

Oracle Tuxedo Application Runtime for CICS and Batch

Release Notes

12c Release 2 (12.1.3)

April 2014

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April 2014

Table 1 Revision History

Revision Date	Summary of Change
April, 2014	12c Release 2 (12.1.3)

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About This Product

Oracle Tuxedo Application Runtime for CICS and Batch supports quick migration of IBM mainframe applications to Oracle Tuxedo with low risk. It provides a combination of APIs and services that allows mainframe CICS and Batch components to run unchanged, preserving years of investment in business logic and data. It protects application users from change by supporting standard 3270 terminal emulators. It also provides familiar APIs and functions that developers use in their mainframe applications.

The result is the ability to quickly and with low risk migrate IBM mainframe COBOL and C applications to open systems running Oracle Tuxedo. This provides substantial cost savings, elastic scalability, and greater flexibility.

Key Features and Components

Oracle Tuxedo Application Runtime for CICS and Batch provides a runtime environment for IBM CICS applications, and a runtime environment for IBM z/OS-compatible batch jobs.

CICS Runtime Provides

- Preprocessors for COBOL and C programs that expand EXEC CICS macros and map CICS keywords into runtime interfaces.
- A production environment based on Oracle Tuxedo that executes CICS programs and transactions, and provides required functions and services.
- A 3270 terminal server for Oracle Tuxedo that enables tn3270 terminal emulators to interact with CICS programs and transactions migrated to Tuxedo ART in the same way they interact with CICS on an IBM mainframe.
- An ATMI user interface server for Oracle Tuxedo that enables a broad range of UIs connected over ATMI to interact with CICS programs and transactions migrated to Tuxedo ART without changing the application program code.
- Integration with TSAM Plus for real-time monitoring of CICS transactions and terminals with detailed Callpath tracing, alerting, and CICS resource management using TSAM Manager.
- Integration with TSAM Plus plug-in for OEM-based (Oracle Enterprise Manager) monitoring and management with in-depth availability and performance metrics, on-demand provisioning, and elastic scale-out.

Batch Runtime Provides

- Tuxedo Job Enqueueing Service (TuxJES), that emulates mainframe JES2/JES3 batch queues, initiators, and provides batch control functions for jobs submitted in native JCL or converted scripts.
- Batch execution engine used by initiators to run submitted jobs with all the standard JCL functions and common utilities.
- Batch operations, monitoring, and management facilities that include `ISPF` extensions for ART Batch operation, support real-time monitoring and alerting in TSAM Plus Manager, and integrate with extensive batch operations and management functions provided by TSAM Plus plug-in for Oracle Enterprise Manager (including in-depth availability and performance metrics, on-demand provisioning, and elastic scale-out).

What's New in This Release

This release includes the following new features and enhancements:

- CICS Runtime
 - Support for C/CICS programs in ART CICS with C pre-processor and runtime support
 - Support for CICS Channels/Containers in ART CICS interactions and on DPL calls from CICS region on z/OS to ART CICS region over TMA
 - Support for CICS Web Services
 - Support for DTP (APPC/LU6.2) and LU6.1 in ART CICS interactions and DTP between ART CICS and CICS on z/OS over TMA
 - Support for CICS initialization and shutdown program list tables: `PLTFPI` and `PLTSD`
 - Support for transferring terminal control between regions
 - Support for handling configurable mirror transactions on calls from JCA adapter to `ARTDPL`
 - Enhanced support for submitting JCL online
 - Support for 3270 printing in CICS leveraging tn3270-attached printers
 - Support for custom callback in initial/shutdown stages for transaction application servers
 - Native database connection support in `ARTDPL` server

