

Oracle® Tuxedo System and Applications Monitor Plus

Deployment Guide

12c Release 2 (12.2.2)

April 2016

ORACLE®

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Deploying Oracle TSAM Plus Manager

This chapter contains the following topics:

- [Deploying Oracle TSAM Plus Manager](#)
- [Oracle TSAM Plus High Availability and Scalability](#)
- [Oracle TSAM Plus Migration](#)

Deploying Oracle TSAM Plus Manager

This section contains the following topics:

- [Overview](#)
- [Oracle TSAM Plus Manager LDAP Deployment](#)
- [Oracle TSAM Plus Manager Database Server Deployment](#)
- [Oracle TSAM Plus Application Server Deployment](#)
- [Changing Configuration Parameters](#)
- [Starting Up and Shutting Down Oracle TSAM Plus Manager](#)

Overview

The Oracle TSAM Plus Manager functions as a Web application in a Servlet/JSP container. It uses the DBMS (Database Management System) to store persistent Oracle Tuxedo performance

and monitoring data. Before using Oracle TSAM Plus Manager, it must be deployed to a database server and a Web application container. Optionally Oracle TSAM Plus Manager can use LDAP server for authentication.

If you input the LDAP configuration file during installation, the LDAP deployment is done automatically; otherwise, you must do the LDAP deployment using the "LDAP Deployment Utility" if you want to enable the LDAP authentication.

If you select "Bundled Derby database", "An existing Derby database" or "An existing Oracle database" during installation, Oracle TSAM Plus Manager is deployed on the specified database server automatically; otherwise, you must deploy Oracle TSAM Plus Manager to a database server using the "Database Deployment Utility".

If you select "Bundled WebLogic Server" or "Existing WebLogic Server" during installation, Oracle TSAM Plus Manager is deployed on the specified application server automatically; otherwise you must deploy Oracle TSAM Plus Manager to an application server using the "Application Server Deployment Utility" or manually.

Oracle TSAM Plus Manager LDAP Deployment

The LDAP deployment updates the LDAP configuration information in the `tsam_wls12c.ear` file (located at `<TSAM_DIR>/deploy`). For more information, refer to [Deploying LDAP Configuration File](#) in [Oracle TSAM Plus Configuration Guide](#).

Oracle TSAM Plus Manager Database Server Deployment

If you choose to deploy Oracle TSAM Plus to an existing database server after installation, you must add an Oracle TSAM Plus database after installation using the database deployment utilities.

Database Deployment Utilities

Oracle TSAM Plus provides the following database deployment utilities:

- **Unix/Linux Database Deployment:** `DatabaseDeployer.sh`
- **Windows Database Deployment:** `DatabaseDeployer.cmd`

The database deployment utilities do the following:

- Creates the Oracle TSAM Plus database

Note: If the TSAM Plus database user is created manually or by one earlier release of TSAM Plus, run `<TSAM12c_DIR>/deploy/TSAMGrantOracle.ddl` in the database administrator role to grant the necessary privileges to users. Replace `"#TSAM_DB_USER#"` in `TSAMGrantOracle.ddl` with the real user name and `;"` followed.

- Creates a super user group "administrator" with the group ID specified by the parameter `- admingid`
- Creates a viewer user group "viewer" with the group ID specified by the parameter `- viewergid`
- Creates a super user with the name "admin" and the password specified by the parameter `-adminpassword`
- Updates the database connection URL in the `tsam_wls12c.ear` file (located at `<TSAM_DIR>/deploy`)
- Resets the default admin user password to the password specified by the parameter `-adminpassword` when setting the parameter `"-resetpassword yes"`.
- Specifies a Weblogic data source JNDI name with the `"-wlsdsJNDIname"` parameter. The database properties parameters are ignored if `"-wlsdsJNDIname"` is specified.

Note: Before the database deployment utility can do this, a Weblogic data source should be created in the WebLogic domain to which TSAM Plus manager will be deployed, with a JNDI name set and Global Transaction support disabled. Note the following when creating:

- The database properties should be the same with the existing TSAM Plus database.
- The Oracle database driver is recommended to be `"*Oracle's Driver (Thin) for Instance connections, Versions:9.0.1 and later"`, `"*Oracle's Driver (Thin) for RAC Service-Instance connections; Versions:10 and later"`, or `"*Oracle's Driver (Thin) for Service connections; Versions:9.0.1 and later"`
- The Derby database driver is recommended to be `"Derby's Driver (Type 4) Versions:Any"`.
- Decides whether to use the Oracle Database Partitioning feature to manage the database table according to the parameter `-enable_partition yes|no`. This is a mandatory option when the database type is 'oracle'. It specifies whether to create the Oracle Database schema with partition. `-enable_partition yes` is only used for Oracle Enterprise Edition (with partition feature).

[Listing 1-1](#) and [Listing 1-2](#) show Unix/Linux and Windows database deployment utility examples accordingly.

Note: The database utility has the following restrictions:

- If the specified database uses OS authentication, the user name and password should be null.
- If you select the parameter "`-overwrite yes`", the existing TSAM Plus database is always overwritten and the database connection URL in the `tsam_wls12c.ear` file is updated; If you select the parameter "`-overwrite no`", the database connection URL is updated, but the existing TSAM Plus database is not overwritten
- The database connection URL in the `tsam_wls12c.ear` file is overwritten after you run the database deployment utility. You must redeploy the `tsam_wls12c.ear` file on the application.

For more information, see the [Oracle TSAM Plus Installation Guide](#).

