

# Datacenter Management Optimization with Microsoft System Center

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## INTRODUCTION

Datacenter managers must ensure that they are consistently delivering the services that the business requires at an acceptable level of performance and availability. In addition to this, internal and external compliance demands and budget pressures are increasing. However, IT can deal with these issues and drive more improvements in their overall datacenter operations by taking advantage of new technology and operational models. In fact, the adoption of server management best practices for automation, virtualization, and integrated management provides organizations with the opportunity to save thousands of dollars each year in operational costs\*.

As part of the Microsoft® optimized datacenter capabilities, the Microsoft® System Center datacenter solutions are designed to help organizations take advantage of opportunities to both improve operations and lower costs. These benefits are delivered through integrated tools that take advantage of a deep understanding of the Microsoft and non Microsoft datacenter environment, along with specialist partner knowledge regarding hardware, applications, virtualization, compliance and security.

System Center lowers the cost of delivering datacenter services through integrated, end-to-end management of physical and virtual environments, and supports the optimization of the datacenter in three primary ways:

- Reduces datacenter costs through server and resource management automation.
- Optimizes the datacenter infrastructure through integrated physical and virtual management.
- Increases simplicity through integrated management capabilities.

Each of these benefits, and the solutions that enable them, are discussed below

\*See the Microsoft Spotlight on Cost Research whitepaper at <http://www.microsoft.com/infrastructure/solutions/spotlightoncost.mspx>.

## REDUCED DATACENTER COSTS THROUGH SERVER AND RESOURCE MANAGEMENT AUTOMATION

While desktop management has largely been automated, the same cannot be said for servers. On average, less than 30\* percent of organizations are automating server tasks such as server deployment and patching. Meanwhile, compliance management for servers remains a costly, time consuming activity. As shown in Figure 1, System Center datacenter solutions enable organizations to automate these tasks while reducing human error. System Center not only provides the tools to plan and deploy configuration changes, but also provides the packaged knowledge and capabilities specific to the task at hand. For example, specific configuration and deployment guidance for Windows Server® 2008 R2 on hardware platforms such as IBM, Dell, and Hewlett Packard are available.

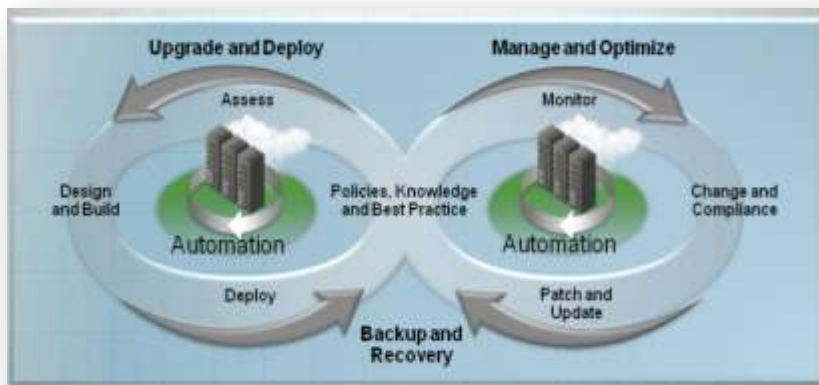


Figure 1: System Center's end-to-end capabilities for deploying and managing Windows Server.

Automation of datacenter management is further extended by taking advantages of extensive monitoring knowledge across server operating systems, hardware or application components, and packaged step-by-step recommended actions. These recommendations can then be automated to drive response to change, such as with the Live Migration of virtual machines. These automated changes can be driven by a variety of circumstances including:

- Power management alerts
- Configuration or compliance alerts,
- Hardware failure,
- Network and storage resource availability issues.

\* See the Microsoft Spotlight on Cost Research whitepaper at <http://www.microsoft.com/infrastructure/solutions/spotlightoncost.aspx>.

Finally, the cost of scaling compliance and security-based activities to the datacenter while managing the impact of human error remains challenging. As shown in Figure 2 below, System Center reduces these costs by providing solutions that unify configuration drift monitoring with compliance status and security audit data from specialist vendors such as Tripwire and SecureVantage. By delivering this into the System Center operational management environment, this enables the IT staff directly responsible for change and configuration of servers in the datacenter to receive actionable data related to compliance and security status



Figure 2: System Center supports server compliance

## OPTIMIZED DATACENTER INFRASTRUCTURE THROUGH INTEGRATED PHYSICAL AND VIRTUAL MANAGEMENT

Virtualization of servers has proven to be a robust strategy for reducing hardware and facilities costs. With Windows Server 2008 Hyper-V™ and System Center, organizations are able to rapidly consolidate servers without the additional layers of complexity that other vendors introduce. System Center datacenter management solutions enable intelligent virtualization with the assessment of suitability for conversion, automation of conversion, and intelligent placement of virtual machines on the most suitable host.

With Microsoft, the benefits of virtualization extend beyond hardware cost reduction. Research shows that virtualization and management provide direct operational cost improvements\*. The combination of virtualization and integrated management capabilities also opens up new cost saving and optimization opportunities such as low cost business continuity. Additional optimized use of resources is delivered through taking advantage of new datacenter models such as extending this solution into the cloud computing environment with cloud-based backup partners such as Iron Mountain.

