CICS 52 Portfolio
Technical Overview

Steve Zemblowski

zem@us.ibm.com
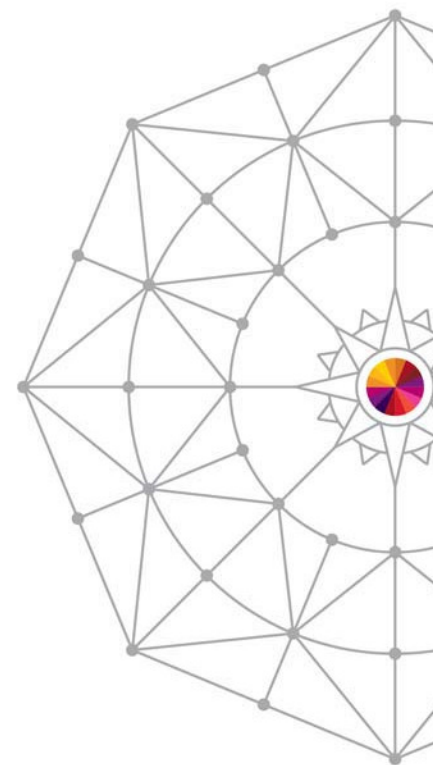
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Notes

IBM® CICS® Transaction Server (CICS TS) V5.2 builds on the many advances in service agility, operational efficiency, and cloud capabilities delivered in CICS TS V5.1. These include the following significant enhancements in the areas of Service Agility, Operational Efficiency and Cloud.

CICS TS V5.2 was announced on April 7, 2014 and was made available June 13, 2014.

Please Note

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

Session Agenda

- CICS TS 51 Review
- CICS TS 52 Overview
  - Service Agility
  - Operational Efficiency
  - Cloud
  - Explorer
- Statements of Direction
- Summary

CICS TS V5 Vision

Service Agility

Runtime support for production ready web applications.

Integration with mobile applications.

Operational Efficiency

Increased system capacity and capability to achieve more with less.

Automatic control of critical resources using policies.

Cloud Enablement

Simplified system management and rapid application deployment.

On premise pattern based cloud deployment.

Notes

Service agility

CICS TS V5.2 significantly enhances the portability of web applications into CICS, by upgrading WebSphere Application Server Liberty Profile to Version 8.5.5 and supporting a broader set of its features. Java™ database connectivity, transactionality, and security infrastructure are all functionally enhanced. This makes applications written in Java even more capable.

Service-oriented architecture (SOA) support is extended by integrating the JSON and REST capabilities, introduced in the CICS TS Feature Pack for Mobile Extensions, into CICS TS V5.2. This makes it easier to interact with mobile devices and mobile-optimized gateways, such as Worklight Server.

Operational efficiency

For operational efficiency, the number of supported policy thresholds is expanded to cover an increased number of threshold types, safeguarding critical runtime resources. This enables a wider range of service-level agreement thresholds to trigger automatic actions.

The integration of CICS applications with distributed security standards has been simplified by incorporating the Security Assertion Markup Language (SAML) support, introduced in the CICS TS Feature Pack for Security Extensions, into CICS TS V5.2. Also introduced is support for Kerberos security tokens and stronger cryptographic ciphers. SAML support is provided for both inbound and outbound use of SAML tokens, and SAML tokens can now be augmented by adding new attributes.

Cloud enablement

Major advances are made in CICS TS V5.2 in the area of cloud enablement, to enhance application lifecycle management by allowing different versions of a multi-program application to run concurrently, and simplify deployment of application updates or to easily rollback to an earlier version if required.

Application versioning assists with the consolidation of applications onto fewer CICS regions.

CICS TS 51 Review

Operational Efficiency

- *Greater capacity* - achieve cost savings through consolidation
- *Managed operations* - control critical resource thresholds with policies
- *Increased availability* - reduce the need for planned downtime
- *Deeper insight* - extend performance and compliance information

125+ requirements satisfied!

Service Agility

- *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
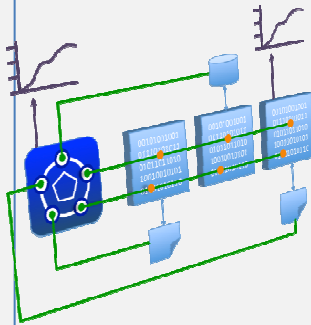- *Foundational enhancements* - extend core capabilities

… with Cloud Enablement

Consistent with the IBM Cloud Computing strategy
Positioning customers for the next transformational era in technology
Moving towards a cloud oriented service delivery platform
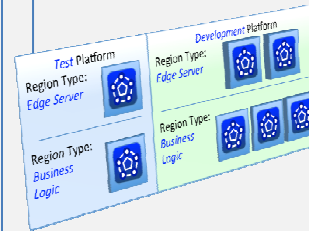
CICS TS 51 Review

First-class Applications

- Manage disparate resources as a single entity
- Rapidly move through the application lifecycle
- Automate dependency management
- Ensure rigorous yet flexible provisioning
- Measure entire application resource usage
- Dynamically manage applications with policies

First-class Platforms

- Group new and existing regions as platforms
- Decoupling applications from the region topology.
- automatic resource deployment and validation
- De-provision resources when requested
- Deploy applications to regions within a platform
- Dynamically manage platforms with policies

Modern Interfaces

- **A production-ready web container**
- **Deploy lightweight Java servlets and JSPs**
- **Local access to CICS applications and data**
- **Roll-out of interface updates through OSGi**
- **Integration with applications & platforms**
- **Built on WebSphere Application Server Liberty profile for compatibilit**
- **CICS TS Feature Pack for Mobile**

Foundational Enhancements
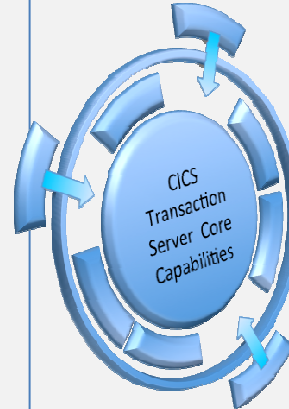
- CICS supports "one-to-many" event emission
- Greater-than-32KB across MQ (DPL) bridge
- Enhancements to IPIC add IMS support
- Reduced application storage needs with GET and PUT container
- Backup and restore entire CICSPlex System Manager (CICSPlex SM) systems
- Automatic adjustment of the CICS clock for daylight saving time changes

CICS TS 51 Review…

Greater Capacity
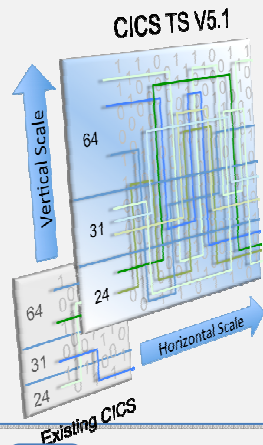
- Doubling the MAXTASK limit to 2,000
- Increased 64-bit and reduced 24-bit storage usage
- Greater parallelism from threadsafe API and SPI
- Greater system parallelism through optimized TCB usage
- Performance improvements from 64-bit Java 7
- Greater access to 64-bit storage from Assembler programs

CICS TS V5.1

Vertical Scale

64

31

24

64

31

24

Horizontal Scale

Existing CICS

Managed Operations
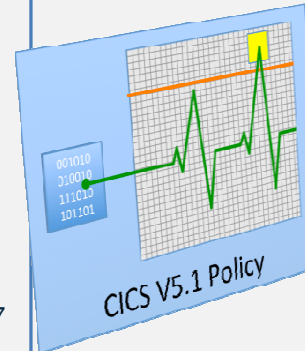
- Automated control over critical system resources
- Set data access thresholds on SQL or file access
- Set program loop thresholds on EXEC LINK
- Set storage request thresholds
- Set CPU time thresholds
- Policies can issue messages, abending tasks, or create events

CICS V5.1 Policy

Increased Availability

24x7

- **Upgrade CICS versions and releases without requiring a z/OS restart**
- **Modern batch feature pack**
- **Refresh Secure Sockets Layer (SSL) certificates**
- **Keep IPIC connections up and running**
- **Support more IBM GDPS/AA solutions**
- **Dynamically specify cross-system coupling facility groups**
- **Better reflect current best practices with updated and simplified defaults**

Deeper Insight

- **Auditing of SPI commands that alter the system**
- **Improved auditing of user IDs that make requests over IP**
- **Extended identity propagation to include started tasks**
- **Cipher suites used for SSL connections to be stored in the performance records**
- **Calculate the actual and potential use of specialty processors**
- **Regular status updates provided while lost locks recovery is taking place**

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Notes

The prior charts are a review of the new features and functions delivered in CICS TS V5.1.

The Evolution Continues…

- CICS Transaction Server V5.2

- CICS Transaction Server V5.2 Value Unit Edition

- CICS Transaction Server V5.2 Developer Trial

- CICS Tools V5.2

- CICS Transaction Gateway V9.1

Notes

CICS TS Developer Trial

CICS TS Developer Trial V5.2, a try-before-you-buy edition of CICS TS V5.2, has a zero-cost license charge and does not initiate any single version charging (SVC) period. If you want to assess the value that could be gained from a CICS TS upgrade, before making an upgrade decision, you should order this product. The CICS TS Developer Trial V5.2 is now fully supported and can be upgraded to CICS TS V5.2 or CICS TS VUE V5.2 without the need for a full reinstallation. For more information, visit

http://www.ibm.com/software/htp/cics/cicsdt/

CICS TS Value Unit Edition

CICS TS Value Unit Edition (VUE) V5.2 offers a one-time-charge (OTC) price metric for eligible workloads that are deployed in qualified System z® New Application License Charge (zNALC) logical partitions (LPARs).

The term Eligible Workload is defined as net new Java workload that executes within the CICS TS VUE Java Virtual Machine (JVM) server environment, on condition that the workload is qualified and approved through the zNALC qualification process.

The OTC price metric provides an alternative pricing model for new CICS Java applications and new CICS Java-based, service enablement workloads.

CICS TS VUE V5.2 is available through the normal ordering channels for IBM z/OS software.

Service Agility

Runtime support for
production ready
web applications.

Integration with
mobile applications.

Notes

The next slides will discuss the service agility features of CICS 52.

CICS TS 52 Service Agility

- CICS and Mobile
  - Provides support for RESTful web service requests
    - JSON in the http body
  - New JSON assistant programs
    - Generate a JSON schema and WSBIND file from a copy book
      - COBOL, PLI, C and C++
    - Create a language structure and WSBIND file from a JSON schema
  - New linkable interface
    - Equivalent to EXEC CICS XMLTRANSFORM
      - Allows application programs to process JSON data
  - Provides support for JAX-RS and JSON Liberty features

Notes

CICS Transaction Server for z/OS, Version 5 Release 2 provides support for web service requests with JSON and the conversion between JSON and application data. Support for JSON greatly simplifies the use of existing CICS services by mobile applications, particularly those managed by IBM Worklight® Server. You can expose CICS applications as web services with JavaScript Object Notation (JSON) payloads, create new RESTful applications, call existing JSON applications, and convert JSON from any source to and from the application data.

