



CICS Transaction Server V4.2

9605: What's New in CICS V4.2 Systems Management Best Practices

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CICS TS 4.2 Management



Notes

CICS V4.2 includes several enhancements to overall systems management. This session will cover topics including transaction tracking, dynamic workload management and online access to SIT values. After a summary of V4.2 capability there will be a deeper dive into the recent additions using Explorer.

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CICS Transaction Server for z/OS V4.2

Events



- System Events
- Assured Events
- Lifecycle Management

Management



- Transaction Tracking
- Workload Management
- Password Phrases

Java

- 64-bit Applications
- Multithreaded Server
- OSGi Management



Scalability

- More Threadsafe
- Optimised Threadsafe
- 64-bit Exploitation



Connectivity



- Axis2 Web Services
- Web Services Offload
- HTTP & IP Extensions

***new and enhanced
capability across five
major technology areas***

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Related CICS TS V4.2 Sessions

- *Monday*
 - **9322:** [CICS TS V4.2 Technical Overview](#)
- *Tuesday*
 - **9601:** [CICS TS V4.2 Scalability](#)
 - **9605:** [What's New in CICS V4.2 Systems Management Best Practices](#)
- *Wednesday*
 - **9599:** [CICS TS 4.x Connectivity](#)
- *Thursday*
 - **9607:** [CICS for Java Developers and Java for System Programmers - Two Sides of the Same Coin](#)
 - **9330:** [CICS Event Processing](#)
- *Friday*

Agenda

- Transaction Tracking for tracking and correlating transactions across CICS systems
- CICSplex Systems Manager
 - WLM routing change for IPIC connections
 - New WLM routing algorithms
 - SYSPARM resource
- Extensions to CICSplex SM CMCI
- CICS Explorer enhancements



Notes

- We will start with a one page summary of management items in previous releases before moving on to cover the CICS TS 4.2 enhancements including a new transaction tracking facility, improvements to workload management, support for password phrases to enhance log-on security, enhancements to the CICS Explorer, and the ability to view system initialization parameters.

CICS TS 4.2 Transaction Tracking

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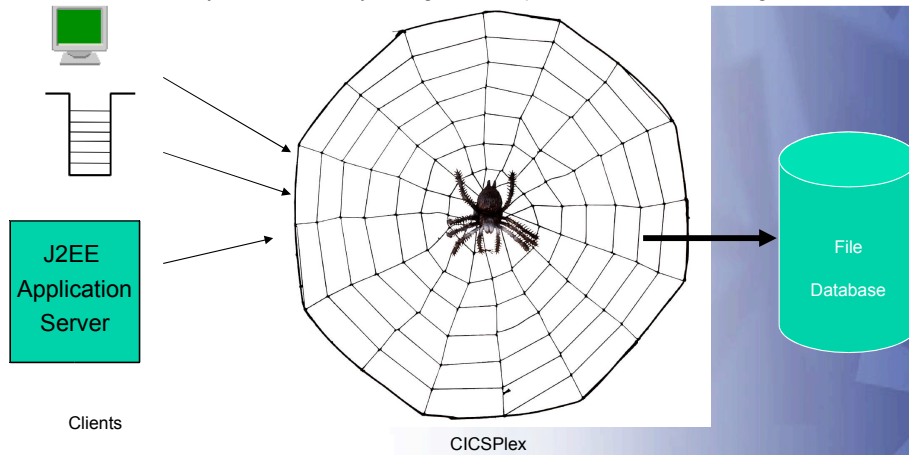
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Transaction Tracking - today

The problem - The vast majority of CICS transactions are either initiated by components outside of CICS (i.e MQ) interact with 3rd party resource managers (i.e DB2) or cause further interactions with transactions in associated CICS regions (i.e use ISC or MRO). As part of the CICS SNA to IP modernization initiative we have had a unique opportunity to vastly improve the ability to track transactions as they weave their way through the complex web of associated regions and resources.



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Why Txn Tracking

Problem: Modern CICS Txns (i.e Web, MQ, CTG) no longer have termids/sessions as principal facilities

➤ Result is lack of context inheritance in the transaction chain

- CWXN -> CWBA for a Web/HTTP transaction
- CWXN -> CPIH for Web Services pipeline
- CTG -> CSMI over IPIC
- CKTI -> MQ Trigger task

Notes

- Many of the ways that work is introduced into CICS means there is no principle facility such as a terminal or session id and multiple transactions may be involved. There is no inheritance of context information as to where the work initiated should you need to track a request back. For example of a task is initiated by the CICS-MQ trigger monitor, there is no way to associate that task with the message that appeared on an application queue which caused a trigger message to be produced.

