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Introducing Microsoft System Center Operations Manager 2007 R2

White Paper

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Introduction

From the foundation for running the business to an enabler of competitive advantage, there's no disputing the essential role that technology plays in today's organization. Managing this strategic resource to ensure optimal performance and business continuity in the most cost effective way is one of the top challenges facing IT organizations.

Whether an organization is large or small or somewhere in between, the technology infrastructure required to drive the core processes of the business can be incredibly complex. Organizations have to deal with the sheer breadth of technologies running in their environment, identify people with the correct skill sets to be able to administrate them, and train others where gaps are identified. On top of this, internal politics or concerns of inadequate training can further complicate the management of distributed applications, since in many cases it involves multiple administrators across the servers that are hosting different applications, as well as the of the applications themselves. To optimally manage and monitor potentially hundreds or thousands of servers, the data center must find more ways to navigate these many challenges in order to automate and centralize the management process.

End-to-end visibility into the health and performance of the infrastructure is the first step to ensuring that the required levels of service are delivered across the IT services and applications running in the datacenter. Only in this way can datacenter management teams understand what components together comprise an IT service, (i.e., servers, applications, network devices and more), see the resultant effect on those services should a component fail, and be able to focus the response in the event of an IT incident.

Even with such visibility into the infrastructure, the time to respond to incidents is still driven up when the respective administrator needed to correct the issue has to be engaged to respond. What is also needed is a way to push administrative actions down to the earliest possible responder, (e.g., the helpdesk team) without having to necessarily grant those individuals administrative access to those systems or applications, or have to train them in potentially complex procedures or in the monitored application itself.

With the release of Microsoft System Center Operations Manager 2007, Microsoft brought the power, visibility, and efficiency of centralized management to the Microsoft environment. Now, with Microsoft System Center Operations Manager 2007 R2, data centers can extend the monitoring capabilities originally provided for just Windows environments across to UNIX and Linux servers and workloads, enabling centralized management of the datacenter from one "single pane of glass."

Introducing Operations Manager 2007 R2

System Center Operations Manager 2007 R2 uniquely enables customers to reduce the cost of data center management across server operating systems and hypervisors through a single, familiar and easy to use interface. Through numerous views that show state, health and performance information (such as shown in Figure 1) as well as alerts generated according to some availability, performance, configuration or security situation being identified, operators can gain rapid insight into the state of the IT environment, and the IT services running across different systems and workloads.

By extending the value that existing Operations Manager customers already see in managing their Windows Server deployed applications to UNIX and Linux, customers are also able to better meet their service level agreements for applications in the data center.

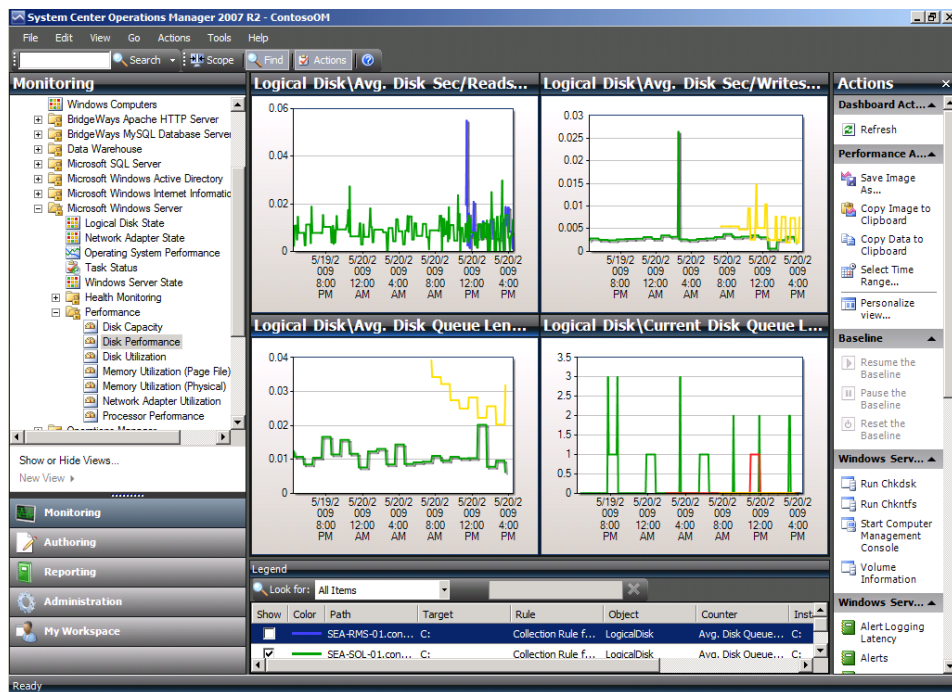


Figure 1: System Center Operations Manager 2007 R2 delivers detailed information on your environment

With Operations Manager 2007 R2 customers are also able to improve their availability and performance metrics through enhanced service level monitoring, while their IT operations staff will be able to have improved access the key functionality they need to maintain and enhance the service they deliver to their end users. The product delivers capabilities across 3 core areas:

- **End-to-End Datacenter Service Management.** System Center Operations Manager helps improve datacenter service performance by improving resolution time through best practice driven alerting, service level monitoring, and reporting. With out-of-the box capabilities for monitoring Windows, UNIX and Linux servers and workloads; support for Simple Network Management Protocol (SNMP); and extensive partner solutions, Operations Manager 2007 delivers comprehensive monitoring and management for your datacenter.
- **Best of Breed Monitoring for Windows and Beyond.** System Center Operations Manager extends low cost Windows management to the complete datacenter environment, providing a single pane of glass across operating systems, hypervisors, networks, storage, and Microsoft and non-Microsoft applications. Including expertise from the Microsoft server, client, and application teams; UNIX and Linux knowledge from both our cross platform teams and partners; and subject matter expertise from our partners and community, Operations Manager provides you with knowledge and capabilities to drive greater operational efficiency.
- **Increased Efficiency and Control.** System Center Operations Manager automates routine, redundant tasks. It provides intelligent monitoring and the ability to automate action to help increase efficiency and enable greater control of your IT environment. Role-based security, Active Directory integration, and powerful infrastructure elements make it easier to monitor, configure and deploy in complex environments. Support for high-availability features such as clustering and failover ensure the IT environment is always monitored.