- Enhanced debugging and diagnostics for COBOL programs running in COBOL-IT runtime.
- Enhanced CICS commands/options coverage in COBOL programs support listed as follows:
 - ADDRESS COMMAREA
 - ALLOCATE (APPC) SYSID
 - ALLOCATE (LUTYPE6.1) SYSID
 - ASSIGN ABDUMP/ABPROGRAM/ASRAINTRPT/ASRAKEY/ASRAPSW/ASRAREGS/
ASRASPC/ASRASTG/CHANNEL/ FACILITY/INITPARM/ INITPARMLN/KATAKANA/
NETNAME/SOSI/USERNAME
 - CANCEL TRANSID/REQID/SYSID
 - COLLECT STATISTICS
 - CONNECT PROCESS CONVID/PROCLNGTH/PROCNAME/STATE/SYNCLEVEL
 - CONVERSE ASIS/ALTERNATE/CTLCHAR/ ERASE/FROM/FROMLENGTH/
FROMLENGTH/INTO/MAXLENGTH/ MAXLENGTH/NOTRUNCATE/
STRFIELD/SET/TOLENGTH/ TOLENGTH
 - CONVERSE (APPC) CONVID/FROM/FROMLENGTH/
FROMLENGTH/INTO/MAXLENGTH/MAXLENGTH/NOTRUNCATE/SET/
STATE/TOLENGTH/TOLENGTH
 - CONVERSE (LUTYPE6.1)
FROM/FROMLENGTH/FROMLENGTH/INTO/MAXLENGTH/MAXLENGTH/NOTRUNCATE/S
SESSION/SET/ TOLENGTH/TOLENGTH
 - DEFINE COUNTER
 - DELETE CONTAINER
 - DELETE COUNTER
 - DELETE GENERIC/RBA
 - DUMP TRANSACTION
 - ENDBROWSE CONTAINER
 - INQUIRE TRANSACTION PROGRAM
 - INQUIRE TSPool
 - INQUIRE TSQNAME

- INVOKE WEBSERVICE
- ISSUE CONFIRMATION CONVID/STATE
- ISSUE DISCONNECT
- ISSUE PASS FROM/LENGTH/LUNAME
- LINK CHANNEL
- MOVE CONTAINER
- PUT CONTAINER
- QUERY COUNTER
- READ GENERIC/RBA
- READNEXT RBA
- READPREV RBA
- RECEIVE(APPC) CONVID/FLENGTH/INTO/LENGTH/MAXFLENGTH/MAXLENGTH/
NOTRUNCATE/SET/STATE
- RECEIVE(LUTYPE6.1) FLENGTH/INTO/LENGTH/ MAXFLENGTH/MAXLENGTH/
NOTRUNCATE/SESSION/SET
- RESETBR GENERIC/RBA
- RETURN CHANNEL/INPUTMSG/ INPUTMSGLEN
- REWIND COUNTER
- SEND ALTERNATE/DEFRESP/LAST/ STRFIELD
- ENTER TRACENUM/TRACEID
- EXTRACT LOGONMSG INTO/LENGTH/SET
- EXTRACT PROCESS CONVID/SYNCLEVEL
- FREE(APPC) CONVID/STATE
- FREE(LUTYPE6.1) SESSION
- GET CONTAINER
- GET COUNTER
- GETMAIN SHARED
- GETNEXT CONTAINER

