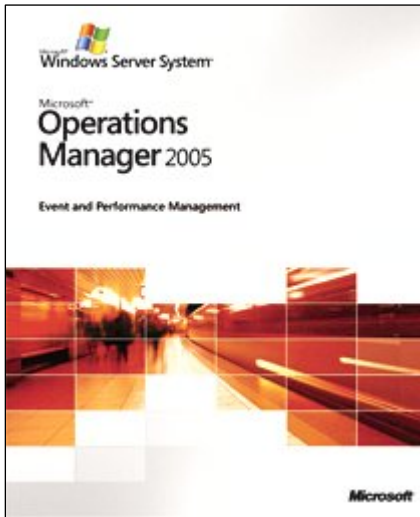


Microsoft® Operations Manager 2005

Get the Knowledge to Avoid the Avoidable



Microsoft® Operations Manager (MOM) 2005 delivers extensible and scalable enterprise-class operational management by providing comprehensive event management, proactive monitoring and alerting, reporting and trend analysis, and system and application specific knowledge and tasks to improve the manageability of Windows Server System™ environments. Microsoft Operations Manager 2005 provides:

- *User interfaces optimized for the task at hand, whether it be administration, operations, or reporting*
- *Operational knowledge obtained directly from developers and operational staff to help identify, understand, and resolve IT issues*
- *Easily extensible architecture to manage custom applications and integrate with third party solutions*

www.microsoft.com/mom

The Cost of Downtime

When IT services are interrupted, IT Professionals are expected to take the necessary actions to restore services as quickly as possible. The cost of downtime can be directly linked to how long it takes to restore the services and time is money. However, a significant amount of time is spent:

- Dealing with issues that could have been avoided if detected earlier
- Trying to determine the importance and priority of events and their root cause
- Searching for the appropriate resolution information

MOM 2005 provides the tools and capabilities to help IT Professionals reduce both the time spent identifying and resolving issues, and the number of issues requiring investigation by simplifying and streamlining the **identification, understanding and resolution** processes for the issues potentially causing service outages. Now, the IT Professional can spend less time managing crises and more time delivering new services to the business.

Identify Issues Faster

To help increase the efficiency of administrators and operators, MOM 2005 provides user interfaces optimized for the different roles and the specific tasks that need to be performed.

- **Administrator Console**
Targeted to configure and optimize MOM 2005, install management packs, create rules, configure and deploy agents, and configure user views and security settings
- **Operator Console**
Provides an intuitive user interface for the MOM Operator to quickly identify issues. This console includes multiple views such as a topology diagram reflecting the relationships between servers and systems, a state view summarizing the health of each

server, and an alert view for displaying actionable events

- **Web Console**
A customizable web interface built on the MOM 2005 Software Development Kit (SDK), which provides a summary of computers, in addition to alert and event views
- **Reporting Console**
Provides access to a large number of predefined reports for systems, applications, and environments monitored by MOM 2005 — utilizing SQL Server™ Reporting Services. Additional custom reports can also be created in the Visual Studio® development environment

Understand the Issues Quickly

MOM 2005 introduces the concept of management packs — a vehicle for encapsulating the knowledge of subject matter experts and delivering it as part of the product — reducing the time and investment needed to:

- Determine what needs to be monitored
- Troubleshoot issues when they occur

Management packs contain a collection of monitoring rules with predefined thresholds, a knowledge base with troubleshooting and resolution information, and scripts that can be used to quickly resolve identified issues. The pre-defined rules and thresholds help reduce the time an IT Professional needs to spend on identifying which alerts are important and need to be monitored, and what the reasonable thresholds are when monitoring specific services. They also reduce the number of alerts that are routed to operator consoles, freeing operators from the tedious task of working through large numbers of alerts trying to determine whether they are significant or not. The knowledge base provided with the management pack contains the known root cause analysis and troubleshooting

information that the operator might have previously obtained through consulting product documentation, run books, or online articles. By linking this knowledge base directly to the alert, an operator now has the information immediately at hand, shortening the time needed to troubleshoot the issue.

Resolve and Restore Services

In addition to the pre-packaged rules and knowledge base, scripts are also included in the management packs. These scripts resolve issues either automatically or when triggered by an operator in response to an alert or event. Operators can create additional custom scripts as needed. The ability to resolve issues automatically through scripts can contribute greatly to reducing the time it takes to restore services and resolve issues.

To further help with quick resolution, the management pack also provides operators and administrators with the capability to add custom troubleshooting scripts, customer specific information or links to additional knowledge sources.

