

# Cics A How To For Cobol Programmers

This Second Edition includes all relevant information regarding IBM's latest major update releases of CICS. Using a step-by-step tutorial, it shows how to develop and maintain CICS code for maximum system effectiveness. Coverage includes all commands, support functions, and VS COBOL II; detailed information on using the first microcomputer (OS/2) version of CICS; and table setup and system utilities for applications programmers developing software on personal computers. By providing a wealth of real-world examples, teaches readers a practical, streamlined approach to problem solving using the latest CICS coding techniques.

This IBM Redbooks® publication gives a broad understanding of several important concepts that are used when describing IBM CICS Transaction Server (TS) for IBM z/OS (CICS TS) performance. This publication also describes many of the significant performance improvements that can be realized by upgrading your environment to the most recent release of CICS TS. This book targets the following audience: Systems Architects wanting to understand the performance characteristics and capabilities of a specific CICS TS release. Capacity Planners and Performance Analysts wanting to understand how an upgrade to the latest release of CICS TS affects their environment. Application Developers wanting to design and code highly optimized applications for deployment into a CICS TS environment. This book covers the following topics: A description of the factors

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that are involved in the interaction between IBM z® Systems hardware and a z/OS software environment. A definition of key terminology that is used when describing the results of CICS TS performance benchmarks. A presentation of how to collect the required data (and the methodology used) when applying Large Scale Performance Reference (LSPR) capacity information to a CICS workload in your environment. An outline of the techniques that are applied by the CICS TS performance team to achieve consistent and accurate performance benchmark results. High-level descriptions of several key workloads that are used to determine the performance characteristics of a CICS TS release. An introduction to the open transaction environment and task control block (TCB) management logic in CICS TS, including a reference that describes how several configuration attributes combine to affect the behavior of the CICS TS dispatcher. Detailed information that relates to changes in performance characteristics between successive CICS TS releases, covering comparisons that relate to CICS TS V4.2, V5.1, V5.2, V5.3, V5.4, and V5.5. The results of several small performance studies to determine the cost of using a specific CICS functional area.

This IBM® Redpaper™ publication describes the set of features that IBM clients use to simplify deployment of the IBM Explorer products in their operating environments. This enables them to give different levels of control to the system administrator, provide different types of experiences for their users, and require different levels of technical knowledge to implement. Before describing the different mechanisms available for deployment and the unique features of each,

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the author introduces some of the factors that are involved in deployment. He concludes with a comparison chart of the available technologies so that you can determine which is the most appropriate for your situation. This paper is likely to interest the people in your organization who are responsible for planning, managing, and maintaining deployments of IBM z/OS® Explorer and IBM CICS® Explorer software.

This IBM® Redbooks® publication describes IBM TXSeries® for Multiplatforms, which is the premier IBM distributed transaction processing software for business-critical applications. Before describing distributed transaction processing in general, we introduce the most recent version of TXSeries for Multiplatforms. We focus on the following areas: The technical value of TXSeries for Multiplatforms New features in TXSeries for Multiplatforms Core components of TXSeries Common TXSeries deployment scenarios Deployment, development, and administrative choices Technical considerations It also demonstrates enterprise integration with products, such as relational database management system (RDBMS), IBM WebSphere® MQ, and IBM WebSphere Application Server. In addition, it describes system customization, reviewing several features, such as capacity planning, backup and recovery, and high availability (HA). We describe troubleshooting in TXSeries. We also provide details about migration from version to version for TXSeries. A migration checklist is included. We demonstrate a sample application that we created, called BigBlueBank, its installation, and the server-side and client-side programs. Other topics in this book include application

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development and system administration considerations. This book describes distributed IBM Customer Information Control System (IBM CICS®) solutions, and how best to develop distributed CICS applications.

New Ways of Running Batch Applications on z/OS: Volume 1 CICS Transaction Server

IBM CICS Explorer

Murach's CICS for the COBOL Programmer

IBM CICS Asynchronous API: Concurrent Processing Made Simple

Implementing IBM CICS JSON Web Services for Mobile Applications

**This IBM® Redbooks® publication is intended for IBM CICS® system programmers and IBM Z architects. It describes how to deploy and manage Java EE 7 web-based applications in an IBM CICS Liberty JVM server and access data on IBM Db2® for IBM z/OS® and IBM MQ for z/OS sub systems. In this book, we describe the key steps to create and install a Liberty JVM server within a CICS region. We then describe how to best use the different deployment techniques for Java EE applications and the specific considerations when deploying applications that use JDBC, JMS, and the new CICS link to Liberty API. Finally, we describe how to secure web applications in CICS Liberty, including transport-level security and request authentication and authorization by using IBM RACF® and LDAP registries. Information is also provided about how to build a high availability infrastructure and how to use the logging and monitoring functions that are available in the CICS Liberty environment. This book is based on IBM CICS**

