

CICS V5.1 Applications agility

Speaker Name and Title



Session Agenda

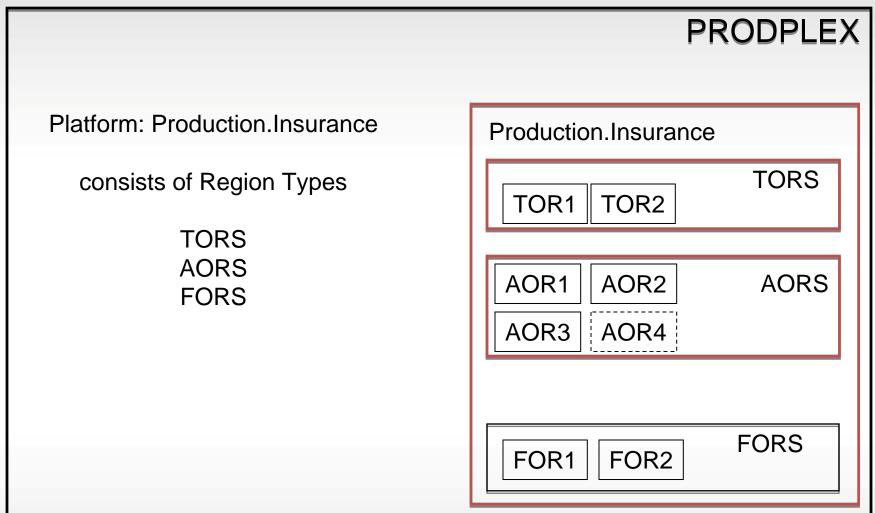
- What is an Application?
- Application Packaging
 - Bundles
 - Application Projects
- Application Deployment
 - Bindings
 - Appdef

Modernization and the Liberty web container





CICS Platform as a Service Review • A review of a CICSPlex and a Platform







What is a CICS application?

 a collection of related programs and other resources that together perform a business operation

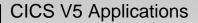
How is a CICS application invoked?

- Transaction ID for 3270
- EXEC CICS START
- URIMAP for a web request

- ...

What resource (dependencies) does a CICS application need?

- VSAM files or DB2 tables
- Temporary Storage, Transient Data or MQ queues
- Programs
- JVM





CICS BUNDLE Resource

Collection of CICS resources

- Managed as a logical unit
 - All bundle parts are managed together
 - If any part is disabled, the whole bundle is disabled
 - Bundle artifact is migrated from test to production
 - Similar to a load module
- Resource dependencies can be specified
 - e.g. FILE(ABC) must be present for the bundle to install





Support for application packaging

- Use the CICS Explorer to define the resources, dependencies and application code for a CICS application
 - Create a Bundle Project(s)
 - Specify resources to define
 - Specify resource dependencies
- Create an Application Project that describes the application
 - Application name, description and version
 - References to CICS bundles
- Allows you to manage the application as a single entity





Application Deployment...

Creating the Bundle Project

😣 🗊 New Project	😣 🗊 Bundle Project
Select a wizard Create a Project to contain the files to be referenced by a CICS Bundle Definition	CICS Bundle Project Create a new project containing the files for deployment in a CICS Bundle
Wizards: type filter text Android	Project name: Car_Insurance_Quote_Bundle ✓ Use default location Location: /home/indi/explorerworkspace/Car_Insurance_Quote_Bun Bundle properties ID: ID: Car_Insurance_Quote_Bundle Version: 1.0.0
Cancel Finish	Cancel Finish





Add entries to the bundle project

Project Explorer	▣ 🔄 ▼ 🗖 🗖	
Car_Insurance_Quote_Bundle		
Production.Insurance	3 <u>N</u> ew	×
	Go Into	li
	Сору	Ctrl+C
	Paste	Ctrl+V
	Delete	Delete
	Move	
	Rena <u>m</u> e	F2 ::
	Import	11
	Export	
	Export Bundle Project to z/OS UNIX File Syste	• m
	Re <u>f</u> resh	F5 🕹
	Clo <u>s</u> e Project	3
	Close <u>Unrelated</u> Projects	2
	Validate	2
	 Debug As	* 3
	Run As	
	Team	Þ
	Comp <u>a</u> re With	F





Create the resource definitions

😣 💿 New Program Definition	😣 🗈 New Transaction Definition
Create Program Definition Create a program definition in a CICS bundle.	Create Transaction Definition Create a transaction definition in a CICS bundle.
Bundle: Car_Insurance_Quote_Bundle Name: ICRATE Description: Car Insurance Rating Program Type Assembler, C/C++, COBOL, or PL/I Java Service Name: JVM Server: Create an Application entry point Operation name:	Bundle:Image: Car_Insurance_Quote_BundleName:Image: Image: Ima
© Cancel Finish	Cancel Finish





Specify the resource dependencies for this bundle

⊕ Car_Insurance_Quote_Bundle ⊠			
Bundle Overview			. 1
General Information This section decribes general information about this bundle. ID: Car_Insurance_Quote_Bundle Version: 1.0.0		Actions You can perform the following actions on this bundle: 1. ♣ Add or remove CICS resource definitions using this editor 2. @ Create an entry point to define an application operation 3. ? Apply a policy to an application operation 4 Export the bundle to a platform or specific location in zFS	
Defined Resources Specify the CICS resources that are installed and managed by this bundle.	New Remove	Imported Resources Specify CICS resources on which this bundle depends. The bundle will only when all required dependencies are met.	J ^a z ▼ ly become ENABLED Add
	Move Up Move Down		Remove Properties
Overview Entry Points Policy Scopes			





Application Deployment...