History of System Center Operations Manager

Released in March 2007, Operations Manager 2007 is actually the third generation of Microsoft's award winning IT monitoring solution. The current release builds on the successes of its predecessors: Microsoft Operations Manager (MOM) 2000 and MOM 2005.

The release of Operations Manager 2007 also aligned the product as part of the System Center family of products. Today, Operations Manager is part of the System Center solutions for the datacenter, which also includes the following enterprise solutions for the datacenter:

- **System Center Configuration Manager** comprehensively assesses, deploys, and updates servers, client computers, and devices—across physical, virtual, distributed, and mobile environments. Optimized for Windows and extensible, it is the best choice for gaining enhanced insight into and control over IT systems.

- **System Center Data Protection Manager** is the new standard for Windows backup and recovery, delivering continuous data protection for Microsoft application and file servers using seamlessly integrated disk and tape media. System Center Data Protection Manager enables rapid and reliable recovery through advanced technology for organizations of all sizes.
- **System Center Virtual Machine Manager (VMM)** enables customers to configure and deploy new virtual machines and centrally manage physical and virtual infrastructure from one console. New to this version of VMM is multi-vendor virtualization platform support, Performance and Resource Optimization (PRO) and enhanced support of “high availability” host clusters, among other new features.

Key Differences between MOM 2005 and Operations Manager 2007

A key difference between Operations Manager 2007 and its predecessors is that the product focuses on the delivery of the IT *service*, not just of the health of individual servers in the environment. This of course broadened the capabilities of the product to be able to discover the different workloads running on different systems, and then enable the creation of distributed application models that combined the different components together to comprise the IT service being monitored. Other key enhancements such as client monitoring, audit collection, role-based security and Active Directory integration (to name a few) also launched the product into the mainstream of IT management and monitoring software. A comparison of the key capabilities between MOM 2005 and Operations Manager 2007 is shown in Table 1.

What’s New in Operations Manager 2007 R2

Release 2 of Operations Manager 2007 adds new and enhanced capabilities across five areas:

- **Cross Platform Monitoring**, adding support for the detailed monitoring of UNIX and Linux servers and workloads alongside the already-provided best-of-breed monitoring capabilities for Windows-based systems and workloads. With an integrated experience for system discovery, monitoring and management, organizations can truly use Operations Manager 2007 R2 to monitor their heterogeneous datacenter environments.
- **Service Level Tracking**, enabling customers to granularly define service level targets against monitored IT services, and then review detailed reports that show the achieved level of service against those targets; helping to quickly identify where components of an IT service may affect overall health and performance of that IT service.
- **New Monitoring Templates**, aiding in the rapid creation of new monitoring capabilities. New templates include those for monitoring processes, monitoring log files and daemons running on UNIX and Linux systems.

Improvements were also made to the process for creating OLEDB and Windows Service monitors.

- **Enhanced Usability**, with new features such as integrated import wizard for management packs, enhancements to the notification subscription wizard, the ability to view the health explorer from within the web console, and much more.
- **Improved Performance** of both the core product and consoles, such as dramatic scalability improvements that enhance the ability of the product to monitor multiple endpoints. For example, one management server can now monitor over 1000 URLs.

Products	Microsoft Operations Manager 2005	System Center Operations Manager 2007
End-to-End Service Management		
Service Oriented Monitoring		✓
Synthetic Transactions	✓	✓ **
Model-based architecture		✓
Monitoring Templates		✓
WS-Management support		✓
SNMPv2 support	✓	✓ **
Best of Breed for Windows		
Client Monitoring		✓
Audit Collection		✓
XML Management Packs		✓
Reporting	✓	✓ **
Self-Tuning Thresholds		✓
Increased Efficiency and Control		
Server roles	✓	✓ **
High availability	✓	✓ **
Monitoring Engine	✓	✓ **
Notifications	✓	✓ **
Connector Framework	✓	✓ **
Consolidated Console		✓
Role-based security		✓
Active Directory Integration		✓
Windows PowerShell command console		✓

* Improved in Operations Manager 2007

Table 1: Comparing MOM 2005 to Operations Manager 2007

Key Benefits of Operations Manager 2007 R2

With the new and enhanced capabilities presented above, Operations Manager 2007 R2 will help organizations:

- **Enhance application performance and availability across the datacenter**, with the ability to monitor Windows, Linux and UNIX servers, as well as their workloads, all from a single console.
- **Improve management of applications in the data center** through enhanced reporting that shows how actual application performance and health maps to target levels of service, as well as monitoring capabilities that scale to required workloads.
- **Increase speed of access to information** and functionality to drive management with efficient problem identification and actions to quickly resolve issues before they become incidents.

Core Capabilities of Operations Manager 2007 R2

With a tiered architecture that provides highly scalable, flexible, yet robust capability, Operations Manager 2007 R2 is able to scale to the most challenging of environments. Support for the monitoring of single, multiple and un-trusted domains – as well as remote branches or sites – the product is able to quickly start monitoring of your datacenter and IT environments.