Listing 1-1 Unix/Linux Database Deployment Utility Example

1. Deploy TSAM Plus to a Derby database

```
cd <TSAM_DIR>/deploy

./ DatabaseDeployer.sh -type derby -hostname localhost -port 1527 -dbname
TSAM -overwrite no -adminid 0 -viewergid 1 -adminpassword admin1
```

2. Deploy TSAM Plus to a Derby database with the user "app" and the password "app"

```
cd <TSAM_DIR>/deploy

./ DatabaseDeployer.sh -type derby -hostname localhost -port 1527 -dbname
TSAM -user app -password app -overwrite no -adminid 0 -viewergid 1
-adminpassword admin1
```

3. Deploy TSAM Plus to an Oracle database with the user "tsam" and the password "tsam"

```
cd <TSAM_DIR>/deploy

./ DatabaseDeployer.sh -type oracle -enable_partition yes -hostname
localhost -port 1521 -dbname TSAM -user tsam -password tsam -overwrite no
-adminid 0 -viewergid 1 -adminpassword admin1
```

4. Reset the default admin user password to "admin1"


```
cd <TSAM_DIR>/deploy
./DatabaseDeployer.sh -type oracle -enable_partition no -hostname localhost
-port 1521 -dbname TSAM -user tsam -password tsam -adminpassword admin1
-resetpassword yes
```

5. Specify a Weblogic data source JNDI name "ds_tsam"

```
cd <TSAM_DIR>/deploy
./DatabaseDeployer.sh -wlsdsJNDIname ds_tsam
```

Note: Other parameters for creating DB are ignored when `-wlsdsJNDIname` is specified.

Listing 1-2 Windows Database Deployment Utility Example

1. Deploy TSAM Plus to a Derby database

```
cd <TSAM_DIR>\deploy
DatabaseDeployer.cmd -type derby -hostname localhost -port 1527 -dbname TSAM
-overwrite no -admingid 0 -viewergid 1 -adminpassword admin1
```

2. Deploy TSAM Plus to a Derby database with the user "app" and the password "app"

```
cd <TSAM_DIR>\deploy
DatabaseDeployer.cmd -type derby -hostname localhost -port 1527 -dbname TSAM
-user app -password app -overwrite no -admingid 0 -viewergid 1
-adminpassword admin1
```

3. Deploy TSAM Plus to an Oracle database with the user "tsam" and the password "tsam"

```
cd <TSAM_DIR>\deploy
DatabaseDeployer.cmd -type oracle -enable_partition yes -hostname localhost
-port 1521 -dbname TSAM -user tsam -password tsam -overwrite no -admingid 0
-viewergid 1 -adminpassword admin1
```

4. Reset the default admin user password to "admin1"

```
cd <TSAM_DIR>\deploy
DatabaseDeployer.cmd -type oracle -enable_partition no -hostname localhost
-port 1521 -dbname TSAM -user tsam -password tsam -adminpassword admin1
-resetpassword yes
```

5. Specify a Weblogic data source JNDI name "ds_tsam"

```
cd <TSAM_DIR>\deploy
```

```
DatabaseDeployer.cmd -wlsdsJNDIname ds_tsam
```

Note: Other parameters for creating DB are ignored when `-wlsdsJNDIname` is specified.

Oracle TSAM Plus Application Server Deployment

If you choose to deploy Oracle TSAM Plus Manager to an existing application server after installation, you must deploy it to an existing WebLogic Server 12c Domain after installation using the application server utilities, or manually.

- [Application Server Deployment Utilities](#)
- [Manual Application Server Deployment](#)

Note: The WebLogic Server has the following restrictions:

- The WebLogic Server is expected to be located on the local installation machine. Remote existing WebLogic Servers are not supported.
- The operator must have the execution permission to the Weblogic Server installation directory.
- Oracle TSAM Plus Manager requires the WebLogic server with the Oracle TopLink and Application Development Framework (ADF) components installed. It is recommended that you use the JDeveloper with the embedded WebLogic Server package.

For more information, see http://www.oracle.com/tools/toplink_adf.html.

- Oracle TSAM Plus Manager requires the WebLogic Domain created with the component "Oracle JRF".
- The Oracle TSAM Plus database must be started when deploying to the WebLogic Server

Application Server Deployment Utilities

Oracle TSAM Plus provides the following application server deployment utilities:

Unix/Linux Application Server Deployment: `AppServerDeployer.sh`

Windows Application Server Deployment: `AppServerDeployer.cmd`

Unix/Linux and Windows application deployment utility examples are shown in [Listing 1-3](#) and [Listing 1-4](#) accordingly.

Listing 1-3 Unix/Linux Application Server Deployment Utility Example

Deploy TSAM Plus to a WebLogic server

```
cd <TSAM_DIR>/deploy
./AppServerDeployer.sh -type weblogic -adminurl localhost:7001 -directory
/home/oracle/wlserver_10.3 -user weblogic -password weblogic1
```

Listing 1-4 Windows Application Server Deployment Utility Example

Deploy TSAM Plus to a WebLogic server

```
cd <TSAM_DIR>\deploy
AppServerDeployer.cmd -type weblogic -adminurl localhost:7001 -directory
C:\oracle\wlserver_10.3 -user weblogic -password weblogic1
```

Manual Application Server Deployment

Oracle TSAM Plus Manager provides deployment scripts for the following application servers:

- [Oracle TSAM Plus Manual Oracle WebLogic Server Deployment](#)

Oracle TSAM Plus Manual Oracle WebLogic Server Deployment

After installing Oracle WebLogic Server, do the following steps to deploy Oracle TSAM Plus:

1. Start your WebLogic Domain and launch Oracle WebLogic Server Administration Console using the following URL: `http://localhost:7001/console`.
2. In the Change Center of the Administration Console, click **Lock & Edit**.
3. In the left panel of the Administration Console, select **Deployments**.
4. In the right panel, click **Install**.

5. In the Install Application Assistant, locate the `tsam_wls12c.ear` file in the `$TSAMDIR/deploy` directory.
6. Click **Next**.
7. Choose the installation targeting style as an application.
8. Click **Next**.
9. Select the servers where you want to deploy the `tsam_wls12c.ear` file.
10. Click **Next**.
11. Optionally update additional deployment settings. These settings include:
 - The deployed name of the application or module.
 - The security model that is applied to the application or module.
 - How the source files are made available to all targeted Managed Servers.Typically, the default values are adequate.
12. Click **Next**.
13. Review the configuration settings you have specified, and click **Finish** to complete the installation.