MOM 2005 New Features

In addition to the capabilities described above, MOM 2005 supports an expanded set of configurations and architectures over and above those offered by MOM 2000:

- **64-bit Support**
Management of applications running on 64-bit operating systems
- **Agentless Monitoring**
Limited management capabilities for servers without requiring the installation of a MOM agent
- **Maintenance Mode**
Ability to stop alerts from being displayed in the Operator Console while a system is being maintained
- **Rule Override and Hierarchy**
Ability to override the default parameters and thresholds for selected computers or groups, and precedence setting to prevent potential conflicts caused by multiple overrides
- **Multi-homing**
Information collected by MOM 2005 agents can be forwarded to and monitored by multiple and separate IT groups requiring visibility into the health of the same servers
- **Multi-tiering**
Bidirectional alert synchronization and aggregated views between tiered MOM servers for distributed environments
- **Fully Globalized**
Operates in multi-language and

localized environments, and the MOM 2005 consoles and management packs are localized for English, French, German, and Japanese.

More than Technology: Best Practices

Implementing monitoring and management technologies and tools are only part of effectively managing IT environments. A significant portion of outages can be caused by procedural issues. To assist IT Professionals with such outages, Microsoft has invested in analyzing and documenting operational best practices associated with monitoring an enterprise environment. These best practices are known as Solution Accelerators and are available free of charge. The **Service Monitoring Solution Accelerator** builds best practices on the IT Infrastructure Library (ITIL) framework, and provides guidance for implementing and operating MOM 2005.

The following solutions are part of the Service Monitoring Solution Accelerator.

- **Notification Workflow**
A Microsoft SQL Server Notification Services application that can be used to extend notification functionalities of MOM 2005 through a subscription-based approach and by sending notifications via email
- **Auto-ticketing**
Provides guidance for automated ticket generation — enabling fully automated posting of a request (or ticket) into the Trouble Ticketing (TT) system used for an incident management
- **Alert Tuning**
Helps streamline alert management. The solution provides:
 - Prescriptive guidance with proven methodology on effective 'noise' reduction and review metrics for dealing with alerts
 - Three key MOM 2005 reports on Alert Tuning
- **Service Continuity**
Helps increase the availability of MOM 2005 services. The role MOM 2005 plays in providing availability monitoring for business applications makes it important that critical operations management tools deliver high levels of availability and continuity. The MOM 2005 Service Continuity solution offers IT managers guidance on:
 - Increased availability and continuity of the monitoring services within IT operations

- Automation for rapid failover of MOM 2005 service across key service layers
- Various architectural configurations spanning multiple geographical locations
- **Multiple Management Group Rollup**
Provides guidance for propagating data from multiple management groups into one data warehouse for consolidation and aggregate reporting. The Multiple Management Group Rollup solution enables the ability to:
 - Store long-term operational data propagated from multiple MOM 2005 management groups
 - Develop report that provides business with information to analyze infrastructure reliability capacity, and behavior

The Service Monitoring Solution Accelerators can be downloaded from www.microsoft.com/msm.

Managing Beyond Microsoft Third Party Management Packs

Management packs for Microsoft applications are developed by the individual product teams in conjunction with Microsoft Consulting Services and Microsoft Product Support Services — combining the best of development, deployment, and troubleshooting knowledge. In addition, there is a wide range of third-party application and hardware management packs that allow MOM 2005 to reach further than the Microsoft components of your IT infrastructure.

To help deliver improved management for applications provided by other vendors, MOM 2005 includes tools that any application provider can use to create a management pack. Since application providers have sophisticated knowledge associated with their applications, it is easy to create management packs that embed the necessary operational knowledge to provide pre-defined rules, thresholds, knowledge and scripts.

A list of MOM 2005 management packs can be found in the Management Pack Catalog:

<http://www.microsoft.com/management/mma/catalog.aspx>.

MOM Connector Framework

Managing the Microsoft components is an important subset of managing a heterogeneous enterprise. Integration between the Microsoft management tools and third party corporate-wide management systems is necessary to

proactively manage and maintain the entire IT environment. To simplify and facilitate integration with other management tools in the enterprise, MOM 2005 includes the web services-based MOM Connector Framework (MCF). The MCF web service provides a generalized abstraction of the MOM 2005 alerting infrastructure, resulting in the ability to:

- Identify and surface MOM 2005 alerts to be forwarded to another management system
- Insert alerts from other management systems and display them in the MOM 2005 Operator console along with alerts generated by MOM 2005
- Track which alerts have been forwarded to another management system, and when they require updating
- Synchronize alerts between management systems, reducing duplicate efforts for alert tracking and updating

With MCF, IT Professionals can reduce the investment required in the costly and time consuming integration between unlike management systems. MCF also provides an easy way to incorporate information from multiple management tools into a single view.