Through this chapter we will present many of the capabilities offered by Operations Manager 2007, but this list is by no means exhaustive. Customers are encouraged to read the online documentation on the product that provide the most comprehensive overview of the offerings, capabilities, and possible deployments of the product.

End-to-End Datacenter Service Management

An increased focus over recent years has been on demonstrating to customers – both internal and external – that IT services hosted in the datacenter are being delivered to agreed levels of service. Approaches to both ensuring that these IT services are ‘up and running’, that users (and other systems) can successfully access them when required, and then providing metrics to show how the service has been successfully delivered, has been no easy task. In many cases a number of different approaches, processes, tools and techniques have been employed, from the most manually intensive, to the procurement of multiple products, to home-grown solutions. Unfortunately, this myriad of approaches have resulted in challenges in providing an integrated approach, higher training costs, a lack of automation, and more.

With support for Windows, UNIX and Linux systems and the ability to monitor (and manage) workloads running on those systems, an extensive set of value-add solutions from partners, and the ability to synchronize with other management infrastructures, Operations Manager 2007 R2 is perfectly placed to be the management console for the datacenter.

Powerful, extensible and customizable monitoring

Agents deployed by Operations Manager receive instructions that are encapsulated within management packs on how to discover different systems and workloads. Once discovered, monitors and rules are deployed that the agent uses to assess the health, performance, configuration and security of those systems and workloads, the status of which it then reports back to its management server.

In many cases these management packs are pre-packaged from entities such as Microsoft and its partners, and are downloaded from the System Center Catalog. However, for situations where a management pack does not exist, such as for monitoring a custom and/or in-house developed application, Operations Manager

provides the ability for an organization to implement their own monitors and distributed application views.

Using the built-in monitor templates, the product's monitoring scope can be quickly and easily extended to detect the health, performance and/or existence of entities such as Windows and UNIX services, databases, files, processes, TCP/IP ports, web services/URLs, and much more. Some of these monitors can be further customized to get very detailed performance and transaction information. One example of such a monitor is the web service monitor that, in addition to monitoring if a URL is responding, can also perform synthetic transactions against that web service such as logging in, performing some workflow – all the time evaluating the responses of that web service to be sure that the response is as expected, and is performing within expected parameters.

No matter the size, experience or capability of the organization, any IT monitoring solution will need to be aligned to the requirements of that organization and its IT infrastructure. For example, an agent that checks a website every few minutes may be seen as performing that validation too frequently. In order to accommodate this, Operations Manager allows the settings of different monitors to be 'overridden,' changing the default or pre-set configuration for that monitor. In our website example, the administrator can change this 'polling interval' from its default of every 2 minutes to a new poll interval of 15 minutes. This is just one example of many possibilities, and different management packs will offer different overrides according to their function. All overrides can then be viewed (and edited) using the overrides summary view, new to Operations Manager 2007 R2, allowing rapid identification of where customizations have been implemented.

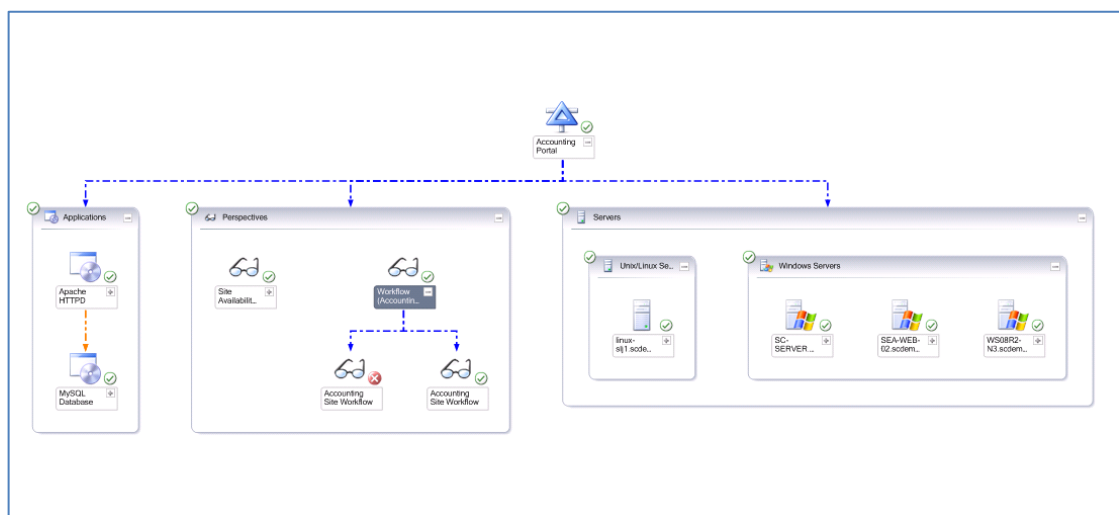


Figure 2: Diagram view of a distributed application (IT Service)

As mentioned above, a key capability introduced with Operations Manager 2007 is the ability to view the health and performance of IT services. Operations Manager does this by piecing together the different components that together comprise an IT service into a diagram, similar to that shown in Figure 2. In many cases management packs will not include diagram views, or will provide some dynamic version of the diagram due to the different ways that IT services can be deployed. Operations Manager also provides the ability for organizations to craft together their own distributed applications using its Distributed Application Designer (see Figure 3). This allows the user to pull together the different components that represent the IT service and show relationships between those components, resulting in a diagram that represents the key components and that rolls up the health of the complete IT service based on the health and performance of those components.