What problems are we aiming to solve?

- Analysis of stuck transactions
 - What tasks across the CICSplex are in the chain
 - What clients are affected
 - Where is the problem originating
- *Trace/audit of recently run transaction chain*
 - *Are business transactions slowing down (but completing)*
 - *Where is elapsed time being taken in a chain of associated tasks*
 - *Near real-time analysis*
 - *New transaction introduced into the CICS – what does it do?*
- Analysis by point of origin
 - How much work is a given client creating in a mixed workload situation
 - How will a client be affected by a problem in CICS
 - Identification by distinguished name or IP address, user credentials

Notes

- This slide shows the type of questions that could be answered if there was a way of tracking transactions as they flow through multiple CICS regions.

CICS Txn Tracking – CICS TS V4.2 Goals

- The ability to identify entry point into CICS for all CICS users tasks (**Task Association** data)
 - Type - Facility type (i.e Web or Terminal) and details
 - Identification details - IP address, user ID, TCPIPService, Termid, session
- Tracking of **associated tasks** as requests flow between different regions
 - **point of origin** inherited from the originating task across all IPIC and MRO connections
 - Common **Transaction Group ID** identifies all associated tasks
 - Which tasks have been LINKed, Function Shipped, routed or STARTed from where?

Notes

- Transaction tracking provides a mechanism to track the point of origin of a transaction by associating an initial user task with other tasks that have been created from it. Transaction tracking also describes the way in which a task was started. The created tasks carry information about the initial user task as origin data.
- Such tracking data is propagated across IPIC and MRO to provide a complete story across the CICSplex for all user tasks including CICS supplied transactions started by a user (for example, CEMT) or running on behalf of a user-initiated transaction (for example, CSMI).

CICS Txn Tracking – CICS TS V4.2 Goals

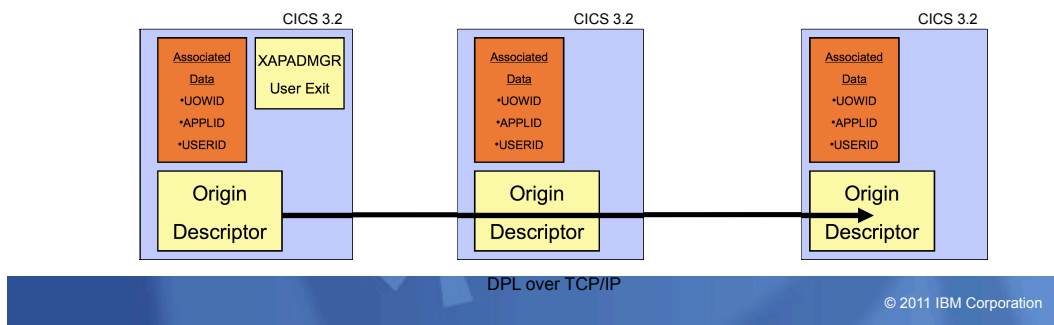
- Support for TRUE based adapters (MQ, Sockets, WOLA)
 - Tie external **adapter data** (i.e QM/queue) to the CICS generated *point of origin*
- Ability to display the relationships between tasks in a chain
 - **Previous hop** data
 - Explorer Task association Search

Notes

- For tasks created by non-CICS transports (for example, adapters connecting to other software applications such as WebSphere MQ) there is the ability for these tasks to participate in transaction tracking by injecting their own unique task metadata, describing their origin, into the propagated context of each transaction they initiate.
- The CICS Explorer uses the task association data and the previous hop data to provide a very easy point and click way of tracking transactions and discovering their inter-relationships.

Transaction Tracking Enhancements

- Provide the ability to determine the topology of a CICS transaction across CICS IPIC and MRO connected regions
- Background
 - CICS TS V3.2 implemented Origin and Association Data
 - XAPADMGR exit can add information to the Origin Data
 - EXEC CICS INQ ASSOCIATION and ASSOCIATION LIST to retrieve information from the descriptor blocks



Notes

IPIC support of previous-hop data provides a transaction-tracking solution that makes it easier to trace back the path of an application and use historical records to analyze patterns of work. Previous-hop data is helpful for non-CICS views where the data gathering capability is limited and association data and origin data are not sufficient for transaction tracking.

Previous-hop data is created when an application transaction causes another application transaction in the sequence to be attached in another CICS system. If more application transactions are initiated in another CICS system, additional hop data is created.