Specify the resource dependencies for this bundle

😣 Create Bun	dle Import	
Create Bundle	Import	_+
Choose the prop	perties of the imported resource.	
Resource Type:		
Name:	👺 Event Processing Adapter Set	
	Extrapartition TDQueue	
Resource Enabl	🛍 File	
Required	Journal Model	
 Optional 	JVM Server	
🐼 Issue		
	🖻 Map Set	
	1 Partition Set	
?	🕮 Pipeline	
-	🕮 Process Type	





Application Deployment...

Application Entry Points

- Associate CICS tasks with an application
 - Define application entry point on a BUNDLE program definition
 - Define application entry point with SET PROGRAM OPERATION
 - Only sets the OPERATION attribute
- Application can comprise one or more tasks in different regions
 - Application context will flow between regions
 - MRO and IPIC connected regions
- Application context data will be included in monitoring data
 - Application name, Platform, Version, Operation





View or add and application entry points

rance_Quote_Bundle 🛛			-
cation Entry Points			.0
ints			
ICS resources to declare as an entry point.			
ion	Resource Name	Resource Type	Add
			Remove
			Properties
Entry Points Policy Scopes			





Creating the Application Project

elect a wizard Create a Project	for a CICS Application	
Vizards:		
type filter text		X
😽 WebSpher	e MQ Connection Definition	
🔁 CICS Resour	ces	
🖾 CICS Appli	cation Binding Project	
🗟 CICS Appli	cation Project	
👫 CICS Atom	Configuration file	
🗳 CICS Bund	e Project	
CICS Event	Binding	11
🖺 CICS Event	Processing Adapter	
😤 CICS Event	Processing Adapter Set	

😣 🗊 New A	pplication Project	
CICS Applica	tion Project	
Create a new	CICS Application project	
Project name	: Insurance_Application	
Trojecendine		
🗹 Use defau	ult location	
Location: /h	ome/indi/explorerworkspace/Insurance_Application	Browse
Application p]
Name:	Insurance_Application	
Description:	Insurance Application for Car, Life and Health	
Version:	1.0.0	
?	< Back Next > Cancel	Finish





Select the bundles which comprise this application

😣 🗈 New Application Project	
CICS Application Project Specify the CICS Bundles that will be installed as part of this Application.	Ø
Car_Insurance_Quote_Bundle (1.0.0)	Select All Deselect All
? < Back Next > Cancel	Finish





Application Deployment...

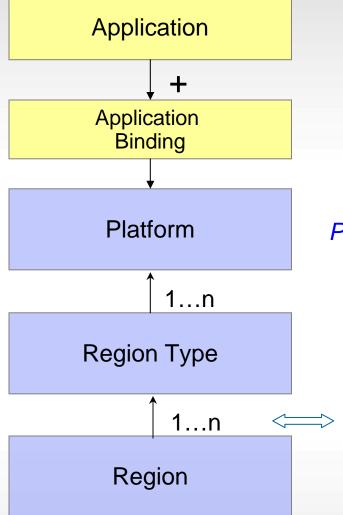
Application Binding Project

- Decouple applications from underlying region topology
- Ties the Application to the Platform
 - Associates bundles with region types
 - Allows the Application project to be mapped to different platforms
 - e.g. Development, Quality Assurance, Production
- Allows additional bundles to be deployed based on the platform





Application Deployment...



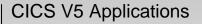
Package application resources and dependencies

Bind the application to the platform. Map bundles within the application to region types. (map developers' world to the operations world)

Platform: where applications are deployed and run

Characterize regions in the region type e.g. TOR, AOR, ROR, FOR

Elastically scale regions in the region type (within specified bounds)





