TXSeries for Multiplatform V6.1

Product Overview and Update

Wen Lu

Technical Track

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The CICS Family

Transaction Servers

- CICS Transaction Server for z/OS
- TXSeries for Multiplatforms
  - AIX, Solaris, HP etc.
- CICS Transaction Server for VSE/ESA

Connectors and Tools

- CICS Connectors
  - CICS Transaction Gateway
  - CICS Universal Client
- CICS Tools
  - Subsystem management
  - Enterprise integration

Agenda
Topics for Consideration

- **Introduction to TXSeries**
  - What is TXSeries? What can TXSeries do?
  - Common Deployment Scenarios
  - TXSeries and CICS Transaction Server Comparison
- **TXSeries v6.1 Product Functionality (3 Themes)**
  - Simplification
  - Enhanced administration
  - More power and higher availability
- **TXSeries working with key WebSphere products**
- **TXSeries Future Thoughts and Further Reading**

What is TXSeries for Multiplatforms?

- **Part of IBM's** CICS family **of products - the** distributed **transaction processing environment**
- **Provides** transaction **and** integration **capabilities for CICS applications written in COBOL, C, C++ and PL/1**
- **Widely used as** a companion to **CICS Transaction Server and WebSphere deployments**
- Enables Scaling **to CICS Transaction Server as your business grows**

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What can TXSeries do for you?

- **Access** data and applications in various distributed and enterprise systems including
  - CICS and IMS
  - DB2 and Oracle
  - WebSphere MQ
- **Reuse** existing CICS applications and application programming skill sets in your organisation
- **Extend** CICS applications to the web and web services via the CICS Transaction Gateway and WebSphere Application Server
- **Build** new CICS applications using COBOL, PL/I, C, C++
  - Test environment in WD4z

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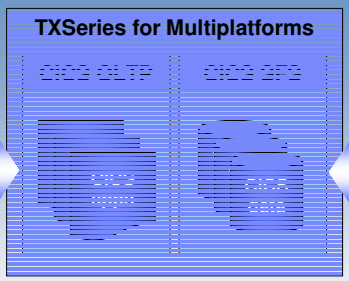
Product Delivery

A transactional processing environment that supports CICS applications written in COBOL, C, C++ and PL/1.

Lets you focus on solving business problem, handles everything else



for VSAM-style data storage with access via online or batch programs

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Business Application Requirements

Business Logic	**APPLICATION**	
Locking		Logging
Administration		Scheduling
Exception Handling		Security
Data Integrity		Connectivity
Performance		Queue Management

COMMUNICATIONS | **DATABASE MANAGER**

OPERATING SYSTEM

HARDWARE

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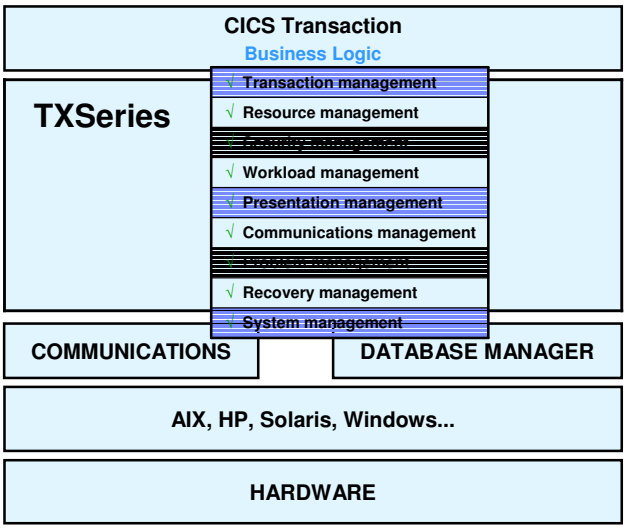
TXSeries Functions



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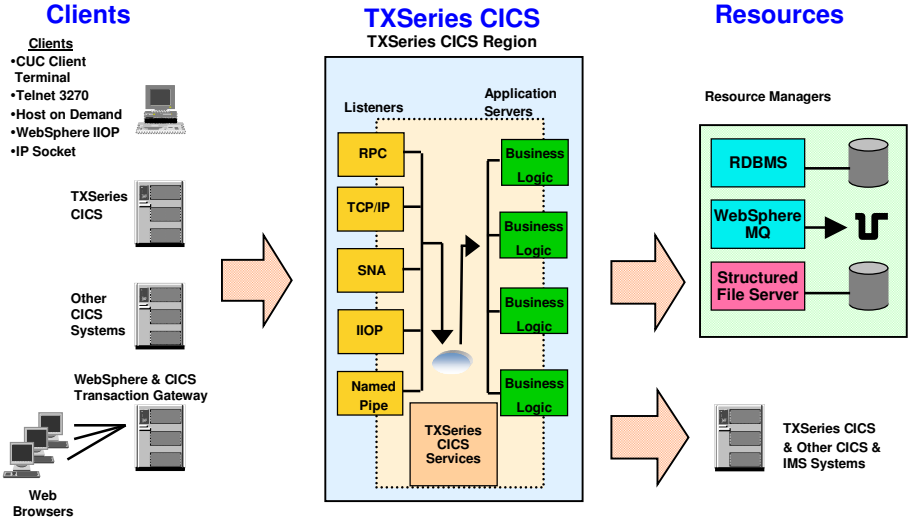
TXSeries Architecture



