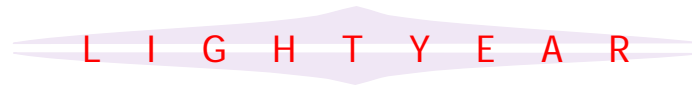


Up and Running with CICS® Transaction Server for z/OS™ V3.1



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April 26th Integrating CICS applications in a Service-Oriented Architecture

This *TechTalk* is intended for *application designers and programmers*. It includes: using the new **Web Services Assistant** to publish existing and new CICS application functions as **Web Services**, and enable CICS applications to issue **SOAP** requests to other Web Service providers; other programming enhancements in areas such as **Web Support** and a new inter-program communication technique that eliminates the 32K COMMAREA size limit.

May 10th Up and Running with CICS Transaction Server

This *TechTalk* is intended for *systems programmers and administrators*. It includes: **migration guidance** for TS Version 3; using the new **CICS Configuration Manager** tool for administration and change control of system definitions; enhancements in the newly available release 4 of **CICS Performance Analyzer**.



- CICS[®] Transaction Server V3
 - Migration options



- CICS[®] Performance Analyzer for z/OS V1.4
- CICS[®] Configuration Manager for z/OS V1.1

End of Support

CICS TS	Version 1	Version 2	Version 3
Release 1	withdrawn	withdrawn	t.b.a.
Release 2	withdrawn	t.b.a.	
Release 3	30 April 2006	t.b.a.	

t.b.a. = to be announced;

(cannot be earlier than September 2006)

IBM software product lifecycle policy:

- » **minimum 3 years support** from date generally available (GA) for purchase
- » announce End of Support (EOS) at least **12 months in advance**
- » withdraw support only in **April or September**

<http://www-306.ibm.com/software/info/supportlifecycle/index.html>

CICS TS 2.3 summary

- Improvements to Java support, at V1.4 level, and to JVM infrastructure
- The CCI Connector for CICS TS
- Extensions to JCICS Web Support
- Enhanced Enterprise JavaBeans support, including performance improvements
- New facilities for interactive debugging of CICS application programs
- New security capabilities for IIOP
- Workload balancing of 3270 Bridge via CICSplex SM
- Improvements to the CICSplex SM Web User Interface
- The ability to cancel suspended or looping tasks

<http://www-306.ibm.com/software/htp/cics/tserver/v23/>

CICS Transaction Server V3 themes

CICS Integration

Enable the re-use of CICS applications within a flexible On Demand operating environment via standard APIs and communication protocols.

Application Transformation

Enable the enhancement of existing applications, and construction of new applications, using contemporary programming languages, constructs and tools

Enterprise Management

Enable the effective management of large runtime configurations via modern user interfaces

- **CICS Integration**
 - *Web services and the CICS Web services assistant*
 - *HTTP/1.1 including outbound API and URIMAPs*
 - *Transport Layer Security, 256-bit encryption, and improved SSL V3*
- **Application Transformation**
 - *Containers and channels*
 - *Codepage conversion enhancements*
 - *Architectural patterns*
 - *Information Center*
- **Enterprise Management**
 - *Open Transaction Environment for all thread safe applications*
 - *Thread safe WEB commands*
 - *XPLink for C & C++ programs*
 - *CPSM Web User Interface including user favourites, group profiles, & 2 column views*
 - *Batchrep enhancements*

OTE delivering improved performance for core business logic applications

- **OPENAPI program support**
 - For COBOL, PL/I, Assembler, C, and C++ programs not compiled with XPLink
 - Programs must be thread safe
 - Programs will run on new L8 and L9 TCBs
- **C and C++ programs can be compiled with XPLINK option**
 - Higher performance subroutine linkage and guard pages for stack extension
 - Programs must be thread safe to use XPLink
 - XPLink programs will start and run on new X8 and X9 TCBs
- **OTE exploitation by CICS SSL connection management**
 - New SP mode TCB
 - Reduces system storage requirements
 - Existing S8 TCBs
 - Now only allocated for the duration of the SSL requests
 - Provides for increased number of simultaneous SSL sessions
- **EXEC CICS WEB commands are now thread safe**

CICS 'Threadsafe' **redbook**: <http://www.redbooks.ibm.com/redbooks/pdfs/sq246351.pdf>

CPSM Web User Interface is easier to use and feature rich

- Improved screens
 - Less white space
 - Multi-column details
 - Collapsible filters
- User favourites + Group profiles
- Result set warning count
- Filter confirmation
- Dynamic selection lists
- Improved BAS admin views
- Full support for new CICS resource types
- Batchrep access enhancements

Collapsible Filters

Ability to add a view to favourites

Reduction in white space

Improved visual presentation

Favourite views

User Profiles

Selection lists

Record name	CICS system name	Task ID	Transaction ID	Dispatch status	User ID	Principal facility	VTAM LU name	Task priority	Transaction class	Time task has been suspended
<input type="checkbox"/>	IYCQSQ22	0000024	CONL	RUNNING	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQSQ22	0000026	COIO	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQSQ22	0000027	COIE	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:13
<input type="checkbox"/>	IYCQSQ22	0000032	CKAM	SUSPENDED	CTSQ01R			255	DFHTCL00	4:08:02
<input type="checkbox"/>	IYCQSQ22	0000033	CKTI	SUSPENDED	CTSQ01R			1	DFHTCL00	4:08:02
<input type="checkbox"/>	IYCQSQ23	0000032	CKAM	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQSQ23	0000033	CKTI	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQSQ25	0000022	CONL	RUNNING	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQST07	0000025	COIE	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQST07	0032860	COIO	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQST17	0000025	CONL	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQST17	0000028	COIE	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQST17	0000096	COIO	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQSWW1	0000022	CONL	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:00
<input type="checkbox"/>	IYCQSWW1	0000030	COVG	SUSPENDED	CTSQ01R			255	DFHTCL00	0:00:06

Select	Resource name	Resource description
<input type="radio"/>	ADCALL	'All Andy Clifton"s CICSes'
<input type="radio"/>	ADCAOR	'Andy Clifton"s AORs'
<input type="radio"/>	ADCTOR	'Andy Clifton"s TORs'
<input type="radio"/>	BATCHBAK	Back level Batchrep tests IPN