Monitoring Scenarios

Once a monitoring tool has been selected and implemented, IT Professionals are expected to use the tool to start realizing the benefits promised. To help capitalize on an investment in MOM 2005, below are three scenarios outlining how MOM 2005 can be used to deliver on the benefits in each of the three areas highlighted – *identifying*, *understanding* and *resolving* of issues.

Identifying Important Issues

Many mission critical applications run on SQL Server 2000 databases. It is commonplace for nightly processes to be executed against the SQL database to verify data integrity. If a nightly process fails, there is the potential for interruption in the application service or inconsistencies in the data. With MOM 2005 monitoring the database using the SQL Server 2000 Management Pack, such failures can be monitored and surfaced through the state monitoring view. The state of a computer is a rollup of the state of various roles the computer is performing. In this case, while the operating system component may be healthy, the unhealthy SQL Server role will cause the overall computer state to be unhealthy and

demand attention. The operator can drill into this particular role to view the alert generated in MOM 2005. The alert also provides a severity level indicating how critical the alert is, as well as detailed information on the cause of the alert.

In addition, many large enterprises have dedicated operations staff to manage specific applications, and with MOM 2005 an operator's view can be customized to a particular subset of servers, allowing the SQL Server owners to see only the relevant information for managing their servers.

Understanding Issues

When services, such as Exchange Server 2003, are distributed in complex configurations, it can be a complex and time consuming process to figure out the root cause of a wide spread problem. In addition, when a command or activity is performed on one server, it is important to understand its role in the environment and the potential impact an activity could have on the broader system.

MOM 2005 provides a variety of topological views from which the existence of nodes and relationships can be discovered automatically by the management pack — providing a reliable and accurate way to visualize the topology of the application. For example, with the Exchange Server 2003 Management Pack, MOM 2005 has the ability to discover and depict memberships of routing groups, relationships between routing groups, roles of the various Exchange servers, and status of servers, providing an up-to-date view of your Exchange implementation.

In addition to monitoring server and application availability, it is important to understand the end-user experience, especially with business critical services such as email, and proactively prevent potential issues from occurring. The Exchange Server 2003 Management Pack includes synthetic transactions to monitor the latency experienced by Outlook®, Outlook Web Access, Outlook Mobile Access, and Exchange ActiveSync® technology, and warning alerts can be generated when the latency is over a predetermined threshold. The MOM 2005 views and reports can then be used to help analyze historical performance, advising the operator to obtain the information needed to detect concerning trends and prevent potential issues.

Resolving Problems

Replication failures in Active Directory can potentially lead to security, resource

access, and configuration challenges if the required changes are not successfully propagated across the environment.

It is often a time consuming process to identify a replication failure as the cause of for example an access issue and to quickly remedy the problem. With MOM 2005 and the Active Directory Management Pack, each Active Directory Domain Controller can be monitored to help ensure the replication is configured correctly, both inter-site and intra-site replication is occurring within reasonable thresholds, and end-to-end replication is occurring within service level agreements. Detailed knowledge is available through the management pack should a replication issue arise, helping to quickly identify the root cause.

To help resolve the issue and remedy the problem, MOM 2005 best practice guidance can be applied directly from the Operator Console by accessing the context-sensitive tasks and diagnostics directly from the alert. Customized sets of tasks are available based on the view selected in the console, and can automatically be populated with pre-discovered data. This information can then be used to intelligently target the correct instances and parameters to execute the task against. The operator retains control of the final approval before the task is executed in order to verify information.

Trouble tickets should also be created when executing any task to track the resolution of issues. An MCF product connector can be used between MOM 2005 and the trouble ticketing system. A task can be configured to automatically open a trouble ticket and populate it with information directly from the alert. MCF allows easy synchronization between MOM 2005 and other systems, any change in the status on either system can be updated automatically, providing visibility into the latest resolution status.