This support for JSON and REpresentational State Transfer (REST) was previously available in the CICS TS Feature Pack for Mobile Extensions.

CICS TS 52 Service Agility…

- Mobile Feature Pack integrated into base CICS
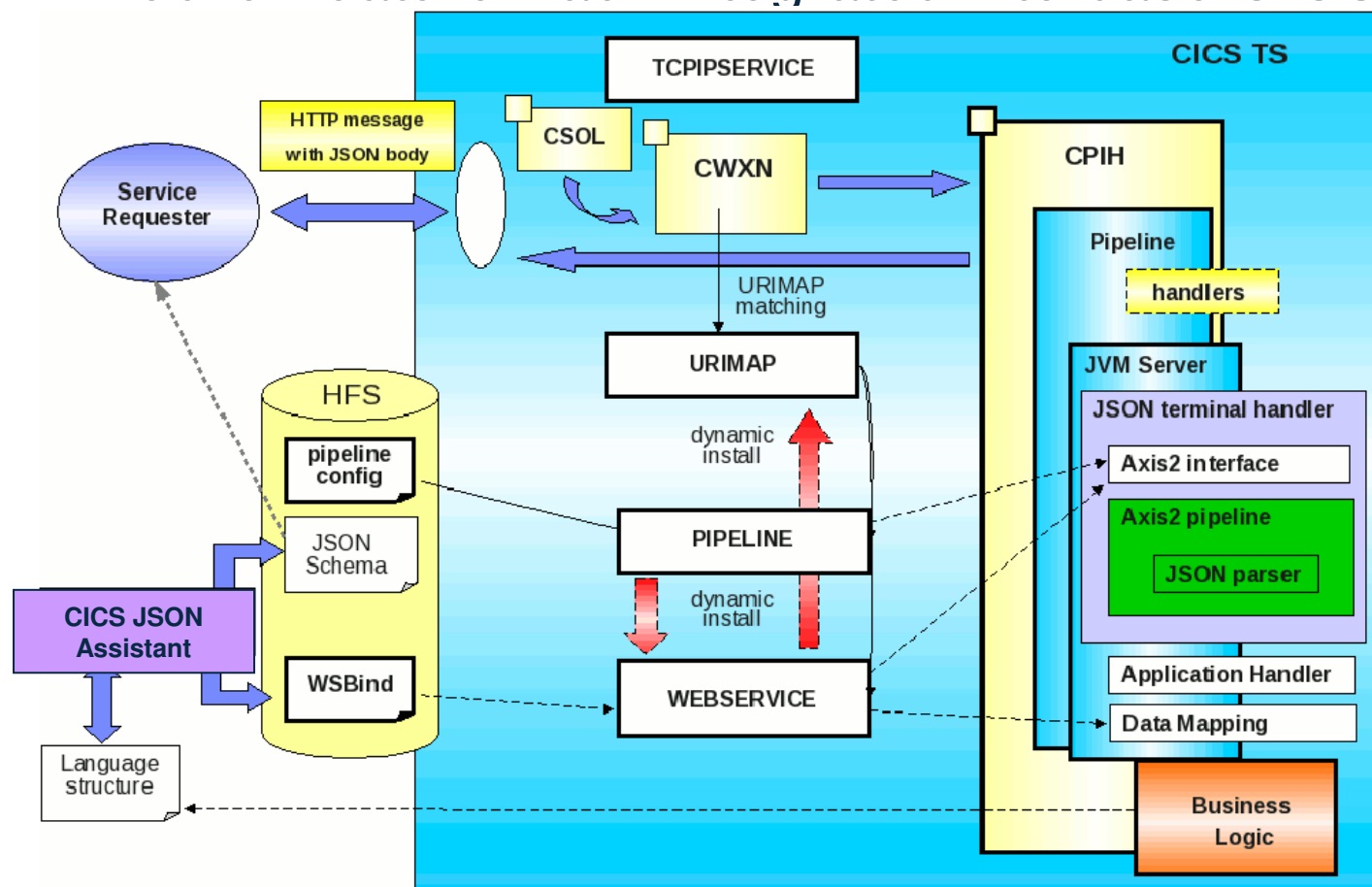
Notes

This chart shows the architecture of the Mobile function in CICS TS V5.2.

CICS TS 52 Service Agility…

- Web Service Enhancements
  - Simple Occurs Depending On and Occurs Indexed By clauses supported in native web services
    - Native web support
    - JSON
    - Axis2
  - AMODE 64 exploitation by native SOAP parser
    - Parser output stays in 64 bit storage
    - SOAP message built in 64 bit storage
    - Code page conversions use 64 bit storage
    - Benefit is 31 bit Virtual Storage Constraint Relief
  - Less TCB switching for DYNAMIC(NO) transactions

Notes

Data mapping for SOAP and JSON web services supports UTF-16 data and more COBOL clauses, including OCCURS DEPENDING ON. With this support, you can represent a larger range of characters in web services application data and the TRANSFORM API. In the CICS® data transformation service for SOAP and JSON web services and the TRANSFORM API, Unicode characters are transformed to UTF-16 data in COBOL, C, C++ and PL/I. Unicode is the widely adopted standard for handling most of the characters in use today and can be used as a basis for globalization of CICS applications. This release of CICS also supports the COBOL clause OCCURS DEPENDING ON, when the field is last in the structure, and the clause OCCURS INDEXED BY.

CICS TS 52 Service Agility…

- CICS Transaction Gateway 9.1 *
  - Planned availability September 2014
  - Support for Mobile Applications
    - JSON web services
  - Security Enhancements
    - NIST SP800-131A support
    - SSL for .NET clients
  - IPIC Connections
    - Start and Stop connections without restarting the gateway
    - Heartbeat mechanism
  - Ability to "virtualize" CICS back-end enabling isolated, automated regression testing

  * Separate Product

Notes

CICS TG, V9.1 offering enables simple and rapid mobile integration of your enterprise CICS Transaction Server for z/OS (CICS TS) environment. You can build on your existing, proven architecture to quickly provide mobile connectivity to back-end systems by using JavaScript™ Object Notation (JSON) web services.

Mobile enablement can be achieved alongside traditional CICS TG for z/OS workloads without modification to existing environments. This minimizes both risk and cost, while retaining the benefits of the proven high availability and scalability of CICS TG for z/OS.

Other functionality that is introduced in the CICS TG V9.1 open beta offering includes:

The exploitation of the CICS IP interconnectivity (IPIC) protocol heartbeat functionality. This reduces the impact of connectivity problems by allowing failures to be detected and resolved faster.

The ability to start and stop IPIC connections in a controlled way, or immediately. This eases planned changes or maintenance to a CICS TS system.

The exploitation of Secure Sockets Layer (SSL) connectivity for the .NET framework-enabled API, and full compliance with National Institute of Standards and Technology (NIST) Special Publication (SP) 800-131A for enhanced security.

The introduction of the Gateway intercept plug-in to facilitate automated regression testing with products such as the IBM Rational® Test Workbench.

Enhancements to CICS TG request monitoring to provide full access to channel and container payload data for monitoring tools.

Support for 31-bit and 64-bit versions of the IBM SDK for z/OS, Java Technology Edition, Version 7 Release 1. This release benefits from the enhancements to exploit zEC12 instructions and of new capabilities available with z/OS V2.1, IBM zEC12, and IBM zBC12.

CICS TS 52 Service Agility…

- Liberty
  - Initially introduced in CICS 51
  - Light weight web container
    - Provides Servlets and JSPs support for CICS
    - Runs in a JVMServer
    - Access to CICS functionality through the JCICS API

CICS TS V5.1

JVM Server

Web Container
Servlet/JSP

COBOL Application

Business Data
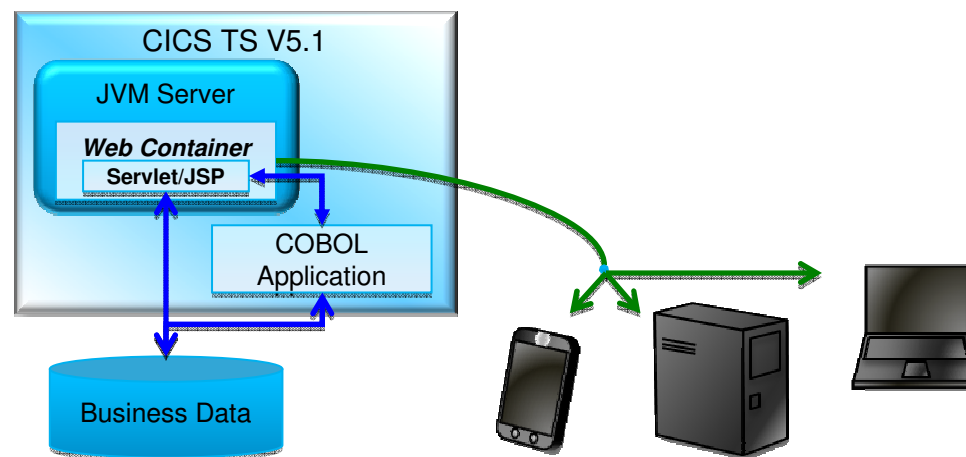
Notes

CICS Transaction Server for z/OS, Version 5 Release 2 upgrades the WebSphere® Application Server Liberty profile to Version 8.5.5 and supports a broader set of its features. Java database connectivity, transactionality, and security infrastructure are all functionally enhanced. The Liberty profile is a lightweight development and application runtime environment that is well-suited to building web applications that do not require the full Java™ EE environment of traditional enterprise application server profiles.

CICS TS 52 Service Agility…

- Liberty in CICS 52
  - Core features
    - Java Transaction API (JTA 1.0)
    - Access to local DB2 resources (JDBC 1.0)
    - CICS Liberty Security
  - Liberty Features
    - Access to remote DB2 resources with T4 driver (JDBC 1.0)
    - Java API for RESTful Services (JAX-RS 1.1)
    - Java Script Object Notation (JSON 1.0)
    - Java API for XML Web Services (JAX-WS 2.2)
    - Java Architecture for XML Binding (JAXB 2.2)

Notes

Support is provided for JDBC type 2 data sources. This support enriches your options for access to other data managers. You can use the JDBC DataSource API to access relational data that is stored in either a local DB2® database, managed by CICS resources, or a remote database using JDBC type 4 connectivity.

Java Transaction API (JTA) support enables transactional web application developing using JTA API to be run in a Liberty JVM server and to coordinate transactional updates to both CICS resources and other third party resource managers, such as a JDBC type 4 driver connection using a remote data source.

You can take advantage of the full range of WebSphere Liberty Profile application security functions. These include an extended range of authentication options, including HTTP basic authentication, single sign-on using LTPA cookies, form login, Trust Association Interceptors, and SSL client certificate mapping. Authorization options include both JEE role authorization and CICS transaction and resource security, which is based on the authenticated SAF userid. The Secure Sockets Layer (SSL) support in the Liberty JVM server HTTP listener is extended to support certificates that are stored in both System Authorization Facility (SAF) keyrings and Java keystores.

