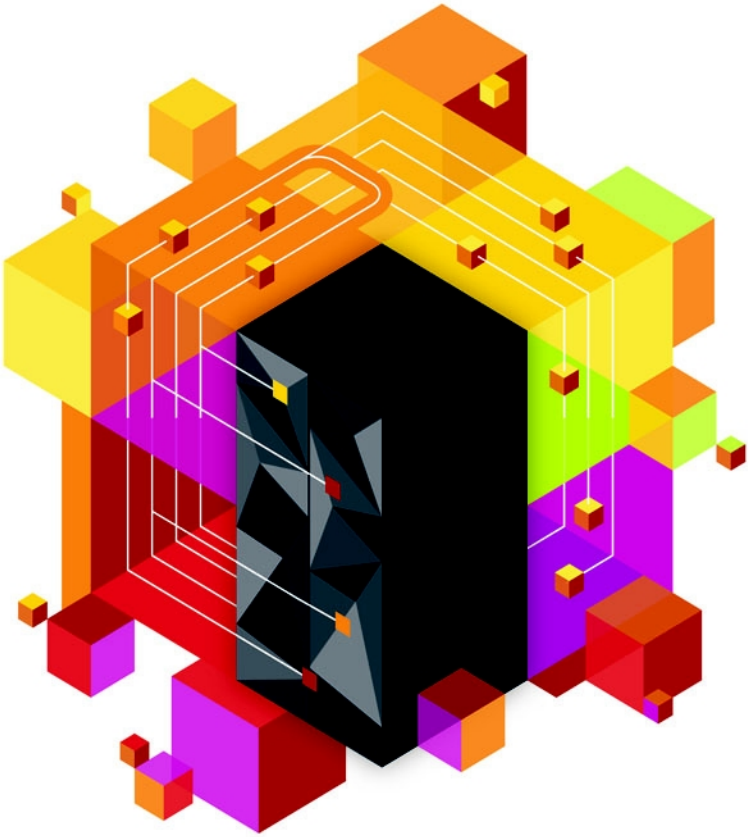
# CICS Portfolio Version 5.1
# Major updates to CICS Family

Andy Armstrong, CICS System Test
Senior Inventor

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# CICS Transaction Server – Business perspective

- CICS TS is the world's premier enterprise class transaction processor
- CICS TS is designed to enable customers to create and maintain a competitive advantage
- CICS TS continues to deliver innovative and essential technology to enable customers to deliver on their business imperatives, now and into the future

| | | |
|---|---|---|
| *Large scale business critical workloads, some > 1bn transactions per day* | *Large installations with mixed workloads continue to support core business* | *CICS web services is the most successful CICS feature in the last 10 years* |

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# Current challenges

- Critical importance is that operational costs are kept as low as possible
- Increased pressure to be able to deliver results faster and more efficiently
  - Current operational practices often inhibit the speed of delivery
- How do you keep pace with rapidly changing technology and trends?
  - Consider the rapid growth of mobile devices and workloads, as well as cloud technology and services
  - Can you cope with the demands of the future?

| *Operation Efficiency: Controlling cost* | *Service Agility: Deliver results faster* | *Cloud Enablement: A long term investment* |
|---|---|---|

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# Announcing the new CICS Portfolio V5.1 release

## 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

*100+ 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

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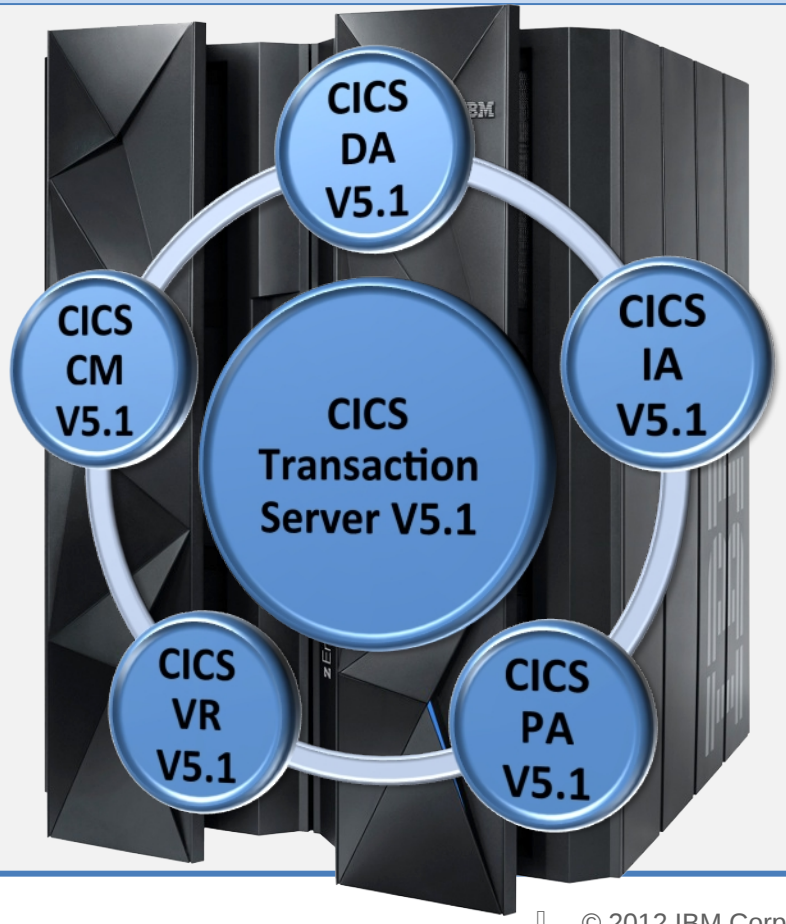
# New V5.1 tools deliver the complete solution

## *Five core foundational CICS Tools* – *updated to exploit TS V5.1*

*Fully integrated with the CICS Explorer…*

- Five core tools support and extend the CICS runtime
- Discovery and visualization aids insight
- Automation speeds service delivery and ensures standardization and governance
- Modern, integrated user interfaces lower skills barrier
- Day-1 exploitation of CICS TS V5.1 new capabilities reduces time to value

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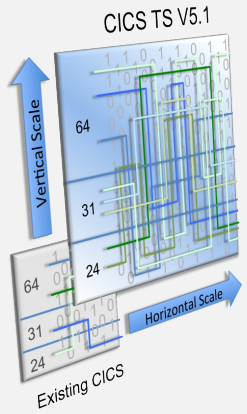
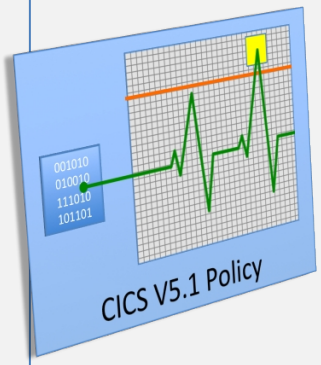
# Driving Operational Efficiency