Application Deployment...Creating the Application Binding

😣 🗊 New			
Select a wizard			
Create a Project for a CICS Appli	ication Binding		
Wizards:			
type filter text			
🕨 🗁 General			
 Android CICS Definitions 	😣 🗈 New Application Bind	ding Project	
 CICS Definitions CICS Resources 	CICS Application Binding I		
Si CICS Application Binding		project to map application components	
CICS Application Project	different region types in the		
CICS Atom Configuration	Project name: Insurance.Bir	ding	
CICS Event Binding			
CICS Event Processing Ad	🗹 Use default location		
CICS Event Processing Ad	Location: //home/indi/explo	rerworkspace/Insurance.Binding	Browse
	Application Binding properti	New Application Binding Proje	ct
	Name: Insurance.Bind	CICS Application Binding Project	
	Description: Binding	Select at least one region type for every	
?	Version: 1.0.0	CICS bundles	Region Types
	version: 1.0.0	Car_Insurance_Quote_Bundle (1.0.0)	✓ Insurance_AORs
	Application: Insurance_App		Insurance_FOR Insurance_TORs
	Platform: Production.Ins		
			Export Application to the home directory of a Platform
			Export Application, Application Binding, and CICS Bundles
			Select the binding under the desired platform for export.
	(?) <[Choose a CICS SM Connection to find matching application binding projects:
			Connection: • • winmvs2c:27298
			▼ 體 ISPLX520
			Production.Insurance (/var/cicsts/ISPLX520/Production.Insurance/)
			Insurance.Binding (1.0.0)
		(?) < Back	
		C DdCk	(filtered to only show platforms that match the selected application binding)
L			Create Application Definition after export finishes





View the Application and Platform

Cloud E	xplorer	
Server: C52	29	
CICSplex:	ISPLX520	*
	uction.Insurance INACTIVE,EMF olications	YTY
	surance_Application v1.0.0 EMI	РТҮ
 Solution Inservice 	ion Types surance_AORs (0/1) surance_FOR (0/1) surance_TORs (0/1)	





CICS Interdependency Analyzer for z/OS

What is CICS IA?

 A discovery tool that identifies resource interdependencies and affinities in your CICS systems

Captures CICS application relationships:

- Resources used by a transaction Programs, Files, TSQs, TDQs plus DB2, MQ, IMS, Web services, and Natural
- Identifies AG Natural and Adabas relationships
- Identifies non-threadsafe programs
- Transactions with affinities and their type / lifetime
- API changes between CICS versions / releases
- Unused resources
- Sequencing of transactions within an application

What's its value?

- Real time documentation of CICS application systems
- Automate Threadsafe Analysis
- Identify and analyze affinities
- Assist in application modernization activities
- Quickly identify application scope
- Verify the application code via call path tracing
- Automatically maintains CPSM rules

Why is this tool important to CICS customers?

 Reduce both time/resource required in understanding active CICS application inventory for efficient maintenance and reuse. A manual and error prone process today.







Projects

Workload balancing

- Affinity Analysis
- Resource utilization

Application Modernization

- Web services
- Atom services
- Events deployment

– CICS TS Upgrade

- Understand the use of TRUEs and GLUEs
- Understand the use of modified or deleted SPIs and APIs
- Assist with test coverage

Threadsafe Analysis

- Identify "safe" code
- Identify "inhibitors"
- Reduce time for analysis



Day to Day usage

Application changes

Which programs uses a given resource

Application deployment

 Governance – check for Affinities, Threadsafe commands, site rules

Problem determination

- What new commands have been added to a given program using the First_used timestamp column
- Use Command flow to dive into a problem transaction

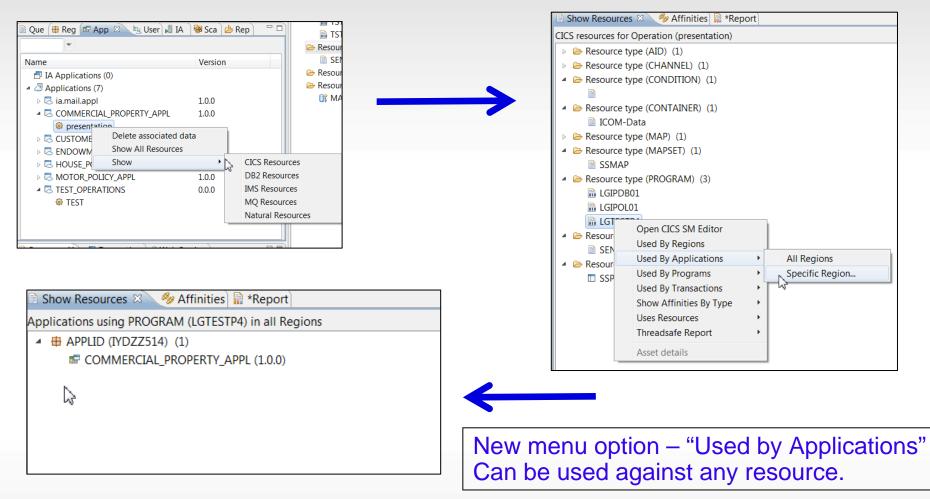
VSAM or resource recovery

Disable all programs that use this file



CICS Interdependency Analyzer V5.1 Highlights...