**Transaction Server (CICS TS) V5.4 that uses the embedded IBM WebSphere® Application Server Liberty technology. It is also applicable to CICS TS V5.3 with the fixes for the continuous delivery APAR PI77502 applied. Sample applications are used throughout this publication and are freely available for download from the IBM CICSDev GitHub organization along with detailed deployment instructions.**

**CICS® Explorer™ is the latest significant evolution in the management and analysis of your CICS environment. It is a statement of intent from the CICS Development organization, which is determined to ensure you can manage your CICS estate in a simple and easily extensible way, using a combination of the following approaches: Tried and trusted CICS expertise and technology The widely accepted user interfaces and integration power of the open source Eclipse platform Web 2.0 and RESTful programming (this technology underpins the CICS Explorer concept) This IBM® Redbooks® publication shows how you can use the extensible design of CICS Explorer to complement the functionality already provided, with added functionality tailored to the needs of your business. We show you how to perform the following tasks: Install the CICS plug-in SDK into your eclipse environment Develop a simple plug-in for the CICS Explorer Deploy the plug-in into CICS Explorer We provide several useful examples of plug-ins that we developed during the residency using the methodology we describe. The starting point for the book is that you already have CICS Explorer installed and configured with connectivity to your CICS region or CICSplex®, and that you are looking for**

ways to customize CICS Explorer.

**This IBM® Redpaper Redbooks® publication introduces the IBM System z® New Application License Charges (zNALC) pricing structure and provides examples of zNALC workload scenarios. It describes the products that can be run on a zNALC logical partition (LPAR), reasons to consider such an implementation, and covers the following topics: Using the IBM WebSphere Application Server Liberty profile to host applications within an IBM CICS® environment and how it interacts with CICS applications and resources Security technologies available to applications that are hosted within a WebSphere Application Server Liberty profile in CICS How to implement modern presentation in CICS with a CICS Liberty Java virtual machine (JVM) server How to share scenarios to develop Liberty JVM applications to gain benefits from IBM CICS Transaction Server for IBM z/OS® Value Unit Edition Considerations when using mobile devices to interact with CICS applications and explains specific CICS technologies for connecting mobile devices by using the z/OS Value Unit Edition How IBM Operational Decision Manager for z/OS runs in the transaction server to provide decision management services for CICS COBOL and PL/I applications Installing the CICS Transaction Server for z/OS (CICS TS) Feature Pack for Modern Batch to enable the IBM WebSphere® batch environment to schedule and manage batch applications in CICS This book also covers what is commonly referred to as plain old Java objects (POJOs). The Java virtual machine (JVM) server is a full-fledged JVM that includes support for Open Service Gateway initiative (OSGi) bundles. It can be used to host open source Java**

**frameworks and does just about anything you want to do with Java on the mainframe. POJO applications can also qualify for deployment using the Value Unit Edition. Read about how to configure and deploy them in this companion Redbooks publication: IBM CICS and the JVM server: Developing and Deploying Java Applications, SG24-8038 Examples of POJOs are terminal-initiated transactions, CICS web support, web services, requests received via IP CICS sockets, and messages coming in via IBM WebSphere MQ messaging software. Ever feel buried by IBM manuals?**

**Computerworld**

**FCC Record**

**Developing CICS Applications on the PC**

**The Complete Guide to CICS Transaction Gateway Volume 1 Configuration and Administration**

**IBM CICS Interdependency Analyzer**

**It's easy to look at the title of a book and think "that's old news" or "I already know all there is to know on that subject." But before you dismiss this publication, consider just how far the IBM® Parallel Sysplex® architecture has come. From the early days the mainframe has embraced a shared everything approach. The original designers coded IBM z/OS® (called IBM MVSTM or IBM OS/390® back then) with the functionality necessary for the operating system to create the repositories, manage the data flow, and ensure the integrity of the systems involved. From there,**

**the middleware systems provided the exploitation and advanced functions to mature the technology. The component in the middle of all this great technology can easily be taken for granted. That is the IBM Coupling Facility. This IBM Redbooks® publication discusses both traditional uses for the IBM Coupling Facility technology and new ways to use it with products such as IBM CICS®. You can learn how to perform new functions and have these functions benefit from the scalability and availability achieved only in a mainframe ecosystem. Open standards are a large part of considerations today, as most companies run IT shops with a mix of technology components. As the world embraces these technologies, it is necessary to understand how to mix the world of mainframe architectures and products with other open architectures. This mix allows the best tool to be used to solve processing needs, at the right cost and service levels. Often the functions needed for modern processing can be found in house, in places where staff are skilled and that already deliver the robust production environments you count on daily. This book discusses these modern functions and how to achieve them with CICS use of the IBM Coupling Facility. You will learn how one IBM client, Walmart, took these concepts far beyond the original design as they share their experiences and even share code examples to help you get started. The last chapter of this book shows what can be achieved when a combination of old and new functions are use together. Even if you**

