



**RoboMon for Windows NT[®] and
Windows[®] 2000**

Technical Specifications

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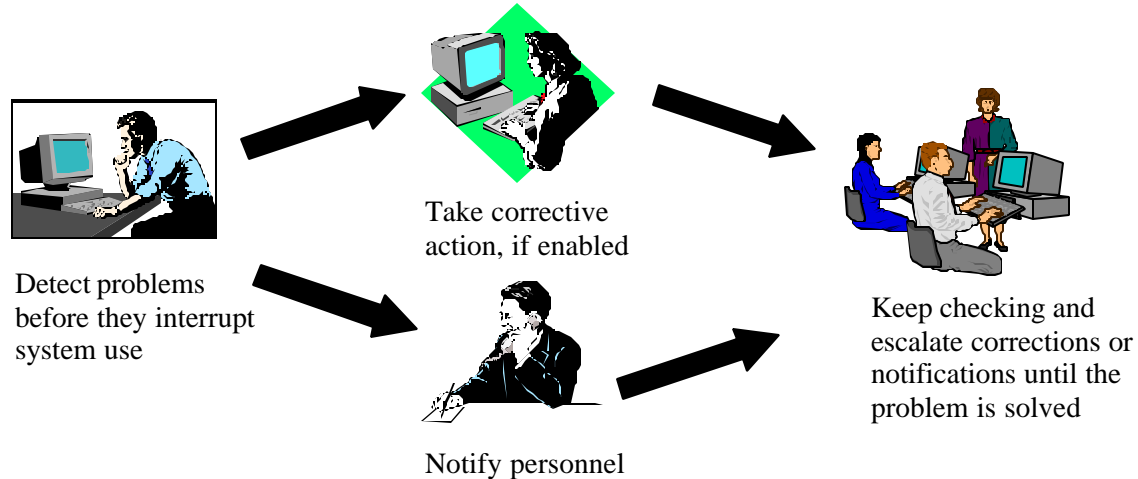
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RoboMon V7.6 for Microsoft® Windows NT® and Windows® 2000 V7.6

Technical Specifications

RoboMon is automated management software that detects and corrects complex application, system, network and hardware problems to ensure the highest levels of availability and performance. It detects problems and notifies staff proactively, so problems can be averted before end users experience failures or slowdowns. RoboMon operates seamlessly across heterogeneous Windows NT, Windows 2000, UNIX and OpenVMS platforms. RoboMon uses intelligent agents to emulate the intelligence and reasoning of a human expert, and to execute the same steps a skilled IT professional would take in order to solve problems.



RoboMon's Approach to Automated Monitoring

RoboMon collects a wide variety of operational and performance data, analyzes that data in real time, and takes action based on the results of its analysis. It provides problem detection, reporting, graphing and centralized monitoring for Microsoft® BackOffice®, Citrix®, Oracle®, Lotus Notes®/Domino™, Cisco®, Compaq® Insight Manager®, Service Level Agreements, and more. By automating these tasks, RoboMon helps ensure a higher level of service because problems are detected and solved before they interrupt application or system use.

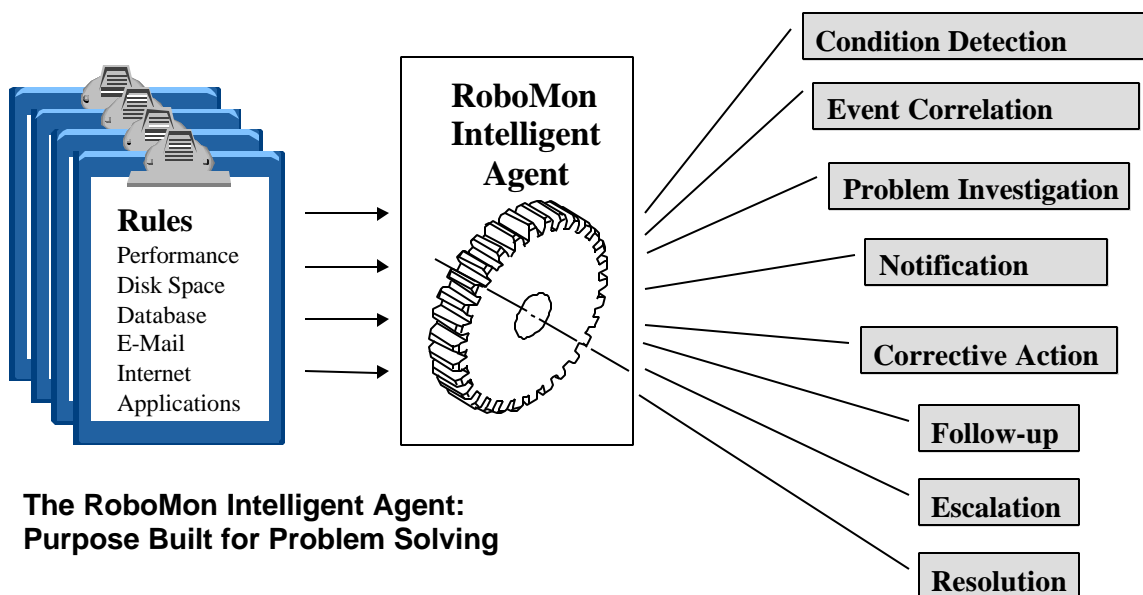
RoboMon is built from the ground up on Windows NT, Windows 2000, UNIX and OpenVMS, so that it operates optimally on all platforms. The underlying design principles and architecture, however, are the same across platforms, to ensure seamless operation in multi-platform environments. The remainder of this document describes RoboMon for Windows NT and Windows 2000.

The RoboMon Intelligent Agent

At the heart of RoboMon's operation is the Intelligent Agent, which is driven by rules. RoboMon comes equipped with agents that operate out of the box to monitor Exchange, IIS, SQL Server™, Citrix, Oracle, Cisco, Insight Manager, Service Level Agreements, and more. The RoboMon GUI (Graphical User Interface) enables the end user to manage the agents and tailor rule settings, modify rules and add rules, without having to write any code.