CICS TS 52 Service Agility…

- Java Transaction API

CICS TS 5.2
Liberty Profile
Transaction Manager
Application   **CICS XAResource**
OT Domain
RM Domain

Type 4 DB

JTA provides coordination of updates across CICS and a remote DB

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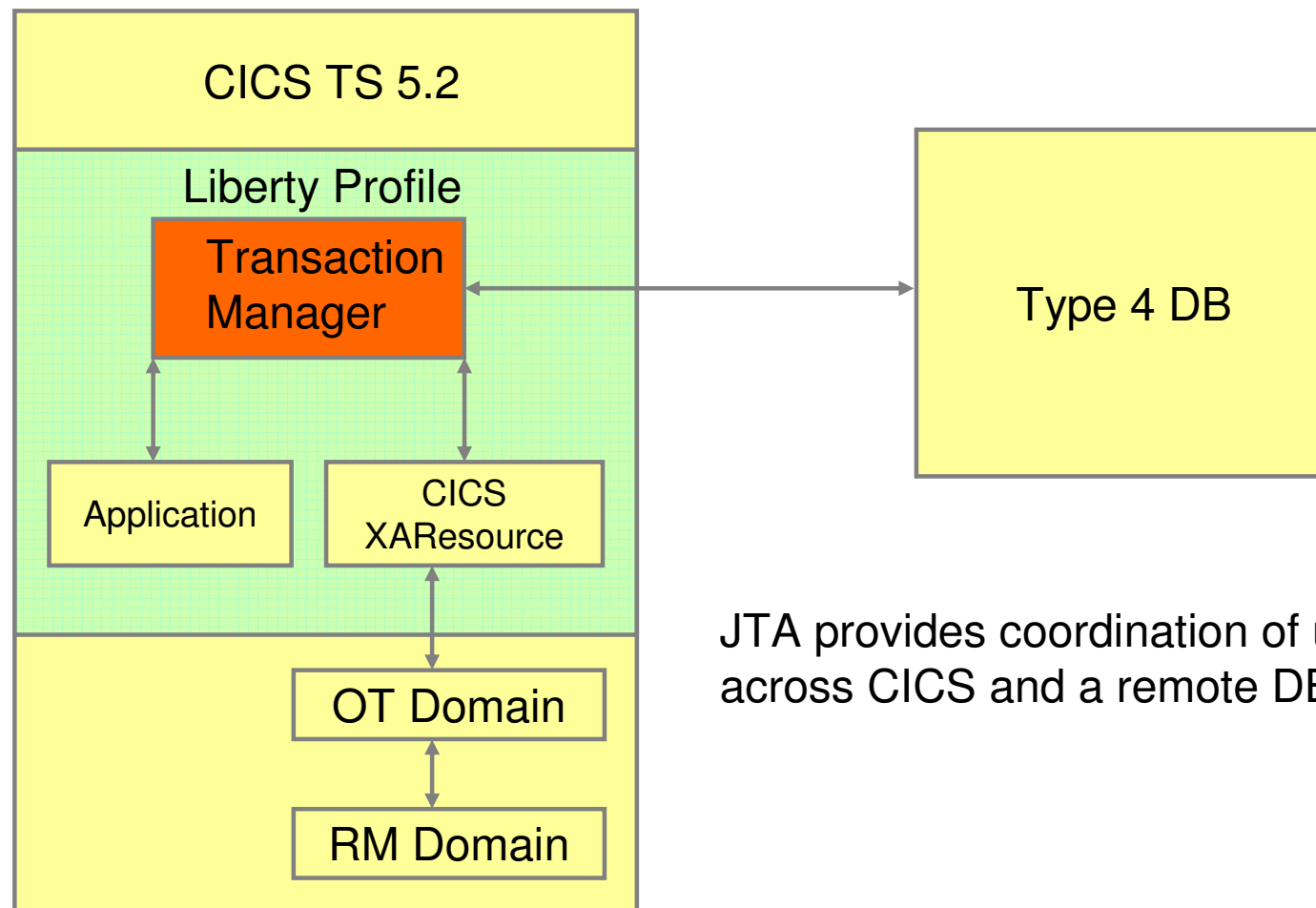
Notes

This chart shows how JTA interacts with CICS through the Object Transaction Service Domain.

CICS TS 52 Service Agility...

- ## IPIC High Availability
  - Allows CICS to connect to a cluster entry point
    - Allows CICS to know the actual endpoint for recovery
      - New TCPIPSERVICE attribute SRECIETODR

Sysplex A

| LPAR 1 | CICS 8 |

DVIPA → CICS 9

AIVIPA 9 | CICS 10

CICS A
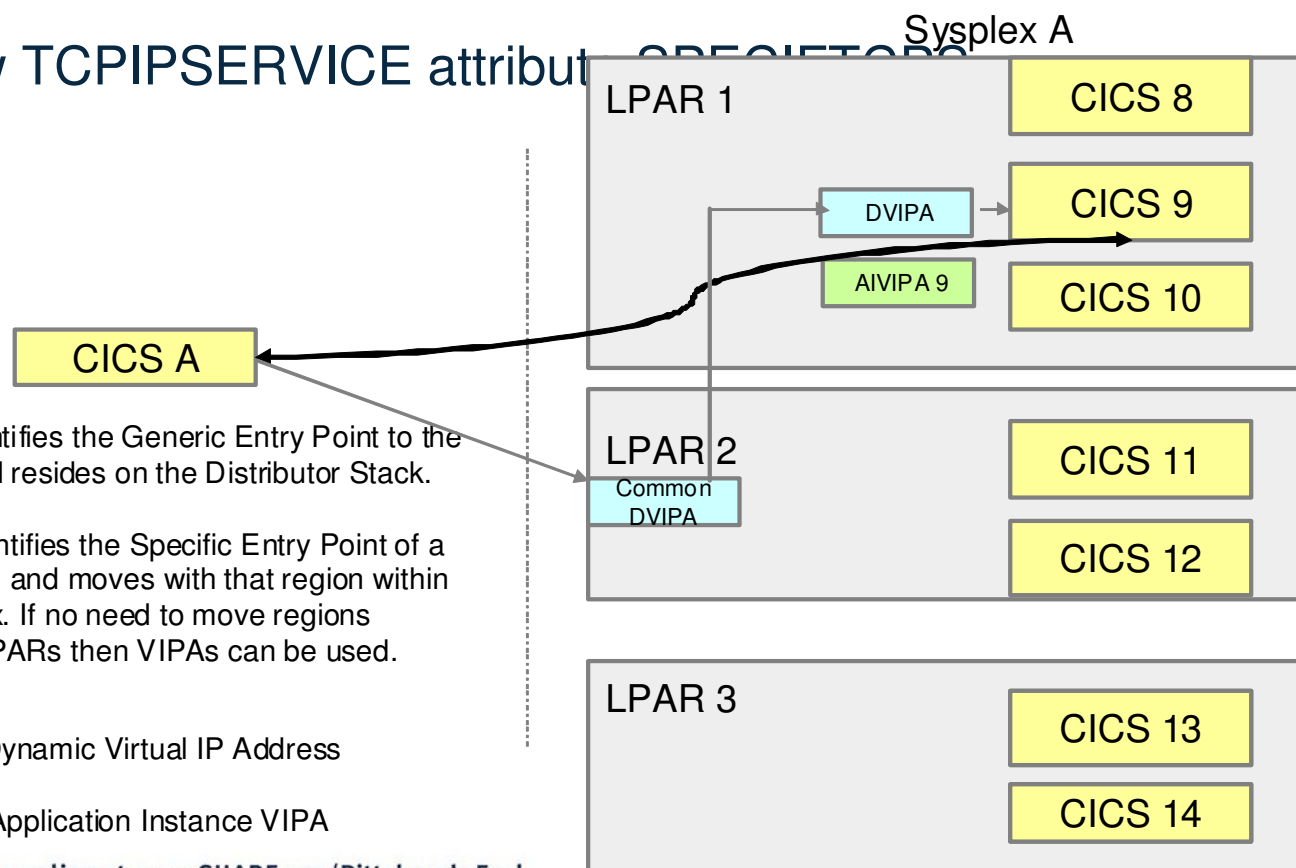
DVIPA identifies the Generic Entry Point to the cluster, and resides on the Distributor Stack.

AIVIPA identifies the Specific Entry Point of a HA Region, and moves with that region within the Sysplex. If no need to move regions between LPARs then VIPAs can be used.

LPAR 2

Common DVIPA

CICS 11

CICS 12

DVIPA – Dynamic Virtual IP Address

AIVIPA – Application Instance VIPA

LPAR 3

CICS 13

CICS 14

Notes

IP-connectivity (IPIC) support is extended to support more high-availability scenarios. This support helps to minimize the impact of issues that can arise when CICS® communicates across a wide area network, for example, if the network fails to respond. Groups of regions from CICS Transaction Server for z/OS, Version 5 Release 2 can be clustered together and accessed through a shared TCP/IP end point from other client regions of CICS Transaction Server for z/OS, Version 5 Release 2 . This support enables individual CICS regions to be removed as a single point of failure, while permitting planned or unplanned outages of individual components, and provides a migration path for VTAM® generic resource support when moving from SNA to an IP network

Operational Efficiency

Increased system capacity
and capability to achieve
more with less.

Automatic control of critical
resources using policies.

Notes

The next slides will discuss the Operational Efficiency features of CICS 52.

CICS TS 52 Operational Efficiency

- Policy Based Management
  - Resource threshold and action
  - Action can be:
    - Emit a message
    - Emit a system event
    - Abend the task

Define a Policy	Trigger an action
SQL	CICS Triggers an action
Files	Abend Message Event
Storage	An XML Policy document defines the threshold and action
CPU	

