Oracle® Tuxedo System and Application Monitor (TSAM)

Product Overview

11*g* Release 1 (11.1.1.2)

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ORACLE®

Oracle Tuxedo System and Application Monitor (TSAM) Product Overview, 11*g* Release 1 (11.1.1.2)

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Oracle TSAM Overview

The following sections provide an overview to the Oracle Tuxedo System and Application Monitor (TSAM) product:

- Understanding Oracle TSAM
- Oracle TSAM Features
- A Brief History of Oracle TSAM
- Oracle TSAM Architecture
- What's Next?

Understanding Oracle TSAM

Oracle Tuxedo is widely used by enterprises that develop and use mission-critical applications. It acts as the infrastructure layer in distributed computing environments. The complexity of Oracle Tuxedo and the applications running on top of it makes performance measurement extremely complex.

Oracle TSAM provides comprehensive monitoring and reporting for Oracle Tuxedo system and applications. It includes two components: Oracle TSAM Agent and Oracle TSAM Manager.

The Oracle TSAM agent enables collection of various applications performance metrics (including call path, transactions, services, system servers). The Oracle TSAM Manager provides graphical user interface that correlates and aggregates performance metrics collected from one or more Tuxedo domains. It displays this information in *interactive* real time.

Why Use Oracle TSAM?

Because the Oracle Tuxedo framework and applications are widely deployed, comprehensive monitoring and reporting capability becomes increasingly critical. For example, you may want to know:

- the end-to-end execution time of an ATMI request
- where a call hangs
- how many requests to a service failed during a certain time period
- how many requests went through a domain gateway during a certain time period
- the current status of all participants in an XA transaction

Oracle TSAM can provide this information and allows you to easily identify bottlenecks and expedite problem resolution. Oracle TSAM can also help with performance tuning and capacity planning.

Oracle TSAM also allows you to define event alerts. The Oracle TSAM Console reports an event when an alert is triggered notifying you to take proper action.

Oracle TSAM Features

The following is a list of Oracle TSAM features:

- Tracking Oracle Tuxedo system call transmissions. Each monitored call is assigned a unique ID and is propagated along a call path tree. Oracle TSAM is able to track calls across multiple machines and domains.
- *Real-time* call path tree tracking of a monitored request is displayed and the performance metrics for each step are available.
- Call pattern summarization based on historical call tracking data.
- Monitoring a particular Oracle Tuxedo service, checking its response time, IPC queue length and execution status. The data can be queried using recent or historical data.
- Gathers Oracle Tuxedo GWTDOMAIN, BRIDGE, and GWWS overall throughput, graphically displaying the business data flow curve.
- Tracking transactions with XA API specifications. Displays execution status and time used on each XA call. Oracle TSAM helps diagnose global distributed transactions.

- The Oracle TSAM Manager console allows you to create “Alert” definitions that generate events when predefined thresholds are reached. The events can be posted to Oracle Tuxedo and received by Oracle Tuxedo Event Broker subscribers.
- Programming APIs that retrieve metadata packaged in a monitored call. Helps developers make application decisions dynamically.
- Flexible monitoring controls. The sampling can be based on interval or ratio and the monitoring can be turned on or off dynamically without restarting application.
- Plug-in mechanism for performance metrics collection at the Oracle Tuxedo infrastructure level. It provides extensive integration capability between Oracle TSAM and other third-party products.
- Powerful event triggers without sending raw metrics data to the Oracle TSAM Manager. It supports flexible FML boolean expression to achieve advanced event trigger conditions. Events can be posted to the Oracle Tuxedo Event Broker and/or the Oracle TSAM Manager.
- Scalable Oracle Tuxedo-side server monitoring designed to meet small, middle and large Oracle Tuxedo runtime environments.
- J2E- based solution. A pure Web-based solution that is easy to deploy, configure and use. The Oracle TSAM Console can be accessed anywhere using a compatible Web browser.