**have familiarity with what could be done with the IBM Coupling Facility in the past, there is much to learn and deploy in a modern world. Those who are familiar with the IBM Coupling Facility might find the content of this book helpful. Additionally, readers who are considering how to use the IBM Coupling Facility technology within their environment might also find useful information in the chapters that follow**

**The IBM® CICS® Transaction Server for z/VSE® (CICS TS for z/VSE) 2.1 provides functions to improve application programming, system programming, system management, and data security and availability. With CICS TS for z/VSE 2.1, you can use the extended functionality of Basic Security Manager. CICS TS for z/VSE 2.1 can be administrated by the IBM CICS Explorer® function on a workstation, which allows CICS management in a convenient way. This IBM Redbooks® publication provides information to help you install, tailor, and configure the CICS TS for z/VSE 2.1 product. The book is intended for IBM z/VSE customers and IBM technical personnel who are responsible for planning and migrating to IBM z/VSE 6.1 and CICS TS for z/VSE 2.1. The book also provides information to help you understand the affect of migrating to CICS TS for z/VSE 2.1. It provides detailed guidance and samples for installing and configuring CICS TS for z/VSE 2.1. Also included in the book is a description of the CICS TS for**

**z/VSE 2.1 features and capabilities and the affect of removing obsolete functions. The book also covers security and performance issues and provides samples for first level problem determination through the use of memory dumps or the use of trace tools.**

**Mainframe computers play a central role in the daily operations of many of the world's largest corporations. Batch processing is still a fundamental, mission-critical component of the workloads that run on the mainframe. A large portion of the workload on IBM® z/OS® systems is processed in batch mode. This IBM Redbooks® publication is the first volume in a series of four in which we specifically address new technologies introduced by IBM to facilitate the use of hybrid batch applications that combine the best aspects of Java and procedural programming languages such as COBOL. This volume specifically focuses on the latest support in CICS to run batch tasks. The audience for this book includes IT architects and application developers, with a focus on batch processing on the z/OS platform in a CICS environment.**

**This is the first book to cover IBM's newest version of COBOL--COBOL 370. Kirk shows programmers how to use this new version of COBOL to develop applications and access a compiler from either a programmable workstation or a mainframe. The book describes a range of techniques and also explores non-COBOL topics such**

as compile options, JCL, and performance issues.

**Extend the CICS Explorer: A Better Way to Manage Your CICS**

**IBM CICS Performance Series: CICS TS for z/OS V5 Performance Report**

**COBOL/370 for Power Programmers**

**IBM System z in a Mobile World: Providing Secure and Timely Mobile Access to the Mainframe**

**Introduction to CICS Dynamic Scripting**

***In this IBM® Redbooks® publication, we discuss CICS®, which stands for Customer Information Control System. It is a general-purpose transaction processing subsystem for the z/OS® operating system. CICS provides services for running an application online where, users submit requests to run applications simultaneously. CICS manages sharing resources, the integrity of data, and prioritizes execution with fast response. CICS authorizes users, allocates resources (real storage and cycles), and passes on database requests by the application to the appropriate database manager, such as DB2®. We review the history of CICS and why it was created. We review the CICS architecture and discuss how to create an application in CICS. CICS provides a secure, transactional environment for applications that are written in several languages. We discuss the CICS-supported languages and each language's advantages in this Redbooks***

***publication. We analyze situations from a system programmer's viewpoint, including how the systems programmer can use CICS facilities and services to customize the system, design CICS for recovery, and manage performance. CICS Data access and where the data is stored, including Temporary storage queues, VSAM RLS, DB2, IMSTM, and many others are also discussed.***

***This IBM® Redbooks® publication explores various implementations of z/OS® Identity Propagation where the distributed identity of an end user is passed to z/OS and used to map to a RACF® user ID, and any related events in the audit trail from RACF show both RACF and distributed identities. This book describes the concept of identity propagation and how it can address the end-to-end accountability issue of many customers. It describes, at a high level, what identity propagation is, and why it is important to us. It shows a conceptual view of the key elements necessary to accomplish this. This book provides details on the RACMAP function, filter management and how to use the SMF records to provide an audit trail. In depth coverage is provided about the internal implementation of identity propagation, such as providing information about available callable services. This book examines the current exploiters of z/OS Identity Propagation and provide several detailed examples covering CICS® with CICS Transaction Gateway, DB2®,***

