



IBM Tivoli Monitoring

Highlights

- ***Improve availability and mean-time-to-recovery (MTTR) with quick incident visualization and historical look for faster incident research***
- ***Improve incident avoidance capabilities with dynamic thresholds to spot abnormal server behavior and integrated performance and capacity management to monitor, alert and report on future capacity bottlenecks***
- ***Achieve better business results by balancing the lower administrative costs of agentless technology with the mission-critical responsiveness of agent-driven technology***
- ***Make new operators highly productive by leveraging common visualization, common data and common reporting to provide side-by-side real time and historical views, expert advice and automated best practices in response to incidents***
- ***Attain higher efficiency and effectiveness in incident resolution by consolidating monitoring of both distributed and host-based systems to a “single role-based pane of glass”***
- ***Realize faster value with a streamlined installation and implementation, as well as lightweight agents supported by integrated software distribution and self-monitoring capabilities***

IBM Tivoli® Monitoring (ITM) software solutions are designed to help manage business applications by proactively monitoring essential system resources, detecting bottlenecks and potential problems, and automatically responding to events. With out-of-the-box best practices for identifying and resolving infrastructure problems, Tivoli Monitoring solutions can help improve the effectiveness and efficiency of your IT department. Proactive system monitoring often identifies problems early, enabling rapid fixes before end users experience significant impact to their performance. The data you collect with Tivoli Monitoring solutions can also be used to drive timely performance and capacity planning activities to avoid outages from resource over-utilization. This is at the heart of incident avoidance.

Integrated physical and virtual operating system management

As server consolidation places mission-critical applications into virtual environments and ever more powerful physical servers, IBM offers an integrated solution for monitoring, viewing, analyzing, forecasting and managing these environments across the enterprise. With the promise of virtualization came the promise of lower hardware and software costs. This can only be achieved with good visualization and control of these new proliferating environments. ITM provides this visualization and control. It can also be easily extended to support the virtualized applications and application infrastructures by simply adding more agents from the ITM – ITCAM – OMEGAMON® XE Monitoring family.

In one package, IBM Tivoli Monitoring enables the monitoring and management of:

- **Physical operating systems**
IBM AIX®, Microsoft® Windows®, Linux®, Sun Solaris, HP/UX, IBM i5/OS®
- **Virtual operating systems**
AIX LPAR/DLPAR/WPAR and Sun Solaris Zones VMware Virtual Machines
- **Virtual client environments***Citrix*

Improve productivity and mean-time-to-recovery with a single, integrated systems management infrastructure

Advanced visualization with IBM Tivoli Enterprise Portal (TEP)

IBM Tivoli Enterprise Portal provides a central location to view and act on information provided by ITM and the ITM – ITCAM – OMEGAMON family of system monitors. It consolidates resource information with performance information into a single console across a heterogeneous enterprise. This consolidated view can significantly reduce the time it takes to navigate, isolate, diagnose and fix a problem. By centralizing real-time and historical information into a central console, new incidents can be viewed in the context of the last 24 hours, week or month to isolate a problem or situation that is causing business outages on a recurring basis.

Gain control with IBM Tivoli Data Warehouse (TDW)

IBM Tivoli Data Warehouse is the backbone repository and central data store for all historical systems management data. It provides IT Operations Management with relevant IT data to make effective business decisions. Tivoli Data Warehouse provides the

foundation for reports and applications that can analyze historical data and identify trends to predict business needs, to support line of business planning or to perform other valuable predictive management tasks. Centralized and consolidated historical data is crucial in improving mean time to recovery. When intermittent problems surface that are hard to isolate, browsing back through consolidated historical data can help visualize a problem at a particular time on a particular part of the infrastructure. It doesn't matter if that infrastructure is a physical or virtual operating system, application server, database, application, home-grown application or other component monitored by ITM or the ITM – ITCAM – OMEGAMON family.

Visualization and control with IBM Tivoli Common Reporting (TCR)

Making decisions about server utilization, allocating critical and scarce resources between virtual environments or even isolating the source of a problem in a business service can be hard when the necessary information is locked away in relational databases, tables or manually maintained spreadsheets. This is critical functionality that should not be in an "add on" or "separately chargeable" package. With

IBM Tivoli Common Reporting (TCR), documentation for management decisions is quickly available, visualized and formatted to identify critical information such as peak hours of usage. The server utilization can be quickly visualized by week, day of the week, hour of the day or even a string of hours over a given week. This kind of information once visualized makes management decisions more accurate, timely and provides supporting documentation for those decisions.