CICS V5.1 Policy

Threshold breach
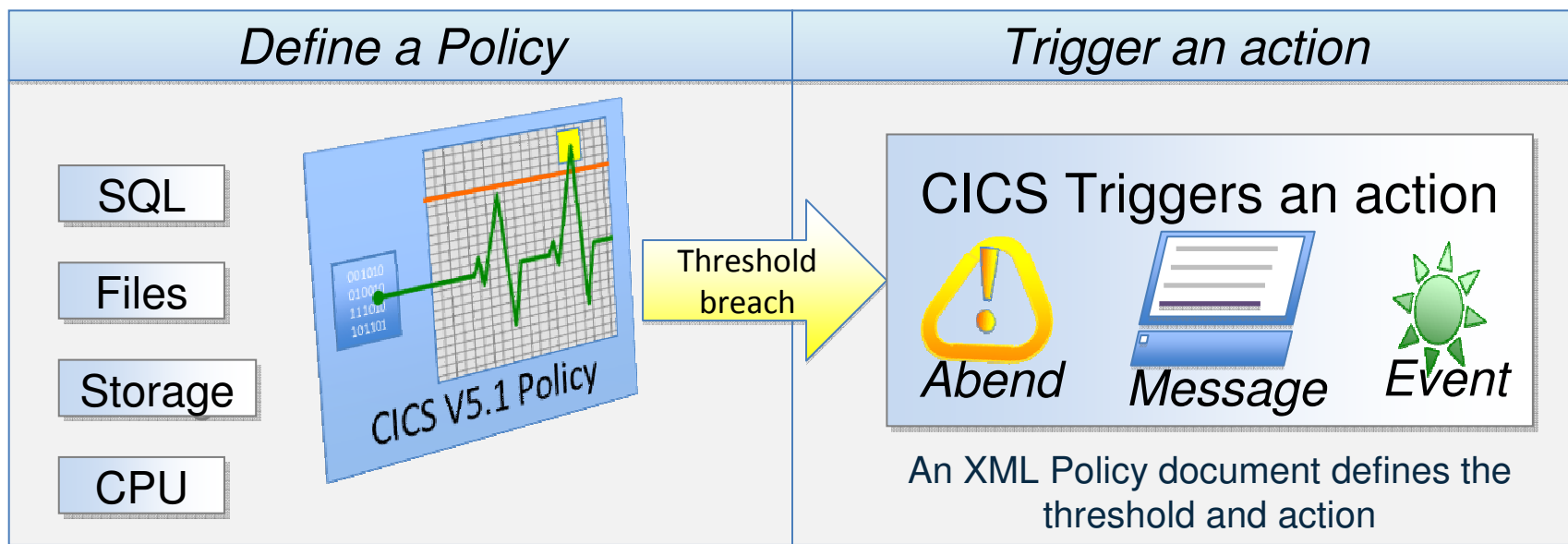
Notes

Managed operations are provided through the introduction of policies, which deliver automated control over critical system resources

A new, dynamic policy-based management capability is introduced in support of both applications and platforms. Policies enable the behavior of applications and platforms to be managed by determining whether tasks running as part of a platform, as an application, or as types of operation within an application, exceed certain predefined thresholds.

Task thresholds can be set based on data access requests, storage usage, program loops and processor time used. For example, a threshold could be defined based on the amount of above-the-line storage used by a task, the number of times a task accesses IBM DB2 or a file, or the number of EXEC LINK requests issued by a user task.

After a threshold is exceeded, CICS can issue a message, or abend the task with a specific abend. Additionally, policies can be defined to trigger one or more CICS events, which can in turn initiate other actions.

CICS policies are a declarative way of ensuring that applications and platforms continue to run effectively. A policy can be applied to any combination of applications and platforms. Additionally, policies can also be deployed into a single region, independently of defining a platform. Policies are applied dynamically during production operations.

CICS TS 52 Operational Efficiency…

- New thresholds in CICS 52
  - Temporary Storage
    - Number of requests or amount of data written
  - Transient Data
    - Number of requests
  - Elapsed Time
    - Check is made at dispatch
    - Action triggered at next API call
  - STARTs
    - Number of requests
  - Syncpoints
    - Number of requests
  - Program Link
    - INVOKE APPLICATION is now included

Notes

The number of supported policies thresholds is expanded to cover a wider range of task thresholds that can be used to trigger autonomic actions.

Thresholds can be set on requests for start, syncpoint, transient data (TD) queues, temporary storage (TS) queues, and elapsed time on a user task.

CICS TS 52 Operational Efficiency…

- Support for TLS 1.2 protocol and FIPS 140.2 Cryptographic Standards
  - FIPS 140.2 mandated by NIST SP800-131A directive
    - Cipher suites can now be defined in XML in a zFS file
    - Greater flexibility and ease of definition
    - APAR PM97207 available for TS 5.1
- System Initialization parameters
  - ENCRYPTION={ALL|TLS12|STRONG|}
  - USSCONFIG={/var/cicsts/dfhconfig|directory}
    - Cipher XML files in USSCONFIG/security/ciphers

Notes

Cryptographic ciphers enable CICS to enforce the use of TLS 1.2, and check for conformance to the NIST-SP800-131a security standard.

Support for stronger cryptographic standards allows you to permit all system SSL supported ciphers and protocols, or restrict to those that are supported by Transport Layer Security (TLS) 1.2.

CICS TS 52 Operational Efficiency…

- Extend NIST SP800-131A checking beyond sockets domain
  - New System Initialisation parameter
    - NISTSP800131A={NOCHECK|CHECK}
    - CHECK means CICS is required to check for compliance with the NIST SP800-131A security standard
    - Checked by Sockets (SO), Java (SJ) and Pipeline (PI) domains

Notes

Cryptographic ciphers enable CICS to enforce the use of TLS 1.2, and check for conformance to the NIST-SP800-131a security standard.

CICS can check and report on conformance to the guidelines in the National Institute of Standards and Technology (NIST) Special Publication 800-131A (NIST-SP800-131A), which includes support for TLS.

CICS TS 52 Operational Efficiency…

- Security Assertion Markup Language (SAML)

- OASIS open standard
- "XML based framework for describing and exchanging security information between on-line business partners."
- Web Single Sign-On
- Dynamic creation of Identity Federations (SSO across domains)

Profiles
Combinations of assertions, protocols, and bindings to support a defined use case

Bindings
Mappings of SAML protocols onto standard messaging and communication protocols

Protocols
Requests and responses for obtaining assertions and doing identity management

Assertions
Authentication, attribute, and entitlement information
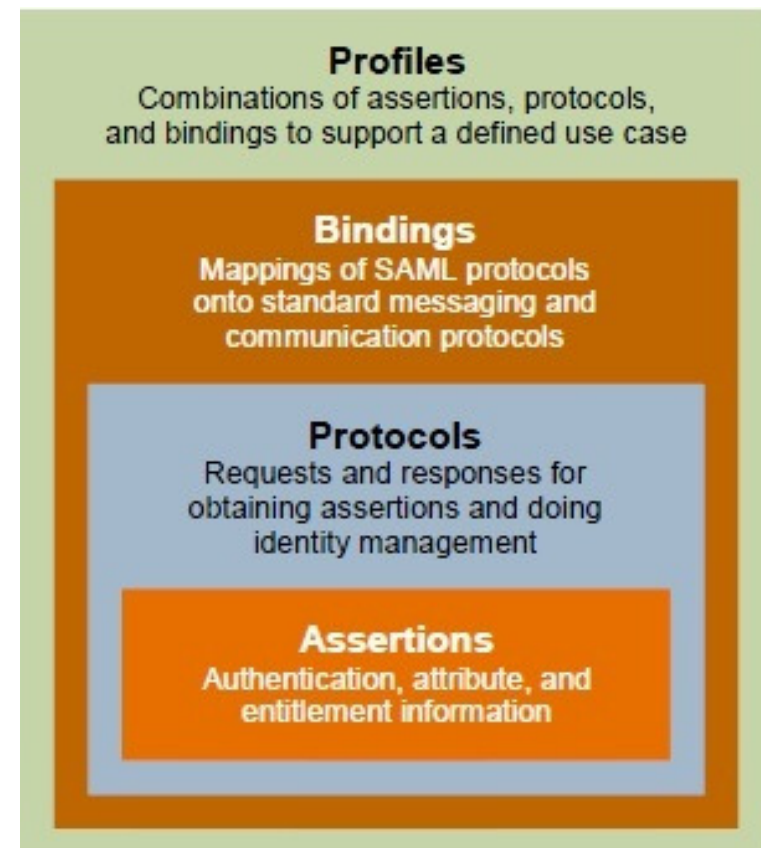
Notes

Security Assertion Markup Language (SAML) is an XML-based framework for describing and exchanging security information between online business partners. This security information is expressed in the form of portable SAML assertions that applications working across security domain boundaries can trust. The OASIS SAML standard defines precise syntax and rules for requesting, creating, communicating, and using these SAML assertions.

SAML provides a solution for a number of problems:

• It provides an open standard for exchanging security information between Service Providers, also known as Federated Identity.

• It provides a means for end-to-end auditing.

• It provides a common source for user role or authority-based information

CICS TS 52 Operational Efficiency…

- Security Assertion Markup Language (SAML)

bookaflight.com

bookahotel.com

SAML Token

IdP

SP

2

3

Validate

Authentication

1

IdP domain
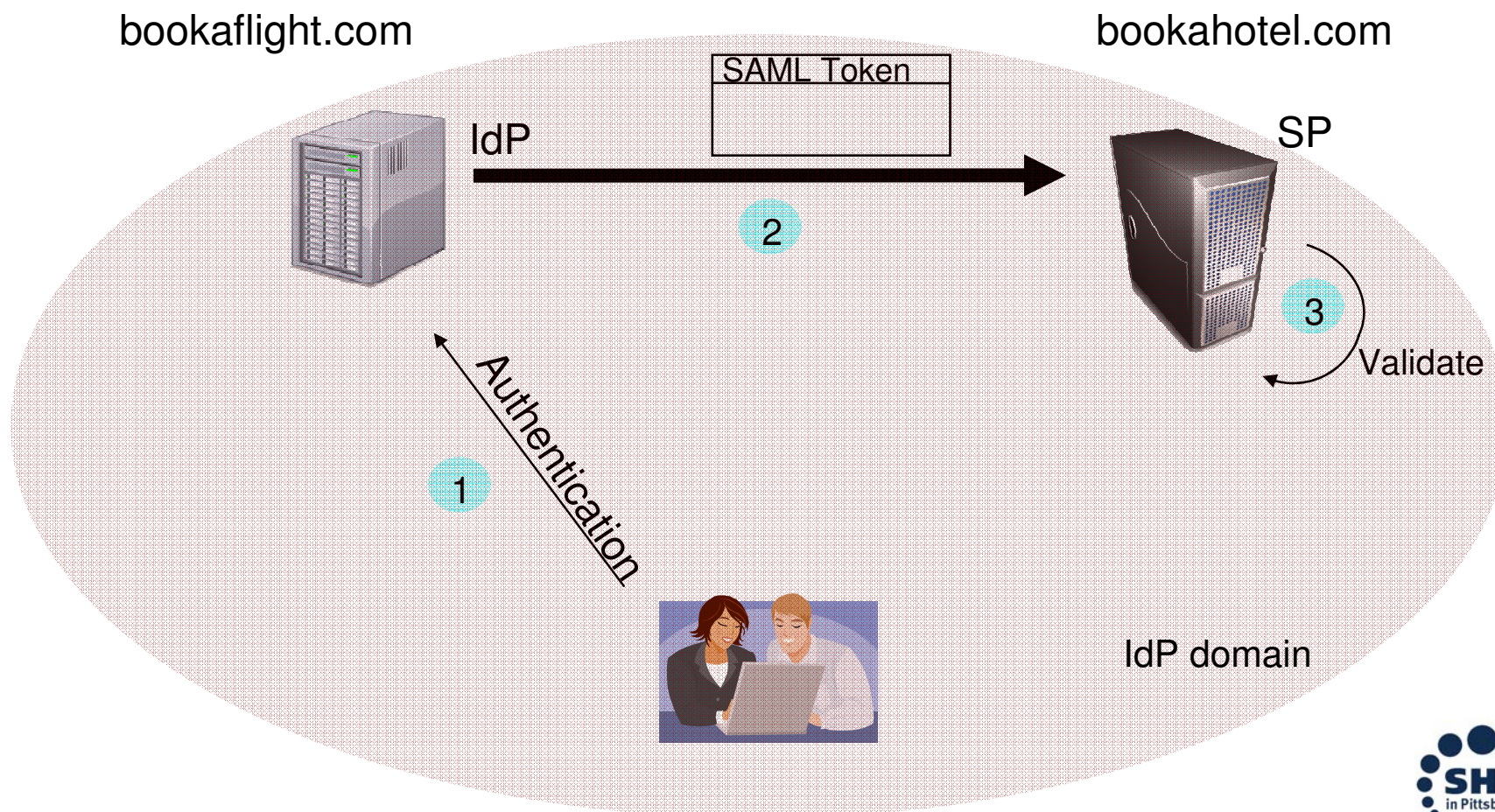
Notes

An example of a security assertion while booking a flight and deciding at add a hotel. The identity provider aserts the user's identity to the next service provider.