At the Settings for TSAM Plus page, you can modify specific settings for TSAM Plus at Configuration -> General. For example, Session Timeout (in seconds).
14. If you chose to immediately go to the deployment configuration screen, click the tabs to set additional TSAM Plus configuration settings. If you chose to change this information later, you are returned to the Deployments table, which now includes the TSAM Plus installation.
15. To activate these changes, in the Change Center of the Administration Console, click **Activate Changes**.

Changing Configuration Parameters

You can directly run the Oracle TSAM Plus Manager without changing any Oracle WebLogic configuration parameters.

If required, you can change the default for the following parameters:

- [Setting the Minimum JAVA Option Memory Size](#)
- [Configuring Oracle WebLogic Listening Port](#)

- [Configuring Session Timeout](#)
- [Configuring HTTP KeepAlive](#)
- [Configuring POST Maximum Byte Size](#)
- [Configuring Maximum Thread Simultaneous Processing](#)
- [Configuring Maximum Incoming Connection Requests](#)

Setting the Minimum JAVA Option Memory Size

When installing Oracle TSAM Plus with a Weblogic server, specify at least 2048MB heap memory for the Weblogic server:

```
-Xms2048m -Xmx2048m
```

For information about how to change the heap size, refer to Oracle Weblogic documents.

Configuring Oracle WebLogic Listening Port

The default Oracle WebLogic Server Listening port number is 7001. To change the default Listening Port, do the following steps:

1. Launch Oracle WebLogic Server Administration Console using the following URL:
`http://localhost:port/console`. Where: "localhost" is the host name of the machine running WebLogic Server, "port" is the port number where WebLogic Server listens for requests.
2. In the Change Center of the Administration Console, click **Lock & Edit**.
3. In the left panel of the Administration Console, under **Environment**, click the **Servers**.
4. Click the Server, e.g., `exampleServer`, where Oracle TSAM Plus is deployed.
5. Change default Listen Port at tab of Configuration -> General.
6. To activate these changes, in the Change Center of the Administration Console, click **Activate Changes**.

Configuring Session Timeout

To set Session Timeout, do the following steps:

1. Launch Oracle WebLogic Server Administration Console using the following URL:
`http://localhost:7001/console`.

2. In the Change Center of the Administration Console, click **Lock & Edit**.
3. In the left panel of the Administration Console, click **Deployments**.
4. Under Summary of Deployments on the right page, click TSAM web application link.
5. Go to Configuration -> Application and then configure the Session Timeout (in seconds).
6. To activate these changes, in the Change Center of the Administration Console, click **Activate Changes**.

Configuring HTTP KeepAlive

To enable and disable HTTP KeepAlive, do the following steps:

1. Launch Oracle WebLogic Server Administration Console using the following URL:
`http://localhost:port/console`. Where: "localhost" is the host name of the machine running WebLogic Server, "port" is the port number where WebLogic Server listens for requests (7001 by default).
2. In the Change Center of the Administration Console, click **Lock & Edit**.
3. In the left panel of the Administration Console, under **Environment**, click the **Servers**.
4. Click the Server, e.g., `exampleServer`, which your TSAM Plus deployed.
5. Enable or disable HTTP KeepAlive by selecting Protocols -> HTTP.
6. To activate these changes, in the Change Center of the Administration Console, click **Activate Changes**.

Configuring POST Maximum Byte Size

To set the maximum size in bytes of the POST unlimited, do the following steps:

1. Launch Oracle WebLogic Server Administration Console using the following URL:
`http://localhost:7001/console`.
2. In the Change Center of the Administration Console, click **Lock & Edit**.
3. In the left panel of the Administration Console, under **Environment**, click the **Servers**.
4. Click the Server, e.g., `exampleServer`, which your TSAM Plus deployed.
5. Change Max Post Size at tab of Protocols -> HTTP.
Note: Set Max Post Size less than 0, which indicates an unlimited size.

6. To activate these changes, in the Change Center of the Administration Console, click **Activate Changes**.

Configuring Maximum Thread Simultaneous Processing

Maximum Thread Simultaneous Processing is mapped into Maximum Threads Constraint at WebLogic Server. To configure Maximum Threads Constraint, do the following steps:

1. Launch Oracle WebLogic Server Administration Console using the following URL:
`http://<hostname>:<port>/console`, where `<hostname>` is the host name of the machine running WebLogic Server, and `<port>` is the port number that WebLogic Server listens for requests (7001 by default).
2. In the Change Center of the Administration Console, click **Lock & Edit**, if you have not already done so.
3. In the left pane of the Administration Console, click **Work Managers** under Environment.
4. Click the Work Manager whose "Targets" includes the WebLogic Server where TSAM Plus Manager web application is deployed. If no such work manager exists (usually called "WebLogic.wsee.mdb.DispatchPolicy"), create a new Work Manager and assign it to the right server.
5. Change **Maximum Threads Constraint** at tab of Configuration, if no constraint is configured, click **New** to create one.
6. To activate these changes, in the Change Center of the Administration Console, click **Activate Changes**.

Configuring Maximum Incoming Connection Requests

Maximum Incoming Connection Requests is mapped into Capacity Constraint at WebLogic Server. To configure Capacity Constraint, do the following steps:

1. Launch Oracle WebLogic Server Administration Console using the following URL:
`http://<hostname>:<port>/console`, where `<hostname>` is the host name of the machine running WebLogic Server, and `<port>` is the port number that WebLogic Server listens for requests (7001 by default).
2. In the Change Center of the Administration Console, click **Lock & Edit**, if you have not already done so.
3. In the left pane of the Administration Console, click **Work Managers** under Environment.