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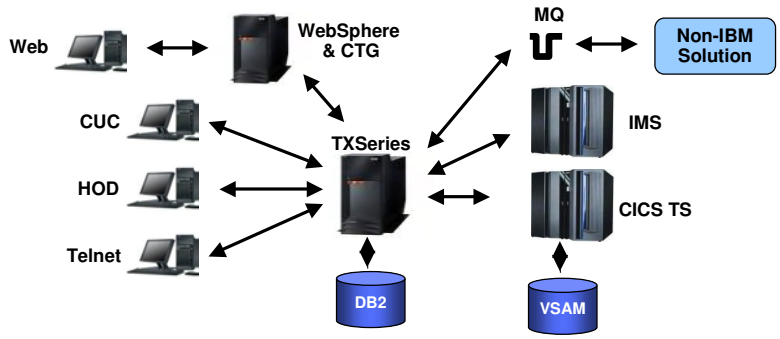
Common Deployment Scenarios

Integration Capabilities

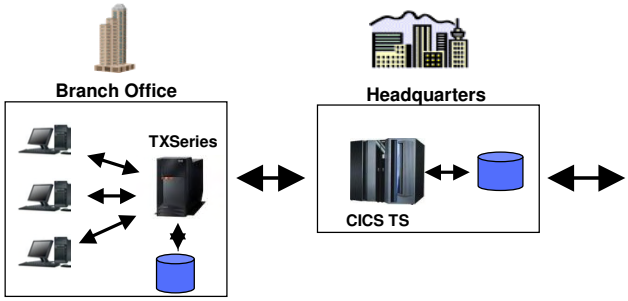
- **A consolidating mid-tier terminal server**
- **An intelligent mid-tier gateway**
- **A comprehensive mid-tier integration server**



Common Deployment Scenarios

Distributed transaction processing capabilities

- **As a transactional run time for custom application services**
- **As a composite transaction server connected to WebSphere Application Server**
- **As a distributed CICS server for local branch-level processing**



High level Comparison

- **CICS Transaction Server for z/OS, Version 3.1**
  - CICS TS for z/OS is the worlds most sophisticated transaction server
  - CICS TS for z/OS V3.1 is the most successful release in history
  - Over 35 years of constant innovation
  - The majority of the worlds largest corporations rely on CICS TS for z/OS
  - Large ecosystem of supporting products and services (from IBM and BP's)

- **TXSeries for Multiplatforms, Version 6.1**
  - TXSeries V6.1 is the most significant new release in 10 years +
  - Implements designs, concepts and a subset of CICS TS functionality
  - Excellent CICS interconnectivity and upward compatibility
  - Provides a choice to suit business needs and maximised data integrity

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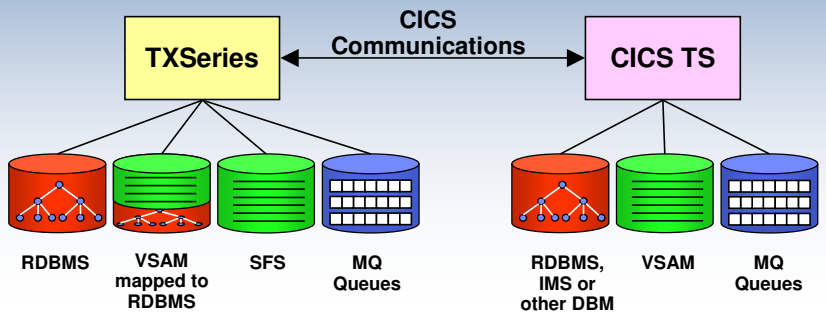
Maximise Data Integrity: A Major benefit

- TXSeries and CICS TS communicate through CICS Intersystem Communications
- All data sources can be included in a single unit of work
- Two-phase commit for data integrity across the network



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TXSeries for Multiplatforms v6.1

Product Themes

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TXSeries v6 Themes
Major Enhancements in Three Key Value Areas

Simplification

- **Removal of DCE and Encina prerequisites**
- **Communication using high-performance and secure shared memory**
- **Simplified installation with InstallShield**

Enhanced Administration

- Web based administration utility on all platforms
- Improved administration commands
- TXSeries client replaced by CICS Universal Client

More Power & Higher Availability

- Improved XA resilience with Resource Managers
- Full Synclevel 2 support across tcp/ip
- New cicserr command
- Improved security integration with RACF

TXSeries v6 Themes

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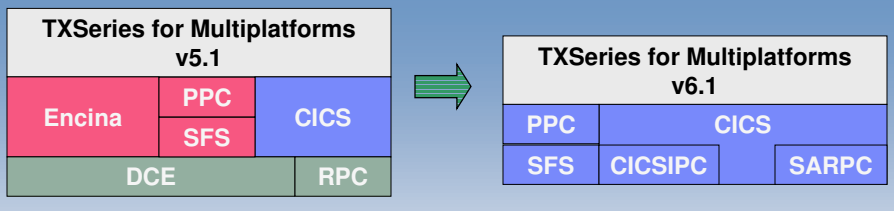
Simplification

