

# CICS Transaction Server for z/OS V4.2

## *Technical Overview*

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**CICS Transaction Server for z/OS (CICS TS) is a modern, dependable, cost-effective application platform. It is designed to execute mixed language application workloads, supporting both modern and traditional programming languages and models. Its extensive data communication services, and its foundations in service-oriented architecture (SOA), provide unparalleled connectivity and scalability. As a result, CICS TS fits naturally into a smart infrastructure that is needed for a flexible, global enterprise.**

**CICS TS V4.2 builds upon the new and enhanced capabilities developed and delivered in Version 4.1, to enable customers to compete in the marketplace, comply with standards and regulations, and control their IT processes. CICS TS V4.2 delivers technical innovation and significant business value in five main focus areas, satisfying in excess of fifty customer and user group enhancement requests. The result is a powerful new release with a huge amount of value for all stakeholders - delivering a smarter transaction processing experience for CICS users and their customers in turn.**

**This presentation will discuss the technical content that is available in CICS Transaction Server for z/OS V4.2.**

General availability date: June 24, 2011

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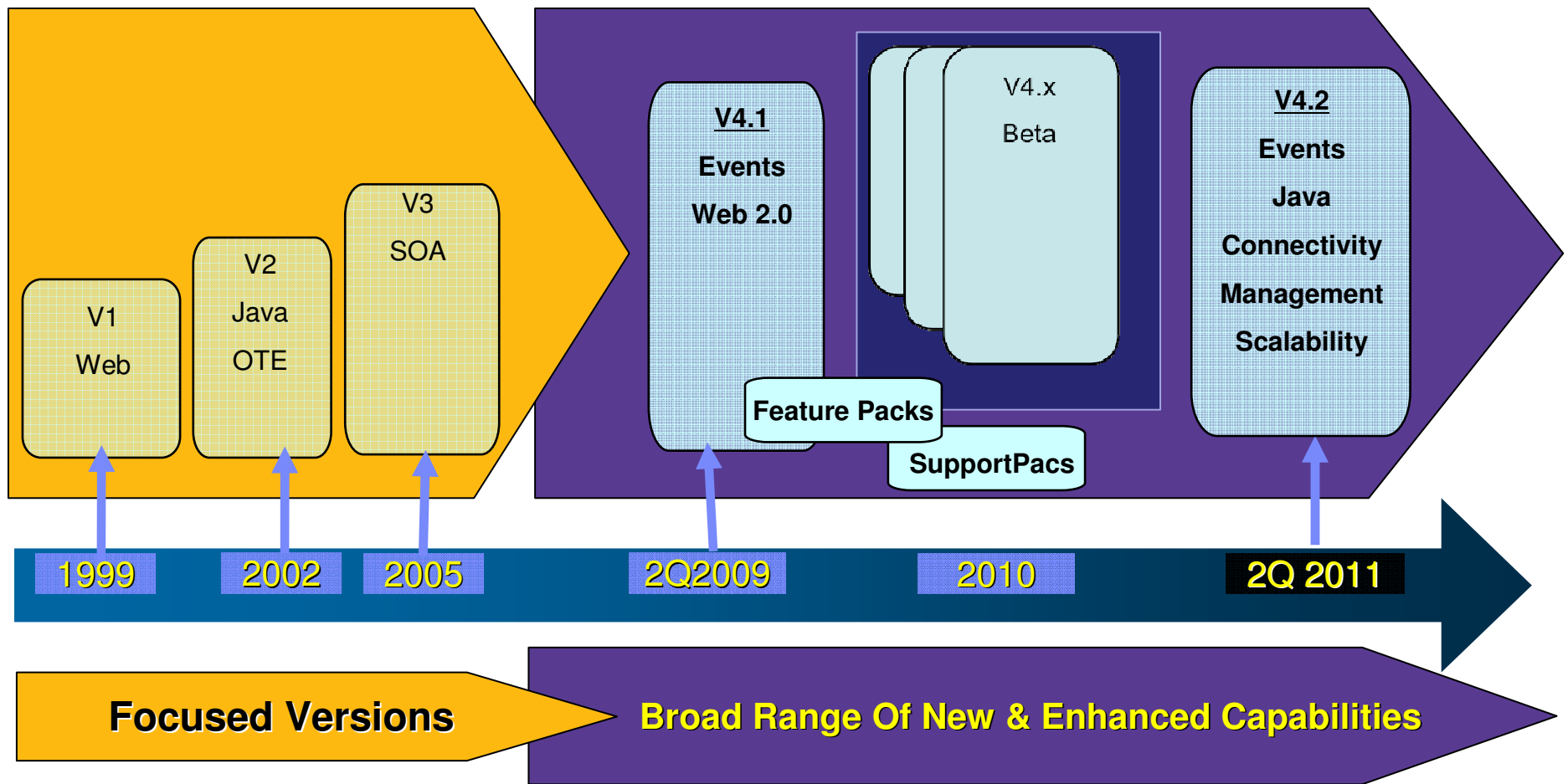
- Functional focus areas and benefits
  - Events
  - Java
  - Connectivity
  - Management
  - Scalability
  
- Summary

Notes



**This presentation will cover the functional enhancements to CICS TS V4.2.**

CICS Transaction Server: The Story So Far...



Notes



**This chart illustrates the history of CICS Transaction Server along with the focus areas of each version.**



## Events



- **System Events**
- **Assured Events**
- **Lifecycle Management**

## Management



- **Transaction Tracking**
- **Workload Management**
- **Password Phrases**

## Java

- **64-bit Applications**
- **Multithreaded Server**
- **OSGi Management**



## Scalability

- **More Threadsafe**
- **Better Concurrency**
- **64-bit Exploitation**



## Connectivity



- **Axis2 Web Services**
- **Web Services Offload**
- **HTTP & IP Extensions**

***New and enhanced  
capability across five major  
technology areas***

CICS Transaction Server for z/OS, Version 4 Release 2 delivers a set of capabilities which provide customer value by enabling business flexibility through IT simplification.

These capabilities are represented in several themes: Events, Java, Connectivity, Management, and Scalability.

### **Events**

The Events theme provides the capability for system events to be emitted using the CICS business event infrastructure, providing monitoring information about the CICS system. Enhanced CICS bundle support reduces setup time and complexity by separating system programmer and application developer activities, with common technology for both system- and application-related events.

### **Java**

The Java theme provides a new 64-bit Java runtime environment, with enhancements to the multithreaded Java Virtual Machine (JVM) server infrastructure. This environment allows CICS to run a greater number of larger Java applications in a single region, with better scalability for Java workloads in CICS. Combined with new support for the deployment of OSGi bundles, you can simplify significantly system administration and portability for Java applications. The provision of a new Java-based Axis2 web services engine improves portability of web services applications. All Java workloads are eligible to run on a zAAP.

### **Connectivity**

The Connectivity theme provides an extension to System z® IP networking and supports the function shipping of file control, transient data, and temporary storage requests between CICS regions over a TCP/IP network using an IP interconnectivity (IPIC) connection. Potential benefits include improved performance and the ability to simplify network administration when moving from SNA to an IP network.

### **Management**

The Management theme provides enhancements to simplify the management of CICS, including a new transaction tracking facility, improvements to workload management, support for password phrases to enhance log-on security, enhancements to the CICS Explorer, and the ability to view system initialization parameters.

### **Scalability**

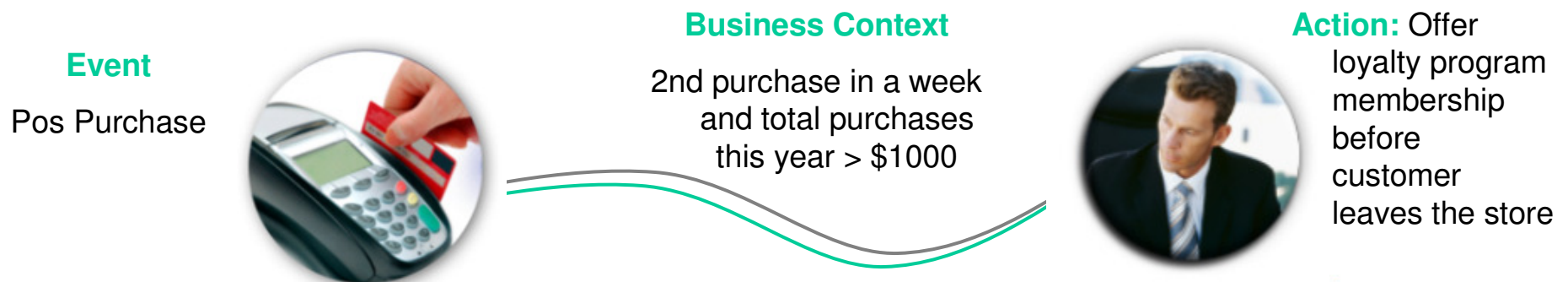
The Scalability theme provides enhanced scalability of the CICS environment, with major extensions to multiprocessor exploitation, including threadsafe access via the CICS-DBCTL interface to IBM Information Management System (IMS) Databases and function shipping requests between CICS systems over IPIC connections



# Events

**This section will discuss Event Processing in CICS Transaction Server Version 4.2.**

- An event is
  - *Anything that happens (or is contemplated as happening)*
  - Produced and responded to asynchronously
- Simple event
  - A single event, meaningful in itself
- Complex event processing
  - Detect patterns of events
- Business Event Processing: “Turn insight into action”



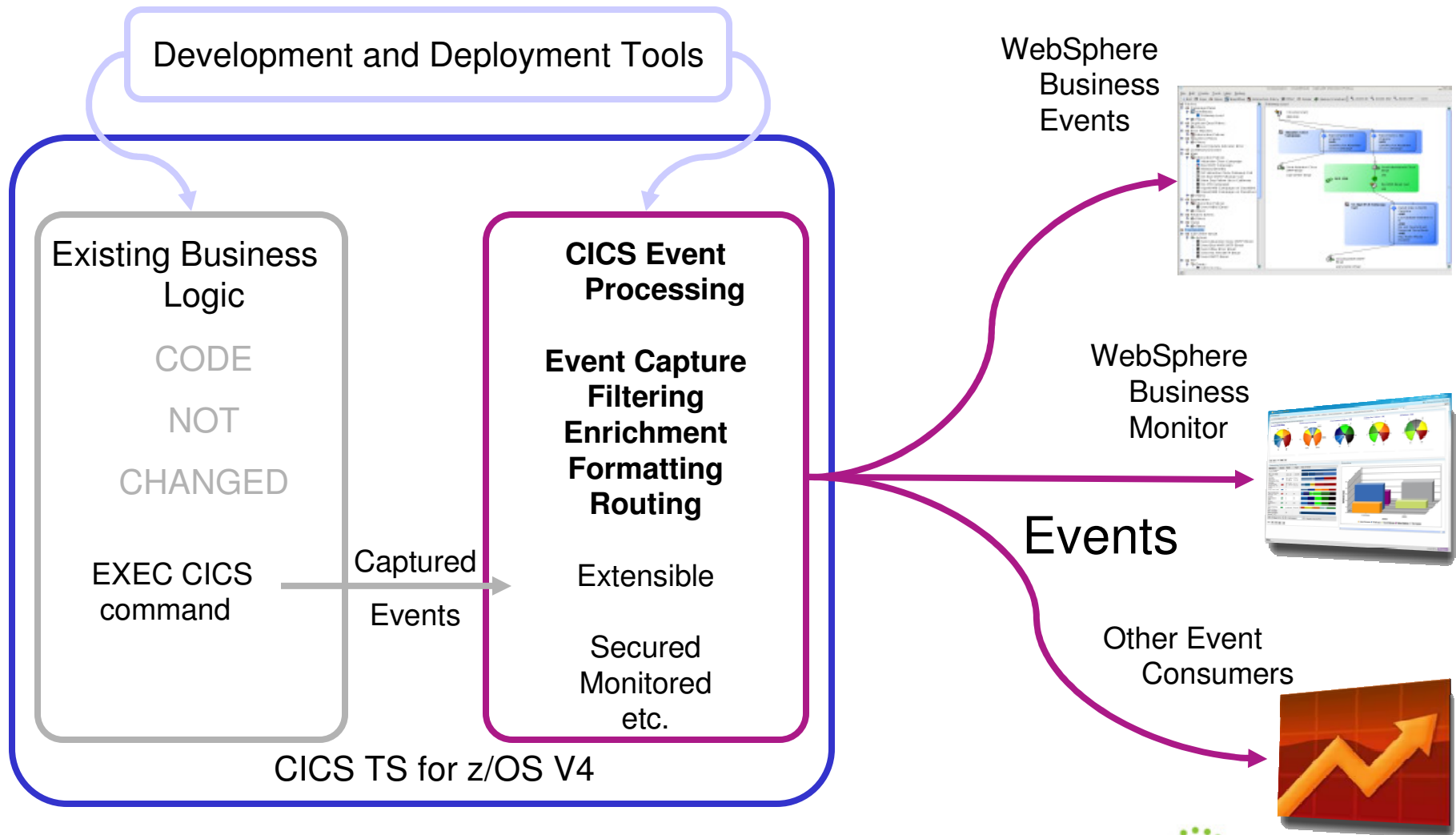
**This slide introduces the idea of an event, which is really simply something that happens. The absence of that thing happening can also be an event.**