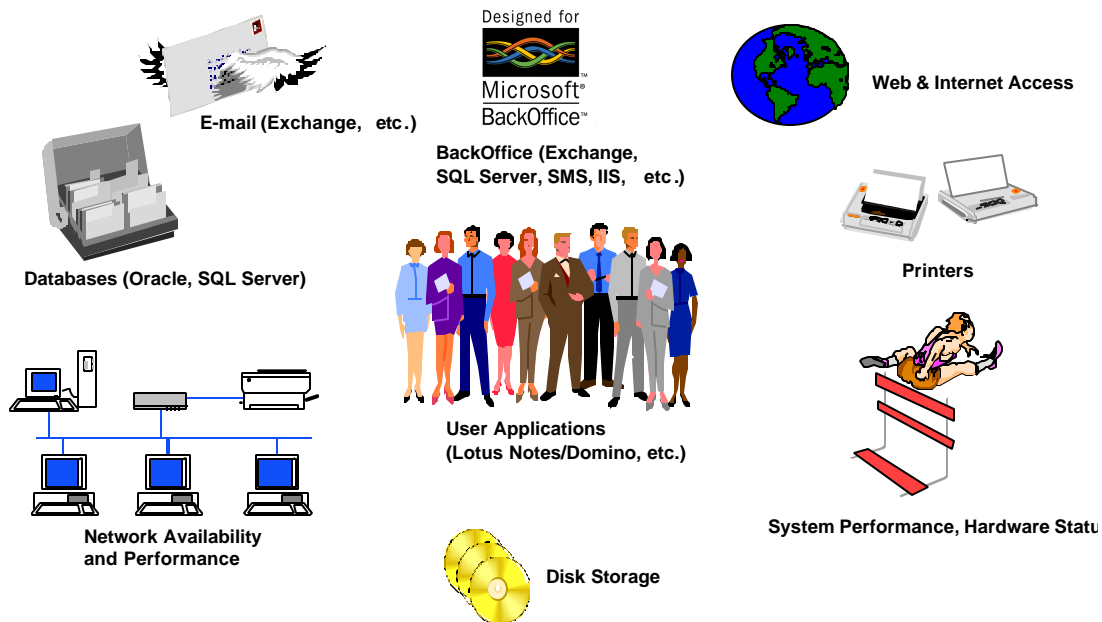
In its simplest form, a rule defines a Condition to monitor for and one or more Actions to take in response. For example, a rule might tell RoboMon to check a specific URL and page the webmaster if the URL is not reachable or is responding slowly.

For more complex monitoring situations, RoboMon provides powerful condition detection, notification, action, scheduling, selection, escalation and cool-off capabilities, which are described in more detail later in this document. Because of the breadth of available statistics and the capabilities of the Intelligent Agent, RoboMon can detect and solve a wide range of application, system, network and hardware problems.



The agents can be managed from anywhere in the Enterprise, via the RoboMon Enterprise Manager. While they can be managed across the network, RoboMon agents do not *depend* on the network or on any one central console. Once started (which generally happens at system boot time), each agent runs as an autonomous process, to provide efficient, robust, reliable, fault-tolerant monitoring and automation. In the event of a network failure, or the failure of any central management “console” system, the agents will continue to operate. In addition to providing fault-tolerant operation, this Autonomous Agent model contributes to RoboMon's Enterprise Scalability, as network traffic is generated *only* when required to notify the central Event Monitor.

Application, System and Network Components Monitored by RoboMon



Built-in Rules: RoboMon Intelligent Solution Sets

RoboMon's pre-defined rules are called Intelligent Solutions Sets. Each ISS runs as an autonomous agent on the system(s) being monitored. In addition to detecting the most common application, system, network and hardware problems, these rules archive performance and event data of interest for subsequent reporting and graphics.

When RoboMon is first installed, it will automatically discover which applications (Exchange, IIS, SQL Server, etc.) are running on the system, and present the Intelligent Solutions Sets recommended for use on the system. The ISS agents are self-configuring, so that RoboMon is fully functional "out of the box." The agents are easily tailorable and extensible at any time using the RoboMon GUI.

RoboMon agents are also self-configuring and dynamically self-adjusting, so no special setup is required either when the software is installed or when changes are made to the system configuration. All rules are provided with reasonable default values (e.g., monitoring intervals, thresholds, selections), which are user-adjustable. All pre-defined rules operate in advise-only mode when first installed. Corrective actions are taken only if and when they are enabled.

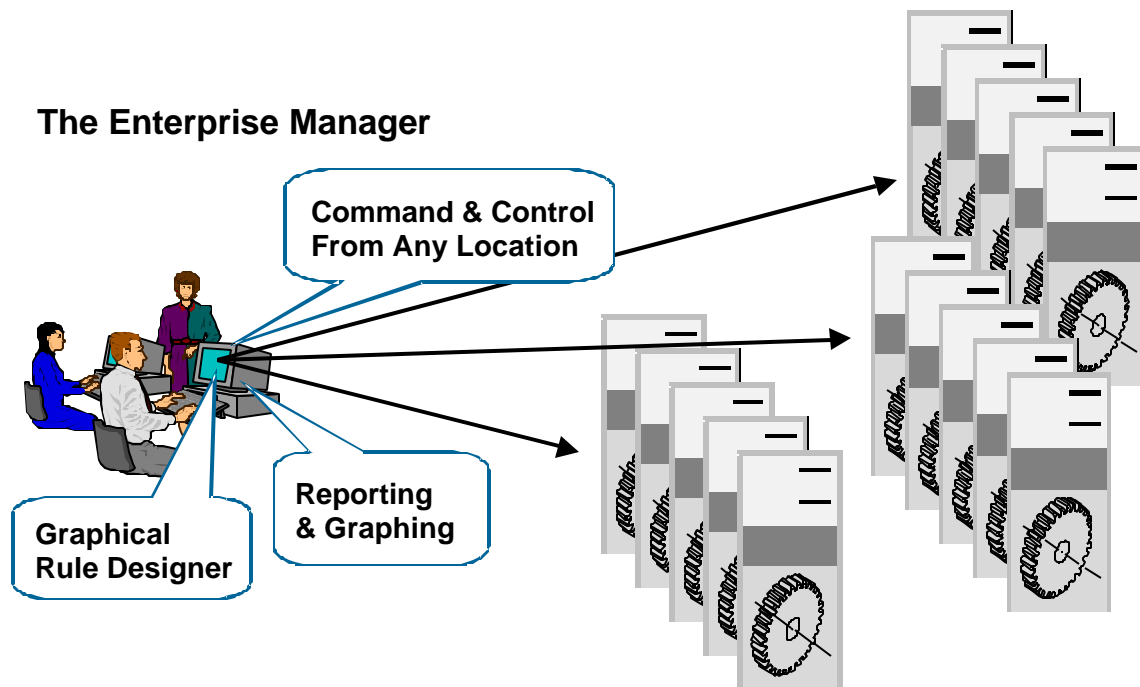
User-Written Rules

Users can write their own rules to run in addition to or instead of the built-in Intelligent Solution Sets. User-defined rules can be combined with built-in rules for convenient deployment and management. The graphical Rule Designer enables users to define any type of rule, no matter how simple or complex, entirely within the Graphical Interface, without having to write a single

line of code. The Rule Designer, in turn, generates the corresponding English-language rule definitions that are used to start a new agent process.

