



IBM Tivoli Composite Application Manager for Applications

Highlights

- *Improve mean-time-to-recovery with an integrated solution for mission-critical applications and application infrastructures*
- *Develop incident avoidance capabilities with dynamic thresholds and integrated performance and capacity management*
- *Implement a single graphical user interface to simplify monitoring, management and systems operations around role-based views*
- *Leverage a common data model to provide a consistent view of historical performance and availability metrics across application resources*
- *Enable more effective organizational problem-solving across operating systems, virtual operating systems, middleware, databases and applications*
- *Utilize common reporting to access critical information for better and more proactive business decisions*

With so many different components to be constantly monitored and managed, today's complex application environments can present a daunting management challenge to IT organizations. With multiple monitoring tools come multiple logins, multiple user interfaces and multiple inconsistent data views. Comparing information on disparate tools to get to a root cause is difficult if not impossible. When a problem arises, it becomes a time-consuming, labor-intensive challenge to find the relevant data. This negatively impacts the mean time to recovery and labor costs.

Integrated application management

IBM offers an integrated solution for monitoring and management across a broad set of heterogeneous applications and application infrastructures. IBM Tivoli® Composite Application Manager for Applications (ITCAM for Applications) provides one tool for monitoring, viewing, analyzing, and

managing applications across the enterprise—consolidating critical application data in one easy-to-use interface, the IBM Tivoli Enterprise Portal.

ITCAM for Applications, in one package, enables the monitoring and management of:

- *Operating systems including AIX®, Microsoft® Windows®, Linux®, Solaris, HP-UX and i5/OS®.*
- *Virtual servers including AIX LPAR/DLPAR/WPAR, Sun Solaris Zones, VMware and Citrix virtual client technology.*
- *Database servers including IBM DB2®, Oracle, and Sybase.*
- *IBM Domino® servers.*
- *Web resources including web servers, application servers, Java™ Platform and Enterprise Edition (Java EE) applications.*
- *IBM WebSphere® MQ and IBM WebSphere Message Broker.*
- *Enterprise applications including SAP, Siebel and PeopleSoft.*

A comprehensive set of management capabilities

From physical and virtual operating systems to applications and database servers to messaging and middleware,

ITCAM for Applications provides comprehensive monitoring and management capabilities for the most complex application environments. It helps IT operations and administrators maintain high performance and availability levels for composite applications and services.

ITCAM for Applications enables:

- *Benchmarking server performance and alerting on abnormal behavior rather than relying on just fixed thresholds.*
- *Monitor, alert and report on future physical or virtual server resource performance needs.*
- *Resolution of common problems with out of the box best practices automation.*
- *Role-based, real-time views of monitoring data, allowing problems to be viewed in the context of the application, historical context or geography. This enables quick drill-down to determine the source of a problem.*

Combining a single user interface, single data warehouse and single reporting capability helps reduce the complexity of multiple management products from multiple vendors,

improves user productivity and helps operations and administrators interpret and act on monitoring metrics quickly, before application performance is degraded. By providing a consolidated set of tools, ITCAM for Applications can help IT organizations optimize service levels and contain costs on critical application resources across the enterprise.

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

Visualization with IBM Tivoli Enterprise Portal (TEP)

IBM Tivoli Enterprise Portal provides a central location to view and act on information provided by ITCAM for Applications' 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 reoccurring basis.

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 visualize a problem at a particular time on a particular part of the infrastructure. It doesn't matter if that infrastructure was a particular operating system, virtual server, application server, database, application, home-grown application or other component monitored by ITCAM for Applications.

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 information is locked away in relational databases, tables or manually maintained spreadsheets. This is critical functionality that shouldn't be in an "add on" or "separately chargeable" package. With IBM Tivoli Common Reporting (TCR), information 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.

Moving to incident avoidance

The goal for most Systems Management products is to improve the mean-time-to-recover—once the server has failed. The goal is to ensure

that the operations team can restore service as quickly as possible.

IBM Tivoli Monitoring (ITM) provides some unique tools in this area 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 time frame has been identified to "zoom in" and "lock the time frame" in all Tivoli Enterprise Portal views. The operator can then move between the ITCAM for Applications monitored resources, within the locked time period, looking for any anomalies. In minutes rather than hours, a performance or service interruption anomaly could be identified and resolved.

