

# ORACLE TUXEDO MESSAGE QUEUE

## KEY FEATURES AND BENEFITS

With Oracle Tuxedo Message Queue, you can translate your inventory of diverse applications into a strategic advantage.

### FEATURES

- XA compliant resource manager to provide transactional queues
- Guaranteed reliable message delivery
- Store and forward messaging to allow operation when network connectivity is lost
- Permanent persistent and transient queues as well as temporary transient queues
- Publish and subscribe messaging
- Synchronous and asynchronous message delivery
- Message delivery checkpoints and message journals
- Virtually unlimited message size
- Self-describing messages for automatic data conversion between heterogeneous platforms
- Connectivity to IBM WebSphere MQ and compatibility with /Q when used with Oracle Tuxedo
- Message level interop with Oracle MessageQ

### BENEFITS

- Unmatched performance—up to tens of thousands of messages per second
- Flexibility—synchronous as well as asynchronous message delivery
- Reliability—message recovery on all Oracle Tuxedo Message Queue clients and servers
- Availability – Fast failover of message queue servers to another machine in a cluster

*Oracle Tuxedo Message Queue combines the best of Tuxedo's scalable transactional infrastructure with the rich messaging features of Oracle MessageQ. Built on top of the core Tuxedo runtime, Oracle Tuxedo Message Queue provides enterprises with the messaging facilities needed to build applications that require high availability, high performance, reliable messaging. Oracle Tuxedo Message Queue is available as an add-on to Oracle Tuxedo to provide richer messaging services and as a standalone product to provide Oracle MessageQ customers an upgrade path to a more scalable and available infrastructure.*

## Rich Messaging Facilities Across Heterogeneous Environments

Oracle Tuxedo Message Queue provides unmatched messaging capabilities in a heterogeneous distributed environment. Leveraging the extremely scalable and highly available Tuxedo core, Oracle Tuxedo Message Queue supports all of the standard Oracle Tuxedo platforms.

## Seamless Portability

Oracle Tuxedo Message Queue uses a common API for all environments, enabling applications to move easily among systems from different vendors, as well as homegrown applications. For example, if you develop Oracle Tuxedo Message Queue applications for Intel PCs running Windows, those same applications will run on all major UNIX systems by recompiling and relinking the applications in their target environment.

The Oracle Tuxedo Message Queue API forms a layer between the application, the operating system, and the network environment to keep applications portable and shield them from any changes in underlying software. This frees development teams from time-consuming, low-level details associated with a multivendor environment, and allows them to focus on activities that add business value.

## Guaranteed Message Delivery

Oracle Tuxedo Message Queue guarantees the delivery of each and every critical message using a suite of distributed communication features, including publish and subscribe, priority selection, recovery, and guaranteed delivery. Distributed communications are achieved based on a peer-to-peer mechanism called the

message queuing bus. This message bus, rather than the application, is responsible for message delivery and serves as a “data highway” transport mechanism to transfer messages between processes. Messages can be a request for service across the network or a request for information needed by a distributed application.

When the message recovery service is used, messages are placed in a journal on local or remote disks before their delivery. If a communications link is down or if the process or machine “crashes,” the message is automatically resent later. If the message has reached a remote disk and the target system goes down, the message is preserved for delivery until the system reboots.

### Investment Protection

Existing IT assets that use Oracle Tuxedo and other technologies can be seamlessly reused with Oracle Tuxedo Message Queue without costly code enhancements or rewrites. Application developers can link the two messaging systems without formatting or sending additional control messages to set up runtime sessions or connections between Oracle Tuxedo Message Queue and Oracle Tuxedo. All mapping of Oracle Tuxedo Message Queue queues and Oracle Tuxedo resources will be done automatically, making it transparent to users.

The following interactions are supported between Oracle Tuxedo Message Queue and Oracle Tuxedo. Each can be achieved without any changes to verb/function behavior and their associated responses and return codes:

- Oracle Tuxedo applications can send messages to Oracle Tuxedo Message Queue queues using standard Oracle Tuxedo Message Queue verbs, and have those messages automatically and transparently delivered to Oracle Tuxedo queues and services.
- Oracle Tuxedo programs can send messages to their standard queues and services using standard Oracle Tuxedo functions, and have those messages automatically and transparently delivered to Oracle Tuxedo Message Queue queues for processing.
- Oracle Tuxedo Message Queue applications that receive messages originating in Oracle Tuxedo can respond to these messages and have the response find its way back to the response queue specified by the original Oracle Tuxedo application, and vice versa.

When used as an add-on to Tuxedo, Oracle Tuxedo Message Queue provides transparent interoperability with IBM WebSphere MQ queues, and vice versa via the Tuxedo MQ Adapter.