Strive for higher availability with incident avoidance

The goal for most Systems Management products is to improve the mean-time-to-recovery—once the server has failed. The goal is to ensure that the operations team can restore service as quickly as possible. ITM provides some unique tools such as incident historical navigation to improve the mean-time-to-recovery. ITM also incorporates new technology to assist with incident avoidance. Through dynamic thresholding and performance analytics, customers may get the equivalent of an “early warning system” that may allow them to start working an incident before it impacts the end-user community, business application or business service.

- **Incident historical navigation** is a graphical time-based incident investigation mode. This allows the operator once an incident timeframe has been identified to “zoom in” and “lock the incident time frame” in all Tivoli Enterprise Portal workspaces. The operator can then move between the ITM monitored resources, preserving the incident time frame, looking for any anomalies. In minutes rather than hours, a performance or service interruption anomaly could be identified and action taken.
- **Dynamic thresholds**, in contrast to fixed thresholds, baselines a server’s normal behavior over a specified period of time. Dynamic thresholds are set to alert on abnormal server behavior. They may alert at the first indication of a problem that would affect overall application performance. This allows the IT Operations team to start working on and resolving a problem earlier—maybe even before the users’ are aware of the problem.
- **Integrated capacity and performance analytics** supports monitoring, alerting and reporting on a future event. ITM, utilizing its integrated historical information, understands rate of growth of a resource and processes alerts at the time periods specified in advance of the threshold breach. For instance, an alert can be issued “if in 90 days the CPU utilization is forecasted to violate a corporation’s best practice threshold”.

This integrated capacity and performance analytics has many business benefits:

- Operations staff can create more predictive incident avoiding alerts
- IT Operations managers can utilize performance reports for cost avoidance by balancing resources between virtual environments or justify year-to-year capital expenditures to avoid performance related incidents
- Distributed performance specialists can manage larger numbers of distributed systems
- Service level managers can enhance their insight into impending service issues by adding resource trends and forecasts

Achieve better business results with agentless and agent-driven technologies

By supporting both agent and agentless technologies, ITM provides a balance between the cost containment characteristics of agentless technology with the mission-critical application monitoring capabilities associated with agent technology.

Agentless monitoring to contain costs

Agentless technology helps to lower costs. Agentless technology is generally lower priced and is less expensive to manage and maintain. Quite simply,

agentless does less but with less management overhead. Agentless technology, because it does not install or utilize a remote agent on each managed server, has faster speed of implementation and reduced management costs associated with deploying and maintaining a remote agent. Testing costs may also be reduced or eliminated by using open standard interfaces already present on the server. The network though is critical to utilization and a central point of failure for polling. Polling will utilize network bandwidth and polling intervals will also result in a notification delay in case of a server, application or business service outage.

Agent monitoring for higher availability

Agent technology is suited for mission critical applications. It can provide unique, detailed and more granular data on the services it monitors. It provides a store and forward capability, is recoverable and can continue to function when the network is down. Agent code on the server also provides the ability to implement independent automated remote actions. It has little impact on the network as it can suppress server-side messages and the sizing of the central management servers is not as critical since processing workload is distributed on the monitored servers.

If alert timing is essential, agent technology can provide near real-time

alerting to a system outage. Agent technology is the mission-critical technology.

IBM Tivoli understands how critical it is today to control these agent-driven costs. It has taken steps to reduce the cost of ownership of agent-driven technology by integrating agent software distribution and maintenance into ITM and implementing a “watchdog” capability to ensure the agent is always available, restarted when necessary and functioning properly. The agent footprint and impact of agent technology on the remote server is constantly under improvement to address these costs.

ITM Agent Builder—insurance and independence for monitoring needs

Monitoring for SAP, Siebel and PeopleSoft applications, because of their market share, can be found in some vendor’s software packages. It is much harder to find a monitoring solution for a mission critical industry-specific application. It is nearly impossible to find an out-of-the-box monitoring solution for home-grown or custom applications. Yet these can be mission-critical environments to the business. Leaving them unmonitored is a recipe for problems. How can these industry packages, home-grown applications and custom built solutions be weaved into an overall systems management strategy?