## Greater Capacity




*Achieve cost savings through consolidation*

## Managed Operations

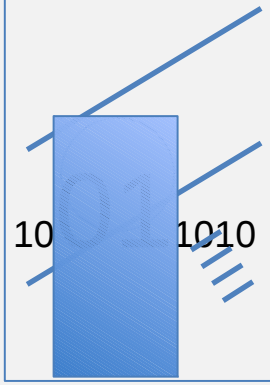



*Reduce cost and risk through automation*

## Increased Availability

*Reduce the need for planned downtime*

## Deeper Insight




*Improve decision making and audit readiness*

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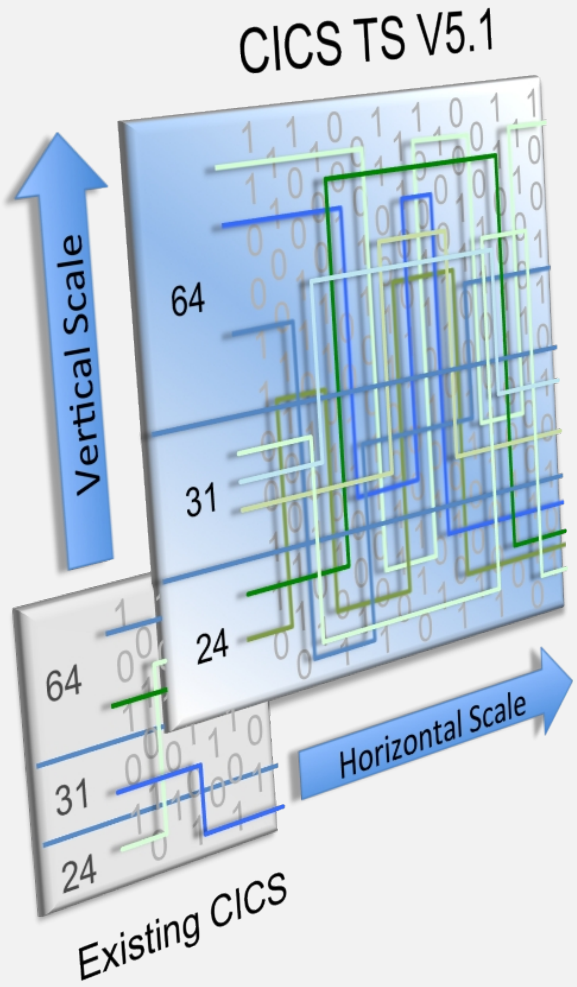
# Greater capacity - Achieve cost savings through consolidation




| Feature | Benefit |
|---|---|
| Doubled MAXTASK to 2000 and optimized storage area usage | Greater vertical scalability |
| More threadsafe API & SPI and optimized TCB usage | Greater horizontal scalability |
| Java 7 support | Greater throughput |
| 64 Bit assembler storage usage | Application access to big data |

***Right-size and simplify your CICS topology***

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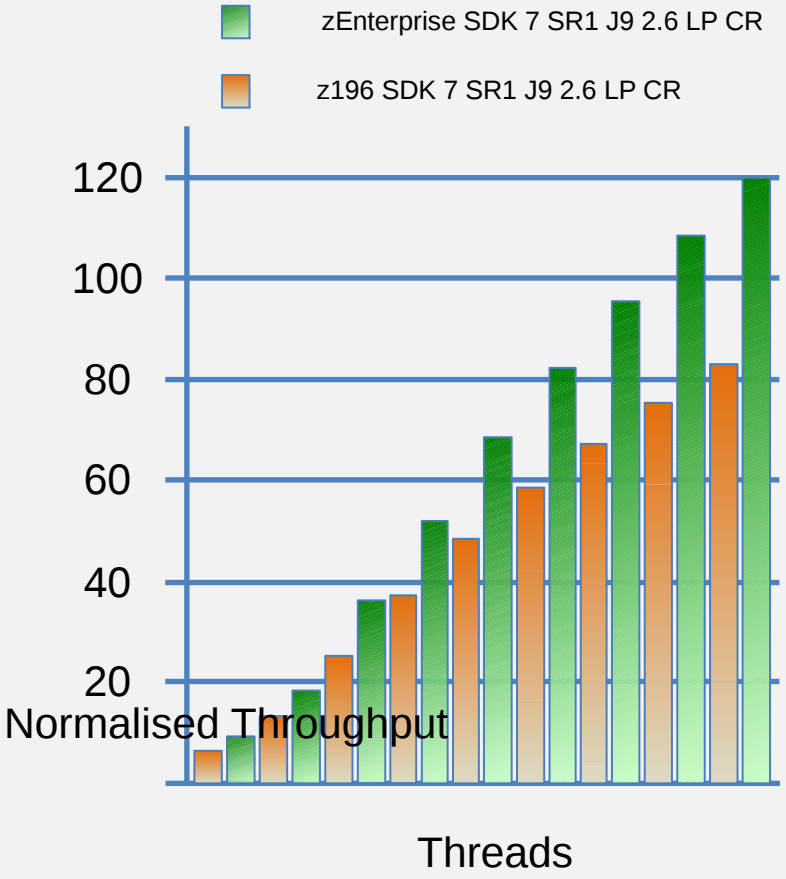
# Performance improvements from Java 7 support

*The latest JVM delivers a performance boost…*

- zEnterprise EC12 offers a ~45% improvement over z196 running the Java Multi-Threaded Benchmark
- EC12 has additional instructions specifically for Java

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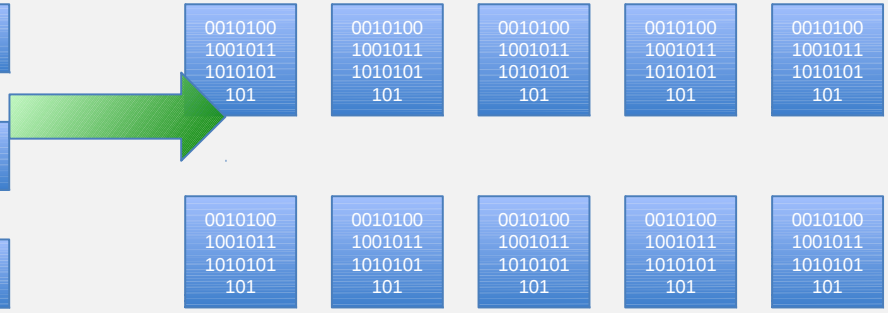
# *Greater Capacity – Achieve cost savings through consolidation*

*IBM Lab benchmark demonstrated…*

- **Consolidate 30** regions down **to 10**
- **Decrease CPU** usage up to **10%***
- **Reduce** the management burden by **2/3**
- **Maintain** the same **workload***




*Test conducted under lab conditions and results may vary – For further information contact IBM

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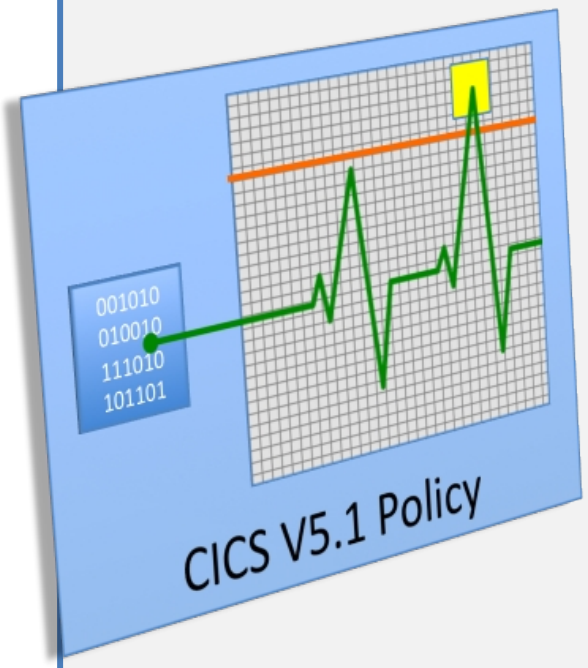
# *Managed Operations - Reduce cost and risk through automation*




| Feature | Benefit |
| --- | --- |
| New declarative policy | Define and automatically manage SLAs |
| Set policy thresholds on<br>• CPU usage<br>• Storage used and GETMAIN<br>• SQL or file access<br>• EXEC LINK | Critical resource protection |
| Automate actions on policy breech<br>• Issue message<br>• Abend a task<br>• Emit an event | Automatic response to undesired behavior |

