

Enterprise2014

zAD21 CICS Transaction Server for VSE - Update



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CICS TS for VSE History

- CICS TS for VSE/ESA 1.1.0 released June 1999
 - VSE ported up to 100 OS/390 services
 - New CICS TS port from OS/390
 - Released with VSE/ESA 2.4
- Next major CICS TS update September 2000
 - CICS TS for VSE/ESA 1.1.1
 - Provides CICS Web Support (CWS), 3270 Bridge, REXX for CICS, Subsystem Storage Protection (SSP), ...
 - Released with VSE/ESA 2.5
- CICS Explorer monitoring support released June 2012

- Thanks to WAVV, GSE, zUniversity and customer requirements
 - We now have a Statement of Direction for a new CICS TS release!



z/VSE Statement of Direction (SOD) in z/VSE 5.2 Announcement

IBM intends to provide

new capability in a future release of IBM CICS Transaction Server for z/VSE, to provide:

- (i) Updates to CICS resources for CICS Explorer, and
- (ii) Channels and Containers to enable the transfer of large amounts of data between CICS applications.
- IBM intends to rename

the product z/VSE Central Functions to z/VSE in a new z/VSE version.

- z/VSE V5.2 will be the last release that supports IBM System z9. Future releases of z/VSE will support IBM System z10 and higher.
- Stabilization of support and discontinued functions:
 - CICS DDM: Support for CICS Distributed Data Management (DDM) is stabilized in CICS TS for VSE/ESA V1.1.1.

In a future release of CICS TS for z/VSE, IBM intends to discontinue support for CICS DDM.

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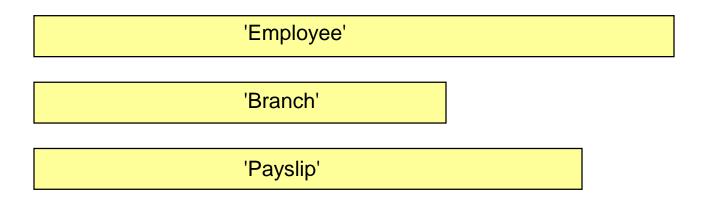


Channels and Containers (Statement of Direction)

- Requirements
 - Lift 32 KB data limit (RFE 28905 / 29432 / 29422, MR1115112844, MR1114113031)
 - CICS Temporary Storage Upgrade (32K Limitation RFE 28892, WAVV200826, MR1024084142)
 - Support for channels and containers (RFE 28883, WAVV200614, MR0526066847)
- Channels and containers lift the 32K Commarea limitation
 - Applicable for both LINK and XCTL, Distributed Program Link (DPL)
 - Affects the exchange of data between CICS tasks
 - Local and transcation routing
 - START with data
- z/VSE will port channel and container APIs based on CICS TS for z/OS 3.1
- Delivered as part of a new CICS TS for z/VSE release.
- Channels and Containers limitations
 - In 31 bit virtual storage only
 - No support for
 - External CICS Interface (EXCI)
 - External Call Interface (ECI)
 - CICS Web Support (CWS)
 - Business Transaction Services (BTS)
- The following charts are derived from Colin Penfold's (CICS TS for z/OS development) presentation.



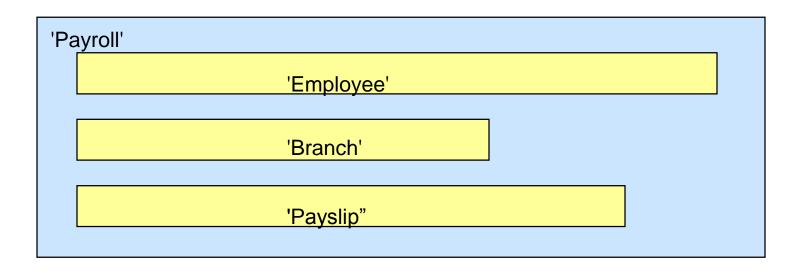
The Solution... Containers



- To solve the 32K Commarea problem a new construct will be provided
- Named block of data designed for passing information between programs
 - Like named COMMAREAs
- CONTAINER API
 - Created using (EXEC CICS) PUT CONTAINER, defines the size of the container
 - Read using (EXEC CICS) GET CONTAINER
 - Delete using (EXEC CICS) DELETE CONTAINER, to free storage, if no longer required
- No CICS enforced size limitation
 - Containers are stored within the CICS EDSA (31 bit partition virtual storage)



The Solution... Channels

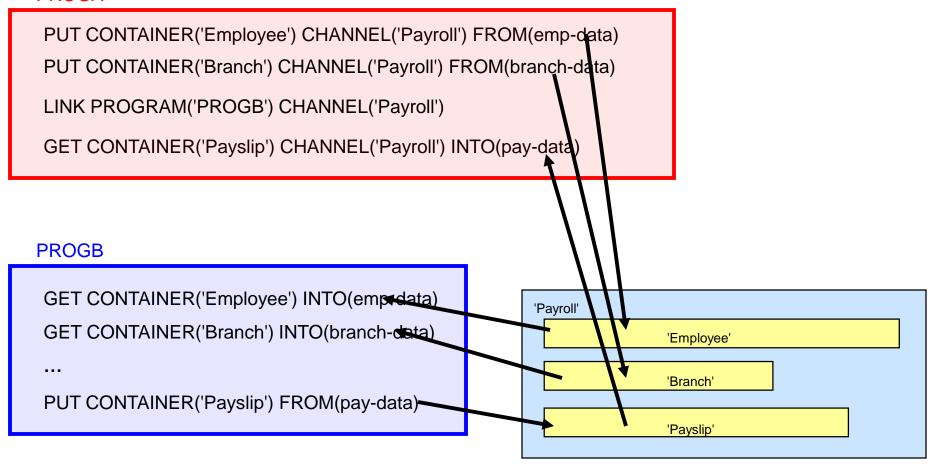


- A group of Containers
 - No limit on the number of Containers in a Channel
- A Channel is a sort of program interface
 - Passed on LINK, XCTL, pseudoconversational RETURN, and START commands
- Non-persistent
 - Non-recoverable resource similar to commareas