CICS TS V4.2 or later regions that use IPIC connectivity can identify previous-hop data for associated application transactions that are processed between the different CICS systems. Previous-hop data is identified only by CICS TS V4.2 or later regions.

CICS TS V3.2 processing:

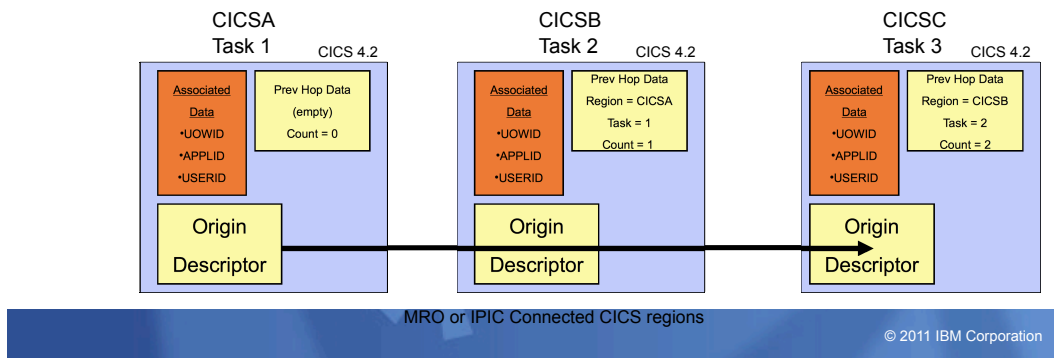
Correlation data to be provided associating work running in one CICS region with work running in another region that has a relationship with each other. This data will be propagated between the tasks executing in different regions, and stored away with each local task. When a new task is attached, Association Data (AD) is built from information retrieved from within CICS. Part of this information describes the task's principle facility, indicating the source of the request that scheduled it. If the task has been created in response to a message arriving across a TCP/IP network then additional information that CICS has obtained from the IP Stack is also stored within the AD.

- 1) Each new task has an Origin Descriptor (OD) section in its AD. Those tasks that are not attached with an OD, such as the one on the left hand side of the diagram, then go on to create one. The OD consists of some mandatory fields that CICS provides and some option data known as a User Correlator (UC), which is created from a Global User Exit program.
- 2) The exit is passed a structure containing the non-mandatory parts of the AD.
- 3) It may then choose to section fields from the AD for inclusion in the UC, or may also choose to obtain information from other sources using the XPI, to include in the UC.
- 4) The exit then returns the UC data to CICS, where it is included in the OD.
- 5) If the task then issues a DPL request to a remote region then the OD is added to the DPL message that passes through the network to the remote region.
- 6) When the DPL over TCP/IP request arrives at a remote region a new task, shown on the right hand side of the diagram, is started to process the request. This task has its own AD built for it by CICS. The presence of the OD is detected within the inbound message, and passed to the mirror task when it is attached to service the DPL request. During task attach processing the OD is then stored in the AD of the new task, and the User Exit is not driven.
- 7) If monitoring is enabled then the OD information is written to the task's monitoring record.

Transaction Tracking Enhancements...

- Provide information about the previous CICS
 - Now for CICS TS V4.2 **IPIC & MRO** connected systems
 - Identify the previous hop CICS system
 - Identify the previous associated task
 - Record the number of hops to reach the current CICS system

DTP will not propagate Origin and Association Data



Notes

previous-hop data: The set of information that identifies another CICS system and the application transaction that caused an application transaction in the sequence to be initiated. Previous-hop data is created when an application transaction causes another application transaction in the sequence to be attached in another CICS system.

CICS TS V4.2 or later regions that use MRO connectivity can identify previous-hop data for associated application transactions that are processed between the different CICS systems. Previous-hop data is identified only by CICS TS 4.2 or later regions.

The transaction identifier specified in the TRANSID option of the START command determines the value of previous-hop data for an application transaction. If the transaction identifier specified in the TRANSID option is a local transaction definition and TERMID is not specified, previous-hop data is not created for the started application transaction. The started transaction runs in the same CICS system in which the START command was issued and there is no hop between CICS systems.

If the transaction identifier specified in the TRANSID option is a remote transaction definition and TERMID is not specified, only the previous hop count is created for the started application transaction because the command is function shipped to another CICS system and so there is a hop to another CICS system. A mirror task which has been attached to process the function shipped START command without TERMID will have hop data created.