CICS TS 52 Operational Efficiency…

- SAML Feature Pack integrated into CICS 52
  - Linkable interface program DFHSAML
  - Channel and containers to provide input and output
  - DFHSAML links to Secure Token Service (STS), running inside a dedicated JVM server (preferably in a dedicated CICS region)
  - STS parses and validates SAML token
    - Most of STS function is zIIP off loadable

Notes

CICS supports SAML by providing an application programming interface (API), which consists of a linkable interface DFHSAML, a channel, and a set of containers. The API provides the means to enable CICS applications to validate SAML tokens, to extract SAML parts, and to augment SAML assertions by adding attributes.

SAML support for web services provides the following facilities:

• Automatic token validation and extraction of SAML parts for inbound SOAP messages

• Addition of a SAML token into a web service request

• Augmentation of a SAML token before it is added into an outbound SOAP message

CICS TS 52 Operational Efficiency…

- Outbound SOAP support for reusing inbound SAML Tokens
  - Previously validated tokens only
  - Requester pipeline retrieves token from DFHSAML-OUTTOKEN container and puts in in WSSE security header of the SOAP request
  - Input SAML token is passed on unchanged
  - Configuration sample samlrequester.xml provided
- Using the DFHTRANSACTION channel
  - No application changes are necessary

Notes

This chart shows how CICS can support outbound web services with SAML

CICS TS 52 Operational Efficiency…

- Transaction Channel & Containers
  - Created for use by SAML, but can be used independently
  - No changes to EXEC CICS API
    - A PUT CONTAINER can create the Transaction Channel
      - CHANNEL("DFHTRANSACTION")
    - If the Transaction Channel does not exist, a GET CONTAINER command will return CHANNELERR
  - New JCICS method in Task class

```
Task t = Task.getTask();
Channel tranChan = t.getTransactionChannel();
```

Notes

A transaction channel allows applications to be able to make use of containers throughout the transaction, without the need to restructure COMMAREA-based programs.

CICS TS 52 Operational Efficiency…

- Kerberos Support
  - Support for inbound tokens from Kerberos systems
  - RACF definitions can map the Kerberos principal to a RACF userid
  - Web services can be configured to handle Kerberos tokens as the security token
    - Alternatively, the userid extracted from the Kerberos token can be used to run the request
  - CICS API enhancement to validate a Kerberos token/extract the RACF userid

    ```
    EXEC CICS VERIFY
          TOKEN() TOKENLEN() TOKENTYPE(KERBEROS)
          <ISUSERID()>
          <ESM_RESPONSE()>  <ESM_REASON()>
    ```

Notes

CICS Transaction Server for z/OS® provides support for Kerberos.

CICS supports Kerberos using the external security manager (ESM). The level of support depends on the support provided by the ESM. If your ESM is RACF®, support is based on Kerberos Version 5 and Generic Security Services (GSS).

CICS can verify a Kerberos token by configuring a service provider pipeline or by using the API command VERIFY TOKEN.

CICS TS 52 Operational Efficiency…

- ## Threadsafe Commands
  - EXTRACT, INQUIRE, SET STATISTICS
  - INQUIRE, SET MONITOR
  - INQUIRE, SET DISPATCHER
  - INQUIRE, SET SYSTEM
  - INQUIRE MVSTCB
  - INQUIRE, SET, DISCARD PROGRAM
  - INQUIRE, SET, DISCARD TRANSACTION
  - INVOKE APPLICATION

Notes

EXEC CICS commands which are now thread safe in CICS V5.2.

CICS TS 52 Operational Efficiency…

- Dispatcher Statistics
  - New fields to understand the TCB pool performance
    - Last Excess TCB Scan
      - Date/time of the last CICS dispatcher excess MVS TCB scan that did not detach any TCBs
    - Last Excess TCB Scan–No TCB Detached
      - Date/time of the last CICS dispatcher excess MVS TCB scan
    - Pool Limit reached
      - Time when pool limit reached
    - Dispatchable Queue (only applicable to the single TCB non-Open TCB modes):
      - Current number of dispatchable tasks queued for the TCB
      - Peak number of dispatchable tasks that have queued for the TCB
      - Average number of dispatchable tasks have queued for the TCB

Notes

DSGLXSCN The date and time of the last CICS dispatcher excess MVS TCB scan that did not detach any TCBs. If the DFHSTUP report shows the date and time as --/--/---- --:--:--:---- then that indicates then an excess TCB scan has not happened yet.

Reset characteristic: not reset

DSGLXSND The date and time of the last CICS dispatcher excess MVS TCB scan. If the DFHSTUP report shows the date and time as --/--/---- --:--:--:---- then that indicates then an excess TCB scan has not happened yet.

Reset characteristic: not reset

DSGTMCDQ The current number of dispatchable tasks queued for the TCB.

Reset characteristic: not reset

DSGTMPDQ The peak number of dispatchable tasks that have been queued for the TCB.

Reset characteristic: reset to current

DSGTMADQ The average number of dispatchable tasks that have been queued for the TCB.

Reset characteristic: reset to current

DSGLTCBL The time at which the pool reached the maximum TCB limit. If the DFHSTUP report shows the time as --:--:--:---- then that indicates that the pool limit has not been reached since the statistics were last reset.

Reset characteristic: reset to zero

CICS TS 52 Operational Efficiency…

- Transaction Statistics
  - New fields to understand the TCB pool performance
    - Time MAXTASKS last changed
    - Time last transaction was attached
    - Time MAXTASK was last reached
    - Currently at MAXTASK indicator
- New Monitoring Domain statistics fields
  - Number of user transactions ended in interval
  - Number of system transactions ended in interval
  - Time last transaction attached
  - Time last transaction ended
  - MAXTASK at last transaction attached
  - Current user tasks at last transaction attached
  - Average user response time
  - Peak user response time
  - Time of peak user response time

Notes

There are new statistics records for the Monitor Domain to help you understand how your CICS system is processing user transactions.

CICS TS 52 Operational Efficiency…

- Private resource statistics
  - New records to support multi-versioning for private resources
    - Library record
    - JVM Programs
    - Programs
    - Program definitions
  - New fields for Platform, Application and Version

  - Reports via DFHSTUP

Notes

There are new statistics records for the private resources available with the multi-versioning support in CICS TS 52.

CICS TS 52 Operational Efficiency…

- CICS Performance Analyzer 52[*]

What's new in CICS PA V5.2?	*CICS PA enables you to…*
• IBM CICS Transaction Server V5.2 support • Performance summary reports for platforms and applications • Multi-version analysis of applications • Reporting, visualization, statistics alerts and analysis enhancements • Transaction Performance Alert plug-in view • Visualization of the performance of individual transactions	• Comprehensive Performance Reporting and Analysis for CICS including DB2, WebSphere MQ, and MVS System Logger • Understand trends and develop capacity plans • View statistics and create statistical alerts
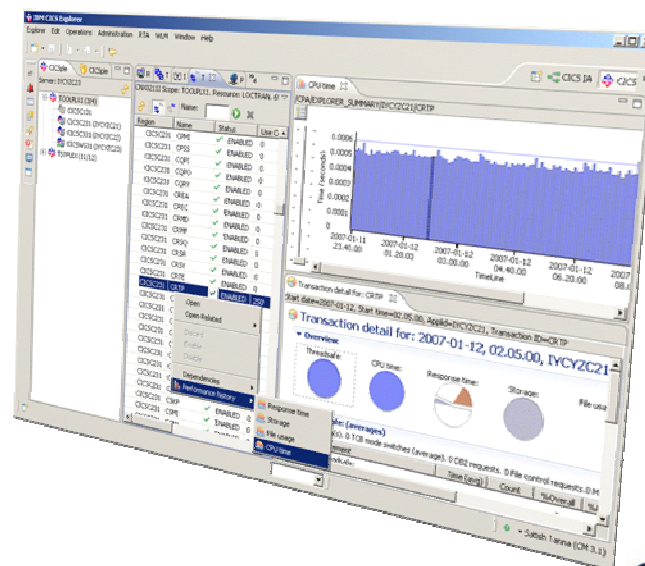
* Separate Product

Notes

CICS PA V5.2 supports the CICS cloud with new Performance Summary reports for platforms and applications, while multi-version application support enables fine-grained analysis of ever-changing mobile applications. New, simply configured, batch reporting of CICS TS and CICS TG statistics provides a wealth of valuable diagnostic and planning information. Plug-in enhancements, which include new Performance Alerts, and more advanced visualization and analysis, help development and systems staff to identify and resolve performance issues quickly.