Key software prerequisites

- *z/OS Version 1 Release 4 (5694-A01), or later*
- *IBM SDK for z/OS Java 2 Technology Edition, V1.4.2*
 - *For Java, Enterprise JavaBeans applications and the CICS Web services Assistant*

- **COBOL**
 - IBM COBOL for OS/390 and VM V2 (5648-A25) with PTF PQ45462
 - IBM Enterprise COBOL for z/OS and OS/390 V3 (5655-G53)
- **PL/I**
 - IBM Enterprise PL/I for z/OS and OS/390 V3 (5655-H31)
- **C and C++**
 - OS/390 C/C++ (5647-A01)
 - z/OS C/C++ (5694-A01)
- **Pre-LE compiled modules**
 - Native run-time support withdrawn
 - Will need run-time libraries distributed with LE to execute current load modules
 - Remove all compiler run-time libraries from CICS startup JCL
 - xxx.COB2CICS, xxx.COB2LIB, xxx.PLILINK, xxx.SEDCLINK

- CICS TS V3.1 is applicable to all CICS customers
 - CICS TS V1.3 service will be discontinued in April 2006
- SOAP for CICS Feature supported for migration purposes
 - To allow for phased migration from the V2 Feature to the improved support for Web Services included in CICS TS V3.1
- Statement of direction to remove the following
 - CICSplex SM TSO End User Interface in the next release
 - In a future release
 - ONC RPC feature
 - CICS Web Interface COMMAREA interfaces
 - CICS Web Server plug-in

Discontinued functions removed from CICS TS V3.1

- **OS/VS COBOL**
 - Programs using this level of COBOL will abend APCE
 - Language Environment within CICS TS : Questions and Answers
<http://www-306.ibm.com/software/htp/cics/library/indexes/whitepapers.html>
- **1 byte console ids**
- **High Performance Java (HPJ)**
- **ECI base classes (ECIREQUEST)**
 - Recommended replacement is the CCI Connector for CICS TS
- **Common Connector Framework (CCF)**
 - Recommended replacement is the CCI Connector for CICS TS
- **TCAM TOR**
 - Network support
- **CPSM remote MAS agent for Windows**
- **Detector and reporter components of the CICS Transaction Affinities utility removed from CICS TS; added to CICS Interdependency Analyzer for z/OS V1.3**

CICS TS V3.1 packaging

- **CICS TS V3.1 product elements**
 - CICS Transaction Server
 - CICSplex System Manager
 - Information Center
 - REXX Development and runtime for CICS
 - CICS Application Migration Aid
- **WebSphere Studio Enterprise Developer V5.1 (WSED) promotion**
 - **Integrated development environment for CICS and WebSphere**
 - COBOL, PL/I, Java and J2EE development
 - z/OS file system integration
 - **One unrestricted license. No service entitlement**



WebSphere Studio Enterprise Developer (WSED)

Brings the power of modern application architectures and rapid application development and robust team support, to diverse enterprise IT organizations

- Intuitive, visual construction based on open standards (JSF and Struts)
- Broad SOA support through Web services and JCA linking visual environments and user sessions to CICS QOS
- Easy to learn, COBOL like language for rapid UI and Business dev.
- Facilities to develop, debug and deploy Java, COBOL, & PL/I applications and services



Statement of Direction - What's Coming

CICS V3 exploitation - Subsystem support latest - CICS, WAS, DB2

- Connectivity enhancements
 - WSDL automation from existing processing
 - Support for new CICS WS run timemarshallers
 - XML based COBOL adapter enhancements
 - JCA connectors supporting latest CTG
- Modern Architectural enhancements
 - Service Flow Modeler support (Preview)
 - Leverages support for channels
- Traditional support for:
 - EGL support for VG based Web Transactions
 - BMS Editor
- Integration with other IBM application lifecycle products
- Eclipse V3 exploitation

WSED Benefits

Single tool for all application transformation

- Increase developer productivity
- Leverage existing processing by enabling legacy assets to be used in SOA's
- Integrate with lifecycle
- Extend skill sets across the organization
- Enterprise Generation Language limits need for Java or traditional expertise



- **Installation**
 - **Similar to previous releases**
 - Standard installation procedure or DFHISTAR
 - **Additional Unix System Services and HFS components**

- **Migration**
 - **Application Programmers**
 - OS/VS COBOL considerations
 - C/C++ Threadsafe considerations for XPLINK usage
 - Threadsafe considerations for OPENAPI usage
 - **Systems Programmers**
 - Function Removal
 - Review ALL GLUEs, TRUEs and URMs
 - Threadsafe considerations

Comprehensive set of CICS focused tools and connectors

- Application Transformation

- CICS Business Event Publisher for MQ V1.2
- CICS Interdependency Analyzer V1.3
- CICS VSAM Transparency V1.1



- Subsystem Management

- CICS Batch Application Control V1.1
- **CICS Configuration Manager 1.1**
- CICS Online Transmission Time Optimizer V1.1
- **CICS Performance Analyzer V1.4**
- CICS Performance Monitor V1.2
- CICS VSAM Recovery V3.3
- CICS VSAM Copy V1.1
- IBM Session Manager for z/OS V1.2
- Tivoli OMEGAMON XE for CICS V1.0