- HANDLE AID
- HANDLE CONDITION ERROR/NOAUTH
- INQUIRE CONNECTION ACCESSMETHOD/CONNSTATUS/SERVSTATUS/NETNAME
- INQUIRE DB2CONN
- INQUIRE EXITPROGRAM
- INQUIRE FILE ACCESSMETHOD/DSNAME/ EMPTYSTATUS/ENABLESTATUS/
LSRPOOLID/MAXNUMRECS/ OPENSTATUS/TABLE/TYPE
- INQUIRE NETNAME ACQSTATUS/TERMINAL
- INQUIRE PROGRAM RESCOUNT
- INQUIRE SYSTEM JOBNAME/SHUTSTATUS
- INQUIRE TASK
- INQUIRE TASK LIST
- INQUIRE TERMINAL ACCESSMETHOD/ACQSTATUS/
ALTSUFFIX/CREATESESS/DEVICE/NETNAME/NEXTTRANSID/REMOTESYSTEM/SERVS
TATUS/ SIGNONSTATUS/TRACING/ TRANSACTION/USERID
- SEND(APPC) CONFIRM/CONVID/FLENGTH/FROM/INVITE/LAST/LENGTH/STATE/
WAIT
- SEND(LUTYPE6.1) FLENGTH/FROM/INVITE/LAST/ LENGTH/SESSION/WAIT
- SEND CONTROL PRINT
- SEND MAP ERASEAUP/PRINT
- SEND TEXT PRINT/NLEOM
- SET CONNECTION CONNSTATUS
- SET FILE CLOSED/DISABLED/DSNAME/ ENABLED/ENABLESTATUS/OPEN/
OPENSTATUS
- SET TERMINAL ACQUIRED/ATI/ATISTATUS/
CREATE/INSERVICE/OUTSERVICE/RELEASED/TTI/ TTISTATUS
/SERVSTATUS/NOATI/NOTTI
- SPOOLOPEN OUTPUT NOCC/NODE
- START CHANNEL
- START SYSID/TRANSID/NOCHECK/REQID

- STARTBOWSE CONTAINER/GENERIC/RBA
- SUSPEND
- UPDATE COUTNER
- WAIT CONVID(APPC) CONVID/STATE
- WRITE RBA
- XCTL CHANNEL
- Support for the following C/C++ programming commands/options:
 - ADDRESS COMMAREA/EIB
 - FREEMAIN
 - GETMAIN
 - LINK COMMAREA/LENGTH/PROGRAM
 - RECEIVE INTO/LENGTH
 - RETRIEVE INTO/LENGTH
 - RETURN
 - WRITEQ TD FROM/LENGTH/QUEUE
- Support for the following BMS Macros:
 - BMS DFHMSD SUFFIX
 - BMS DFHMDF CASE
 - BMS DFHMDF GRPNAME
- Batch Runtime
 - JES Functions and Job Control
 - Synchronous job submission mode in `artjesadmin`
 - Native JCL job submission via `artjesadmin`
 - `artjesadmin` sub-command for dynamic priority change of a job in waiting status
 - NJE-like support for routing batch jobs within a network of specific nodes or initiator groups
 - Role-based job control authorization through Oracle Entitlement Server or LDAP
 - Automatic job purge function when spool Qspace approaches a configurable limit

- Batch Execution Engine
 - Option to maintain GDG metadata tables in IBM DB2 LUW
 - ABEND capture and alerting through OEM Incident Manager (configurable policies)
 - Support for DUMP command and asterisk wildcards in external m_pkzip API
 - Extended support for sort utility JOINKEYS command
 - DSN resolution within volumes using File Catalog and related functionality, including IDCAMS LISTCAT (requires database)
 - Configurable SYSIN and SYSOUT redirection in COBOL programs
 - Support for running dynamically loadable C programs in m_ProgramExec function
 - Extended EXCI call support to CICS on z/OS using TMA
 - Check file availability prior to actually executing a job
- Batch Operations, Monitoring, and Management
 - Integration with uni-SPF and ARTISPF extensions for batch operations, administration, and management, which provides the following functions through ISPF panels (requires uni-SPF and uni-REXX from The Workstation Group, Ltd.):
 - * Find and list jobs, view, edit, copy, and submit individual jobs
 - * View submitted jobs, drill down into job details and logs, and perform job control functions
 - * View jobs in OUTPUT queue and browse their SYSOUT files
 - * View JES and Oracle Tuxedo logs
 - * View Initiators and the jobs they are currently running
 - * Start/stop Oracle Tuxedo batch domain
 - * Configure system setting for batch subsystem
 - * Configure users and security profile for batch subsystem
 - * View and release file locks
 - * Access file catalog to search/view files, catalog/uncatalog, and allocate new files
 - * Access GDG metadata to view GDG bases and drill down to individual generation datasets

