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Virtual CICS User Group Presentation

EXPLORING CICS-MAINTAINED DATA TABLES FOR ENHANCED MAINFRAME PERFORMANCE

Our May speaker, Colin Pearce, has been a z/OS and CICS Systems Programmer for over 30 years and has been teaching more than 25 years.

He has installed CICS and related software many times and is an expert in the Application side of CICS using Command level, and with CICS Debugging at the Transaction level, as well as CICS Systems Dumps using IPCS.

He has developed many CICS courses including CICS for System Programmers. In addition to his CICS expertise, Colin is well-versed in z/OS, VSAM, Assembler, COBOL, and more. He is a frequent presenter and writer for notable industry publications.

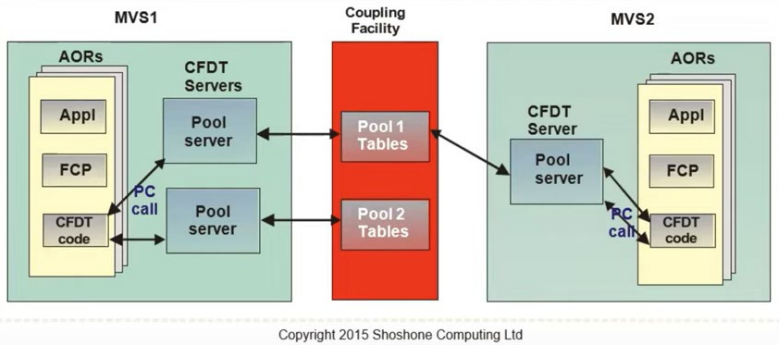
In his presentation on 9 May 2023, Colin presented on “How to define CICS-maintained Data Tables to the Coupling Facility Resource Manager” and demonstrated the techniques for set-up and resource monitoring your data tables.

In the world of mainframe technology, CICS (Customer Information Control System) is a powerful tool that allows organizations to manage their critical business applications. One key feature of CICS is its ability to maintain data tables, which are used to store and process important information. In his session, “How to define CICS-maintained Data Tables to the Coupling Facility Resource Manager”, Colin Pearce explores and demonstrates the concept of CICS-maintained data tables and how they can significantly

enhance mainframe performance. He dove into the benefits, usage, and technical aspects of these tables, making the information accessible to readers unfamiliar with mainframe technology.

Understanding CICS-Maintained Data Tables

When defining a CICS-maintained data table, it is linked to a file defined in the Resource Definition Online file (CSD). During the first part of his demonstration, Colin showed where



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DATATABLE PARAMETERS can be edited to define the TABLE as a CICS data table with NoLimit to the number of records. These tables provide a more efficient alternative to traditional CICS files by leveraging a data space, a dedicated address space for storing pure data. CICS-maintained data tables are API-based, enabling familiar operations such as reads, updates, writes, and browsing. CICS asynchronously updates the source file with any changes made to the data table, optimizing performance.

Advantages of CICS-Maintained Data Tables

One major advantage of using CICS-maintained data tables is their high-speed performance. The data space, which can support multiple tables, enables quick cross-memory services for seamless data exchange between address spaces. By utilizing this feature, organizations can achieve faster data processing, leading to improved service level agreements and overall business satisfaction. To compare the data space, consider that a data space is 2GB of pure data and CICS can support 100 of these. So, 100 times 2GB will give you an idea of how much space CICS can actually manage.