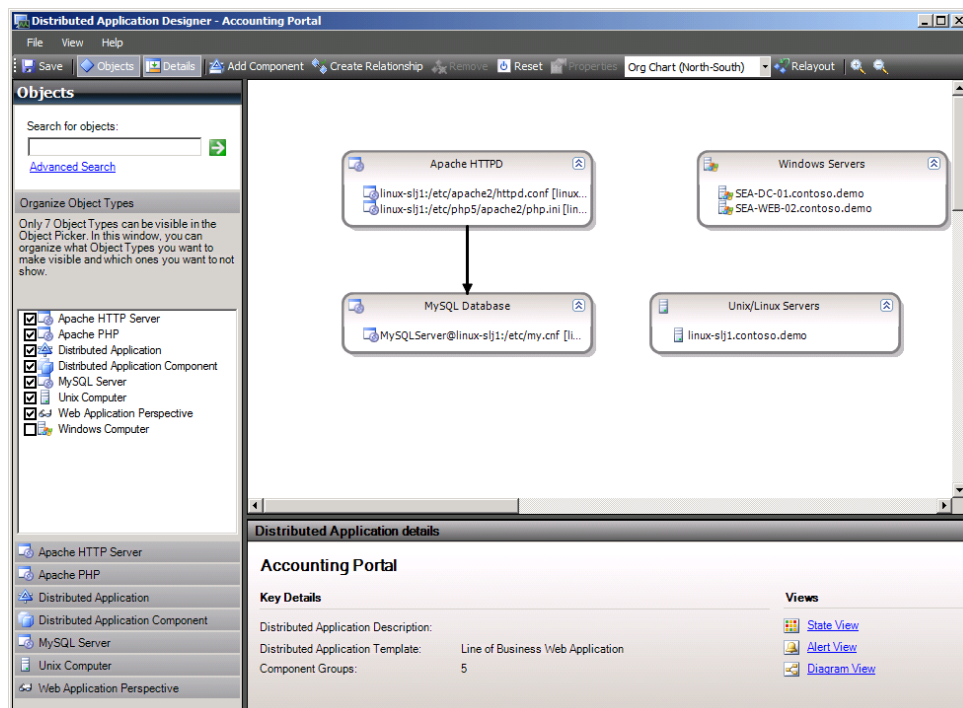


Figure 3: The Distributed Application Designer enables the creation of custom IT service diagrams

Track Service Levels against Targets

Determining whether the level of service delivered against a target can be a challenging undertaking. Approaches can be reactive, such as using helpdesk tickets to determine the period of unavailability, to more proactive measures such as employing external services, procuring products with a focused scope of determining application availability, or implementing home-grown tools. Such approaches can increase security risks (such as from the opening of firewall ports to enable external

service access), expensive (such as a subscription fee per URL monitored), or even inadequate for the intended purpose.

Operations Manager 2007 R2 facilitates the granular definition of service level objectives against each of the components that together deliver the IT service, as shown in Figure 4.

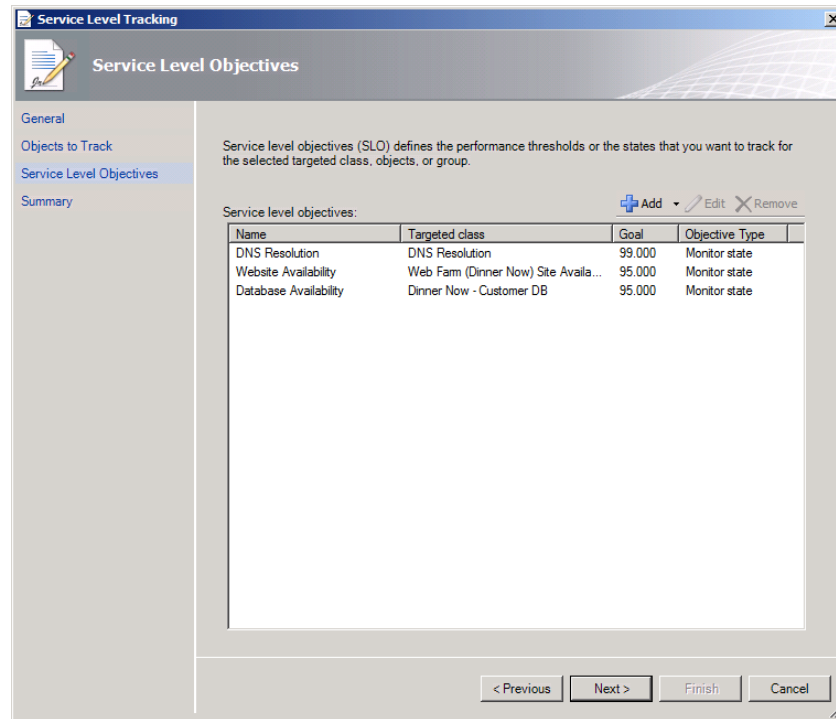


Figure 4: Assigning Service Level Objectives to IT service components

Since Operations Manager is already collecting metrics about each of these components, it is able to quickly ascertain whether a particular component is meeting its service level target, or needs attention. It then is able to present this information via its operational service summary report, such as shown in Figure 5, which also allows the operator to drill down to help identify the exact time of failure and work towards identifying the root cause of any outage.

Organizations who wish to share this information to other audiences, such as to management or to customers, can also implement the Service Level Dashboard solution from the Microsoft Solution Accelerators team. This presents the same IT service alignment metrics through Microsoft SharePoint, as shown in Figure 6, which removes the need to train potential audience members in Operations Manager or implement any access requirements. Instead, those users use the familiar interface or SharePoint through their web browser to view the information.

