

ORACLE ENTERPRISE MANAGER 10g: ORACLE DIAGNOSTICS PACK FOR ORACLE MIDDLEWARE



BENEFITS

- Manage and monitor multiple Oracle WebLogic Server domains and Oracle Application Server farms from a single console
- Optimize the performance of Java applications using real-time events, notifications, reports and historical trends of metrics
- Improve availability and performance of Oracle JRockit JVM environments with low-overhead application monitoring and diagnostics
- Reduce performance problem resolution for Java environments without instrumentation overhead and no server restarts
- Simplify the determination of root causes between database and application servers using transaction tracing
- Rapidly detect memory leaks using differential heap analysis

Most application performance problems surface during peak loads. Often times, these problems are time- and resource-intensive, if not impossible, to reproduce in test environments. Application administrators need solutions that not only monitor production applications but also provide intelligence to help diagnose problems early and avert emergencies. Oracle Diagnostics Pack for Oracle Middleware provides proactive monitoring and advanced diagnostic capabilities that empower administrators to prevent crashes and other undesirable outcomes in high load production environments.

Comprehensive Monitoring and Diagnostics Capabilities

Oracle Diagnostics Pack for Oracle Middleware enables application owners to quickly identify and rapidly diagnose performance problems in even the most complex application environments. This maximizes availability and performance of enterprise applications to help improve productivity while lowering the cost of application administration. Key features in the pack include

- System monitoring of Oracle Application Server and Oracle WebLogic Server
- Java application diagnostics
- Java virtual machine (JVM) monitoring
- URL performance for applications running on Oracle Application Server
- Transaction tracing for applications running on Oracle Application Server

Monitoring of Oracle Application Server and Oracle WebLogic Server

Oracle Enterprise Manager provides a single console that allows administrators to manage and monitor all of the application servers and targets in an entire datacenter from one location. This lowers costs and simplifies the challenge of managing multiple Oracle WebLogic Server domains or Oracle Application Server farms.

With this solution, administrators can capture a wide range of application and server metrics for servlets, Enterprise JavaBeans (EJB), transactions, datasources, and JVM memory to proactively monitor the performance, load, and usage of resources deployed on systems using Oracle middleware. Administrators can set thresholds on metrics, receive notifications, compare metrics across servers, view historical trends, create custom reports, and correlate performance across the entire stack to facilitate root cause analysis.

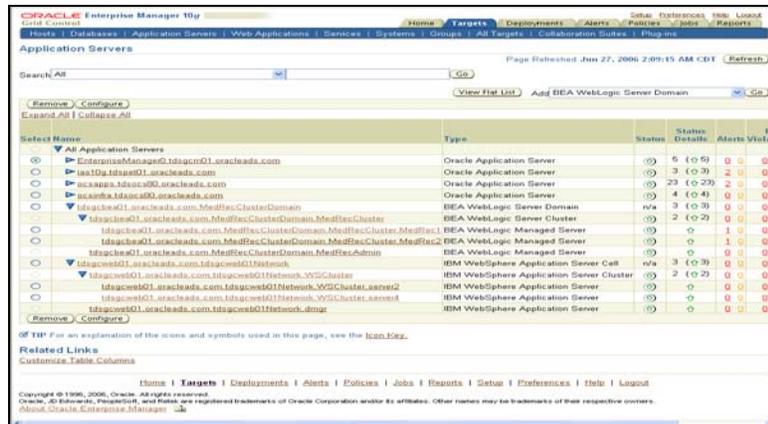


Figure 1. Through a single interface administrators can manage, monitor, and diagnose all Oracle Application Servers and Oracle WebLogic Servers in the datacenter.

Application Diagnostics For Java

Oracle Diagnostics Pack for Oracle Middleware includes an application diagnostics for java (AD4J) feature that provides low overhead monitoring and diagnostic functionality to improve Java application availability and performance. It enables administrators to proactively monitor application performance and provides in-depth application details to diagnose problems. Most importantly, AD4J can perform all of these capabilities without any server restarts, no application instrumentation, and no additional performance overhead making it a perfect solution for monitoring and diagnosing production applications.

Hot Deployment

The AD4J feature includes a management console, from which a lightweight agent can be downloaded and deployed on application servers running live applications. Once an agent is deployed, the AD4J feature will immediately discover the associated application server without any restart and immediately show the slowest requests and the bottleneck resources affecting the application including CPUs, network devices, memory, slow running or hanging threads, and database locks.