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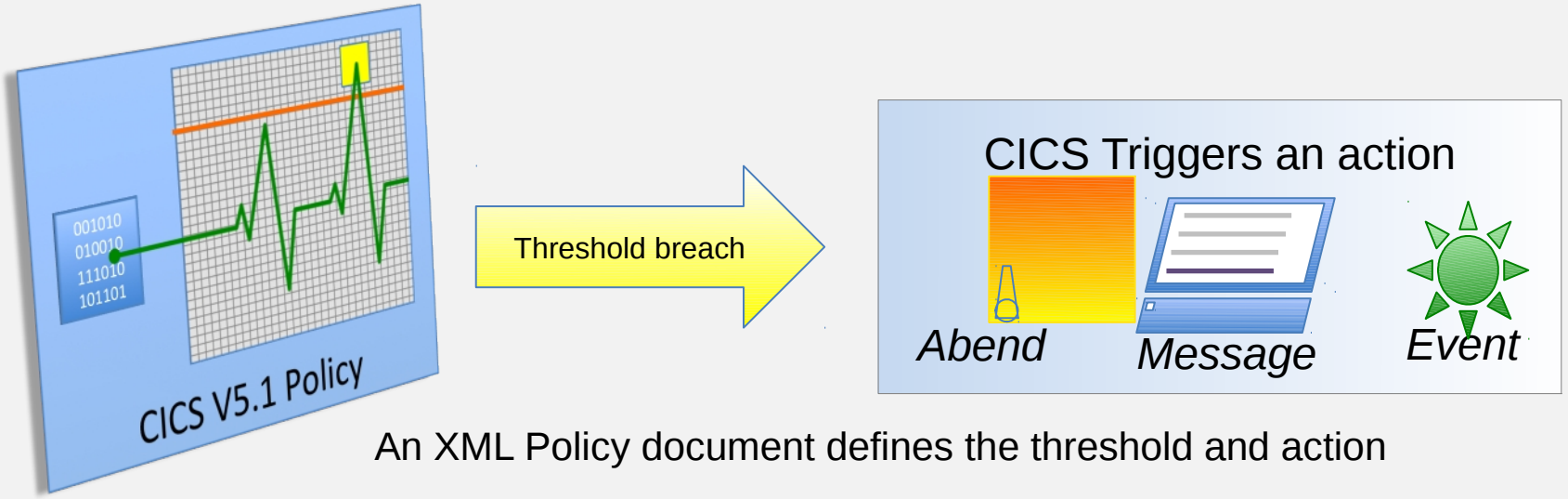
# *Managed operations - Control critical resource thresholds with policies*

*Protect critical systems*

- "*Abend* any *task* running on the Retail Banking region that tries to request any 24-bit storage"
- "I want to see a *message* if a *task* allocates more than 1MB of storage in this region"
- "Trigger an *event* if a shopping-cart browse *task* generates more than 500 SQL requests"




An XML Policy document defines the threshold and action

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# *Increased availability - Reduce the need for planned downtime*

| Feature | Benefit |
|---|---|
| SVC dynamic update utility | Upgrade CICS without z/OS IPL |
| SSL refresh | Update SSL without region restart |
| Improved default configuration settings | Easier and quicker for new installations. Lowered skills requirements |
| IPIC Heartbeat | Maintain IPIC connections during periods of inactivity |
| EXCI XCF group selection from URM | Full region availability from EXCI regardless of XCF group |
| Replication logging | IBM GDPS/AA readiness |

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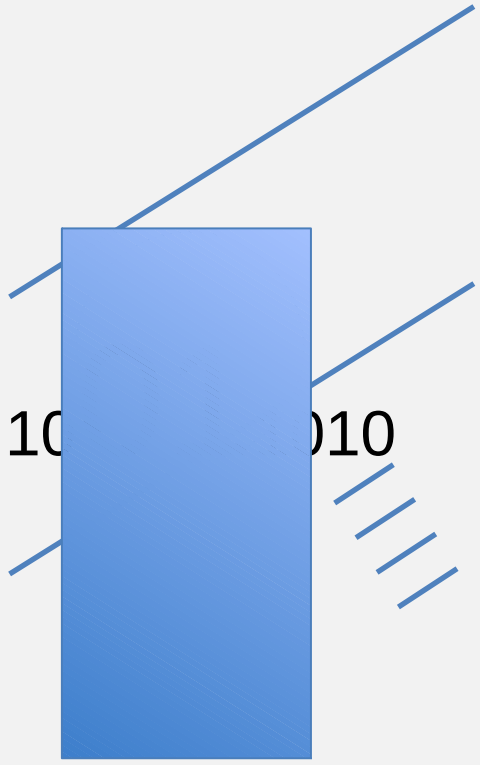
# *Deeper insight - Improve decision making and audit readiness*



| Feature | Benefit |
|---|---|
| Logging of system configuration changes via SPI | Auditable system configuration changes |
| Specify that a full ID verification occurs | Better audits for requests over IP |
| Extended identity propagation to include started tasks | Improved end-to-end security and auditability |
| SMF now stores SSL cypher suite and specialty engine usage data | Better understanding of system performance |
| Notification during lost lock recovery | Understand progress of lock recovery |

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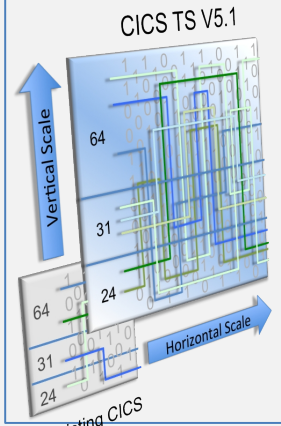
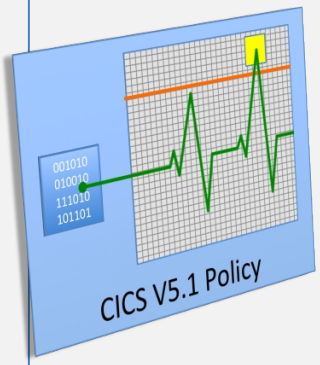
# Driving Operational Efficiency

## 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

## Managed Operations

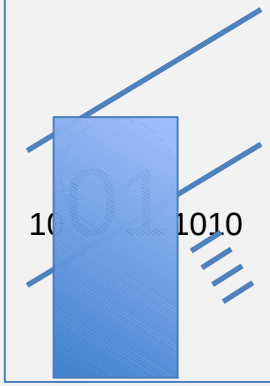



- Automated control over critical system resources
- Set data access thresholds on SQL or file access
- Set program loop thresholds on EXEC LINK
- Set storage request thresholds
- Set CPU time thresholds
- Policies can issue messages, abending tasks, or create events

## Increased Availability

- Upgrade CICS versions and releases without requiring a z/OS restart
- 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
- Calculation of the actual and potential use of specialty processors
- Regular status updates provided while lost locks recovery is taking place