4. Click the Work Manager whose "Targets" includes the WebLogic Server where TSAM Plus Manager web application is deployed. If no such work manager exists (usually called "WebLogic.wsee.mdb.DispatchPolicy"), create a new Work Manager and assign it to the right server.
5. Change **Capacity Constraint** at tab of Configuration, if no constraint is configured, click **New** to create one.
6. To activate these changes, in the Change Center of the Administration Console, click **Activate Changes**.

Note: If you do not see "**Lock & Edit**" in the Change Center of the Administration Console, WebLogic Server Configuration editing is enabled.

Click **Preferences**. Uncheck the **Automatically Acquire Lock** and **Activate Changes** checkbox, then click **Save**.

For more information, see the [Oracle WebLogic Web site](#).

Starting Up and Shutting Down Oracle TSAM Plus Manager

If you chose the bundled WebLogic Server and the bundled Derby database during installation, startup/shutdown script files for both are installed in the Oracle TSAM Plus `bin` folder.

If you only choose the bundled WebLogic Server, the installed startup/shutdown script only deals with WebLogic Server. If you only choose the bundled Derby database, startup derby/shutdown derby script files are installed in the Oracle TSAM Plus `bin` folder.

Bundled WebLogic Server Start Up/Shut Down

If you run Oracle TSAM Plus Manager with the bundled WebLogic Server (with or without the Bundled Derby database), use the following steps to start and shut down Oracle TSAM Plus Manager:

1. Start Oracle TSAM Plus Manager

Unix/Linux:

- a. `cd <TSAM_DIR>/bin`
- b. `./startup.sh`

Windows:

- a. `cd <TSAM_DIR>/bin`
- b. `startup.cmd`

2. Shut down Oracle TSAM Plus Manager

Unix/Linux:

- a. `cd <TSAM_DIR>/bin`
- b. `./shutdown.sh`

Windows:

- a. `cd <TSAM_DIR>/bin`
- b. `shutdown.cmd`

Bundled Derby Database Start Up/Shut Down

If you run Oracle TSAM Plus Manager with the bundled Derby database (without the bundled WebLogic Server), use the following steps to start and shut down Derby:

Note: If you do not choose the bundled WebLogic Server, you must set up your JAVA environment (JDK 1.8 or above) and boot up your existing application server manually.

1. Start the bundled Derby database

Unix/Linux:

- a. `cd <TSAM_DIR>/bin`
- b. `./startupderby.sh`

Windows:

- a. `cd <TSAM_DIR>/bin`
- b. `startupderby.cmd`

2. Shut down the bundled Derby database

Unix/Linux:

- a. `cd <TSAM_DIR>/bin`
- b. `./shutdownderby.sh`

Windows:

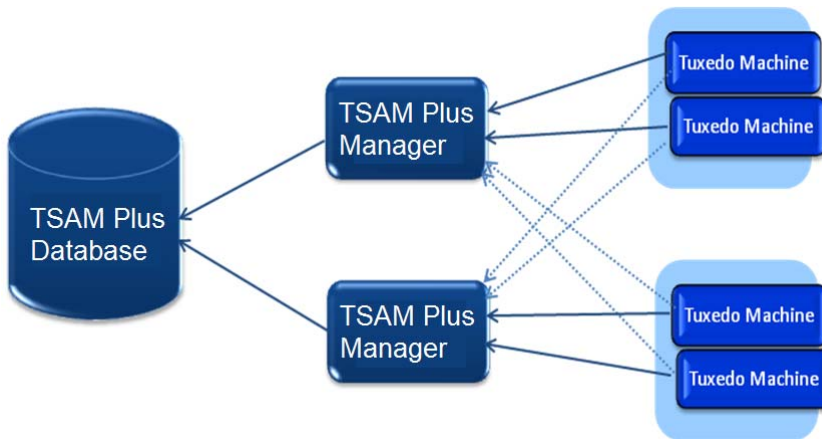
- a. `cd <TSAM_DIR>/bin`
- b. `shutdownderby.cmd`

Oracle TSAM Plus High Availability and Scalability

Oracle TSAM Plus High Availability

You can configure two TSAM Plus managers for one TSAM Plus agent. The first one is a master. When the master manager is not available, TSAM Plus agent tries to connect the second one as a backup.

Figure 2 Oracle TSAM Plus High Availability



TSAM Plus Manager Scalability

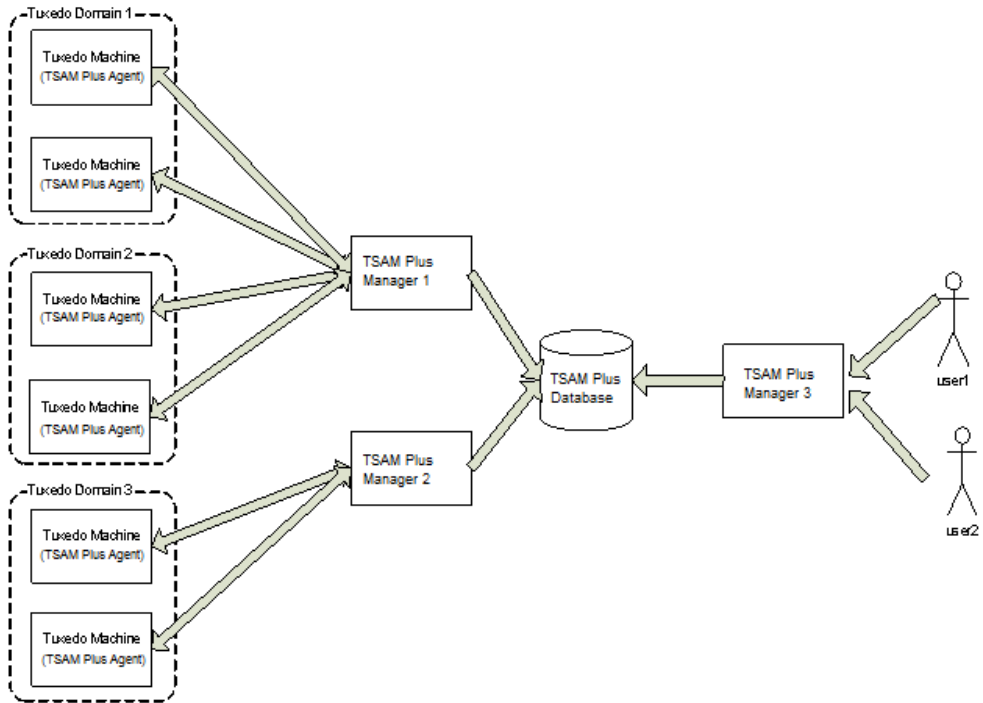
Oracle TSAM Plus manager is responsible for doing following tasks simultaneously:

- Persists monitoring data sent by Oracle TSAM Plus agents.
- Serves the GUI requests from end users promptly.
- Calculates the call pattern of call path data.

For an enterprise that has a large number of Oracle Tuxedo applications, it requires TSAM Plus Manager to handle huge amounts of data and requests. Multiple TSAM Plus Manager instances can be configured to achieve the high throughput and low latency requirements.

As shown in [Figure 3](#), there are three Oracle TSAM Plus managers configured in one Oracle TSAM Plus system, in which manager 1 and 2 are configured as data servers, and manager 3 is configured as a TSAM Plus console.

Figure 3 Oracle TSAM Plus Manager Scalability



Oracle TSAM Plus Migration

This section contains the following topics:

- [Oracle TSAM 1.1/10gR3 Alert Migration](#)
- [AlertMigration.sh Parameters](#)
- [Oracle TSAM 1.1/10gR3 Policy Migration](#)
- [Oracle TSAM Plus 12.1.3.0.0 Database Migration](#)

Oracle TSAM 1.1/10gR3 Alert Migration

Oracle TSAM Plus Manager 12cR2 can import Oracle TSAM 1.1/10gR3 alert definition items or event trigger rule files and convert them to Oracle TSAM Plus 12c format. To make these conversions, you must do the following steps:

Oracle TSAM 1.1/10gR3 Alert Definition Items Migration

1. Make sure your Oracle TSAM 1.1/10gR3 and Oracle TSAM Plus 12cR2 database servers are running.
2. `cd <TSAM12c_DIR>/deploy`
3. Run the commands shown in [Listing 3-1](#).

Listing 3-1 AlertMigration.sh (Unix/Linux only)/cmd (Windows only)

```
-srcdbtype SRCDBTYPE -srcdbhostname SRCDBHOSTNAME -srcdbport SRCDBPORT  
-srcdbdbname SRCDBNAME -srcdbuser SRCDBUSER -srcdbpassword SRCDBPASSWORD  
-dstdbtype DSTDBTYPE -dstdbhostname DSTDBHOSTNAME -dstdbport DSTDBPORT  
-dstdbdbname DSTDBNAME -dstdbuser DSTDBUSER -dstdbpassword DSTDBPASSWORD.
```

Oracle TSAM 1.1/10gR3 Rules File Migration

1. Make sure your Oracle TSAM Plus 12c database servers are running.
2. `cd <TSAM12c_DIR>/deploy`
3. Run the commands shown in [Listing 3-2](#).

Listing 3-2 AlertMigration.sh (Unix/Linux only)/cmd (Windows only)

```
-srcfile SRCFILE -dstdbtype DSTDBTYPE -dstdbhostname DSTDBHOSTNAME  
-dstdbport DSTDBPORT -dstdbdbname DSTDBNAME -dstdbuser DSTDBUSER  
-dstdbpassword DSTDBPASSWORD.
```

AlertMigration.sh Parameters

[Table 3-1](#) lists `AlertMigration.sh/cmd` parameters.

Table 3-1 AlertMigration.sh/cmd Parameters

Parameter	Description	Default Value	Optional Value
srcfile	Oracle TSAM 1.1/10gR3 rules file path		
srcdbtype	Oracle TSAM 1.1/10gR3 database type		oracle, derby
srcdbhostname	Oracle TSAM 1.1/10gR3 database host name		
srcdbport	Oracle TSAM 1.1/10gR3 database port		
srcdbdbname	Oracle TSAM 1.1/10gR3 database name		
srcdbuser	Oracle TSAM 1.1/10gR3 database user	null	
srcdbpassword	Oracle TSAM 1.1/10gR3 database password	null	
dstdbtype	Oracle TSAM Plus 12c database type		oracle, derby
dstdbhostname	Oracle TSAM Plus 12c database host name		
dstdbport	Oracle TSAM Plus 12c database port		
dstdbdbname	Oracle TSAM Plus 12c database name		
dstdbuser	Oracle TSAM Plus 12c database user	null	
dstdbpassword	Oracle TSAM Plus 12c database password	null	

Note: If the specified database uses OS authentication, the user name (parameter `srcdbuser` or `dstdbuser`) and password (parameter `srcdbpassword` or `dstdbpassword`) should be null.

Oracle TSAM 1.1/10gR3 Policy Migration

TSAM 1.1/10gR3 policy files can be imported in the Oracle TSAM Plus 12cR2 (12.1.3) policy management page. For more information, see [Tuxedo Monitoring Policy](#) in the [Oracle TSAM Plus Users Guide](#).

Oracle TSAM Plus 12.1.3.0.0 Database Migration

The TSAM Plus 12.1.3.0.0 Oracle database can be reused by TSAM Plus 12.2.2.0.0 after the database is upgraded. The Oracle TSAM Plus 12.1.3.0.0 database is different from the Oracle TSAM Plus 12.2.2.0.0 database. You must run three database migration scripts before reusing it.