If the TERMID option is specified, the started transaction is treated as executing at a point of origin and so no previous hop data is created. This is the case whether the TERMID option specifies a local terminal definition or remote terminal definition. When the TERMID option specifies a remote terminal definition, the process to schedule the START command may nevertheless involve a transfer of the command across a number of CICS systems to reach the target CICS system where the terminal specified in the TERMID option is a local terminal definition.

Adapter Transaction Tracking

- Allow non-CICS adaptors (MQ, CICS Sockets, WOLA) to set origin data for transactions they START
 - Origin data may be set only once by the first origin adaptor
 - Origin data will be included in the CICS monitor record
 - New extension to the TRUE Context Management parameter list (DFHECON)
 - Four 64 character fields to identify the origin
 - Suggested usage:
 - Product Identifier
 - Server identifier
 - Adaptor instance starting this task
 - Reason for the START
 - EXEC CICS INQUIRE ASSOCIATION
 - Updated to return non-CICS adaptor origin data

Notes

Enhancements to transaction tracking provide for non-terminal START requests from third party adapters (such as WebSphere MQ, CICS sockets, WebSphere Optimized Local Adapter) to be tracked by allowing the adapter to set fields in the origin data of the task that they start within a CICS region.

This support includes the following changes:

Four new adapter field options added to the origin data to enable identification of a third party resource manager.

Four new data areas available for an adapter to set when called for context management to be placed in the origin data of the transaction that is started.

Four new origin data fields available from the INQUIRE ASSOCIATION command. This allows information from other products to be included in the transaction tracking model, which benefits non-CICS environments.

New adapter fields have been added to the origin data to enable identification of a third party resource manager. To allow the adapter to pass values to populate the new adapter data fields in the origin data section of the association data of a task that is being started, five new fields will be added to the context management parameters (mapped by DFHUECON):

UECON_ADAPTER_ID_PTR: Address of a 64-character area in which the exit program can pass the data to be placed into the origin data adapter identifier field. Use the same address for all instances of the adapter; for example, the product identifier for the owner of the adapter. If an adapter does not specify an identifier in this area then none of the other adapter data is set.

UECON_ADAPTER_DATA1_PTR: Address of a 64-character area in which the exit program can pass the data to be placed into the origin data adapter data 1 field. This field can be used to identify the server to which the adapter instance (which might be one of many) is connected.

UECON_ADAPTER_DATA2_PTR: Address of a 64-character area in which the exit program can pass the data to be placed into the origin data adapter data 2 field. This field can be used to identify the instance of the adapter task that is STARTing the task.

UECON_ADAPTER_DATA3_PTR: Address of a 64-character area in which the exit program can pass the data to be placed into the origin data adapter data 3 field. This field can contain details to identify the reason that the adapter instance STARTed this particular task.

UECON_FLAGS: The address of a single byte with bit definitions indicates if any adapter data that is set by the adapter is placed in the origin data of the task being started.

UECON_ADAPTER_DATA_ON: (X'80') indicates that the adapter is permitted to set origin data adapter data fields.

If the adapter returns values for the adapter data when this flag is not set, the values are ignored. Only the first (origin) adapter for a task, or a set of tasks, is permitted to set the origin data adapter fields.

These fields are in the origin data, so they can only be set once, by the origin adapter. If they already exist, it will not be possible for a different adapter to change them. There is a flag that is addressed by UECON_FLAGS that permits the adapter to tell whether adapter data will be accepted.

CICSplex SM Enhancements in CICS TS 4.2

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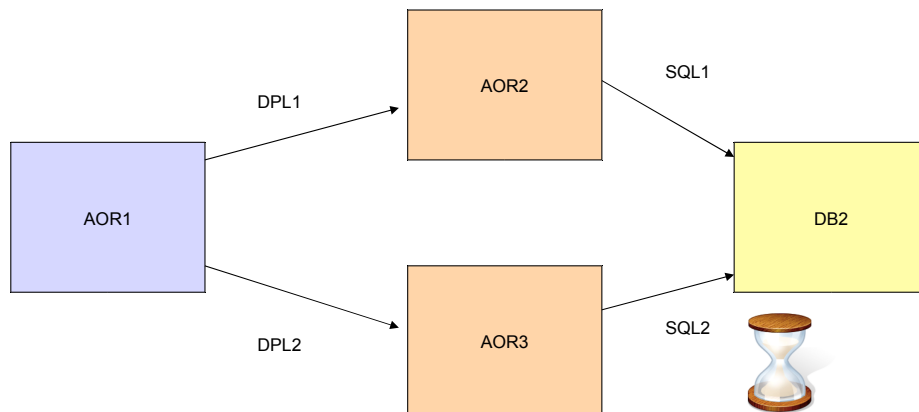
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Improvements to Dynamic Workload Management

- Resolves problems with multiple DPLs in a single UOW
- Known as the UOW affinity problem



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Notes

When using dynamic workload management, problems can occur during the use of multiple dynamic program link (DPL) requests in a single unit of work (UOW). When multiple invocations of the same dynamically-routed program in a UOW access a common resource and one program link locks the resource, if the subsequent program link is routed to a different region, a deadlock can occur.