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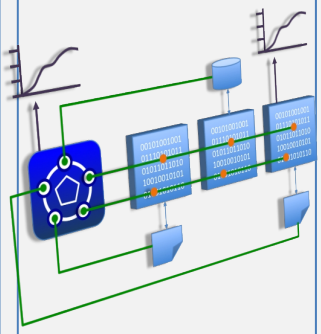
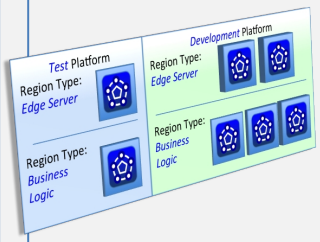
# Increasing Service Agility

## First-class Applications



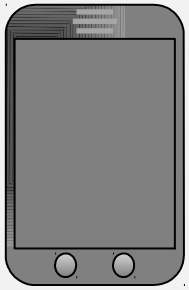
*Create agile services from existing assets*

## First-class Platforms




*Create agile service delivery platforms*

## Modern interfaces



*Build rich web experiences for critical applications*

## Foundational Enhancements

*Extend core capabilities*

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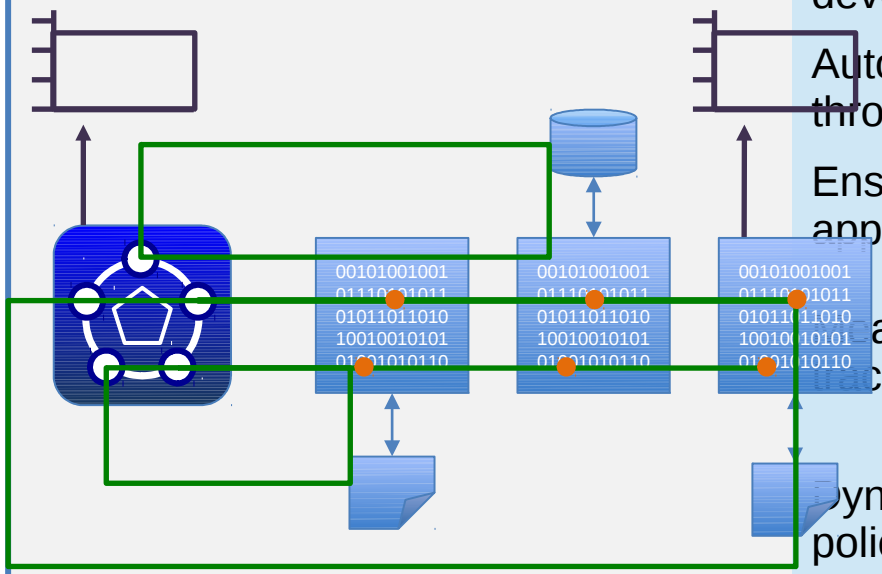
# *First class applications - Create agile services from existing assets*

## Feature

New declarative **Application** resource



## Benefit

Combine and manage disparate application resources as a single entity

Rapidly move versioned applications through development, test, and production

Automate dependency management throughout the application lifecycle

Ensure rigorous yet flexible provisioning with application bindings

asure entire application resource usage for cking and internal billings

ynamically manage applications by applying policies during runtime

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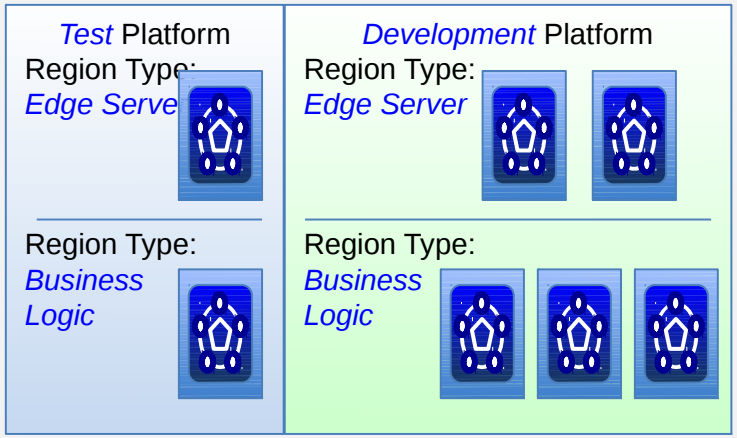
# *First class platforms* - *Create agile service delivery platforms*

## Feature

New declarative platform resource




## Benefit

Group new and existing regions as platforms for rapid application deployments

Increase flexibility, by decoupling applications from the underlying CICS region topology

Increase reliability through automatic resource deployment and validation

De-provision resources when requested, without requiring any interaction from a system administrator

Deploy applications to started regions within a platform, without requiring any interaction from a system administrator

Dynamically manage platforms by applying policies during runtime

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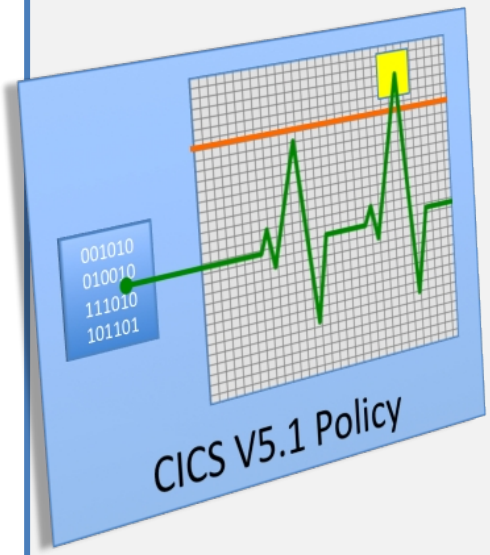
# *Apply Policies to Applications and Platforms - Reduce cost and risk through automation*

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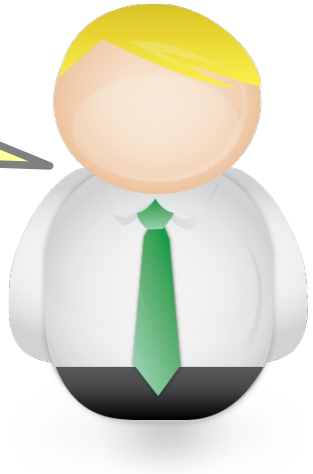
# Service Agility, development scenario…

***FASTER***

"Hey Simon, I need to test my new version of the payroll **application.**"

"Sure Abigail, you should get the latest payroll test **platform** from the repository, I'll send you a link."



"Thanks, I'll **deploy my app** onto that platform on the development plex later today."

***SIMPLER***

"That should be fine, just check with Oliver that the **policies** on the plex are going to be OK for your app's changes."