**In contrast to just sending messages, one particular characteristic of an event is that it is a named. The data associated with an event is sometimes referred to as its payload.**

**Event emission is asynchronous to the emitting application, and the consumption of the event is decoupled from its originator.**

**This slide also explains the distinction between a simple event, and complex event processing, the later being based on a pattern of simple events potentially occurring over time, and correlated together in some way.**

**A business event is something that happens which is relevant to the business. This effectively means that all events are really business events, but as we shall see, the focus for CICS events is on application events as opposed to system or “IT” events.**



Notes



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- Lifecycle management

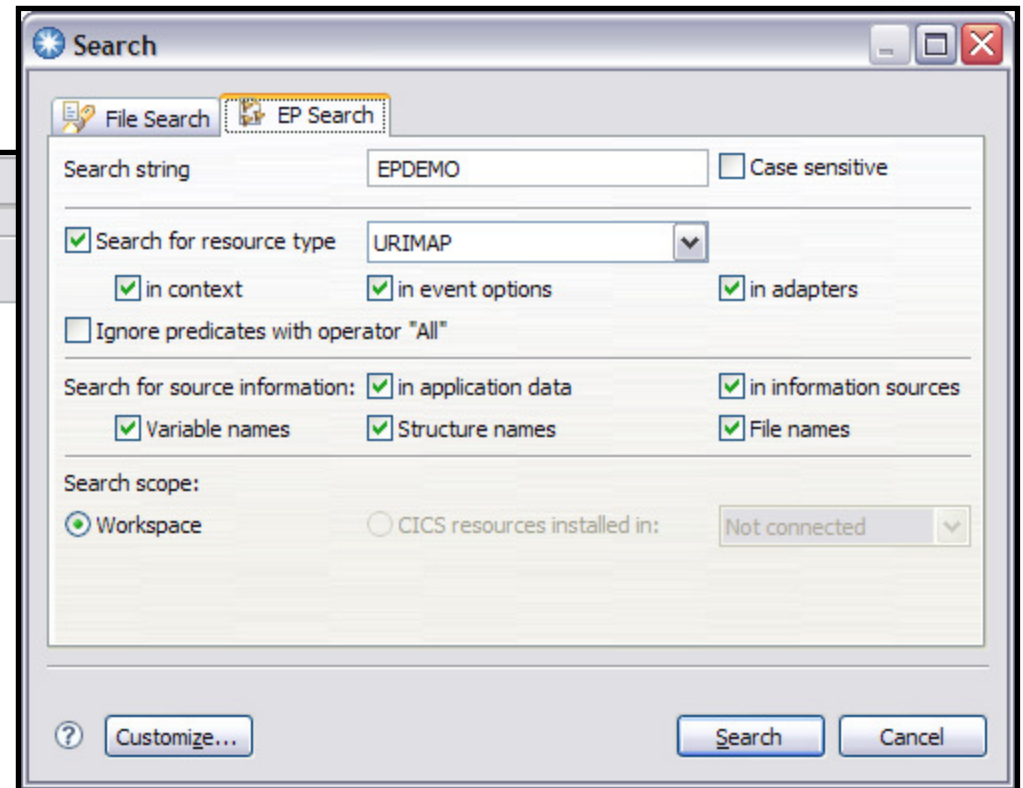
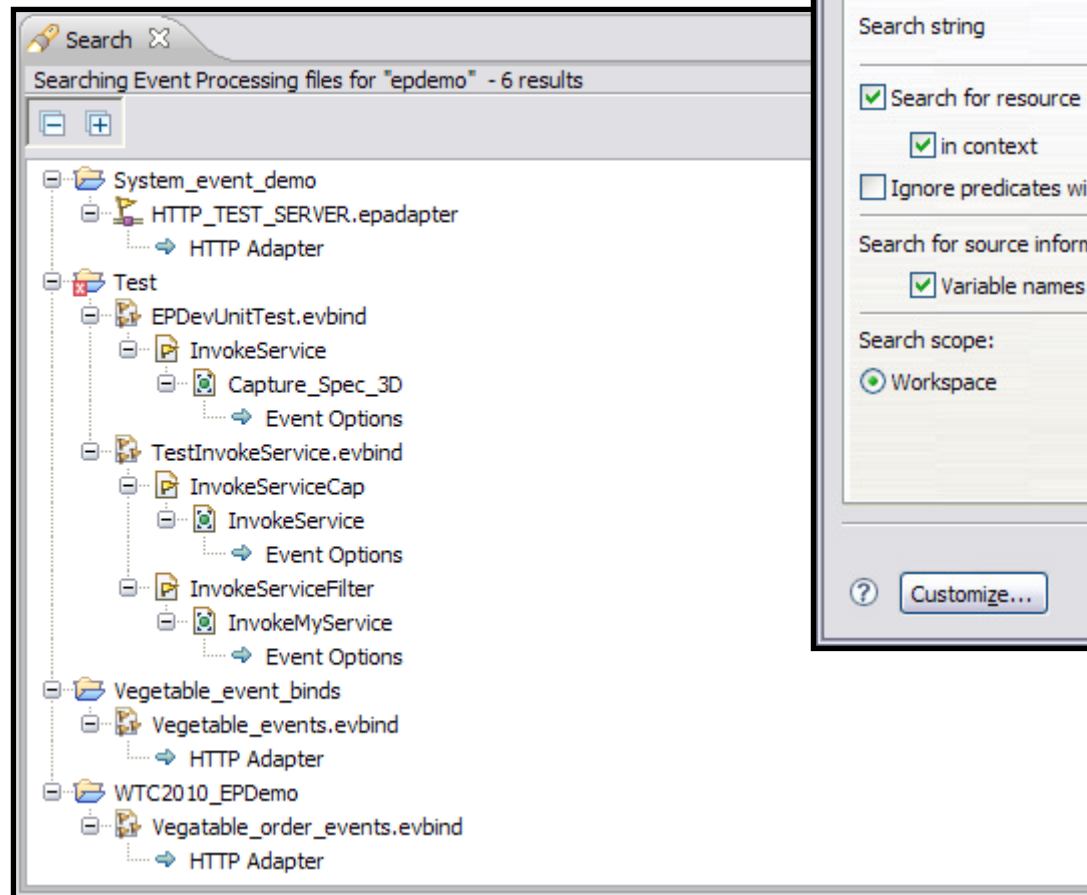
*“We emit events from a number of our applications. If we ever needed to make a change to any of those applications how would we know which event capture specifications could be affected and may need updating?”*

- EP Search capability available in the CICS Explorer

- Enter the name of the “thing” you have changed and EP search will tell you which event bindings may be affected
  - *“Things” include:*
    - ✓ *CICS resource names*
    - ✓ *Language Structure names*
    - ✓ *Language Structure field names*
- Searches event bindings in the CICS Explorer workspace or those installed in CICS regions that Explorer is connected to

**Using the CICS event binding editor, you can use the EP Search tab to search event bindings and EP adapter configurations for named resources. You can also search by variable, structure, and copybook name. You can discover which of the events that are enabled are affected by changes such as a program structure that is defined in a copybook.**

## EP Search Interface



Notes



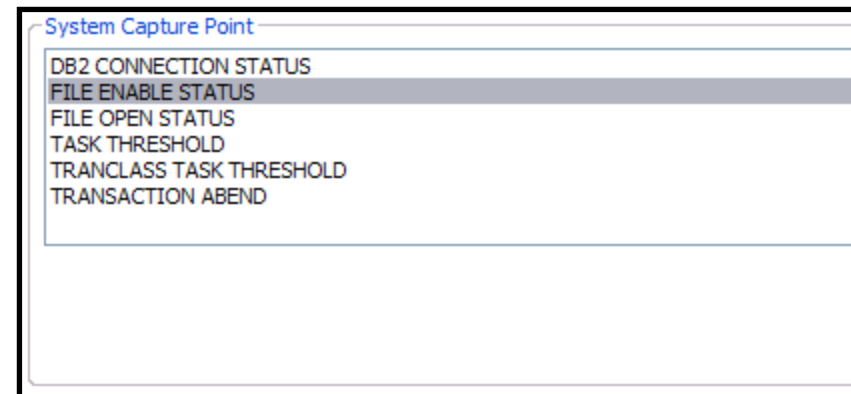
**An view of the Event Editor search tab with the returned results.**

- System events

- 6 new system event capture points

- Capture events when:

- DB2 connection status changes
- FILE enable status changes
- FILE open status changes
- Unhandled transaction abends
- Current active tasks for a TRANCLASS goes above or below a certain percentage of MAXACTIVE.
- Current active task in a region goes above or below a certain percentage of MAXTASKs.



**The scope of event processing is expanded to include everything from events that check the health of your CICS system, to the assured emission of events, to capture specification improvements, and more.**

### System events

**You can use system events to help you understand and manage the health and availability of your CICS system by emitting events that notify you when system health or system resource state changes or when a threshold has been crossed. Event processing supports the following system events:**

*FILE enable or disable status*

*FILE open or close status*

*DB2CONN connection status*

*TASK threshold*

*TRANCLASS TASK threshold*

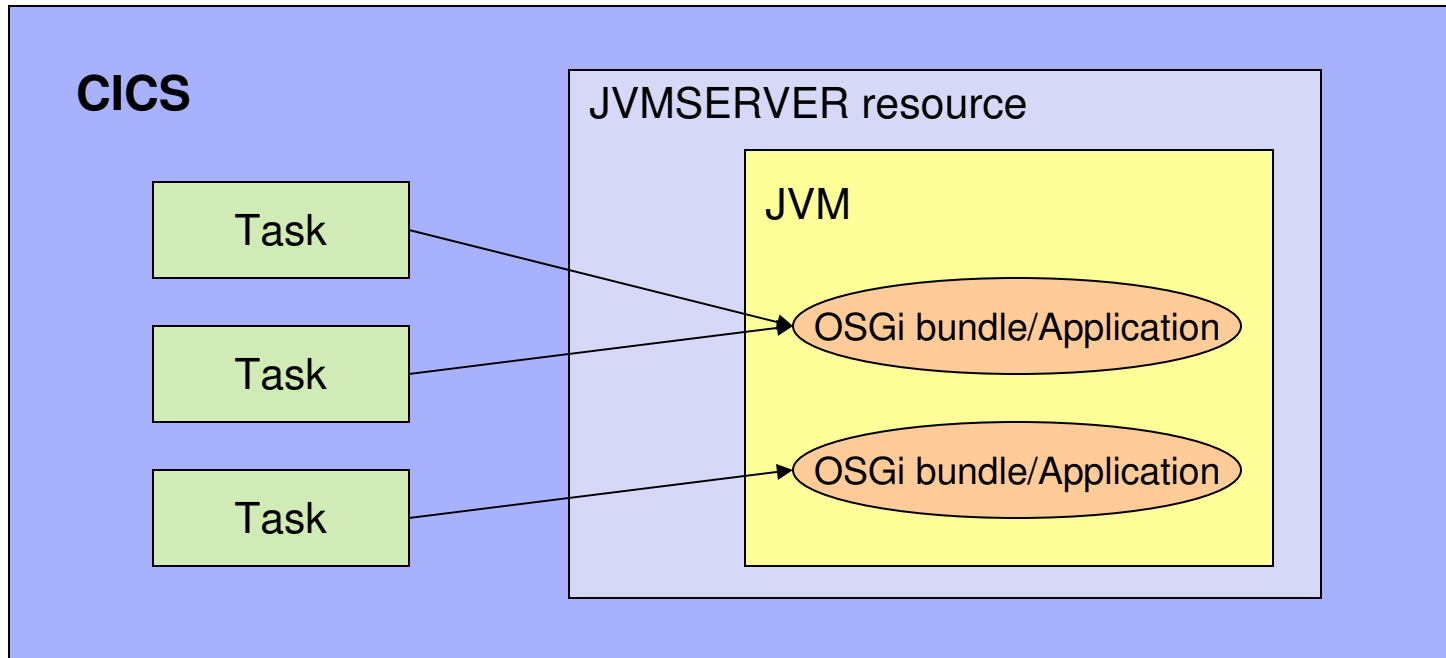
*Unhandled transactionabend*



# Java

**This section will discuss Java enhancements in CICS Transaction Server Version 4.2.**





- What is a JVM Server?
  - A new CICS resource containing a long-running JVM
  - The strategic direction of Java in CICS
    - *Pooled Java will be discontinued in the future*
  - A JVM that serves multiple transactions concurrently
  - A JVM in which applications/tasks run as OSGi bundles

The JVM server is a long-running JVM whose lifecycle and configuration is controlled by the 'JVMSERVER' CICS resource.