CICS TS 52 Operational Efficiency…

- CICS Performance Analyzer 52
  - Alert Visualizations for Storage, dispatcher, loader, monitoring, etc
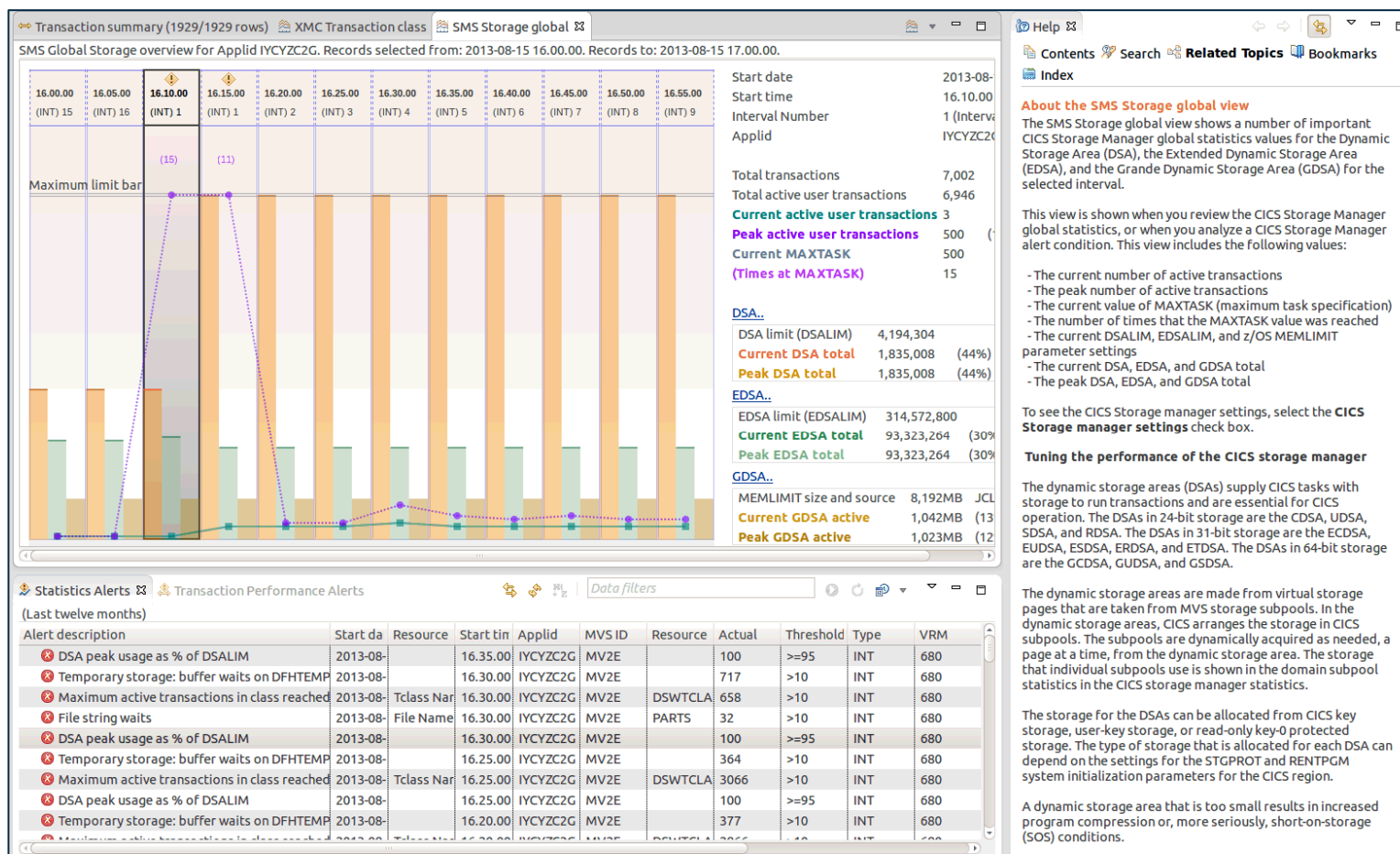
CICS TS 52 Operational Efficiency…

- CICS Performance Analyzer 52
  - Alert Visualizations for Storage and Dispatcher
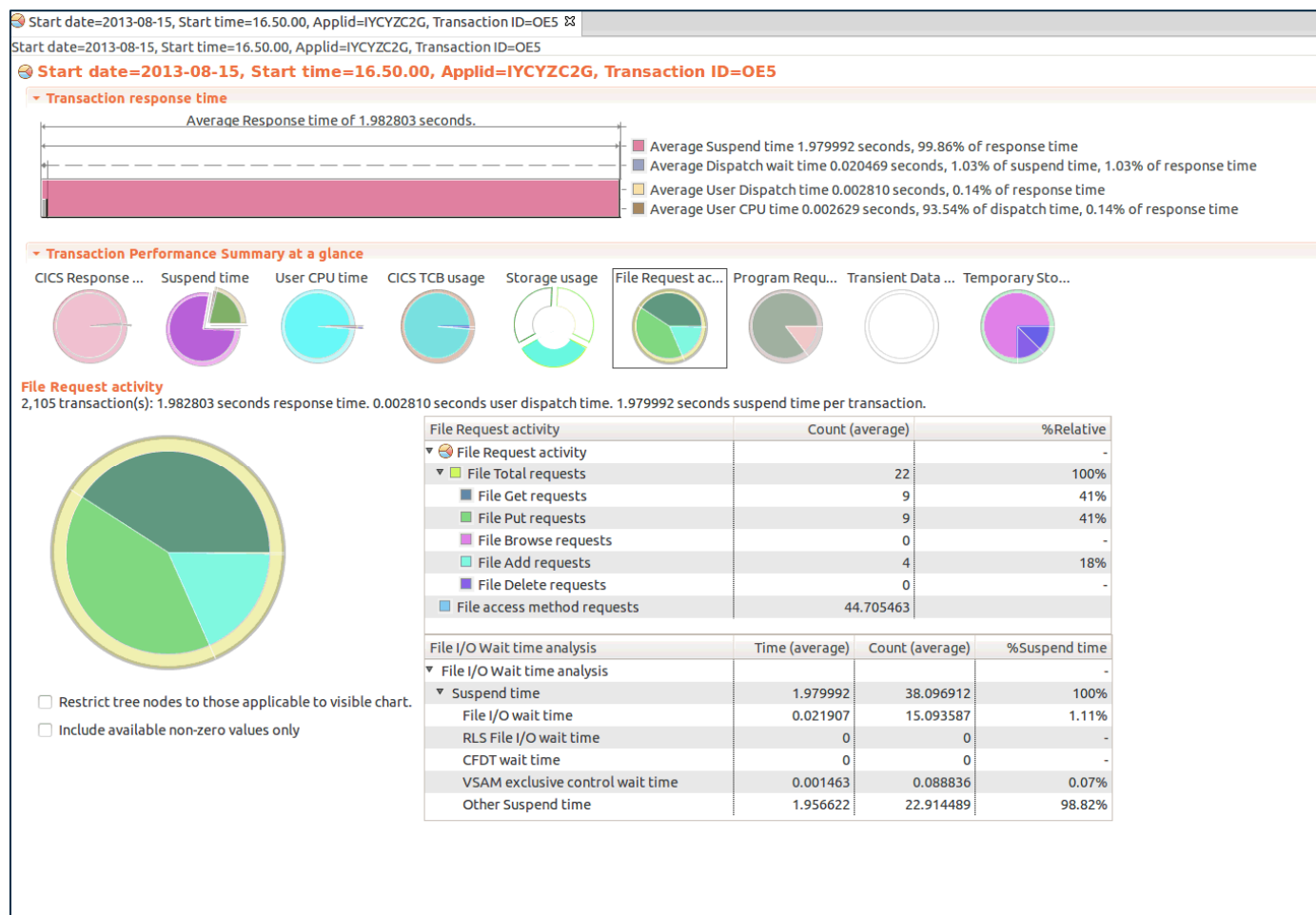
Cloud
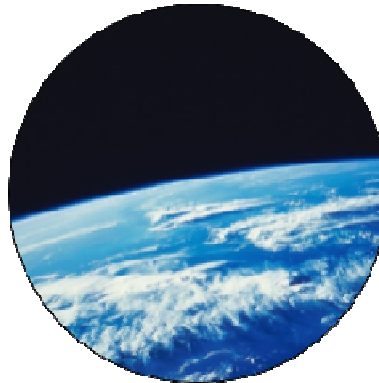
Simplified system management and rapid application deployment.

On premise pattern based cloud deployment.

Notes

The next slides will discuss the Cloud features of CICS 52.

CICS TS 52 Cloud

Platform Lifecycle

PLEX2

MV2D
MUNNSA3   MUNNSA4
MUNNSF4   MUNNST3   MUNNSF3   MUNNST4
DH2D   QG2D

MV28
MUNNSA2   MUNNSA1
MUNNST1   MUNNSF1   MUNNST2
DH28   QG28

Platform

Region Type

Region Type

Region Type

- Top down Platform definition now available

Notes

You can package a CICS platform into a platform bundle to deploy, manage, and monitor it as a single entity. With a platform bundle, you can install and manage the resources for the platform in all of the CICS regions in a platform.

You can use platforms to help you manage your requirements as a single entity. This has a number of benefits; for example:

You can manage legal requirements for specific geographies.

You can manage applications, resources, and policies as a group.

You can manage system characteristics in one place.

You can monitor applications or system resources as a group.

You can monitor platforms as a logical whole, helping users to manage resource usage and process internal charge-back billings.

You can easily drill down to the resource consumption of individual resources.

You can undertake problem determination starting with the overall platform and drilling down to individual applications, resources, and policies.

Use a platform instead of a CSYSGRP when you want to manage several groups of systems as a single entity. A CSYSGRP is a method of grouping CICS regions together. A platform provides a point of control for deploying, managing, and monitoring the lifecycle of several groups of systems as a single entity.

CICS TS 52 Cloud…

- CICS Deployment Assistant for z/OS V5.2*

What's new in CICS DA V5.2?	CICS DA enables you to…
• Support for IBM CICS Transaction Server V5.2 • New RESTful API to access model • Cloning of unmanaged and cross-logical partition (LPAR) regions • New Comparison view • New TCP/IP usage report.	• Visualize and manage your CICS topology • Discover existing regions and sub-systems • Automation creates new CICSplex • Plexify and clone CICS regions • Start and stop a CICS region • Share model with other applications
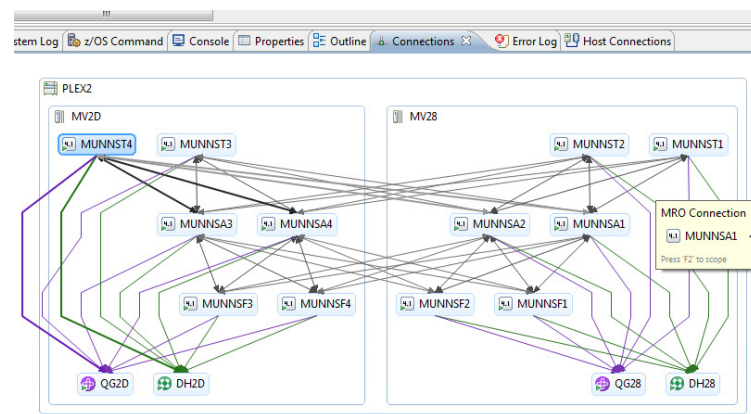
* Separate Product

Notes

CICS DA V5.2 introduces a new RESTful API that allows the deep insight captured in the discovered model to be shared with other management tools, or viewed from mobile devices and browsers. New cloning options deliver value to a wider range of client environments. A new compare option highlights key differences in region configuration and helps to ensure standards conformance and system reliability.

CICS TS 52 Cloud…

- Bundle definition support for addition resources
  - FILE
  - JVMSERVER
  - TCPIPSERVICE
  - PIPELINE
  - WEBSERVICE

Notes

The type of resources that can be defined in CICS bundles and managed as part of a platform is broadened to include files, JVM servers, pipelines, TCP/IP services, and web services. In addition, library and program resources that are defined in CICS bundles as part of an application are made private to that version of the application. This facility avoids resource name clashes between applications and application versions, and is particularly useful for server consolidation.

