

ORACLE TUXEDO APPLICATION RUNTIME FOR CICS AND BATCH

KEY FEATURES AND BENEFITS

FEATURES

- IBM CICS API emulation and CICS services
- EXEC CICS pre-processor
- Distributed TP resource management
- CICS Regions and resources can be monitored with Oracle TSAM
- 3270 Terminal Server and BMS map support
- Multi-node, grid-ready
- Batch Management: Job Submission, Queuing, Distributed Initiators
- Batch Execution Environment: JCL functions, Batch utilities
- Agile server and workload management

BENEFITS

- Significant cost reduction vs. the mainframe
- Faster and simpler migration avoiding a re-write
- Lowers migration risk and cost by eliminating any end user impact and minimizing developer impact
- Mitigates risk from retiring mainframe skills
- Greater scalability and Active/Active HA and DR configurations at a fraction of the mainframe cost
- Open, agile foundation enables further modernization using Oracle SOA Suite and other Oracle Fusion Middleware technology
- Future-proofs the applications in terms of scalable growth path and functional evolution to meet changing needs
- Cost savings shift more IT budget from maintenance to innovation, help to increase business alignment

Oracle Tuxedo Application Runtime for CICS and Batch supports IBM mainframe applications rehosted to Oracle Tuxedo. It provides a combination of APIs and services that allows OLTP and Batch mainframe applications to run unchanged, preserving years of investment in their business logic and data. It protects application's users from change by supporting standard 3270 terminal emulators, and it provides the familiar APIs and functions that developers use in their mainframe applications. The result is ability to quickly and with low risk migrate legacy mainframe applications to open systems running an industry-leading COBOL and C/C++ application server, leading to substantial cost savings and greater flexibility.

Rehost Mainframe Applications Intact

Oracle Tuxedo Application Runtime for CICS and Batch helps organizations to migrate mainframe OLTP and Batch applications to open systems without having to re-write them to Java or .Net. It leverages the capabilities of the premier COBOL and C application server – Oracle Tuxedo. Running mainframe applications in native languages combined with support for required APIs and functions provided by the CICS and Batch runtimes, allows application migration without a re-write – preserving decades of investment in business logic and data, protecting users from change, and removing the risk and cost of changing business-critical applications.

Rehosted CICS applications run in Tuxedo containers using the APIs and services provided by the CICS runtime, including 3270 terminal server and distributed resource management. Rehosted batch applications run under the control of the Batch runtime, which provides robust job management capabilities similar to IBM JES and, together with a Batch execution environment, delivers production features of JCL and IBM batch utilities. Rehosted CICS and Batch applications run in a native environment, not an emulation black box, and can benefit from the rich set of integration options in Oracle Tuxedo – from Tuxedo Mainframe Adaptors to Web Services gateway, Service Bus, JCA adapter, and IBM MQ gateway.

Rehosted applications access migrated files and databases on open systems using the same SQL and file access APIs they used on the mainframe. Oracle Tuxedo Application Rehosting Workbench facilitates this process and automates data migration. Mainframe data access is supported through DB2 Connect and other gateways. Tuxedo Mainframe Adaptors also provide CICS ISC-style connectivity to remaining CICS and IMS TM programs and transactions and make it appear that rehosted components are running in a remote CICS region.

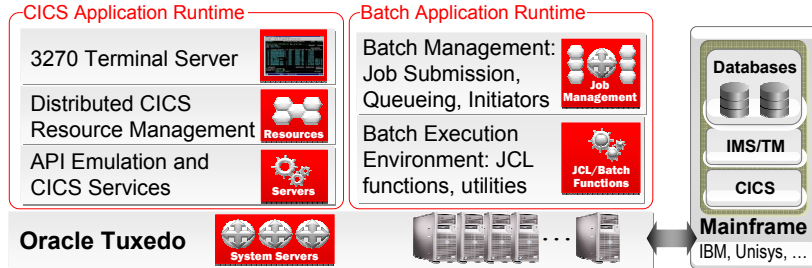


Figure 1. Oracle Tuxedo Application Runtime for CICS and Batch

Migrate CICS Applications to Simple, Robust and Scalable Architecture

An online application in IBM CICS environment may use a wide range of services provided by the CICS infrastructure, including Temporary Storage queues, Basic Mapping Service for 3270 UI, file access, etc. CICS Application Runtime for Tuxedo is built to run CICS applications unchanged by providing the same CICS services and emulating the standard EXEC CICS API. CICS services are provided by special Tuxedo servers built on native infrastructure. Support for CICS includes:

- 3270 terminal server and BMS management
- EXEC CICS API and the underlying functions
- Synchronous or asynchronous transactions and DPL-callable programs
- File operations over ISAM files or mapped to Oracle Database
- EXEC SQL API either for DB2 access or for access to Oracle Database
- APPC-based distributed transactions over Tuxedo Mainframe Adaptors

The CICS runtime protects application’s functionality and enables it to run on an open systems cluster managed by Oracle Tuxedo. The architecture is completely message-oriented and SOA-Ready because all servers are stateless. CICS transactions and DPL programs become message-based services, which can be invoked via a broad range of Tuxedo integration APIs, such as Web Services, JCA/WTC, Jolt/.Net clients, and Tuxedo Transport in OSB. Rehoused applications have access to EXEC CICS API as well as native Tuxedo APIs. Applications can add new components built in a Tuxedo container (e.g., ATMI for COBOL or C/C++, CORBA, or SCA for C++, Python, and Ruby) or JEE application server.

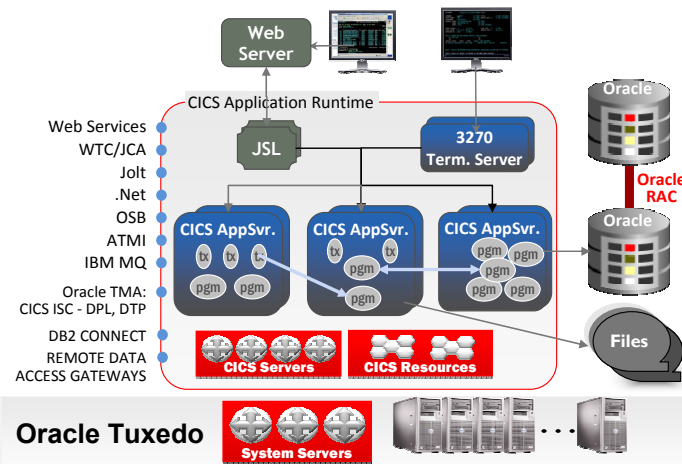


Figure 2. System View of Rehoused CICS Application

Offload Batch Workloads to Reduce Costs and Shorten Batch Window

The Batch runtime is designed to preserve the job flow, job structure and execution characteristics to minimize application impact. The Batch runtime provides utilities and technical functions for robust production environment and runs native job scripts adapted from JCL by Oracle Tuxedo Application Rehosting Workbench.

Batch management functions provide JES-like queues and job submit interface that supports standard job parameters (e.g., job name, class, priority, etc.) and job stages. A command-line client and service calls are provided to submit, hold/release, cancel, purge, and query jobs cluster-wide. The command line client can be used by any scheduler, including Oracle Database scheduler, and it also provides a service API that can be used to submit jobs from the mainframe over Tuxedo Mainframe Adapter, or any of Tuxedo service gateways, such as Web Services, Jolt, JCA, etc.

The jobs are processed through submit/convert/waiting stages until picked up by an Initiator server that monitors queues for its assigned job classes and launches the jobs into batch execution environment. By distributing Initiator servers on multiple nodes you can use more resources and systems to parallelize your batch execution.

Once the job is launched, it leverages all the typical production functions provided by the batch execution environment. This comprehensive batch framework handles automatic DB connections, commit/rollback, various DB and file manipulations, GDG support, sorts, and provides standardized statistics and logging. When the job is completed, the Initiator moves it to the output queue until it is purged. Batch runtime provides event-based, extensible monitoring based on Tuxedo Event Server. This provides rich notification framework based on events, and is programmatically extensible for custom job monitoring and management needs.