A JVM server is able to run Java applications for up to 256 tasks concurrently. Each task runs as a thread that is attached to the JVM.

You can run multiple JVM servers within one CICS region, with a maximum of 1024 concurrent threads shared across JVM servers.

Each thread has full access to the JCICS API to interact with CICS resources.

Applications are deployed as OSGi bundles, and are installed into CICS via the existing CICS bundle capabilities.



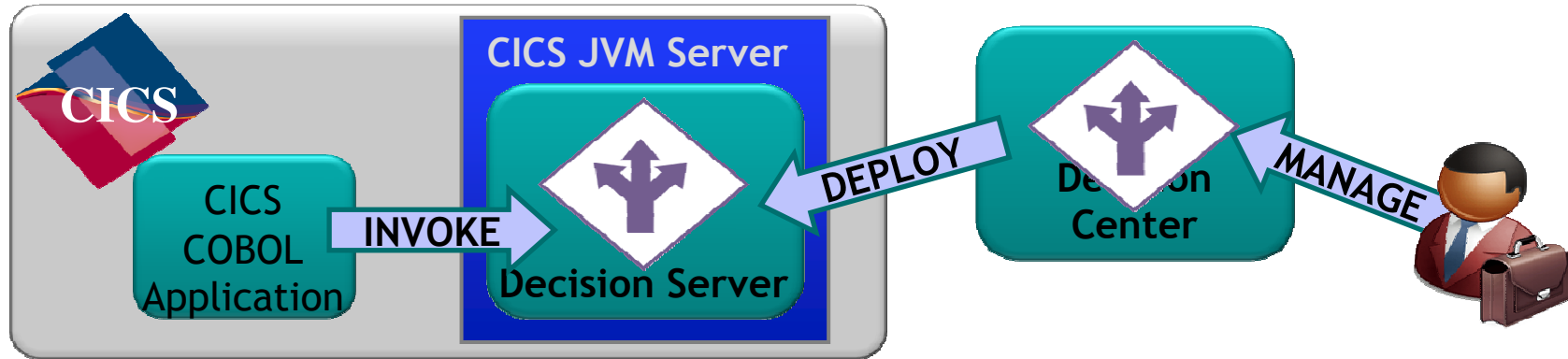
## JVM server versus existing Java pooled support

|   |  |
|---|--|
| Single JVM - serves many tasks (reduced storage)                    | Pool of JVMs - each serves only a single task. |
| (concurrent, multi-threaded, up to 256 threads per JVM server)      | Java Program Isolation                         |
| T8 (CICS key)   | J8 (CICS key), J9 (User key)                   |
| MAXTHRDCBS (automatically calculated), up to max of 1024 per region | MAXJVMTCBS, SIT parm                           |
| More standard Server model (+ data-sharing)                         | Difficult, convoluted to share data and state. |
| Dynamic update and replace of modules                               | JVMs must be restarted to effect changes       |

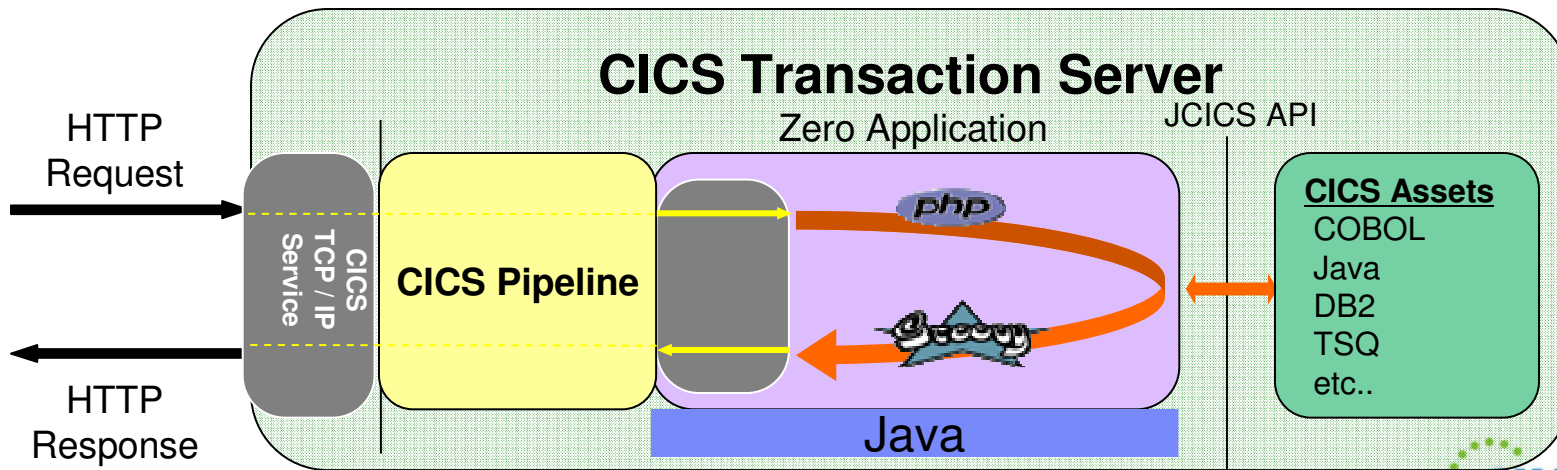
**There are two types of JVM which can be run in the CICS environment:**

- 1) The “traditional” Pooled JVMs, which provide support for a single thread of program execution in each JVM. This provides for isolation of Java programs from each other. The maximum number of JVMs a CICS region can support is governed by the MAXJVMTCBS system initialization parameter (assuming that enough resources are available to support that many). A PROGRAM definition in the CSD maps the CICS 8-character uppercase program name to the longer mixed-case Java class name, and specifies the execution key (CICS or USER) and the name of the JVM Profile which is associated with the program. JVM profile options specify the JVM characteristics.**
- 2) “New” JVM servers, which operate in a more industry-standard fashion. The PROGRAM definition in the CSD specifies the name of the JVMSERVER instead of a JVM Profile (The JVM Profile is now associated with the JVMSERVER resource). Each JVMSERVER is also defined in the CSD. A JVMSERVER can run up to 256 simultaneous threads of execution, running on CICS T8 TCBs, with a system-wide limit of 1024 threads over all JVMSERVERs in the CICS region. Running many programs in the same JVM allows for data sharing between tasks.**

- Usage of the JVM Server
  - WebSphere Operational Decision Management



- Dynamic Scripting



Notes



**There are no notes for this chart.**

- Support for 64 bit JVMs
  - Both Pooled JVMs and JVMServers
    - *Java stack and heap are now allocated in above the bar storage*
    - *Allows more Pooled JVMs per region*
  - Java 6.0.1
    - *IBM zEnterprise optimized version of Java 6 JVM*
      - ✓ *Exploits new z196 instruction set*
      - ✓ *Improved GC*
      - ✓ *Improved JIT*
      - ✓ *Significant performance improvements*
  - Support for 31 bit JVMs dropped

Notes



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- OSGi
  - Industry standard that provides for:
    - *Application isolation and versioning*
    - *Cross package pre-requisite checking*
    - *Simplified package redeployment*
  - OSGi packaging now required to deploy CICS applications to a JVM server

*JVM server applications must be thread-safe*

- CICS Explorer SDK
  - Provides CICS Java development tool kit for use in any Eclipse 3.6.2 IDE
  - Can be used to develop and deploy applications for CICS+
  - Java projects are developed as Plug-in Projects and then packaged in a CICS bundle and exported to zFS

**The JVM server environment supports the development and deployment of Java applications through the use of industry standard OSGi bundles. This will require Java applications to be packaged into an OSGi bundle, and then deployed as a CICS BUNDLE resource with reference to the OSGi bundle and its version, removing the need to load Java applications from a statically defined class path. This function will significantly improve the system management of Java applications in CICS through the provision of application isolation and versioning, cross-package prerequisite checking, and simplified package redeployment.**

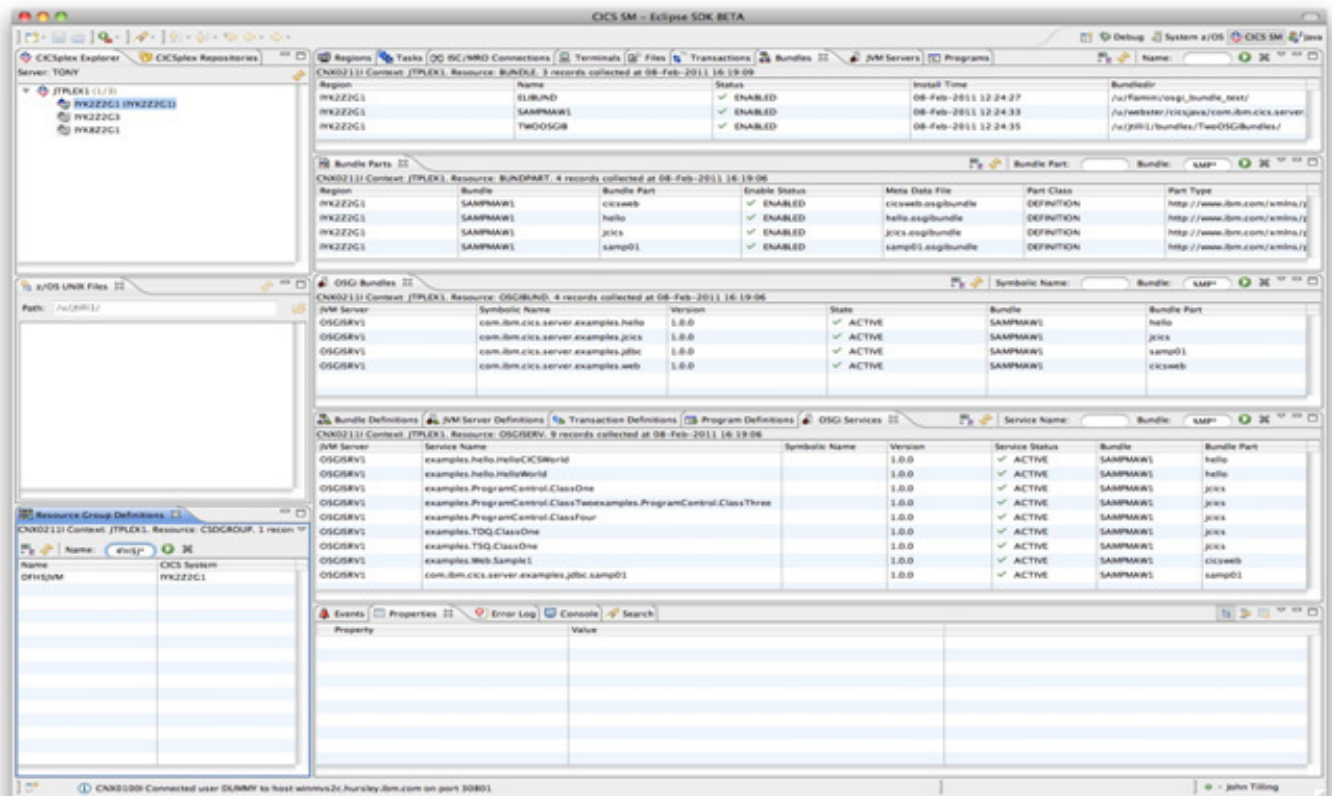
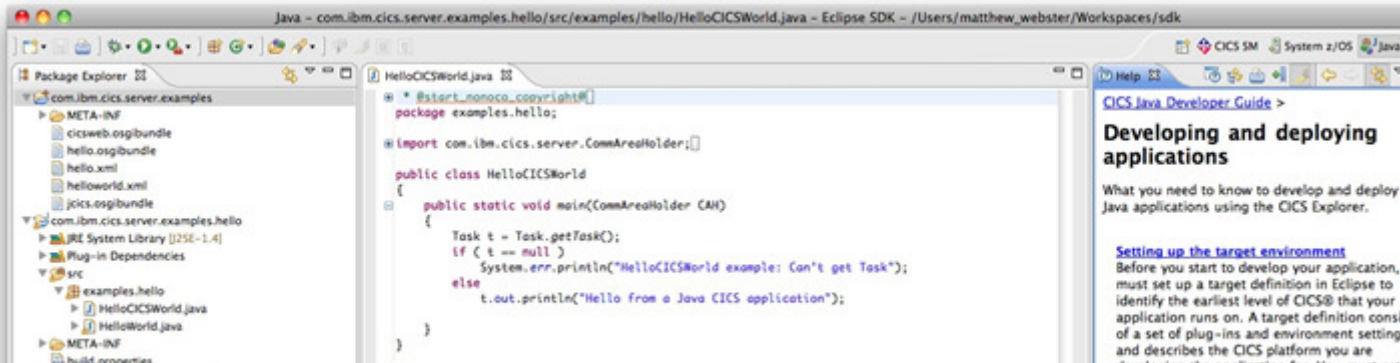
**The CICS Explorer SDK supports the development of Java applications for both JVM servers and pooled JVMs. Users with the appropriate prerequisite Eclipse Integrated Development Environment (IDE) can use documentation, examples, and wizards in conjunction with the plug-in development environment to develop applications as a set of OSGi bundles and deploy them using the CICS bundle support in the SDK. This enhanced plug-in will significantly improve the development of new Java applications and accelerate the migration of existing Java applications to exploit the OSGi environment in a JVM server.**