CICS TS 52 Cloud…

- ## Application Multi-versioning

CICS TS

Version 1.0.0

Version 1.0.1

Version 1.2.0

Version 2.0.0

Install, enable, make available
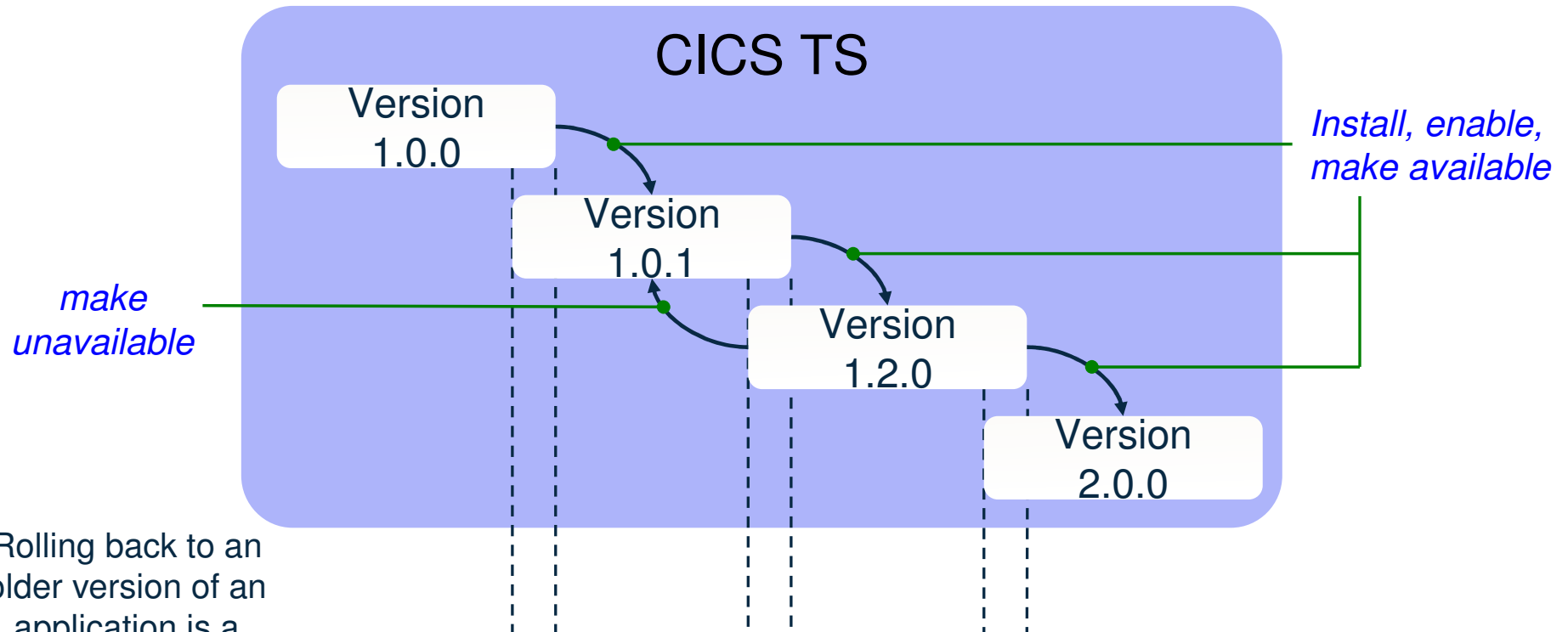
make unavailable

Rolling back to an older version of an application is a simple operation - mark the version as 'unavailable"

Versioning provides support for the "major.minor.micro" system

Transition to newer (or older) version

Notes

CICS TS V5.2 enables a platform to host multiple versions of the same application, and multiple applications at the same time. New versions of an application can be deployed to the platform without the need to disable or remove the previous version, and be made available to users without service interruption. This can improve service agility and reduce the business risk of deploying applications as users can be progressively switched to the new version to gain confidence in it, or switched to an older version if there are any issues.

CICS TS 52 Cloud…

- Application Multi-versioning

Resources **private** to an application

PROGRAM LIBRARY

CICS TS

Private programs

PROG1

URIMAP Payroll App LIBRARY

URIMAP Customer App LIBRARY

PROG1

Private programs

X

Y
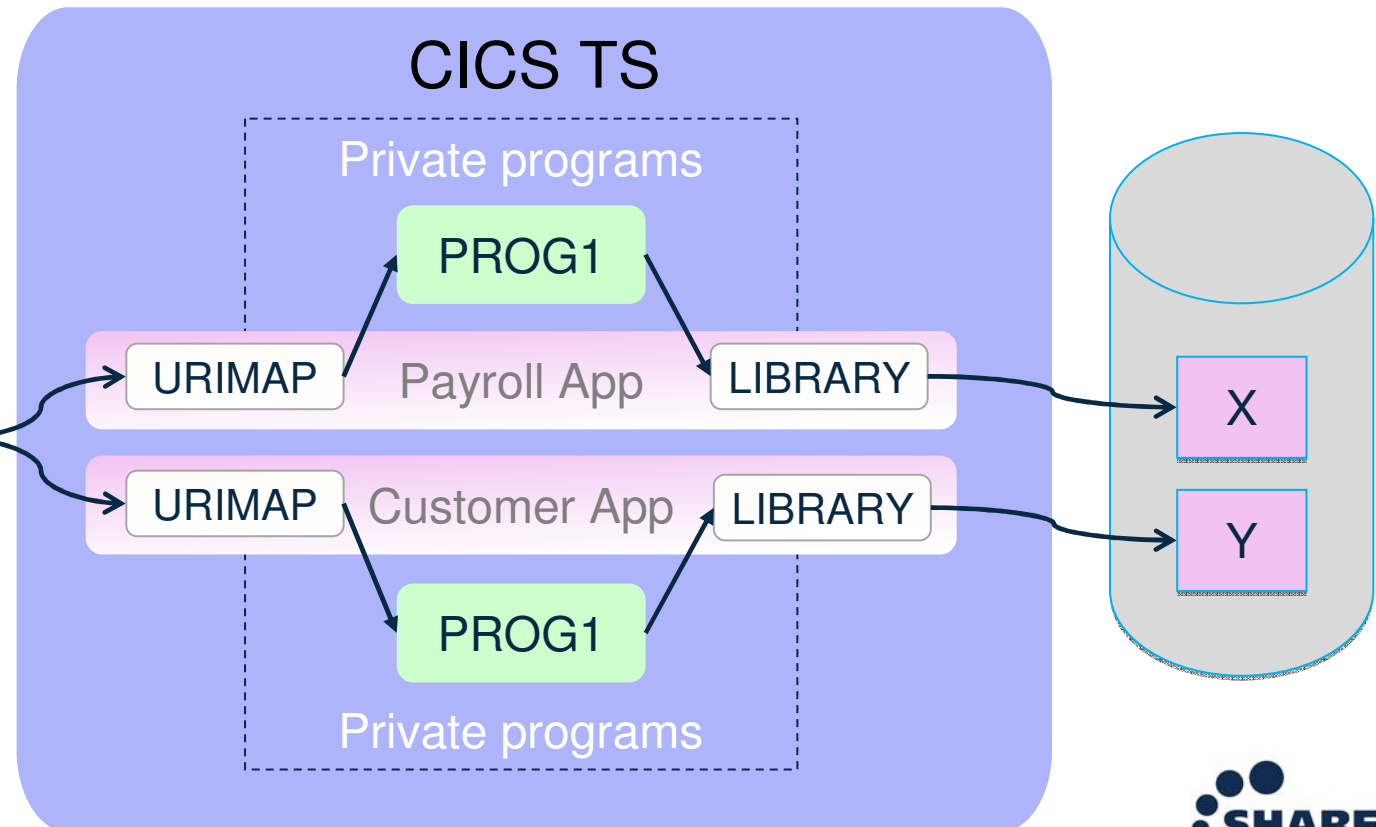
Notes

Library and program resources that are defined in CICS® bundles as part of an application can be made private to that version of the application. This separation avoids resource name clashes between applications and application versions, and is useful for server consolidation.

CICS TS 52 Cloud…
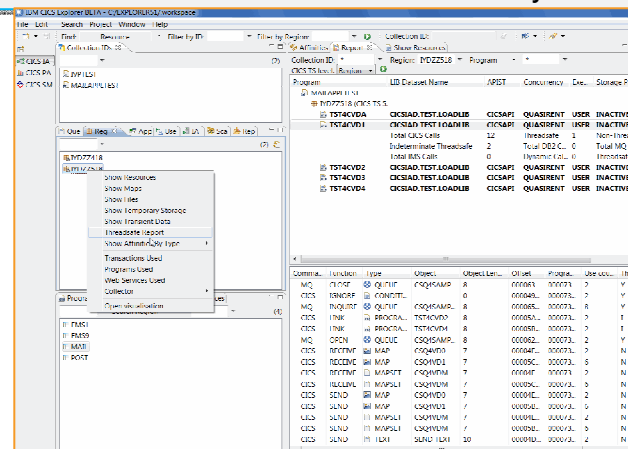
- CICS Interdependency Analyzer*

What's new in CICS IA V5.2?
- Support for CICS® Transaction Server V5.2
- Enhanced cloud application analysis
- New resource use and dependencies by platform
- New visualization of TCB, region, and application switches
- New plug-in view for Program Details
- New affinity analysis in the plug-in
- New Dependency collection sampling technique
- Deeper thread-safe analysis

CICS IA enables you to…
- Visualize application flow and structure
- Identify mobile and web service candidates
- Identify threadsafe / non-threadsafe programs
- Isolate and remove affinities
- Speed CICSPlex® SM workload management
- Advanced CICS command flow analysis

* Separate Product

Notes

CICS IA V5.2 collects more information about applications and platforms, to help clients create a more dynamic CICS cloud environment. The new Command Flow visualization provides yet more insight into program behavior. A new variable sampling technique is introduced to help reduce the CPU overhead by up to 75% while collecting data. This technique can be applied to production regions to balance the impact of collection, the fidelity of the data collected, and production throughput.

CICS TS 52 Cloud…

- ## CICS Configuration Manager*

What's new in CICS CM V5.2?	*CICS CM enables you to…*
- Plug-in support for migration schemes - New deployment analysis from plug-in - New support for IBM CICSPlex SM topology and workload management definitions - New support for NIST SP800-131A security standard - New migration of TCPIPSERVICE and IPCONN definitions for high availability connections	- Manage changes throughout the life-cycle - Create reports to identify redundant definitions, show resource relationships, and change management history - Manage audit, back-out and change authorizations
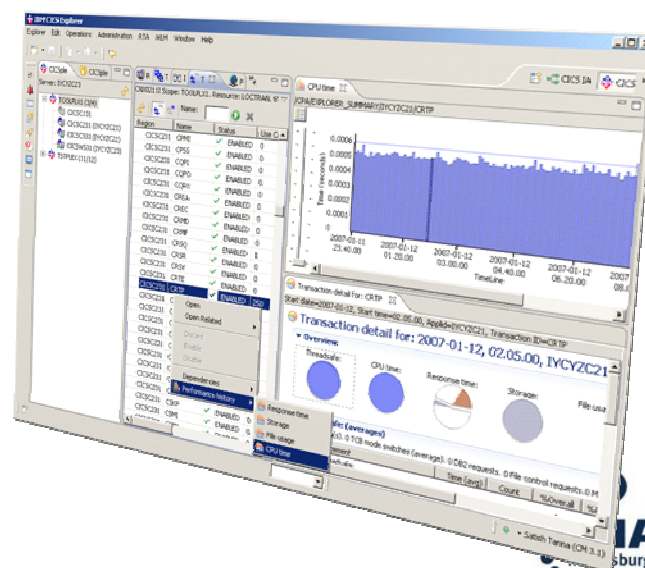
* Separate Product

Notes

CICS CM V5.2 improves DevOps collaboration with new plug-in support for Migration Schemes and Deployment Analysis. New support to manage CICSPlex SM Topology and Workload Management definitions allows dynamic mobile workloads to be quickly reconfigured.