You must do the following steps:

1. Make sure your Oracle TSAM Plus 12.1.3.0.0 database server is running.
2. Run the scripts under `<TSAM12c_DIR>/deploy`

Take using Oracle SQLPlus as an example, the steps of running the script are as follows:

- Enter the directory `<TSAM12c_DIR>/deploy`.
- Run SQLPlus and connect to TSAM Plus 12.1.3.0.0 database.
- Execute the following commands:

```
SQL > @TSAMUpgradeOracle.sql
```

```
SQL > @TSAM_PACKAGE.sql
```

Notes: Derby database upgrading is not supported.

See Also

- [Oracle TSAM Plus Installation Guide](#)
- [Oracle TSAM Plus Users Guide](#)

Deploying Enterprise Manager for Oracle Tuxedo

This chapter describes how to perform initial installation tasks and deploy your Enterprise Manager for Oracle Tuxedo on Oracle Enterprise Manager Cloud Control system.

This chapter contains the following:

- [Prerequisites](#)
- [Deploying Enterprise Manager for Oracle Tuxedo on Management Servers](#)
- [Deploying Enterprise Manager for Oracle Tuxedo on Management Agents](#)
- [Typical Deploy Scenarios](#)

Prerequisites

The following prerequisites must be met before you deploy the Enterprise Manager for Oracle Tuxedo.

- Oracle Enterprise Manager Cloud Control 13.1.0.0.0 or higher is installed, Enterprise Manager Cloud Control Management Agent is installed, and required post-installation steps are performed. For more information, see [Enterprise Manager Cloud Control Documentation](#).
- Enterprise Manager software library is set up. The software library should be already set up automatically during installation.
- Enterprise Manager for Oracle Tuxedo package is imported to Enterprise Manager server. You can choose one of the following ways:

- Set up the `emcli` tool. For more information, see <https://<Enterprise Manager console hostname>:<port>/em/console/emcli/download>. Then run the following command:

```
emcli import_update -file=<Enterprise Manager for Oracle Tuxedo package absolute path> -omslocal
```

By default, the Enterprise Manager for Oracle Tuxedo package is located in <TSAM Plus installation directory>/em/13.1.2.0.0_oracle.fmw.txdo_2000_0.opar.

Note: The import process will not successful if any problems arise in the software library setup process.

or

- From Enterprise Manager console, click **Setup > Extensibility > Self Update** in the upper right. Click **Plug-in** in the Type column and select **Oracle Tuxedo** in the list, then click **Download**.

Deploying Enterprise Manager for Oracle Tuxedo on Management Servers

Follow these steps to deploy Enterprise Manager for Oracle Tuxedo on management servers:

1. Log in to Enterprise Manager Cloud Control.
2. From the home page, navigate to **Setup > Extensibility > Plug-ins**.
3. Click the **Middleware** folder to expand the list.
4. Highlight Enterprise Manager for Oracle Tuxedo from the list and click **Deploy on > Management Servers**.

Deploying Enterprise Manager for Oracle Tuxedo on Management Agents

Before Enterprise Manager Cloud Control can discover Oracle Tuxedo Domain targets, you must deploy Enterprise Manager for Oracle Tuxedo on management agents. Do the following steps:

1. Log in to Enterprise Manager Cloud Control.
2. From the home page, navigate to **Setup > Extensibility > Plug-ins**.
3. Click the **Middleware** folder to expand the list.

4. Highlight Enterprise Manager for Oracle Tuxedo from the list and click **Deploy on > Management Agents**.

Note: For more information, see the [Plug-in Manager](#) chapter in [Oracle Enterprise Manager Cloud Control Administrator's Guide](#).

Typical Deploy Scenarios

This section provides several typical deployment use scenarios to demonstrate how Enterprise Manager for Oracle Tuxedo is deployed in different circumstances.

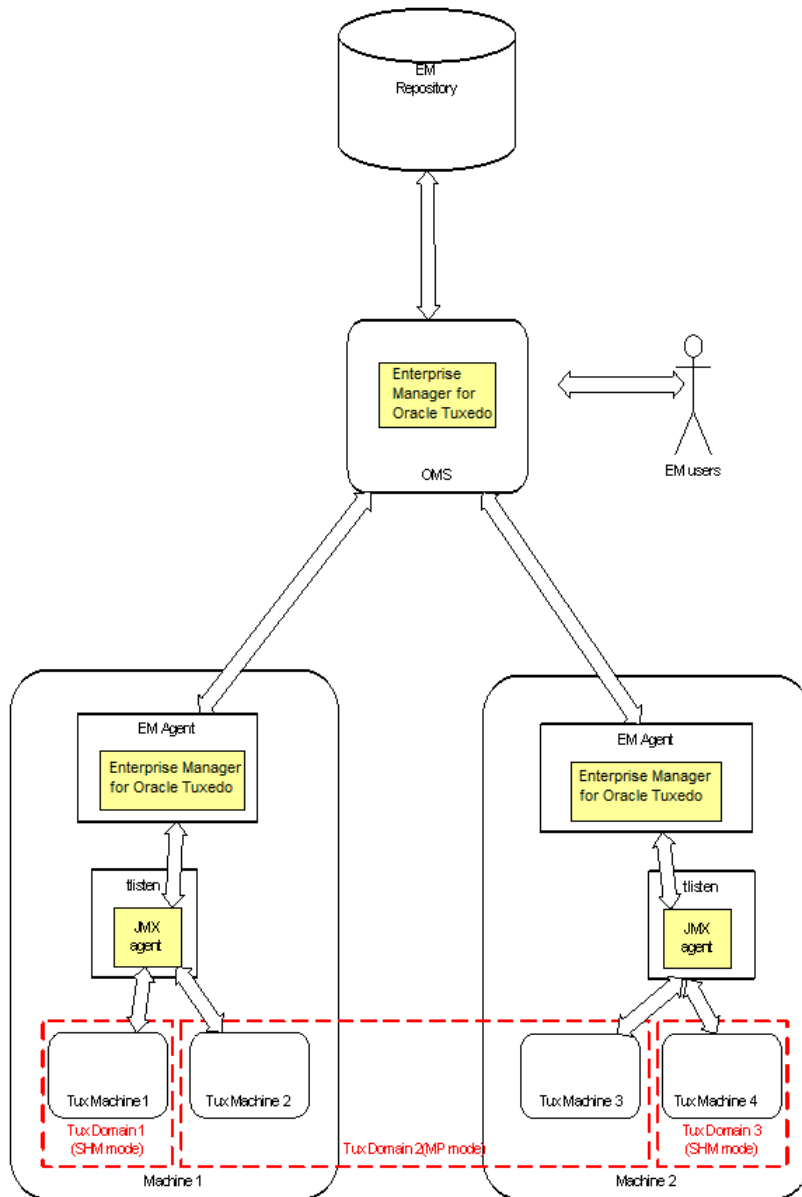
Note: For all the nodes involved in an Enterprise Manager for Oracle Tuxedo monitoring environment (including the machines on which Tuxedo applications, Enterprise Manager agents, Enterprise Manager OMS, and Enterprise Manager repository are running), it is highly recommended that you synchronize their clocks.