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## OSGi support in CICS



# CICS Explorer SDK



## OSGi bundles and services in CICS Explorer

JVM server has added the Equinox OSGi Framework into its runtime, allowing applications to be deployed as OSGi bundles. CICS Explorer SDK (based in Eclipse) can be used to create new, or turn existing applications into OSGi bundles. Right click your Java project and select “convert to OSGi Bundle project”!

You can then create a ‘CICS bundle project’ through the Explorer SDK and place your OSGi bundles into a CICS bundle. Explorer can deploy your CICS bundles into CICS where the OSGi bundle parts are themselves deployed into the OSGi Framework of the JVM server.

With OSGi you don’t end up with a large sprawling classpath - each bundle is self-contained with its own classloader, and has explicit resolvable dependencies. JAR Hell is not an issue, you can’t accidentally pick up anyone else’s classes.

OSGi also allows you to install, start, stop, and discard OSGi bundles on the fly while the JVM server is still running (via lifecycle operations on the parent CICS bundle). You can also have parallel versions of the same OSGi bundle – very handy for migrating to newer code.

One other key benefit is that all dependencies between OSGi bundles are explicitly declared. This allows the framework to resolve your bundle and all its dependencies before any code is actually run. No more CLASSDEFNOTFOUND!



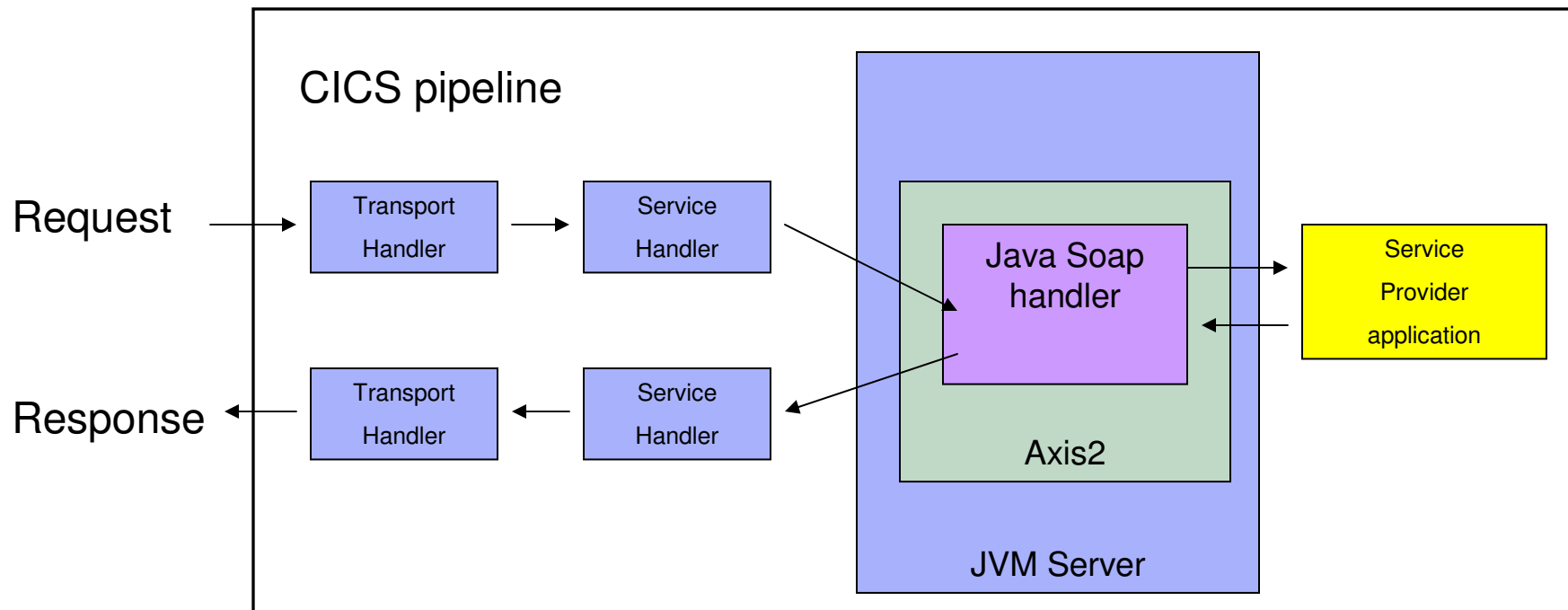
# Connectivity

Notes



**This section will discuss connectivity enhancements in CICS Transaction Server Version 4.2.**

- Support for Axis2 Java based SOAP engine
  - Provider and requester modes
  - Executes in a JVM Server
    - *Eligible for zAAP offload*

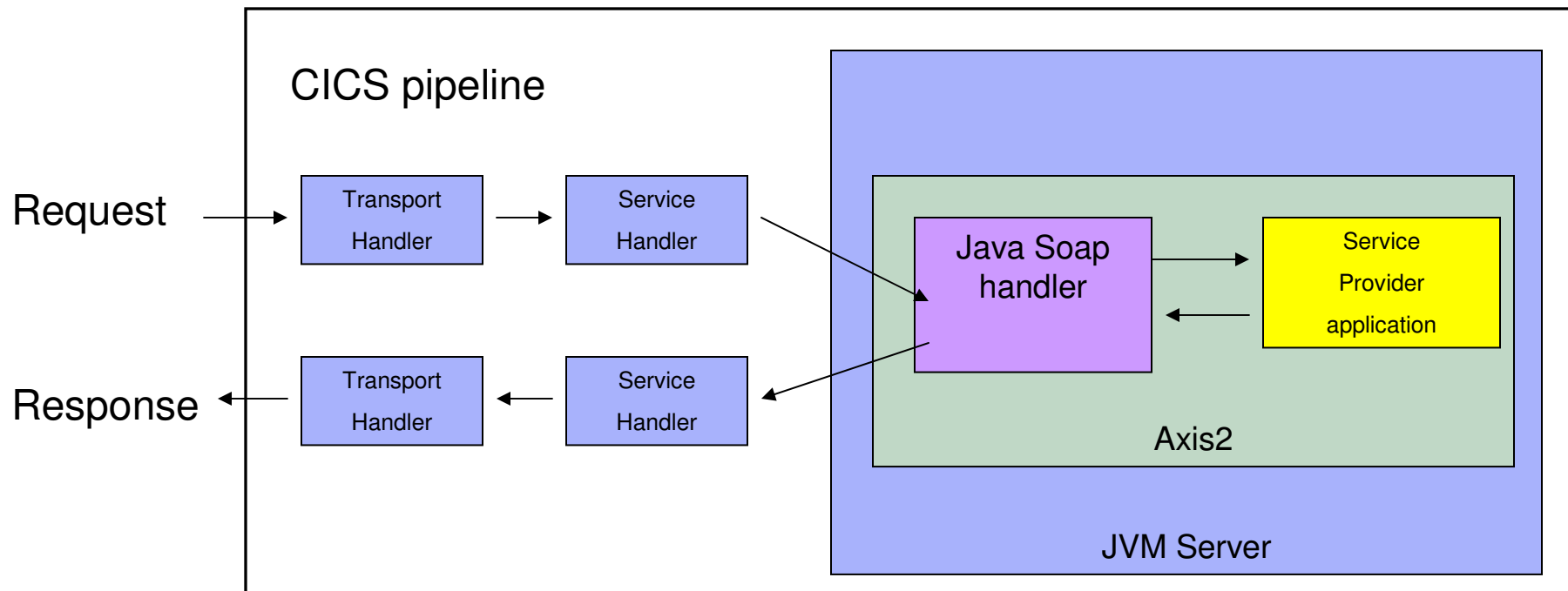


**CICS supports using the Axis2 Java-based SOAP engine to process web service requests in provider and requester pipelines. Because Axis2 uses Java, the SOAP processing is eligible for offloading to the zSeries Application Assist Processor (zAAP).**

**Axis2 is an open source web services engine from the Apache foundation and is provided with CICS to process SOAP messages in a Java environment. You can opt to use Axis2 by adding a Java SOAP handler to your pipeline configuration file and creating a JVM server to handle the Axis2 processing. When CICS is a service provider, the Java-based terminal handler uses Axis2 to parse the SOAP envelope for a request message. You can use header processing programs to process any SOAP headers associated with the SOAP message. Axis2 also constructs the SOAP response message.**



- CICS Java applications as a web service provider
  - Deploy Axis2 style web services: POJO
  - Use JAX-SW to annotate and expose Java classes as a service
    - *Executes in a JVM Server*
    - *Eligible for zAAP offload*



**You can deploy an Axis2 application as a provider mode web service in CICS®. These applications are typically generated using JAX-WS and can be hosted in a Java enabled pipeline.**

You might want to deploy Java applications using this method for one of the following reasons:

You want to create web services in Java.

You have experience of Axis2 web services on other platforms and want to create web services in CICS.

You have complicated WSDL documents that would be difficult to handle using the CICS web services assistants.

You want to offload the handling of the web service application to the IBM® System z® Application Assist Processor (zAAP).

**Axis2-style applications do not use the WEBSERVICE resources. They interact with CICS using the Axis2 programming model. You must have a Java application that is suitable for deployment in Axis2, for example a POJO application using JAX-WS. For this task, the following POJO application is used as an example:**

```
/**
 * Simple example
 */
@XmlJavaWebService(targetNamespace = "com.ibm.cics.example", name = "pojoExample")
public class TestAxis2
{
    public String getMessage(String input)
    {
        return "CICS got this: " + input + " ";
    }
}
```

**This application specifies the XML namespace that is used to generate the WSDL, and a name to associate with the web service. The Java code for this application must be compiled, and the JAX-WS generator run, to package the application into a jar file called TestAxis2.jar. You can do this by issuing the following code:**

```
javac TestAxis2.java
wsgen -cp . TestAxis2 -wsdl
jar -cvf TestAxis2.jar
```

The JAX-WS generator also creates a WSDL document and the bindings used by Axis2.

