IBM CICS Transaction Gateway Version 6.0
Product Overview

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Agenda

- **Session Objectives**

- **Application Transformation**

- **What is the CICS Transaction Gateway?**

- **A Simple, Easy to Implement Solution**

- **Four Key Customer Value Areas**

- **Increased Qualities of Service**

- **Improved Systems Management**

- **Better Support for Security**

- **Enhanced Ease of Use**

- **Summary**

- **Further Resources**

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Session Objectives

During this session, there are three key learning points:

1. **The Business Value of the CICS Transaction Gateway**

   - Why it is beneficial to transform applications for use in mixed CICS and WebSphere workloads.
   - How JCA and Web Services are complimentary solutions in a on demand operating environment.

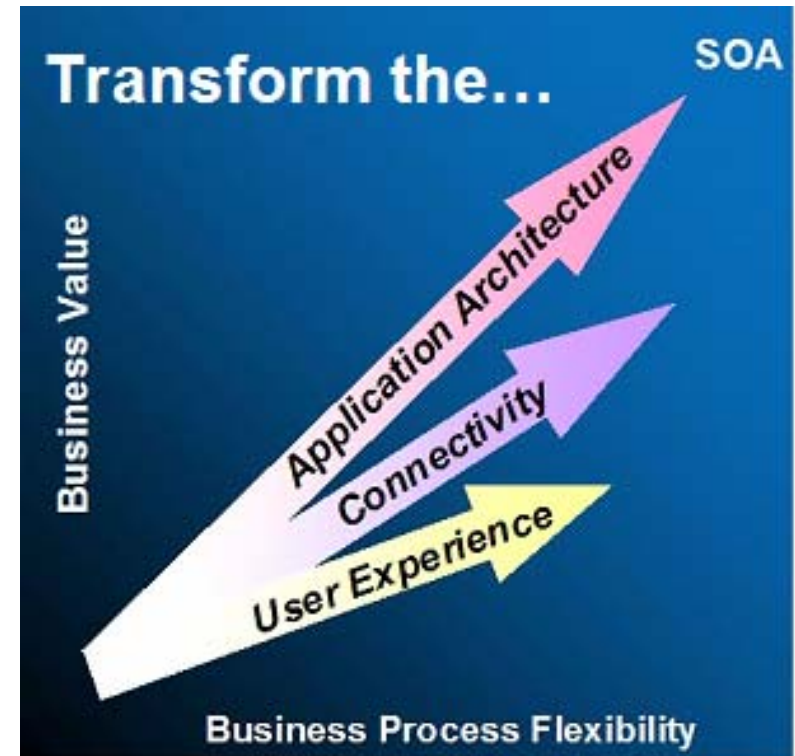2. **The Technical Value of the CICS Transaction Gateway**

   - How the CICS TG and the JCA interface together provide a high quality, proven solution on multiple platforms and in multiple configurations.
   - CICS TG as a high performing, secure and scalable access to CICS requiring minimal or no changes to CICS and CICS applications.

3. **The Latest Enhancements in Version 6 (Ann. Nov 30th 2004)**

   - Increased **Qualities of Service** (QoS) provide more power.
   - Improved **Systems Management** allows more control.
   - Better support for **Security** delivers even more protection.
   - Enhanced **Ease of Use** further reduces complexity.

Application Transformation

- **Focus on Reducing:**
  - Cost
  - Risk
  - Time to Market
- **Focus on Increasing:**
  - Application Reuse
  - Employee Productivity

Transform the... SOA

Business Value

Application Architecture

Connectivity

User Experience

Business Process Flexibility

Transform applications for use in mixed workloads.	Reduce risk and cost.