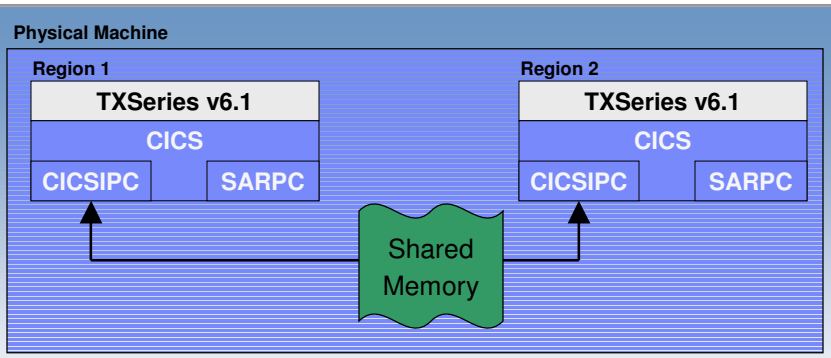
Removal of DCE & Encina Prerequisites



- **TXSeries for Multiplatforms, Version 6.1 provides a version of TXSeries without the DCE or Encina prerequisites across the AIX, Windows, HP-UX and Sun Solaris platforms.**
- **This capability means that the installation, configuration and administration is simplified, helping to increase system programmer and system administrator productivity.**

Simplification

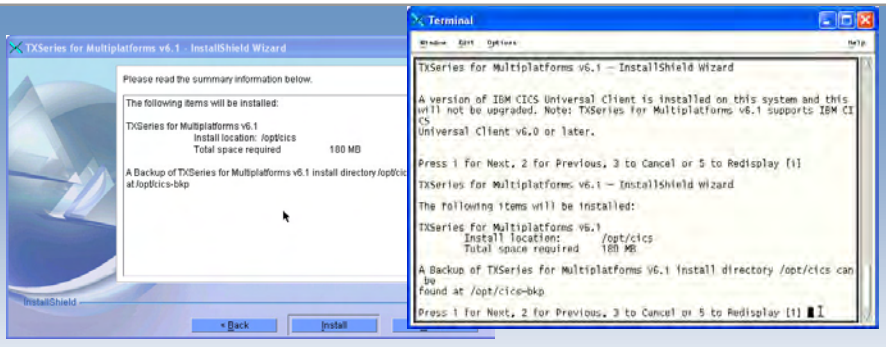
Communication using Shared Memory



- CICSIPC component replaces RPC calls with Shared Memory calls for region-region communications on the same physical machine
- Shared Memory is faster and more secure

Simplification

Simplified Installation with InstallShield



- Installation and version-to-version upgrades are enhanced with InstallShield for Multiplatforms
- InstallShield can be run as a GUI, a command-line console or as a silent install with no user interaction.
- Removed SMIT (AIX) install option

TXSeries v6 Themes

Simplification	▪ Removal of DCE and Encina prerequisites ▪ Communication using high-performance and secure shared memory ▪ Simplified installation with InstallShield
Enhanced Administration	▪ Web based administration utility on all platforms ▪ Improved administration commands ▪ TXSeries client replaced by CICS Universal Client
More Power & Higher Availability	▪ Improved XA resilience with Resource Managers ▪ Full Synclevel 2 support across tcp/ip ▪ New cicserr command ▪ Improved security integration with RACF

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TXSeries for Multiplatforms, Version 6 Highlights

New, intuitive administration capability

Enhanced Administration

- Web based administration utility on all platforms
- Improved administration commands
- TXSeries client replaced by CICS Universal Client

- Security-rich remote administration using a Web-based interface that enables authorized users to administer the TXSeries system from a Web browser.
- Display of current status information for all configured TXSeries regions, SFSs and peer-to-peer communication (PPC) gateways.
- Intuitive grouping and sorting of information regarding TXSeries systems, properties, resources, transactions and so on.
- Assistance with the configuration of TXSeries resources using drop-down menus, radio buttons, tables, online help and so on.
- Problem-determination capabilities that enable viewing, filtering and searching of event logs, with error codes now hyperlinked to message explanations.
- Availability of the administration console in all Group 1 languages, including French, Korean, Chinese, Spanish, Portuguese-Brazilian, German, Japanese, Italian & English.

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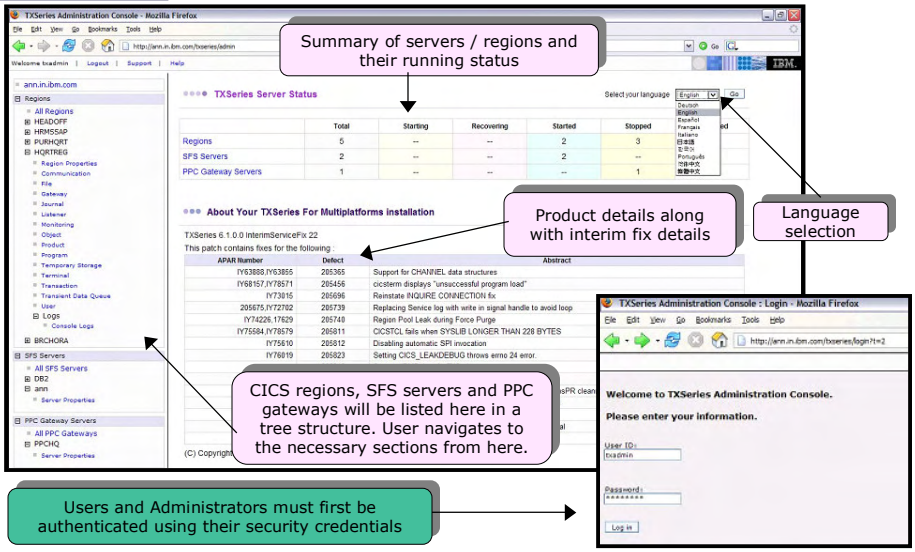
Enhanced Administration