The Enterprise Manager

The Enterprise Manager enables full command and control of RoboMon from anywhere in the Windows NT network. From the Enterprise Manager, IT staff can see at a glance which RoboMon rules are running on which systems, query running agents, and start and stop RoboMon as needed. The Enterprise Manager also enables staff to tailor rules (using the Solutions Manager, as described below), define their own rules (using the Rule Designer, as described below), and then propagate changes across the Enterprise with instantaneous drag-and-drop operations.



The Enterprise Manager view can be tailored to show the entire Enterprise or a subset of Managed Computers. It can show computers grouped into their natural Windows NT and Windows 2000 domains, or alternatively can group computers by user-specified “virtual” domains in order to facilitate easy management. For example, all Exchange servers might be grouped together under a “virtual” domain called Exchange for easy deployment and tailoring of Exchange-related rules. In addition, the Enterprise Manager can present different views for different staff functions.

The Solutions Manager

The Solutions Manager is a specialized section of the Enterprise Manager that is used to tailor the selections and thresholds used by rules. For example, to define the threshold for disk space shortages, or to specify disks to exclude from checking, the user need only locate the appropriate threshold or selection, then enter the new value in the Solutions Manager.

The Solutions Manager provides two capabilities that are critical to usability and scalability: First, it can make changes on the system level, the domain level (either Windows NT or “virtual”), or the Enterprise Level, and propagate the settings accordingly. Second, its changes take place immediately, without having to restart RoboMon. Thus, it can be used to effect even large-scale changes with a minimal amount of effort. The Solutions Manager works on all built-in Solutions, as well as on user-written rules that follow Solutions Manager standards.

The Rule Designer

The Rule Designer, also invoked from the Enterprise Manager, provides full control over the inner workings of rules. It can be used to change existing rules and to define new rules from scratch, in a completely graphical environment. The Rule Designer provides a palette of graphical aids to help users define and combine the building blocks of rules - Schedules, Selections, Conditions and Actions. Once a rule has been designed, the Rule Designer automatically generates the underlying rule “code” which provides RoboMon with its instructions.

The underlying ASCII rule syntax is also available to the user. It is a simple, English language syntax that is easy to read, understand and, if desired, learn. The Rule Designer makes learning the syntax unnecessary, as it is capable of generating whatever rule code is needed based on the user’s graphical rule definition.

The Report and Graph Manager

The Report and Graph Manager presents reporting and graphing in a single user interface that can be invoked either from the RoboMon Enterprise Manager or from the Windows start menu. The facility contains hundreds of predefined report and graph definitions, including an extensive set of Service Level Agreement reports and graphs that are presented to the user in hierarchical views. The Report and Graph Manager enables the user to:

- Report and graph on data consolidated from multiple computers
- Customize report columns and summarization groupings
- Graph by time, hour summary, computer, or entity (disk, database, etc.)
- Save customized report and graph definitions
- Export a report or graph in html format for web publishing
- Schedule reports and graphs to be run in batch (hourly, nightly, weekly, monthly) and optionally emailed to interested parties

The Report and Graph Manager provides three pre-defined views, each containing reports and graphs designed for a specific audience of users:

The CIO and Management views contain summary reports and graphs that would be of interest to management level users. The management view contains the full set of management reports

and graphs, and the CIO view contains those reports and graphs that would be of interest to a Chief Information Officer.

The Sysadmin view contains more detailed reports and graphs that would be of interest to a system administrator.

The Report and Graph Manager enables each person to define their own view and customize the reports and graphs most relevant to their IT role (e.g., Exchange Administrator, Web Administrator).

The Event Monitor

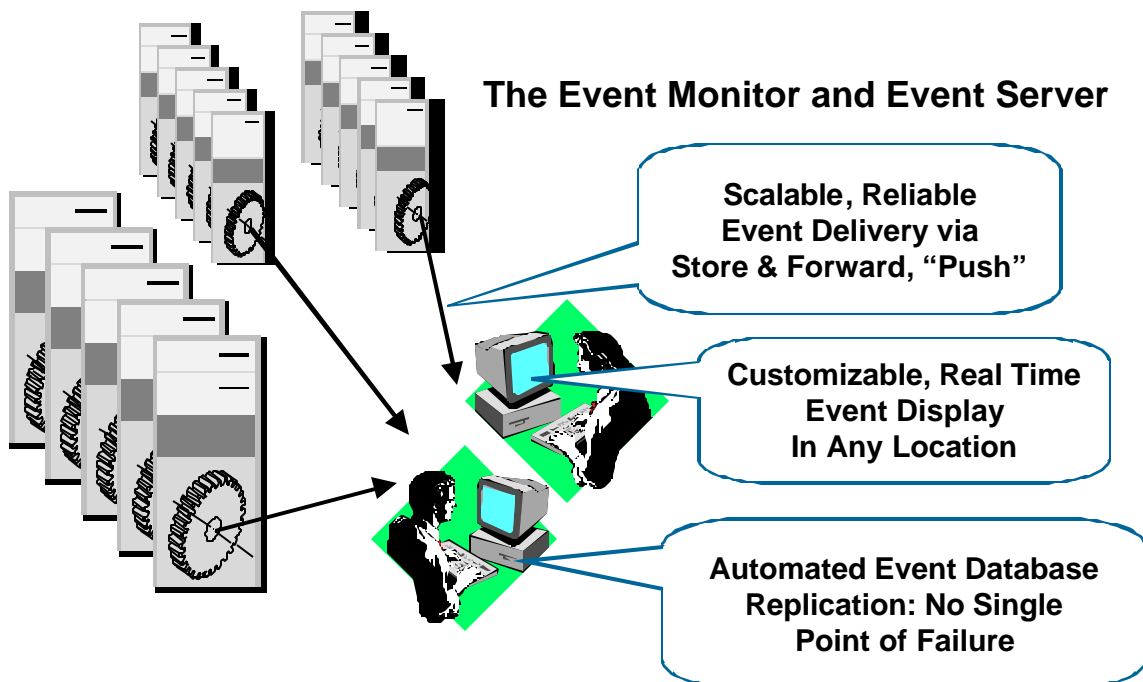
The Event Monitor is a graphical facility that enables system administration personnel to monitor the entire network from any location. If a problem occurs anywhere in the enterprise, personnel are notified immediately. The Event Monitor centralizes event notification in a network, providing for dynamic, real time, fault-tolerant, enterprise-wide event notification. User-written and built-in rules can send messages to the Event Monitor via event actions.