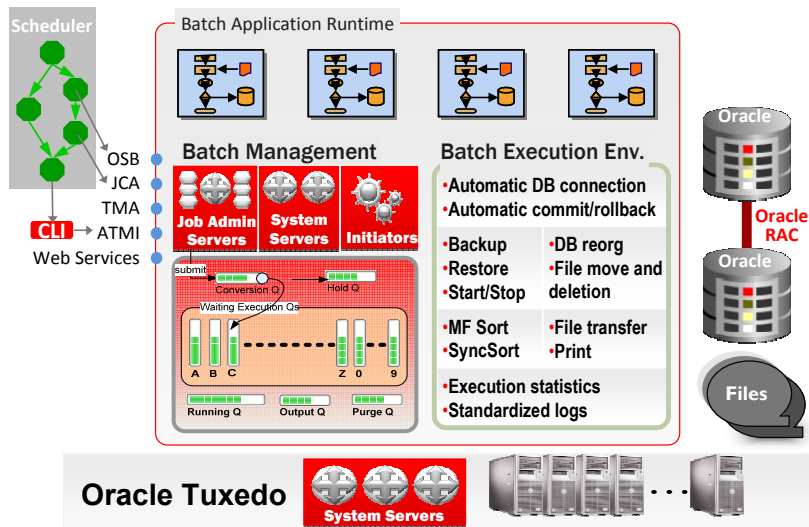


Figure 3. System View of Rehosted Batch Jobs

The Batch runtime supports not only mainframe JCL jobs converted by the Oracle Tuxedo Application Rehosting Workbench, it also allows the batch workload to be extended with new steps to run new programs or scripts, user exits before/after each phase, and new jobs built using a provided templates.

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 Application Rehosting Workbench
- Oracle Tuxedo System and Applications Monitor (TSAM)
- Oracle Tuxedo Mainframe Adapters (TMA)
- Oracle Tuxedo JCA Adapter
- Oracle Services Architecture Leveraging Tuxedo (SALT)
- Oracle Tuxedo Jolt
- Oracle Enterprise Repository
- Oracle Service Bus
- Oracle BPEL Process Manager
- Oracle WebLogic Server

Mainframe Robustness and Scalability at a Fraction of the Cost

The Oracle Tuxedo Application Runtime for CICS and Batch is built on the scalable Oracle Tuxedo foundation and inherits its core features:

- Multi-node, grid-enabled application server infrastructure
- XA-compliant distributed transactions (i.e., 2-PC or SYNC Level 2)
- Load balancing, priority management, and dynamic routing
- Service-oriented architecture
- Distribution of application servers across a cluster
- Health monitoring, automatic recovery, fail-over, and fail-back
- Server migration between cluster nodes

This enables rehosted online applications to be deployed in a multi-region CICS environment (MRO) across multiple nodes, similar to mainframe CICSplex configurations. However, unlike CICS on the mainframe, there are no limitations on the number of processors or nodes available to each CICS region. Using Tuxedo server groups, the resources representing a single CICS region can be distributed and replicated across a cluster for scalability and high availability.

For batch workloads the clustered configuration brings the benefits of mainframe JESplex – centralized job submission and control while distributing the execution across multiple nodes. This enables batch workloads to use a broad range of resources and systems so you can parallelize batch execution whenever possible.

Dynamic configuration of Tuxedo nodes and clusters enables additional resources to be brought online for CICS or Batch applications and shift resources between them based on regular schedule or ad hoc requirements. Similarly, application servers can be migrated between nodes, enabling an upgrade to be performed on one node without disrupting user requests serviced by other nodes in the cluster. This rolling upgrades capability virtually eliminates the need for any planned downtime.

The key value of the runtime approach is to simplify and accelerate migration by minimizing application change, while providing an open, extensible, SOA-ready framework. Together with the robustness, performance, scalability of Tuxedo this enables migration of the largest mainframe applications safely and cost-effectively.

Contact Us

For more information about Oracle Tuxedo Application Runtime for CICS and Batch, please visit oracle.com/tuxedo or call +1.800.ORACLE1 to speak to an Oracle representative.



Oracle is committed to developing practices and products that help protect the environment

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