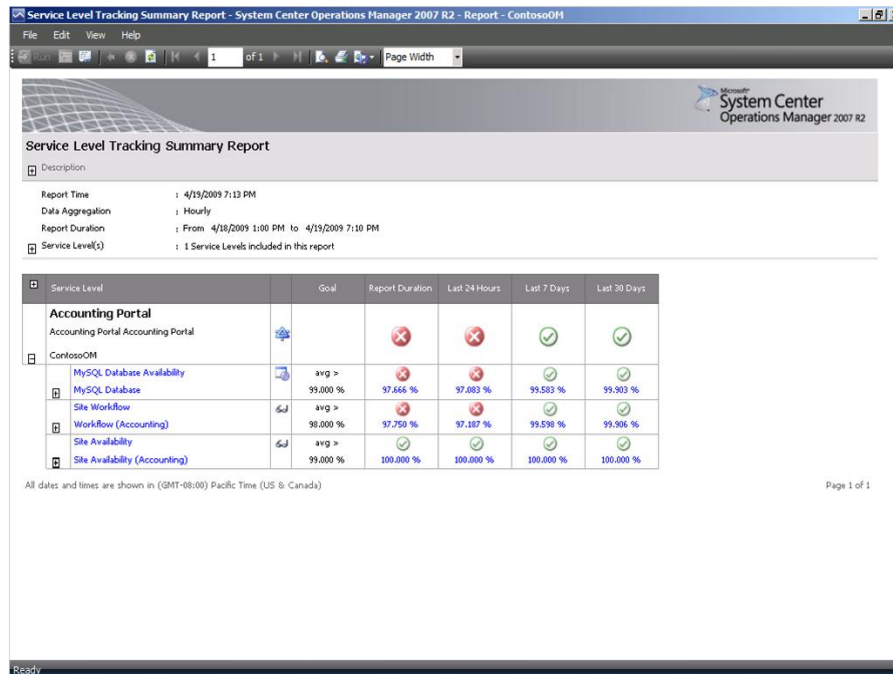


Figure 5: The Service Level Tracking Summary Report shows, at a glance, how IT service components are aligning to their service level objectives

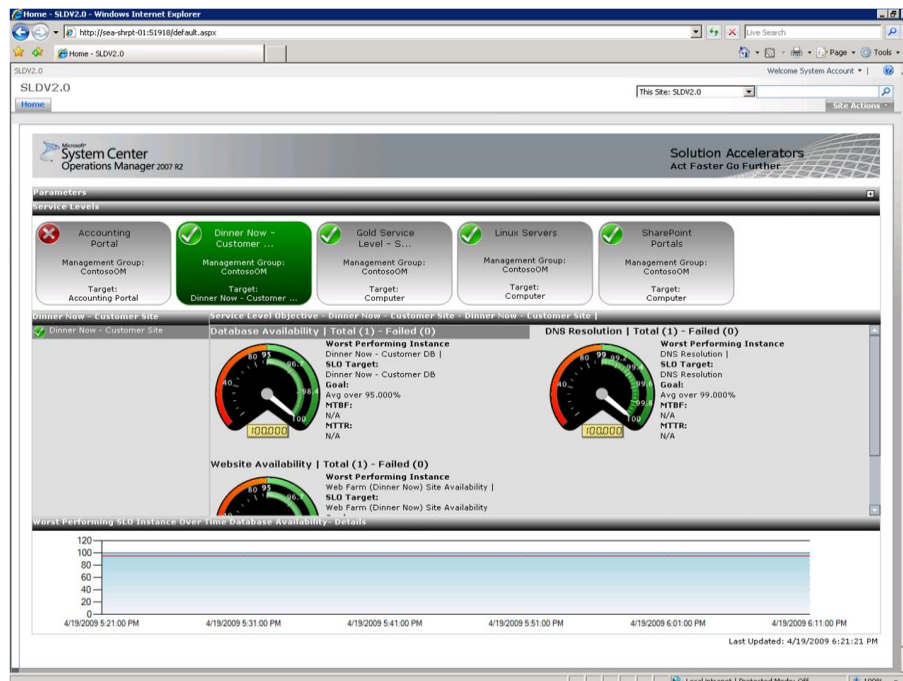


Figure 6: The Service Level Dashboard presents service alignment information through Microsoft SharePoint.

Extensive, In-Depth Reporting

In addition to presenting near real-time information through one of its many monitoring views, Operations Manager 2007 R2 also provides the facility for operators to run detailed reports on performance, availability and other metrics for monitored elements.

Operations Manager provides a default set of reports out-of-the-box, and new reports are imported via the management packs to which they relate. For example, importing the operations management pack for Windows Server 2008 provides new reports that are focused on that monitoring target (as shown in Figure 7). In many cases, these reports will permit additional drill-down to deeper levels of detail, allowing investigation and greater insight into the data that created that report.