### Mainframe Connectivity

The Tuxedo MQ adapter used in conjunction with Oracle Tuxedo Message Queue and WebSphere MQ provides a seamless message exchange between the

applications. The interface ensures that message and header information is properly formatted for the target application, allowing application developers to write applications using either message queuing system.

Oracle Tuxedo Message Queue offers queuing functions as services to IBM mainframe applications through IBM's Systems Network Architecture, and the TCP/IP, using the Oracle Tuxedo Mainframe Adapters. Oracle Tuxedo Message Queue applications can also access mainframe application services through direct access to queues in the Oracle Tuxedo Message Queue domain.

### Features and Benefits for Tuxedo users

For Oracle Tuxedo users, Oracle Tuxedo Message Queue offers significantly richer messaging features over the standard Tuxedo /Q message queuing facility. These include:

- **Synchronous and asynchronous messaging.** Select the messaging style that best serves the application. Although one-way asynchronous messaging is typical for Oracle Tuxedo Message Queue, it also supports a synchronous request/response paradigm when needed.
- **Publish and subscribe.** Send one message to several receivers simultaneously. As basic as it sounds, this simplifies coding, improves performance, and increases the return on investment for a distributed application. It also reduces network traffic because messages can be proactively generated to eliminate the subscriber's need to constantly "query" the publisher for relevant information.
- **Global naming.** Networkwide queue visibility facilitates systems configuration and other operations. Programs can send and retrieve information without concern for a queue's network location or identifier.
- **Message recovery services.** Message recovery is a facility that prevents loss of message data. Queues are housed on disk rather than in the more-volatile main memory. If a failure occurs, data in transit is written to disk for delivery after system recovery. Recoverable messages can be journaled for auditing purposes.
- **Delivery Interest Point.** A delivery interest point is a checkpoint during the delivery of a message. When the message reaches the delivery interest point, an acknowledgement message is returned to the sender to indicate the message reached the delivery interest point. Thus an application can track the progress of a message as it is being delivered.
- **Temporary queues.** Temporary queues are available only while a process is attached to them. When the attached process exits, the queue is deleted. This allows applications to use queues that haven't been preconfigured or are only valid while a particular client is running, thus simplifying configuration requirements.
- **Store and forward messaging.** Allows messages to be delivered at a later

## RELATED PRODUCTS AND SERVICES

Oracle Tuxedo delivers a robust platform to run high-volume applications across distributed, heterogeneous computing environments, enabling transactions that stretch from customer-facing, business-critical applications to back-office processes, across any system, anywhere in the world.

### RELATED PRODUCTS:

- Oracle Tuxedo
- Oracle Tuxedo System and Applications Monitor (TSAM)
- Oracle Tuxedo SALT
- Oracle Tuxedo JCA Adapter
- Oracle Tuxedo Mainframe Adapters
- Oracle Tuxedo Jolt
- Oracle Tuxedo Application Runtime for CICS and Batch
- Oracle Tuxedo Application Runtime for IMS
- Oracle Tuxedo Application Runtime for Batch
- Oracle Tuxedo Application Rehosting Workbench
- Oracle MessageQ
- Oracle Solaris Studio
- Oracle WebLogic Server
- Oracle JDeveloper
- Oracle SOA Suite

time if network connection is unavailable.

## Features and Benefits for Oracle MessageQ users

For Oracle MessageQ users, Oracle Tuxedo Message Queue brings features and benefits provided by Oracle Tuxedo. These include:

- **Transactional messaging.** Oracle Tuxedo Message Queue acts as a transaction manager and provides an XA compliant queue manager. This allows multiple queues to be updated in a consistent manner without possibility for message duplication or loss.
- **High Availability.** Messaging servers can be migrated to another machine in a cluster in case of failure or scheduled down time. This significantly improves the availability of messaging services.
- **Scalability.** The Oracle Tuxedo infrastructure brings clustering capabilities to Oracle MessageQ users to allow scaling up an Oracle Tuxedo Message Queue environment to multiple machines.
- **Flexible Message Formats.** Oracle Tuxedo Message Queue supports all standard Oracle Tuxedo buffer formats. This provides the Oracle MessageQ user access to new message formats such as VIEW, VIEW32, and XML. VIEW and VIEW32 buffers can contain binary fields that are automatically converted as they traverse machines with different representations such as integer endianess and floating point representations.
- **Very Large Messages.** Virtually unlimited message sizes. Queues are limited to 2,147,483,648 blocks, which often equates to 8 petabytes depending on the system block size.

## Contact Us

For more information about Oracle Tuxedo Message Queue, please visit [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.



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