- CICS Connectors

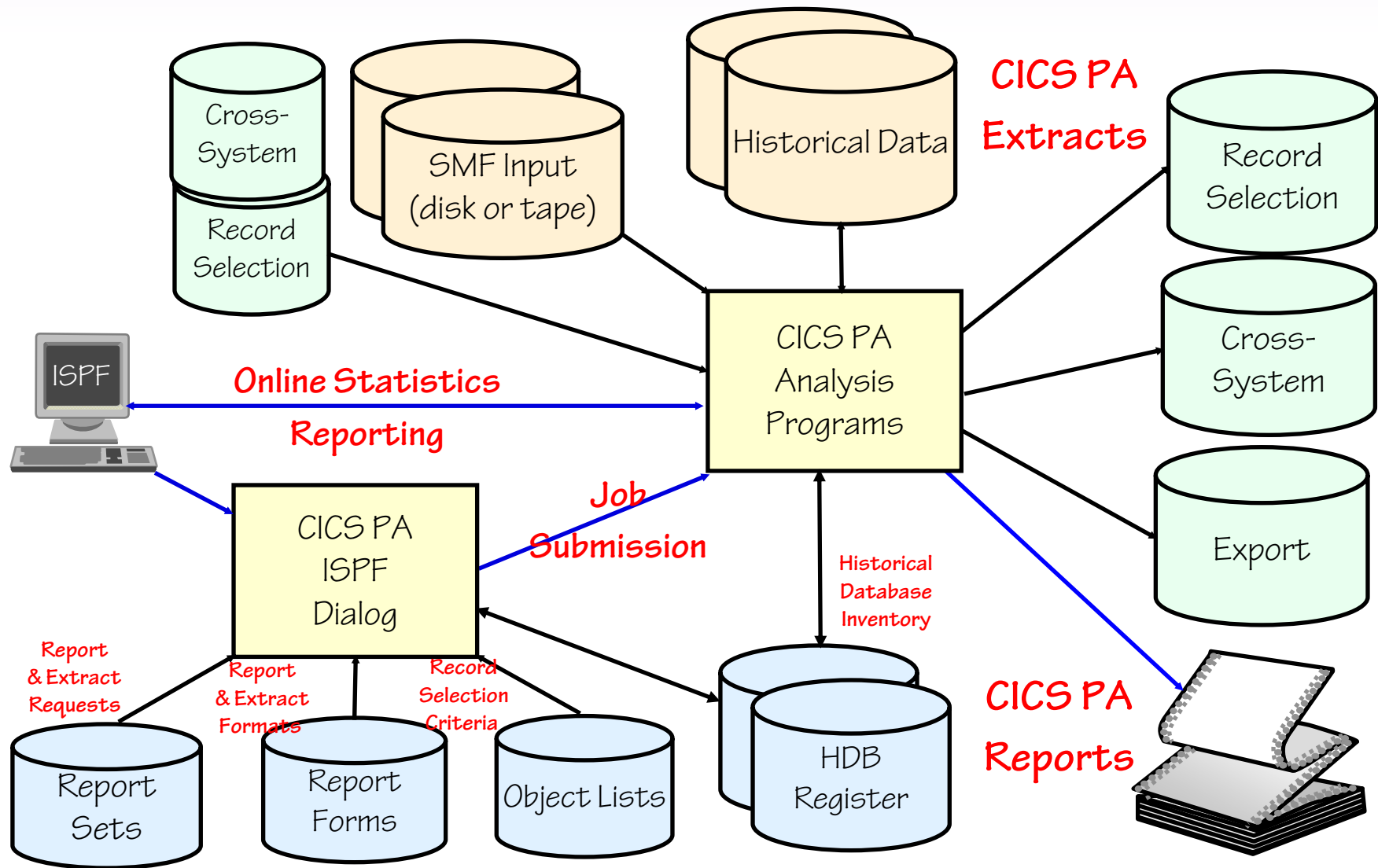
- CICS Transaction Gateway V6.0
- CICS Universal Client V6.0
- MQ Integrator Agent for CICS V1.1

- Application Development tools

- IBM Application Monitor for z/OS V2
- IBM Debug Tool for z/OS V5.1
- IBM Fault Analyzer for z/OS V5.1
- IBM WebSphere Studio Enterprise Developer V5.1.2

- **Support for CICS TS Version 3.1 includes:**
 - All new CMF Performance Class data fields ...
 - Performance List, ListX, and Summary Reports and Extracts
 - Performance Record Selection Criteria
 - New and updated Statistics records
 - Revised Performance Totals Report
 - Revised Performance Wait Analysis Report
 - Additional Summary Report and Extract By keywords
 - Additional Performance ListX Report By and Limit keywords
 - Revised Cross-System Work Extract default record format
 - Revised Performance Data Extract default record format
 - Additional Sample Report Forms
- **Available: March 2005**

CICS PA Overview



CICS Transaction Server for z/OS Version 3.1 Support

- **Custom reports are provided that enable extensive performance analysis of the many new functions introduced in CICS Transaction Server V3.1**
 - Including CICS Integration and Application Transformation
- **Detailed and summary reports provided include ...**
 - Transaction CPU Analysis – including CICS TCB usage for ...
 - OPENAPI Applications, XPLink, ...
 - Web services applications
 - CICS Web support and Secure Sockets Layer (SSL) enhancements
 - Application Transformation - inter-program data transfer ...
 - Channel Container usage, Program request channel activity, ...
- **Online Statistics Reporting is available for all CICS statistics data ...**
 - Including the new statistics data on the CICS resources for Web services ...
 - PIPELINE, URIMAP, and WEBSERVICE
 - And the CICS Web support enhancements to TCP/IP Services

CICS PA Historical Database – Export and Extract

- **Export to DB2**

- **A facility to load history data into DB2 for further analysis and reporting**
 - Creates the DDL to define the DB2 Table
 - Generates the JCL to load an HDB into a DB2 Table
- **Access to DB2 Tools, such as ...**
 - DB2 Query Management Facility (QMF)
 - Query and Reporting tool

- **Extract to CSV data set**

- **A facility to extract history data into a CSV format data set**
 - Can then be imported by database or PC spreadsheet tools for further processing and analysis.

CICS PA 1.4 vs OMEGAMON XE for CICS Performance Reporting Capabilities

Function	CICS PA 1.4	OMEGAMON for CICS Historical Reporter
ISPF Dialog Interface	Yes. Batch JCL Command Language also supported.	No. Batch JCL Command Language only.
IBM record types	Standard SMF record types ... <ul style="list-style-type: none"> •CICS SMF 110 CMF data (All 3 classes of data) •CICS SMF 110 Statistics and Server Statistics data •DB2 SMF 101, MQ SMF 116, System Logger SMF 88 	CICS SMF 110 CMF record types in a proprietary format. <ul style="list-style-type: none"> •CICS CMF Performance class data only! •No. •No
OMEGAMON SMF 110 record extensions	No, but alternatives are available for most of the data.	Partial.
OMEGAMON SMF 255 records	Partial. Some similar reports available from other data sources. <ul style="list-style-type: none"> •Alternative (and more comprehensive) support for File (and TSQueue) by task records. IMS (DBCTL) data available in the CICS SMF 110 records. •MQ data available from other SMF data sources. •No support for OEM Database and System Records. 	Partial. <ul style="list-style-type: none"> •File by task support only. •OEM Database and System Records
Sample reports and customization	Comprehensive set of sample reports (130+) <ul style="list-style-type: none"> •Enables powerful, in-depth performance reporting and analysis, including wait analysis, cross-system reporting by unit of work ID, MVS Workload Manager. •Comprehensive customization capabilities. 	Very limited set of predefined reports. <ul style="list-style-type: none"> •Limited customization capabilities.