A Simple Example

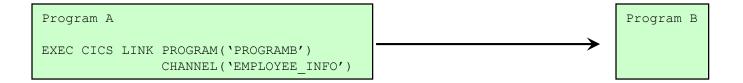
PROGA



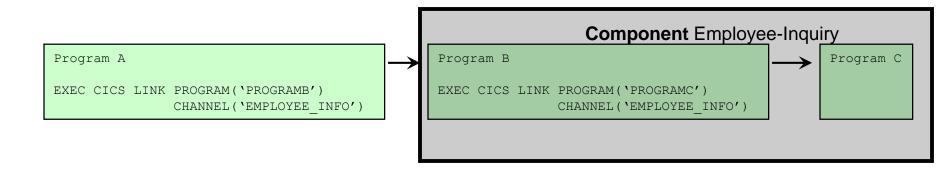


Basic Scenarios for using Channels

One Channel / One Program



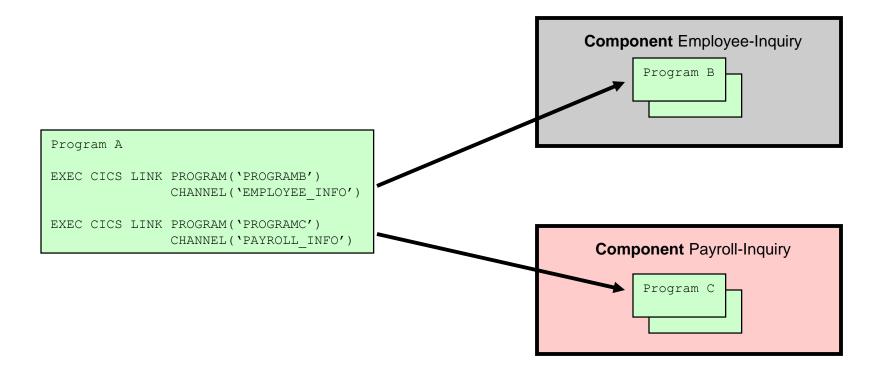
- One Channel / Multiple Programs
 - The Channel is the interface to a Component





Scenario - Multiple Components

One Program / Multiple Channels

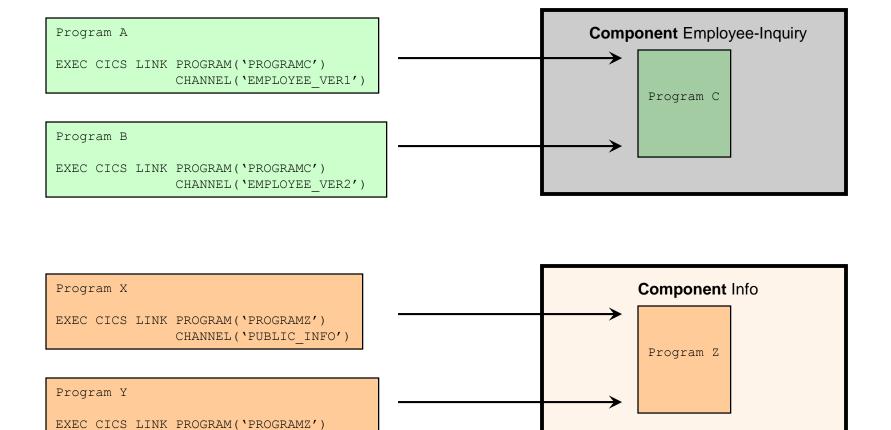




Scenario - Loose Binding

Multiple Programs / Multiple Channels

CHANNEL ('PRIVATE INFO')

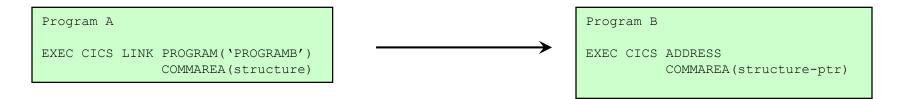


Note that CICS does not define any security mechanism to enforce who can use a Channel name.

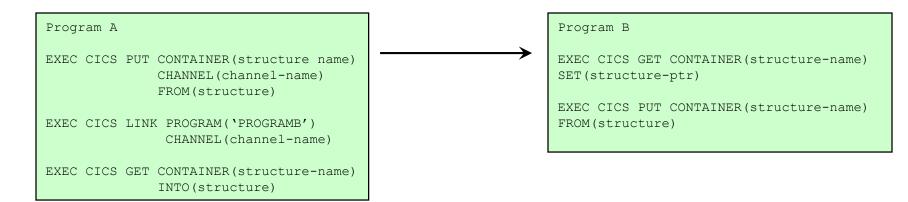


Migration of Programs Using LINK

Existing application with COMMAREA



Changed application using Channels

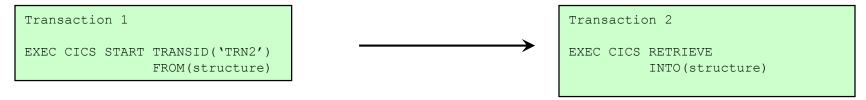


Note that, if Program B changes the Container data, it must PUT the Container back before returning, or the changes will not be visible to the caller.

