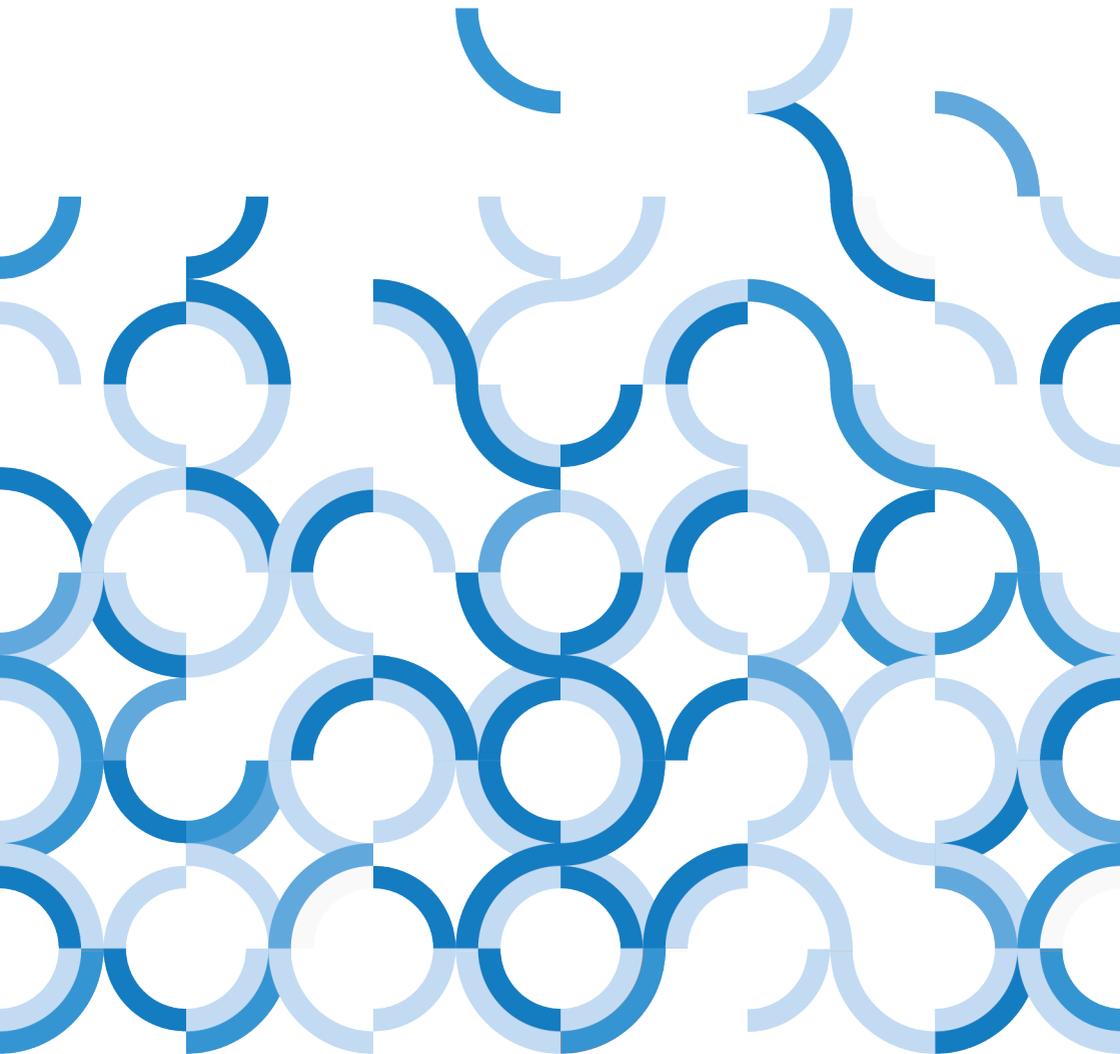# IBM | **CICS TS V5.5**

Your essential guide to this release

CICS TS V5.5

As CICS reaches its 50th year of CICS Transaction Server we arrive at the launch of CICS TS V5.5, our most advanced and powerful version yet.
Create powerful, mixed-language applications, while allowing your operational teams to manage these applications from one single point of control.

"The world's most powerful mixed-language application server."

Quite unlike many of our previous versions of CICS TS, Version 5 has reached its 5th release. This is a consequence of the realisation of the V5 vision and provides ongoing value to this journey. This booklet will explore why. Our development of V5.5 has made significant progress since the early days of Version 5 and the integration of Java.

Core to our V5.5 production, CICS has grounded its development strategies around key sponsor users at concept stages. This ensures our users are able to extract the maximum value of CICS delivered capabilities. Moreover, we are continuing to push our mixed-language capabilities further into the future.