A Brief History of Oracle TSAM

Release 1.1

Oracle TSAM 1.1 introduced the following features:

- Call Path Monitoring and Analysis
- Service Monitoring and Statistics
- System Server Monitoring and Statistics
- Transaction Monitoring
- Event Alerts
- Open Plug-in Framework
- Dynamic Monitoring Policy Management

- Web-based Reporting and Management

Release 10*g* Release 3 (10.3)

Oracle TSAM 10*g* Release 3 (10.3) incorporated the following enhancements based on the previous Oracle TSAM release:

- Oracle TSAM Manager supports Oracle WebLogic Server and Oracle OC4J
- Oracle TSAM Agent supports IPv6

Release 11*g* Release 1 (11.1.1.1.0)

Oracle TSAM 11*g* Release 1 (11.1.1.1.0) incorporated the following new features and enhancements based on the previous Oracle release:

- Web 2.0 technologies used to dramatically improve the Oracle TSAM console usability
  - Improved functional organization and operation model
  - Improved GUI look and feel
  - Improved user interaction and response speed
- Monitoring policy enhancements
  - Centralized policy repository
  - XA Transaction policy propagation
  - Finer level of granularity (service level) of monitoring scope
- Automatic Web Container and Database deployment
- Performance Improvements
  - Reduced live monitoring overhead
  - Shorten elapsed time between Oracle TSAM agent data collection and console display.
- Access Control for Oracle TSAM Artifacts
- Additional performance metrics
  - Call path: message size, total transport time, etc.
  - Call pattern: succeeded vs. failed statistics, end-to-end execution time, etc.
  - Service: maximum/minimum message size, CPU consumption time, etc.

- Monitor additional components: GWWS
- Alert enhancements
  - Centralized alert management
  - More alert-triggered action. Server-side stale messages are dropped
- Export reports to a spreadsheet
- The following new menu items
  - **Policy**
    - Tuxedo Monitoring Policy
    - Tuxedo Application Runtime Monitoring Policy
  - **Tuxedo Metrics**
    - Call Path
    - Call Pattern
    - Service
    - XA Transaction
    - Domain Gateway
    - Bridge
    - GWWS
  - **Tuxedo Application Runtime Metrics**
    - CICS Transaction
    - CICS Terminals
  - **Management**
    - User Management
    - Data Management
    - Global Parameters
  - **Alert**
    - Tuxedo Alert Definition
    - Tuxedo Application Runtime Alert Definition

    - Alert Query
  - **Help**

Release 11*g* Release 1 (11.1.1.2.0)

Oracle TSAM 11*g* Release 1 (11.1.1.2.0) incorporated the following new features and enhancements based on the previous Oracle TSAM release:

- LDAP-based authentication
- Group-based authorization
  - Group list
  - Create, delete and modify groups
  - Set user groups
- Monitoring ARTJES component of Oracle Tuxedo Application Runtime for CICS and Batch
  - ARTJES system component tree
  - Display job list and job status
  - Cancel, purge jobs
- The following new menu items
  - **Tuxedo Application Runtime Metrics**
    - JES2 Jobs

For more information, see the Oracle TSAM Console Users Guide.

Release 11*g* Release 1 (11.1.1.2.1)

Oracle TSAM 11*g* Release 1 (11.1.1.2.1) incorporated the following new features and enhancements based on the previous Oracle TSAM release:

- Enhancements to ARTJES monitoring
  - Job repository support
  - Browsing the job repository and submit jobs
  - Hold, release jobs

For more information, see the Oracle TSAM Console Users Guide.

Release 11*g* Release 1 (11.1.1.2.2)

