Microsoft System Center
Customer Solution Case Study

Energy Firm Integrates Acquisitions in Days, Boosts IT Productivity by 50 Percent

Overview

Country or Region: United States
Industry: Manufacturing—Oil and gas

Customer Profile

NuStar Energy, based in San Antonio, Texas, transports and stores petroleum products for customers all over the world. NuStar employs more than 1,700 people.

Business Situation

NuStar has been growing rapidly through acquisitions, and its IT staff needed better tools for managing its server holdings and integrating acquisitions.

Solution

NuStar deployed Microsoft® System Center management software and Microsoft Forefront™ identity and security software to handle routine tasks more efficiently and improve network security.

Benefits

- Two-day acquisition integration
- Faster response to business needs
- IT resource requirements 50 percent less
- Less business disruption

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Robert Amos, Manager of Infrastructure Systems, NuStar Energy

NuStar Energy is a crude-oil transportation and storage company that has grown rapidly since its creation in 2001. The IT staff was intent on meeting business needs by streamlining mundane server management chores, keeping headcount low, and standardizing its infrastructure. NuStar deployed Microsoft® System Center data center solutions and enhanced its network security using Microsoft Forefront™ client security software. NuStar can now integrate new acquisitions in days and respond to new business needs in hours instead of weeks with consistently configured servers and a set of easy-to-use tools for managing them. NuStar claims it would need 50 percent more people to manage its growing infrastructure without Microsoft software. The IT staff's agility yields lower costs and more time to create new services. NuStar has also reduced business disruption with stronger server protection.

Microsoft® System Center

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Situation

NuStar Energy L.P. (NuStar Energy) is a publicly traded, limited partnership based in San Antonio, Texas, with 8,491 miles of pipeline, 82 terminal facilities, 4 crude-oil storage tank facilities, and 2 asphalt refineries with a combined throughput capacity of 104,000 barrels a day. NuStar Energy is one of the largest asphalt refiners and marketers in the United States and the second-largest independent liquids terminal operator in the nation. NuStar Energy operates in four market segments—storage, transportation, asphalt, and fuels marketing—all of which have been growing steadily since the company's creation in 2001. NuStar employs more than 1,700 people around the world.

Surviving Constant Change

NuStar was born big and just keeps getting bigger. Even before completing the separation from its original parent company, NuStar made its first major acquisition. Within 18 months, the company had doubled in size. "Companies in the oil and gas industry grow through acquisition as a way to add new physical assets quickly," explains Robert Amos, Manager of Infrastructure Systems for NuStar Energy. "Our chief challenge as a business is managing rapid growth, and our chief challenge as an IT organization is responding quickly to what the business requires us to do."

The IT staff needed to assimilate acquisitions quickly so that those investments could contribute to the business immediately. NuStar also needed to divest unprofitable pieces of the business when they no longer had strategic value. Delivering that kind of agility required a standardized technology infrastructure with pieces that were easy to add and remove, and management tools that simplified the task of deploying systems quickly and monitoring them wherever they were.

Reining in IT Costs

NuStar owned the licenses to Microsoft® Systems Management Server and Microsoft Operations Manager but did not initially use the programs to manage its Windows Server® 2003 operating system–based servers. "We developed basic operating system and application installation procedures but lacked the ability to consistently deliver standardized installations," Amos says. "We often deployed servers in a hurry, but without an automated approach, we sometimes discovered variations from our standards when moving a system into production. This was not the best time to tell the customer the system would have to be rebuilt."

As the company grew, configuration "drift" became a bigger problem. After six months in business, NuStar had 110 servers; within another year it had more than 200; and by early 2009, it had 325. Without standardized configurations and procedures, deploying, managing, and troubleshooting servers took longer and consumed valuable IT staff time.

With such a rapid rate of server growth, NuStar would have to expand its IT staff unless it could become more efficient. The company used server virtualization to curb server proliferation where possible, but server growth was inevitable if the business was successful. Issues relating to configuration drift continued to grow as more servers were built, and virtualization made adding servers easier than ever. "We didn't want to constantly grow headcount to manage our IT resources," Amos says. "We wanted to run a lean IT organization with a staff that was focused on creating new business services, not swamped by routine administrative work."

Amos's small staff spent one month a quarter just inventorying servers, not to mention deploying, troubleshooting, and repairing them. IT staff knew that if many of these processes were standardized and automated,

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they would have more time to create new applications and help the business grow.

Although most of the company’s 325 servers were located in the San Antonio data center, some were in field offices serving as domain controllers and file, print, and application servers. The San Antonio–based IT staff could not easily monitor these remote servers; if one failed, the services provided by that server might be unavailable to the business for a week or longer. Amos had to send one of his staff members to the site, troubleshoot the problem, maybe order a new server, and replace it. “The business just couldn’t stand that kind of disruption, and fixing problems reactively took my staff away from moving the business forward,” Amos says.