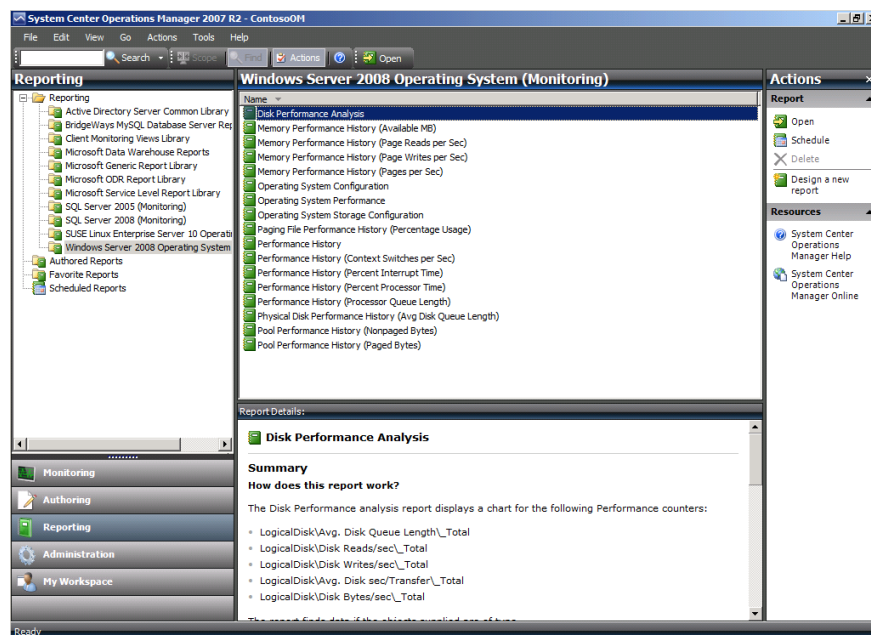


Figure 7: Rich reports are available for different management targets, such as Windows Server 2008

Agentless Exception Monitoring

Using Domain Policy to instruct clients and servers to redirect application crash and hang information to Operations Manager, Agentless Exception Monitoring (AEM) allows administrators to centrally gather the data generated by Dr. Watson or Windows Error Reporting and perform detailed analysis on that information. This information can help determine if there are issues affecting multiple systems or end users, such as a particular version of application that is hanging frequently, and then provide organizations the information to approach vendors of those applications for a solution. Organizations also have the option of forwarding this information on to Microsoft for deeper analysis, which will also provide links to solutions should they exist.

Best of Breed for Windows and Beyond

As mentioned above, operations management packs are the building blocks which extend Operations Manager 2007 management capabilities to operating systems, applications, and other technology components. An operations management pack (MP) contains best practice knowledge to discover, monitor, troubleshoot report on, and resolve problems for a specific technology component. Upon detection of an incident, users can use the knowledge encapsulated within the operations management pack to their advantage through the information provided on the alert, such as through the health explorer (see Figure 8).

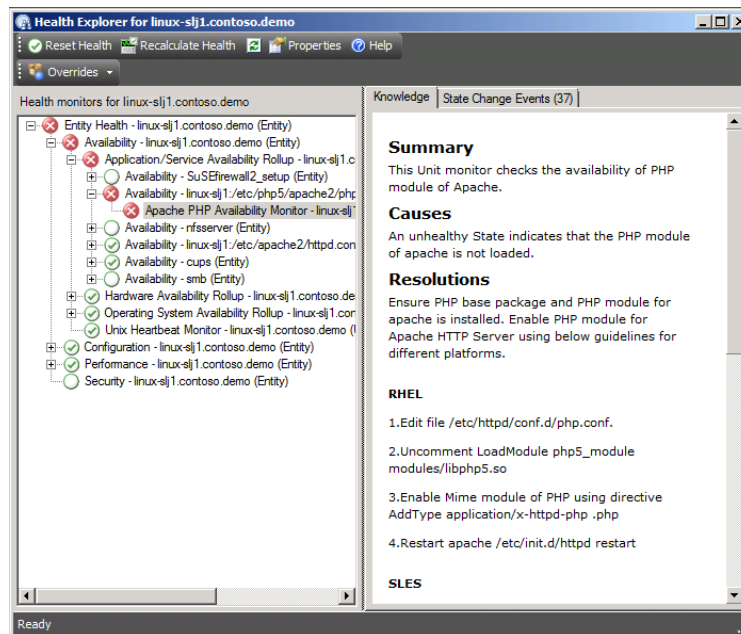


Figure 8: Health Explorer provides detailed knowledge to help troubleshoot and rectify issues

Operations management packs are available for Microsoft and third party operating systems, applications and devices, and include health models based to analyze the performance, availability, configuration and security inputs, as well as the status of related components, to determine the overall status of components. Where validated at a customer location, operations management packs are available for download from the System Center Catalog, although more management packs exist for download from community sites such as <http://systemcentercentral.com>, individual partners, and more.

Best of Breed for Windows

Operations Manager 2007 R2 delivers the best of breed management solution for Windows systems and workloads. Improvements in Management Packs for Microsoft products have increased knowledge and reports based on the best practices of Microsoft IT and Product Support Services. Microsoft currently has more than 70

Management Packs for various Microsoft products, ranging from the Windows operating system to applications such as Microsoft Exchange Server and Internet Information Server.

Extending Monitoring to UNIX and Linux

Operations Manager 2007 R2 is the first edition of the product that extends the award-winning monitoring capability for Windows systems and workloads to UNIX and Linux servers, including HP-UX[®], Sun Solaris[™], Red Hat[®] Enterprise Linux[®], Novell[®] SUSE[®] Linux Enterprise Server, and IBM AIX server environments. Out-of-the-box monitoring provides baseline monitoring of key variants of each operating system including physical and logical disks, memory, processor, network interfaces, and more.

To deliver monitoring for workloads running on these UNIX and Linux systems, Microsoft Partners including Novell and BridgeWays deliver operations management packs that perform comprehensive monitoring and management of workloads such as MySQL[®], Apache HTTP Server, and more.

Managing Physical and Virtual Infrastructures Side-by-Side

The interoperability between System Center Virtual Machine Manager and Operations Manager allows organizations to manage both virtualized and physical systems and workloads. Using the operations management pack for System Center Virtual Machine Manager, it is possible to see the state of virtual hosts, their guests, and identify on what physical hosts a virtual guest is running, and what workloads are running within that virtual guest.