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Improvements to Dynamic Workload Management...

- New CICS affinity relationship
 - LOCKED
- New CICS affinity lifetime
 - UOW
- Changes to:
 - Views:
 - WLMSPEC, TRANGRP, WLMAWORK, WLMATGRP, WLMATAFF, WLM AWTOR
 - User Replaceable Modules
 - DFHDYPS, EYURWCOM, EYURWTRA

Notes

To prevent this problem, work must not be routed away from the region that locked the resource. CICS TS 4.2 introduces a new type of CICS affinity associated with a UOW, and extends CICSplex SM workload management (WLM) to manage these UOW affinities for DPL requests. The new affinity is restricted to programs that are dynamically linked. Programs with this type of affinity are routed to the same target region for the duration of a unit of work. These affinities are defined with an affinity relation of LOCKED and an affinity lifetime of UOW.

In CICSplex SM, you can create transaction groups and WLM specifications incorporating this new type of affinity using the TRANGRP and WLMSPEC resource tables.

CICSplex SM workload management administration views are updated with new fields and field values to configure UOW affinities. The Active workloads detailed view is also improved by the addition of new fields to display extra workload-related object counts.

The dynamic transaction routing user-replaceable modules DFHDYPDS, EYURWCOM, and EYURWTRA now support the improvements to dynamic workload management.

WLM routing change for IPIC connections

- WLM LINK weighting factor changed for IPIC connections
 - IPIC weighting moved above LU6.2 and Indirect
- New LINK weighting order
 - Local
 - MRO/IRC
 - MRO/XCF
 - **IPIC**
 - LU6.2
 - Indirect

Notes

Modified WLM routing for IPIC connections

WLM can use the type of connection between routing regions and target regions as a weighting factor when making dynamic routing decisions. The weighting applied to IP connectivity (IPIC) connections has been decreased to make target regions using this type of connection more attractive in decisions to route work requests.

In CICSplex SM workload management, the dynamic routing process makes an evaluation of the viability or health of a target region when making workload routing decisions. These decisions are based on routing algorithms containing weighting factors. Two of the four routing algorithms; the QUEUE and GOAL algorithms, use the type of connection between routing and target regions as a significant weighting factor. The weighting applied to IPIC connections is altered to make this type of connection relatively more attractive than in previous releases of CICS TS.

In CICS TS V4.2 the relative connection weights put links in the following order of priority:

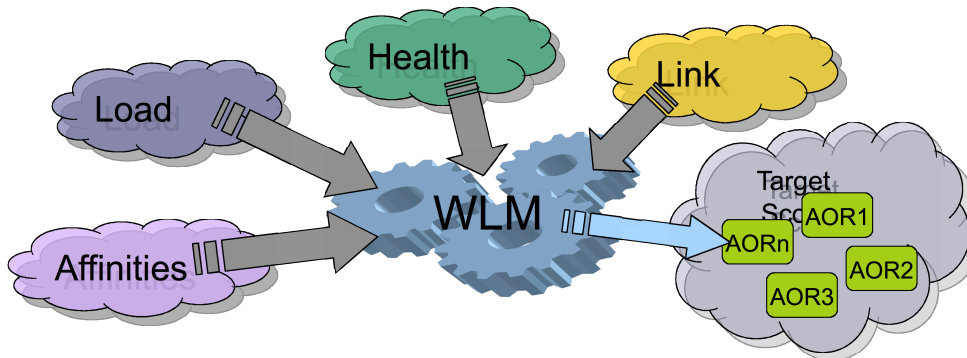
Local, MRO/IRC, MRO/XCF, IPIC, LU6.2, Indirect

CICSplex SM uses the weighting factor of the link as a multiplier against the task load and other factors to determine an overall routing weight. At the end of the evaluation, the region with the lightest weight is normally selected as the target region. No differentiation is made between the different types of IPIC links that are possible.