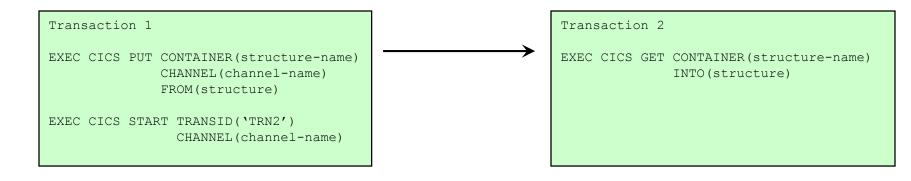


Migration of Programs Using START

Existing application with START data

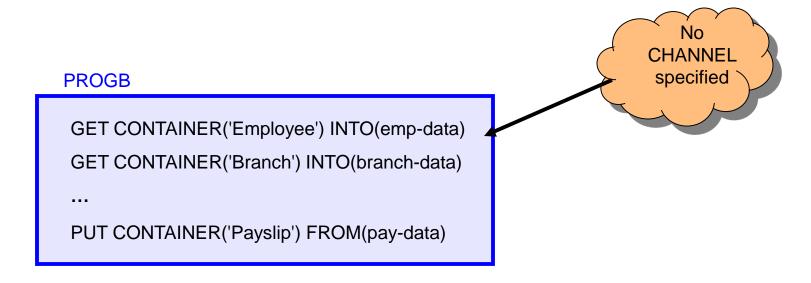


Changed application using Channels





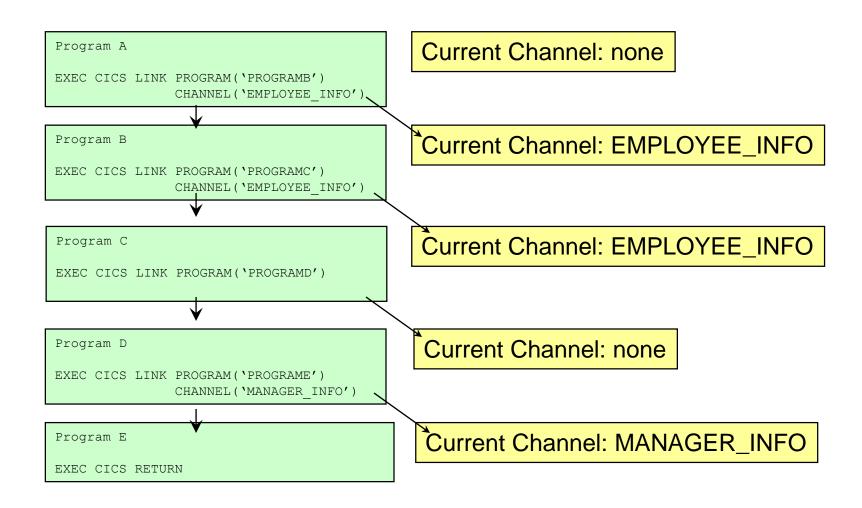
The Current Channel



- The Channel, if any, passed to the program by:
 - LINK, XCTL, START or pseudo-conversation RETURN
- Does not change during the life of the program
 - The program may create other Channels
- Default for EXEC CICS commands that do not explicitly specify a Channel name



Current Channel



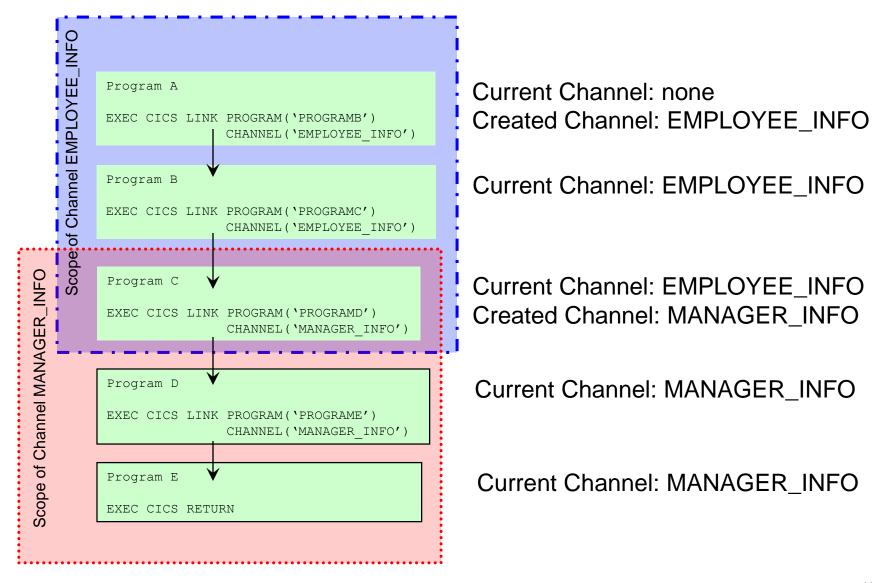


The Scope of a Channel

- A program can access
 - Its Current Channel
 - Any other Channels it creates
- When no program in the link stack can access a Channel it is deleted
 - Can occur on RETURN or XCTL
- Channels cannot be accessed by other tasks



Channel Scope





API Commands

- Container commands
 - PUT CONTAINER
 - GET CONTAINER
 - MOVE CONTAINER
 - DELETE CONTAINER
- Program transfer commands
 - LINK PROGRAM
 - XCTL PROGRAM

- Inquiry commands
 - ASSIGN CHANNEL
 - STARTBROWSE CONTAINER
 - GETNEXT CONTAINER
 - ENDBROWSE CONTAINER
- Transaction transfer commands
 - RETURN TRANSID
 - START TRANSID



Container Commands

EXEC CICS PUT CONTAINER

- Copies data into a container within the channel
- Overwrites existing data if container already exists
- Creates channel if it does not already exist

EXEC CICS GET CONTAINER

Retrieve the container data into user storage

EXEC CICS MOVE CONTAINER

- Moves a container from one channel to another
- Can be used to rename a container

EXEC CICS DELETE CONTAINER

- Deletes a container from the channel
- Does not delete the channel, even if no containers left



EXEC CICS PUT CONTAINER

- CONTAINER (data-value)
 - The name (1-16 characters) of the container
- CHANNEL (data-value)
 - The name (1-16 characters) of the channel that owns the container.
 - Defaults to current channel.
- FROM (data-area)
 - Specifies the data area from where the data to be saved is read.
- FLENGTH (data-value)
 - Specifies the length of the data area to be saved.
 - Can be 0 to very large.
 - This parameter is added by the translator if not specified (except C).
- FROMCCSID (data-value)
 - Specifies the current Coded Character Set of the character data to be put into the container. Defaults to the CCSID of the local CICS region.
- DATATYPE (CVDA)
 - BIT The data in the container cannot be converted.
 - CHAR Character data which can be converted.