CICS PA 1.4 vs OMEGAMON XE for CICS Performance Reporting Capabilities

Function	CICS PA 1.4	OMEGAMON for CICS Historical Reporter
Alternative Reporting	Yes. Either via Export to DB2 or to CSV files giving data access to reporting tools such as QMF or to commonly used PC based tools such as Excel, Access, etc.	Partial. Very limited set of SAS reports provided. SAS is a prerequisite for using these reports.
Historical Database (HDB)	Yes. CICS Performance and CICS Statistics SMF data. Sample reports for reporting and data analysis are also provided.	No.
Accounting and Chargeback	Yes. Using CICS PA's HDB support acting as an alternative data feed to the Tivoli Decision Support Accounting Workstation for z/OS product.	No.
Set-up and reporting on SMF data collected in the past	No set-up and tuning required. Can report on any supported SMF data.	Data collection needs to be set up and turned on. Can only report on the additional data from the date of installation.
Overhead	Only SMF data collection.	For customers already collecting SMF data, additional overhead for proprietary data recording.
IBM strategy	Strategic product.	No enhancements planned.

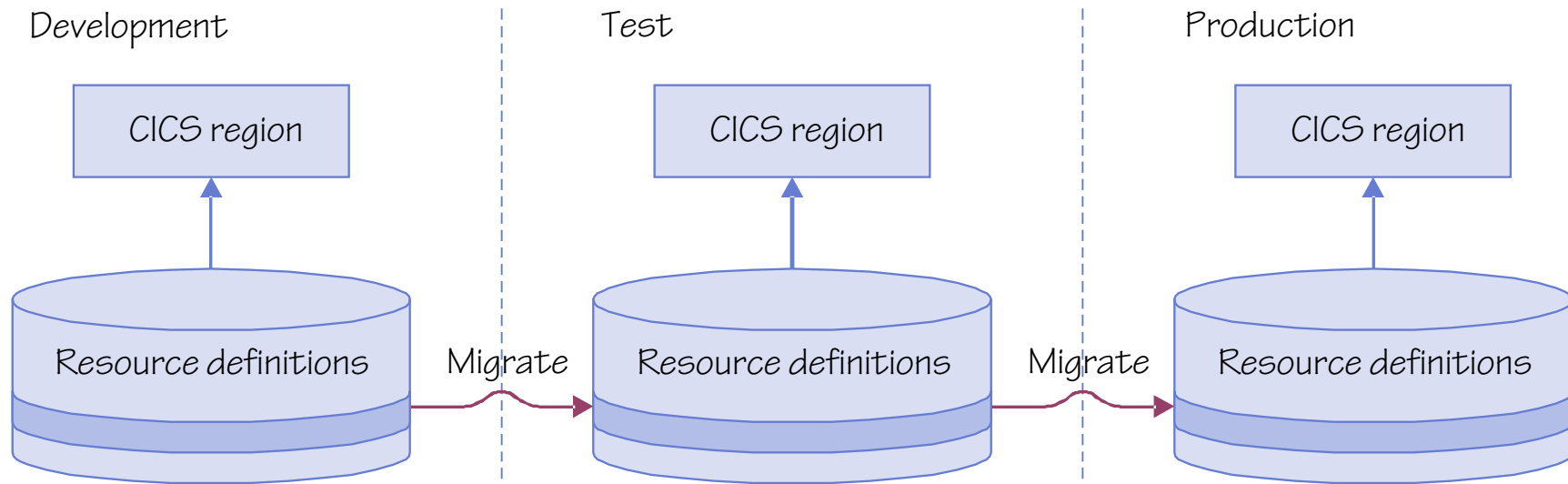
- **CICS Performance Analyzer for z/OS**
 - Comprehensive Performance Reporting for CICS
 - Including **DB2**, **WebSphere MQ**, and MVS **System Logger**
 - CICS Monitoring Facility (CMF) and CICS Statistics SMF 110 data
 - Extensive Tabular Reports and Extract Data Sets
 - Historical Database
 - Trending and Capacity Planning
 - ISPF Dialog to build, maintain, and submit reports and extracts
- **CICS PA Version 1.4 - Product information ...**
 - Program Product - 5655-F38
 - Releases Supported ...
 - CICS Transaction Server for z/OS, Version 3 and Version 2
 - CICS Transaction Server for OS/390, Version 1
 - More Information
 - <http://www-306.ibm.com/software/http/cics/panaly/>



- **IBM CICS Configuration Manager for z/OS Version 1 Release 1**
- **Product number 5697-178**
- **Pre Requs:**
 - *z/OS Version 1 Release 2, or later*
 - *CICS Transaction Server for OS/390 Version 1 Release 3, or later*