CPSM Workload Management

- Workload Management is about providing CICS with the 'best' target region at the moment the request is made from all of the possible region candidates.

It's NOT about evenly distributing work!



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Notes

Dynamic routing decisions are based on the most current load data for a potential routing target region. A routing decision is based on a combination of factors:

The number of tasks in the region.

Factored as a percentile value, calculated by dividing the target region MAXTASKS setting with the current task count.

The health status of the region.

Factored by assigning arithmetic weights, depending on whether the region is short-on-storage, taking a transaction dump, taking a system dump, running at its MAXTASKS limit, or in a CPSM stall.

The "speed" of the link between the router and the target.

Factored by assigning arithmetic weights, depending on whether the target region is linked to the target by an MRO connection, an XCF connection, an LU6.2 connection, an IPIC connection, or if the target region is the router itself.

If any outstanding CICSplex SM Realtime Analysis (RTA) Events are associated with the workload.

Factored by assigning arithmetic weights depending on the severity of the events outstanding. These events are factored in only when Event name is specified in the WLM specification for the workload or any Transaction Group definitions associated with it.

If any transaction affinities are outstanding to override the dynamic routing decision.

Regardless of any other factors, if the routing request has an outstanding affinity associated with it, that affinity always overrides the route decision.

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New WLM routing algorithms

- Exclude LINK weighting in target region selection
 - LNQUEUE
 - Route the transaction to the target region with best combination of:
 - Health (MaxTask, Short-on-storage, Dumping, Stalled)
 - Task queue depth (or load)
 - Abend probability, when calculated
 - RTA event impact, when defined
 - Lngoal
 - Route the transaction to the target region that:
 - Is the most likely to allow the transaction to meet its response time goal

Notes

New WLM routing algorithms to exclude link weighting

Workload management (WLM) is enhanced by the introduction of new routing algorithms that exclude the connection type as a weighting factor in decisions to direct work requests to a target region.

Links between router regions and target regions can be of type Local, MRO, MRO/XCF, IPIC, LU6.2, and INDIRECT. In previous CICS releases WLM directed work requests to a target region using one of two weighting algorithms; the queue algorithm or the goal algorithm. In both of these algorithms the type of links between the router and the target are significant weighting factors, which are used along with other factors when distributing work from a router to a target. Link weighting can have a strong impact on the routing behavior in some situations and can prevent CICS transaction routing across system-boundaries in a single-site parallel sysplex environment.

Two new algorithms are introduced; LNQUEUE (link neutral queue) and Lngoal (link neutral goal). LNQUEUE and Lngoal correspond to the existing QUEUE and GOAL algorithms but exclude the connection type as a weighting factor.

The **LNQUEUE algorithm** selects the target region that conforms to the following criteria:

Has the shortest queue of work waiting to be processed, relative to the maximum number of tasks permitted in the target region.

Is the least affected by conditions such as short-on-storage, SYSDUMP, and TRANDUMP.

Is the least likely to cause the transaction to stop.

The **Lngoal algorithm** selects the target region that is the most likely to allow the transaction to meet the response time goal set for it and other transactions in its z/OS workload management class. The Lngoal mode algorithm reverts to LNQUEUE mode when multiple target regions are achieving the same best response time goals, or when the target and routing regions are managed by different CMASs.

You can specify the new algorithms in the same way as GOAL and QUEUE; when defining a workload specification (WLMSPEC).

Transaction Level Control for Dynamic Routing

- In CICS TS V4.1 routing behavior is specified on the WLMSPEC
 - Routing algorithm applies to the entire workload
- In CICS TS V4.2 routing algorithm can be specified on the TRANGRP
 - Allows different transaction to have different behaviors
 - New ALGTYPE attribute
 - QUEUE
 - GOAL
 - LNQUEUE
 - LNGOAL
 - INHERIT

Notes

Workload routing is enhanced by the ability to control dynamic routing behavior at the transaction level. You can now specify an alternate dynamic routing algorithm for specific transactions in a workload that is different from the algorithm defined in the parent workload management specification.

A workload specification (WLMSPEC) controls the default routing behavior for all the transactions that workload management (WLM) is called on to evaluate in a routing region or routing system group. You can override certain routing characteristics by supplying associated pairs of WLM definitions and transaction group definitions (WLMDEF and TRANGRP objects) to specify a specialized routing evaluation to be applied to one or more transactions. However before CICS TS V4.2 you have not been able to specify alternate workload routing characteristics in this way. Workload routing is the directing of transactions amongst a group of target regions according to the availability and activity levels of those target regions. The criteria used to select a target region is determined by the choice of routing algorithm, each of which contains a different combination of weighting factors.