Secured administration console displays TXSeries status



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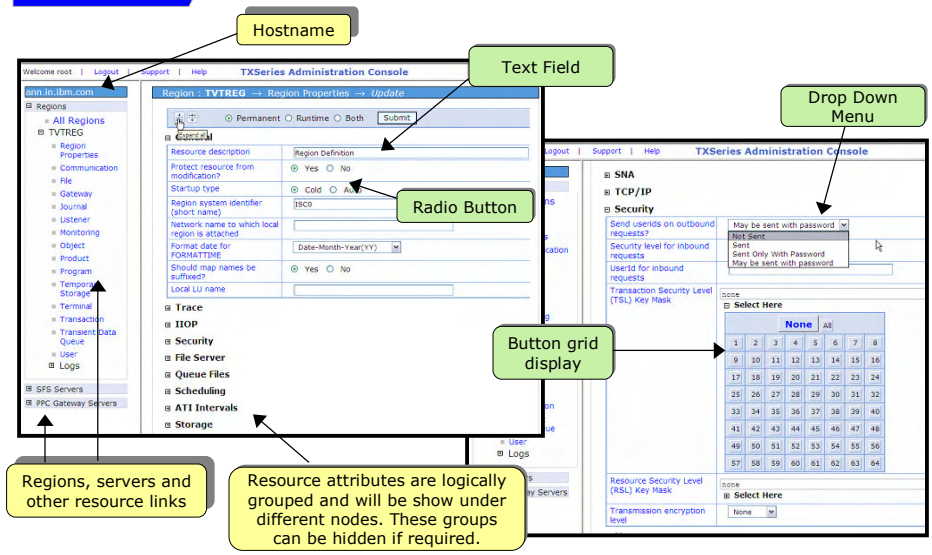
Enhanced Administration

Assistance with the configuration of TXSeries resources



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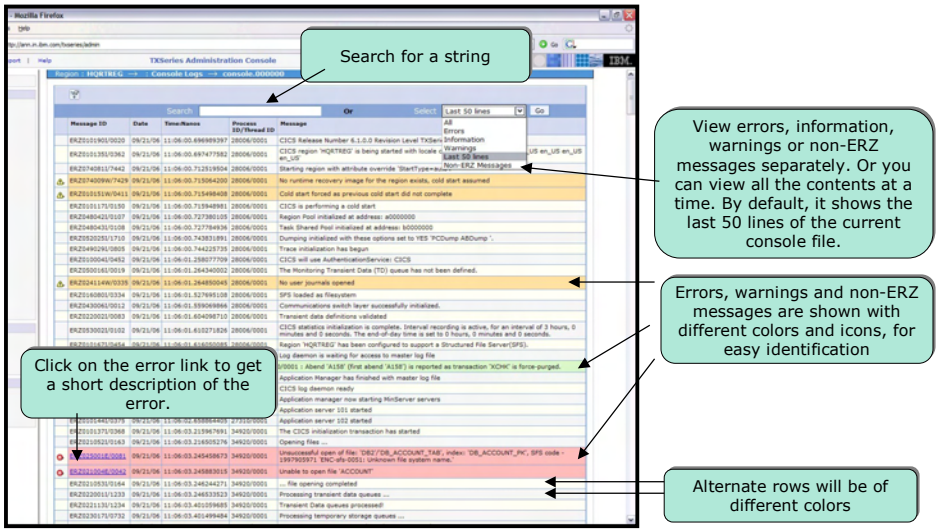
Enhanced Administration

Enables viewing, filtering and searching of event logs



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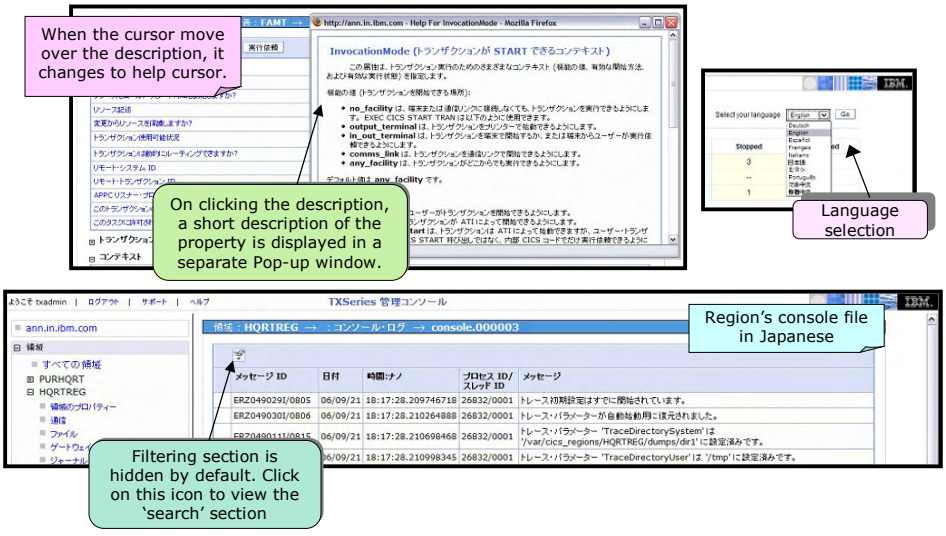
Enhanced Administration