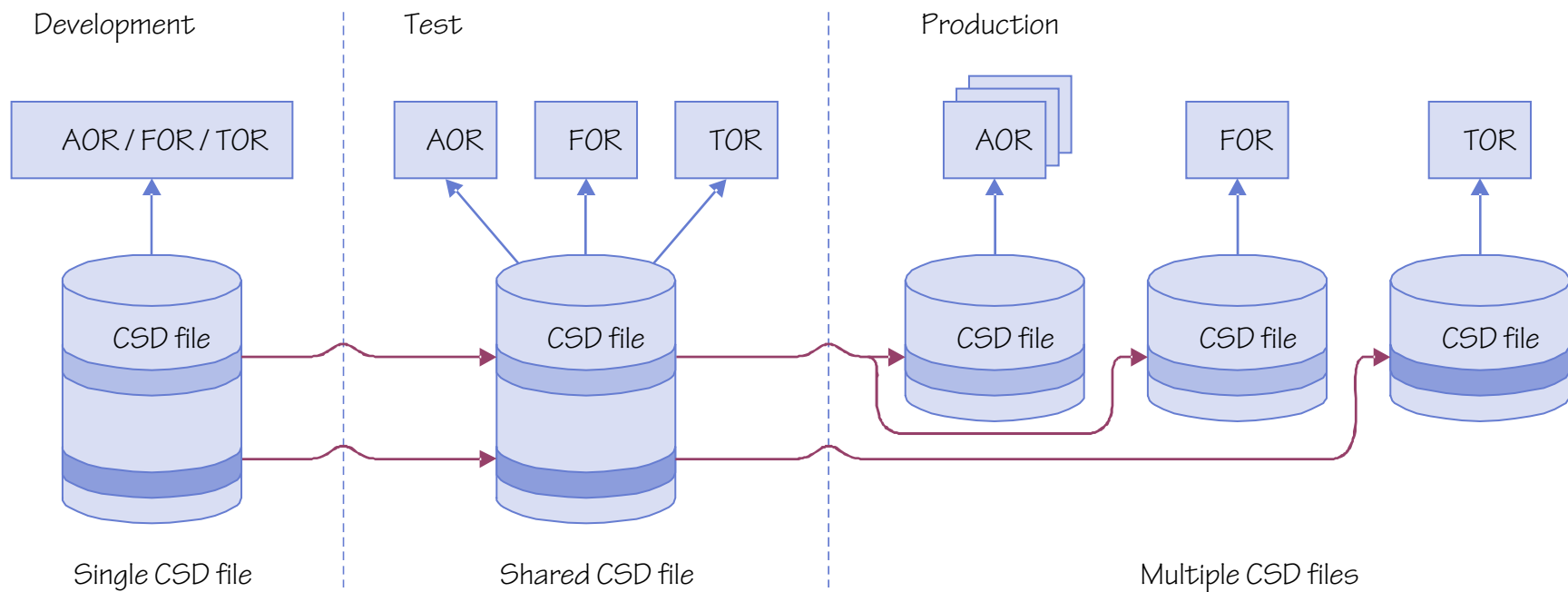
- **Generally available 29 April 2005**

Simple example: 3 CICS regions



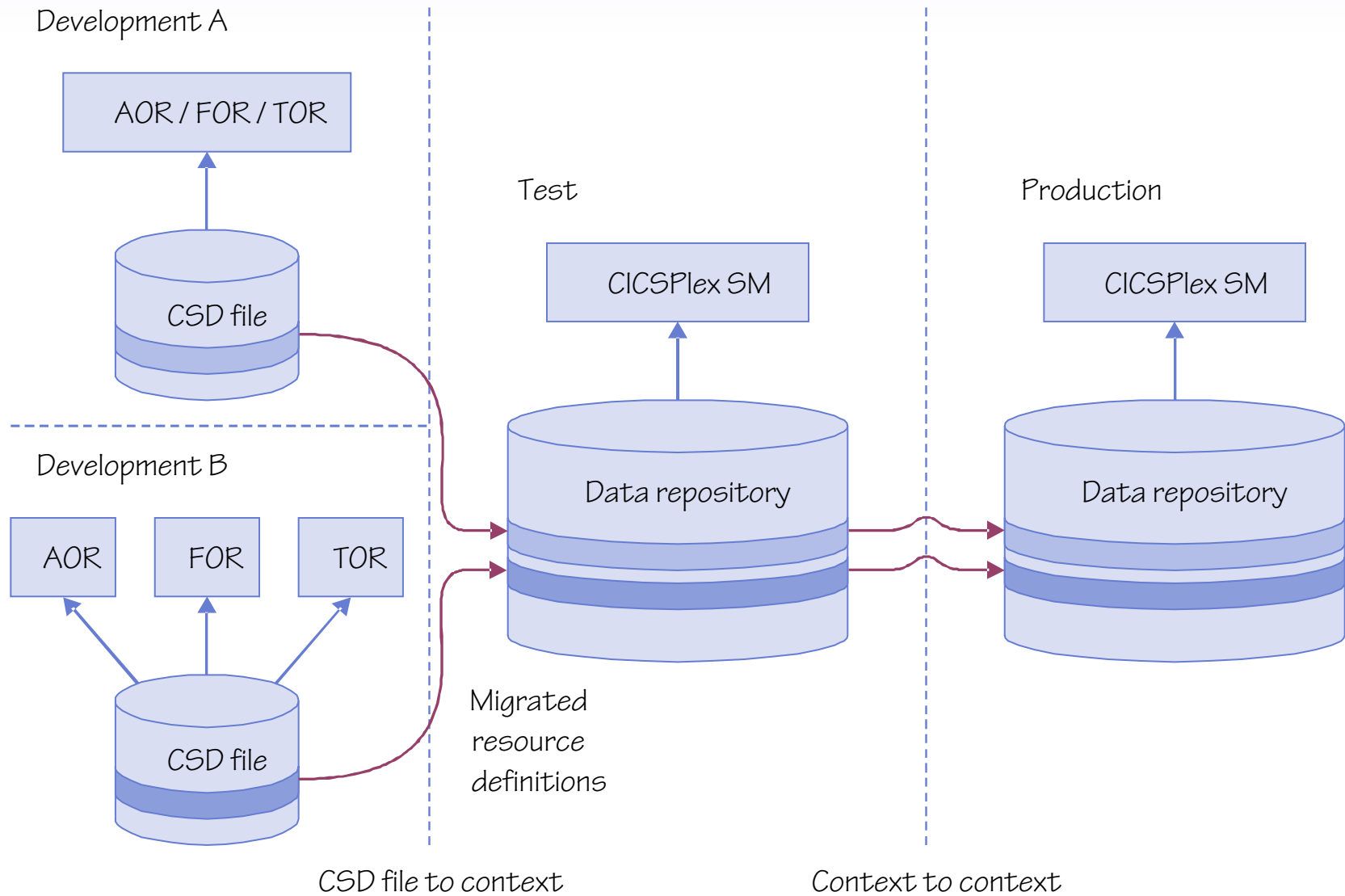
- Three sets of definitions to manage
- Two migrations per change:
Development → Test, then Test → Production
- Real-life environments are much more complex...