***and CICS Web services with Datapower.***

***The service-oriented architecture (SOA) style of integration involves breaking an application down into common, repeatable services that can be used by other applications (both internal and external) in an organization, independent of the computing platforms on which the business and its partners rely. In recent years CICS® has added a variety of support for SOA and now provides near seamless connectivity with other IT environments. This IBM® Redbooks® publication helps IT architects to select, plan, and design solutions that integrate CICS applications as service providers and requesters. First, we provide an introduction to CICS service enablement and introduce the architectural choices and technologies on which a CICS SOA solution can be based. We continue with an in-depth analysis of how to meet functional and non-functional requirements in the areas of application interface, security, transactional scope, high availability, and scalability. Finally, we document three integration scenarios to illustrate how these technologies have been used by customers to build robust CICS integration solutions.***

***This IBM® Redbooks® publication is intended to make System Programmers, Operators, and Availability Managers aware of the enhancements to recent releases of IBM z/OS® and its major subsystems in***

***the area of planned outage avoidance. It is a follow-on to, rather than a replacement for, z/OS Planned Outage Avoidance Checklist, SG24-7328. Its primary objective is to bring together in one place information that is already available, but widely dispersed. It also presents a different perspective on planned outage avoidance. Most businesses care about application availability rather than the availability of a specific system. Also, a planned outage is not necessarily a bad thing, if it does not affect application availability. In fact, running for too long without an IPL or subsystem restart might have a negative impact on application availability because it impacts your ability to apply preventive service. Therefore, this book places more focus on decoupling the ability to make changes and updates to your system from IPLing or restarting your systems.***

***Cloud Enabling IBM CICS***

***A Guide to Internal Structure***

***CICS***

***A Software Architect's Guide to New Java Workloads in IBM CICS***

***Transaction Server***

***Integrating Existing Mainframe Applications with New Technologies***

***In this IBM® Redbooks® publication, you will gain an appreciation of the IBM CICS® Transaction Gateway (CICS TG) product suite,***

***based on key criteria, such as capabilities, scalability, platform, CICS server support, application language support, and licensing model. Matching the requirements to available infrastructure and hardware choices requires an appreciation of the choices available. In this book, you will gain an understanding of those choices, and will be capable of choosing the appropriate CICS connection protocol, APIs for the applications, and security options. You will understand the services available to the application developer when using a chosen protocol. You will then learn about how to implement CICS TG solutions, taking advantage of the latest capabilities, such as IPIC connectivity, high availability, and Dynamic Server Selection. Specific scenarios illustrate the usage of CICS TG for IBM z/OS®, and CICS TG for Multiplatforms, with CICS Transaction Server for z/OS and IBM WebSphere® Application Server, including connections in CICS, configuring simple end-to-end connectivity (all platforms) with verification for remote and local mode applications, and adding security, XA support, and high availability. This IBM® Redbooks® publication, intended for architects, application developers, and system programmers, describes how to design and implement Java web-based applications in an IBM CICS®***

***Liberty JVM server. This book is based on IBM CICS Transaction Server V5.3 (CICS TS) using the embedded IBM WebSphere® Application Server Liberty V8.5.5 technology. Liberty is an asset to your organization, whether you intend to extend existing enterprise services hosted in CICS, or develop new web-based applications supporting new lines of business. Fundamentally, Liberty is a composable, dynamic profile of IBM WebSphere Application Server that enables you to provision Java EE technology on a feature-by-feature basis. Liberty can be provisioned with as little as the HTTP transport and a servlet web container, or with the entire Java EE 6 Web Profile feature set depending on your application requirements. This publication includes a Technology Essentials section for architects and application developers to help understand the underlying technology, an Up-and-Running section for system programmers implementing the Liberty JVM server for the first time, and a set of real-life application development scenarios. Micro Focus CICS Option is a powerful and popular tool for CICS application development and maintenance. In this manual, McNally describes the capabilities of Micro Focus CICS Option and through extensive examples shows how to use its various functions. It gives***

***readers a clear understanding of how to use Micro Focus CICS Option--and how it can save time and money.***

***For more than 40 years, Computerworld has been the leading source of technology news and information for IT influencers worldwide. Computerworld's award-winning Web site (Computerworld.com), twice-monthly publication, focused conference series and custom research form the hub of the world's largest global IT media network.***

***The CICS Programmer's Desk Reference***

***The Next Generation of Distributed IBM CICS***

***IBM z/OS Container Extensions (zCX) Use Cases***

***A Comprehensive Compilation of Decisions, Reports, Public Notices, and Other Documents of the Federal Communications Commission of the United States***