Dynamic Systems Initiative

MOM 2005 is a key component of the Dynamic Systems Initiative (DSI). DSI is an industry-wide initiative led by Microsoft aimed at delivering software that maximizes resources and decreases labor costs across the entire IT life cycle. This is accomplished by driving operational requirements back into IT systems at design time, creating a strong connection from system design to operation and ultimately the end users. For more information on DSI, see www.microsoft.com/DSI

Specifications

To use Microsoft Operations Manager 2005, you need:

For MOM 2005 Management Server:

- PC with 550-megahertz (MHz) or higher Pentium-compatible processor (Dual Pentium-compatible 450 MHz processors or higher recommended)
- 512 megabytes (MB) of RAM (1 GB or higher recommended)
- 2 gigabyte (GB) of available disk space
- Network Adapter
- Microsoft Windows Server™ 2003 Standard Edition, Enterprise Edition, Datacenter Edition, or Web Edition; or Microsoft Windows® 2000 Server, or Advanced Server, or Datacenter Server
- Microsoft Data Access Components (MDAC) version 2.8 with Service Pack 1 or later
- Microsoft .NET Framework 1.1

For MOM 2005 Database:

- PC with 550-megahertz (MHz) or higher Pentium-compatible processor (Dual Pentium-compatible 450 MHz processors or higher recommended)
- 512 megabytes (MB) of RAM (1 GB or higher recommended)
- 1 gigabyte (GB) of available disk space
- Network Adapter
- Microsoft Windows Server 2003 Standard Edition, Enterprise Edition, Datacenter Edition, or Web Edition; or Microsoft Windows 2000 Server, Advanced Server, or Datacenter Server
- Microsoft SQL Server 2000 Standard or Enterprise Edition Service Pack 3.0a or later

Note: For evaluation purposes only, you can use Microsoft SQL Server 200

Desktop Engine (MSDE) 2000 with Service Pack 3.0a, which has a 2 GB database size limit.

For MOM 2005 Administrator Console and Operator Console

- PC with 550-megahertz (MHz) or higher Pentium-compatible processor (Pentium-compatible 1GHz processor or higher recommended)
- 128 megabytes (MB) of RAM (256 MB or higher recommended)
- 150 megabytes (MB) of available disk space
- Super VGA (800 x 600) or higher resolution capable of displaying 256 colors (1024 x 768 resolution capable of displaying 24 bit color or higher recommended)
- Network Adapter
- Microsoft Windows Server 2003 Standard Edition, Enterprise Edition, Web Edition, or Datacenter Edition; or Microsoft Windows 2000 Server, or Advanced Server, Windows XP Professional, Windows 2000 Professional with Service Pack 4 or later
- Microsoft .NET Framework 1.1

For MOM 2005 Reporting Server:

- PC with 550-MHz or higher Pentium-compatible processor (Pentium-compatible 1-GHz processor or higher recommended)
- 256 megabytes (MB) of RAM (1 GB or higher recommended)
- 1 gigabyte (GB) of available disk space (30 GB's recommended)
- Network Adapter
- Microsoft Windows Server 2003 Standard Edition, Enterprise Edition, Datacenter Edition, or Web Edition; or Microsoft Windows 2000 Server, or Advanced Server
- Microsoft SQL Server 2000 Standard or Enterprise Edition with Service Pack 3 or later

- Microsoft SQL Server 2000 Reporting Services
- Microsoft SQL Server 2000 Reporting Services can render reports in HTML 3.2 and HTML 4.0. To view MOM reports you must have one of the following browsers:
 - Microsoft Internet Explorer 6.0 with Service Pack 1
 - Microsoft Internet Explorer 5.5 with Service Pack 2
 - Microsoft Internet Explorer 5.01 with Service Pack 2
 - Netscape 7.0
 - Netscape 4.78
- Microsoft Visual Studio® .NET 2003, or Integrated Developer Environment 2003 (if you want to customize or create reports)

For each managed computer:

- PC with 200-MHz or higher Pentium-compatible processor
- 128 MB of RAM (more RAM may be necessary depending on the number of management packs deployed)
- The size of the installed agent software is approximately 3 MB. It is recommended that you allocate 100 MB of available hard disk space for agent use (more hard disk space might be necessary depending on which Management Packs you use)
- 3 MB of additional hard disk space is necessary for each configuration group that a multi-homed agent is added to
- Microsoft Windows Server 2003 Standard Edition, Enterprise Edition, Datacenter Edition, or Web Edition; Windows Server 2003 64-Bit Enterprise Edition, and Datacenter Edition, or Microsoft Windows 2000 Server, Advanced Server, or Datacenter Server

Actual requirements may vary based on your system configuration and the applications and features you choose to install.



Windows Server System is comprehensive, integrated, and interoperable server infrastructure that simplifies the development, deployment, and management of flexible business solutions.

www.microsoft.com/windowsserversystem

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