In CICS TS V4.2 you can now specify one of four routing algorithms in a transaction group and this overrides the default algorithm associated with the workload specification. Specifying an alternate routing algorithm in this way also means that you can change workload routing characteristics for specific target regions dynamically without stopping your routing region.

New CICSplex SM Resource: SYSPARM

- Allows retrieval of systems initialization table values
 - Read-only access to SIT parameters
 - Ability to access SIT parameters from
 - DFHSITxx load module
 - EXEC PGM=DFHSIP,'PARM=...'
 - SYSIN dataset overrides
 - Console overrides
 - All of the above combined together in order
 - Cannot retrieve the changes made after startup using system programming interface commands

Notes

You can now use the CICSplex SM API to discover information about CICS system initialization parameters and system initialization parameter overrides. The new API capability is implemented using the new CICSplex SM resource SYSPARM.

When you retrieve parameters you have the following options:

- You can retrieve the current values of the parameters in the SIT including any override values.
- You can retrieve the original SIT values as specified at system startup.
- You can retrieve the values from a single override source.

You cannot, however, retrieve changes in the values of parameters that were made after startup using system programming interface commands.

In common with many other CICSplex SM operations, you can control which CICS regions the retrieval operates on by specifying context and scope.

New CICSplex SM Resource: SYSPARM...

- You can implement SIT parameter discovery:
 - API program
 - EXEC CPSM GET command operating on the SYSPARM object
 - CMCI GET method
 - Using the CICSSystemParameter external resource
 - Using a WUI view based on the SYSPARM resource table
 - The WUI does not include a supplied SYSPARM view set
 - You can create one using the WUI view editor
- Two mandatory parameters for SYSPARM requests
 - Parameter Type (SIT)
 - Parameter Source (Table, Console, JCL, SYSIN or Combined)

Notes

The new API capability is implemented using the new CICSplex SM resource SYSPARM. The SYSPARM resource has two required parameters, PARMSRCE and PARMTYPE, associated with the GET operation. You use these parameters to specify which parameters to retrieve according to their source.

You can implement system initialization parameter discovery in three ways:

In an API program using the EXEC CPSM GET command operating on the SYSPARM object.

Using the CMCI GET method operating on the CICSSystemParameter external resource.

Using a WUI view based on the SYSPARM resource table. The WUI does not include a supplied SYSPARM view set but you can create one using the WUI view editor.

When you use EXEC CPSM GET command or CMCI, you can define a parameter expression using PARMSRCE and PARMTYPE to specify which parameters to retrieve. In the WUI you can use PARMSRCE and PARMTYPE as filters to control the records displayed.

CICS TS 4.2 Explorer enhancements

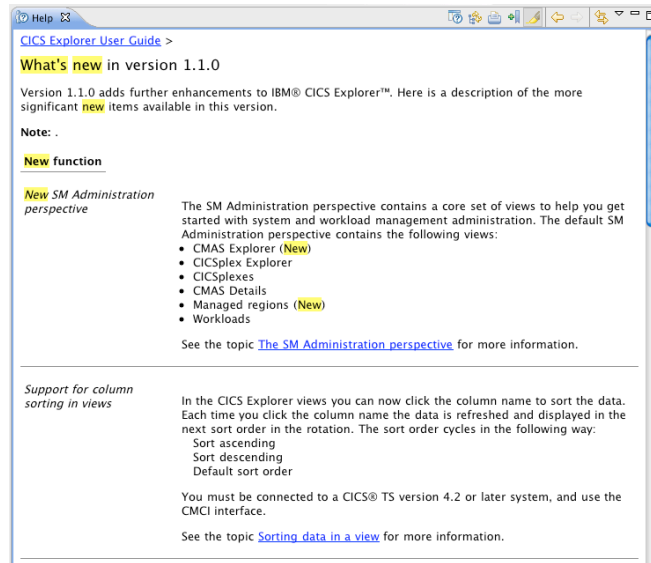
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What's new in V1.1.0 (CICS TS V4.2)



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RECAP - CICS Explorer Milestones

- July 2007 - Conception
- November 2008 – SupportPac
 - The New Face of CICS
 - CICSplex SM connectivity
 - CICS Tools Integration
- June 2009 – CICS TS V4.1 GA
 - Full management capability with CICSplex SM
 - Operations management of SMSS
 - Free supported feature for CICS TS V3
 - Event Processing
 - Explorer SDK
- September 2010 – CICS Explorer V1.0.1 Management of selected z/OS resources
- June 2011 CICS TS 4.2 support