Availability of the administration console in many languages



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Enhanced Administration

New Administration Commands

- **CICSCP is now synchronous**
  - Only returns control once command is complete
- **New command options added to CICSCP**

```
cicscp version
```

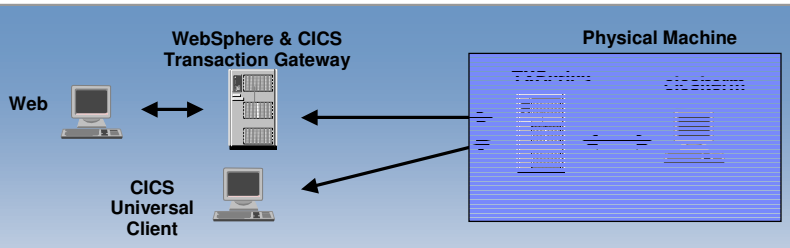
```
TXSeries 6.1.0.0 s610-L061011
```

```
cicscp status all
```

```
pcorplpar1      sfs      Running
epireg          region   Stopped
CICSCOR1        region   Stopped
mfcob           region   Running
```


Enhanced Administration

TXSeries Client Replaced by CICS Universal Client



- **Original TXSeries client replaced by CICS Universal Client**
  - Smooth upgrade path when moving from CUC to CTG
- **One license for CUC supplied with TXSeries installation image**
- **Local CICS terminal renamed from *cicsterm* to *cicslterm***
  - Removes name conflict with CUC version of cicsterm
  - Only available on same physical machine as the CICS region

TXSeries v6 Themes

Simplification	▪ Removal of DCE and Encina prerequisites ▪ Communication using high-performance and secure shared memory ▪ Simplified installation with InstallShield
Enhanced Administration	▪ Web based administration utility on all platforms ▪ Improved administration commands ▪ TXSeries client replaced by CICS Universal Client
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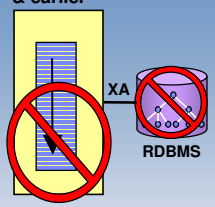
More Power & Higher Availability

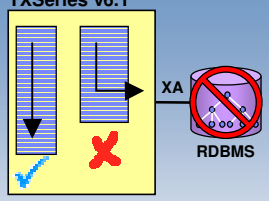
Improved XA Resilience with Resource Managers

TXSeries v6.0 & earlier



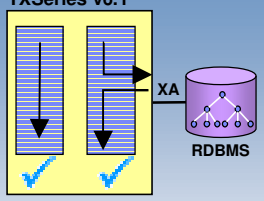
Database Failure
- In-flight transactions fail
- Region abends
- Fix database before region restart

TXSeries v6.1



Database Failure
- **Non-database transactions succeed**
- **Database transactions receive an SQL error**

TXSeries v6.1



Database Recovery
- All transactions succeed
- No need for region restart

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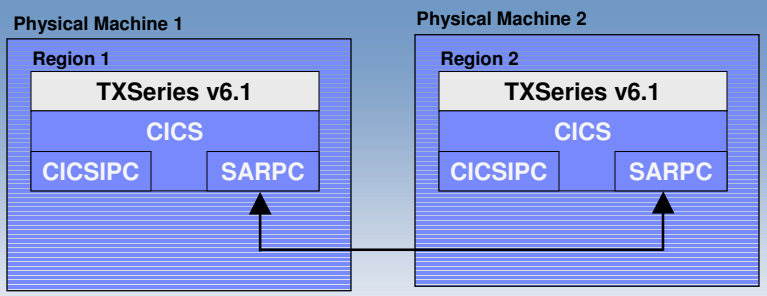
More Power & Higher Availability

Full Synclevel 2 Support Across TCP/IP



- DCE provided RPC process for inter-machine calls is replaced by SARPC (Standalone RPC)
- Full SyncLevel 2 support across TCP/IP is now enabled

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More Power & Higher Availability

New cicserr Command

- New cicserr command provides information on error messages
- Avoids looking in the CICS Messages and Codes manual for an explanation of error messages

`cicserr ASRA`

```
Explanation: The task has terminated abnormally
because of a signal or exception.
System action: CICS abnormally terminates the
transaction and produces a transaction and
possibly a system dump.
User response: Determine and correct the cause
of the signal or exception.
```

`cicserr ERZ010020I`

```
ERZ010020I *** CICS startup is complete ***
Explanation: The region is now ready for use.
System action: CICS continues processing.
User response: None
```

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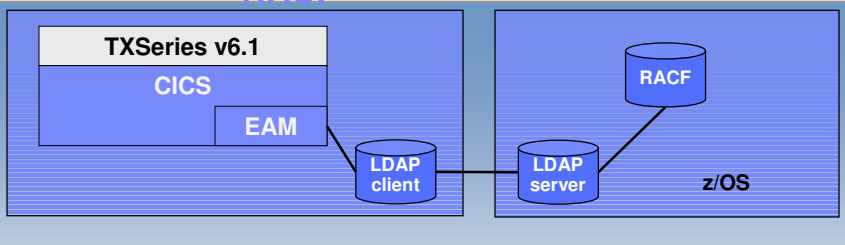
More Power & Higher Availability

Improved Security Integration with RACF



- **Requires External Authentication Manager (EAM) component from TXSeries**
- **LDAP Client such as IBM Directory Server installed on TXSeries machine**
- **LDAP Server running on z/OS in Security Database Manager (SDBM) mode**
- **z/OS with RACF 1.7 or later**
- TSLKey **and** RSLKey **attributes added to RACF 1.7 to allow integration between TXSeries and LDAP**