- IPIC for function shipping between CICS TS V4.2 regions for:
  - File Control
  - Transient Data
  - Temporary Storage
    - *Including TS MAIN function shipping*
  - Enhanced routing (i.e. ROUTABLE=YES) of terminal-based STARTs
  
- Requests function shipped over IPIC are threadsafe
  - Exception is Transient Data

**IP interconnectivity (IPIC) using TCP/IP now supports function shipping of file control, transient data, and temporary storage requests between CICS TS 4.2 or later regions. Before the introduction of IPIC support of function shipping, these requests could only be accessed over an MRO or ISC connection. Function shipping file control, transient data, and temporary storage requests with an IPIC connection provides CICS application programs with the ability to run without regard to the location of the requested resources, and uses threadsafe mirror transactions for potentially greater throughput between CICS TS 4.2 regions.**



# Management

Notes



**This section will discuss management enhancements in CICS Transaction Server Version 4.2.**

- Transaction Tracking
  
- As the name implies....
  - Follow the path of a transaction through the system
  - Provide means to track and correlate the progress of
    - *Simple linearly routed tasks, asynchronous tasks, spawned CICS tasks*
      - ✓ *Across distributed CICS systems including over CICS managed TCP/IP*
  - Extends and uses Association data
    - *Previous hop, association data and origin data for both MRO and IPIC connections*
  - Expose tracking information via CICS Explorer
  - Helps to answer questions like
    - *Why is this transaction suspended?*
    - *Where was this transaction routed to?*
    - *What was the point of origin for this transaction?*

Notes



**This chart describes the transaction tracking function in CICS TS V4.2.**



## Transaction Tracking



**Identify A Task to Analyze**

IBM CICS Explorer

Explorer Edit Project Operations Definitions Search

Tasks Task Associations Transactions Programs Files TCP/IP Services IS Queues ISCF MQ Connections

CNX02111 Context: CICSPLX1. Resource: TASKASSC. 61 records collected at Sep 5, 2011 5:28:27 PM

| Region   | Task ID | Start Time                       | Origin Transaction ID | Origin Ap... | Origin Us... | Origin Task | Origin Fac... | Origin Fac... | Origin IP ... |
|----------|---------|----------------------------------|-----------------------|--------------|--------------|-------------|---------------|---------------|---------------|
| CICSAOR1 | 0000029 | 2011-09-05T18:36:28.286612+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000048 | 2011-09-05T18:36:30.186619+00:00 | CKAM                  | CICSACB1     | SYSSTC       | 0000048     | START         |               | 0.0.0.0       |
| CICSAOR1 | 0000050 | 2011-09-05T18:36:30.186631+00:00 | CSKL                  | CICSACB1     | SYSSTC       | 0000050     | START         |               | 0.0.0.0       |
| CICSAOR1 | 0000056 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000060 | 2011-09-05T18:36:33.070592+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000062 | 2011-09-05T18:36:34.905368+00:00 | OMEG                  | CICSACB1     | SYSSTC       | 0000062     | START         |               | 0.0.0.0       |
| CICSAOR1 | 0000063 | 2011-09-05T18:36:34.905631+00:00 | OMEG                  | CICSACB1     | SYSSTC       | 0000062     | START         |               | 0.0.0.0       |
| CICSAOR1 | 0000134 | 2011-09-05T21:06:19.125174+00:00 | ABRW                  | CICSACB1     | DDS0363      | 0000134     | TERMINAL      | 0050          | 9.49.146...   |
| CICSAOR2 | 0000027 | 2011-09-04T20:09:41.693224+00:00 | CONL                  | CICSACB2     | SYSSTC       | 0000027     | NONE          |               | 0.0.0.0       |
| CICSAOR2 | 0000044 | 2011-09-04T20:09:43.250145+00:00 | CKAM                  | CICSACB2     | SYSSTC       | 0000044     | START         |               | 0.0.0.0       |
| CICSAOR2 | 0000045 | 2011-09-04T20:09:43.250151+00:00 | CKTI                  | CICSACB2     | SYSSTC       | 0000045     | START         |               | 0.0.0.0       |
| CICSAOR2 | 0000052 | 2011-09-04T20:09:44.006149+00:00 | CONL                  | CICSACB2     | SYSSTC       | 0000027     | NONE          |               | 0.0.0.0       |

Regions Properties Internal Web Browser RTA Events Search Error Log

No search results available. Start a search from the [search dialog...](#)

DemoMVS - CICSplex SM

## Transaction Tracking



**Right Click and Search Associated Tasks**

| Region   | Task ID | Start Time                       | Origin Transaction ID | Origin Ap... | Origin Us... | Origin Task | Origin Fac... | Origin Fac... | Origin IP ... |
|----------|---------|----------------------------------|-----------------------|--------------|--------------|-------------|---------------|---------------|---------------|
| CICSAOR1 | 0000029 | 2011-09-05T18:36:28.286612+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000048 | 2011-09-05T18:36:30.186619+00:00 | CKAM                  | CICSACB1     | SYSSTC       | 0000048     | START         |               | 0.0.0.0       |
| CICSAOR1 | 0000050 | 2011-09-05T18:36:30.186631+00:00 | CSKL                  | CICSACB1     | SYSSTC       | 0000050     | START         |               | 0.0.0.0       |
| CICSAOR1 | 0000056 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000060 | 2011-09-05T18:36:33.070592+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000062 | 2011-09-05T18:36:34.905368+00:00 | OMEG                  | CICSACB1     | SYSSTC       | 0000062     | START         |               | 0.0.0.0       |
| CICSAOR1 | 0000063 | 2011-09-05T18:36:34.905631+00:00 | OMEG                  | CICSACB1     | SYSSTC       | 0000062     | START         |               | 0.0.0.0       |
| CICSAOR1 | 0000134 | 2011-09-05T18:36:34.905631+00:00 | ABRY                  | CICSACB1     | DDS0363      | 0000134     | TERMINAL      | 0050          | 9.49.146...   |
| CICSAOR2 | 0000027 | 2011-09-04T20:09:44.006144+00:00 | CONL                  | CICSACB2     | SYSSTC       | 0000027     | NONE          |               | 0.0.0.0       |
| CICSAOR2 | 0000044 | 2011-09-04T20:09:44.006144+00:00 |                       | CICSACB2     | SYSSTC       | 0000044     | START         |               | 0.0.0.0       |
| CICSAOR2 | 0000045 | 2011-09-04T20:09:44.006144+00:00 |                       | CICSACB2     | SYSSTC       | 0000045     | START         |               | 0.0.0.0       |
| CICSAOR2 | 0000052 | 2011-09-04T20:09:44.006144+00:00 |                       | CICSACB2     | SYSSTC       | 0000027     | NONE          |               | 0.0.0.0       |

Regions Properties Internal Web Browser RTA Events Search Error Log

No search results available. Start a search from the [search dialog...](#)

DemoMVS - CICSplex SM

# Transaction Tracking



**A Search Analysis is run**

IBM CICS Explorer

Explorer Edit Project Operations Definitions Search

Tasks Task Associations Transactions Programs Files TCP/IP Services IS Queues IS/MRO Connections

CNX0211I Context: CICSPLX1. Resource: TASKASSC. 61 records collected at Sep 5, 2011 5:25:27 PM

| Region   | Task ID | Start Time                       | Origin Transaction ID | Origin Ap... | Origin Us... | Origin Task | Origin Fac... | Origin Fac... | Origin IP ... |
|----------|---------|----------------------------------|-----------------------|--------------|--------------|-------------|---------------|---------------|---------------|
| CICSAOR1 | 0000029 | 2011-09-05T18:36:28.286612+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000048 | 2011-09-05T18:36:30.186619+00:00 | CKAM                  | CICSACB1     | SYSSTC       | 0000048     | START         |               | 0.0.0.0       |
| CICSAOR1 | 0000050 | 2011-09-05T18:36:30.186631+00:00 | CSKL                  | CICSACB1     | SYSSTC       | 0000050     | START         |               | 0.0.0.0       |
| CICSAOR1 | 0000056 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000060 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000062 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000062 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000063 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR1 | 0000134 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | TERMINAL      | 0050          | 9.49.146...   |
| CICSAOR2 | 0000027 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |
| CICSAOR2 | 0000044 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | START         |               | 0.0.0.0       |
| CICSAOR2 | 0000045 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | START         |               | 0.0.0.0       |
| CICSAOR2 | 0000052 | 2011-09-05T18:36:30.720844+00:00 | CONL                  | CICSACB1     | SYSSTC       | 0000029     | NONE          |               | 0.0.0.0       |

Tasks associated with task "0000134" in region "CICSAOR1"

Tasks associated with task "0000134" in region "CICSAOR1"

Tasks associated with task "0000134" in region "CICSAOR1"

Run in Background Cancel << Details

Regions Properties Intern

No search results available. Start a search

DemoMVS - CICSplex SM

# Transaction Tracking



**Results show up in the Search View**

IBM CICS Explorer

Explorer Edit Project Operations Definitions Search

Tasks Task Associations Transactions Programs Files TCP/IP Services IS TS Queues ISCF/AMRO Connections

CNX0211I Context: CICSPLX1. Resource: TASK. 61 records collected at Sep 5, 2011 5:06:40 PM

| Region   | Task ID | Transaction ID | Run Status  | User ID | Principal Facility | Priority | Class Name | Suspend Time | Dispatcher TCB HWM | Dispatcher TCB ... |
|----------|---------|----------------|-------------|---------|--------------------|----------|------------|--------------|--------------------|--------------------|
| CICSAOR1 | 0000029 | CONL           | ▶ RUNNING   | SYSSTC  |                    | 255      | DFHTCL00   | 0:00:00      | 0                  | 0000:00:00.000...  |
| CICSAOR1 | 0000048 | CKAM           | ▢ SUSPENDED | SYSSTC  |                    | 255      | DFHTCL00   | 2:29:53      | 0                  | 0000:00:00.000...  |
| CICSAOR1 | 0000050 | CSKL           | ▢ SUSPENDED | SYSSTC  |                    | 255      | DFHTCL00   | 0:00:24      | 0                  | 0000:00:00.000...  |
| CICSAOR1 | 0000056 | COIO           | ▢ SUSPENDED | SYSSTC  |                    | 255      | DFHTCL00   | 0:00:00      | 0                  | 0000:00:00.000...  |
| CICSAOR1 | 0000060 | COIE           | ▢ SUSPENDED | SYSSTC  |                    | 255      | DFHTCL00   | 0:00:06      | 0                  | 0000:00:00.000...  |
| CICSAOR1 | 0000062 | OMEG           | ▢ SUSPENDED | SYSSTC  |                    | 255      | DFHTCL00   | 0:05:54      | 0                  | 0000:00:00.000...  |
| CICSAOR1 | 0000063 | OMEG           | ▢ SUSPENDED | SYSSTC  |                    | 255      | DFHTCL00   | 0:05:54      | 0                  | 0000:00:00.000...  |
| CICSAOR1 | 0000134 | ABRW           | ▢ SUSPENDED | DDS0363 | 0050               | 1        | DFHTCL00   | 0:00:05      | 0                  | 0000:00:00.000...  |
| CICSAOR2 | 0000027 | CONL           | ▶ RUNNING   | SYSSTC  |                    | 255      | DFHTCL00   | 0:00:00      | 0                  | 0000:00:00.000...  |
| CICSAOR2 | 0000044 | CKAM           | ▢ SUSPENDED | SYSSTC  |                    | 255      | DFHTCL00   | 4:56:41      | 0                  | 0000:00:00.000...  |
| CICSAOR2 | 0000045 | CKTI           | ▢ SUSPENDED | SYSSTC  |                    | 1        | DFHTCL00   | 4:56:41      | 1                  | 0000:00:00.000...  |

Regions Properties Internal Web Browser RTA Events Search Error Log

Tasks associated with task "0000134" in region "CICSAOR1" - 4 results - 5:08:59 PM

| Tasks   | Region   | Trans ID | Run Status | Suspend Time | Suspend Reason | Program   | Current Program | Origin User ID | CPU Time          | Pr |
|---------|----------|----------|------------|--------------|----------------|-----------|-----------------|----------------|-------------------|----|
| 0000134 | CICSAOR1 | ABRW     | SUSPENDED  | 0:02:38      | IRLINK         | DFH\$ABRW |                 | DDS0363        | 0000:00:00.000316 | 0  |
| 0000916 | CICSAOR6 | ABRW     | SUSPENDED  | 0:02:24      | IRLINK         |           |                 | DDS0363        | 0000:00:00.000910 | 1  |
| 0000127 | CICSAOR4 | ABRW     | SUSPENDED  | 0:02:24      | IRLINK         | DFH\$ABRW | DFH\$ABRW       | DDS0363        | 0000:00:00.000368 | 2  |
| 0000610 | CICSAOR7 | CSMI     | SUSPENDED  | 0:02:24      | EDF            | DFHMIRS   | DFHEDFX         | DDS0363        | 0000:00:00.000231 | 3  |

DemoMVS - CICSplex SM





- Transaction Tracking for Adaptors
  - Allow non-CICS adaptors (MQ, CICS Sockets, WOLA) to set origin data
  - Origin data may be set only once by the first origin adaptor
    - *Origin data will be included in the CICS monitor record*
  - New extension to the TRUE Context Management parameter list (DFHECON)
    - *Four 64 character fields to identify the origin*
    - *Suggested usage:*
      - ✓ *Product Identifier*
      - ✓ *Server identifier*
      - ✓ *Adaptor instance starting this task*
      - ✓ *Reason for the START*
  - EXEC CICS INQUIRE ASSOCIATION
    - *Updated to return non-CICS adaptor origin data*

**Enhancements to transaction tracking provide for non-terminal START requests from third party adapters (such as WebSphere MQ, CICS sockets, WebSphere Optimized Local Adapter) to be tracked by allowing the adapter to set fields in the origin data of the task that they start within a CICS region.**

**This support includes the following changes:**

Four new adapter field options added to the origin data to enable identification of a third party resource manager.