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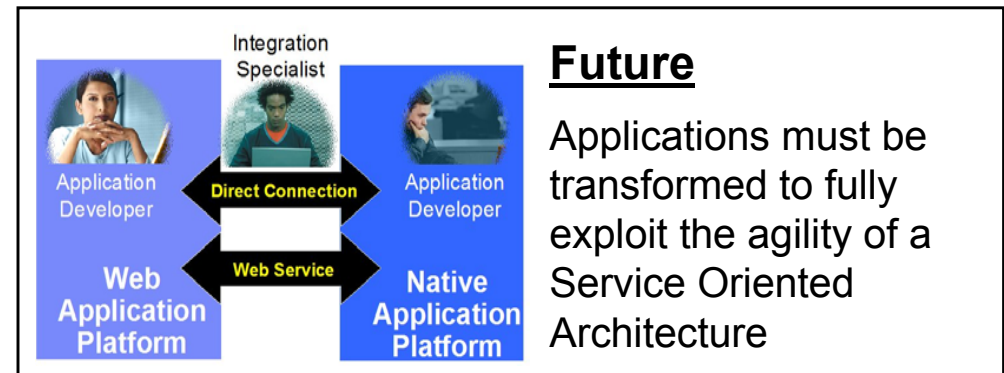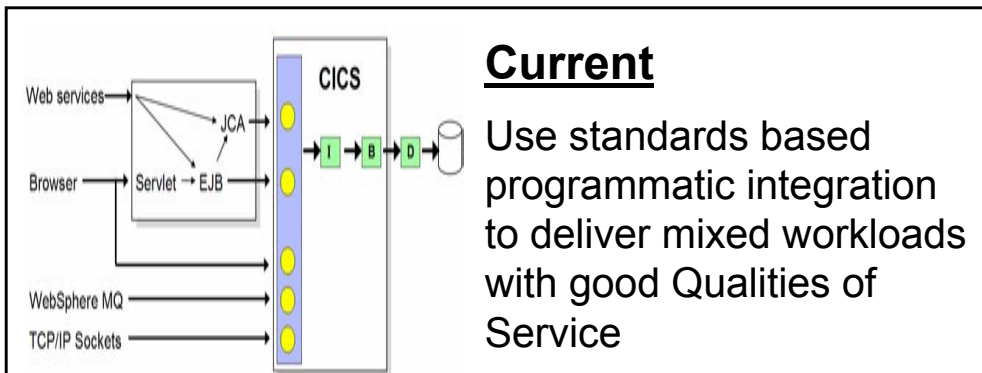
CICS and WebSphere Mixed Workloads
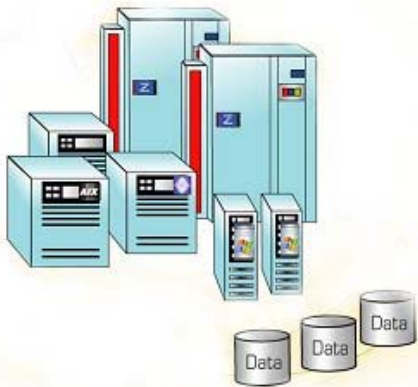
**The majority of large corporations deploying WebSphere will:**

▪ Have a core of previously established, proven CICS business logic that that they will want to leverage within modern WebSphere J2EE environments

▪ Want tooling to help them discover, design, deploy and manage, mixed CICS and WebSphere applications, helping to minimize cost, risk and time to market

Current

Use standards based programmatic integration to deliver mixed workloads with good Qualities of Service

Future

Applications must be transformed to fully exploit the agility of a Service Oriented Architecture

Integrate CICS and WebSphere technology.

Satisfy business and application needs.

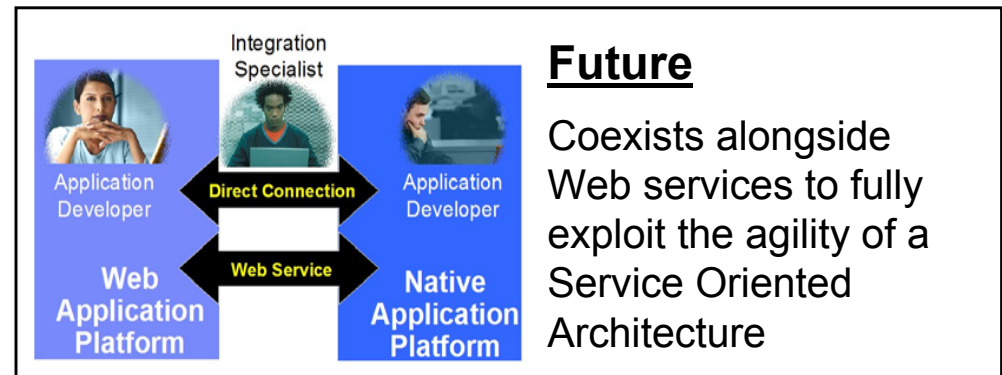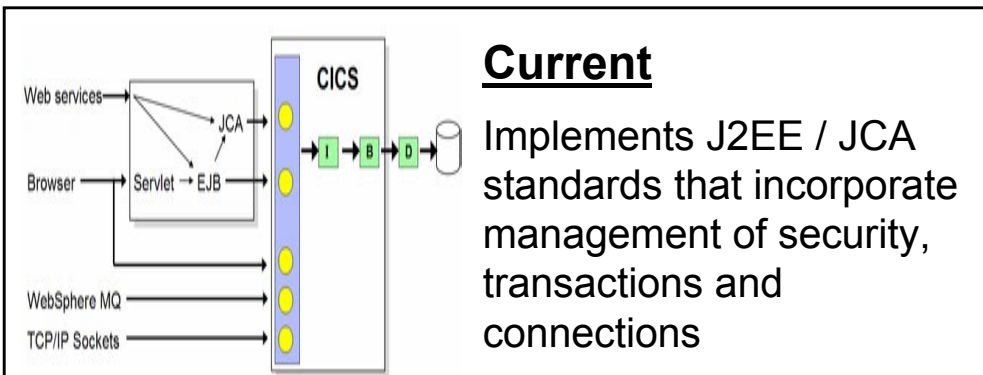**ON DEMAND BUSINESS**™