The Event Monitor can seamlessly receive and manage information from any supported platform. The format and content of the event display are completely user-definable to display events in the most meaningful fashion. For example, events may be grouped into different views according to problem status (open/closed), event type (e.g., application events, system events, network events), location (e.g., the site or computer where the event occurred) or severity. Individual views are grouped together into sets called event definitions.

Several template views and event definitions are provided. The user can easily adjust the supplied views as well as create new views to tailor the event display to the unique needs of the site. The Event Monitor also enables each person to define their own event definition and customize the views to present the events most relevant to their IT role (e.g., System Administrator, Exchange Administrator, Web Administrator).

The Event Monitor offers several ways of calling attention to severe problems or critical events, including sound, color, and a system tray icon. Events of interest can be selected and expanded to reveal problem history and more detailed problem information. The Event Monitor also allows the user to acknowledge events, update progress on problem resolution, and designate problems as fixed.

The Event Monitor obtains all event information from its local RoboMon event database, which is populated by the Event Server. As a result, the Event Monitor can process an extremely large number of RoboMon and/or Windows NT/Windows 2000 events for highly responsive, efficient event consolidation and display in any size network. Events from UNIX and OpenVMS systems are received using an efficient, user-adjustable polling mechanism. By default, event data is maintained in an Access (JET) database; scripts are provided to convert to SQL Server if desired.



The Web-Based Event Monitor

The RoboMon Web Event Monitor makes problem and event data accessible over the Internet, including problem status, history and RoboMon recommendations and actions. Many IT staff are on call during off-hours or when they visit remote locations. The RoboMon Web Event Monitor makes it easy to "check in" using any common Internet browser. Thus, IT staff can easily check on system health and investigate problems from home, from remote sites, and from any location where they have access to the Internet.

The Event Server

One of the cornerstones of automated monitoring is the generation of an event - some sort of alert that can be routed through the organization in real time, and also saved for future reporting. With RoboMon, events are generated as actions in rules. An event may be generated to indicate a problem, to provide information or document the execution of a task.

RoboMon achieves the two goals of event delivery - real time monitoring via the Event Monitor, and archiving for subsequent reporting via the RoboMon Report and Graph Manager - with a background component called the Event Server. The Event Server is designed to provide reliable, fault-tolerant delivery of all events, with minimal network overhead and no single point of failure.

To enable event routing, the user simply specifies where to route events in the network. Events may be routed to a single, central monitoring system, or they may be routed to multiple systems, in order to provide for multiple Event Monitors and/or automatic failover. The Event Server can optionally send RoboMon performance data, Windows NT and Windows 2000 Event Log events (system, application and security), and SNMP Traps in addition to RoboMon events.

The Event Server runs on each system, side by side with the monitoring agents, and works using a store-and-forward, “push” mechanism. When the Event Server receives an event from an agent, it consults its internal database to determine which system(s) to send the event to, and attempts to send (push) the event to the remote system, where that system’s Event Server will write it to its local event database (and perhaps forward it on to a third system). If the attempt fails, the originating Event Server stores the event locally and retries until it succeeds or until the event becomes stale. Store and forward ensures reliable delivery. The push mechanism ensures scalability to any size network.

Microsoft Management Console (MMC)

RoboMon includes a snap-in to Microsoft Management Console (MMC). The RoboMon MMC Snap-in enables the user to launch the Enterprise Manager, the License Manager, the Event Monitor and the Report and Graph Manager.

Windows NT/Windows 2000 Data Sources

RoboMon gathers data from a variety of sources. The primary sources and types of data are:

- Performance Counters - RoboMon can collect all available Performance Counters, including native Windows NT/Windows 2000 counters as well as counters from layered and third-party software.
- Windows NT and Windows 2000 Event Logs - RoboMon has access to all fields in the system, application and security event logs.
- SNMP Traps and Variables – RoboMon can listen for SNMP traps and access SNMP Variables via MIBs.
- ODBC Databases - RoboMon can collect data from any ODBC-compliant database.
- ASCII Files - RoboMon can examine the contents of any ASCII file (structured or unstructured), based on the user’s description of the format of the file, in order to detect content of interest in the file.
- COM Objects – RoboMon can collect data using any COM (Component Object Model) object.
- WMI – RoboMon can collect data from the WMI (Windows Management Initiative).
- Native Statistics - RoboMon also incorporates a set of native Windows NT collectors that gather critical data from a variety of sources.

Scheduling

RoboMon is capable of monitoring according to any desired schedule. Typically, rules are executed at a specified interval (e.g., every 10 minutes) or time of day (e.g., every night at midnight). RoboMon’s scheduling capabilities allow for scheduling according to any combination of criteria, including interval, time of day, hours of the day, days of the week, dates,

days of the month, weeks of the month, months of the year, etc. These scheduling capabilities also enable RoboMon to initiate tasks (e.g., system backups) automatically at specified times. Rules can also be scheduled to run only once (e.g., at system boot time), or only on demand (e.g., in response to a problem detected by another rule).

Selection

Rules that examine entity-based conditions (e.g., services, processes, files, disks, etc.) can selectively monitor the entities of interest via flexible selection criteria. For example, a rule that checks for runaway processes might look at specific users or applications. Selections are self-configuring so a single rule can detect new entities as they appear on the system after RoboMon is started (e.g., new disks that come online or new processes that log in). They can also be specified and changed dynamically, using the RoboMon GUI. RoboMon dynamically recognizes new entities that match the selection criteria (e.g., new processes and files that are created). In addition, RoboMon dynamically recognizes when an entity goes away (e.g., a process logs out or a disk is removed).