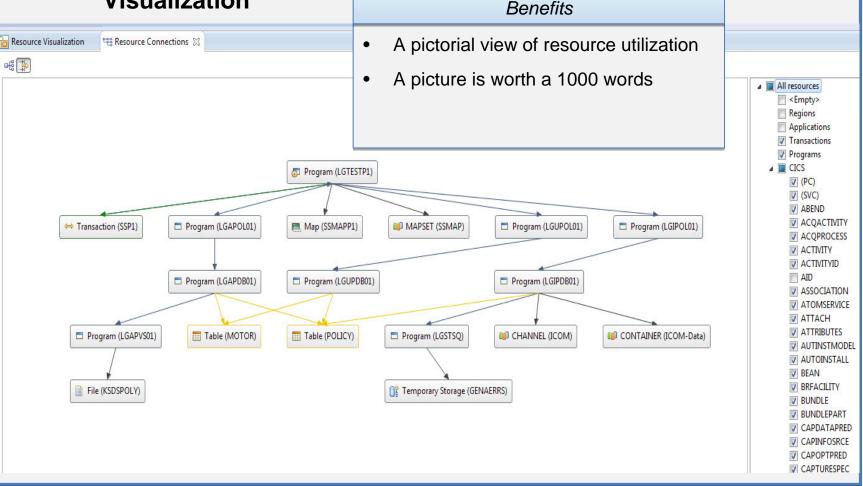
Application support - collect and display data for a deployed application

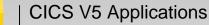




CICS Interdependency Analyzer V5.1

Visualization







CICS Configuration Manager for z/OS

What is it?

 CICS Configuration Manager simplifies CICS resourcedefinition administration and maintenance, while at the same time offering comprehensive reporting and optional change-management control facilities.

What's its value?

 Single point of control for managing CICS application resource definitions. Aids systems administration, lowers costs, reduces risk of downtime due to user errors and speeds version to version migration

How does it enhance CICS management?

- Create, Update, Delete, Copy, Replicate CICS resource definitions
- Provides change management through the life-cycle stages, e.g. development, test, production
- Create customized reports to identify redundant definitions, show resource relationships and change management history
- Audit, back-out and change authorization capabilities

Why is this tool important?

- Accurate CICS resource definitions are essential to maintain the high availability expected of CICS. With tens, or even hundreds, of CICS regions across the enterprise, each containing hundreds or thousands of artifacts, maintaining potentially millions of definitions can be challenging.
- Reduce both time/resource in gaining tighter control over CICS CSD administration
- Enhance compliance with change management policies.
- Generate audit reports to simplify effort and costs associated with compliance

RESOURCE MANAGEMENT



Single point of control over Resource Definitions Access multiple CSDs, Data Repositories, Lists, and Groups from single interface

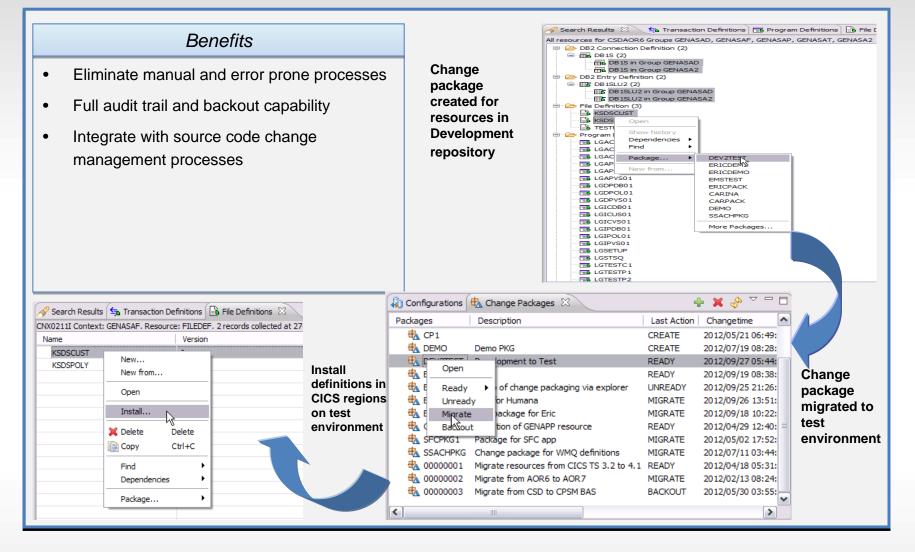
File Edit Operations Definitions Search Project Window Help