EXEC CICS GET CONTAINER

- CONTAINER (data-value)
 - The name (1-16 characters) of the container
- CHANNEL (data-value)
 - The name (1-16 characters) of the channel that owns the container.
 - Defaults to current channel.
- INTO (data-area)
 - Specifies the data area into which the retrieved data is to be placed.
- SET (ptr-ref)
 - Specifies a data area in which the address of the retrieved data is returned
- FLENGTH (data-area)
 - Specifies the length of the data area to be read.
 - Returns the length actually read.
- NODATA
 - Specifies the only the length of the data in the container is to be returned. The length returned will take into account the INTOCCSID.
- INTOCCSID (data-value)
 - Specifies the current Coded Character Set into which the character data is to be converted. Defaults to the CCSID of the local CICS region.



Scenario – Simple Data Conversion

- PUT and GET can be used for data conversion.
- Uses CICS or conversion tables
- Simple example of converting data to UTF-8

EXEC CICS PUT CONTAINER('temp') CHANNEL('dummy') FROM(ebcdic-data)
CHAR

EXEC CICS GET CONTAINER('temp') CHANNEL('dummy')
SET(utf8-ptr) FLENGTH(utf8-len)
INTOCCSID(1208)



EXEC CICS MOVE CONTAINER

- CONTAINER (data-value)
 - The name (1-16 characters) of the container
- CHANNEL (data-value)
 - The name (1-16 characters) of the channel that owns the container.
 - Defaults to current channel.
- TOCHANNEL (data-value)
 - Specifies the name of the channel that will own the target container
- AS (data-value)
 - Specifies the name of the target container



EXEC CICS DELETE CONTAINER

- CONTAINER (data-value)
 - The name (1-16 characters) of the container
- CHANNEL (data-value)
 - The name (1-16 characters) of the channel that owns the container.
 - Defaults to current channel.
- Note: There is no command to delete a channel.
 These are deleted automatically when the go out of scope.



Program Transfer Commands

- LINK PROGRAM [CHANNEL|COMMAREA]
 - Links to another program, on a local or remote system, passing the channel and container data
 - Creates the channel if it doesn't already exist
- XCTL PROGRAM [CHANNEL|COMMAREA]
 - Transfers control to the program on a local system passing the channel and container data
 - Creates the channel if it doesn't already exist



Transaction Transfer Commands

- RETURN TRANSID [CHANNEL|COMMAREA]
 - Returns control to CICS, passing the channel and container data to the next transaction id
 - Creates the channel if it doesn't already exist
- START TRANSID [CHANNEL|FROM]
 - Starts a task, on a local or remote system
 - Copies the named channel and container data and passing it to the started task
 - Creates the channel if it doesn't already exist



Inquiry commands

- ASSIGN CHANNEL(data-area)
 - Returns the name of the current channel
 - Spaces returned if no current channel
- Container browse commands
 - STARTBROWSE CONTAINER [CHANNEL(data-area)]
 - GETNEXT CONTAINER (data-area)
 - · Container names returned in no particular order
 - ENDBROWSE CONTAINER



Interface Changes

- Global User Exits (GLUEs)
 - Can create and pass channels and containers to programs they call
- Task Related User Exits (TRUEs)
 - Can create and pass channels and containers to programs they call
- User Replaceable Modules (URM)
 - Can create and pass channels and containers to programs they call
 - URMs may not access contents of application channels
- Monitoring
 - New monitoring group DFHCHNL
 - Changed monitoring group DFHPROG
 - Changed monitoring group DFHTASK
- Statistics
 - New fields in ISC/IRC system entry
 - New fields in Connections and Modenames



Summary

- Channels and Containers allow more than 32k of data to be passed between CICS applications
 - Program to program
 - LINK and XCTL
 - Transaction to transaction
 - START and RETURN
- Allow better structuring of application data
 - Different containers to prevent overloaded copybooks
- Minimal application changes required for exploitation
- Allow for data conversion between different code pages
- We announced Channels & Containers (and CICS Explorer update) in a <u>Statement of Direction</u>.
 That is it is not yet available for z/VSE.

We are looking for beta customers. Please contact Ingolf Salm (salm@de.ibm.com), if you are interested.

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CICS Explorer for z/VSE

- Announced 04/03/2012, GA 06/15/2012
- CICS Explorer The new face to CICS
 - System management framework for CICS TS
 - Consists of CICS Explorer client and a CICS TS server extension
 - CICS Explorer client
 - · Read-only capabilities
 - Eclipse-based user interface on workstation
 - Connects to CICS TS via TCP/IP Communication via HTTP requests
 - CICS Explorer server extension
 - Delivered as PTF for CICS TS for VSE/ESA 1.1.1
 - z/VSE V5 only
- Statement of direction (SOD)
 - IBM CICS Explorer to provide updates to CICS resources
 - Update resources as you would do with transactions on your CICS terminal
 - Enable / disable CICS resources
 - · Change selected CICS definitions
 -



CICS Explorer for z/VSE

- CICS Explorer client supports
 - CICS TS for z/OS
 - CICS TS for VSE/ESA 1.1.1
- Provides a view of some CICS system management functions
- Displays details of CICS resources in definition views
- Administration operations are not supported
- Displays the resource attributes as of CEMT / CEDA
- Provides context and more detailed help