Migrating between shared and unshared CSD files

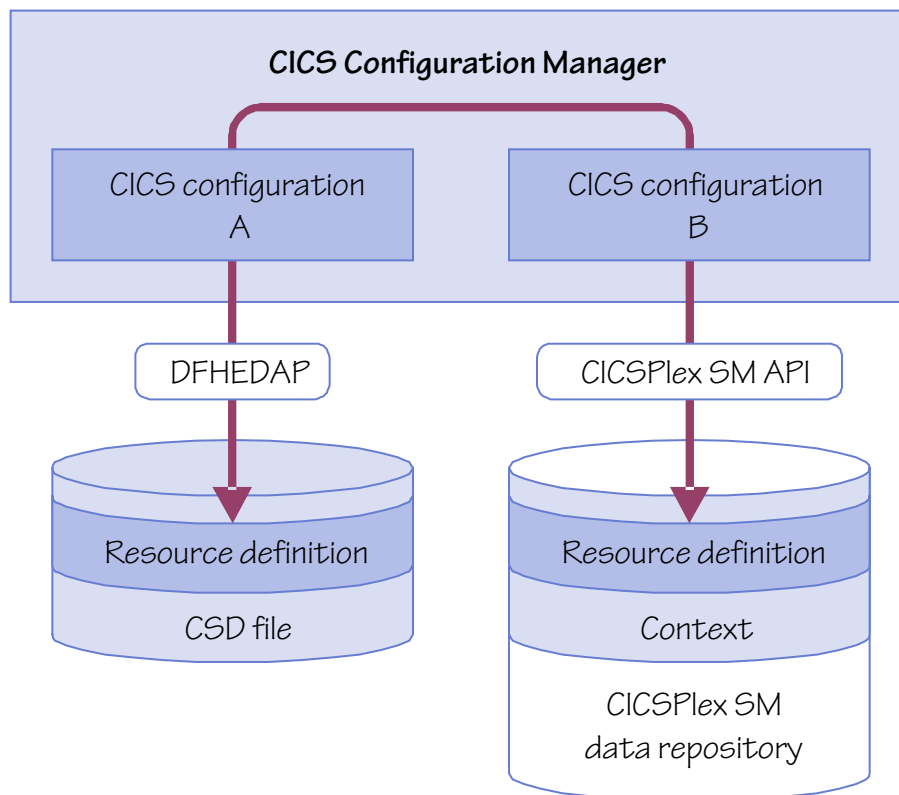


- How do you systematically manage this migration?
- If you also use CICSplex SM for some environments, it gets more complex...

Migrating between CSD and context



Abstracting the backend database

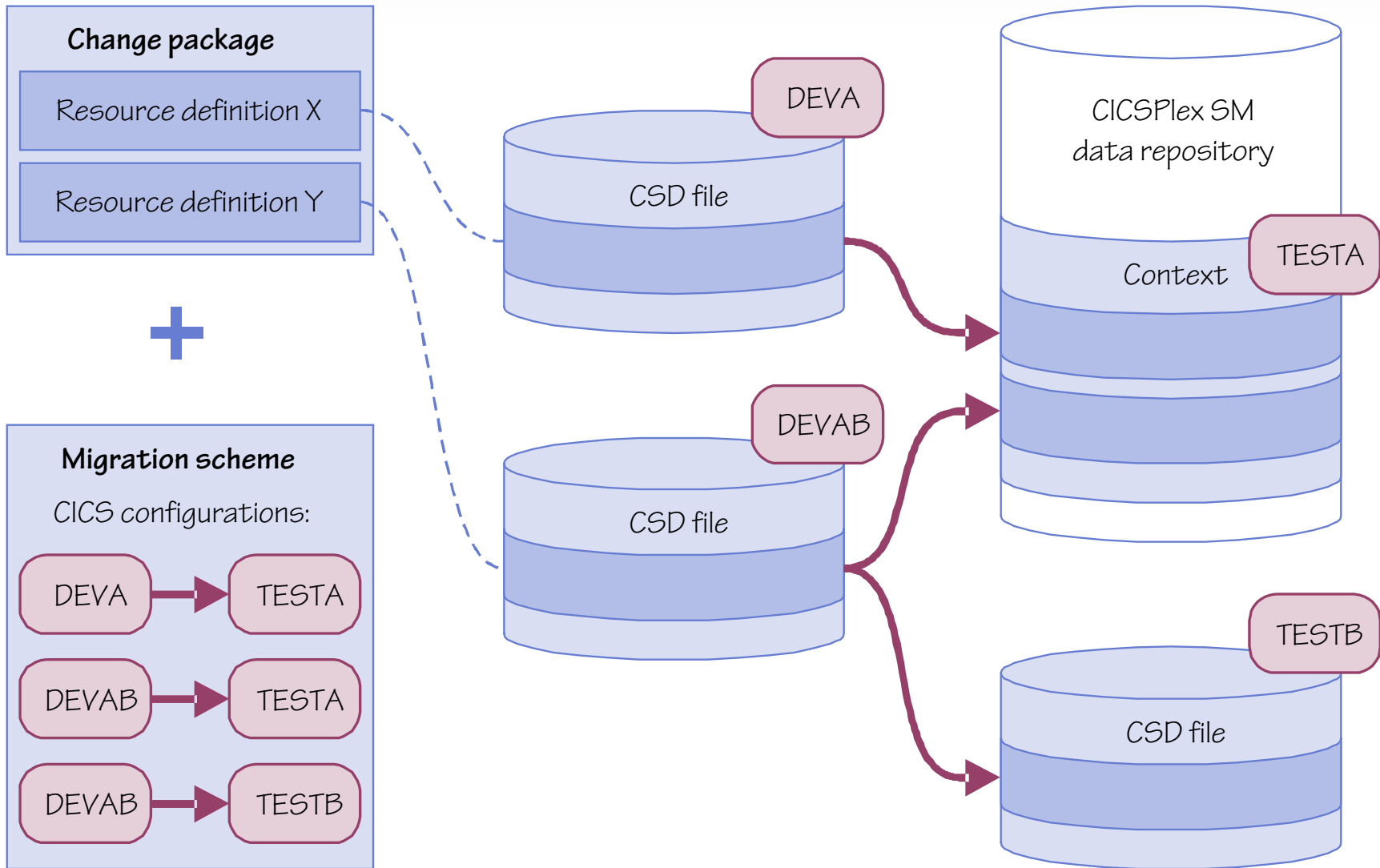


- CICS RDO uses CSDs
- CICSplex SM uses DREPs and Contexts
- CICS CM uses *Configurations*
- For each CSD file or CICSplex SM context, you define a *Configuration*
- Thereafter, you refer only to the *Configuration*;
 - CICS Configuration Manager handles the differences **transparently**