- Integration with Oracle Enterprise Manager (OEM) for batch operations and management:
 - * Archival of job logs and SYSOUTS to OEM management repository, with extended search capability through OEM
 - * List and submit jobs through OEM
 - * View and control jobs through OEM
 - * Configure ABEND alerting policies for triggering OEM Incidents and Rule sets
 - * Configure job wait times and service-level monitoring policies for triggering OEM Incidents and Rule sets
 - * Search GDG bases and drill down to specific generation datasets
 - * Extended log/SYSOUT viewer and search capability for active and archived jobs
 - * BI Publisher-based reporting for batch utilization
 - * Batch subsystem monitoring with in-depth availability and performance metrics, and configurable alert thresholds
- CPU time monitoring at job step level
- Consolidated JES system level log

Interoperability

Tuxedo ART for CICS and Batch maintains full interoperability with:

- Oracle Tuxedo 12c Release 2 (12.1.3)
- Oracle Tuxedo Application Runtime for Batch 12c Release 2 (12.1.3)
- Oracle Tuxedo Application Runtime for IMS 12c Release 2 (12.1.3)
- Oracle Tuxedo Application Rehosting Workbench 12c Release 2 (12.1.3)
- Oracle Tuxedo System and Application Monitor Plus (TSAM Plus) 12c Release 2 (12.1.3)
- Oracle Services Architecture Leveraging Tuxedo (SALT) 12c Release 2 (12.1.3)
- Oracle Jolt 12c Release 2 (12.1.3)
- Standard tn3270 terminal emulators
- IBM WebSphere MQ 7.x

- IBM CICS 3.x, 4.x, 5.x

Installation

Oracle Tuxedo Application Runtime for CICS and Batch 12c Release 2 (12.1.3) installation requires Oracle Tuxedo 12c Release 2 (12.1.3) installation.

The use of `ISPF` extensions for batch operations (`ARTISPF`) requires `uni-SPF` and `uni-REXX` from The Workstation Group, Ltd. (<http://www.wrkgp.com/index.html>).

Execution of IMS batch jobs requires Oracle Tuxedo Application Runtime for IMS 12c Release 2 (12.1.3).

For more information, see the [Oracle Tuxedo Application Runtime for CICS and Batch Installation Guide](#).

Platform Support

Oracle Tuxedo Application Runtime for CICS and Batch 12c Release 2 (12.1.3) supported platforms are listed in the [Supported Platforms](#) in the [Oracle Tuxedo Application Runtime for CICS and Batch Installation Guide](#).

Upgrade Considerations

When you upgrade Oracle Tuxedo Application Runtime for CICS and Batch from an older release, you must rerun the CICS Preprocessor for the CICS COBOL programs, and then recompile the COBOL programs with versions of COBOL compilers certified for this release.

If upgrading from release 11.1.1.2 or earlier, you must ensure the `ARTADM` server is configured at CICS Runtime.

If using COBOL-IT, you must specify the `-fthread-safe` option when compiling CICS programs.

When using Micro Focus Visual COBOL 2.1 on AIX/Solaris OS platforms, make the following soft links in `$COBDIR/lib`.

- `ln -s libcobrts64.so.3 libcobrts64.so.2`
- `ln -s libcobrts64_t.so.3 libcobrts64_t.so.2`
- `ln -s libcobmisc64.so.3 libcobmisc64.so.2`
- `ln -s libcobmisc64_t.so.3 libcobmisc64_t.so.2`

- `ln -s libcobcrtn64.so.3 libcobcrtn64.so.2`

Behavior Changes

- The second FML base in `$KIXDIR/include/msgflds32` is changed from 30002700 to 30001100.
- The ARTSRM server is required for many enhancements introduced in 12c Release 2 (12.1.3). You must ensure it is configured in the Oracle Tuxedo UBBCONFIG file for CICS runtime if you use any of the following enhancements:
 - TASK management
 - Named COUNTER support
 - system INQUIRE verbs.
 - For more information, see [ARTSRM Configuration](#) in [Oracle Tuxedo Application Runtime for CICS Reference Guide](#).