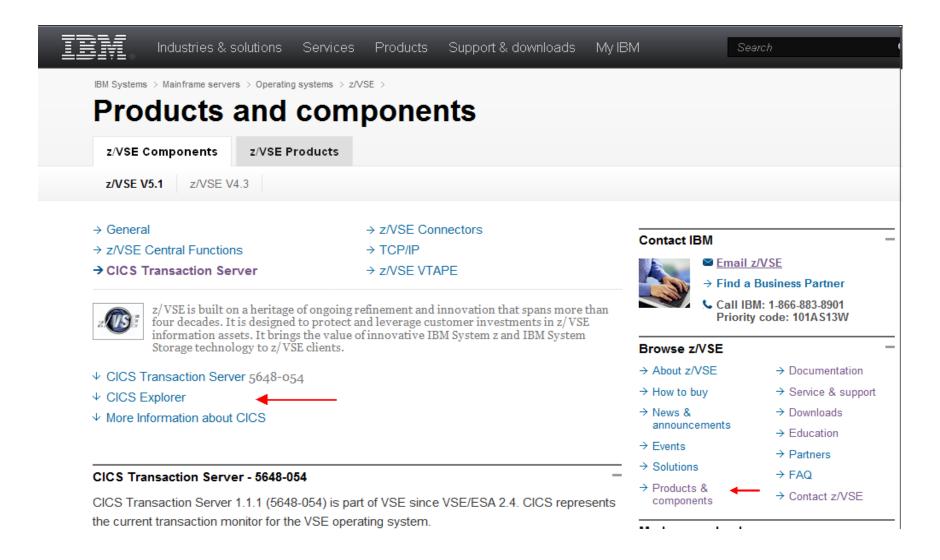


CICS Explorer for z/VSE – supported operations

- Regions
- TCP/IP services
- ISC/MRO connections
- Terminals
- Transactions
- Transaction classes
- Programs
- Tasks
- Files
- Interval control requests
- Transient data (TD) and temporary storage (TS) queues
- Document templates



CICS Explorer for z/VSE on the web - www.ibm.com/vse



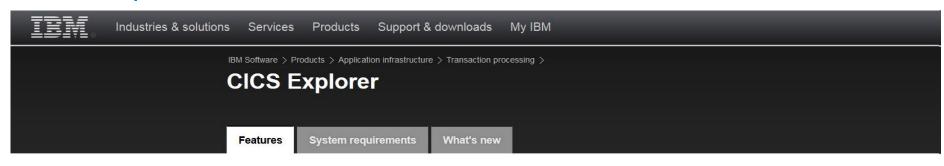


CICS Explorer for z/VSE on the web ...

IEM. License Charges ↑ Back to top → Linux on IBM System z → Recommended Service Level $\rightarrow z/OS$ → IBM Shopz \rightarrow z/VM **CICS Explorer** Middleware The new face of CICS Transaction Server for VSE/ESA V1.1 → Rational (software → Mainframe software The CICS Explorer is the new systems management framework for CICS TS. It provides readfor IBM System z and systems delivery) only capabilities to display CICS resources. The CICS Explorer consists of a CICS Explorer → WebSphere client and a CICS TS server extension. The CICS Explorer client can be downloaded from the (integration and → Tivoli (service optimization) management) CICS Explorer web page, and the CICS TS server extension is delivered as CICS TS PTF. → Information → Lotus When used with CICS TS for VSE/ESA, it requires z/VSE V5.1, or later. (collaboration) Management (DB2, Informix, The CICS Explorer user guide provides some more information on the CICS Explorer InfoSphere) installation and use Rate zEnterprise product ■ IBM CICS Explorer User Guide V1.2b (PDF, 500KB) Tell us what you think → IBM CICS Explorer download Your opinion matters and we want to hear from you. Write a review today! ↑ Back to top



CICS Explorer for z/VSE on the web



Simplify CICS management with an integrated, single interface



and intuitive way of managing one or more CICS systems. It is based on the Eclipse platform and enables you to view and manage CICS Transaction Server regions and integrates CICS tools and the visibility and control of the CICS run time and its resources.

CICS Explorer offers a lightweight yet powerful and extensible framework with a small footprint and fast start-up. It features powerful task-oriented views, context-sensitive resource editors and wizards for access to a broad range of CICS and IBM z/OS® data and control capabilities.

It also includes IBM Explorer for z/OS®—a common connection management and single sign-on component that simplifies access to z/OS-based sub-systems.

CICS Explorer features:

- A centralized user interface makes CICS easier to manage and boosts productivity.
- Smart resource editors and wizards simplify creation or editing of complex CICS resources.





CICS Explorer for z/VSE client installation

- Download CICS Explorer zip file from the web
- Installation on the local workstation or remote network drive
- Configure the way it connects to the CICS system
 - Connect credentials, CICS system connection, ...
 - z/VSE supports the CICS Management Client Interface (CMCI) only



CICS Explorer for z/VSE - CICS TS installation

- System requirements
 - CICS Explorer connects to z/VSE Version 5 only
 - Additional extended Dynamic Storage Area (EDSA) required
 - Size depends on active CICS resources
 - Good start is 50 MB (with additional PTF)
 - May impact partition allocation
 - TCP/IP for VSE/ESA 1.5F or IPv6/VSE 1.1 or Linux Fast Path (IPv4 only)
- Install PTFs for CICS Explorer support (included in z/VSE 5.1.1 or higher)
 - CICS Management Client Interface (CMCI)
 - CICSPlex System Management (CPSM)
 - Code will be installed into PRD1.BASE
 - No additional z/VSE Librarian definitions (LIBDEFs) required

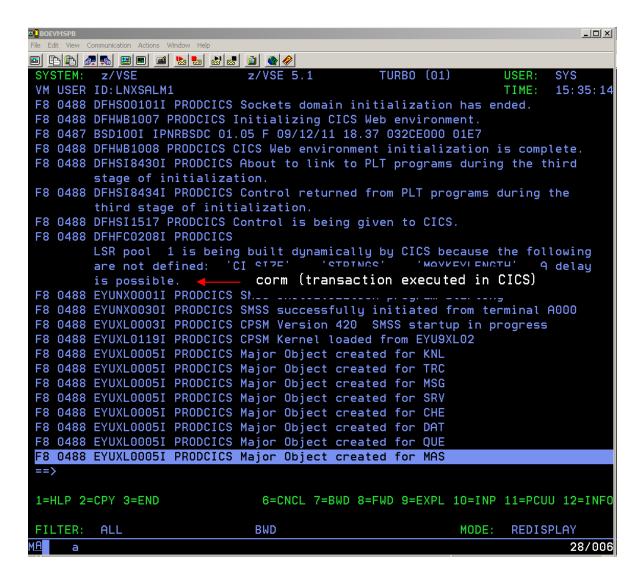


CICS Explorer for z/VSE - CICS TS installation ...