- **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 a problem earlier—maybe even before the users are aware of the problem.
- **Integrated capacity and performance analytics** allows for monitoring, alerting and reporting on a future event. For instance, an alert can be set to warn “if in 90 days” the CPU utilization is “forecasted” to violate the corporation's best practice threshold.

ITCAM for Applications in action

The following real-world example shows how you might use ITCAM for Applications to identify and resolve an application problem.

- *A workspace is configured to show metrics from multiple components in one view, including the application server, database, operating system, and transaction response times.*
- *An alert is received regarding slow end-user transactions.*

- *With the workspace views, drill down to the source of the problem, and then refer to the Expert Advice for in-context troubleshooting information, including probable causes and possible fixes.*
- *In this case, the recommended action may be to increase the page size in the database.*
- *From the same screen, execute the fix, thus reducing the time to find and resolve problems, resulting in lower mean-time-to-repair.*
- *Finally, you can use the graphical editor to create a workflow that automates the resolution of similar problems by correlating database and response time situations. Then configure Expert Advice to notify the operator to execute a pre-written script to solve the problem, reducing the need for manual intervention in the future.*

ITCAM for Applications pricing model helps reduce shelf-ware and compliance concerns

With today's economy, there is concern with maximizing return on investment, eliminating unused software and easier compliance. ITCAM for Applications provides an ability to choose exactly the agents for the environments you want to manage in your server environment. Choose from the following agents and if at a future date you repurpose a server,

just exchange for an equivalent number of agents. For instance, if a Domino server is repurposed to be an SAP server, simply stop using the Domino agent and start using the SAP agent. This packaging and pricing has several advantages:

- *Easier compliance as accountability is based on number not type of agents*
- *Eliminate shelf-ware resulting from repurposing of servers*
- *Move applications and application monitoring easily between servers*

ITCAM for Applications - Operating System Monitoring

ITCAM for Applications provides market leading support for the latest heterogeneous operating systems in the market place. It consolidates support for heterogeneous operating system environments helping reduce administrative and operating system support costs. ITCAM for Applications' agentless and agent-driven support blends the best business results of both technologies. It balances the cost containment characteristics of agentless technology with the mission-critical availability characteristics of agent technology. Deploy the appropriate technology that makes the most business sense.

Finally, IBM Tivoli Agent Builder, with its easy to use graphical user interface and usage of open monitoring standards, enables fast development of custom monitors for home-grown applications, protects against unforeseen future monitoring requirements and provides a degree of vendor independence. It can make the IT department or business partner a provider of fast, one-of-a-kind monitoring solutions tailored to their customer's unique internal requirements.

ITCAM for Applications - Virtual Server Monitoring

There is no such thing as a “*virtual performance*” problem. Just very real performance problems. As servers are consolidated to ever more powerful physical servers with ever expanding virtual environments, monitoring, correlating and identifying the root cause of performance slow downs and outages becomes an ever greater concern. In the past with a one-to-one relationship between server and application, isolating a problem was as easy as locating the physical server. Today, now that tens to hundreds of applications may be running on a single physical server, new tools are needed to monitor these environments and provide historical information and trends, balance memory, isolate individual virtual machine

problems and identify a root cause. ITCAM for Applications provides centralized monitoring and management of both physical and virtual server environments. Virtual server environments such as AIX's Logical Partitions (LPAR), Dynamic Logical Partitions (DLPAR) and Workload Partitions (WPAR), SUN Solaris' Zones, and market-leading VMware are supported. In addition, Citrix virtual client support is also provided. (Microsoft Windows Hyper-V technology is supported in ITM for Microsoft Applications.)

ITCAM for Applications - Database Monitoring

ITCAM for Applications provides intelligent monitoring and management of database servers. You can gain visibility into database availability and performance—including database component details, failed SQL statements, application locks, table space availability and SQL text performance. Out-of-the-box views show key metrics unique to each application, including buffer hits, connections used, thread activity, deadlocks and contention. Out-of-the-box best practice monitoring thresholds are included for I/O errors, free space warnings, cache thresholds, lock warnings, wait times, SQL statement failed percentage and more. Automated actions for resolving common database problems are provided including stop, start, rebind, reorg or any other custom

database administration command. ITCAM for Applications provides support for IBM DB2, Oracle, and Sybase (Microsoft SQL Server is supported in ITM for Microsoft Applications).