***IBM CICS and Liberty: What You Need to Know***

Beginning with IBM® CICS® Version 2, applications can run on TCBS apart from the QR TCB, which has positive implications for improving system throughput and for implementing new technologies inside of CICS. Examples of implementing new technologies include using the IBM MVSTM Java virtual

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machine (JVM) inside CICS and enabling listener tasks written for other platforms to be imported to run under CICS. The newest release, CICS Transaction Server for z/OS® (CICS TS) V4.2, includes scalability enhancements so that you can perform more work more quickly in a single CICS system. The advantage of this enhancement is that you can increase vertical scaling and decrease the need to scale horizontally, reducing the number of regions that are required to run the production business applications. The scalability enhancements in CICS TS V4.2 fall into two broad areas, which are increased usage of open transaction environment (OTE) and of 64-bit storage. This IBM Redbooks® publication is a comprehensive guide to threadsafe concepts and implementation for IBM CICS. This book explains how systems programmers, applications developers, and architects can implement threadsafe applications in an environment. It describes the real-world experiences of users, and our own experiences, of migrating applications to be threadsafe. This book also highlights the two most critical aspects of

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threadsafe applications: system performance and integrity. This IBM® Redbooks® publication covers the background and implementation of the IBM CICS® asynchronous API, which is a simple, accessible API that is designed to enable CICS application developers to create efficient asynchronous programs in all CICS-supported languages. Using the API, application developers can eliminate the overhead that is involved in coding and managing homegrown asynchronous solutions, instead using a set of CICS-supported API commands to underpin CICS applications, which are more responsive and robust than ever. Initially, the book reviews the history and motivations of asynchronous processing in computing and the benefits involved when calling external services. It then introduces the asynchronous API itself and its commands. It also provides a range of scenarios, including sample code, that cover everything from the basics of making an asynchronous request to updating existing synchronous program calls, with the goal of illustrating how to harness the CICS asynchronous API to solve real business

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problems. Later chapters take a deeper dive into the capabilities of the asynchronous API for advanced use cases. Beyond application development, CICS provides a complete solution for system programmers to manage and monitor asynchronous business logic. Thus, the final chapters of this book cover enhancements to CICS monitoring, statistics, trace, and dumps. Using supporting CICS tooling, system programmers have greater insight than ever, with improved transaction tracking capabilities and CICS policies to provide maximum control and optimization of asynchronous processing in CICS environments.

Here's a comprehensive and useful book on CICS for COBOL programmers at all levels. Kirk focuses on techniques, structures, and style. If your're new to CICS, use this book as a CICS tutorial and then, as you gain mastery of CICS, as a handy desk reference. CICS pros can use it for review and reference, and for guidance in migrating to COBOL II.

Is it time for you to modernize your IBM® z/OS® applications to allow for access to an entire system of open source and

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Linux on IBM Z® workloads? Is co-location of these workloads on the z/OS platform with no porting requirements of value to you? Your open source or Linux on IBM Z software can benefit from being co-located and managed inside a z/OS environment; leveraging z/OS quality of service for optimized business continuity. Your software can be integrated with and can help complement existing z/OS workloads and environments. If your software can communicate with z/OS and external components by using TCP/IP, now is the time examine how IBM z/OS Container Extensions (IBM zCX) makes it possible to integrate Linux on Z applications with z/OS. This IBM Redbooks® publication is a follow-on to Getting started with z/OS Container Extensions and Docker, SG24-8457, which provides some interesting use cases for zCX. We start with a brief overview of IBM zCX. In Part 1, "Integration" on page 9, we demonstrate use cases that integrate with zCX. In Part 2, "DevOps in zCX" on page 165, we describe how organizations can benefit from running a DevOps flow in zCX and we describe the set up of necessary

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components. Finally, in Part 3, "Monitoring and managing zCX systems" on page 229, we discuss IBM Service Management Unite Automation, a free-of-charge customizable dashboard interface and an important discussion of creating the suitable container restart policy.

Threadsafe Considerations for CICS

Managing Enterprise-wide Deployment of IBM Explorer for z/OS or CICS Explorer

CICS and SOA: Architecture and Integration Choices

Smarter Banking with CICS Transaction Server

Application Development for IBM CICS Web Services

This IBM® Redbooks® publication focuses on developing Web service applications in IBM CICS®. It takes the broad view of developing and modernizing CICS applications for XML, Web services, SOAP, and SOA support, and lays out a reference architecture for developing these kinds of applications. We start by discussing Web services in general, then review how CICS implements Web services. We offer an overview of different development approaches: bottom-up, top-down, and meet-in-the-middle. We then look at how you would go about exposing a CICS application as a Web service provider, again looking at the different approaches. The book then steps through the process of creating a CICS Web service requester. We follow this by looking at CICS application aggregation (including 3270

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applications) with IBM Rational® Application Developer for IBM System z® and how to implement CICS Web Services using CICS Cloud technology. The first part is concluded with hints and tips to help you when implementing this technology. Part two of this publication provides performance figures for a basic Web service. We investigate some common variables and examine their effects on the performance of CICS as both a requester and provider of Web services.