- CICS setup skeletons in ICCF library 59
 - CICS System Definitions (CSD)
 - Transaction security setup
 - DCT (Destination Control Table)
 - Define / initialize dataset EYUPARM (for debugging)
- Add DLBL / EXTENT / ASSGN statements for EYUPARM dataset to CICS start-up job
- Changing CICS SIT (SEC=YES, TCPIP=YES)
- Define TCPIPSERVICE
- Adjust EDSALIM, if additional DSA space required
- Define a conversion table DFHCNV
- Install new groups using CEDA



CICS Explorer for z/VSE – start CORM transaction on server



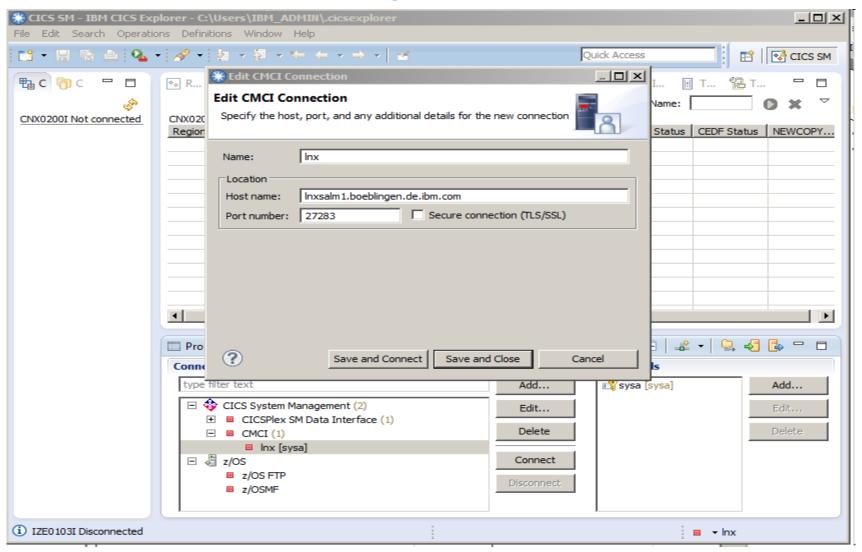


CICS Explorer for z/VSE – welcome page



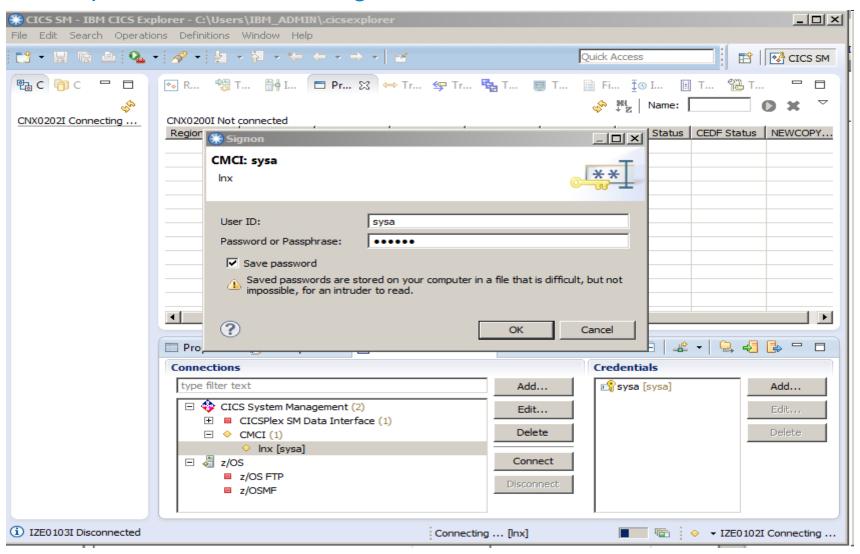


CICS Explorer for z/VSE - configuration



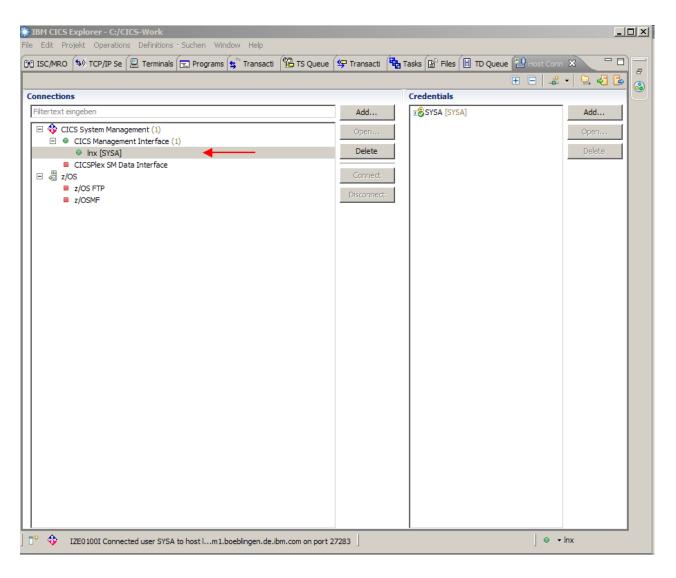


CICS Explorer for z/VSE – sign-on

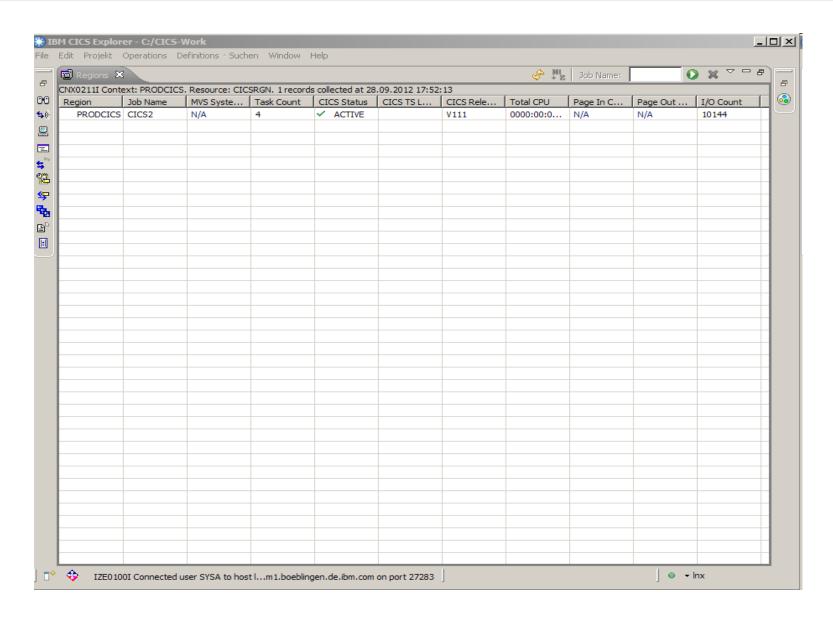