01

WHY CHOOSE CICS TS V5.5?
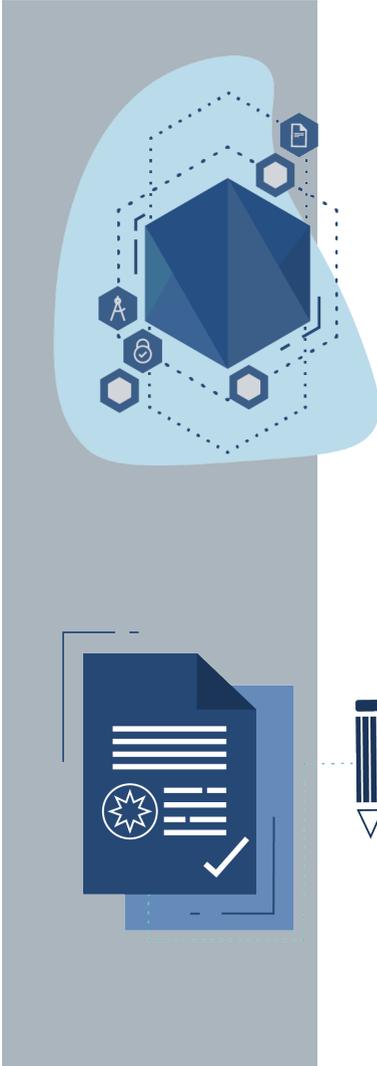
Extending and consolidating our unparalleled mixed-language capabilities with Node.js in CICS. The highly scalable, widely used, high-level programming language, JavaScript, is now integrated and supported inside CICS TS V5.5.

Upgrading your user interface. Using the GraphQL API in CICS Explorer to query multiple types of CICS resources across multiple CICSPlexes in one single request and offering a simplified solution to understanding relationships between resources.

Improved security for JCL job submissions to the JES internal reader, QUERY SECURITY command enhancements, and the ability for System programmers to restrict API/SPI commands, user IDs, and LPAR level changes.

02
NODE.JS IN CICS

CICS has always been unique in providing developers the choice to use languages most appropriate to their skills, tools, and business requirements – be it COBOL, PL/I, C/C++, Assembler, or Java. With CICS TS V5.5, CICS is extending this choice by adding support for JavaScript, provided by the Node.js runtime.

So why Node.js? It provides a highly scalable, lightweight and efficient runtime for JavaScript, ideal for data and I/O intensive applications. JavaScript is a high-level, interpreted programming language used by websites to run code inside web browsers to create exciting and responsive pages. This has led to JavaScript becoming one of the most widely used languages today.

Node.js enables JavaScript developers to use their skills to write applications that run on servers, for example, to write RESTful APIs that are called from browsers, mobile applications, or else-where. CICS also provides a secure and optimized invoke API for Node.js applications to call CICS programs.

Node.js in CICS enables your developers to write the application using the language and tools they are familiar with, and for the operations team to deploy and manage the application with the services and data it consumes on the world class IBM Z platform.

More on Node.js in CICS at ibm.biz/nodejs-in-cics

4

03 CICS EXPLORER

Innovating the user interface space, CICS Explorer now uses GraphQL to map relations between resources through a smart and sophisticated system. With this new technology embedded into CICS Explorer, you can aggregate and summarize data to quickly find anomalies between sets of definitions or installed resources. For example, you could aggregate a large set of resources to spot any that are not in ENABLED state, or simply look for resources that stand out as being different. This becomes especially useful across a large CICSplex environment in instances where it is challenging to keep track of updates to sets of resources.

The GraphQL technology is also harnessed to visualize the relationship between CPSM Workload Management (WLM) definitions. This offers a simple, all-encompassing tree view of Transactions all the way through to Workload Specifications.

Additionally, Business Application Services (BAS) offer the same comprehensive viewing portal, allowing quick, easy access for System Administrators.

The GraphQL API is provided in a server component running in your WUI. In this release, CICS Explorer uses this server component to make sophisticated queries. And what is more, you can integrate these queries into your own tooling.
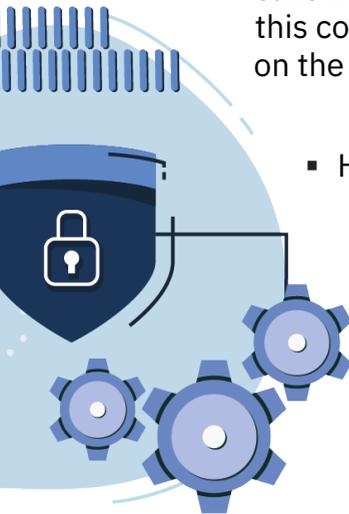
04 SECURITY, RESILIE & SYS

Security and the ability to maintain a reliable and efficient environment is, and will always be, a key priority in any enterprise. For this reason, CICS has a high reputation due to our diligence towards the cause. Here are some of the key enhancements to security and resilience in this release:

- Improved security for JCL job submissions to the JES internal reader. CICS can be configured to perform surrogate user checking to verify if the user is authorized to submit a job with the user ID specified on the job card.

- The CMCI, used by the CICS Explorer and other web clients, can now be configured to handle multi-factor authentication.

- The QUERY SECURITY command has been enhanced such that the number of TCB switches has been reduced if more than one access level is specified on the command. This enhancement improves the performance of the API command.