Expanding Data Accessibility

While the speed is great and you are getting good feedback, you will eventually notice the data tables are limited to within an individual LPAR (Logical Partition) due to the constraints of cross-memory services. Although you can have these shared data tables across, they're still using function shipping to get to my data space. However, by integrating a coupling

```

OVERTYPE TO MODIFY                                CICS RELEASE = 0740
CEDA Alter File( FILE )
+ RECORDSize ==> 00080                            1-32767
  Keylength ==> 006                                1-255 (1-16 For CF Datatable)
INITIAL STATUS
STATUS ==> Enabled                                Enabled | Disabled | Unenabled
Opentime ==> Firstref                              Firstref | Startup
Disposition ==> Share                              Share | Old
BUFFERS
Databuffers ==> 00004                              2-32767
Indexbuffers ==> 00003                            1-32767
DATATABLE PARAMETERS
TABLE ==> No                                       No | Cics | User | CF
Maxnumrecs ==> Nolimit                            Nolimit | 1-99999999
CFDATATABLE PARAMETERS
CFdtpool ==>
TABLEName ==>
UPDATEModel ==> Locking                          Contention | Locking
+ Load ==> No                                     No | Yes

DSN=TSOCP21.DFHCSO                                SYSID=T021 APPLID=WM816G21
6 CRSR 7 SBH 8 SFH 9 MSG 10 SB 11 SF 12 CNCL
PF 1 HELP 2 COM 3 END
  
```

facility (CF) into the mainframe infrastructure, organizations can extend the benefits of CICS-maintained data tables across multiple LPARs within a Sysplex (a cluster of interconnected mainframes). This advancement enables global data sharing and access, significantly enhancing the capabilities of CICS-maintained data tables.

Utilizing Coupling Facility for Enhanced Performance

Once the coupling facility (CF) is utilized, additional parameters need to be defined to leverage the coupling facility. A unique pool name must be specified for each file that participates in the CF. Additionally, a TABLEName parameter is required to identify the structure associated with the data table.

Communication between the server and the coupling facility relies on two communication types: XCF (Cross-System Coupling Facility) messaging and XES (Cross-Coupling Extended Services). These components facilitate the seamless flow of requests and authorized macros between the server and the coupling facility. Specifically, when you define your connection sessions and you specify MRO, then you know that'll use XCF to get to the destination no matter where

it is within the Sysplex. XCF is the messaging component. And XES is the communication process between the server and the cutting facility.

Setting Up the Server

To initiate the server program responsible for communication with the coupling facility, specific JCL (Job Control Language) is used. This JCL specifies the program name, REGION size, and the pool name associated with the CICS-maintained data tables. Multiple tables can be defined (up to 100), allowing for scalable deployment. The server program, usually initiated at system startup, can be controlled and managed through automation or manual intervention.

Monitoring and Control

Once the structure and server programs are set up, monitoring and control become crucial. In particular, your z/OS programmer is going to be concerned with the size that's in the coupling facility but there are tools like the CFSizer that Colin took a moment to demonstrate for the audience. This tool will estimate the CF that is needed to manage the data tables that you can take back to your z/OS systems programmer.



NEXT VIRTUAL MEETING - JULY 11, 2023, 10:30 AM CDT

Problem Analysis and Performance Tuning for CICS

CICS Problems whether they are related to performance or transaction failures can in some cases be easily remedied in the short term but getting to the root cause of the problem and creating a permanent fix, so they no longer occur, can be quite a bit more difficult. In this session we will discuss a methodology for finding and resolving CICS problems whether they are related to performance or outages, and show some CICS products that alone can help, but together can provide a solution to even the most difficult ones.