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# CICS TS V5.1 with cloud enablement

*A cloud oriented service delivery platform*

**Applications**

*Create agile services from existing assets*

**Platforms**

*Create agile service delivery platforms*

**Policies**

*Control critical resource thresholds with policies*

*With cloud enablement you can…*

- Bring the flexibility of cloud deployment to your existing CICS assets
- Easily measure resource usage of your CICS business applications
- Dynamically control your CICS applications and infrastructure at runtime

*3 simple steps to cloud enablement…*

1. Define your platform encapsulating your existing regions
2. Define your applications, entry points, and dependencies from existing assets
3. Deploy your applications onto your platform

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# *Modern interfaces - Build rich web experiences for critical applications*

## Feature

Embedded web container for Servlets & JSPs

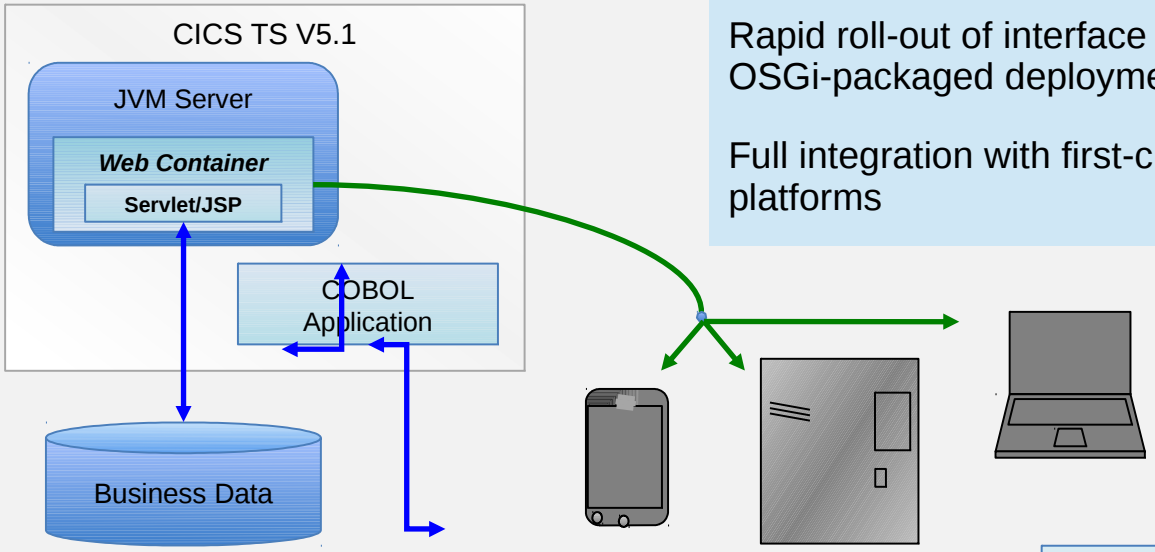
## Benefit

Deployment of lightweight Java servlets and Java Server Pages (JSP)

Improved performance through local access to CICS applications and data

Rapid roll-out of interface updates through OSGi-packaged deployments

Full integration with first-class applications and platforms




*The best connector is no connector!*

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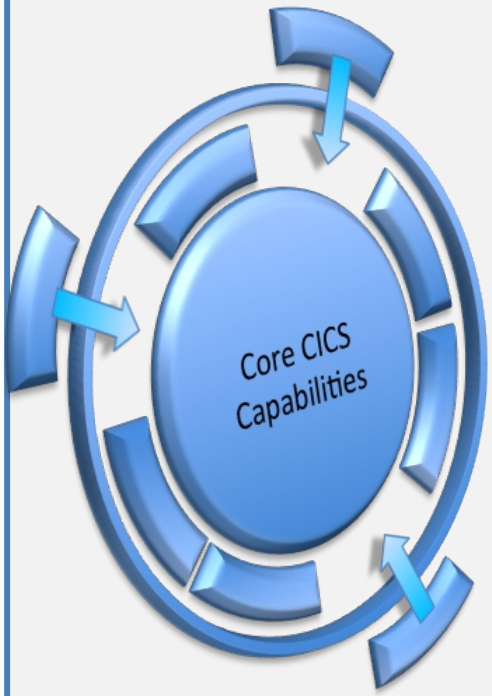
# *Foundational enhancements - Extending core CICS capabilities*




| Feature | Benefit |
|---|---|
| Enhanced CICS event support | One-to-many event emissions |
| WebSphere MQ Dynamic Program Link (DPL) bridge support message >32KB | No restrictions on MQ DPL message size |
| IPIC support for IMS | Improved integration and error recovery |
| GET and PUT container enhancements | Reduce application storage needs |
| Backup and restore capability for entire CICSPlex System Manager (CICSPlex SM) systems without manual overrides | Improved automation |
| Automatic daylight saving adjustments | No need to restart CICS regions |

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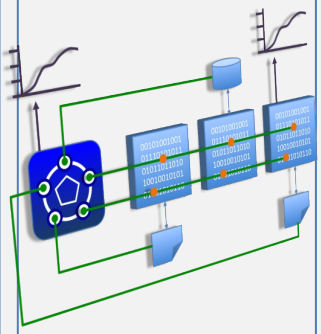
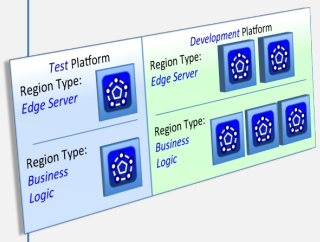
# Increasing Service Agility

## First-class Applications



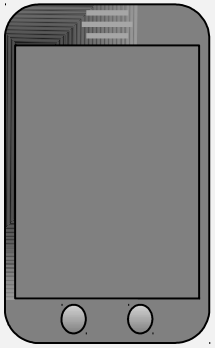
- Manage disparate resources as a single entity
- Rapidly move through the application lifecycle
- Automate dependency management
- Ensure rigorous yet flexible provisioning
- Measure entire application resource usage
- Dynamically manage applications with policies

## First-class Platforms



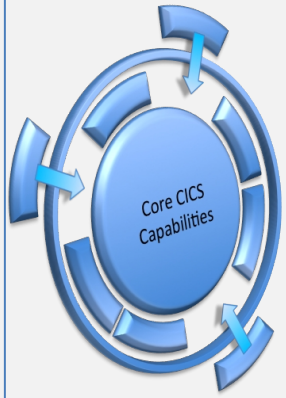

- Group new and existing regions as platforms
- Decoupling applications from the region topology.
- Automatic resource deployment and validation
- De-provision resources when requested
- Deploy applications to regions within a platform
- Dynamically manage platforms with policies

## 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 and platforms
- Built on WebSphere Application Server Liberty profile for compatibility

## 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

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# New V5.1 tools deliver the complete solution