Condition Detection

RoboMon detects system problems and events through the process of condition detection, which emulates the thought process a human would follow in recognizing a system problem manually. RoboMon collects statistics and analyzes them to determine whether the specified condition exists. The condition is specified by an expression that evaluates to true or false. For example, to detect a CPU bottleneck, RoboMon would compare the CPU busy percentage to a value defined by the user (e.g., 85%) to see if it exceeds the threshold. For entity-based rules (rules that look at objects such as disks, processes or files), the rule's condition is automatically repeated for each relevant entity. For example, to detect overly large files, RoboMon would compare the size of each selected file to a threshold defined by the user, and signal a problem if the size of one or more files exceeds the threshold.

Event Correlation

More complex conditions can be defined by combining arithmetic, relational (<, >, etc.), and logical (AND, OR, etc.) operations in a single rule. For example, it might be desirable to focus on overly large files that have been created recently. The condition would check the file size and also the creation date of the file. This type of event correlation enables RoboMon to evaluate situations more precisely.

RoboMon can correlate disparate pieces of information in order to diagnose the root cause of problems. For example, suppose three symptoms occur within a small timeframe: a critical user application fails, a database becomes corrupt and a disk is low on free space. In addition to detecting the three symptoms themselves, RoboMon can recognize that all three have happened at the same time, and investigate further. By looking more closely at the situation (for example, which disk is filling, which application failed, and which file has been growing most on the disk), it might determine that the application failure has been caused by the database corruption;

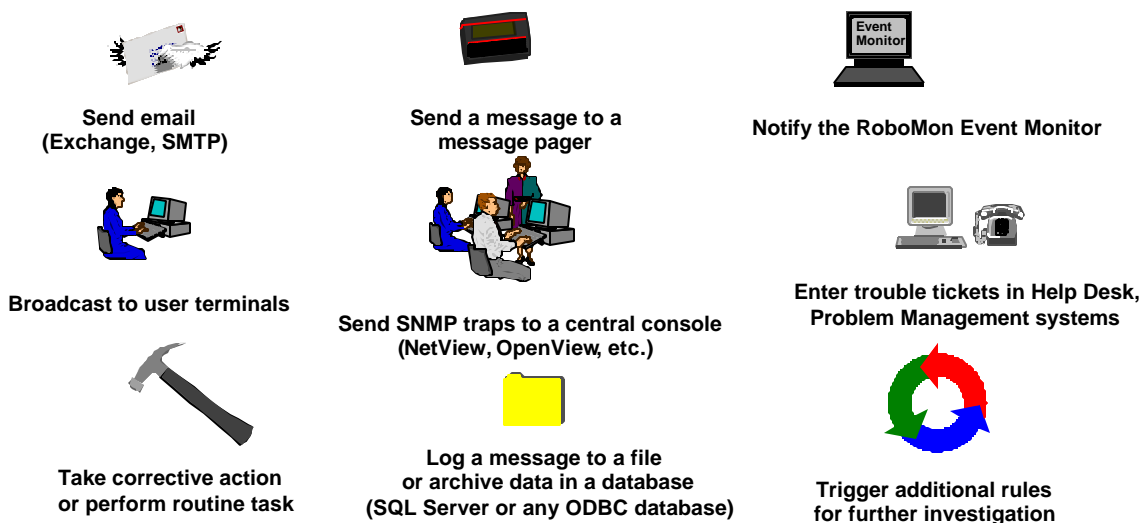
furthermore, the disk shortage is being caused by a fast-growing SQL Error log, thereby endangering other applications. Not only does this type of event correlation provide better information to IT staff, it also enables RoboMon to take appropriate corrective action if desired.

In addition, RoboMon has the ability to characterize system or application workloads and perform self-configuration and self-adjustment. For example, problems may be overlooked if thresholds are set too high; alternatively, staff may be inundated with false alarms if they are set too low. RoboMon can automatically determine reasonable thresholds by watching the system over time, recording statistical values during typical prime time use, and then measuring deviation from those norms.

Action

Once a problem or condition of interest has been detected, RoboMon takes whatever actions apply under the circumstances. RoboMon is capable of taking some three dozen different actions to perform Notification, Correction, Data Archiving, Escalation and Cool-Off. RoboMon's actions are designed to work in concert to solve problems in the most appropriate manner based on site-specific situations and policies.

Actions Available to RoboMon Rules



Notification

When RoboMon detects a problem, it can perform notification using one or more of several mechanisms. Whenever a text message is sent, it is highly specific, indicating the exact nature of the problem. For example, if there is a disk space shortage, the message indicates which disk and the exact level of the shortage. Also, messages can be grouped when appropriate. For example, if several disks are low on free space, it may be desirable to send a notification for each disk, or a single message summarizing the situation. Notification mechanisms include:

- Send an electronic mail message

This sends an electronic message to one or more users. E-mail may be sent via Microsoft Exchange or SMTP mail.

- Generate an Event Log event (Windows NT and Windows 2000)

This sends a detailed message to the Windows NT or Windows 2000 Event Log.

- Broadcast a message to a terminal

RoboMon can use a net send command to send a message to a user terminal.

- Send a numeric code or alphanumeric message to a pager

This sends a numeric code or a user-defined text message to a pager via a Hayes-compatible modem, using user-specified telephone and pager information. For alphanumeric pagers, a highly specific message can be sent. Paging can also be accomplished via email if that is supported at the site.

- Generate an Event

This sends a message to the RoboMon Event Monitor for real-time, fault-tolerant, network wide event monitoring. It also archives the event in RoboMon's Event Database.

- Send a message to a Network Management System (e.g., OpenView, Sun's Solstice SunNet Manager™, Tivoli® NetView®) via SNMP trap

This sends a message to a Network Management System for real-time, network wide event monitoring. The trap number and Heroix-specific trap variables are user-definable, and a MIB is provided.

- Send a message to a help desk

RoboMon interfaces with most common help desk systems for integrated notification throughout the organization.

- Log a text message to a file

This logs a message to a text file for permanent documentation of the event or condition.

Correction

When RoboMon detects a problem, it can optionally take corrective action in a highly directed fashion:

- Perform a built-in file or process control action

RoboMon provides several built-in file and process control actions, including the ability to remove a file, to change process priority and to terminate a process.