📑 🕂 📄 🖢 🕶 👘 🕶 🛷 🛩 🛷 😭 🔂 CICS SM 👖 CICS DA 🔏 z/OS 📲 CICS IA 📗 CICS PA 👪 CICS CM Properties 🛛 📳 🍰 🖪 🛃 🔻 🖓 🗖 🐣 🗖 🗐 🔗 Search Results 🖄 🙀 Transaction Defini 📄 Program Definitio 📄 File Definitions 📑 TD Queue Definiti 🖓 Configurations 🛛 🔪 🗄 Change Packages 8 📄 🀶 🕶 (12) - di) Transaction Definition (TEST) All resources for CSDAOR6 Groups GENA, GENASAD, GENASAF, GENASAP, GENASAT, GENASA2 (45) Name CSD/Context Transaction Definition (TEST) BB2 Connection Definition (2) CICSAOR1 CICSTS.CICSAOR1.DFHCSD ? Overview ▷ DB2 Entry Definition (2) CICSAOR2 CICSTS.CICSAOR2.DFHCSD 🗁 Enqueue Model Definition (1) CICSCM CICSTS.COMMON.DFHCSD 🔁 CSDAOR6 🕨 🐼 CSDAOR6 🕨 🛃 TEST 🔻 → File Definition (3) CPSMBAS CICSPLX1 KSDSCUST CSDAOR5 CICSTS.CICSAOR5.DFHCSD Basi KSDSPOLY CSDAOR6 CICSTS.CICSAOR6.DFHCSD Description: Name TESTFILE CSDAOR7 CICSTS.CICSAOR7.DFHCSD Brogram Definition (26) CSD Group: GENASA2 Created: Apr 27, 2012 8:25:27 AM CTS32CSD CICSTS.V3R2.DFHCSD ➢ Transaction Definition (11) ✓ Enabled Sep 25, 2012 9:10:38 PM Changed: CTS41CSD CICSTS.V4R1.DFHCSD LGCF Details CTS42CSD CICSTS.V4R2.DFHCSD LGPF GENA001 Profile: DFHCICST **EWHSTAGE** DNET409.STAGE.DFHCSD Initial Program: LGSE LIVECMSR SSC1 CICSTS.CICSCM.DFHCSD Task Work Area Size: 0 SSP1 Storage SSP2 Clear task-lifetime storage on release to protect sensitive data SSP3 SSP4 Task life-time storage can be located above 16MB Line **TEST** Isolate user-key task-lifetime storage from other tasks' user-key programs 🔄 🔗 🗖 🗖 ES2 🕒 Group List Definitions 📃 Groups 🖾 Obtain task storage in CICS-key TES3 in (CSDAOR6) (6) GEN* **GENA** GENASAD 🗗 😤 🆑 🗸 🗖 History 🖾 **GENASAF** Resource History for TEST from 2012/09/17 13:35:09 to latest entry GENASAP **Revision Time** Resource Type/Before Resource Name/After Group User Name Configurat GENASAT TRANDEF 2012/09/25 21:10:38 TEST GENASA2 DNFT409 CSDAOR6 GENASA2 🕉 shutdown **ENABLED** DISABLED 0 2012/09/25 21:10:27 TEST TRANDEF GENASA2 DNET409 CSDAORE DISABLED ENABLED 🖠 shutdown Overview Remote Termination Runtime Alias Recovery Attributes





CICS CM – CICS resource definition lifecycle management





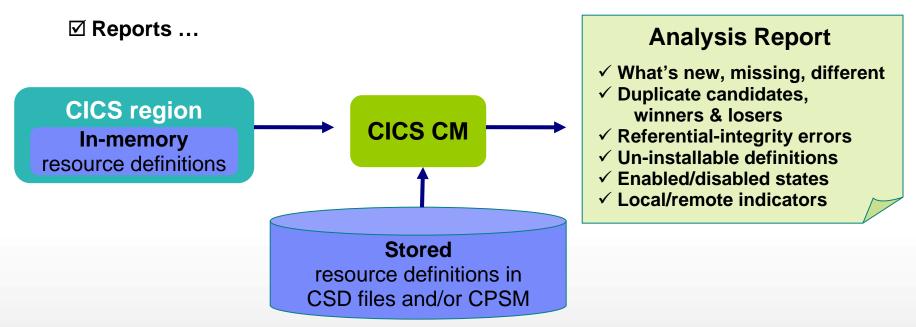


CICS CM: Deployment analysis

☑ Immediate analysis – no need to stop/start CICS regions

☑ Supports CSD, CPSM, or CSD/CPSM hybrid models

- ☑ Understands 'order-sequence' processing and RASGNDEF overrides
- Provides filtering for auto-install, dynamic resources, known conditions



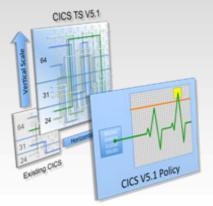




How can I modernize my CICS Applications With today's technologies?

© 2014 IBM Corporation

The new CICS Transaction Server V5.1 delivers...





Operational Efficiency

- Greater capacity achieve cost savings through consolidation
- Managed operations reduce cost and risk through automation
- Increased availability reduce the need for planned downtime
- Deeper insight improve decision making and audit readiness
- Modern batch manage your batch window
- Security integration reducing the cost and complexity of security

Service Agility

Free Feature Packs

100 +

requirements

satisfied!