## *Five core foundational CICS Tools* – *updated to exploit TS V5.1*

*Fully integrated with the CICS Explorer…*

- Five core tools support and extend the CICS runtime
- Discovery and visualization aids insight
- Automation speeds service delivery and ensures standardization and governance
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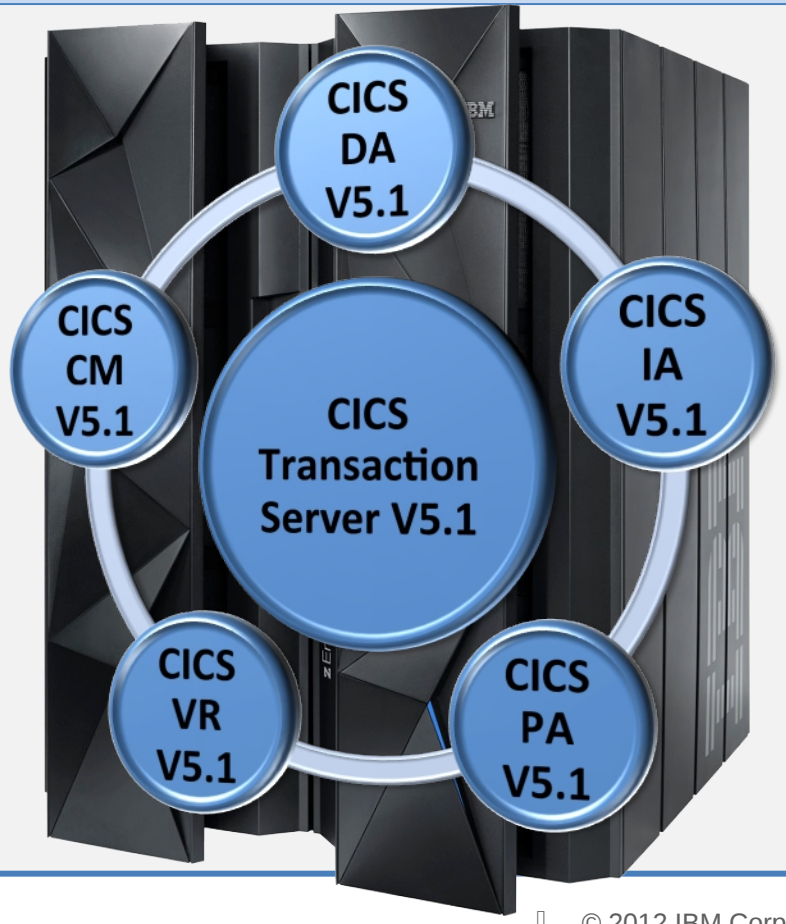


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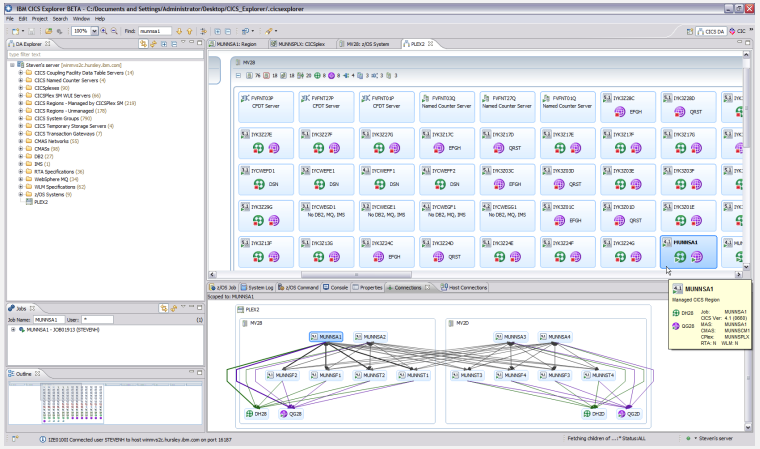
# CICS Deployment Assistant for z/OS V5.1

## *Topology insight through discovery*

### *CICS DA enables you to…*

- Visualize and manage your CICS topology
- Discover existing regions and sub-systems
- Automatically create a new CICSplex
- Plexify and clone CICS regions
- Start and stop a CICS region



### *What's new in CICS DA V5.1…*

- Enriched discovery of over 30 entities
- Improved visualization with tagging and filtering
- Export model for external reporting
- CICS TS V5.1 upgrade cheat sheet
- IPv6 support
- Virtual IP addressing support
- Clone JCL improvements
- Serviceability enhancements
- Connections view with scoping

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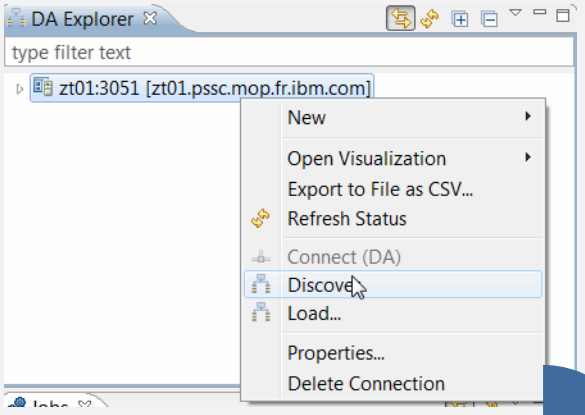
# DA – Plexify your unmanaged regions

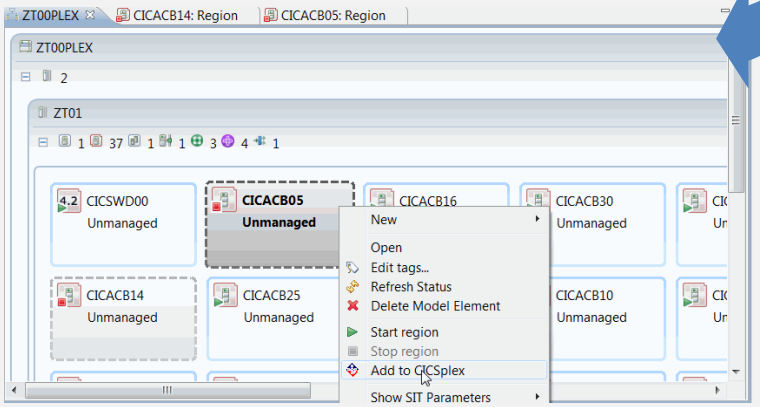
## *Benefits*

- 3 steps to a managed region
- Manage your region from the CICS SM Explorer perspective

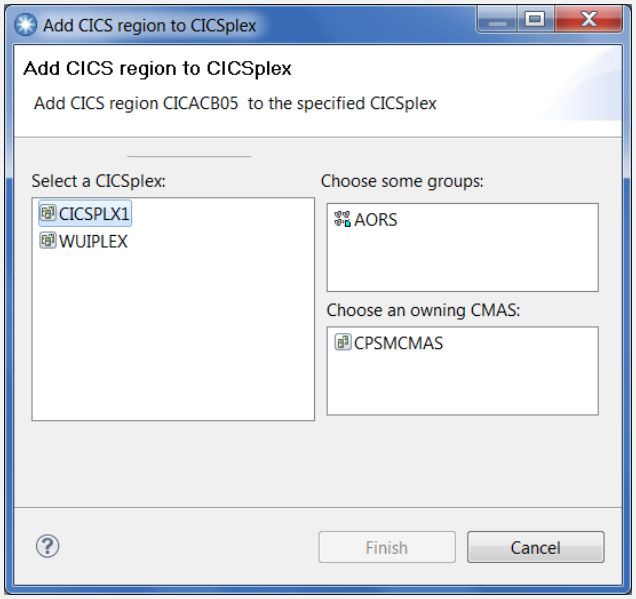
Discover




Visualize
Unmanaged regions




Manage





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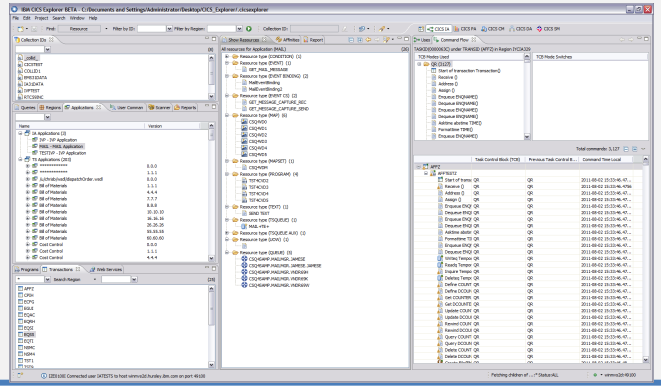
# CICS Interdependency Analyzer for z/OS V5.1