CICS Transaction Gateway Version 6.0
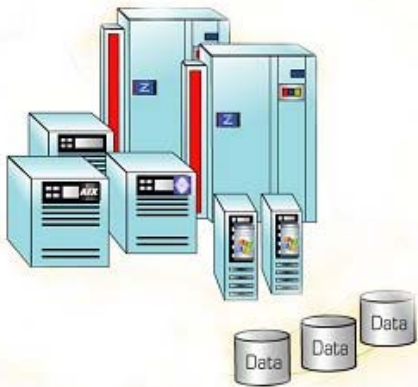
CICS Transaction Gateway Version 6.0:

▪ Provides high performing, secure and scalable access to CICS, requiring minimal changes to CICS and usually no changes to existing CICS applications

▪ Supports IBM Software Development Platform tooling to discover, design, deploy and manage mixed CICS and WebSphere applications

Current

Implements J2EE / JCA standards that incorporate management of security, transactions and connections

Future

Coexists alongside Web services to fully exploit the agility of a Service Oriented Architecture

J2EE standards based, managed access to CICS.

For today and for tomorrow.

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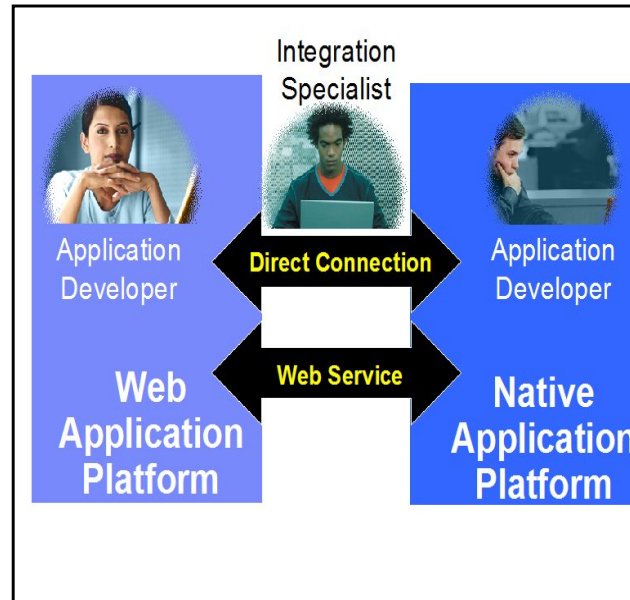
Direct Connection or Web Service into CICS?

- **Tightly coupled and loosely coupled connectivity solutions coexist to fully exploit the agility of an on demand environment**

- **The difference between Direct Connection and Web Service depends on whether the presentation applications are directly bound to the business logic.**

Direct Connection

- High QoS Today
- Mature technologies
- Existing application interfaces
- Few application/system level changes required
- Good where application has fewer reusable purposes

Integration Specialist

Application Developer

Direct Connection

Application Developer

Web Application Platform

Web Service

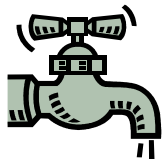Native Application Platform

Web Services

- QoS improving via standards
- Emerging technologies
- Web Services interface
- Some application/system level changes required
- Good where application has many reusable purposes

Exploit an appropriate set of complementary technologies.

Fully integrate your CICS systems.

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What is the CICS Transaction Gateway?