- First-class applications create agile services from existing assets
- First-class platforms create agile service delivery platforms
- Modern interfaces build rich web experiences for critical applications
- Foundational enhancements extend core capabilities
- Mobile extensions simplified integration with mobile devices
- **Over 150 ISV Dynamic Scripting** enterprise class composite web applications

applications supporting

... with Cloud Enablement

CICS V5.1 consistent with the IBM Cloud Computing strategy positions customers for the next transformational era in technology moves towards a cloud oriented service delivery platform





Mobile extensions – *simplified integration with mobile devices*

CICS Transaction Server Feature Pack for Mobile Extensions



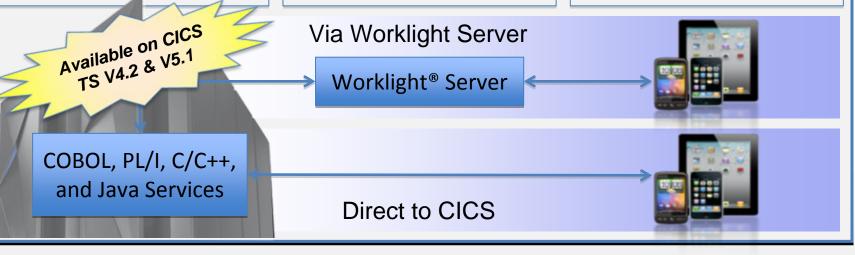
CICS TS V5.1's advanced scalability makes it the ideal platform for managing mobile workloads

Service enablement

COBOL, C/C++, PL/I and Java programs can be RESTful service providers

Agile integration

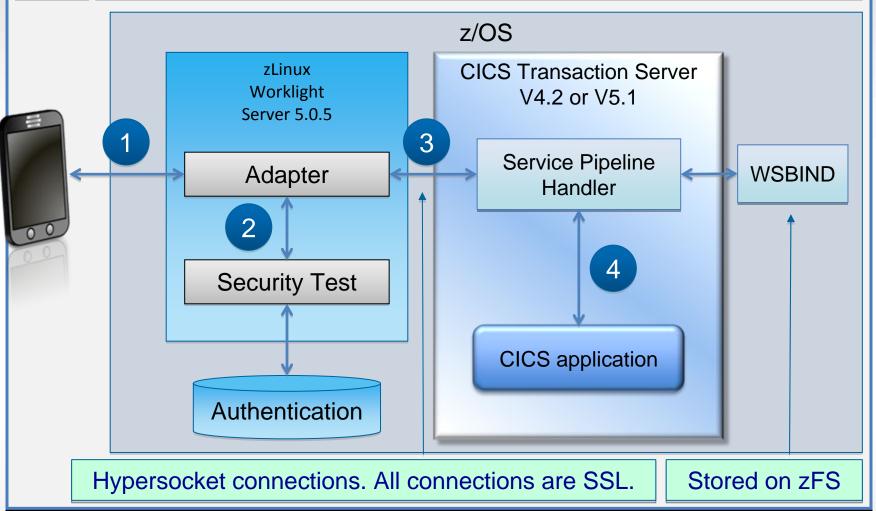
JSON data and RESTful interface makes integration with mobile devices simple and efficient







Mobile extensions – simplified integration with mobile devices







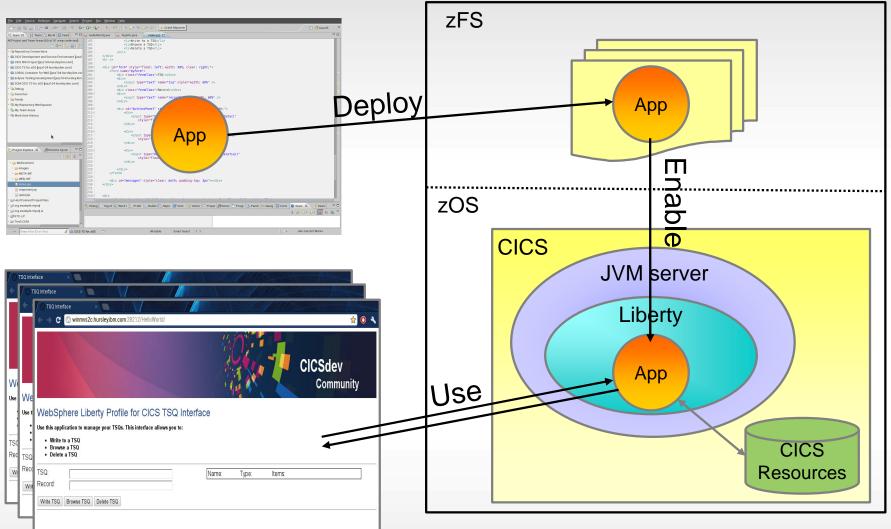
Liberty Profile Web Container

- New Java web container is built on WebSphere Application Server Liberty profile technology:
 - Liberty is a lightweight, composable, 'profile' of WebSphere Application Server
 - Provides a fast and lightweight Java web container
 - Provides "off the shelf" Web-server capabilities (JSPs and Servlets)
 - Provides potential to re-use even more WebSphere technology in CICS.
 - JSP and Web servlets have direct, local, access to CICS data and resources.
 - Servlets can take advantage of existing CICS OSGi applications to provide a Dynamic Web front end.