## *Application insight*

### *CICS IA enables you to…*

- Identify threadsafe / non-threadsafe programs
- Highlight CICS web service candidates
- Speed CICSPlex® SM workload management
- Advanced CICS command flow analysis



### *What's new in CICS IA V5.1…*

- CICS Business Events support
- Support for building CICS Applications
- Improved CICS Explorer views
  - Plug-in control for data collection
  - Command Flow self-service
  - Enhanced business application analysis
- CICS user exit detection and mapping

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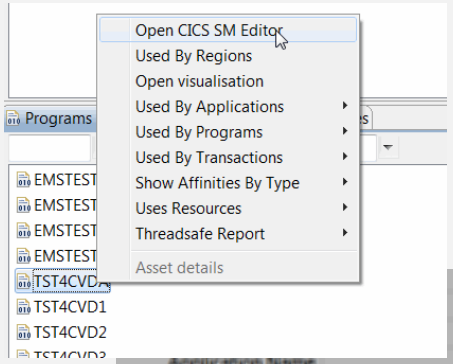
# Using CICS IA data to define Applications in TS 5.1

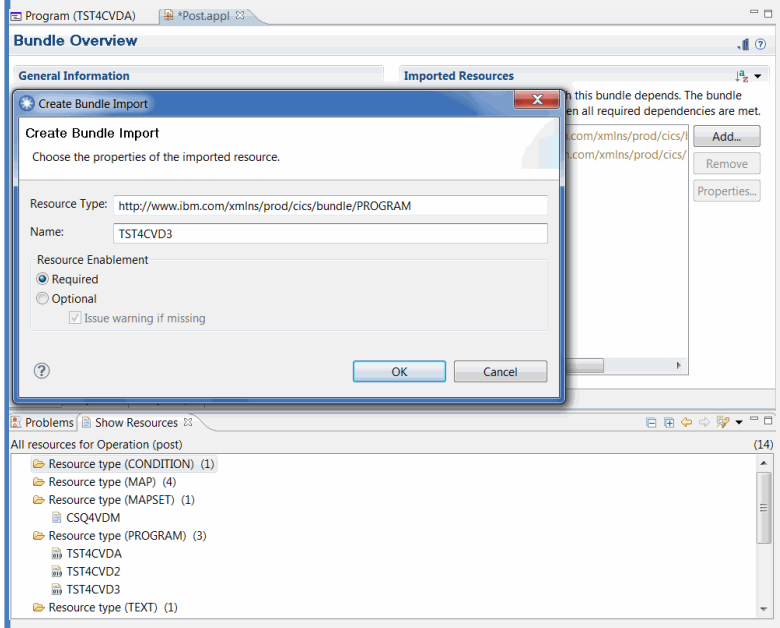
## *Benefits*

- Upfront knowledge of resources required to define an Application Bundle

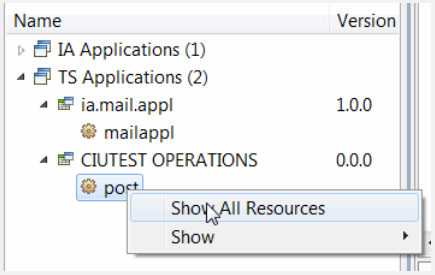
Open CICS SM Editor and assign an entry point




Collect and load data into DB2




Define bundle using IA information





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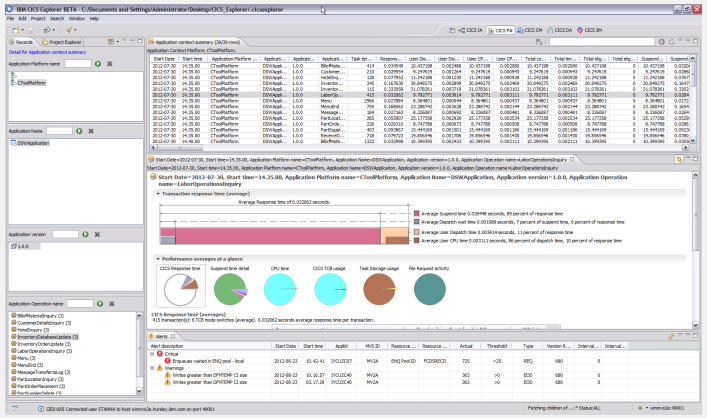
# CICS Performance Analyser for z/OS V5.1

## *Application insight*

### *CICS PA enables you to…*

- 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



### *What's new in CICS PA V5.1…*

- CICS TS V5.1 support for Application, Platform, and Policy
- Several UI enhancements:
  - Application centric view
  - Customizable sheet views
  - Wait Analysis
  - Improved Navigation
  - Export and Import capability
  - Batch statistics reporting for CICS TG
  - Statistics filtering
  - CPU totals on MQ reports

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# CICS VSAM Recovery for z/OS V5.1

## *Reduce the risk to your data*

### *CICS VR enables you to…*

- Manage and automate the recovery of damaged, corrupted, or lost VSAM files for both the CICS and Batch environments.
- Supports backups created by Backup-While-Open (BWO)
- Test forward recovery and backout
- Produce disaster recovery reports

### *What's new in CICS VR V5.1…*

- Replication logging in support of the GDPS-Active-Active availability solution
- Batch logging enhancements
- Batch backout improvements
- Migration utility enhancements
- Logstream printing and other usability enhancements

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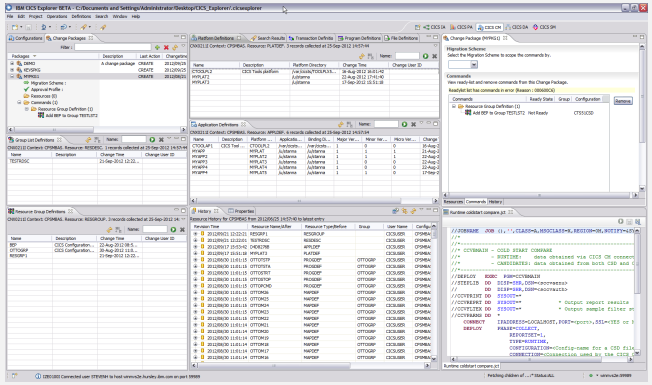
# CICS Configuration Manager for z/OS V5.1

## *The value of control*

### *CICS CM enables you to…*

- 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



### *What's new in CICS CM V5.1…*

- Support for Application, Platform, and Policy resources
- Enhanced plug-in with Packaging and Deployment Analysis
- Sort in Package view and Ready list
- Command stack improvements
- Remove empty Group from the CSD List
- SSL support for plug-in connection
- Audit trail for Install and NewCopy

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# Recap of CICS Portfolio 5.1 Capabilities

## 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

*100+ 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

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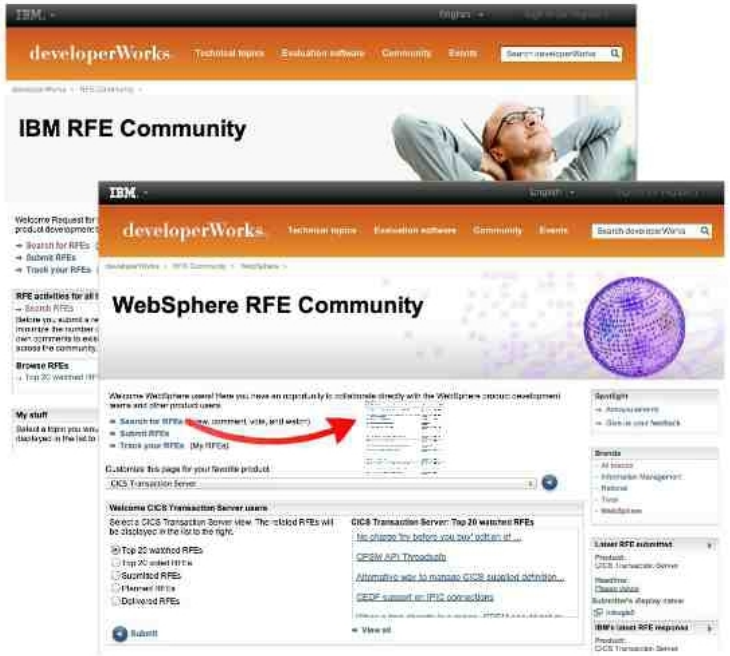
# Online Requirements!