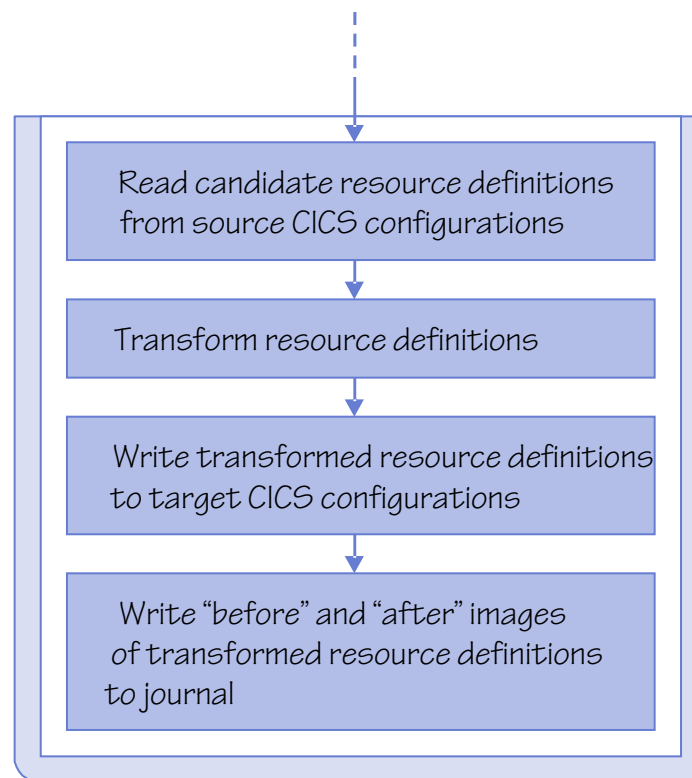
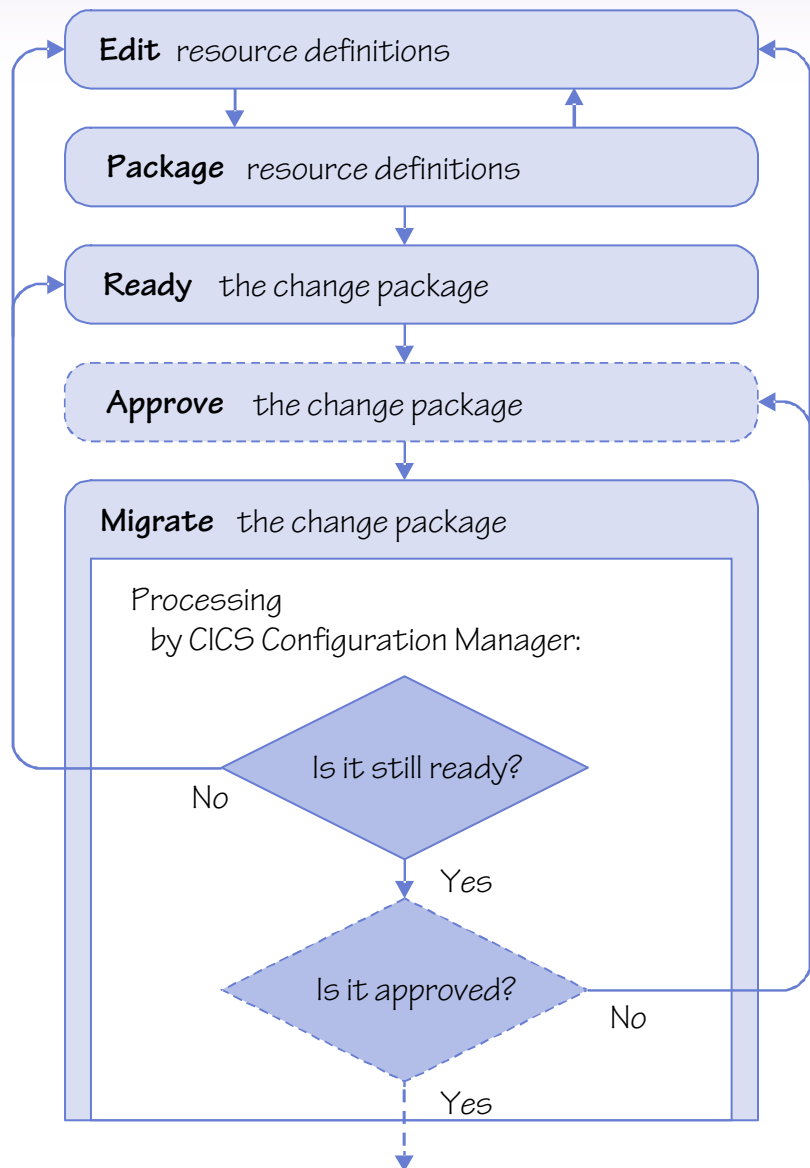
- These define the source and targets for the move
- They can also identify transformation rules

Migration scheme: TEST		
CICS configurations		Transformation rule set
From	To	
CICSDAOR	CICSTTOR	DEVTTEST
CICSDFOR	CICSTFOR	DEVTTEST