This is an updated and expanded version of Murach's two best-selling CICS books. Now, in just one book, IBM mainframe programmers will learn everything they need to know for developing interactive programs with CICS. In addition, they will learn new design and implementation methods for distributed CICS processing. These methods also make it ..... The IBM® CICS® Interdependency Analyzer (CICS IA®) is a runtime tool for use with IBM CICS Transaction Server for z/OS®. CICS IA allows both system programmers and application developers to get an understanding of the relationships and dependencies of your CICS applications and the environment on which they run. By analyzing data collected by CICS IA, you can make changes to your environment in a safe and controlled but timely manner to address changing demands on your business applications. In this IBM Redbooks® publication, we first provide a detailed overview of what CICS IA is and what business issues it addresses before we review how to configure CICS IA to collect the data that you require with the minimum provenance impact. We then show how you can analyze this data to assist with day-to-day application changes and major projects such as application onboarding.

This IBM® Redbooks® publication takes an existing IBM 3270-COBOL-VSAM application and

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describes how to use the features of IBM Customer Information Control System (CICS®) Transaction Server (CICS TS) cloud enablement. Working with the General Insurance Application (GENAPP) as an example, this book describes the steps needed to monitor both platform and application health using the CICS Explorer CICS Cloud perspective. It also shows you how to apply threshold policy and measure resource usage, all without source code changes to the original application. In addition, this book describes how to use multi-versioning to safely and reliably apply and back out application changes. This Redbooks publication includes instructions about the following topics: How to create a CICS TS platform to manage and reflect the health of a set of CICS TS regions, and the services that they provide to applications How to quickly get value from CICS TS applications, by creating and deploying a CICS TS application for an existing user application How to protect your CICS TS platform from erroneous applications by using threshold policies How to deploy and run multiple versions of the same CICS TS application on the same CICS TS platform at the same time, enabling a safer migration from one application version to another, with no downtime How to measure application resource usage, enabling a comparison of the performance of different application versions, and chargeback based on application use This book describes how CICS TS cloud enablement uses existing operational facilities, including monitoring, events, transaction tracking, CICS TS bundles, and IBM CICSplex® System Manager (CICSplex SM), to integrate with existing deployment and management processes.

CICS Transaction Server from Start to Finish  
ARCHIVED: Pooled JVM in CICS Transaction Server  
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IBM CICS and the JVM server: Developing and Deploying Java Applications

Liberty in IBM CICS: Deploying and Managing Java EE Applications

NOTE: This book contains information about technologies that have been superseded and it is retained for historical purposes only. IBM CICS Transaction Server (CICS TS) has supported the deployment of Java applications since the 1990's. In CICS TS V1.3 (1999), IBM introduced the 'Pooled JVM' style of JVM infrastructure within CICS TS. This infrastructure was designed to be similar in nature to that which a CICS application developer for a language such as COBOL would be used to. It brought the benefits of the new Java language to CICS TS, without a dramatic change to the way CICS users thought of core concepts such as re-entrancy and isolation. As enterprise usage of Java evolved it began to make more and more use of multi-threaded environments where isolation was not a desired characteristic. Additionally, technologies such as OSGi (Open Service Gateway Initiative) evolved to overcome some of the original disadvantages of applying Java to an enterprise environment. As such, the limitations of the 'Pooled JVM' approach began to outweigh the benefits. In CICS TS V4.1 (2009), IBM introduced the new 'JVM server' infrastructure in CICS TS as a replacement to the 'Pooled JVM' approach. This 'JVM server' infrastructure provides a much more standard Java environment that makes the writing and porting of Java applications for CICS TS much simpler. In CICS TS V5.1 (2012), support for the old 'Pooled JVM' infrastructure was removed. While there is a relatively simple migration path from 'Pooled JVM' to 'JVM server', applications should no longer be written to the 'Pooled JVM' infrastructure. There are a number of more recent IBM Redbooks publications covering

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the replacement 'JVM server' technology, including: IBM CICS and the JVM server:  
Developing and Deploying Java Applications, SG24-8038 A Software Architect's guide  
to New Java Workloads in IBM CICS Transaction Server, SG24-8225

This handbook on CICS internal structures offers detailed information that systems programmers can easily access when they encounter a problem. Full of information not available in official manuals, this nuts-and-bolts handbook features a large number of examples and helpful figures. It will help system programmers make CICS run the way it was intended to.