CICS TS 52 Explorer

- Support for new Bundle and Policy definitions
- Purge action for shared TS Queues
- Mixed case credentials
- System group editor
- New views
  - Dumps
  - Task related user exits
  - Repository view
  - Active workloads

Notes
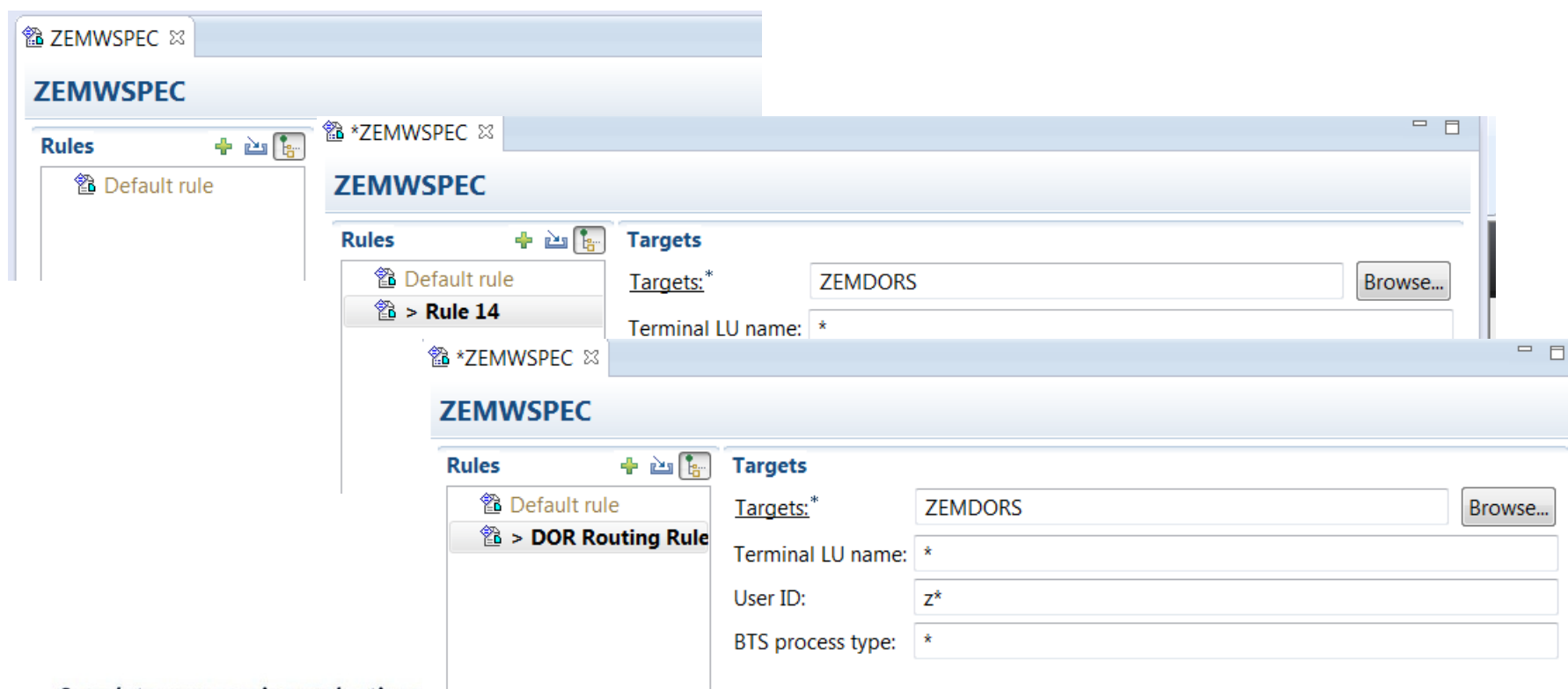
CICS Explorer, the strategic management interface for CICS TS, is upgraded to CICS Explorer V5.2. This is a major update to support the latest CICS TS and CICS Tools capabilities.

CICS Explorer V5.2 is updated to include support for the new and enhanced capabilities of this CICS TS deliverable, such as:

* Enhanced support for CICSPlex SM WLM

* Improvements in support for modification of associated CICSPlex SM workload definitions, using a new sophisticated editor

* Intuitive access to information about the state of running workloads

CICS TS 52 Explorer…

- Workload specification editor
  - Creates default routing rules
  - Add and rename additional routing rules
  - Can import an existing rule

Notes

CICS Explorer presents a new way of managing your CICSPlex SM workloads. There is no change to the way the CICSPlex SM workload management operates, but by using CICS Explorer you can get a simplified and consolidated view of the CICSPlex SM elements that control where, and how, the work is distributed in a workload.

CICS TS 52 Documentation
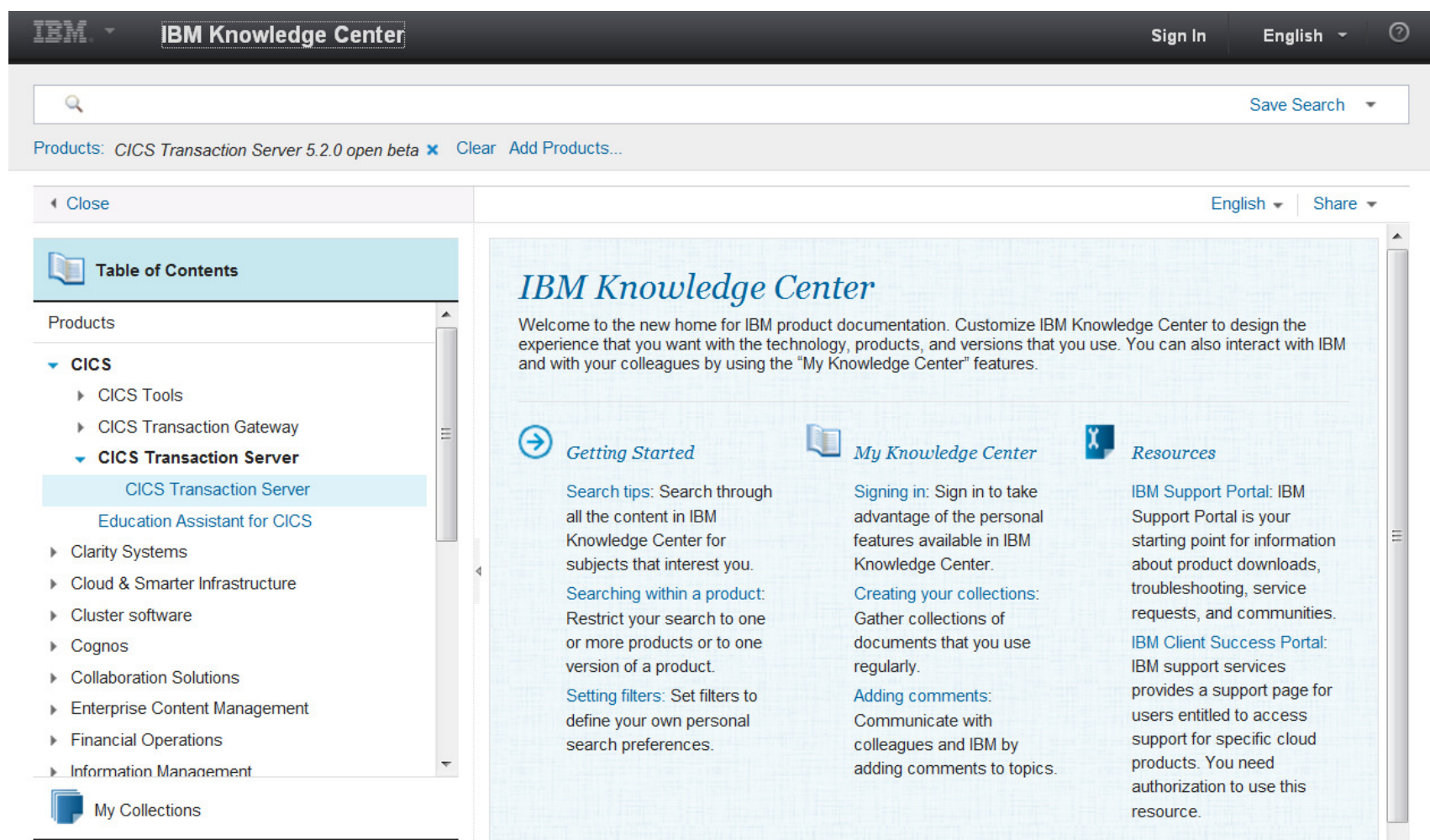
- IBM Knowledge Center
  - All IBM product documentation from one URL
  - Replacing online Information Centers for all supported versions of CICS from March 2014
    - Downloadable ICs will still be available

http://www.ibm.com/support/knowledgecenter/

Notes

Documentation for CICS® is supplied in the IBM® Knowledge Center. This format offers benefits in searching, filtering, saving, customizing, and printing documentation for all IBM products. IBM Knowledge Center provides information for over 2500 IBM products. The information that was previously provided in product information centers is in IBM Knowledge Center. IBM Knowledge Center provides integrated tools for finding, filtering, customizing, saving, and sharing information.

CICS TS 52 Documentation…

Notes

Integration

IBM Knowledge Center is one place to go to find information about all IBM products that you use.

Consistency

There were differences in the presentation and function of information centers between products. IBM Knowledge Center provides the same set of functions for all product information.

Customization

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Feedback

You can rate the quality of topics and share your comments and tips with other users in the IBM Knowledge Center. You can continue to send feedback privately to IBM, if you prefer.

Statements of Direction

- *IBM intends to deliver IBM WebSphere Liberty z/OS Connect (z/OS Connect) as a common program component of WebSphere Application Server for z/OS, IMS Enterprise Suite for z/OS, CICS Transaction Server for z/OS, and CICS Transaction Gateway.*

  z/OS Connect is intended to provide a simplified, secure, and scalable gateway functionality to route web, cloud, and mobile application traffic that accesses applications provided by the aforementioned z/OS products, as well as z/OS Batch and z/OS UNIX™ System Services applications.

  z/OS Connect intends to offer: (i) a fast on-ramp interface to z/OS applications by providing a common access mechanism based on RESTful services; (ii) tooling to allow a cloud or mobile developer to define secure enterprise connectivity without the need for extensive code development or knowledge of System z.

IBM CICS Transaction Server V5
the premier enterprise grade mixed language application server

Service Agility

Runtime support for production ready web applications.

Integration with mobile applications.

Operational Efficiency

Increased system capacity and capability to achieve more with less.

Automatic control of critical resources using policies.

Cloud Enablement

Simplified system management and rapid application deployment.

On premise pattern based cloud deployment.

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