Monitoring, Notifications, Historical Trends, and Dashboards

AD4J agents use low overhead and can run on application servers 24/7 to monitor applications. Performance metrics captured by these agents are displayed in a network operations center dashboard. Through this dashboard, administrators can

- Define thresholds for key metrics
- Receive email notifications if a threshold is breached
- View all JVMs with their associated metrics and alerts
- Analyze previous problems using data stored in the application repository
- Identify bottleneck resources and the associated end-user requests
- Uncover application database issues that caused, or may cause, a slowdown

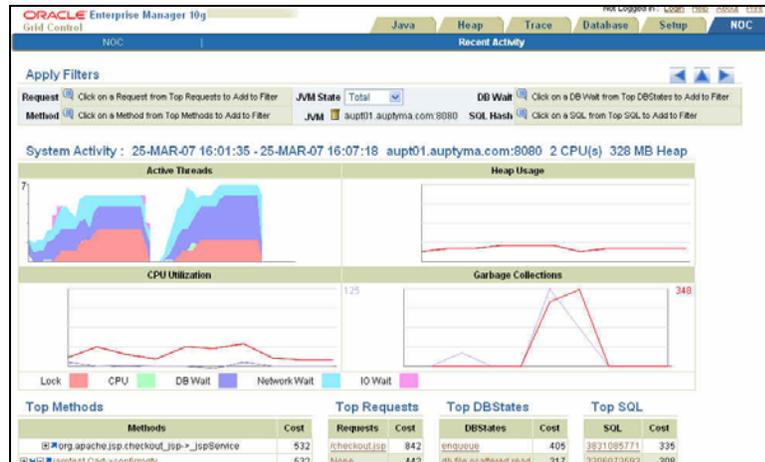


Figure 2. A comprehensive dashboard for 24/7 monitoring of Java environments.

Real-time Visibility into JVM and Application State

The AD4J feature shows in-depth JVM state and application state without having to instrument the application code. Through a powerful console, administrators can see the current state of the JVM and the application, as well as all active threads, their states, and the line of code that each one is executing. If a thread is waiting on a network or lock, administrators can quickly view the state and identify the line causing the wait. The console also enables administrators to identify the slowest requests, the slowest methods, their line numbers in the Java code, and the associated call stack for all applications running on the JVM.

Tracing In-flight Transactions

Using the AD4J functionality administrators can trace one or more active threads to view stack progression over a period of time. These trace details help analyze the impact of a thread on the JVM by illustrating the time spent by each method waiting for resources. Administrators can view the resource wait time percentages for each method in the call stack.

Transaction Trace from Java to the Database

The AD4J feature enables administrators to trace a request activity in Java to the corresponding database session activity and vice-versa. This helps application and database administrators determine the specific cause of performance problems. For example, if an application thread in Java is waiting forever to return from a call to the database an administrator can quickly identify the precise query causing the problem. Alternatively, database administrators can view all database sessions, if a particular database is having performance problems, they can trace back to the responsible Java thread.

Cross-tier Trace Between J2EE Containers

Just as with the database tracing functionality, administrators can trace request activity for cross-tier EJB calls into other Java 2 Platform, Enterprise Edition (J2EE) application servers. This enables them to identify specific outbound calls that are causing performance problems and identify the source of bottlenecks across tiers.

Request Performance Diagnostics

Oracle Enterprise Manager provides in-depth historical details about the performance of all URLs accessed by end users. Application owners can view the server response times of the URLs including a breakdown of response times into servlet, JavaServer Pages (JSP), EJB, Java DataBase Connectivity (JDBC), and SQL statements. URL response time problems are available through the request performance diagnostics feature. Once the problem is identified administrators can drill down to the specific JVM to determine the root cause of the response time problem.

(Notes: The request performance diagnostics feature is only available for applications running on Oracle Application Server front-ended by Web cache or Oracle HTTP Server powered by Apache 2.0. Use of this feature with Oracle WebLogic Server requires Apache 2.0. The drill down functionality requires Oracle Diagnostics Pack and Oracle Tuning Pack)

Interactive Transaction Tracing

Interactive transaction tracing is available for Web transactions defined as part of Web applications. Application Web transactions can be easily created using a simple, intuitive transaction recorder. Once an application performance problem is identified, Web transactions can be executed on-demand to immediately trace problems to specific application tiers. Transactions are played back interactively, and provide in-depth breakdowns of response times across all tiers of a Web application for quick problems diagnosis. Playback results include total response time for each page, and the time spent in each layer of the J2EE stack, such as JSP, EJB, and JDBC. Playback data also includes the time required to execute each SQL statement with in-context drill downs to perform diagnostics and tuning of the query statement.

(Notes: Interactive transaction tracing is only available for applications running on Oracle Application Server. Creating Web transactions requires Oracle Service Level Management Pack or other management packs that include transaction functionality.)

Contact Us

For more information about Oracle Diagnostics Pack for Oracle Middleware, please visit oracle.com/enterprise_manager/index.html or call +1.800.ORACLE1 to speak to an Oracle representative.



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