Identity and Security Challenges

Managing user identity credentials was another time drain. To comply with the United States Sarbanes-Oxley Act of 2002, the IT staff had created a custom application to manage identity credentials. However, it was time consuming to make changes to the application, and the staff still had to manually review every employee, contractor, and vendor account request before granting access to the company’s systems, and manually track account provisioning and termination. Also, there was no coordination between the IT staff’s identity management application and other business systems, such as the company Human Resources (HR) application. Staff in IT and HR wasted time duplicating one another’s work in changing user account information in multiple systems. Many times, information in one system was not updated until much later, making it difficult for other processes to obtain accurate identity data. Management had a growing concern about the timeliness of securing the enterprise after an employment termination.

Threat Protection

NuStar used a popular security application to protect desktop and server computers, but it did not provide comprehensive protection. “We were not addressing all avenues through which we could be attacked, but we thought it would be too expensive to get the coverage we needed,” Amos says.

Solution

NuStar decided to activate its investment in Microsoft management software to gain better control of its fast-growing infrastructure, reduce its IT workload, and create the agility that the business needed to continue its rapid growth. “We recommitted to Microsoft, because the consistent interface across the Microsoft management programs simplifies learning and use, plus gives us greater value,” Amos says. “Using the Microsoft Enterprise Client Access License gives us fast access to the products we need, when we need them. Mostly, having a Microsoft management infrastructure was very important in achieving the consistency that’s so important for us to run a lean IT organization. It minimizes the learning curve for my staff and ensures that we are consistently installing servers, operating systems, and applications.”

In December 2008, NuStar used its Enterprise Client Access License (CAL) to deploy the latest suite of Microsoft System Center data center solutions, which span server monitoring, software deployment, asset management, identity, security, and backup.

Server Monitoring

NuStar uses Microsoft System Center Operations Manager 2007 to give the IT staff regular reports on the health of all its servers and to proactively alert them of any issues that might lead to problems. For example, if a server in a remote office is reporting a disk

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failure, Amos can have a team member order the replacement, contact a regional IT coordinator, and schedule the replacement. Or, if the performance of a database server begins to fail, Amos can track down the origin of the issue to determine if a recent change to the application by the Business Development team impacted server performance. "Advance notification really helps us be proactive in addressing potential problems before they cause failures that could disrupt the business," Amos says.

Server Configuration and Management

NuStar also deployed Microsoft System Center Configuration Manager 2007 to automate software deployment, asset management, and reporting. The IT team created a System Center Configuration Manager 2007 template for deploying consistent configurations of server operating systems, databases, and other applications in an automated fashion.

NuStar also uses System Center Configuration Manager 2007 to create quarterly reports on its technology assets. The reports contain far more detail than the IT staff was able to gather when it was assembling this information manually, including total number of servers, locations, configurations, operating system and applications running on each, individuals who requisitioned them, purchase orders used to order them, and so forth.

To more easily comply with Sarbanes-Oxley and other regulations, NuStar uses the Desired Configuration Management feature in System Center Configuration Manager 2007, which ascertains whether a server complies with desired configuration states. "Desired Configuration Management will enable us to set a baseline of our systems to ensure that we're consistent in what we're doing, but also track how our infrastructure has changed and why," Amos says. "[Desired Configuration Management] plays an important role in minimizing the resources needed to get a server backed up and running; it helps ensure that we are following our change-management best practices."

NuStar is also using System Center Configuration Manager 2007 to create reports that track its software licensing, which help the company comply with its licensing agreements. Without such an automated tool, creating inventories across so many servers in multiple locations would take weeks.

Identity Management

NuStar deployed Microsoft Identity Lifecycle Manager 2007 to automate manual, redundant identity management tasks. Identity Lifecycle Manager 2007 provides an integrated and comprehensive solution for managing the life cycle of user identities and their associated credentials. It provides identity synchronization, certificate and password management, and user provisioning in a single solution that works across systems running the Windows® operating system and non-Microsoft systems.

NuStar was able to use Identity Lifecycle Manager 2007 to create a self-service identity service for users. The IT staff is not involved in adding, removing, or changing user permissions to various applications; the individual business units perform these tasks themselves using an automated workflow. The HR department now has direct control over the identity information that flows from the HR system through Identity Lifecycle Manager 2007 and into the Active Directory® directory service. This helps keep applications up-to-date with accurate information.

System Security

NuStar is using the Microsoft Forefront™ line of business security products to provide end-

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to-end security across all its client and server computers. “Previously, we had only antivirus protection, but Forefront adds protection against malware and spyware,” Amos says. “Also, we can deploy Forefront software using Group Policy, which helps ensure that all our servers are protected.”

Data Backup

NuStar uses Microsoft System Center Data Protection Manager 2007 to back up critical Microsoft application workloads, especially Microsoft Exchange Server 2007 e-mail messaging and collaboration software. System Center Data Protection Manager 2007 is an integrated disk-and-tape backup solution designed to safeguard Microsoft software-based workloads. Amos now has an easy, reliable way to back up branch-office servers where there are no IT staff members to swap out tape media. Data is backed up throughout the workday to disks in San Antonio, where it is later offloaded to tape for long-term storage. Also, NuStar now has the added capability of backing up and restoring data at the e-mail message level, which enables the IT staff to better support users without excessive IT time investments.

