

# IBM Tivoli Composite Application Manager for WebSphere

## Highlights

- Simplify management throughout the life cycle of complex IBM WebSphere-based J2EE applications that span multiple subsystems
- Detect, analyze and repair WebSphere performance issues in production and test environments, using real-time and historic data to maintain high levels of uptime and responsiveness
- Isolate performance bottlenecks through correlated tracing of composite transactions that span J2EE and back-end systems such as IBM CICS and IBM IMS
- Create reports that deliver insight into performance trends through deep-dive analytical views at the application, transaction, server or request levels
- Leverage powerful memory diagnostics to help IT staff quickly detect and fix application memory leaks for specific Java classes
- Integrate smoothly with other IBM Tivoli products to provide a comprehensive application management solution for composite environments
- Integrate with IBM Rational Eclipse-based developer products to provide live performance data from production directly to the developer desktop — enabling operations and development to work closely together to solve production problems without having to re-create them in preproduction environments

## Establish an application management solution for high availability and performance

Today's dynamic, on demand business depends on an array of complex applications. These are *composite applications*, meaning that they are deployed as partitioned business logic and data that span Web servers, Java™ 2 Enterprise Edition (J2EE™) application servers, integration middleware and mainframe systems including CICS® and IMS™. Traditional siloed tools that monitor individual systems are not equipped to manage and diagnose composite application performance and availability problems. As a result, operations and development teams relying on disparate tooling waste countless hours trying to identify, isolate and fix these problems. Poorly performing composite applications can have serious financial consequences on top- and bottom-line results of the business.

## Detect and repair problems before they impact users

IBM Tivoli® Composite Application Manager (ITCAM) for WebSphere® delivers unparalleled, integrated management tools for your Web and enterprise infrastructure that help maintain availability and performance of your on demand business. Part of the Tivoli family of application management solutions, ITCAM for WebSphere helps you quickly pinpoint the source of bottlenecks or other defects in application code, server resources or external system dependencies. Management capabilities are supported in both distributed and IBM z/OS® environments.

Because organizations may use application servers from multiple vendors, ITCAM for WebSphere can integrate tightly with IBM Tivoli Composite Application Manager for J2EE — giving you a consistent way to manage composite applications across

WebSphere, BEA WebLogic, JBoss, Oracle, SAP NetWeaver and Tomcat environments. Unlike other solutions that lack integrated tools across the problem resolution and application life cycles, ITCAM for WebSphere helps you rapidly identify and fix performance problems before they impact customers and other end users. The end result? You can keep your business running smoothly — to meet customer demands for exceptional service around the clock and around the world.

### **Monitor, manage and enhance performance across subsystems**

Through a set of diagnostics, reporting, analysis and resolution tools, ITCAM for WebSphere enables advanced monitoring and management of WebSphere-based J2EE applications, which allow you to:

- Detect, analyze and repair WebSphere performance issues in production and test environments.
- Maintain high uptime, performance and responsiveness standards for both mainframe and distributed systems.
- Understand overall application health at a glance across multiple system types.

### **Simplify application management throughout the life cycle**

Without requiring you to modify application code each time it cycles through a change process, ITCAM for WebSphere allows you to monitor newly deployed applications as soon as they become active. Out of the box, you can begin to correlate deep-dive performance data gathered from multiple middleware environments, including J2EE, CICS, IMS and IBM WebSphere Portal. As a result, your IT support teams can pinpoint precise hotspots in application code — no matter how deep — with minimal effort. Your organization benefits by delivering a simplified, lower-cost application management solution for your ongoing operational and support initiatives.

To further simplify management and help minimize the amount of overhead that is used for management, ITCAM for WebSphere dynamically adjusts the depth of transaction monitoring levels. You can establish a preset schedule for moving between monitoring levels or switch “on the fly” when requiring a deeper level of analysis. Changing monitoring levels can occur without

restarting the application server or Java Virtual Machine (JVM), thereby not impacting production service levels.