Four new data areas available for an adapter to set when called for context management to be placed in the origin data of the transaction that is started.

Four new origin data fields available from the INQUIRE ASSOCIATION command. This allows information from other products to be included in the transaction tracking model, which benefits non-CICS environments.

**New adapter fields have been added to the origin data to enable identification of a third party resource manager. To allow the adapter to pass values to populate the new adapter data fields in the origin data section of the association data of a task that is being started, five new fields will be added to the context management parameters (mapped by DFHUECON):**

**UECON\_ADAPTER\_ID\_PTR: Address of a 64-character area in which the exit program can pass the data to be placed into the origin data adapter identifier field. Use the same address for all instances of the adapter; for example, the product identifier for the owner of the adapter. If an adapter does not specify an identifier in this area then none of the other adapter data is set.**

**UECON\_ADAPTER\_DATA1\_PTR: Address of a 64-character area in which the exit program can pass the data to be placed into the origin data adapter data 1 field. This field can be used to identify the server to which the adapter instance (which might be one of many) is connected.**

**UECON\_ADAPTER\_DATA2\_PTR: Address of a 64-character area in which the exit program can pass the data to be placed into the origin data adapter data 2 field. This field can be used to identify the instance of the adapter task that is STARTING the task.**

**UECON\_ADAPTER\_DATA3\_PTR: Address of a 64-character area in which the exit program can pass the data to be placed into the origin data adapter data 3 field. This field can contain details to identify the reason that the adapter instance STARTed this particular task.**

**UECON\_FLAGS: The address of a single byte with bit definitions indicates if any adapter data that is set by the adapter is placed in the origin data of the task being started.**

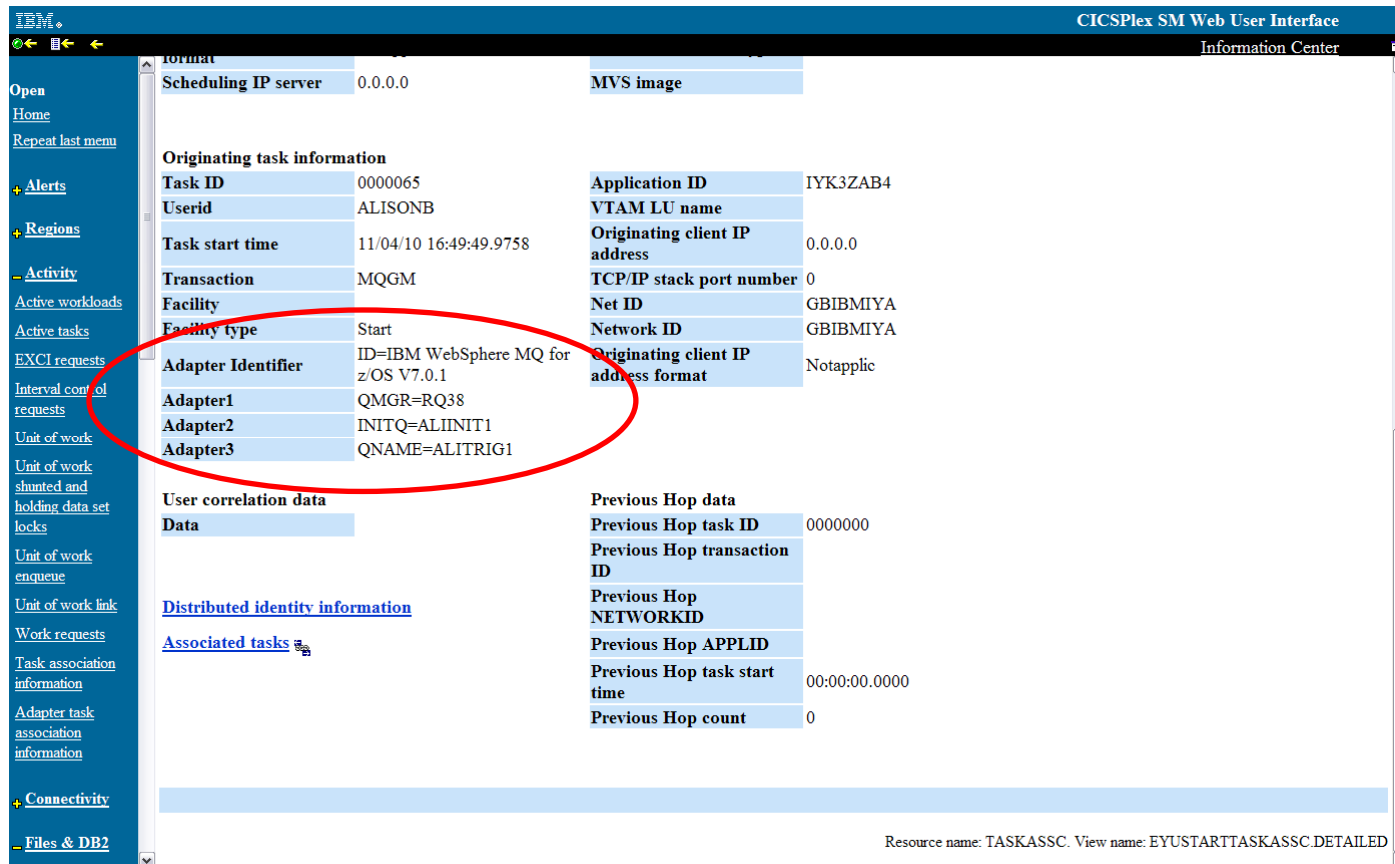
**UECON\_ADAPTER\_DATA\_ON: (X'80') indicates that the adapter is permitted to set origin data adapter data fields.**

If the adapter returns values for the adapter data when this flag is not set, the values are ignored. Only the first (origin) adapter for a task, or a set of tasks, is permitted to set the origin data adapter fields.

**These fields are in the origin data, so they can only be set once, by the origin adapter. If they already exist, it will not be possible for a different adapter to change them. There is a flag that is addressed by UECON\_FLAGS that permits the adapter to tell whether adapter data will be accepted.**



- WebSphere MQ adaptor will set origin data
  - Will allow tracking back to the listener task and the associated queue



IBM CICSplex SM Web User Interface

Information Center

Format

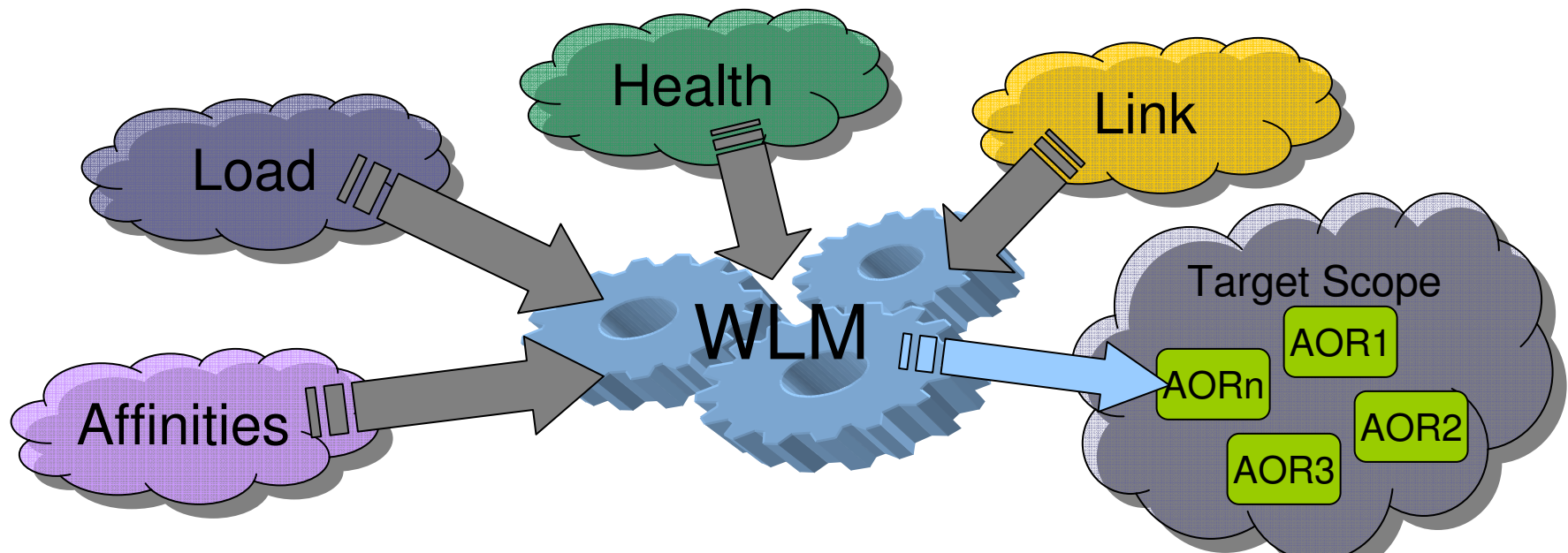
|   |                                     |                                      |               |
|---|-------------------------------------|--------------------------------------|---------------|
| Scheduling IP server                    | 0.0.0.0                             | MVS image                            |               |
| <b>Originating task information</b>     |                                     |                                      |               |
| Task ID                                 | 0000065                             | Application ID                       | IYK3ZAB4      |
| Userid                                  | ALISONB                             | VTAM LU name                         |               |
| Task start time                         | 11/04/10 16:49:49.9758              | Originating client IP address        | 0.0.0.0       |
| Transaction                             | MQGM                                | TCP/IP stack port number             | 0             |
| Facility                                |                                     | Net ID                               | GBIBMIYA      |
| Facility type                           | Start                               | Network ID                           | GBIBMIYA      |
| Adapter Identifier                      | ID=IBM WebSphere MQ for z/OS V7.0.1 | Originating client IP address format | Notapplicable |
| Adapter1                                | QMGR=RQ38                           |                                      |               |
| Adapter2                                | INITQ=ALIINIT1                      |                                      |               |
| Adapter3                                | QNAME=ALITRIG1                      |                                      |               |
| <b>User correlation data</b>            |                                     |                                      |               |
| Data                                    |                                     | Previous Hop data                    |               |
|   |                                     | Previous Hop task ID                 | 0000000       |
|   |                                     | Previous Hop transaction ID          |               |
|   |                                     | Previous Hop NETWORKID               |               |
|   |                                     | Previous Hop APPLID                  |               |
|   |                                     | Previous Hop task start time         | 00:00:00.0000 |
|   |                                     | Previous Hop count                   | 0             |
| <b>Distributed identity information</b> |                                     |                                      |               |
| <b>Associated tasks</b>                 |                                     |                                      |               |

Resource name: TASKASSC. View name: EYUSTARTTASKASSC.DETAILED

**The adapter data in the task started by the MQ trigger monitor enables a system programmer to quickly identify a specific MQ listener task and its associated queue at the point of origin of any task (or its child) without requiring changes to CICS applications.**

- **Workload Management is about providing CICS with the 'best' target region at the moment the request is made from all of the possible region candidates.**

**It's NOT about evenly distributing work!**



**Dynamic routing decisions are based on the most current load data for a potential routing target region. A routing decision is based on a combination of factors:**

The number of tasks in the region.