CICS Transaction Gateway provides three core capabilities:

Plumbing *J2EE connector into CICS*	**Interfaces** *Java and non-Java API's*	**Integration** *WebSphere, CICS and others*

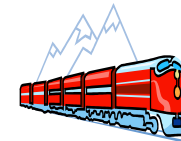**Plumbing**

J2EE connector into CICS

- High performing and scalable inbound connector to CICS applications
- Provides connectors to COMMAREA and 3270-based CICS applications
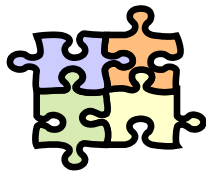
Interfaces

Java and non-Java API's

- Standard JCA interface provides best Qualities of Service
- Base Java, C, C++, COBOL and COM interfaces are supported but stabilized
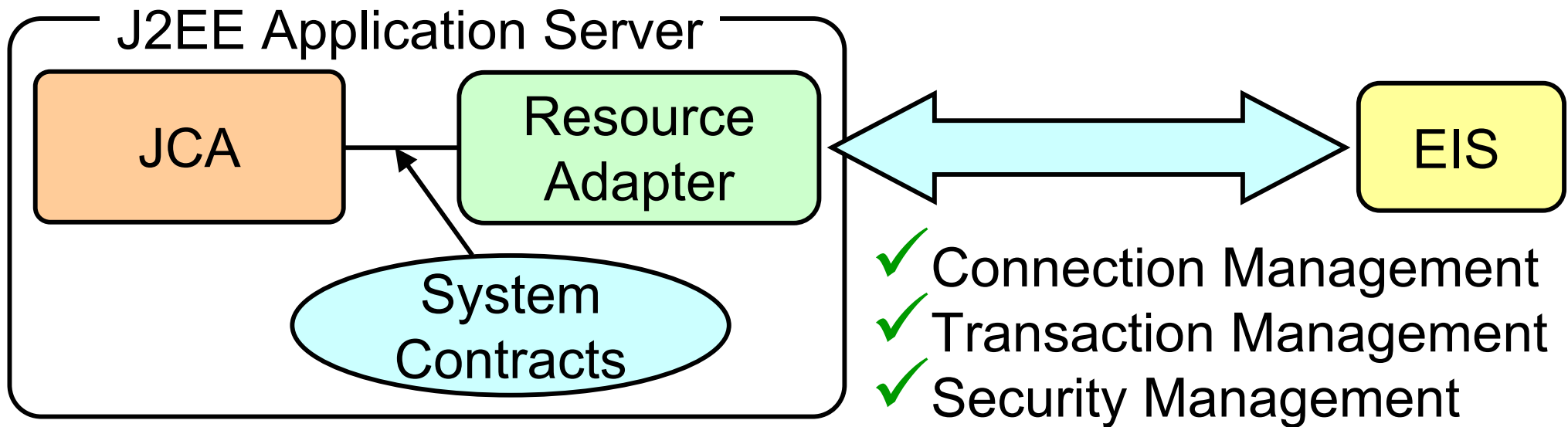
Integration

WebSphere, CICS and others

- All supported CICS releases
- 3 versions of WebSphere Application Server across 7 different platforms
- 5 SNA servers (AIX, Windows, Linux on zSeries)

Supported connectivity from WebSphere to all CICS servers.

Integrate all your CICS assets.

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Why use the JCA?

- **JCA provides two key advantages:**

  – Standard programming interface to all Enterprise Information Systems (EIS)

  – Delegated management of Connections, Transactions and Security

J2EE Application Server

| JCA | Resource Adapter | ⟷ | EIS |

System Contracts

✓ Connection Management
✓ Transaction Management
✓ Security Management

Utilise the JCA to manage the Qualities of Service.

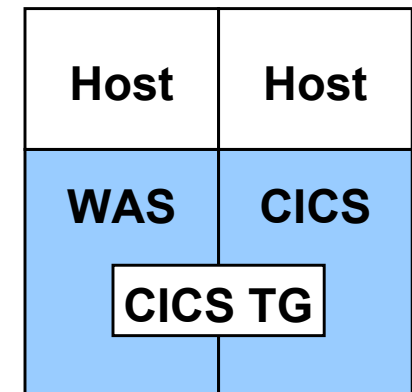Better applications, developed faster.