Liberty Profile Web Container - Putting it all together

Eclipse with CICS Explorer SDK & Liberty Tools



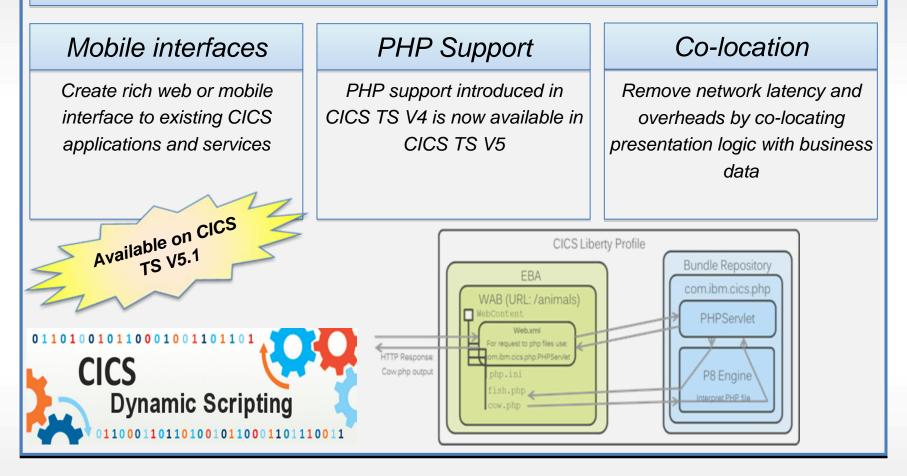






Dynamic Scripting – Run PHP applications inside CICS

CICS Transaction Server Feature Pack for Dynamic Scripting





Summary

What is an Application?

How do we package an application?

- Bundles
 - Definitions
 - Dependencies
 - Context
- Application Project

How do we deploy an application to different platforms?

- Bindings
- Application definitions
- Cloud Explorer

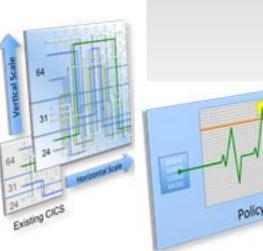
How do we modernize our applications?

- Liberty Web Container



Try it now





CICS Transaction Server V5.2 Open Beta





Delivers more dynamic, flexible CICS application deployment. Faster and more reliable CICS platform deployment. Policy-based management of CICS applications and platforms. Better vertical and horizontal scaling

64-bit addressing, thread safe, and higher maximum CICS tasks. More exploitation of industry standards,

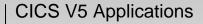
XML, Java, and TCP/IP.

Includes more core transaction processing capability

email notifications, identity propagation, API, and enhanced events.

Provides more comprehensive monitoring and statistics to improve operational metrics.

CICS TS V5.2 Open Beta Available now!

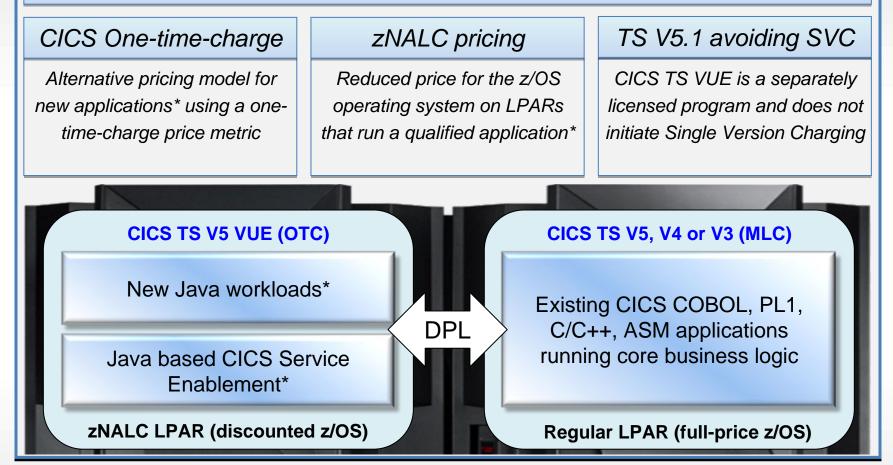






CICS TS Value Unit Edition - For new Java workload and service enablement

Responding to customer demand for an alternative pricing structure



* zNALC approval is required for each application

What is CICS Transaction Server Value Unit Edition V5.

A one-time charge version of CICS TS V5.1

A separate licensed product running in a zNALC LPAR

Specifically for qualifying new Java workloads

- One-time-charge
 - CICS TS VUE can be purchased as a one-time-charge product, unlike previous releases of CICS that have all been a monthly license charge
 - Allows you to purchase CICS as a one-time capital expense
- Feature complete
 - CICS TS VUE V5.1 is a complete version of CICS TS V5.1
- Subscription and support
 - Optional, allowing you to receive IBM support and remain on a currently release of CICS TS VUE