IBM® CICS® Transaction Server Feature Pack for Dynamic Scripting embeds and integrates technology from WebSphere® sMash into the CICS TS V4.1 run time, helping to reduce the time and cost of CICS application development. The Feature Pack provides a robust, managed environment for a wide range of situational applications allowing PHP and Groovy developers to create reports, dashboards, and widgets, and integrate CICS assets into mash-ups, and much more. The CICS Dynamic Scripting Feature Pack combines the benefits of scripted, Web 2.0 applications with easy and secure access to CICS application and data resources. The Feature Pack includes a PHP 5.2 run time implemented in Java™ and with Groovy language support, support for native Java code and access to many additional libraries and connectors to enhance the development and user experience of rich Internet applications. Access to CICS resources is achieved by using the JCICS APIs. In this IBM Redbooks® publication, we introduce the Dynamic Scripting Feature Pack, show how to install and customize it, and provide examples for using it.

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It goes without saying that 2009 was a year of unprecedented change in global banking. The challenges that financial institutions are facing require them to cut costs but also to regain trust and improve the service that they provide to an increasingly sophisticated and demanding set of customers. In the past, siloed and rigid IT systems often inhibited banks in their attempts to re-engineer their business processes. The IBM® smarter banking initiative highlights how more intelligent software can be used to significantly improve the end-to-end integration of banking processes. In this IBM Redbooks® publication, we aim to show how software technologies, such as SOA, Web 2.0 and event driven architectures, can be used to implement smarter banking solutions. Our focus is on CICS® Transaction Server, which is at the heart of most bank's core banking implementations.

z/OS Identity Propagation

IBM CICS and the Coupling Facility: Beyond the Basics

CICS--a How-to for COBOL Programmers

Micro Focus CICS Option

***This IBM® Redbooks® publication provides information about the new Java virtual machine (JVM) server technology in IBM CICS® Transaction Server for z/OS® V4.2. We begin by outlining the many advantages of its multi-threaded operation over the pooled JVM function of earlier releases. The Open Services Gateway initiative (OSGi) is described and we highlight the benefits OSGi brings to both development and deployment. Details are then provided about how to***

***configure and use the new JVM server environment. Examples are included of the deployment process, which takes a Java application from the workstation Eclipse integrated development environment (IDE) with the IBM CICS Explorer® software development kit (SDK) plug-in, through the various stages up to execution in a stand-alone CICS region and an IBM CICSplex® environment. The book continues with a comparison between traditional CICS programming, and CICS programming from Java. As a result, the main functional areas of the Java class library for CICS (JCICS) application programming interface (API) are extensively reviewed. Further chapters are provided to demonstrate interaction with structured data such as copybooks, and how to access relational databases by using Java Database Connectivity (JDBC) and Structured Query Language for Java (SQLJ). Finally, we devote a chapter to the migration of applications from the pooled JVM model to the new JVM server run time.***

***This IBM® Redbooks® publication provides information about how you can connect mobile devices to IBM Customer Information Control System (CICS®) Transaction Server (CICS TS), using existing enterprise services already hosted on CICS, or to develop new services supporting new lines of business. This book describes the steps to develop, configure, and deploy a mobile application that connects either directly to CICS TS, or to CICS via IBM Worklight® Server. It also describes the advantages that your organization can realize by using Worklight***

***Server with CICS. In addition, this Redbooks publication provides a broad understanding of the new CICS architecture that enables you to make new and existing mainframe applications available as web services using JavaScript Object Notation (JSON), and provides support for the transformation between JSON and application data. While doing so, we provide information about each resource definition, and its role when CICS handles or makes a request. We also describe how to move your CICS applications, and business, into the mobile space, and how to prepare your CICS environment for the following scenarios: Taking an existing CICS application and exposing it as a JSON web service Creating a new CICS application, based on a JSON schema Using CICS as a JSON client This Redbooks publication provides information about the installation and configuration steps for both Worklight Studio and Worklight Server. Worklight Studio is the Eclipse interface that a developer uses to implement a Worklight native or hybrid mobile application, and can be installed into an Eclipse instance. Worklight Server is where components developed for the server side (written in Worklight Studio), such as adapters and custom server-side authentication logic, run. CICS applications and their associated data constitute some of the most valuable assets owned by an enterprise. Therefore, the protection of these assets is an essential part of any CICS mobile project. This Redbooks publication, after a review of the main mobile security challenges,***