Flexible Configuration

CICS Transaction Gateway runs on:

- z/OS
- Linux (Intel, zSeries)
- UNIX (AIX, HP-UX, Solaris)
- Windows

Providing access to:

- CICS TS (z/OS, OS/390, VSE, iSeries)
- TXSeries CICS (AIX, HP-UX, Solaris, Windows)
- CICS on Linux – Coming 2005!

Dist	Dist
WAS	CICS
CICS TG	

Dist	Host
WAS	CICS
CICS TG	

Dist	Host
WAS	CICS
	CICS TG

Host	Host
WAS	CICS
CICS TG	
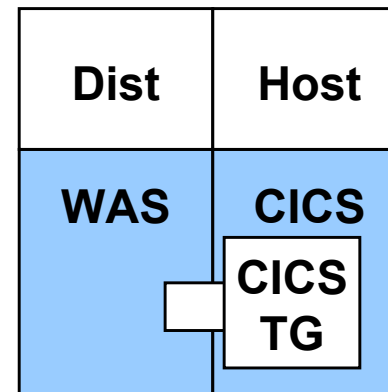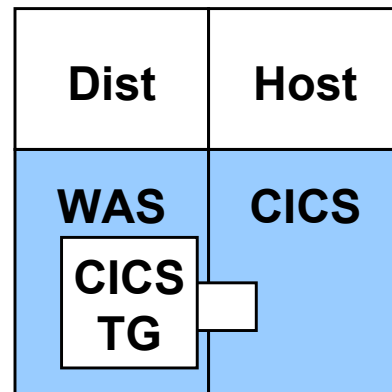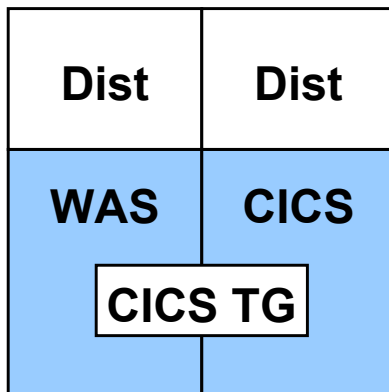
Flexibility to support most application architectures.

IBM middleware from end to end.

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Flexible Configuration

- **CICS Transaction Gateway has two implementations**

- **You can use either or both, depending on your requirements**

- **Further QoS comparison in Whitepaper on ibm.com/cics/ctg**

Dist	Dist
WAS	CICS
CICS TG	

Dist	Host
WAS	CICS
CICS TG	

Dist	Host
WAS	CICS
CICS TG	

Host	Host
WAS	CICS
CICS TG	

CICS TG for Multiple Platforms   **CICS TG for z/OS**

Good ←——————————————→ Best

Qualities of Service
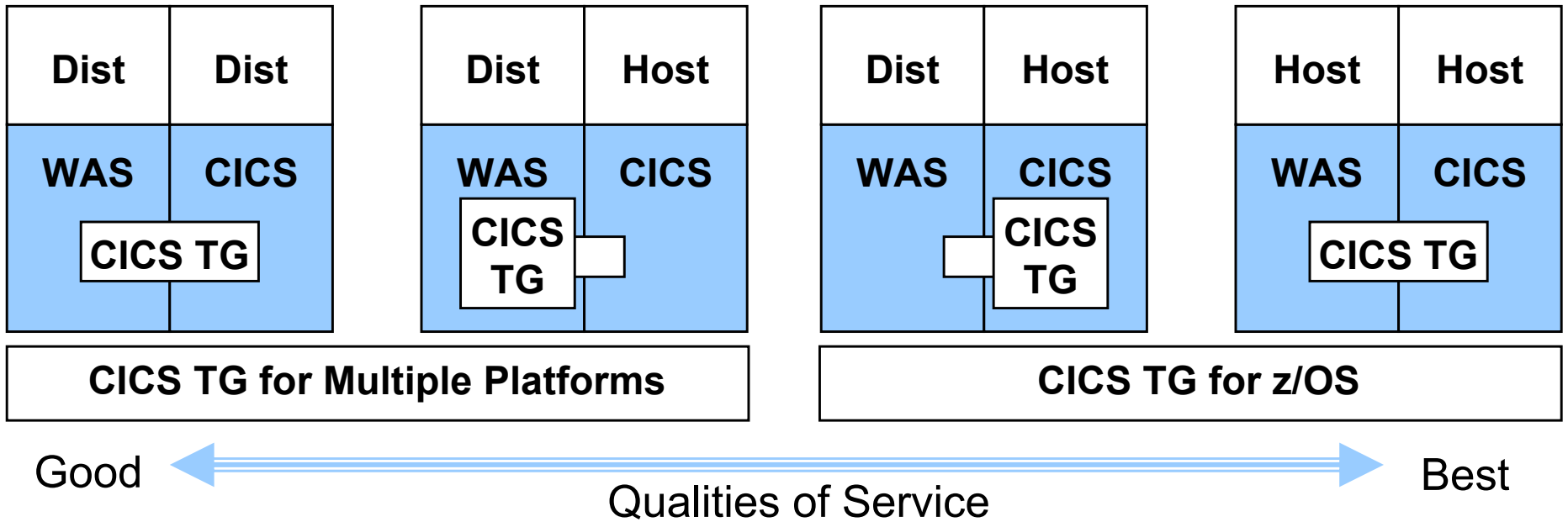
Choice of platform based on application requirements.	z/OS provides best QoS.