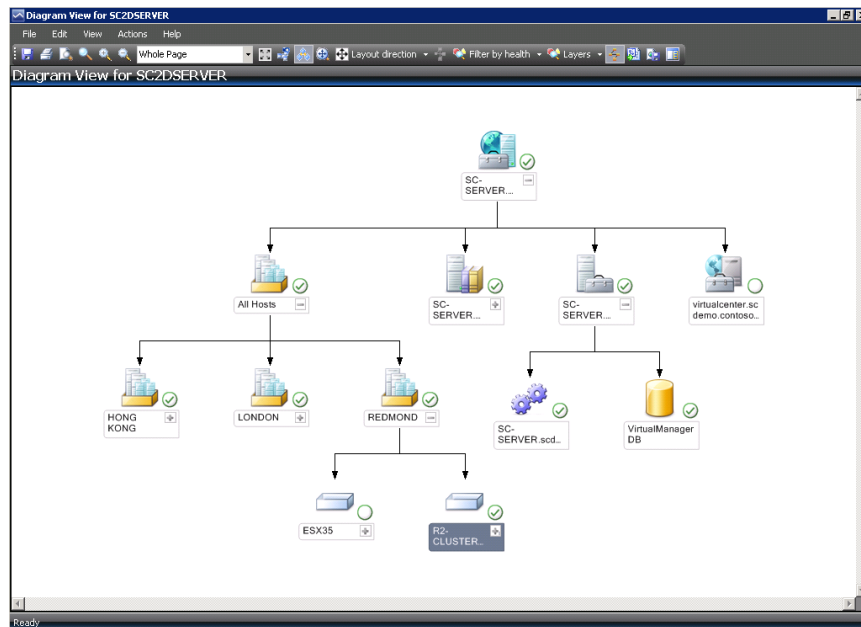


Figure 9: Operations Manager 2007 R2 showing the relationship between virtualized guests, their workloads, and the physical hosts where they are located.

Interoperability with other Management Infrastructures

The Interoperability Connectors for Operations Manager 2007 R2 (Interop Connectors) provide enterprises of all sizes the ability to share and synchronize events between Operations Manager 2007 R2 and other management platforms. Available connectors include those that support IBM Tivoli® Enterprise Console (TEC), HP Operations Manager (for UNIX and Windows), and BMC Remedy ARS. A new Universal Connector also provides the ability to connect to other management systems running on different variants of Windows, UNIX and Linux operating systems. For more information, refer to the *Interoperability Connectors for Operations Manager 2007 R2* datasheet.

Partner Solutions

Many operations management packs for many non-Microsoft products and workloads – such as Oracle, DB2, Apache, MySQL, SAP, and both server and networking hardware – are produced and offered by Microsoft Partners such as Avicode, Quest, Brocade, Savision, HP and Dell.

Partners also provide solutions that align to the deployment and daily management of Operations Manager. Examples include:

- **Silect**, who deliver a solution for analyzing, testing, tuning and auditing management packs. This solution can also help with migrations from MOM 2005 to Operations Manager.
- **SecureVantage**, who extend the auditing capabilities in Operations Manager 2007 R2 to provide additional security management, auditing, and compliance.
- **Tideway**, who provide an automated service discovery solution that can help quickly identify and catalog the different IT services running across your environment.

These represent just a handful of the Microsoft Partners and their solutions, and are by no means a complete list. However, it provides you an example of some of the solutions that are available, and which extend the capabilities of Operations Manager.

Increased Efficiency and Control

As with any enterprise product, beyond a rich set of features ensuring that it is easy to deploy, to configure, and to use are of critical important to the success (or failure) of that product in any environment. In addition to performing significant research to identify the features that customers need, Microsoft works closely with its customers to ensure that their experience with Operations Manager meets, even exceeds, their expectations.

Operations Manager 2007 R2 delivers clear benefits across a number of areas, including notifications on alerts, internal product security, (e.g., role-based access), integrated update capabilities, and powerful interoperability and automation.

Flexible Notification Infrastructure

Operations Manager 2007 R2 delivers support for notifications to be sent to recipients through a number of different communication channels that include e-mail, SMS, and instant messaging. Commands and scripts can also be run based upon a notification alert.

Using a notification schedule, subscribers can determine how they wish to be notified on different alert types, and through which notification channel. For example, during business hours a SQL administrator may wish to receive notifications through his work email account, and can elect to receive notifications via SMS outside of business hours.

While operators can be subscribed to be notified on alerts by a central administrator, Operations Manager 2007 R2 also allows end-users to 'self-subscribe' to receive notifications to alerts of their choosing. This significantly reduces the administrative burden that accompanied earlier versions of Operations Manager.

Built-in Security Capabilities

Operations Manager uses Active Directory to manage its users and group-based access, leveraging that centralized identity store without forcing organizations to manage, maintain and secure a separate identity repository. This allows the use of Active Directory groups to determine access to different roles, and also leverages domain security policies to ensure that security is adequately maintained for operators and their accounts.

From an operations standpoint, Operations Manager dramatically reduces the security risk of monitored systems by acting as the 'proxy' between its users and the systems and workloads being managed. Using role-based access controls, administrators can limit the scope of views and actions that an operator can perform using Operations Manager. For example, the organization may decide that members of the SQL management team are only able to view the available SQL monitoring views in the console, and be allowed to run the tasks that start or restart the SQL Server and SQL Reporting Services. This would essentially remove access to any of the other views or panes available in the console.

Integrated, Updatable Monitoring Capabilities

As discussed above, Operations Manager relies upon operations management packs to deliver advanced and in-depth monitoring of corporate IT environments. One of the challenges of the System Center Catalog is that as it grows, it becomes harder to navigate and to identify if a newer version of a management pack is available.