### **Uncover performance problems**

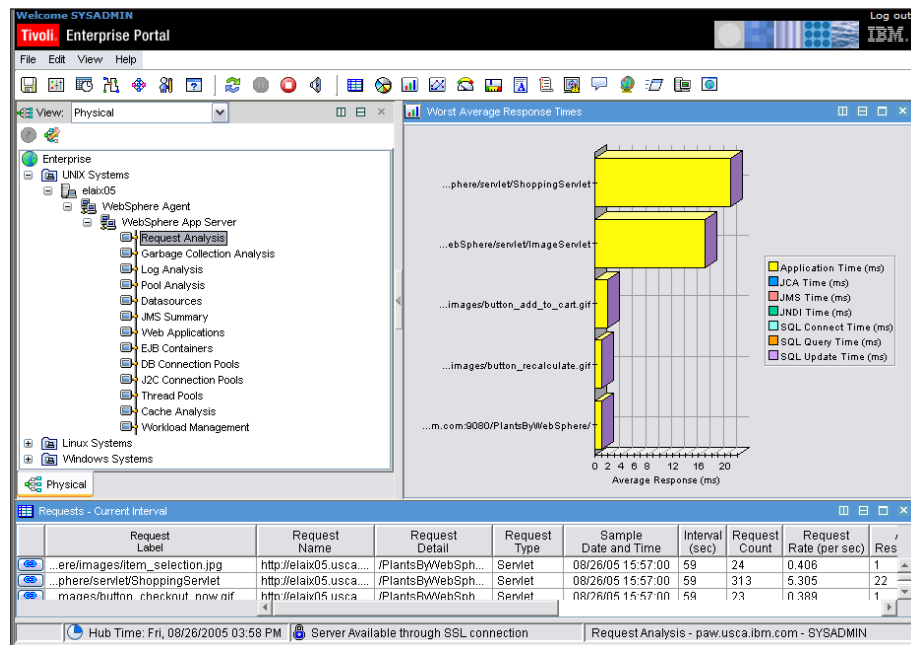
To enable you to rapidly identify and resolve problems, ITCAM for WebSphere includes a comprehensive set of management functions. Using the software’s automation and other capabilities, you can:

- View in real time all in-flight J2EE transactions, including composite transactions that cross into the CICS and IMS subsystems.
- Evaluate common performance bottlenecks and contributing factors with an automated problem finder to help detect, categorize and analyze root causes easily.
- Analyze problematic transactions both historically and in real time by drilling down into the details and share the information with other stakeholders using built-in, interactive reporting tools.
- Correlate and profile transactions across multiple subsystems to determine the precise location and root causes of application failures.
- Set traps and alerts to help detect and fix potentially troublesome situations before they affect end users.
- Analyze resource consumption patterns, perform trends or historical analysis, and plan for future growth.

**Capture vital information quickly through an easy-to-use, Web-based console**

Built as a multitier monitoring infrastructure, ITCAM for WebSphere consists of a J2EE-based managing server — the back-end component — and data collectors that are deployed to each monitored application server, including optional CICS and IMS host data collectors. The software collects application data natively at the transaction instance level, making all code paths and call trees visible to the user console. The advanced managing server parses each transaction and evaluates it based on user-defined criteria to help analyze the transaction and isolate the root cause of performance issues.

The Web-based managing console displays rich, graphical IBM WebSphere Application Server data, including information about memory and heap use. It also provides a single interface into all managed environments, including J2EE servers and back-end control regions. The console represents data visually — using meters, bars, charts and buttons. Many of the displays are hyperlinked or have drop-down menus to navigate to detailed views of performance data,



*ITCAM for WebSphere supplies Tivoli Enterprise Portal with a complete set of performance metrics, including advanced Garbage Collection Analysis workspaces.*

making it easy for support teams, subject-matter experts and developers to quickly diagnose and resolve performance problems.

**View key performance metrics in user-appropriate workspaces**

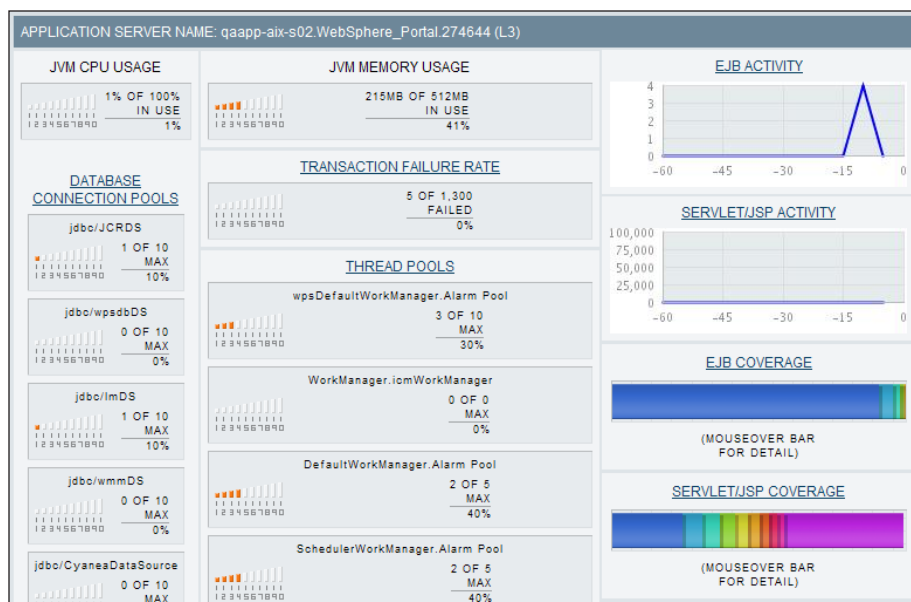
On its own and through integration with other Tivoli and Rational® solutions, ITCAM for WebSphere presents performance data to both operations experts and developers in familiar, highly usable formats.