3 Key Characteristics of the CICS TG

■ **Very popular CICS connectivity method, because:**

  – <u>**High performing**</u>

   • 1,000+ TPS with optimised data handling

  – <u>**Secure**</u>

   • SSL implementation and good integration with CICS

  – <u>**Scalable**</u>

   • Multi-Threaded technology and load balancing capabilities

■ **Improvements in each of these three key areas in V6.0**

Provides high performing, secure and scalable access to CICS.	Production proven over many years.

A simple, easy to implement solution

- **Popular with System Programmers and Application Developers**

  - <u>**Ease of System Programming**</u>
    - Requires minimal changes to CICS and usually no changes to existing CICS applications
    - Provides simple, familiar mechanisms with which to configure and manage your gateway

  - <u>**Ease of Application Development**</u>
    - Implements the industry standard JCA (J2EE Connector Architecture) interface
    - JCA provides delegated management of Transactions, Connections and Security

Requires minimal or no changes to CICS systems and applications.	Ease of implementation.

Enhancements in CICS TG V6.0 have focused on *four key technical value areas*:

1. **Qualities of Service**

   - Performance enhancements through optimization of the product and via exploitation of the latest J2EE and Linux standards.

   - Considerable Availability and Scalability enhancement on our flagship z/OS platform.

2. **Systems Management**

   - Improved Administration of the gateway through a more functional interface, better aligned with the native operating system.

   - Problem Determination and Management have been enhanced through better recording and control of system information.

Enhanced Performance, Availability, Scalability and Management.	More power & More control.

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Enhancements in CICS TG V6.0 have focused on *four key technical value areas*:

3. **Security**

   - Support for the Industry leading SSL protocol enables fine tuned control of your network security.

   - Exploitation of the advanced z/OS security features provides a faster and more comprehensive security solution.

4. **Ease of Use**

   - New, industry standard installation vastly simplifies the process of installing, migrating and applying maintenance.

   - Redesigned and searchable Eclipse-based information center provides a greatly improved interface for online documentation.

Advanced security capabilities, simpler product deployment.	Better security, Less complexity.

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Increased Qualities of Service

- **Performance Enhancements:**

  – Improved performance of data processing on z/OS provides significant CPU usage savings when null padded COMMAREAS are used

  – Improved performance of data processing of null padded COMMAREAS within the Java client provides throughput improvements across all platforms.

  – Improved runtime performance of the CICS TG on distributed platforms, provides CPU reduction

  – Support for Transaction and Connection improvements in JCA V1.5 provides improved performance for J2EE applications.

Enhanced data processing and runtime operation.	Performance boost out of the box.

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Increased Qualities of Service

- **Availability and Scalability**

  - Significant z/OS enhancements through two EXCI pipe usage modifications:

    1. Introduced is an option to limit the number of EXCI pipes used per thread to one.
    2. CICS TS V2 will provide an APAR (PQ92943) to increase the maximum number of pipes from 100 to 250 (not a CICS TG enhancement)

  - Improved performance and scalability on Linux

    - Support for NPTL, a high-performance multi-threading capability that improves scalability for multi-threaded applications.

Support higher numbers of concurrent users.	Respond to peak demands.

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Improved Systems Management

- **All Platforms**

  – New Normal (quiesce) Shutdown allows all units of work to safely complete before shutdown

- **CICS TG on z/OS**

  – New SDSF command based systems administration interface provides improvements in both usability and functionality.

