

# Veritas™ Operations Manager

Simplified storage management and application availability

## Data Sheet: Storage Management

### Overview

Today's data center is suffering from explosive data growth, while IT investments have remained flat. Between 2010 and 2012, data grew on average by 46%.<sup>1</sup> The data center has also become complex; there are too many disparate tools, too many manual processes, and adopting technologies such as virtualization introduces its own set of challenges. The result is reduced utilization of storage assets, increased challenge in scaling operations, and increased risk of unplanned downtime. All of these translate into a substantial jump in operational costs.

The challenge for IT organizations now is to maintain end-to-end visibility and control of an increasingly heterogeneous environment, as well as to optimize data center assets without affecting the availability of mission-critical applications.

Veritas Operations Manager from Symantec is a centralized operationally focused tool that enhances the management of Symantec Storage Foundation, Symantec Cluster Server, Symantec Dynamic Multi-Pathing, and Symantec ApplicationHA across different application, server, virtualization, and storage platforms. In addition to providing a complete centralized management interface for those environments, Operations Manager discovers a wealth of detail about the related configuration. This includes visibility into storage array configuration, the SAN connectivity and fabrics, multi-vendor virtualization and server platforms, and applications, such as Microsoft SQL Server and Oracle databases.

### Highlights

- Centralized visibility and control—Monitors heterogeneous application, server, and storage environments from a single console. Enables administrators to drill down from the application to the storage spindle, even in virtual environments. Correlates virtual machines, applications,

and service groups to physical servers and to VMware® High Availability (HA) clusters.

- Automation of complex operations across platforms—Allows for quicker and more accurate execution of day-to-day tasks with features such as the management of Dynamic Multi-Pathing, Storage Migration, Compression and Thin Reclamation. Maintains standards through simple creation of storage templates based on existing configurations and allowing streamlined provisioning of new host storage for applications.
- Comprehensive and actionable reports—Gathers data in seconds that would otherwise take hours, days, or weeks, thereby improving productivity and application and data availability.
- Risk mitigation and troubleshooting—Identifies which servers have availability and performance risks before they have an impact on your business. Allows administrators to determine applicable patches and criticality and then easily deploy to ensure that the environment is up-to-date.

### Centralized visibility and control

Operations Manager allows you to centrally manage application, server, and storage environments from a secure Web-based console. You can also perform wizard-driven operations on file systems, volumes, disk groups, and more with a simple right-click. With a summary dashboard that displays the state of these resources, administrators are able to monitor the data center infrastructure and drill down to manage any risks or faults in the environment. The customizable user interface enables streamlined visibility and management based on the logged in user's role and required visibility.

The multi-level dashboards provide detailed and summary views of the critical infrastructure. This includes the dependencies and status of Business Applications and databases, operating systems, host bus adapters, disks, disk

<sup>1</sup>. Forrsights Hardware Survey, Q3 2012

groups, volumes, and enclosures. With VMware® discovery, users can visualize HA clusters and their correlation to physical ESX servers, virtual machines, Cluster Server or ApplicationHA service groups, and discovered applications.

Business Applications provides insight into storage resources needed to run an application stack along with historical and real-time performance metrics. Reports on storage and file system utilization deliver an overview of how much storage is used per Business Application and across the organization. Operations Manager provides visibility from the application to the disk, providing the right mapping of application needs to storage assets.

Additionally in virtual environments, you get visibility into storage pools, and virtual machine to Logical Unit Number (LUN) mapping. This feature allows you to provision storage faster, as well as validate storage-based cloning configurations to ensure data protection. For example, you can validate whether volumes used by the database are consuming the right Redundant Array of Independent Disk (RAID) levels, without manual and complex auditing.

thousands of I/O paths across physical hosts and VMware® ESX® servers and can simplify operations if paths need to be temporarily disabled for array maintenance. VOM provides the visibility to better understand single points of failure so your maintenance doesn't lead to application downtime.

Template-based storage provisioning helps you set up well-tested Storage Foundation configurations across your data center to optimize performance and provision applications faster. Simplified campus cluster configuration allows site tagging at the array level and streamlined configurations, reducing OPEX spend. Furthermore, easy integration with configuration management database allows seamless asset metadata management.

For improved application recovery automation, run book steps can be recorded in a simple workflow plan, which allows for start/stop of Cluster Server and ApplicationHA managed applications and Virtual Business Services by showing multi-tier applications across physical and virtual platforms. Administrators can build in hooks to their own custom scripts.

### Comprehensive and actionable reports

Operations Manager provides comprehensive reports and views on storage utilization, cluster activity, availability trends, product usage, licensing, and patching.

These reports provide valuable information about your infrastructure that can be used to reduce storage consumption, ensure availability, and maintain standards and compliance:

- Storage utilization reports help you easily identify underutilized storage pools and reclaim them on supported arrays.
- License deployment reports discover Storage Foundation and Cluster Server software to ensure compliance.
- Uptime analysis and failover summary reports help you identify the root cause of availability problems, so you can take steps to prevent them from recurring.
- Patch reports identify which patches are applicable to your Storage Foundation and Cluster Server deployments to ensure that the most critical and recent patches are in



Figure 1. Veritas Operations Manager dashboard views are tailored to specific job roles.

### Automation of complex operations across platform

Operators leveraging Storage Foundation to handle key operations can use Operations Manager to automate tasks. With a guided workflow to ease configuration, Dynamic Multi-Pathing management reduces the complexity of managing

place. In order to reduce risk and prevent downtime, you can deploy newer hotfixes and patches for Storage Foundation High Availability for Windows through Operations Manager.

- Switch discovery and reporting identifies SAN switches and fabrics and correlates virtual and physical hosts and storage arrays to switches and fabrics. It minimizes risk using the visibility into the path of a server to switch to storage array and improves port configuration.
- Automatic alerts notify you when physical storage pools reach a critical level, thereby removing risks of fully exploiting thin storage, improving storage efficiency and reducing storage costs.
- Compression and deduplication reports highlight which hosts and file systems would benefit from optimization
- Thin pool reclamation recommendation reports pinpoint enclosures, thin pools and hosts which have maximum reclaimable space.

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### **Risk mitigation and troubleshooting**

With improved visibility, administrators can quickly identify the root cause of problems and easily repair them, leading to faster application deployment times, higher service levels, and reduced risk of human error. The application dashboards provide you with complete visibility into different applications discovered in physical and virtual machines, including applications discovered by Operations Manager and ApplicationHA. This dashboard helps assess the business risk of performing maintenance and can track the status of applications as they move across your infrastructure.

Health checks are available to give administrators visibility into the health and configuration of Storage Foundation and Cluster Server deployments. Through a series of checks, the software periodically inspects hosts and reports back on the information it discovers at both high and detailed levels. Four categories of checks are available covering Storage Foundation, Cluster Server, Dynamic Multi-Pathing and ApplicationHA:

- Availability checks ensure that Storage Foundation is configured optimally to ensure application availability.
- Performance risk checks monitor and report on the performance of Storage Foundation; for example, I/O access times or waits.
- Storage Foundation utilization checks determine whether file systems or volumes are mounted or can instead be reclaimed for further use.
- Best practices provide tips on how to more efficiently use Storage Foundation.

In addition, the Fire Drill tests allow you to run nondisruptive availability checks to ensure that applications are protected by Cluster Server's high availability and disaster recovery capabilities.

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### **Supported operating systems:**

- HP-UX®
- IBM AIX®
- Linux®
- Microsoft® Windows®
- Oracle® Solaris™
- VMware® ESX®

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