With Operations Manager 2007 R2 was also launched a new web service for the System Center Catalog. Using the management pack import wizard (see Figure 10), administrators can select to view all management packs, all released in the past 3 to 6 months, as well as view all management packs that are newer versions of those already installed. With auto-resolve capabilities, Operations Manager 2007 R2 now takes much of the work out of determining and resolving any management pack dependencies, and helps quickly identify if a management pack is installed, as well as if an update is available.

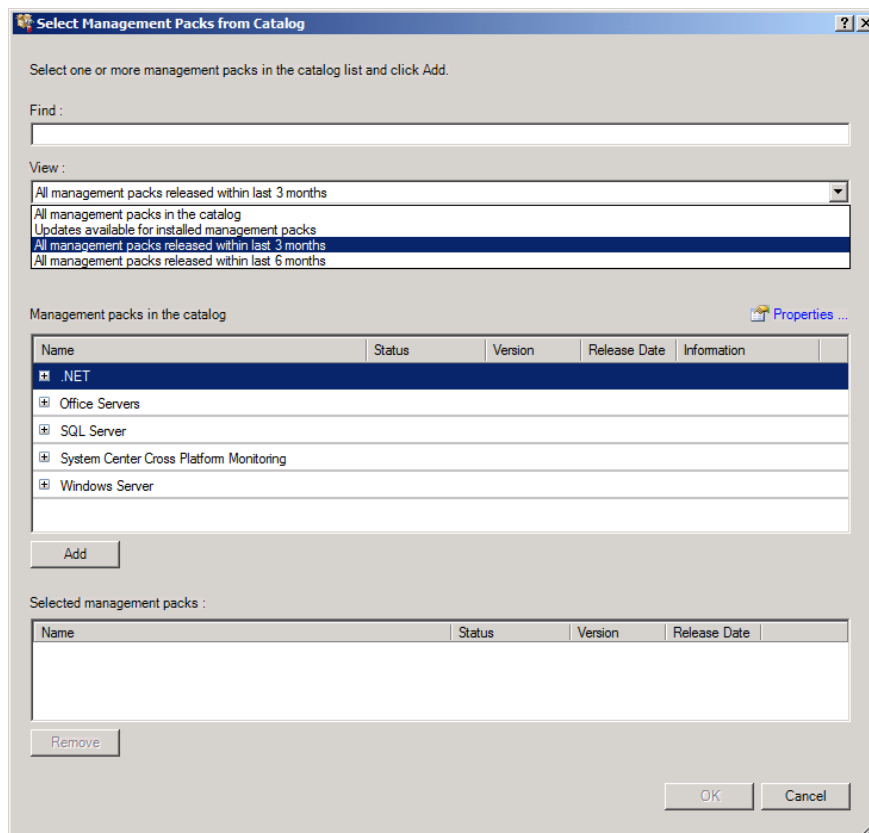


Figure 10: New Management Pack Import from Web Service Capability

Centralized Audit Collection

A continuing challenge in any large IT environment is the ability to collect and review log information. Traditional approaches included perusing log files to try to determine undesired behaviors, or breaches of policy. Log management and security event monitoring solutions provide a great way to centralize audit information, but often come along with very high costs to purchase. Operations Manager 2007 R2 provides the ability to securely and efficiently extract and collect security logs from systems and store them for later analysis and reporting. The extracted logs are stored in a separate Audit Collection database, which can then be polled using the built-in reports to evaluate scenarios that include users created and deleted, users added to

privileged user groups, and more. This information can be used to satisfy auditor requests for regular log review in order to comply with regulatory or policy-based requirements that mandate regular inspection of system log data.

Powerful Interoperability and Automation

With Operations Manager 2007 R2, organizations can utilize rich interoperability and automation functionalities between the product, other System Center solutions for the datacenter, as well as other products and systems. To name some examples:

- **PRO-enabled management packs** provide an automated or advised response to incidents within virtualized environments, (e.g., Live Migration of workloads between servers in response to an issue on the virtualization host).
- **System Center management packs** deliver monitoring of the health, status and performance of the other System Center solutions for the datacenter.
- **PowerShell interface**, allowing administrators to use a command-line interface for administrative capabilities, or to make calls from other scripts or applications.
- **Software Development Kit** interface enables customers, integrated service vendors, and more to extend the capabilities of Operations Manager 2007 R2 to wider applications with added value.
- **PowerShell hosting capability** delivers highly-optimized environment for hosting PowerShell cmdlets used to monitor health and performance, rather than running those cmdlets on target machines.

Conclusion

System Center Operations Manager 2007 R2 excels over its predecessors by extending the familiar monitoring interface and capabilities of the Windows domain to UNIX and Linux. With Service Level Tracking capabilities, organizations are empowered to leverage the IT service and component information already collected by Operations Manager to assess the delivery of those IT services against service level objectives, and at a glance, be able to identify where services are at risk of falling below expectations, as well as quickly drill down to identify the root cause of incidents. With many other enhancements, including richer monitoring capabilities, enhanced usability, and improved performance,

Overall, Operations Manager 2007 R2 delivers the reliability, flexibility and scale demanded of today's organizations and datacenters, along with the familiarity and ease of use; all elements of which are needed to successfully reduce the costs of managing your complex and distributed IT environments.

For Further Information

Download a trial of Operations Manager 2007 R2

Find details on how to obtain and evaluate a free 180-day trial of the product, as well as find more information, at <http://www.microsoft.com/opsmgr>

Learn more about our cross platform and interoperability capabilities

Read whitepapers, datasheets and more at <http://technet.microsoft.com/en-us/opsmgr/dd239186.aspx>

Obtain Management Packs and Connectors

For the latest Management Packs and Connectors from Microsoft and Microsoft Partners for Operations Manager 2007, visit the System Center Catalog at <http://technet.microsoft.com/en-us/opsmgr/cc539535.aspx>

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