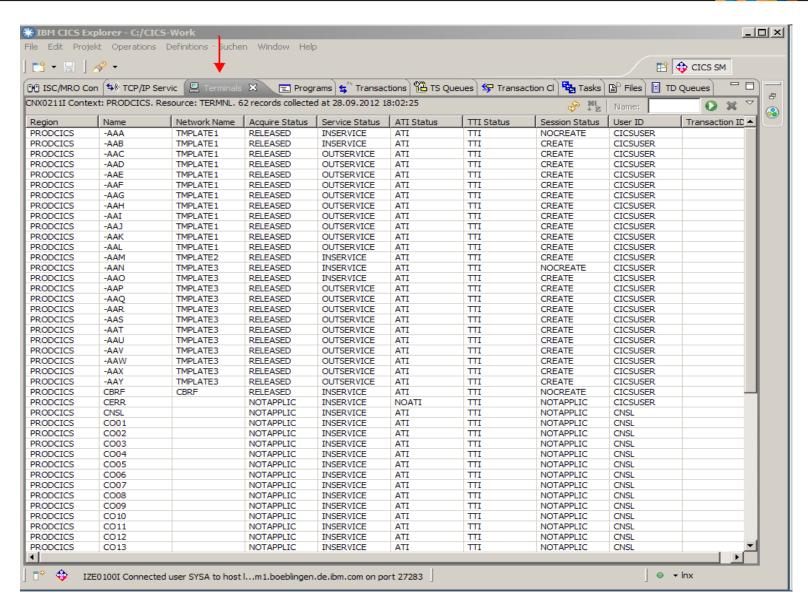
CICS Explorer for z/VSE – connected



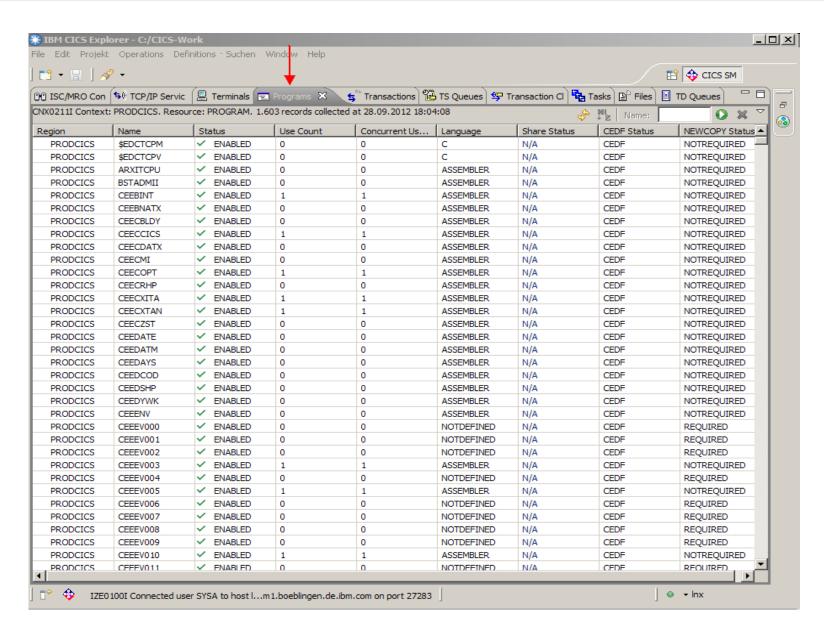




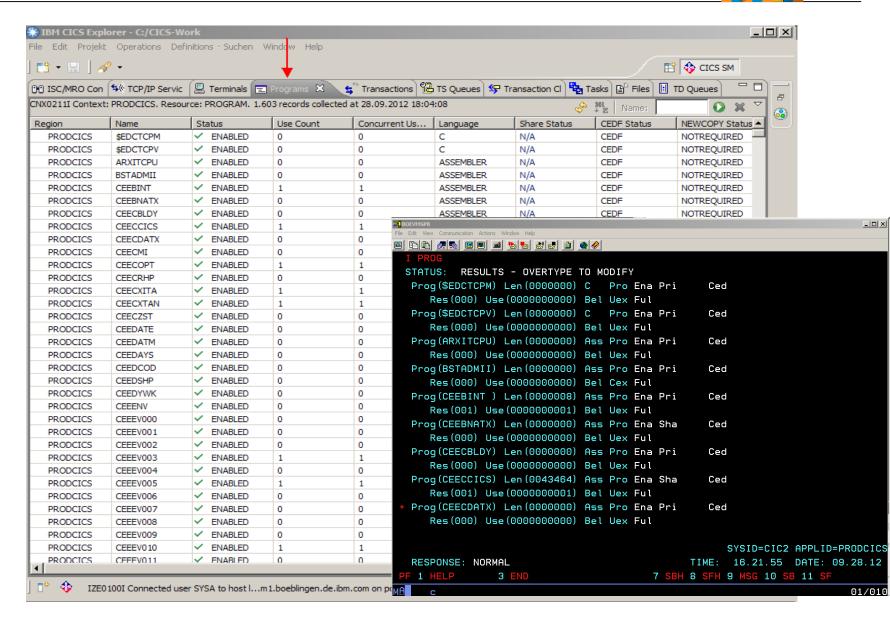




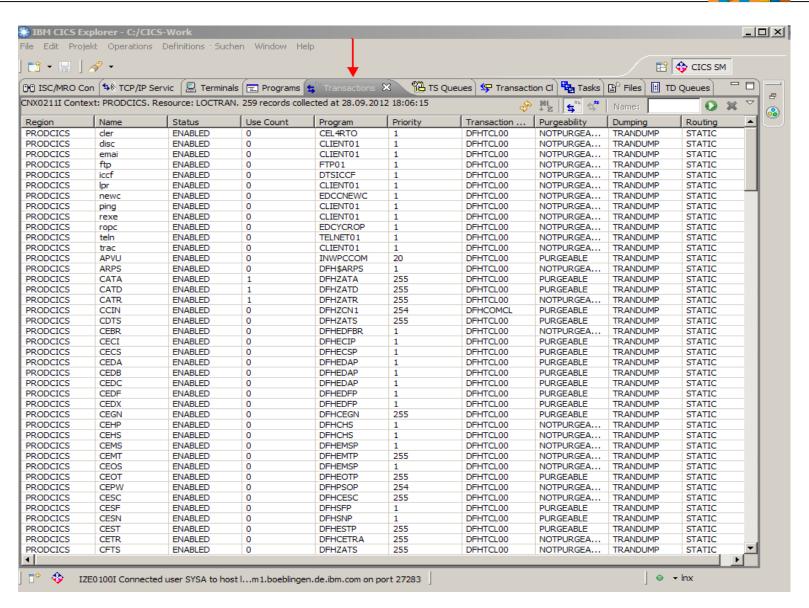




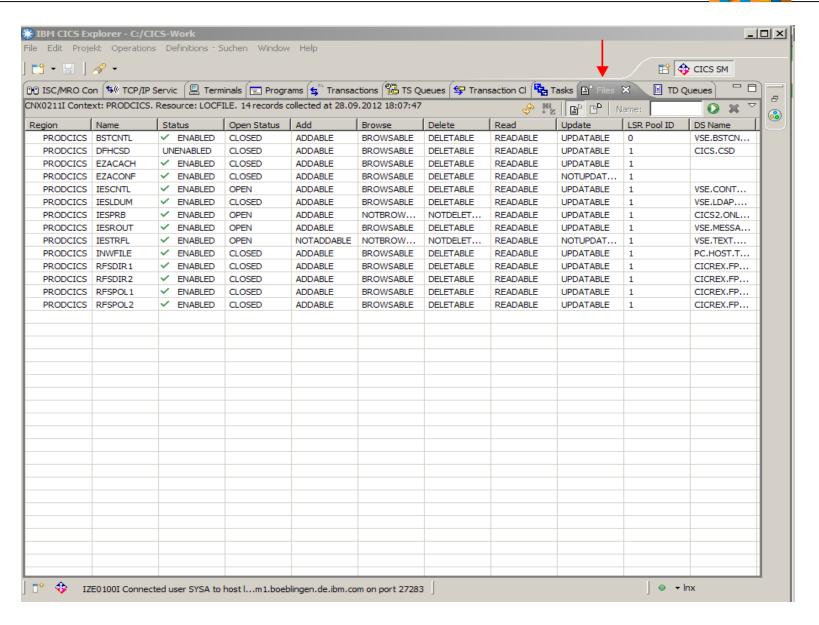














More Information

- ... on VSE home page: http://ibm.com/vse
- Ingolf's z/VSE blog: https://www.ibm.com/developerworks/mydeveloperworks/blogs/vse
- New: Hints and Tips for z/VSE 5.2:
 - http://www.ibm.com/systems/z/os/zvse/documentation/#hints
- 64 bit virtual information:
 - IBM z/VSE Extended Addressability, Version 5 Release 1
 - IBM z/VSE System Macro Reference, Version 5 Release 1
- CICS Explorer: http://www.ibm.com/software/htp/cics/explorer/
- IBM Redbooks:
 - Introduction to the New Mainframe: z/VSE Basics http://www.redbooks.ibm.com/abstracts/sg247436.html?Open
 - Security on IBM z/VSE updated
 http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/sg247691.html?Open
 - z/VSE Using DB2 on Linux for System z http://www.redbooks.ibm.com/abstracts/sg247690.html?Open
 - New: Enhanced Networking on IBM z/VSE http://www.redbooks.ibm.com/Redbooks.nsf/RedpieceAbstracts/sg248091.html?Open
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- Academic Initiative works with colleges and universities to introduce real-world technology into the classroom, giving students the hands-on experience valued by employers in today's marketplace
- www.ibm.com/training is the main IBM training page for accessing our comprehensive portfolio of skills and career accelerators that are designed to meet all your training needs.