- The QUERY SECURITY command has also been extended to give authorized users the ability to query the security authorization of a different user ID.

- The CESN/CESL sign-on transactions can now be configured to prevent the user exiting to an unsigned on 3270 session. The user will be disconnected from the CICS region if they press PF3.

- If CICS encounters a MXT condition, the CICS-MQ Attachment calculates the maximum number of MQGET calls that an MQMONITOR can issue per second when this condition exists, effectively imposing a restriction on the number of tasks being started by MQMONITOR resources while CICS is at MXT.

- Have better control of work into regions that are in warm-up or cool-down with enhancements to CICSPlex System Management workload routing. The z/OS WLM health value of a region is now a more prominent factor in CICSPlex SM workload routing decisions. The higher the health value, the lower the penalizing weight assigned to the routing algorithm, so a region with greater health becomes a more favorable target. Additionally, a region with zero health value is now deemed ineligible to receive work.

For more on security, resilience, or System Management, take a look at the CICS Knowledge Center: ibm.biz/kc-whatsnew-v55

05 API / SPI

Learning from key customer insights, the CICS development team have improved the way you can deploy existing and new API/SPI in CICS TS V5.5 in three main areas:

Manage your development team with precision with API/SPI restriction. Make it possible to specify commands/keywords which should result in either a warning message or an error message when applied. Not quite ready to introduce all the APIs in CICS TS V5.5? Not a problem, this capability allows System Programmers to control a phased approach to introducing new APIs into your system. Or simply to enforce new coding standards within your enterprise. In either case, feel at ease that this functionality will not impact your performance as the update has been implemented within the translator, so checking is not performed at runtime.

Regulate at a more granular level with selective control of API/SPI and generate either warning or error messages for commands. System Programmers can restrict particular parameters, such as SYSID, to disallow certain areas of your application.

Impose a higher level of security with RACF. API/SPI restrictions can be controlled on a LPAR or user basis by using a RACF profile.

For more information on API/SPI restrictions, check out the announcement letter: ibm.biz/cicsv55-announceletter

06
Z/OS PROVISIONING TOOLKIT

Using this simple command line utility for the rapid provisioning of z/OS development environments, z/OS Provisioning Toolkit V1.1 can offer System Programmers an easily manageable provisioning process, and application developers the ability to provision and deprovision z/OS applications in minutes. What is more, the toolkit is fully supported and available to all z/OS V2 clients at no additional charge.

Following our continuous delivery model, z/OS Provisioning Toolkit is regularly updated through the year to include new capabilities. With Node.js as an available language within CICS TS V5.5, z/OS Provisioning Toolkit offers support for provisioning that is embedded with Node.js runtime, extending its capabilities to this high-level, highly scalable programming language. A new *cics_55_open_beta_nodejs_ivp* sample enables a Systems Programmer to provision a CICS region running the Node.js IVP application. The scenario has also been enhanced to provide more options for managing log streams during the provisioning process.

z/OS Provisioning Toolkit offers the capability for efficient, confident, and simple provisioning at no cost - so why not try it? Visit the Mainframe DEV at ibm.biz/zosptdev

07
Z/OS CONNECT EE

By providing truly RESTful APIs to and from your mainframe, z/OS Connect EE unleashes your most valuable IBM Z assets to accelerate your Hybrid Cloud strategy. Never again will it take weeks to create RESTful APIs, with z/OS Connect EE use the intuitive point and click tooling to create APIs in minutes to provide cloud native developers with seamless access to your CICS applications.

And, through a single point you can monitor and control API flows in and out of CICS alongside the rest of your subsystems.
z/OS Connect EE allows CICS applications to effortlessly call Swagger/OpenAPI defined APIs, allowing your core business logic to be enhanced with the power of cloud native services.

Moreover, z/OS Connect EE offers comprehensive subsystem support From CICS to IMS, Db2 to MQ, utilize z/OS Connect EE's adaptable functionality for smooth and easy cross-platform usage.
All of these capabilities and more are available with z/OS Connect EE. Additionally, 99.9% of the work done in a z/OS Connect server is zIIP offloadable, thus minimizing cost.

Try the Z Trial: ibm.biz/ztrial_zcee

08 RESOURCES

CICS Developer Center
The hub for blogs, podcasts, information and more
ibm.biz/cics-home

CICS Knowledge Center
The place for CICS technical documentation
ibm.biz/cicskc_home

CICS Z Trial
Experience the value of the latest IBM Z capabilities today
at no charge, with no install required
ibm.biz/ibmztrial

CICS Education
IBM Redbooks video courses on CICS
ibm.biz/cics_videocourses

CICSbuzz Newsletter
Keep up to date with the latest news and events
ibm.biz/cicsbuzz-subscribe

GitHub Samples
Example code for our portfolio of products
ibm.biz/cics-githubsamples

Follow our social channels

ibm.biz/cics-twitter   ibm.biz/cics-youtube

ibm.biz/cics-fb   ibm.biz/ibmz-twitter