What is CICS Transaction Server Value Unit Edition V5.17

A one-time charge version of CICS TS V5.1

A separate licensed product running in a zNALC LPAR

Specifically for qualifying new Java workloads

zNALC Licensing

- CICS TS VUE V5.1 is a separate product that runs within a z/OS LPAR operating under the System z New Application License Charge terms and conditions
- Reduced price z/OS
 - Reduced price for the z/OS operating system on zNALC LPARs that run a qualified application*
- No Single Version Charge triggering
 - CICS TS VUE does not trigger the SVC period for any of the existing MLC versions of CICS TS you may have installed



What is CICS Transaction Server Value Unit Edition V5. $\overline{\mathbf{T}}$

A one-time charge version of CICS TS V5.1

A separate licensed product running in a zNALC LPAR

Specifically for qualifying new Java workloads

- New qualifying Java workloads
 - Net new Java workloads are approved through a qualification process
- New qualifying packaged applications
 - Qualifying packaged applications can also be run within CICS TS VUE
- First class Java environment
 - Built on 64-bit multi-threaded Java 7 infrastructure
 - Allows CICS to run more Java applications in a single region, by delivering enterprise-class scalability for Java workloads



Deployment options for CICS TS VUE V5.1



Independent

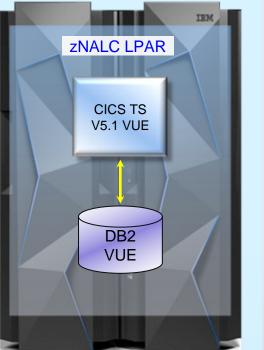
- Single zNALC LPAR
- VUE Products only

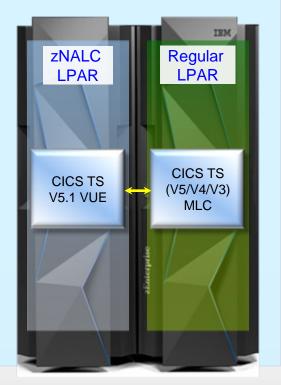
Connected

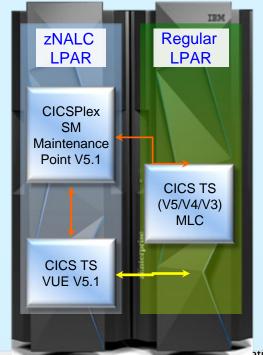
- zNALC & regular z/OS LPAR
- CICS TS VUE and CICS MLC LINKing to each other

Federated

- zNALC & regular z/OS LPAR
- CPSM managed CICSPlex











CICS Resources

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Find out more

IBM.

Register for Impact 2014 today -30 CICS related sessions

- 2 Labs
- -Meet CICS Technical specialists
- -Hear about the latest CICS V5.1 Portfolio release

-http://www-01.ibm.com/software/websphere/events/impact/registration.html

CICS Smart Seminars

Arrange a customized CICS agenda at your location and hear about the CICS topics you want to hear about. Contact your local IBM representative or send an Email to <u>cicssem@uk.ibm.com</u>





CICS Developer Trial

CICS Developer Trial V5.1

Operational Efficiency and Service Agility with Cloud Enablement



- V5.2 Available in 2014
- No charge trial, fixed expiry date
- Does not start SVC period
- For non-production environments
- Available through IBM ShopzSeries
- PID 5655-Y30

Based on CICS TS V5.1

- (with restrictions)
 - Performance
 - Capacity
 - License

http://www-03.ibm.com/software/products/en/cics-ts-devtrial

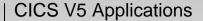


Raising new requirements with RFE

- You can now raise and track requirements using the new IBM RFE system for
 - CICS Transaction Server
 - CICS Explorer
 - TXSeries
 - WXTR
 - IBM CICS Tools
 - CICS Transaction Gateway
 - PD Tools



- All previous FITS requirements have been processed, and either be transferred to RFE or closed and returned
- All brands <u>https://www.ibm.com/developerworks/rfe/</u> select Brand: WebSphere
- WebSphere only <u>https://www.ibm.com/developerworks/rfe/?BRAND_ID=181</u>
- Select Product Family: Transaction Processing for CICS Transaction Server, TXSeries, and WXTR
- Select Product Family: Enterprise Tooling for the CICS Tools, CICS Transaction Gateway, and PD Tools
- Raise CICS Explorer base requirements against the Explorer component of CICS TS.
- Raise plug-in requirements against the Explorer component of related product.





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- You Tube youtube.com/cicsfluff
- You Tube youtube.com/cicsexplorer





twitter.com/IBM_System_z

CICS Explorer Forum

ibm.com/developerworks/forums/forum.jspa?forumID=1475&start=0



CICS-L list Forum

listserv.uga.edu/archives/cics-l.html

Key documents



- Analyst papers
 - Lustratus Research New project platform section for CICS Users <u>ftp://public.dhe.ibm.com/software/htp/cics/pdf/Lustratus_Research_Paper_New_project_p</u> <u>latform_selection_for_CICS_users.pdf</u>
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CICS V5 Scalability and availability for a mobile world

- Scalability
- Performance
- Policies
- Scalability Tooling
- Connectivity
- Summary







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