ITM Agent Builder with its wizard driven GUI, provides a fast and easy solution to build in minutes to a few hours solutions for these critical applications. An ITM Agent Builder custom monitor fully integrates with the Tivoli Enterprise Portal for visualization, the Tivoli Data Warehouse for control of availability and performance metrics and even reporting generated by Tivoli Common Reporting.

ITM Agent Builder is an insurance policy. It is an insurance policy against future application monitoring requirements that you can’t foresee today. It is an insurance policy against future capital funding shortfalls, as IT Operations can continue to build monitoring solutions.

ITM Agent Builder is also about independence. IT is about independence to build your own unique monitoring solutions for your home grown applications. It is about independence from outside development and support costs. It is an insurance policy so that you are not so dependent on a vendor to listen to your requirements and solve your problems for you. It is about independence to control your own monitoring destiny and ensure you are in control.

Finally, this is the way for the IT Operations team to deliver faster, more timely monitoring solutions for their internal customers. This is about better aligning IT and the business.

Achieve faster problem resolution with situation-based alerts

Based on industry best practices, out-of-the-box supplied situations include a combination of metrics and thresholds that once triggered can identify, notify and automate problem resolution. You can take advantage of situations in IBM Tivoli Monitoring to detect and repair incidents as they occur. You can also tailor automated responses to these alerts for your environment to facilitate proactive resolution of recurring problems. The built-in situation editor allows you to easily set up your own intelligent alerts and thresholds giving you the power to create granular notification and eliminate false alarms.

Be more responsive with consolidated event management

Add advanced event management with IBM Tivoli OMNibus and IBM Tivoli Network Manager. Take control of your events through event automation, event filtering, event deduplication and identifying root cause from symptom events.

Consequently, the IT staff can move quickly to isolate a failing component, diagnose the problem and resolve the incident. IBM Tivoli OMNibus and Tivoli Network Manager display within the Tivoli Enterprise Portal for simple launch in context.

Automate best practices in a consistent and error-free manner

Automation and expert advice helps resolve problems when they occur and execute repetitive tasks in an error-free consistent manner:

Expert advice—Detailed explanations of incidents and problems are provided and recommendations made for resolving them. Simply move the mouse over an alert. You can use this knowledge out of the box or edit it to preserve solutions specific to your environment.

Take action—Automatically resolve recurring problems by running scripts created from templates. For example, use this capability to detect runaway processes and view resource consumption by workload, network and disk information, and system logs in real time. Extend the reach of skilled

ITM—ITCAM Family

The ITM—ITCAM Solution Family

easily extends ITCAM for Applications to monitor and manage an extensive end-to-end application and application infrastructure environment from a single enterprise portal, with a single data warehouse and visualized with a single, common report capability.

- **ITM—Heterogeneous physical and virtual operating system support.**
- **ITM for Microsoft® Applications—Integrate Microsoft's applications and application infrastructure environments**
- **ITCAM for Applications—Integrate heterogeneous applications and application infrastructure environments**
- **ITCAM for WebSphere/J2EE—Diagnostic capabilities for Subject Matter Experts in the area of WebSphere and J2EE**
- **ITCAM for Transactions—Extend monitoring to include the end-user's application transaction experience and the Internet technologies this infrastructure depends on such as DNS and DHCP servers**
- **OMEGAMON® XE on System z®—Integrate tightly with backend System z operating systems and application infrastructures for a truly complete end-to-end monitoring solution**



employees by using monitoring automation to capture best practices and “replay” them as problems occur.

Workflow automation—Tivoli Monitoring software includes policies to automate detailed system processes. Using the included workflow editor, design policies to perform actions, schedule work to be done by users or automate manual tasks. For example, IBM Tivoli Monitoring for Databases includes best practices for typical situations that database administrators face such as determining what to monitor, when to monitor, and how to interpret and act on the monitor results. With the software guiding and automating these tasks, database administrators have more time to focus on more business relevant tasks.

For more information

To learn more about IBM Tivoli Monitoring, contact your IBM representative or IBM Business Partner, or visit ibm.com/tivoli/products/monitor

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