Basic Monitoring

[Figure 4-1](#) shows a typical Enterprise Manager for Oracle Tuxedo deployment scenario.

For performance and security considerations, if the Enterprise Repository agent supports the specific platform on which Tuxedo domains are running, it is recommended to deploy an Enterprise Repository agent on each physical machine that has Tuxedo domains monitored.

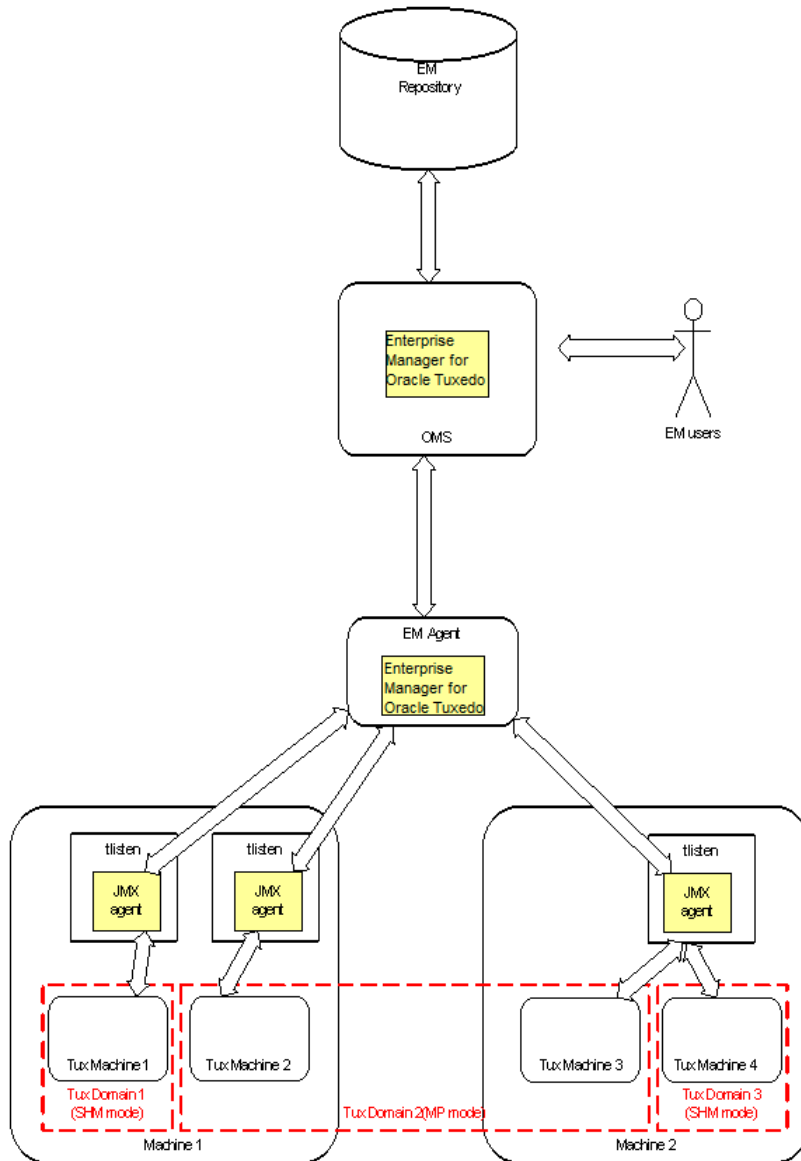
Figure 4-1 Typical Enterprise Manager for Oracle Tuxedo Deployment Scenario



Remote Monitoring From Enterprise Repository Agent

[Figure 4-2](#) shows a scenario where Enterprise Repository agent is monitoring Tuxedo domains remotely. This deployment topology is useful for platforms supported by Tuxedo rather than by Enterprise Repository agent.