Limitations and Known Issues

Oracle Tuxedo Application Runtime for CICS and Batch limitations and known issues are as follows:

Batch Runtime

- `IEBGENER GENERATE` with `MEMBER` is not supported.
- System date (e.g., `DATE1`) comparison is not supported in `SORT` operation.
- Using `DISP=SHR` to add a new member in a PDS is not supported.

CICS Runtime

- BMS file name cannot be used as `MAPSET` name in `CICS SEND MAP` and `RECEIVE MAP` commands.
- All the `RBA` and `Generic` options for CICS commands are not supported in file-to-file scenarios when using `COBOL-IT`.
- When `ISC_ENABLE=YES` is set, ART CICS cannot validate `LUNAME` across multi-CICS regions.

- There are some restrictions when users implement and run CICS applications in C language. For more information, see [CICS Runtime C Program Support](#).
- When using a COBOL-IT compiler, you must configure variable `COB_ENABLE_XA` before booting up `ARTSTRN`.
- When using a COBOL-IT compiler, you must make sure `PROGRAM-ID` is the same as the COBOL program name. Different COBOL programs must define different `PROGRAM-ID`.
- APPC session negotiation is not supported.
- Profile resource definition is not supported. Default profile `DFHCICSA` is assumed; there is no timeout mechanism for this profile.
- Applications communicating via DTP must run within the same Oracle Tuxedo domain.
- Communication between ART CICS and Mainframe CICS via TMA SNA inherits the following limitations from TMA:
 - LUTYPE6.1 protocol is not supported.
 - Only the following APPC conversational programming model scenarios are supported:
 1. ART CICS DTP client Request/Response to Mainframe CICS DTP server (server gets control)
 2. Mainframe CICS DTP client Request/Response to ART CICS DTP server (client relinquishes control)
 3. Transactional ART CICS DTP client Request/Response to Mainframe CICS DTP server (server gets control)
 4. Transactional Mainframe CICS DTP client Request/Response to ART CICS DTP Server (client relinquishes control)

For more information, see [Oracle Tuxedo Mainframe Adapter for SNA Reference Guide](#).

 - Sending the data with state in one transmission using the `SEND` command is not supported.
 - For scenarios 3 and 4, the `SEND CONFIRM/ISSUE CONFIRMATION` commands must be added to the server and client code respectively in a transactional conversation.
 - Implementations of `SYNCPPOINT` in internal ART CICS and TMA-based ART CICS are different; these two types of sync-level conversation cannot occur in the same transaction.

- TMA conversation server is terminated using `tpreturn()`; however, in scenario 2 and 4, TMA-based ART CICS can only map `SEND LAST` (or `FREE`), in sync level 0 and `SEND CONFIRM` in sync level 2 to `tpreturn()`. As a result, all subsequent operations are not executed.
- Sync level 1 operation is not supported in Oracle TMA conversation. `SEND CONFIRM/ISSUE CONFIRMATION` is not supported except in scenarios 3 and 4.
- Oracle TMA copybook from Mainframe (via ART Workbench), must be aligned before it can be used in ART CICS applications.
- Every node in the same ART for CICS application (no matter how many domains it is deployed on) must run on homogeneous platforms (for example, CICS Runtime supports this scenario: one node runs on Oracle Linux 5.6 platform while the other node runs on Oracle Linux 5.8 platform. However, CICS Runtime does not support this scenario: one node runs on Oracle Linux platform while the other node runs on Oracle Solaris platform). For all ART for CICS supported platforms, see [Supported Platforms](#) in [Oracle Tuxedo Application Runtime for CICS and Batch Installation Guide](#).

See Also

- [Oracle Tuxedo Application Runtime for CICS and Batch Installation Guide](#)
- [Oracle Tuxedo Application Runtime for CICS User Guide](#)
- [Oracle Tuxedo Application Runtime for CICS Reference Guide](#)
- [Oracle Tuxedo Application Runtime for Batch User Guide](#)
- [Oracle Tuxedo Application Runtime for Batch Reference Guide](#)