- Execute any operating system, database or application command

This executes any user-specified command or series of commands to take site-specific corrective action or perform additional notification. Pertinent information is passed via RoboMon's powerful symbol substitution capability. For example, in the case of a disk

space shortage, symbols will indicate which disk and the level of the shortage, as well as the problem count (see escalation capabilities). Thus, different actions can be taken based on which disk has the problem, the severity of the problem and the problem count.

Data Archiving

It is sometimes desirable to archive collected data for subsequent reporting and graph generation. RoboMon can write to any ODBC-compliant database. By default it uses an Access (JET) database; scripts are provided to convert the database to SQL Server. Data can be reported and graphed using commercial reporting, graphics and spreadsheet software, or using the RoboMon Report and Graph Manager.

New, Updated and Closed Problems

Each New problem detected by RoboMon is given a unique tracking handle. When the problem occurs again, RoboMon recognizes it as another occurrence of the same problem (Updated), rather than a whole new problem. This is especially useful if a separate set of actions should be taken for persistent problems, or if the problem is being routed to a help desk. When the problem is fixed, RoboMon closes out the problem (Closed).

Escalation and Cool-off

RoboMon can take specific actions based on whether a problem is new, updated or closed, as well as based on the number of times it has occurred. For example, if a critical process is missing, the user may wish to try to restart the process the first time it is detected missing, and send an email message or page someone if the restart fails. Finally, the user may wish to have a message logged to a file when the process is successfully restarted, in order to document the event.

RoboMon can achieve any level of escalation desired. For example, the user may wish to page different individuals or take different actions based on whether the problem is occurring for the first time or has persisted over time.

In addition, RoboMon understands the concept of “cool-off.” For example, if a problem is time-consuming to fix, it might be desirable to perform a single notification and then wait until the problem is fixed before resuming monitoring.

Paging

RoboMon’s Pager dials out over a Hayes-compatible modem and sends a numeric code or an alphanumeric message to a pager. It can be accessed from any user-written or supplied RoboMon rule, or from a bat file. The pager is script-driven, so any paging protocol can easily be accommodated.

In addition, RoboMon can interface with any paging package that supports a command interface. If paging at the site is accomplished via email, RoboMon can perform paging via its email action.

SNMP Integration

RoboMon easily integrates with SNMP-based monitoring systems, such as network management consoles and frameworks, by generating SNMP traps. A RoboMon MIB (Management Information Base) defines all fields of the SNMP trap for quick integration with SNMP-based monitoring consoles.

RoboMon can also monitor any SNMP Agent by interacting with SNMP variables. Rules can interrogate SNMP variables by defining them as RoboMon statistics. Rules can set SNMP variables via the RoboMon SNMP Set action. This allows RoboMon rules to be written based on any SNMP MIB. Many of RoboMon's pre-defined rules gather data using SNMP variables.

In addition, RoboMon can listen for SNMP traps generated by other system and network components, and make them viewable by the RoboMon Event Monitor. SNMP traps routed to the RoboMon Event Database can also be interrogated and acted upon using rules.

Help Desk Integration

RoboMon easily integrates with help desk systems that provide for command line, email or file-based problem logging. In addition, RoboMon fully supports the new problem, updated problem, closed problem model used by many help desk systems. Thus RoboMon can generate, update and even close out problem or trouble tickets, and can alert help desk personnel to problems being worked on by systems staff.

Graphical and Command Interfaces

RoboMon provides a choice of interfaces:

- A Windows-based Graphical User Interface (GUI) provides for event viewing and for point-and-click control of RoboMon functions from anywhere in the Enterprise. A web-based GUI and web-based event monitor are also provided.
- RoboMon also provides a Microsoft Management Console (MMC) snap-in.
- A command line interface provides easy RoboMon control for those familiar with operating system commands. The command line interface also enables RoboMon commands to be automated via rules and bat files.

Documentation

RoboMon includes printed/printable user manuals and extensive on-line help and reference material.

Ordering and Warranty Information

All binary licensed software, including any subsequent updates, is furnished under the Terms and Conditions of the Heroix Corporation License Agreement.

Software Support/Maintenance

Standard maintenance services are available, including telephone support and upgrades of software and documentation. Self-service support is available via a support knowledge base at www.heroix.com. 24-hour support is also available.

Product-Related Services

Training and consulting services are available. For more information, contact your account representative.

Installation

Installation is fast, with minimal user input required. Remote installation is available through RoboMon's remote installation capability (Intel-based Windows NT or Windows 2000 only), and through Microsoft SMS. Full installation includes the agents, all Graphical User Interface components, documentation and all required supporting software. GUI components and documentation are omitted from Agent Only installation.

Operating Systems Supported

- RoboMon V7.6C Full Installation: Windows NT 4.0 (SP5 or higher) or Windows 2000 on Intel hardware
- RoboMon V7.6C Agent Only Installation: Windows NT 4.0 (SP3 or higher) or Windows 2000 on Intel hardware
- RoboMon V7.5C Agent Only Installation: Windows NT 4.0 on Alpha hardware (Agent Only)

BackOffice® Certification

Microsoft's BackOffice® logo program is designed to identify and recognize products that have a high level of compatibility and synergy with Microsoft BackOffice. To earn the right to display the "Designed for Microsoft BackOffice" logo, software and hardware products must adhere to a set of criteria stipulated by Microsoft Corporation. RoboMon has passed a series of compliance tests performed by the Microsoft Testing Labs and has been certified as "Designed for Microsoft BackOffice."

Windows 2000 Server Certification

RoboMon has been designated by Microsoft Corporation as "Certified for Microsoft Windows 2000 Server." RoboMon has passed a series of compliance tests to verify that it will work effectively on Windows 2000. One of the key components of Windows 2000 Server certification is support and utilization of Active Directory services.

Built-In Rules: Intelligent Solution Sets

RoboMon uses Intelligent Solution Sets (ISS) to detect and diagnose problems using the knowledge and skill of seasoned Windows NT and Windows 2000 administrators, BackOffice specialists and other subject-matter experts. Each Intelligent Solution Set is comprised of an integrated set of rules that study the specific system or application and monitor according to each individual configuration and workload it encounters in your enterprise. Solution Sets are described briefly here. Please consult the data sheets for individual Solution Sets for more detailed information.

