system outages that compromise the organization's ability to fulfil its production targets.

SOLUTION
Implemented a Vblock system incorporating VMware vSphere to deliver a resilient, highly available infrastructure and ensure critical systems can be recovered in the event of a disaster.

BUSINESS BENEFITS

- Considerable improvement in end-user response times
- Established recovery time objective of four hours for SAP and Microsoft Exchange Server
- Achieved zero data loss for SAP and Microsoft Exchange Server

Indian-headquartered ink business Micro Inks had run its SAP and Microsoft Exchange systems on a physical server infrastructure with direct-attached storage. However, data corruption cost the company three days worth of plant operations. To stop a similar event occurring again, the organization deployed VMware vSphere as part of a vBlock converged infrastructure, and VMware vCenter Site Recovery Manager to ensure fast, error-free disaster recovery.

Established in 1987 and headquartered in Vapi, India, Micro Inks Ltd manufactures pigments, flush pigments, resins, varnishes, additives and printing inks. In 2005, German ink company hubergroup acquired Micro Inks and today the business operates manufacturing plants in Vapi, and Daman and Silvassa on India's west coast. Micro Inks has 16 offices in India and, through hubergroup, a presence in 52 countries.

The Challenge

The Micro Inks manufacturing plant distributes ink products to all locations in India and the Asia-Pacific region. To run critical business processes such as supply chain operations, financial management and reporting and human resources activities, Micro Inks used an SAP enterprise resource planning (ERP) system. In addition, to enable effective collaboration and timely communication between its 700 employees, the organization used a Microsoft Exchange Server email system.

From 2006 to 2010, Micro Inks had run these applications on a physical infrastructure that included 28 servers with direct-attached storage. However, in 2009 the company experienced a catastrophic problem that corrupted data in the SAP system and cost about three days' worth of plant operations. This meant the organization could not meet its production targets and lost a considerable amount of money.

Micro Inks could not afford a problem of this magnitude to happen again. "We need our SAP and Microsoft Exchange Server systems to be up and running

24 hours a day, seven days a week," said Mayank Desai, Head of Information Technology, Micro Inks. "We had to make these production systems more resilient and establish a separate disaster recovery location we could use to bring them back up if a problem did occur."

Micro Inks set itself a recovery time objective for these systems of between one and four hours, and zero data loss.

The Solution

Micro Inks' technology team conducted a comprehensive evaluation of server virtualization products to determine which was best suited to its business continuity and disaster recovery requirements. The team evaluated products from Microsoft and Citrix before deciding on VMware® vSphere™ and VMware vCenter Site Recovery Manager™.

The organization selected VMware vSphere as part of a Vblock system from VCE, an entity established by VMware, EMC and Cisco.

"By migrating our SAP and Microsoft Exchange Server systems to VMware vSphere and using VMware vCenter Site Recovery Manager to ensure prompt recovery in the event of a disaster, we are minimizing the risk of a crippling outage."

Mayank Desai
Head of Information Technology
Micro Inks

The VCE system combines VMware vSphere with Cisco UCS blade servers and EMC networked storage to provide converged infrastructure platforms for customers.

"We believed the integration of the various products would give us the best performance for our SAP and Microsoft Exchange Server environments," said Desai.

Micro Inks also implemented VMware vCenter Site Recovery Manager to automate disaster recovery processes for SAP and other legacy applications, and enable testing without disrupting production systems or users. Should a disaster occur, Micro Inks can fail over the SAP and legacy systems from its production datacenter to a 'near-DR' site about 100 meters away.

In addition, the organization incorporated some of the Exchange Server roles, including hub and client access, and edge, into the VMware vCenter Site Recovery Manager environment. By doing this, and replicating mail queues from production to the near-DR site, it could avoid any loss of mail.

Micro Inks then migrated the SAP ERP system and Microsoft Exchange Server email to the converged infrastructure. With help from VMware partner HCL Infosystems, the organization successfully completed the deployment in four to six months during 2010. Shortly afterwards, Micro Inks upgraded from SAP 4.7 to an SAP ECC6 system to run important business functions such as order tracking, materials management, sales and distribution and accounting. Including test, development and quality assurance, the SAP system is running across nine virtual machines at the organization's production datacenter.