*Factored as a percentile value, calculated by dividing the target region MAXTASKS setting with the current task count.*

The health status of the region.

*Factored by assigning arithmetic weights, depending on whether the region is short-on-storage, taking a transaction dump, taking a system dump, running at its MAXTASKS limit, or in a CPSM stall.*

The “speed” of the link between the router and the target.

*Factored by assigning arithmetic weights, depending on whether the target region is linked to the target by an MRO connection, an XCF connection, an LU6.2 connection, an IPIC connection, or if the target region is the router itself.*

If any outstanding CICSplex SM Realtime Analysis (RTA) Events are associated with the workload.

*Factored by assigning arithmetic weights depending on the severity of the events outstanding. These events are factored in only when Event name is specified in the WLM specification for the workload or any Transaction Group definitions associated with it.*

If any transaction affinities are outstanding to override the dynamic routing decision.

*Regardless of any other factors, if the routing request has an outstanding affinity associated with it, that affinity always overrides the route decision.*

- New WLM routing algorithms
- Exclude LINK weighting in target region selection
  - LNQUEUE
    - *Route the transaction to the target region with best combination of:*
      - ✓ *Health (MaxTask, Short-on-storage, Dumping, Stalled)*
      - ✓ *Task queue depth (or load)*
      - ✓ *Abend probability, when calculated*
      - ✓ *RTA event impact, when defined*
  - LINGOAL
    - *Route the transaction to the target region that:*
      - ✓ *Is the most likely to allow the transaction to meet its response time goal*

New WLM routing algorithms to exclude link weighting

**Workload management (WLM) is enhanced by the introduction of new routing algorithms that exclude the connection type as a weighting factor in decisions to direct work requests to a target region.**

**Links between router regions and target regions can be of type Local, MRO, MRO/XCF, IPIC, LU6.2, and INDIRECT. In previous CICS releases WLM directed work requests to a target region using one of two weighting algorithms; the queue algorithm or the goal algorithm. In both of these algorithms the type of links between the router and the target are significant weighting factors, which are used along with other factors when distributing work from a router to a target. Link weighting can have a strong impact on the routing behavior in some situations and can prevent CICS transaction routing across system-boundaries in a single-site parallel sysplex environment.**

**Two new algorithms are introduced; LNQUEUE (location neutral queue) and LNGOAL (location neutral goal). LNQUEUE and LNGOAL correspond to the existing QUEUE and GOAL algorithms but exclude the connection type as a weighting factor.**

The **LNQUEUE algorithm** selects the target region that conforms to the following criteria:

*Has the shortest queue of work waiting to be processed, relative to the maximum number of tasks permitted in the target region.*

*Is the least affected by conditions such as short-on-storage, SYSDUMP, and TRANDUMP.*

*Is the least likely to cause the transaction to stop.*

The **LNGOAL algorithm** selects the target region that is the most likely to allow the transaction to meet the response time goal set for it and other transactions in its z/OS workload management class. The LNGOAL mode algorithm reverts to LNQUEUE mode when multiple target regions are achieving the same best response time goals, or when the target and routing regions are managed by different CMASs.

**You can specify the new algorithms in the same way as GOAL and QUEUE; when defining a workload specification (WLMSPEC).**

## ■ Password Phrase Support

- Background

- *Introduced in z/OS 1.8*
  - ✓ *14-100 character password phrases*
- *Updated in z/OS 1.9*
  - ✓ *9-100 character password phrases if ICHPWX11 installed*
- *Alternative to traditional passwords*
  - ✓ *Improved system security - harder to attack*
  - ✓ *Easier to remember*

**Over the years, many customers have asked for improvements and modernization of user ID and password processing. Customer perception is that longer passwords will improve system security. In z/OS Release 8, RACF added the infrastructure for password phrases, as an alternative to passwords greater than eight characters. This enables applications that exploit this new infrastructure to specify an authentication value longer than 8 characters to better fit in the heterogeneous world, while traditional applications may continue to use the traditional password.**



- CESL transaction
  - New transaction to sign on to CICS using a password or a password phrase
  - Supports both 3270, Sequential and Console devices
    - *Does not support 40x12 size screens*
  - CESN will remain unchanged
- CEDF transaction
  - Changed to hide passwords or password phrases
- Additional functions that support password phrases
  - CMCI
  - CICS Explorer
  - Web Interface
  - Web Services
  - LDAP (supports a long password)
  - CPSM Web User Interface

**CESL is a new supplied transaction you can use to sign on to CICS using a password or a password phrase as authorization. With CESL, you can sign on to CICS with a password phrase of 9- to 100-characters or a standard password of up to 8 characters. In other respects CESL operates in the same way as the CESN sign-on transaction. CESN does not support password phrases but you can specify CESL as an alias for CESN. If you enter a password that is 9- to 100-characters, CESL treats the password as a password phrase. CESL is a category 3 transaction.**

**The CEDF transaction is changed to prevent the viewing of password phrases as well as standard passwords when debugging an application. When one of the following EXEC CICS commands are issued by a transaction running under CEDF, the password or password phrase (and new password or password phrase, where applicable) is blanked out:**

CHANGE PASSWORD

CHANGE PHRASE

SIGNON

VERIFY PASSWORD

VERIFY PHRASE



# Scalability

Notes



**This section will discuss management enhancements in CICS Transaction Server Version 4.2.**

## ■ Threadsafe Enhancements

- New REQUIRED option on the program definition
  - *REQUIRED means the program must run on an Open TCB*
    - ✓ *The program must be written to threadsafe standards*
- DFHMIRS is now Threadsafe
- IPIC transformers are now threadsafe
  - *Only requests function shipped over IPIC will run on an Open TCB*
    - ✓ *File Control, Temporary Storage*
- CICS-DBCTL interface will use OTE when connected to IMS 12

**CICS provides a new program concurrency setting REQUIRED which enables a program coded to threadsafe standards to start on an open TCB.**

**Enabling programs to start on an open TCB reduces contention for resources on the CICS QR TCB and reduces TCB switching. With the new REQUIRED setting, if CICS switches to the QR TCB to run a CICS command, it switches back to the open TCB before handing control back to the application program.**

**The type of open TCB used depends upon the API setting. Defining your program with CONCURRENCY(REQUIRED) allows CICSAPI programs to start on an L8 open TCB without matching the TCB with the execution key of the program. This setting is suitable for programs accessing resource managers like DB2 and WebSphere MQ which also require an L8 TCB. For OPENAPI programs, CICS uses an L9 TCB if EXECKEY(USER) is set and an L8 TCB if EXECKEY(CICS) is set.**

**IP interconnectivity (IPIC) over TCP/IP now supports function shipping of file control commands between CICS TS regions. Function shipping with IPIC uses threadsafe mirror transactions for improved performance.**

- **Application commands made threadsafe**
  - SYNCPOINT, SYNCPOINT ROLLBACK, RESYNC
  - JCICS COMMIT and ROLLBACK methods
  - QUERY SECURITY, SIGNON, SIGNOFF
  - VERIFY PASSWORD or PHRASE, CHANGE PASSWORD or PHRASE
  - EXTRACT TCPIP or CERTIFICATE
  - All CALL and EXEC CICS Name Counter Server commands
  - Built in functions for DIGEST and DEEDIT
  
- **Systems commands made threadsafe**
  - INQUIRE CAPDATAPRED, CAPINFOSRCE, CAPOPTPRED
  - INQUIRE EPADAPTER, SET EPADAPTER, INQUIRE OSGIBUNDLE, INQUIRE OSGISERVICE
  - INQUIRE TEMPSTORAGE, SET TEMPSTORAGE
  - INQUIRE CLASSCACHE, JVM, JVMPOOL, JVMPROFILE
  - PERFORM CLASSCACHE, JVMPOOL
  - SET CLASSCACHE, JVMPOOL

Notes



**This chart shows the application and systems programming commands made threadsafe in CICS TS V4.2.**



- CICS historically has allowed use of 8 LSR pools
  - In the days of local DLI, DLI used the other 8
  - When local DLI was removed, CICS File Control was not changed
- Since z/OS 1.4, DFSMS have allowed up to 256 lsr pools per address space.
  
- In CICS TS V4.2 we will allow use of 255 LSR POOLs ( 1-255)
  - Will not use pool 0
- Potential performance optimization where greater subdivision of files across LSR POOLs is required
  - e.g. Place highly-used files in their own LSRPOOL

Notes



**This chart discusses the history of multiple LSRPOOL support in CICS.**

## ■ CICS and 64-Bit

- *CICS Transaction Server for z/OS V4.2 contains significant changes to the CICS domain architecture that exploits the underlying z/Architecture for 64-bit addressing and provides the infrastructure for CICS domains to utilize and exploit 64-bit addressing mode.*
- *Enables CICS to remove some of the limitations that affected scalability and availability by delivering large address spaces*
- *CICS can now make use of 64-bit virtual storage to increase capacity by supporting a larger number of concurrent users and transactions, as well as keeping up with virtual storage demands*

**The aim of CICS 64-bit re-architecture is to provide a CICS domain architecture environment that exploits the underlying z/Architecture for 64-bit addressing and to provide the infrastructure for CICS domains to use and exploit 64-bit addressing mode.**

**This enables CICS to remove some of the previous limitations that affected scalability and availability by delivering large address spaces with the exploitation of the 64-bit addressing provided by the z/Architecture.**

**CICS can now make use of the large 64-bit virtual storage to increase capacity by supporting a larger number of concurrent users and concurrent transactions, as well as keeping up with the virtual storage demands of increased workload of existing applications and the larger memory requirements of new applications and new technologies.**

## Conditions for CICS facilities to use 64-bit storage

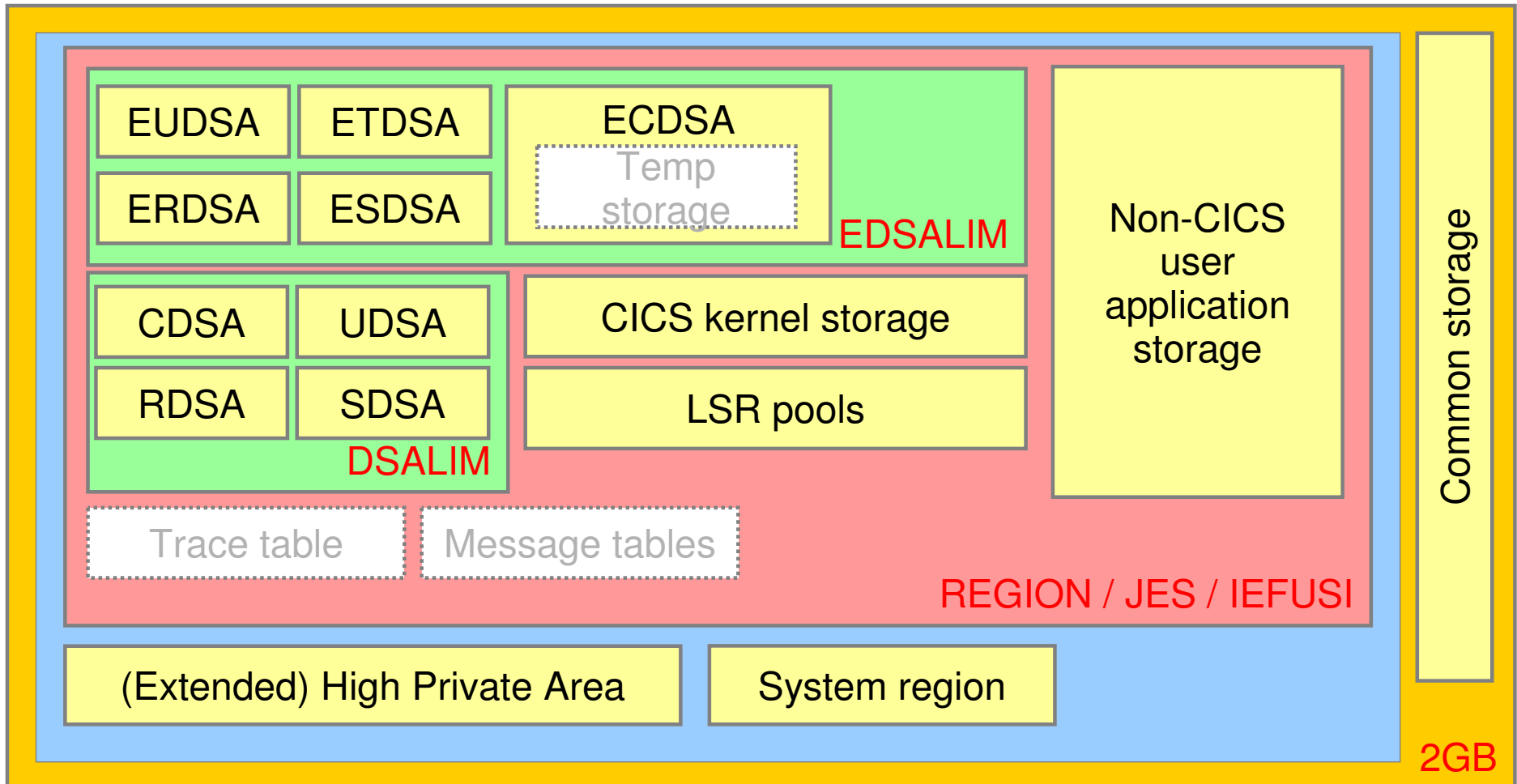
| z/OS Level                                  | TRANISO setting | Storage utilized |
|---|-----------------|------------------|
| V1R11<br>V1R12                              | YES             | 31-bit           |
| V1R11<br>V1R12                              | NO              | 64-bit           |
| V1R12 (with<br>OA34311 applied)<br>or later | YES or NO       | 64-bit           |

**CICS operates without transaction isolation when the TRANISO system initialization parameter is set to NO.**

**In CICS TS V4.2, some CICS facilities use 64-bit storage rather than 31-bit storage, depending on the version of the z/OS operating system and whether the CICS region operates with transaction isolation.**

CICS TS V4.2 Scalability Enhancements...