  – the ability to direct all runtime messages to the IBM Job Entry Subsystem (JES) instead of using HFS files

  – A new configuration infrastructure enables multiple Gateway daemons on z/OS to be configured and run independently much more easily

Improvements in functionality and system reliability.	Better operational capabilities

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Improved Systems Management

- **CICS TG on Multiplatforms**

  - The command-based systems administration tool provides improved usability and the added capability of invoking shutdown processing

  - A new services function has been introduced that uses standard UNIX or Linux mechanisms to start and stop the gateway

  - Support for IBM Communications Server for Linux on zSeries, providing an SNA interface to CICS

  - More control over the management of the gateway log files

Improvements in the interface, and management of information.	Better problem determination.

Better Support for Security

- **Control of SSL Cipher Suite**
  - A new external configuration option for SSL connections, allows the SSL cipher suite to be specified.
  - This enables fine tuned control of the algorithms that can be used for encryption of network data sent to the Gateway.
  - Enables immediate exploitation of new Cipher Suites, as they are supported by Java

- **Additionally, on z/OS:**
  - Introduced the ability to store your SSL private keys and certificates within the RACF database
  - Introduced support for hardware cryptography cards when using JSSE SSL.

Better security infrastructure, supporting latest encryption levels.	Good guys in, bad guys out.

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Enhanced Ease of Use

- **Simplified Installation and Migration**
  - z/OS SMP/e installation vastly simplifies the task of installing, upgrading and applying maintenance to the CICS TG
  - Install Shield Multiplatforms provides a significantly simplified installation and configuration; particularly on UNIX and Linux

- **Eclipse Based Information Center:**
  - New method of viewing IBM product information, based on the Eclipse framework, providing improved interface.
  - Introduces advanced search capabilities, including ability to search all installed IBM information centers in one search

Simpler migration and upgrades, find information faster.	Even easier implementation.

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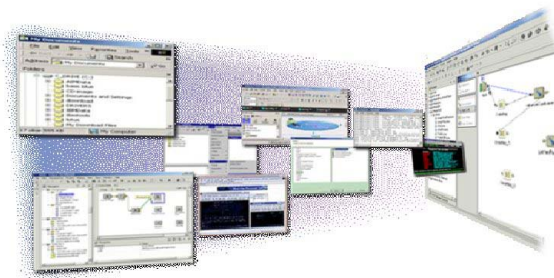
Comprehensive Tooling

Simplify software development

→ The new IBM Software Development Platform

Rational. software   **WebSphere.** software

The IBM Software Development Platform is a comprehensive set of tools that forms a complete and modular solution for building software in an on demand world.

WebSphere Studio

- **Asset Analyzer**
- **Application Developer Integration Edition**
- **Enterprise Developer**
- **Application Monitor**

CICS Tools

IBM @server Tools

The IBM Software Development Platform.	A complete IBM solution.

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Summary

Middleware is Everywhere.	Can you see it?

- Significant enhancements in four major customer value areas:

1. Qualities of Service:

   Performance enhancements via product optimization and exploitation of the latest J2EE and Linux standards

   Considerable Availability and Scalability enhancement on the flagship z/OS platform

2. Systems Management

   Improved Administration through a more functional interface, better aligned with the native operating system

   Problem Determination and Management enhanced through better recording and control of system information

3. Security

   Support for the Industry leading SSL protocol enables fine tuned control of your network security

   Advanced z/OS security features provides a faster and more comprehensive security solution

4. Ease of Use

   New, industry standard installation vastly simplifies the process of installing, migrating and applying maintenance

   Redesigned and searchable Eclipse-based information center provides improved interface for online documentation

- CICS Transaction Gateway is a high performing, scaleable and easy to use connector into CICS.

Middleware is Everywhere. Can you see it?

here
here
here
here

The strongest link in on demand business.

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Further Resources

- **Much more information can be found online:**
  - CICS: **www.ibm.com/cics**
  - CICS Transaction Gateway: **www.ibm.com/cics/ctg**
  - IBM Software Development Platform: **www.ibm.com/developerworks/platform**

- **Of particular interest on the CICS Library www.ibm.com/cics/library**
  - Redbooks and Whitepapers
  - Online Information Center

- **Be sure to check BOTH announcement letters www.ibm.com/common/ssi**
  - CICS Transaction Gateway for z/OS V6.0, 30th November 2004, US letter 204-283
  - CICS Transaction Gateway for Multiplatforms V6.0, 30th November 2004, US letter 204-284

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