Operations and support teams can take advantage of ITCAM for WebSphere integration with next-generation Tivoli infrastructure monitoring solutions. Because ITCAM for WebSphere supplies IBM Tivoli Enterprise™ Portal with key performance metrics, operations staff obtain a single-user interface into performance metrics and trends from WebSphere and other monitored systems, such as messaging middleware, networks and databases. Data is aggregated, correlated and

presented in rich visual formats to help operations spot trends pointing to delays or other symptoms.

Application support, test and development teams can also use Tivoli Enterprise Portal to gain deep insight into the health of your applications. Business workspaces defined in Tivoli Enterprise Portal integrate with other IBM Tivoli Monitoring, IBM Tivoli Composite Application Manager and IBM Tivoli OMEGAMON® tools to provide an end-to-end view of the front-end, middleware and back-end processes of end-user applications.

Developers can also take advantage of ITCAM for WebSphere information within an Eclipse desktop environment. ITCAM for WebSphere also works in conjunction with other IBM Tivoli Composite Application Management products to send low-level application trace data to Rational Eclipse-based developer tools, such as IBM Rational Application Developer. This provides application teams with live production intelligence to quickly access and fix application code, eliminating the need to re-create the problem at the developer's desktop.



ITCAM for WebSphere shows resource consumption patterns for available J2EE resources like thread and connection pools.

### Use memory analysis tools to perform deep-dive analysis and facilitate resolution

ITCAM for WebSphere provides robust memory analysis capabilities, including:

- Memory trends graphing and metric comparison — to help optimize JVM memory parameters, as well as detect memory leaks, garbage collection and lock contention conditions.
- Heap analysis — to help pinpoint leaking classes to aid developers in fixing defective code.
- Capturing the line number of code responsible for suspected leaking classes and methods — to help establish relationship between referenced objects in heap and allocating class names.

Monitoring trends through connection pools or JVM memory functions, users can track the health of servers and automate event management by creating *situations*, which generate alerts or take automated, user-defined actions such as change a resource pool size when threshold conditions you set are exceeded. By continuously monitoring the health of all your production WebSphere J2EE applications, you can more easily maximize return on investment, meet service level agreements and satisfy user demand.

### **Leverage Tivoli to keep business-critical applications running**

The Tivoli composite application management solution can optimize performance for J2EE, portal, service oriented architecture (SOA) and main-frame applications. It brings application problem diagnosis and performance optimization capabilities like capacity planning, configuration management and performance tuning to a complex, heterogeneous computing environment. Its integration with Rational tools helps businesses successfully monitor, diagnose and resolve problems through the IT life cycle by enabling operations, support and development to manage application performance together as one team.

Tivoli composite application management is also an integral part of IBM

Service Management solutions. ITCAM software integrates with IBM Tivoli Change and Configuration Management Database (CCMDB) to help deliver consistent, repeatable and measurable IT services based on a best-practices framework.

#### **For more information**

To learn more about ITCAM for WebSphere and other integrated solutions from IBM, contact your IBM representative or IBM Business Partner, or visit [ibm.com/tivoli](http://ibm.com/tivoli)

#### **About Tivoli software from IBM**

Tivoli software provides a comprehensive set of offerings and capabilities in support of IBM Service Management, a scalable, modular approach used to deliver more efficient and effective services to your business. Meeting

the needs of any size business, Tivoli software enables you to deliver service excellence in support of your business objectives through integration and automation of processes, workflows and tasks. The security-rich, open standards-based Tivoli service management platform is complemented by proactive operational management solutions that provide end-to-end visibility and control. It is also backed by world-class IBM Services, IBM Support and an active ecosystem of IBM Business Partners. Tivoli customers and partners can also leverage each other's best practices by participating in independently run IBM Tivoli User Groups around the world — visit [www.tivoli-ug.org](http://www.tivoli-ug.org)



## ITCAM for WebSphere at a glance

ITCAM for WebSphere is ready to be used against a Java application and does not require the user to access the application source code.

### ITCAM for WebSphere system requirements

#### Monitored environments:

Data collectors are designed to monitor applications running on WebSphere Application Server within the following environments:

- IBM AIX®
- HP-UX
- Red Hat Enterprise Linux®
- Sun Solaris
- Microsoft® Windows®
- SUSE Linux Enterprise Server
- Red Flag Advanced Server
- IBM i5/OS®
- z/OS

Data collectors for CICS and IMS are available separately.

#### Managing server environments:

If you so choose, ITCAM for WebSphere can automatically install WebSphere Application Server and IBM DB2® database components, which are included with and used by the product.

ITCAM for WebSphere Managing Server can be installed on one of the following environments:

- AIX
- HP-UX
- Red Hat Enterprise Linux
- Solaris
- Windows
- SUSE Linux Enterprise Server

#### Browsers:

- Microsoft Internet Explorer

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Software Group  
Route 100  
Somers, NY 10589  
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