Usage of 24 and 31 Bit Storage



Color key:

**Orange area is 31-bit addressability limit**

**Blue area is private storage**

**Red area is storage limit defined by JCL REGION parameter / JES defaults / IEFUSI**

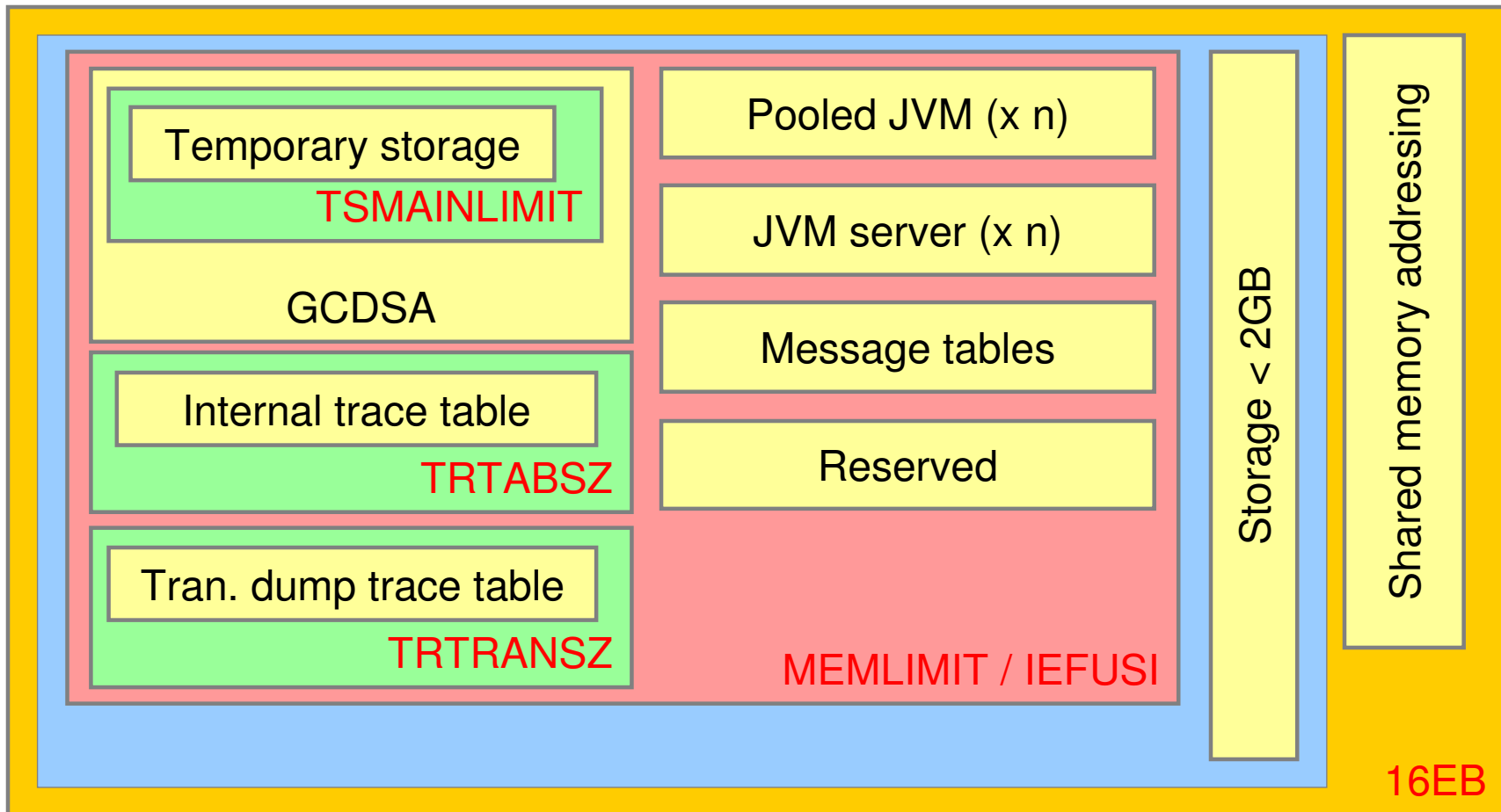
**Green areas are CICS dynamic storage areas**

**Red text indicates limiting factor for each area**



CICS TS V4.2 Scalability Enhancements...

Usage of 64 Bit Storage



Color key:

**Orange area is 64-bit addressability limit**

**Blue area encompasses all private storage**

**Red area is storage limit defined by JCL MEMLIMIT parameter / IEFUSI**

**Red text indicates limiting factor for each area**

## ■ Domain Re-architecture

- Some CICS Domain components running AMODE(64)
  - *Kernel Domain*
  - *Storage Manager Domain*
    - ✓ *Including some code which manages CICS storage below the bar*
  - *Trace Domain*
  - *Message Domain*
  - *Lock Manager Domain*
  - *Temporary Storage Domain*
  - *Monitoring Domain*

**A number of the CICS Domains are now either running fully AMODE(64) or some of their specific domain modules are running AMODE(64). These domains include the Kernel Domain, Storage Manager Domain (including some modules which manage CICS storage below the bar), Trace Domain, Message Domain, Lock Manager Domain, Temporary Storage Domain, and the Monitoring Domain.**

**The minimum z/OS MEMLIMIT value required for CICS to initialize has increased to 4G. A MEMLIMIT value of less than 4G will result in message DFHSM0602 and CICS startup will be terminated.**

- 64-bit exploiters \*
- CICS Trace Domain
  - *Internal Trace Tables above the bar*
    - ✓ *Internal Trace Table in 64-bit storage only ...*
  - *Transaction Dump Trace Table in 64-bit storage*
  - *Trace control blocks in 64-bit storage*
    - ✓ *Auxiliary and GTF Buffers moved from 24-bit to 31-bit storage*
  - *64-bit GTF Trace*
- CICS Message Domain
  - *CICS Message tables are above the bar*

*\* subject to the TRANISO restriction*

Notes



**This chart lists the CICS exploiters of 64-bit storage subject to Transaction Isolation restrictions.**

- 64-bit exploiters \* ...
  - CICS Dump Domain
    - *64-bit storage SDUMP support*
  - CICS Monitoring Domain
    - *Association Data control blocks are above the bar*
  - CICS Java
    - *Updated to 64-bit JVM (Java 6.0.1) for Pooled and JVMServer*
      - ✓ *31-bit Java not supported*

Notes



**This chart lists the CICS exploiters of 64-bit storage subject to Transaction Isolation restrictions.**



- 64-bit exploiters \* ...
  - CICS Temporary Storage Domain
    - *MAIN TS above the bar*
      - ✓ *Maximum is 32G, not greater than 25% of z/OS MEMLIMIT*
    - *Many Temporary Storage control blocks above the bar*
    - *Automatic TS Cleanup*
      - ✓ *EXPIRYINT can be specified on a TSMODEL definition*
      - ✓ *Applies to MAIN TS Queues and non-recoverable AUX TS Queues*
      - ✓ *Does NOT apply to:*
        - Remote TS Queues, Recoverable AUX TS Queues*
        - Shared TS Queues, CICS internal TS Queues*
        - TS Queues that don't match a TSMODEL*

**TSMAINLIMIT, which specifies the maximum amount of CICS storage to be available above the bar for MAIN Temporary Storage Queues. TSMAINLIMIT must not be greater than 25% of the z/OS MEMLIMIT setting for the CICS region, otherwise CICS will terminate with message DFHTS1608. The value of TSMAINLIMIT can be changed using the SET TEMPSTORAGE command. TSMAINLIMIT cannot be reduced such that it would be more than 75% occupied, or less than the minimum of 1M. Similarly, it cannot be increased to greater than 25% of the z/OS MEMLIMIT for the CICS region.**



Announced Jan 24<sup>th</sup> 2012, available from Jan 27<sup>th</sup>

- No charge trial, fixed expiry date
- Does not start SVC period
- For non-production environments
- Available through IBM ShopzSeries
- PID 5655-CIC

Based on CICS TS V4.2 (with restrictions)

- Performance
- Capacity
- License

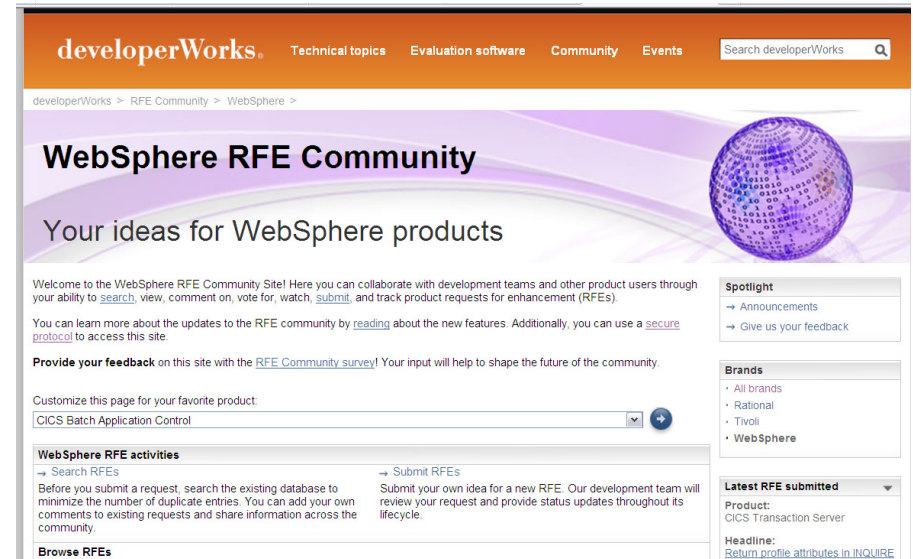
<https://www.ibm.com/developerworks/connect/cicsdev>

## 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



- Existing FITS requirements are currently being processed, and will either be transferred to RFE or closed and returned.
- All brands <https://www.ibm.com/developerworks/rfe/> - select Brand: WebSphere
- WebSphere only [https://www.ibm.com/developerworks/rfe/?BRAND\\_ID=181](https://www.ibm.com/developerworks/rfe/?BRAND_ID=181)
- 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.



## Summary

### Events



- **Discover Faster**
- **React Quicker**
- **Compete Better**

### Management



- **Understand More**
- **Control Better**
- **Manage Easier**

### Java

- **Perform Better**
- **Manage Easier**
- **Innovate Quicker**



### Scalability

- **Process More**
- **Lower Costs**
- **Perform Better**



### Connectivity



- **Connect Easier**
- **Lower Costs**
- **Manage Better**

***Delivering a smarter  
transaction processing  
experience for everybody***

Notes



**This chart illustrates the benefits of each focus area that was discussed in the presentation.**