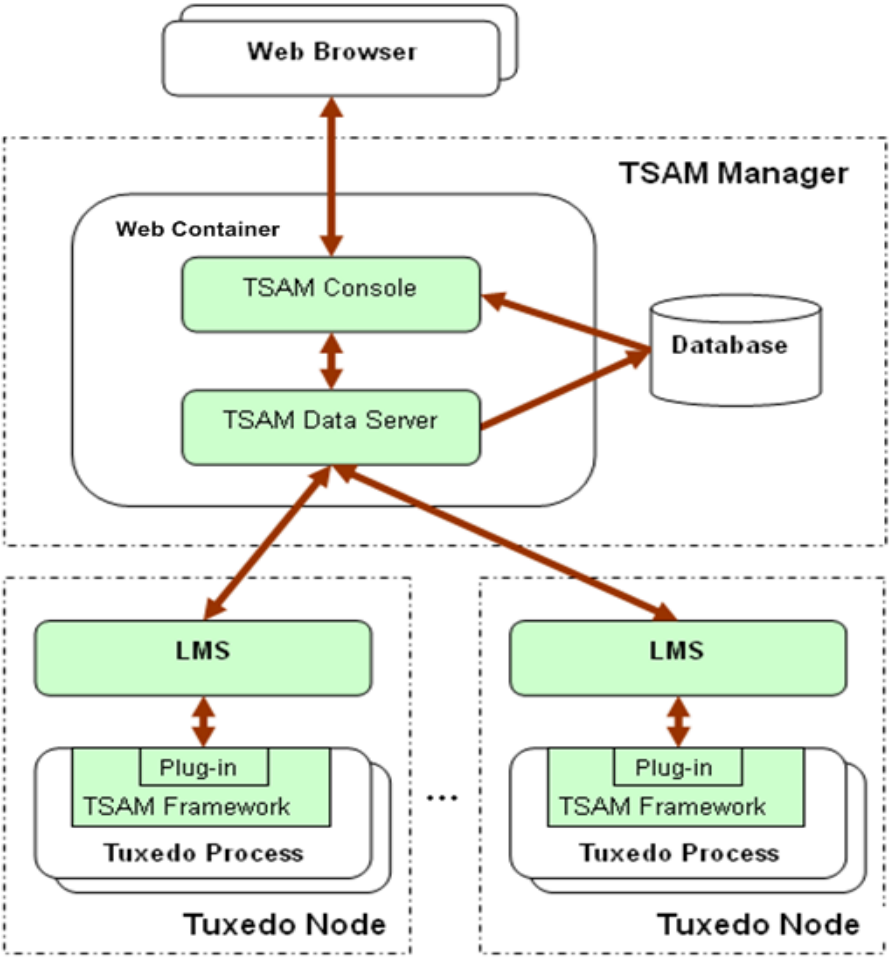
Oracle TSAM 11*g* Release 1 (11.1.1.2.2) incorporates the following new features and enhancements based on the previous Oracle TSAM release:

- JES Support Enhancement
  - View job logs and Sysouts
  - Job metrics
  - -Job alert
- CICS Runtime Configuration
- The following new menu items
  - **Tuxedo Application Runtime Metrics**
    - CICS Resource
    - JES Metrics
  - **Alert**
    - Tuxedo Application Runtime JES Alert Definition

For more information, see the Oracle TSAM Console Users Guide.

Oracle TSAM Architecture

Figure 1 Oracle TSAM Architecture



Oracle TSAM includes two components:

Oracle TSAM **Agent**: Performs Tuxedo-side data collection.

Oracle TSAM **Manager**: Performs data storage, aggregation, computing and representation.

Oracle TSAM Agent

The Oracle TSAM Agent handles all Tuxedo-side back-end logic. It works in conjunction with the Oracle TSAM Manager, and includes the following sub-components:

- **TSAM Framework**: An Oracle Tuxedo-side facility that defines and controls performance metrics collection behavior. It uses the Tuxedo traditional interface and can be easily integrated into an existing Tuxedo management suite.
- **TSAM Plug-in**: An extensible mechanism invoked by the TSAM Framework**.** The Oracle TSAM Agent provides default plug-ins to send data to the Local Monitor Server (LMS), and then to the Oracle TSAM Manager. The default plug-in also checks event triggers, and generates events if needed.

  You can develop your own plug-ins for additional data processing. A customized plug-in can be linked to an existing plug-in chain, or replace the default plug-in.
- **Local Monitor Server (LMS)**: The LMS is an Oracle Tuxedo system server. The Oracle TSAM default plug-in sends data to the LMS. The LMS then passes the data to the Oracle TSAM Manager in HTTP/XML message format.

For more information, see Oracle TSAM Agent.

Oracle TSAM Manager

The Oracle TSAM Manager is built on standard J2EE technology. It includes following components:

- **TSAM Data Server:** Data server that accepts data from the LMS and stores the data in the database. It is a J2EE application.
- **TSAM Console**: The TSAM presentation layer. It is a J2EE Web application and can be accessed via a compatible Web browser. After logging on to the Oracle TSAM Console, you have access to full Oracle TSAM functionality.

For more information, see Oracle TSAM Manager.

What's Next?

After becoming familiar with the Oracle TSAM Product Overview, refer to the following topics for installing, deploying, and using Oracle TSAM.

- Release Notes

  For more information on the current Oracle TSAM Release, see *Oracle TSAM Release Notes*.

- Installing Oracle TSAM

  For an explanation of how to install the product, see the *Oracle TSAM Installation Guide*.

  Deploying Oracle TSAM

  For an explanation of how to deploy the product, see the *Oracle TSAM Manager Deployment Guide*.

- Using Oracle TSAM.

  For an explanation of how to use Oracle TSAM, see the *Oracle TSAM Administration Guide*.