## *CICS Family Request for Enhancement (RFE) Community*

- Submit your requirements directly to IBM, interact with the Lab and track status online
- Collaborate with the community by searching, viewing, discussing and voting on requirements

- What's new with CICS Family RFEs?
  - Transparent process with no middle-men between you and the lab
  - Email notifications to let you know when the requirement request is updated
  - Private fields for information you only want to share with IBM
  - Online searches and voting of the existing RFEs in the database

- **ibm.com/developerworks/rfe/websphere**




**Breaking down barriers between CICS users and IBM developers**

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# Get Involved!
## *Get Social*

- ibm/developerworks/cicsdev
- facebook.com/IBMCICS
- twitter.com/IBM_CICS
- youtube.com/cicsfluff
- youtube.com/cicsexplorer
- twitter.com/IBM_System_z
- themasterterminal.com
- CICS-L listserv (Google it!)

ibm.com/cics

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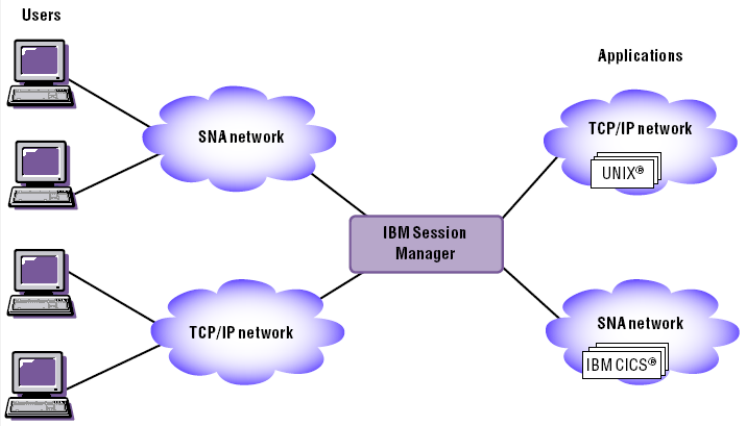
# IBM Session Manager for z/OS V3.2

## *Simple, secure session-management*

### *What's new in …*

- Updated plug-in with administration perspective
- Simplified pass-ticket support
- Load RACF classes into data spaces
- Improved DUMP GDG facility
- Customer-driven enhancements




### *CICS …*

- Access multiple z/OS systems from a single 3270 terminal - SNA and TCP/IP
- Session recovery across the Sysplex
- Centralized administration
- Rexx-like scripting language
- Log-off procedures
- Security checking and Audit logging
- Benefits to helpdesk and operations
- Spy function
- Broadcast messages
- Demo function helps staff training

# IBM Problem Determination Tools Version 12.1

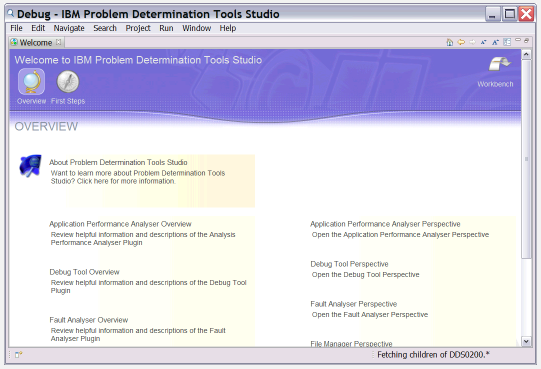
## *Tools to address your z/OS Development or System Programming needs*

### *What's new in PD Tools V12.1*

- New **IBM Problem Determination Tools Studio** pre-packaged with plug-ins
- File Manager DB2 and CICS plug-in
- Initial Workload Simulator plug-in
- Enhanced integration and synergy amongst PD Tools, CICS Explorer and/or IMS Explorer taking advantage of newly announce common z/OS Explorer capabilities
- CICS TS 4.2, IMS V12, MQ 8.1 updates to ensure synchronization with latest subsystems
- Improved Java support  in APA and FA

### *PD Tools provides …*

- Five tools addressing z/OS problem resolution needs  - Debug Tool, Fault Analyzer, File Manager, Application Performance Analyzer and Workload Simulator
- Subsystem and language support traversing z/OS provided in a timely manner when subsystems and languages are updated
- Improved TCO with full function tools at competitive price

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# CICS Transaction Gateway V9.0

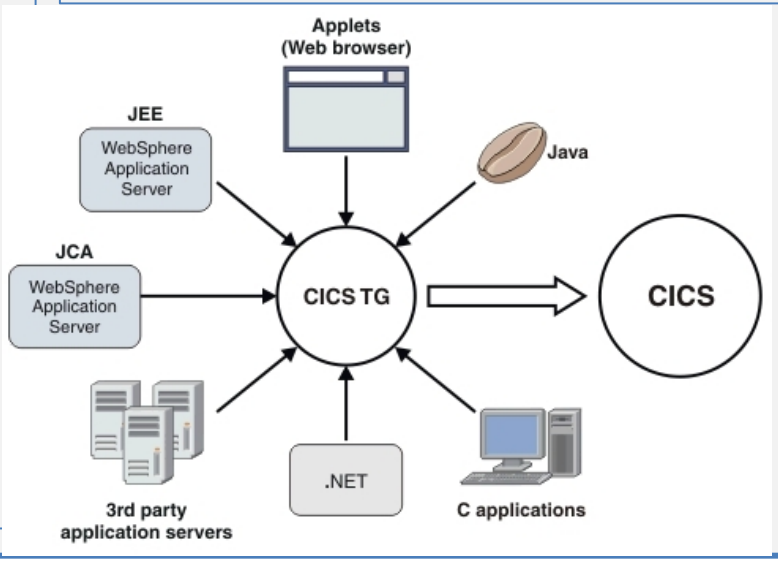
## *Open integration and modernization*

### *What's new in CICS Transaction Gateway V9.0…*

- Java 7 support for client applications
- End-to-end transaction tracking
- SSL connectivity for 3-tier topologies
- Connection-level time-out with IPIC
- 64-bit support for ECI V2 and ESI V2
- ECI V2 support for asynchronous calls.
- Simplified configuration
- Statistics with CICS TG for MP
- Increased vertical scaling on z/OS

### *CICS Transaction Gateway provides…*

- Proven connectivity—distributed platforms integrate with any CICS server
- Skills match for today—bridges the skill gap
- Secure, scalable, and highly available connectivity

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