Figure 4-2 Remote Monitoring From Enterprise Repository Agent



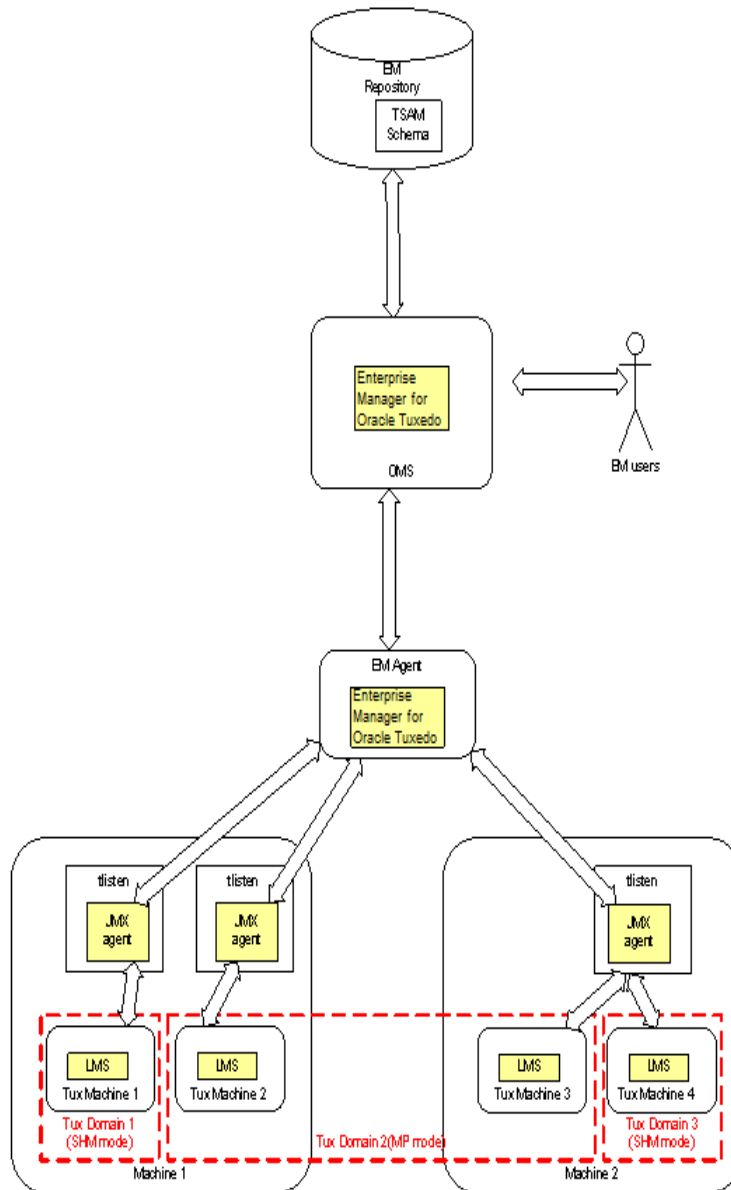
Multiple tlisten Processes on One Physical Machine

In some circumstances, you may need to deploy multiple `tlisten` instances on a physical machine for the following reasons:

- Security: Each `tlisten` process starts as a different user with different privileges.
- Administration: Each `tlisten` process represents a different department.

[Figure 4-3](#) shows how to deploy multiple `tlisten` processes on a physical machine. Please note that each `tlisten` process is able to interconnect with different Enterprise Repository agents respectively, no matter if it is running locally or remotely.

Figure 4-3 Multiple tlisten Processes Running On a Physical Machine



Multiple Agents and Clients Connecting to One `tlisten` Concurrently

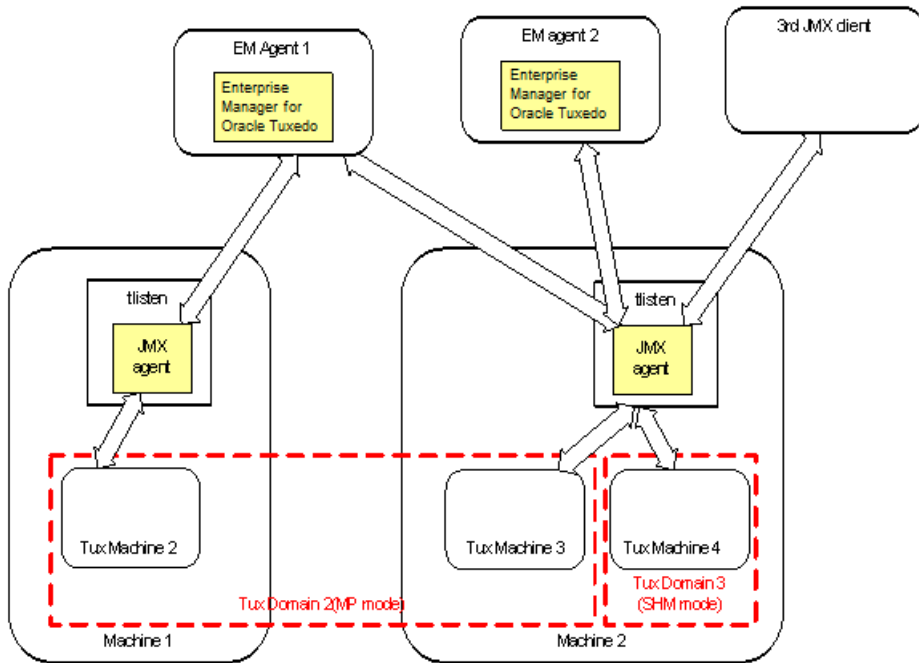
A `tlisten` process with JMX agent embedded is able to interconnect with multiple Enterprise Repository agents concurrently. [Figure 4-4](#) shows a `tlisten` process running on "Machine 2" is connected and monitored by "EnterpriseManager Agent 1" and "EnterpriseManager Agent 2" concurrently.

In this scenario, you can separate Enterprise Repository agents and Tuxedo Domains related to a `tlisten` process into two groups (for example, "EnterpriseManager Agent 1" monitors "Tux Domain 2" and "EnterpriseManager agent 2" monitors "Tux Domain 3").

You can also let "EnterpriseManager Agent 1" and "EnterpriseManager Agent 2" monitor both "Tux Domain 2" and "Tux Domain 3" at the same time.

Since JMX is a widely used and supported JRE standard, some third-party JMX clients or JMX connectors are potentially supported by Enterprise Manager for Oracle Tuxedo, which makes Tuxedo monitoring and management functionalities more flexible.

Figure 4-4 Multiple Agents and Clients Connecting to One tlisten Concurrently



Note: In this scenario, once an active domain has been discovered by Enterprise Manager for Oracle Tuxedo, even if the domain is down afterwards, the Enterprise Manager for Oracle Tuxedo still can discover it (unless `tlisten` is rebooted).