Heroix RoboMon includes a suite of Intelligent Solution Sets for:

- Microsoft Active Directory™ Services
- ARCServeIT (Computer Associates)
- Backup Exec™ (VERITAS Software Corporation)
- Cisco® routers and switches
- Citrix® MetaFrame™ (See Terminal Server)
- Citrix WinFrame® (See Terminal Server)
- Microsoft Cluster Server
- Compaq® Insight Manager
- Dell® OpenManage
- Dynamic Host Control Protocol (DHCP)
- Microsoft Exchange
- HP TopTools
- Microsoft IIS
- Microsoft Internet Security and Acceleration Server (ISA Server)
- Lotus Notes®/Domino™
- Microsoft Message Queue (MSMQ)
- Oracle®
- Microsoft Proxy Server and Client
- Remote Access Service (RAS)
- Service Level Agreements
- Microsoft Site Server (including Commerce Edition)
- Microsoft SQL Server
- Microsoft System Management Server (SMS)

- Microsoft Terminal Server / Citrix WinFrame / Citrix MetaFrame
- Microsoft Transaction Server (MTS)
- Windows Internet Naming Service (WINS)
- Windows Load Balancing
- Microsoft Windows NT and Windows 2000 Server

RoboMon Active Directory™ Services Rules

The Active Directory rules work to enhance the power and scalability of Microsoft's Active Directory technology by monitoring the success and efficiency of directory store searches and all aspects of the directory replication process. They also track DNS activity, such as zone transfers, the dynamic update process, notification and query response failures, and warn you of performance problems that may compromise the efficiency of your network.

RoboMon ARCserve/IT Rules

RoboMon's ARCserve/IT Rules work out of the box to monitor the health of Computer Associates' ARCserve/IT storage management solution. RoboMon monitors basic performance indicators and the status of ARCserve/IT's services, as well as a variety of job status and completion issues.

RoboMon Backup Exec™ Rules

RoboMon's Backup Exec Rules work out of the box to monitor the health of Veritas's Backup Exec network backup solution. RoboMon monitors Backup Exec's resource usage, the status of its services, and a variety of job status and completion issues.

RoboMon Cisco® Rules

RoboMon's Cisco Rules work out of the box to monitor the health of Cisco devices such as switches and routers. RoboMon will pinpoint performance problems on the device, such as CPU bottlenecks and memory shortages. In addition, RoboMon will monitor the status of the device and alert staff if it becomes unavailable or when environmental factors exist that may cause it physical damage.

RoboMon Cluster Server Rules

RoboMon's Cluster Server rules augment the reliability achieved by using clustered servers. In addition to monitoring basic performance indicators and network availability, the rules alert you situations when cluster nodes and resources groups are down and have not failed over, optionally restarting them to ensure the least interruption of service to your users.

RoboMon Compaq® Insight Manager Rules

RoboMon's Insight Manager rules monitor the health of the Compaq server through Compaq Insight Manager (CIM) SNMP agent data. RoboMon checks a wide variety of hardware-related conditions (drive conditions, fan status, power supply issues, etc.), and can alert staff to problems with Insight Manager itself.

RoboMon Dell® OpenManage Rules

RoboMon's OpenManage rules provide consolidated monitoring and management of Dell servers running OpenManage. RoboMon checks a wide variety of hardware-related conditions, including the status of the server's physical container and memory devices, temperature conditions and voltage levels, and alerts staff to problems that can compromise the server's performance.

RoboMon DHCP Rules

RoboMon's DHCP rules work out of the box to monitor the health of DHCP (Dynamic Host Configuration Protocol). RoboMon will monitor the state of DHCP-related services, can restart any services that fail, and monitors availability of free addresses both for individual scopes and for the DHCP server as a whole.

RoboMon Exchange Rules

RoboMon's Exchange rules embody a tremendous amount of Exchange-specific knowledge, which is applied automatically to all aspects of Exchange that may impact e-mail reliability or performance. In addition to checking basic operations such as Exchange service problems, event log errors and delivery failures, RoboMon diagnoses Exchange performance problems and also addresses Exchange housekeeping issues, such as mailboxes and folders with too many messages or too much storage.

Proper threshold settings are essential to successful Exchange monitoring. If thresholds are set too low, staff are inundated with alerts, most of which turn out to be false alarms. Alternatively, if thresholds are set too high, problems may be missed. Because e-mail workloads vary from site to site, there are no standard thresholds that can be used universally for monitoring Exchange. However, RoboMon is able to set proper thresholds automatically, based on the particular system being monitored. RoboMon watches the system and records Exchange activity levels, in order to determine what to expect under normal conditions. The Exchange rules then auto-configure by observing unusual levels of Exchange activity. RoboMon thus avoids false alarms without letting problems slip through the cracks.

RoboMon HP TopTools Rules

RoboMon's TopTool rules provide consolidated monitoring and management of HP servers running TopTools. RoboMon checks a wide variety of hardware-related conditions, including

the status of the server's physical container and memory devices, temperature conditions and voltage levels, and alerts staff to problems that can compromise the server's performance.

RoboMon IIS Rules

RoboMon's IIS rules monitor all aspects of IIS reliability and performance. In addition to checking basic operations, such as URL reachability, service problems, event log errors, and Active Server Pages errors, RoboMon diagnoses IIS performance problems, such as slow URL response and unusual activity levels. RoboMon automatically configures itself to any size IIS environment to avoid false alarms without letting problems slip through the cracks.

RoboMon ISA Server Rules

RoboMon's ISA Server rules monitor all aspects of ISA Server reliability and performance. In addition to checking basic performance indicators and availability of services, RoboMon monitors the efficiency and performance of the disk cache and alerts you to suspicious activity that may indicate security attacks.

RoboMon Lotus Notes®/Domino™ Rules

The Lotus Notes/Domino rules monitor the performance and reliability of running Notes/Domino systems. In addition to checking basic performance indicators and availability of services, individual rules track HTTP requests, concurrent users, and overall transactions, alerting you when these exceed specific thresholds, and providing the information that will help you redistribute server workload and modify the cache for greatest efficiency. Other rules identify errors and transmission failures that may indicate problems with NICs, connectivity, transmission lines, etc. Database-monitoring rules help you manage the growth, performance and replication of Domino databases.