Benefits

Using Microsoft management, identity, and security solutions to optimize its core infrastructure, NuStar has achieved the agility that it needs to respond quickly in a fast-changing business environment. It can integrate even complex acquisitions into the company over a weekend, and the IT staff is super-efficient. Amos estimates that he would need a 50 percent larger staff to manage the infrastructure without Microsoft software. With preemptive server monitoring and tighter network security, NuStar is able to keep critical applications running without interruption.

Two-Day Acquisition Integration

With a standardized infrastructure and a consistent suite of management tools for managing that infrastructure, NuStar can more effectively continue to grow through acquisition. “The IT staff gets at most a month’s notice when acquisitions come along,” Amos says. “Within two weeks, management wants the new company integrated to provide quick returns. We now have a consistent, integrated infrastructure across the company. If management decides to acquire a new company, we can integrate the new data center in days rather than months.”

NuStar simply builds new virtual machines based on a standard server configuration, installs Forefront client security software to ensure that the new systems are safeguarded, and begins monitoring those new systems through its central management console. Business data and applications are migrated to the new infrastructure, and the old equipment is set aside for archival or reference, as required. When NuStar acquired a facility in 2008, Amos sent two people onsite and migrated the entire data center in a weekend.

Faster Response to Business Needs

Apart from integrating acquisitions faster, the IT staff can respond faster to new-service requests from business users. In one instance, a field office needed to install barcode scanners. The IT staff was able to quickly create a virtual machine on an existing server in that office to run the needed application. “We had that new service provisioned within a business day, rather than the weeks it would have taken without the flexible, consistent infrastructure that we’ve created,” Amos says. “In contrast, before we implemented our System Center infrastructure, we had to deploy a new application environment that required 12 servers. The project took us a month. With

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System Center software, we could have deployed those 12 servers in four days.”

IT Resource Requirements 50 Percent Less

NuStar’s infrastructure is now so consistent that any IT person can travel to any company office and find identical systems that require a consistent skill set to manage. Consistency delivers efficiency and reduced IT administrative work. For example, using System Center Configuration Manager 2007 to deploy Microsoft SQL Server® 2005 data management software to remote servers takes about six hours versus the three days it required previously. Producing a server inventory and verifying the information takes four days rather than a month. Using Identity Lifecycle Manager 2007 to streamline identity management has eliminated one full-time position, an annual savings of U.S.$100,000.

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NuStar achieved further savings from licensing its Microsoft management, identity, and security software using the Microsoft Server Management Suite Enterprise, a component of the Enterprise CAL, which provides cost efficiencies for licensing Microsoft System Center solutions. “We saved about $160,000 on licensing costs, enough to buy the physical servers needed to run our System Center solutions,” Amos says.

Less Business Disruption

With the ability to preemptively learn of server problems wherever the servers are, NuStar can fix problems before they cause server failures. “We’ve been able to remediate major field server issues at least twice a quarter with the help of System Center Operations Manager 2007,” Amos says. “This has prevented server failures that would have taken out local services for a week.”

Similarly, rapid software deployment helps maintain business continuity by ensuring that needed applications are deployed promptly. For example, some field offices need to have SQL Server 2005 installed before installing other applications. If the IT staff is late installing SQL Server, it delays the installation of the business application, which disrupts the business and costs the company money.

Also, using Microsoft Forefront software to defend servers, desktop computers, and critical applications, Amos has attained a comfort level that he did not previously have. “We not only know when we have problems, but we know that they were handled,” he says. “With Forefront, we have a single program watching every corner of our network, with all data presented in one place.”

By standardizing on Microsoft infrastructure software, NuStar has achieved the level of responsiveness and cost-effectiveness needed to continue its rapid growth. “We now have the agility we need to respond quickly in a fast-changing environment,” Amos says. “We’re going to continue to see a lot of growth, and we’re ready.”

For More Information

For more information about Microsoft products and services, call the Microsoft Sales Information Center at (800) 426-9400. In Canada, call the Microsoft Canada Information Centre at (877) 568-2495. Customers who are deaf or hard-of-hearing can reach Microsoft text telephone (TTY/TDD) services at (800) 892-5234 in the United States or (905) 568-9641 in Canada. Outside the 50 United States and Canada, please contact your local Microsoft subsidiary. To access information using the World Wide Web, go to: www.microsoft.com

For more information about NuStar Energy products and services, call (800) 866-9060 or visit the Web site at: www.nustarenergy.com

Microsoft System Center

System Center solutions help IT pros manage the physical and virtual information technology (IT) environments across data centers, client computers, and devices. Using these integrated and automated management solutions, IT organizations can be more productive service providers to their businesses.

For more information on Microsoft System Center please visit: www.microsoft.com/systemcenter

Software and Services

- Microsoft Server Product Portfolio
  - Microsoft System Center Configuration Manager 2007
  - Microsoft System Center Data Protection Manager 2007
  - Microsoft System Center Operations Manager 2007
  - Windows Server 2003
  - Microsoft Identity Lifecycle Manager 2007
- Microsoft Forefront

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