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TXSeries for Multiplatforms, Version 6.1 Summary

Vastly simplified and more powerful

The Next Generation of Distributed CICS

New and Intuitive Administration Environment

TXSeries for Multiplatforms V6.1 Summary of Key Highlights

- **A significantly simplified infrastructure**
  - Offers simplified installation, configuration and administration by removing the DCE and Encina prerequisites from all platforms
- **New intuitive administration capability**
  - Provides a powerful and intuitive new Web-based administration console, designed to look and operate like the WebSphere Application Server administration console
- **More power and higher availability:**
  - Offers a higher-availability infrastructure that enables TXSeries to withstand planned or unplanned downtime of XA-connected resources

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TXSeries for Multiplatforms v6.1

Integration with SOA Product Portfolio

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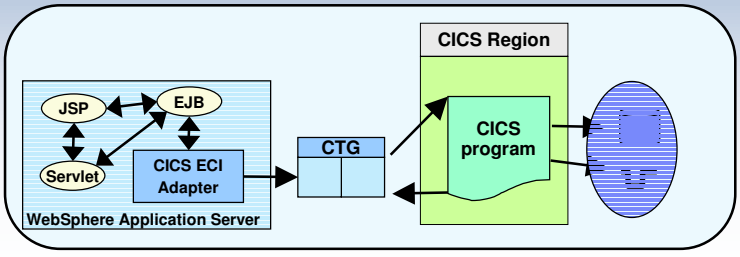
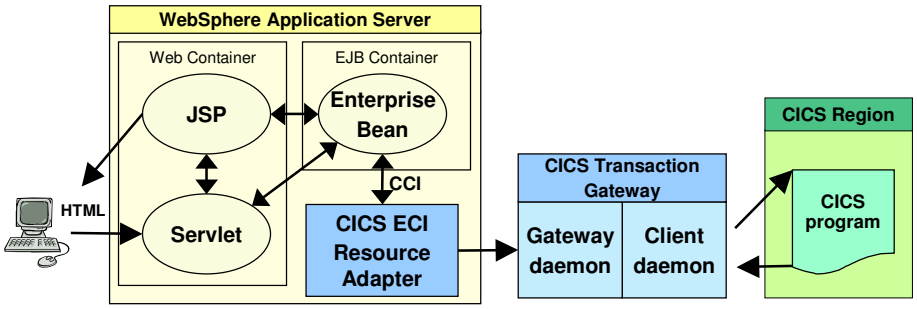
TXSeries as a part of a SOA solution

- **TXSeries enables end-to-end distributed solution through integration with WebSphere and CICS Transaction Server for z/OS**
- **Close SOA integration is achieved using a combination of products**
- **Combination of TXSeries and WebSphere SOA Foundation products delivers a proven and robust solution**



SOA Integration with J2EE Application Servers



- **CICS Transaction Gateway (CTG) provides an external interface to TXSeries**
- **CICS Resource Adapter allows J2EE applications to access CTG**

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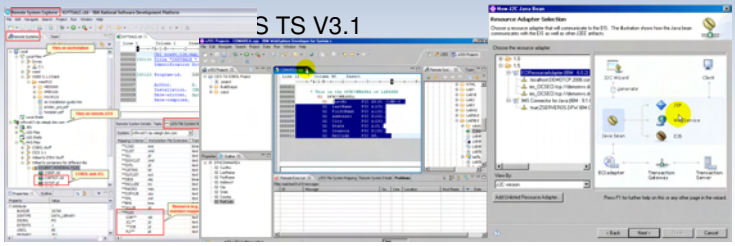
TXSeries is now a part of WD4z

- **A version of TXSeries is shipped with WD4z V7 onwards**
  - Developer license
  - Replaced CICS TS for Windows
  - Provide local syntax check for multiple version of CICS APIs



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TXSeries for Multiplatforms v6.1

Strategy and Directions

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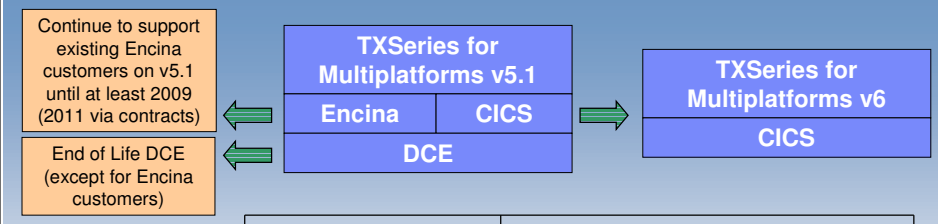
TXSeries Strategy: Phase 1
Separate then Remove DCE and Encina



Action	Objective & Customer Benefit
Remove DCE & Encina Repackage TXSeries	**Remove complexity Simplify installation and administration**
Develop CICS alternatives to DCE & Encina	**Maintain and enhance functionality Enable full CICS application compatibility**

TXSeries for Multiplatforms, Version 6.1 is now the strategic migration path for:

- **TXSeries CICS v4, v5 and v6.0**
- **CICS TS for Windows**
- **CICS TS for OS/2 customers**