RoboMon MSMQ Rules

RoboMon's MSMQ rules work out of the box to monitor the health of Microsoft Message Queue. RoboMon will monitor the state of the Message Queue services, restart any services that fail, pinpoint performance problems on the Message Queue Server, check the size and performance of the MQIS database, and alert staff to high levels of message activity, long or growing queues, error events, queue quota problems, and other potential problem indicators. RoboMon will also test Message Queue operability by creating a queue on a Message Server, sending a message, and verifying message delivery.

RoboMon Oracle® Rules

RoboMon's Oracle rules work out of the box to monitor key configuration and performance issues based on extensive advice and recommendations obtained directly from Oracle. These rules embody the expertise and problem-solving skills of experienced Oracle DataBase Administrators (DBAs), to give you useful information immediately. In addition to checking basic operational issues, such as locked objects, cache usage, and transactions that can't

complete promptly, RoboMon alerts you to immediate problems such as insufficient DML locks, list contention, buffer waits, corrupt control files and other database objects. Furthermore, RoboMon monitors the allocation of space to blocks, extents, clusters and tablespaces to improve database efficiency, and to provide information important in planning for and accommodating database growth.

RoboMon Proxy Server and Client Rules

RoboMon's Proxy Server rules monitor the health of Microsoft Proxy Server. RoboMon will monitor the state of the Proxy Server services, restart any services that fail, pinpoint performance problems on the Proxy Server, and alert staff to high numbers of requests (FTP, Gopher, HTTP, etc.), transfers, Winsock DNS failures, site access denials, and other potential problem indicators.

RoboMon's Proxy Client rules ensure that a client has proper Internet/intranet connectivity through the Proxy Server. RoboMon checks to make sure that the client can access approved sites through the Proxy Server, and cannot access blocked sites.

RoboMon RAS Rules

RoboMon's RAS rules monitor performance and reliability. RoboMon will alert staff to high connection rates and excessive port activity, as well as excessive connection failures, port errors, event and service problems, and other potential problem indicators.

RoboMon Service Level Agreement Rules

RoboMon's Service Level Agreement Rules provide comprehensive monitoring and measurement of service level criteria for applications, systems and networks. Used with the 100+ templates in RoboMon's Reporting and Graphing Facility, the SLA rule set can produce reports and graphs appropriate for any level of review, from management summaries to diagnostic detail, in a wide range of output formats.

RoboMon Site Server Rules

RoboMon's Site Server rules work out of the box to monitor the health of Microsoft's Site Server and Site Server Commerce Edition. RoboMon monitors all aspects of Site Server reliability and performance, including basic performance indicators such as CPU busy percentage, I/O, memory usage, etc.; the performance of Site Server's crawler, search and content deployment services; and connection and login activity that may indicate security attacks.

RoboMon SQL Server™ Rules

RoboMon's SQL Server rules work out of the box to monitor Microsoft SQL Server and notify staff of problems that may impact SQL Server performance or reliability. In addition to checking basic operations such as SQL Server service problems, log file errors and database

corruption, RoboMon also addresses SQL Server "housekeeping" issues, such as tables and databases filling up, and user-related issues, such as an inadequate number of available user connections or an excessive number of deadlocks. Furthermore, RoboMon keeps an eye on SQL Server performance and accessibility, and alerts you to problems in real time.

RoboMon System Management Server (SMS) Rules

RoboMon's SMS rules monitor the health of Microsoft's SMS. RoboMon will monitor the state of SMS services, restart any services that fail, and alert staff to high numbers of SMS jobs in any state (active, completed, failed, pending, etc.) that may be wasting resources or that signal problems such as an incorrect SMS implementation or unavailable target sites. The SMS rules also alert you to problems with the hardware components on any computers forwarding inventory information to SMS.

RoboMon Terminal Server / Windows® 2000 Terminal Services / Citrix® WinFrame®/MetaFrame™ Rules

RoboMon's Terminal Server, WinFrame and MetaFrame server rules monitor the status and performance of Microsoft Terminal Server, Windows 2000 Terminal Services, Citrix WinFrame and MetaFrame servers. RoboMon will warn staff if the Terminal Server, Terminal Services or WinFrame server is in danger of reaching its connection limit, or when it is experiencing excessive session timeouts or error rates. In addition, RoboMon will alert staff to server and user-related performance issues, and can optionally warn or terminate idle sessions. RoboMon's MetaFrame rules monitor the MetaFrame server for running services, basic performance, and sufficiency of available connections.

RoboMon Transaction Server (MTS) Rules

RoboMon's MTS rules work out of the box to monitor the health of Microsoft Transaction Server. RoboMon will monitor the state of the Transaction Server services, restart any services that fail, and pinpoint performance problems on the Transaction Server. In addition, RoboMon will alert staff to high levels of object creation, object activation, method arrival, and other problems related to MTS.

RoboMon Windows Internet Naming Service (WINS) Rules

RoboMon's WINS rules monitor the health of WINS (Windows Internet Naming Service). RoboMon will monitor the state of the WINS service, restart it if it fails, initiate scavenging (when requested), and alert staff to high numbers of queries, conflicts, query failures, releases, release failures, and renewals.

RoboMon Windows Load Balancing Rules

RoboMon's Windows Load Balancing Rules work out of the box to monitor the health of Microsoft's Windows NT Load Balancing Service (WLBS) and Windows 2000 Network Load Balancing (NLB). RoboMon monitors all aspects of Windows Load Balancing reliability

and performance, including cluster configuration and communication between cluster members, and clustering operations and cluster membership. The rules can optionally stop and restart cluster operations if problems are detected.

RoboMon Windows NT and Windows 2000 Server Rules

RoboMon's Windows NT and Windows 2000 Server rules work out of the box to monitor Windows NT, Windows 2000, BackOffice, security and application issues. The Windows NT and Windows 2000 Server rules monitor basic Windows NT and Windows 2000 performance, and pinpoint common performance problems such as CPU and I/O bottlenecks, memory shortages and pool leaks. The rules also detect and report a host of operational issues, including application and service failure, URL availability, disk space shortages, network availability problems, printer problems, directory and file issues, and so on.

RoboMon Windows NT and Windows 2000 Performance Rules

RoboMon's Performance rules work out of the box to archive a variety of performance data for reporting and graphics. Data is archived to an ODBC-compliant database (Access by default), which is then available for Enterprise-Wide reporting and graphing using the RoboMon Report and Graph Manager.



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