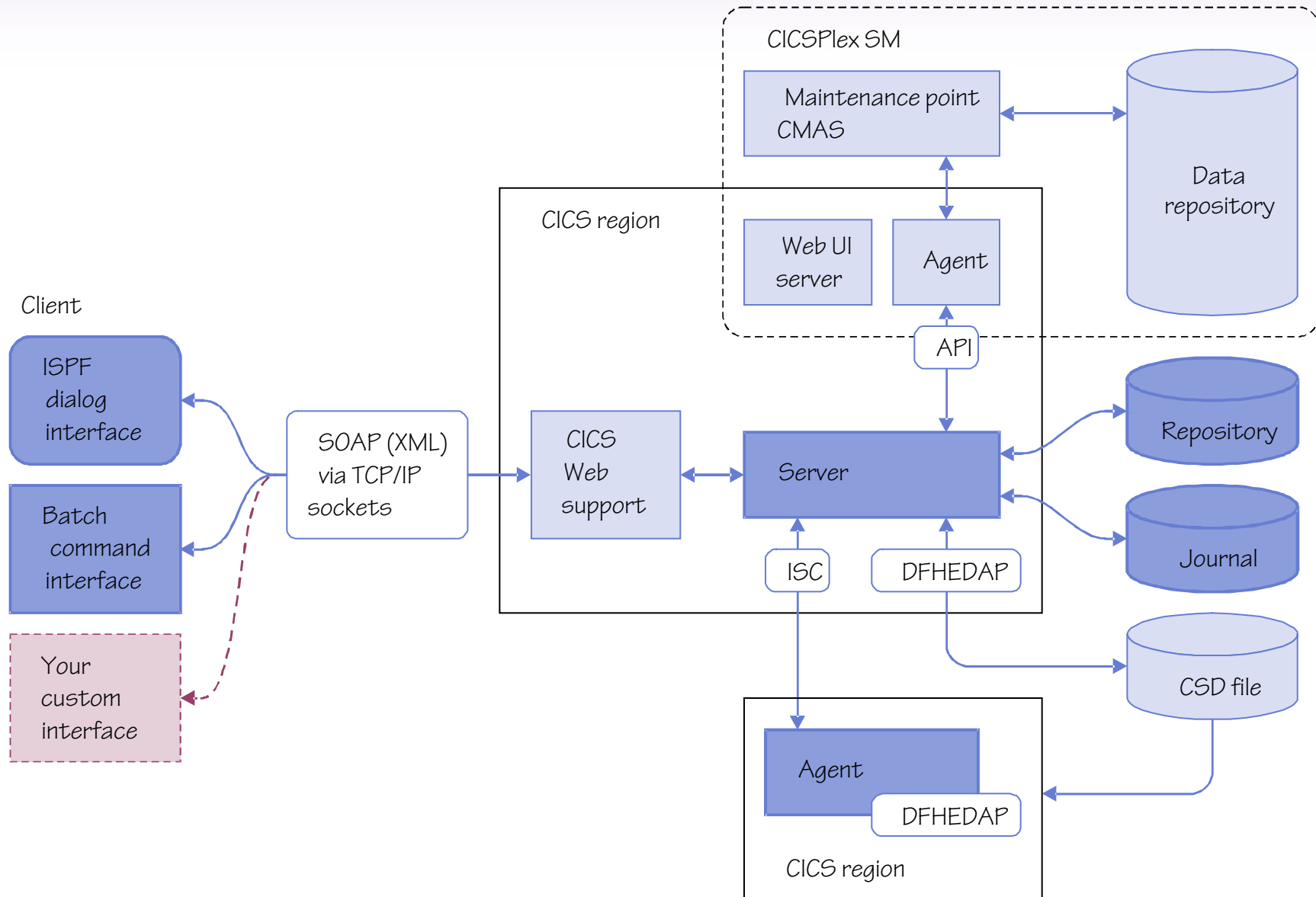
MIGRATE PACKAGE=555 SCHEME=TEST



Processing



Architecture



1. **Define CICS configurations (pointing to CSD files or CICSplex SM contexts)**
 - CICS Configuration Manager server must be able to access CSD files
 - Largest configuration with CSDs is therefore sysplex wide
 - CICSplex SM: CICS Configuration Manager server must run in a local MAS whose CMAS understands the contexts you wish to manage
 - This is the same prereq as for the WUI server
2. *Optional: Define approval profiles*
3. *Optional: Define transformation rules*
4. **Define migration schemes:**
 - Source and target CICS configuration pairs
 - Which set of transformation rules to use

- **For system programmers & administrators**
 - Work with definitions in CSD files or CICSplex SM contexts transparently
 - Compare configurations and versions of definitions
 - Ready processing: detect unexpected changes in definitions prior to migration
 - Migrate (and back-out) definitions with a single command
 - Transform definitions during migration
 - Online reports
 - Batch command interface
 - New client interfaces (in addition to the ISPF and batch interfaces) can be added using the CICS Configuration Manager XML SOAP interface

- **For managers**
 - Packages group related sets of resource definition changes
 - Migration Schemes control which CICS regions are affected by changes
 - Approval Profiles ensure changes are properly authorized
 - Detailed audit logs

<http://www-306.ibm.com/software/htp/cics/cm/>



CICS Transaction Server V3.1 - Summary

- CICS TS and WebSphere Application Server are IBM's strategic middleware products that together support practically any mission critical solution
 - Interoperate well using Web services and connectors to support end-to-end on demand systems
 - Complement z/OS qualities of service such as high availability, scalability, low cost per transaction, and excellent security
- CICS TS provides the base for the majority of mainframe applications today
 - An efficient and optimized runtime for the reuse and transformation of existing CICS applications
 - Provides easy to use services that exploit new technologies by building on CICS skills
 - First class management and support of mixed application types and workloads
- CICS TS V3.1 is now generally available (25 March 2005) <http://www-306.ibm.com/software/htp/cics/tserver/v31/>

Increased ease of Integration

- Web services capabilities to extend CICS applications to a Services Oriented Architecture
- Support for industry-leading SSL and TLS protocols

Enhanced CICS Application Transformation

- Ability to leverage single development tool for application transformation and integration
- Optimized CICS data exchange capabilities

Improved performance & Enterprise Management

- Improved workload throughput
- Enhanced C and C++ programs performance
- Extension of CICSplex SM Web User Interface

Browse the CICS TS 3.1 Information Center online @:

publib.boulder.ibm.com/infocenter/cicsts31/index.jsp

Or install your own personal copy:

1. If you don't already have Eclipse, download the SDK from:

www.eclipse.org/downloads/index.php

2. Go to IBM Publications...

www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi

...find SK3T-6965, and download it...

3. Add the CICS Info Center (SK3T-6965) to your Eclipse workbench

To request a free 'One-on-One' seminar:

- e-mail to Carole (crice@lightyr.com), copy to me (tonysk@lightyr.com), specify which CICS 3.1 topic(s) would be of interest to you, include your 'phone #
- We will call you back to discuss:
 - Objectives
 - Content
 - Audience
 - Schedule