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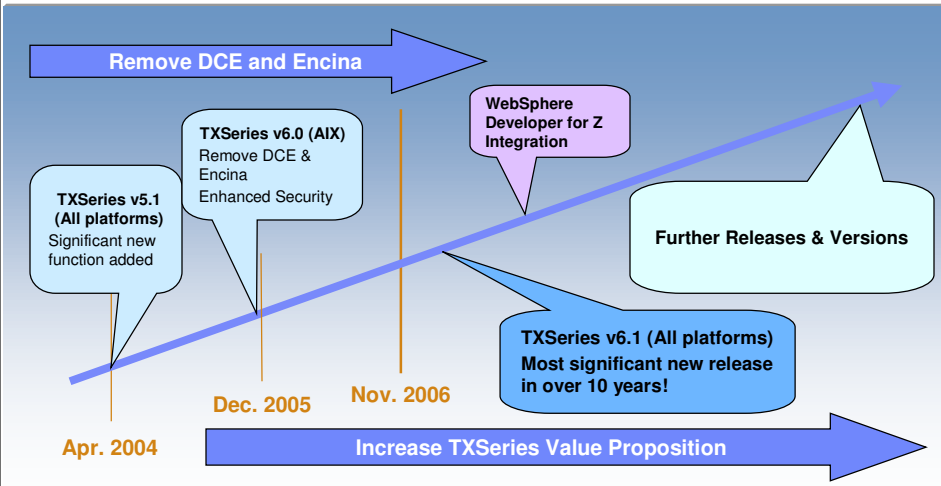
TXSeries Strategy: Phase 2
Increase TXSeries Value Proposition



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Statement of Direction and Future Thoughts

IBM Software Announcement 206-096 (2nd May 2006) announced:

- *"IBM intends to focus on the integration of TXSeries assets in modern SOAs by delivering a structured method of inter-program communication that can be used across standards-based networks."*
- *"This will be delivered in line with established CICS design principles to maintain upward compatibility with CICS Transaction Server for z/OS."*

Other Future Thoughts (not committed plans) include:

Enhancement Area	Potential Enhancements (not committed plans)
Communications and Integration	*Channels and Containers; Enhanced TCP/IP; Enhanced MQ Integration*
Systems Management and Administration	*Extensions to new Admin WUI; Add more online management capability*
Availability and Workload Management	*Enhance current WLM implementation; Integrate with Admin WUI*
Monitoring and Problem Determination	*Extend monitoring, logging and PD capability; Integrate with Admin WUI*
Security Management and Integration	*Introduce administration 'groups'; Enhance Tivoli Integration*

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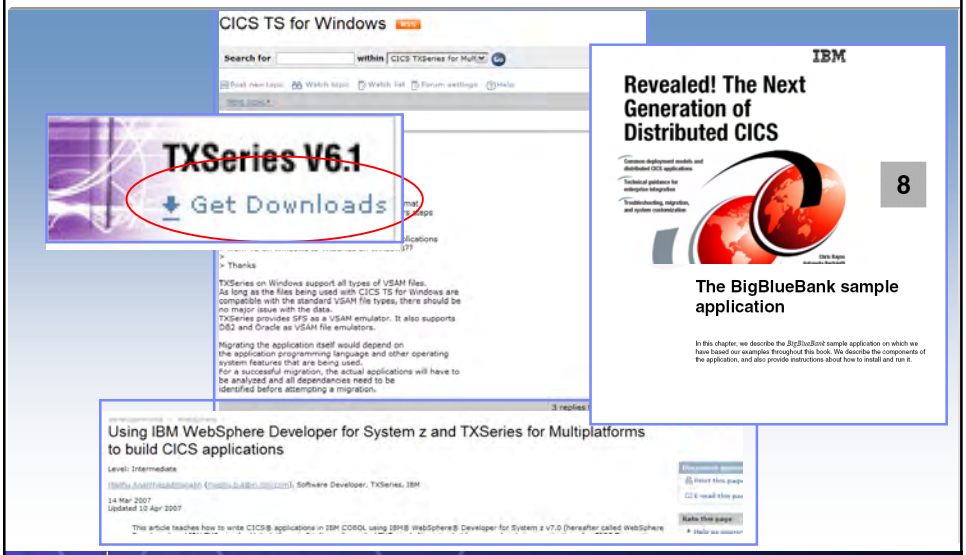
For hands on people out there



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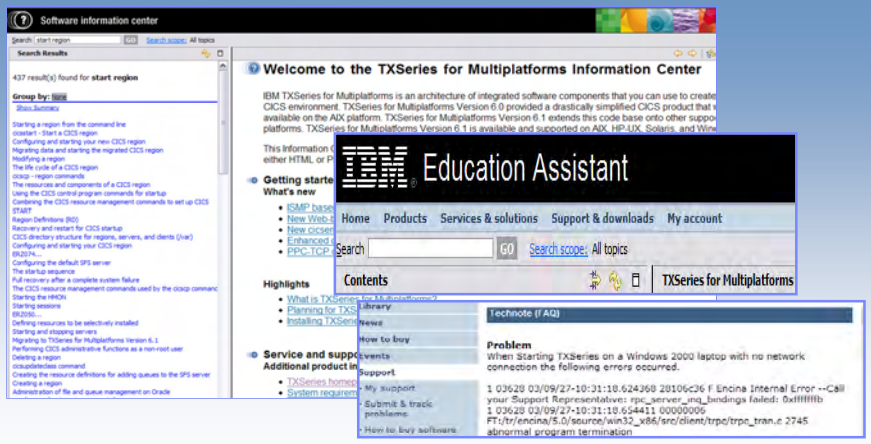
Product Documentation



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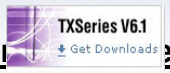
Questions and More Resources

www.ibm.com/cics/txseries/library

www.ibm.com/cics/txseries



- **Any Questions?**
  - Ask the IBM product teams and other TXSeries users on the forum
  - Google "*TXSeries Forum*"
  - CICS-L Mailing list

developerWorks.
TXSeries
Technical Forum

- **The TXSeries Library is the place for information:**
  - Datasheets/Brochures
  - Redbooks
  - Whitepapers
  - Presentations
  - Hints and Tips
  - Technical Library
  - And more….