*outlines the options for securing CICS JSON web services, and reviews how products, such as Worklight and IBM DataPower®, can help. It then shows examples of security configurations in CICS and Worklight.*

*IBM® Customer Information Control System (CICS®) Explorer is the new face of CICS Integration point for CICS tooling with rich CICS views, data, and methods. Are you looking for new ways to accelerate the transfer of knowledge, skills, and best practices to the next generation of technical staff and experts? Do you need to maintain productivity and protect service-levels? CICS Explorer™ and System z® lead the way to platform simplification. IBM CICS Explorer has a common, intuitive, Eclipse-based environment for architects, developers, administrators, system programmers, and operators. The task-oriented views provide integrated access to a broad range of data and control capabilities, and it also has powerful, context-sensitive resource editors. Integration point for CICS TS, CICS Tools, CICS TG, PD Tools, and Rational® Tools are extensible by independent software vendors (ISV), system integrators (SI), and customers who use our Software Development Kit. In this IBM Redbooks® publication, we focus on the new CICS Explorer. The first part of the book is an overview of the CICS Explorer along with all of the CICS Tools' plug-ins. In the second part of the book, we focus on several scenarios in which you can use the CICS Explorer with the CICS Tools plug-ins to resolve various problems.*

***CICSA How-To for COBOL Programmers\* A Wiley-QED Publication***

***Designing and Programming CICS Applications***

***CICS Command Level Programming***

***Migration to CICS Transaction Server for z/VSE V2.1***

***Improving z/OS Application Availability by Managing Planned Outages***

CICS is an application server that delivers industrial-strength, online transaction management for critical enterprise applications. Proven in the market for over 30 years with many of the world's leading businesses, CICS enables today's customers to modernize and extend their applications to take advantage of the opportunities provided by e-business while maximizing the benefits of their existing investments. Designing and Programming CICS Applications will benefit a diverse audience. It introduces new users of IBM's mainframe (OS/390) to CICS features. It shows experienced users how to integrate existing mainframe systems with newer technologies, including the Web, CORBA, Java, CICS clients, and Visual Basic; as well as how to link MQSeries and CICS. Each part of Designing and Programming CICS Applications addresses the design requirements for specific components and gives a step-by-step approach to developing a simple application. The book reviews the basic concepts of a business application and the way CICS meets these requirements. It then covers a wide range of application development technologies, including VisualAge for Java, WebSphere Studio, and Visual

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Basic. Users learn not only how to design and write their programs but also how to deploy their applications. Designing and Programming CICS Applications shows how to: Develop and modify existing COBOL applications Become familiar with the CICS Java environment and write a simple Java wrapper for a COBOL application Develop a web front end using servlets, JSP and JavaBeans. Link the web front end to an existing COBOL application using CORBA Write a Visual Basic application to develop a customer GUI Link an existing COBOL application using a CICS Client ECI call Develop a Java application using Swing as an MQSeries Client Use the MQSeries-CICS bridge to access an existing COBOL application Whether for working with thousands of terminals or for a client/server environment with workstations and LANs exploiting modern technology such as graphical interfaces or multimedia, Designing and Programming CICS Applications delivers the power to create, modernize and extend CICS applications.

Today, organizations engage with customers, business partners, and employees who are increasingly using mobile technology as their primary general-purpose computing platform. These organizations have an opportunity to fully embrace this new mobile technology for many types of transactions, including everything from exchanging information to exchanging goods and services, from employee self-service to customer service. With this mobile engagement, organizations can build new insight into the

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behavior of their customers so that organizations can better anticipate customer needs and gain a competitive advantage by offering new services. Becoming a mobile enterprise is about re-imagining your business around constantly connected customers and employees. The speed of mobile adoption dictates transformational rather than incremental innovation. This IBM® Redbooks® publication has an end-to-end example of creating a scalable, secure mobile application infrastructure that uses data that is on an IBM mainframe. The book uses an insurance-based application as an example, and shows how the application is built, tested, and deployed into production. This book is for application architects and decision-makers who want to employ mobile technology in concert with their mainframe environment.

What This Book Will Do For You Need to learn CICS in a hurry? Whether at work or in the classroom, CICS: A How-To for COBOL Programmers gives you all the skills you need to master CICS fast. Written for MVS programmers and with an emphasis on COBOL II, this book takes you through the basics and a whole lot more. You'll refer to this book time and time again to solve everyday CICS programming problems. Easy-to-understand examples make sure you gain proficiency in the most commonly used features of CICS Kirk's emphasis on the concepts of CICS, such as transaction design, computer dialogues, structured programming in transaction design, programming style, program debugging, and efficiency, allow you to understand fully the more advanced topics you

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encounter on the job This invaluable tool is the one CICS book you cannot be without.