ITCAM for Applications - Web Resources Monitoring

ITCAM for Applications provides the health status of critical Web resources including WebSphere and J2EE™ Application servers and Web servers. A single monitoring agent can monitor multiple Web servers. Metrics monitored include request analysis, pool analysis, garbage collection and allocation failure analysis, EJB containers, database connection pools, J2E connection pools, thread pools, cache analysis, and web application analysis. Metrics are summarized in server health summary views and application health summary views giving operators and administrators the ability to see, at a glance, where a problem is located. ITCAM for Applications monitors web application servers including WebSphere Application Server, WebSphere ESB, WebSphere Portal Server, WebSphere Process Server, Lotus® Workplace Server, J2SE™ Applications, WebLogic, Oracle, SAP NetWeaver, Tomcat, JBOSS and Web Server Platforms including Apache and iPlanet.

ITCAM for Applications - IBM WebSphere MQ and IBM WebSphere Message Broker Monitoring

ITCAM for Applications provides comprehensive monitoring and management of IBM WebSphere MQ and IBM WebSphere Message Broker. It decreases WebSphere MQ and WebSphere Message Broker downtime by identifying common problems and automating corrective actions, auto-discovery and immediate monitoring of complex environments, drill-down to locate a problem, identify root cause and resolve bottlenecks or outages. It provides capabilities to proactively prevent problems by correctly configuring and deploying WebSphere MQ infrastructure, detection and repair of problems as they happen, or alerting to an imminent concern. ITCAM for Applications provides key WebSphere MQ and WebSphere Message Broker metrics for real-time and historical data analysis. Real-time metrics such as Current Message Rates, Current Average Message Time and Sub-flow Statistics can help IT operations and administrators identify problems more quickly. You can define, verify and schedule automatic deployments of WebSphere MQ configurations across

the IT infrastructure, then enable automated corrective actions in accordance with industry best practices for more improved service level management.

ITCAM for Applications - IBM Domino Server Monitoring

ITCAM for Applications provides monitoring and management of IBM Domino servers, helping to optimize performance for IBM Lotus Notes® applications. This functionality can be deployed agent-based or agentless, it leverages best-practice models that focus on performance monitoring of key Domino components including servers, mail routing, replication, calendar, database, and clusters. Deeper Domino administrative capabilities are available with IntelliWatch®. (Microsoft Exchange Server is supported in ITM for Microsoft Applications.)

ITCAM for Applications - ERP Applications Monitoring

ITCAM for Applications provides proactive monitoring and management of your enterprise resource planning (ERP) applications, including SAP, Siebel and PeopleSoft. IBM Tivoli integrates these application environments into an overall systems management strategy to help reduce the mean-time-to-recovery and assist in incident avoidance. Rather

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**

than attempting to replace or compete with the native subject matter expert (SME) tools, IBM Tivoli integrates these “application islands” with all their dependent resources such as databases, operating systems, middleware, network and storage devices. It does not replace, but rather enhances and integrates these existing ERP systems management tools into the overall Tivoli systems management portfolio.

- **SAP Application Monitoring**

SAP monitoring takes advantage of custom ABAP code and integration with Computer Center Management System (CCMS) to show SAP-specific monitoring data. It monitors key components of Siebel CRM such as the application server and the gateway name server.

- **Siebel Application Monitoring**

Siebel CRM monitors key Siebel resources such as the application server and the gateway name server.

- **PeopleSoft Application Monitoring**

PeopleSoft Enterprise monitors provide the monitoring capability for the entire PeopleSoft Enterprise including Application Servers, Process Schedulers and Tuxedo. Monitoring of the PeopleSoft Enterprise includes Application Servers, Process Schedulers and Tuxedo.

For more information

To learn more about IBM Tivoli Composite Application Manager for Applications, contact your IBM representative or IBM Business Partner, or visit ibm.com/tivoli/products/composite-application-mgr-applications

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