While virtualization has significant cost and operational benefits, it also presents additional management challenges with issues such as managing an increasing number of unmanaged virtual machines, often called “VM sprawl”. To deal with this other vendor solutions introduce the need to have duplicate tools to manage physical environments, virtual environments, and the applications running within them. With System

Center, IT workers have a single set of tools that can manage the entire datacenter service. This negates the need for duplicate management tools, and the costly duplicate license associated with them.

### **INCREASED SIMPLICITY THROUGH INTEGRATED DATACENTER MANAGEMENT**

System Center datacenter solutions manage datacenter services with a single view across server operating systems, physical and virtual environments, and application components. This significantly reduces training costs, licensing costs, and overall complexity. Organizational alignment can also be improved through a single view of datacenter services deployed across both Windows Server environments and non Microsoft servers such as Unix and Linux. Microsoft and non Microsoft application components, along with network and storage resources can also be included in this unified view. These solutions are enabled by System Center and further enhanced through deep integration with partners such as Bridgeways (for non-Microsoft applications), Avicode (for .NET applications), EMC (for network resource management) and Sanbolic (for storage management)

This unified view can be delivered to variety of types of users across the organization, in the format that is most appropriate to their role. Datacenter management professionals can receive alerts and status information directly within the System Center environment or within Microsoft Office Visio diagrams, with live status data directly associated with the physical layout of the datacenter itself. Additionally, through the use of common technologies, System Center service level monitoring and dashboard information can be shared with business partners through Microsoft Office SharePoint. This enables tighter alignment between IT and the business, without additional reporting costs.

When issues do arise, the process of resolving these is also greatly simplified with System Center. Resolution times are reduced through unifying system and human workflows, enabled through integrated incident management, change management, and other service desk capabilities.

System Center also simplifies the licensing and deployment of these capabilities. The core of the System Center datacenter capabilities are licensed through a suite model that enables simple adoption across the datacenter. This model is directly aligned with the licensing model available for Windows Server, further simplifying the procurement process. These end-to-end capabilities are priced to ensure that IT organizations receive the highest value for the price, while taking advantage of a licensing model that is flexible enough to meet the varying needs of organizations.

### **SYSTEM CENTER DATACENTER MANAGEMENT SOLUTIONS**

The capabilities and benefits outlined above are delivered through five key solutions that directly support customer deployment and management

requirements. These solutions are outlined below along with the key capabilities that support each customer scenario. Each solution takes advantage of the System Center family of products, Solution Accelerators, services offerings, and partner knowledge and capabilities.

### **Deliver Service Health and Performance**

This datacenter solution enables customers to improve their datacenter service performance while driving alignment with their business. By providing a single view of services deployed in their heterogeneous datacenter, System Center enables organizations to extend the low cost management of Windows management across their Unix and Linux servers.



### **Automate Deployment and Management of Servers**

Through automation of key server management tasks such as deployment and patching, organizations are able to scale server management while lowering costs. This not only reduces operational costs but can reduce downtime caused by configurations issues and human error. Costs are further reduced through the use of existing skills, tools and knowledge.

### **Support Compliance and Manage Change**

By unifying compliance, desired configuration, and security audit information, organizations are more easily able to meet the compliance demands generated by internal and external requirements. This solution puts this critical information in the hands of the operations staff directly capable of making the required configuration and settings changes to remediate compliance issues. Additionally, the integrated System Center service desk capabilities support change management across the datacenter.

### **Consolidate Servers Through Virtualization**

This solution enables organization to maximize their datacenter resources by converting physical servers to virtual machines, thus lowering costs and supporting green datacenter initiatives. The automated conversion to a virtualized server environment also establishes pools of resources that support improved agility to respond to changes in business requirements.

### **Deliver Datacenter Business Continuity**

The combination of physical, virtual, and cloud based backup and recovery capabilities lower the cost of delivering business continuity. With best practices for backing up and recovering Microsoft applications and the added advantage of utilizing dynamic virtual machine Live Migration,

this solution further supports the drive to ensure datacenter service performance and availability.

### **Solutions Accelerators to Help Optimize Datacenter Management**

Microsoft offers a range of free packaged guidance and best practices to help datacenter managers save money and achieve business goals by optimizing their core infrastructure. Solution Accelerator's free, fully supported tools, guidance and best practices help each step of the IT lifecycle. For more information visit:

<http://technet.microsoft.com/en-us/solutionaccelerators/dd883226.aspx>

### **CONCLUSION**

Microsoft System Center lowers the cost of delivering datacenter services through integrated, end-to-end management of physical and virtual environments. The System Center datacenter solutions provide a range of capabilities specifically designed to ensure the health and performance of datacenter services, while maximizing the use of datacenter resources.

This is delivered in three key ways:

- Reduces datacenter costs through server and resource management automation.
- Optimizes the datacenter infrastructure through integrated physical and virtual management.
- Increases simplicity through integrated management capabilities.

These capabilities are enabled by the System Center platform using packaged best practices from Microsoft and its partners, and an integrated end-to-end management capability across the complete datacenter environment.

For more information visit:

<http://www.microsoft.com/systemcenter/en/us/dynamic-data-centers.aspx>