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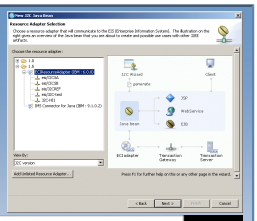
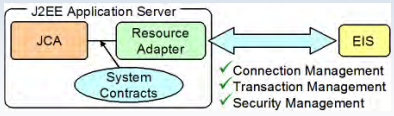
The J2EE Connector Architecture (JCA)

J2EE standards based access to Enterprise Information Systems

- A component of the Java™ 2 Platform Enterprise Edition specification, alongside other standard services, such as JMS, JDBC and JNDI
- Standard programming interface to all Enterprise Information Systems (EIS), such as CICS, IMS and SAP
- Widely supported in education materials and software tooling from IBM and non IBM vendors
- Delegated management of Connections, Transactions and Security for better, faster application development





In summary the J2EE Connector Architecture (JCA):

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TXSeries Functionality Overview

- **Data Access .. all via 2 phase commit XA protocols**
  - CICS SFS or DB2 / Oracle for VSAM emulation
  - SQL database access via leading RDBM products
  - Messaging via MQSeries
- **Full CICS ISC Support**
  - FS, DPL, DTP, TR, Starts
  - Sync Level 2 support over SNA
  - Sync Level 1 and 2 support over TCP/IP (TXSeries CICS to TXSeries CICS only)
- **Security**
  - CICS Provided
  - External Security

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TXSeries Functionality Overview

- **Administration Commands**
  - CICS Control Program (cicscp) for most situations
  - Plenty of other commands if you need control
  - Web based administration tool
- **Supplied Transactions**
  - CICS - CEMT, CECI/CECS, CESN/CESF, CEBR, CEDF …
  - TXSeries - CJDB/CADB/CDCN, CMLV, CALF …
- **Problem Determination**
  - Several diagnostic and console files
  - Dumps, Traces, Monitoring, Statistics

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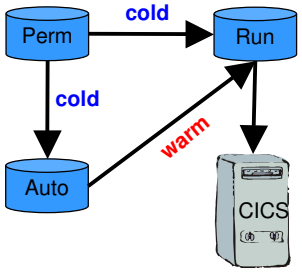
TXSeries Resource Management

- **Command line interface on all platforms**
- **User Interface on AIX and Windows**
  - Windows - TXSeries Administration Tool
  - AIX - System Management Interface Tool (SMIT)
- **RDO is supported, but no CEDA transaction**
- **Resource definition database**
  - Composed of stanza (text) files
  - One stanza per resource type
  - Stanza names are different from CICS TS
- **Three databases**
  - Permanent, Auto and Runtime



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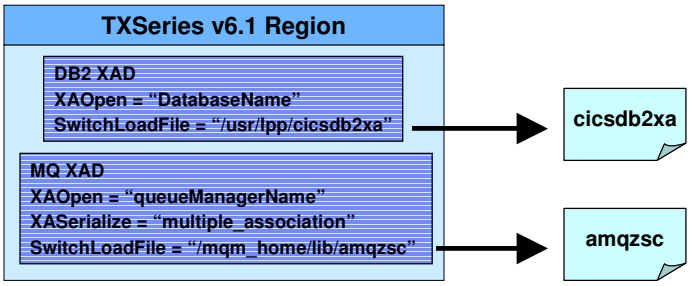
Integration with XA Resource Managers
1. Prepare the CICS Region



1. **Compile the supplied Switch Load File**
   - The library interface between CICS and the resource manager (DB2 or WMQ)
2. **Define the Switch Load File to CICS**
   - Create an XAD Stanza entry

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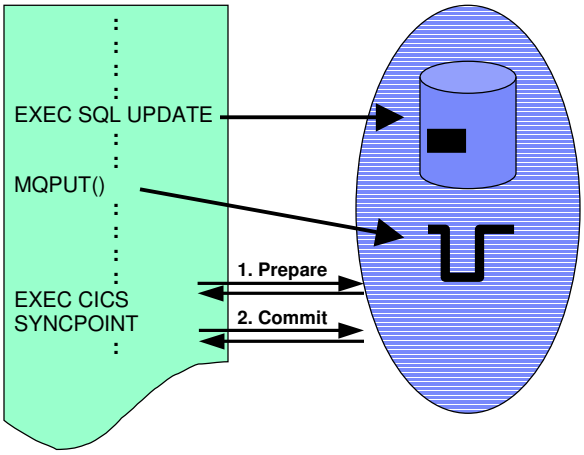
Integration with XA Resource Managers
2. Accessing the Resources



- **Update Resource Managers using native commands**
- **CICS transaction syncpoint will drive 2 Phase Commit processing in all Resource Managers (RM)**
  1. Prepare each RM in turn
  2. Commit each RM in turn