REGISTER



Ezriel Gross
Principal Solutions Advisor
Rocket Software

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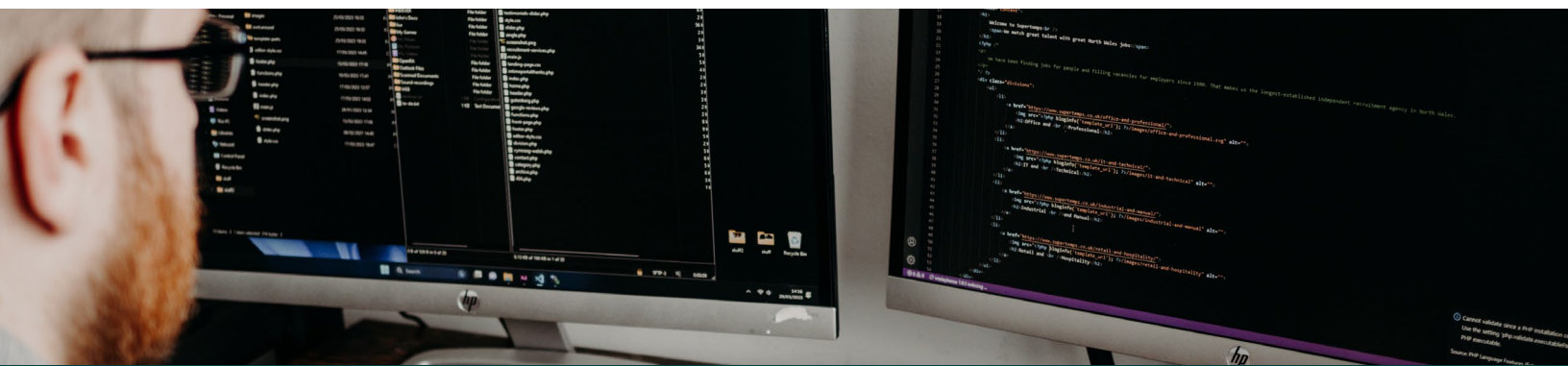
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There are multiple steps involved in updating the Coupling Facility Resource Manager (CFRM) using the XCF Administration Utility, including specifying the structure name, size, and other parameters. Pearce also explained the use of preference and exclusion lists for managing the data table's location within the coupling facility, taking into account the configuration of multiple coupling facilities. He emphasizes the importance of maintaining a resilient setup with primary and alternate coupling facilities.

Furthermore, Pearce mentioned that CICS connects to the data table by creating a list-type structure and recommends monitoring and verifying the structure's status using the CFRM commands such as "DXCF,STR,ALL". He suggests working with performance teams to ensure service level agreements are met and highlights the need for ongoing monitoring and maintenance of the data table setup.

Conclusion

CICS-maintained data tables enhance mainframe performance and enable efficient data processing. They leverage data spaces and coupling facilities for faster, global data access, improving application performance and meeting service-level agreements. Understanding and implementing CICS-maintained data tables is crucial for optimizing mainframe systems and gaining a competitive edge in the digital age. These tables provide a centralized and controlled environment for managing critical data, ensuring efficient processing and improved system performance. By utilizing data spaces and coupling facilities, organizations achieve faster data access across regions, eliminate data replication, and maintain consistent information. Improved data access directly impacts application performance, enhancing user experience and productivity. Meeting SLAs through optimized data processing avoids penalties and maintains customer satisfaction. Thorough understanding and utilization of CICS-maintained data tables drive business productivity and success in the digital era.





NEWS AND ANNOUNCEMENTS

- Virtual CICS User Group is now in the Broadcom Community! It's a place to share ideas, collaborate, ask questions, and connect with Broadcom Mainframe Experts as well. Visit community.broadcom.com
- After you register for our July 11th session, Save the Date for September 12, when James Alexander (Broadcom) will be discussing, "How to solve the problem of rapidly developing and deploying reusable CICS APIs"

ARTICLES AND BLOGS

- [CICS Db2 resource \(RESNAME\) collection and visualization using CICS IA client by Swarna G in the IBM Z and LinuxONE Community \(24 April 2023\)](#)
- [Lifting the Lid on CICS Temporary Storage by Andy Wright and Darren Beard in Enterprise Tech Journal issue 1 \(March 2023\)](#)
- Colin Pearce is a regular contributor to our new partner, Planet Mainframe. [Check out his most recent articles there including his list of CICS 6.1 compliant Training Courses](#)

Click [HERE](#) to complete our Poll!

We want to know how we can make Virtual CICS User Group better.

ABOUT THE VIRTUAL CICS USER GROUP

The Virtual CICS user group was established as a way for individuals using IBM's CICS TS systems to exchange information, learn new techniques, and advance their skills with the product. The Web site at <https://iteched.com/virtualcics/> provides a central point for coordinating periodic meetings (which contain technically-oriented topics presented in a webinar format), and provides articles, discussions, links, and other resources of interest to IBM CICS practitioners. Anyone with an interest in CICS is welcome to join the Virtual CICS user group and share in the knowledge exchange. To share ideas, and for further information, contact trevor@itech-ed.com. The Virtual CICS user group is free to its members.

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