In 2011, Micro Inks upgraded its mail system to Microsoft Exchange Server 2010 SP1 to take advantage of features such as synchronization to mobile devices, multi-layered anti-spam filtering and a unified approach to high availability and disaster recovery. The Exchange infrastructure comprises four virtual machines running in an active-active configuration at its two locations, as well as one BlackBerry server at each of its primary and near-DR sites. These servers are running in an active-passive configuration.

Business Results & Benefits

By deploying VMware vSphere as part of a converged infrastructure solution, Micro Inks has achieved its objective of running the SAP and Microsoft Exchange Server systems on a more resilient infrastructure. Implementing VMware vCenter Site Recovery Manager has also reassured the organization that it can recover in the event of a disaster with zero data loss from its SAP and Microsoft Exchange Server systems.

"The VMware vSphere platform offered a range of capabilities to improve the resilience of our datacenter infrastructure," said Desai. "For example, it automatically restarts the virtual machines running SAP or Exchange components in safe environments if we experience physical server failure. In addition, it balances loads across our environment, ensuring the virtual machines running the SAP and Microsoft Exchange Server systems can access the resources they need."

VMware vSphere can also be used to create shadow virtual machines that operate synchronously with virtual machines running Exchange Server, ensuring instant failover in the event of a hardware problem with zero data loss.

In addition, by running VMware vCenter Site Recovery Manager in conjunction with EMC MirrorView, Micro Inks has ensured production data is replicated byte-for-byte to its 'near-DR' site and can be accessed quickly and easily in the event of a disaster. The organization can be fully functional at its DR location within four hours; however, since deploying VMware, it has not experienced any downtime for any of its critical business applications.

"We can now rest assured that our operations are running 24 hours per day, seven days a week," said Desai. "We have tested 500 failover scenarios and established fixes for each, eliminating even remote chances of failure."

The flexibility of the virtualized infrastructure has also given Micro Inks the ability to provide high availability capabilities to its Microsoft Exchange Server 2010 cluster.

The organization has structured the cluster so that mailboxes are available and emails can continue to be routed to recipients, even if machines running

VMWARE CASE STUDY

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VMWARE FOOTPRINT

VMware vSphere featuring:

- VMware ESXi
- VMware vMotion
- VMware DRS (Distributed Resource Scheduler)
- VMware High Availability

VMware vCenter Site Recovery Manager

APPLICATIONS VIRTUALIZED

- Microsoft Exchange Server 2010
- SAP ECC6 (two instances)
- Oracle Database 11g

PLATFORM

- Two Cisco UCS 5108 blade server chassis
- 14 Cisco UCS B200 M2 blade servers
- Two EMC CLARiiON CX4-120 storage systems
- Cisco Catalyst 3560 series switch (for datacenter and disaster recovery network)

crucial functions or roles such as edge and hub-client access are disrupted. This environment includes an active-active setup across production and disaster recovery datacenters for the Microsoft Active Directory environments used to store configuration and recipient information.

Micro Inks has also established a separate cluster of two servers in a demilitarized zone to run the Microsoft Exchange edge server, proxy servers and antivirus software, and is using VMware vShield to provide security.

With the risk of failure minimized, Micro Inks can be sure of fulfilling its customer orders and meeting its financial objectives. This also gives senior management the confidence to focus on expansion and strategy rather than keep one eye on operational performance.

The virtualized infrastructure has also enabled Micro Inks to increase the headroom available for SAP, Microsoft Exchange Server and other applications. "After we had finished configuring our applications on the virtual infrastructure, we found we still had 40 percent of our resources spare," said Desai. "This gives us room to expand and mitigate recurring IT expenses."

In addition, because the SAP and Microsoft Exchange Server systems are not experiencing any bottlenecks, users have been able to boost their productivity significantly.

Looking Ahead

Thanks to its success with SAP and Microsoft Exchange Server, Micro Inks is now planning to virtualize its Microsoft SharePoint collaboration software. The organization is also examining the deployment of a virtual desktop environment across more than 600 users.