Notes

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RECAP - CICS Explorer deliveries

- Version 1.0.0.2 & 1.0.0.4
 - Ability to display resources in a CICS CSD file
 - Ability to create resource definitions in a single CICS region
 - Ability to copy and paste resource definitions
 - Ability to add a group to, or remove a group from, a list
 - Ability to append one list to another list
- Version 1.0.0.5
 - Workload management support and Task associations
- Version 1.0.0.7
 - New Connection Credentials page in the Preferences view
- Version 1.0.1
 - New System z/OS perspective
 - Ability to export and import system connection details
 - Ability to view SIT parameters

Notes

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CICS Explorer for CICS TS V4.2

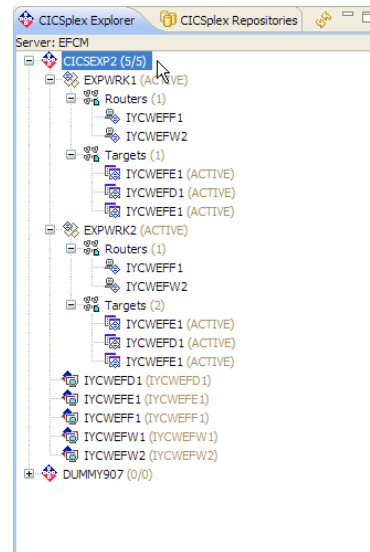
- Atom usability enhancements
- Event Binding Editor enhancements and additional support for events
- Transaction Tracking support
- Workload manager support
- Support for new resources, new SPI etc. etc.
 - Exposed via CMCI, then with Explorer value-add
- Ongoing integration with additional plug-ins
 - CICS TG, OMEGAMON XE for CICS, PD Tools, etc. etc.
- Beta deliveries for CICS TS V4.2
- Updated CICS Explorer to be available at CICS TS V4.2 GA, for use with all releases of CICS TS

Notes

- This slide lists the major enhancements to CICS Explorer in support of CICS TS 4.2

CICS Explorer...

- CICS Explorer can perform some workload management:
 - View workloads in the CICSplex Explorer view as well as the Active Workloads view
 - View router and target regions associated with workloads in the CICSplex Explorer view



Notes

Using CICS Explorer you can now perform some workload management:

View workloads in the CICSplex Explorer view as well as the Active Workloads view.

View router and target regions associated with workloads in the CICSplex Explorer view.

CICS Explorer...

- Search for associated tasks

The screenshot displays the IBM CICS Explorer BETA interface. The main window shows a list of tasks in a table. The tasks are all in a 'SUSPENDED' state. Below the main table, there is a section titled 'Tasks associated with task "0000410" in region "IYK22G1" - 2 results', which shows two associated tasks: '0000410' (CECI) and '0000057' (CSMI).

Region	Task ID	Transaction ID	Run Status	User ID	Terminal ID	LU Name	Priority	Class Name	Suspend Time
IYK22G1	0000410	CECI	SUSPENDED	CICSUSER	TC16	IYCWTC16	1	DFHTCL00	0:00:00
IYK22G1	0000057	COJE	SUSPENDED	CICSUSER			255	DFHTCL00	0:00:09
IYK22G3	0000057	CSMJ	SUSPENDED	CICSUSER			1	DFHTCL00	0:00:05
IYK22G1	0000056	CONM	SUSPENDED	CICSUSER			240	DFHTCL00	0:00:01
IYK22G1	0000055	CONM	SUSPENDED	CICSUSER			240	DFHTCL00	0:00:02
IYK22G3	0000055	COJE	SUSPENDED	CICSUSER			255	DFHTCL00	0:00:00
IYK22G1	0000054	CONM	SUSPENDED	CICSUSER			240	DFHTCL00	0:00:01
IYK22G3	0000054	CONM	SUSPENDED	CICSUSER			240	DFHTCL00	0:00:04
IYK22G3	0000053	CONM	SUSPENDED	CICSUSER			240	DFHTCL00	0:00:01
IYK22G1	0000053	CONM	SUSPENDED	CICSUSER			240	DFHTCL00	0:00:01
IYK22G3	0000052	COJO	SUSPENDED	CICSUSER			255	DFHTCL00	0:00:00
IYK22G1	0000051	CONM	SUSPENDED	CICSUSER			240	DFHTCL00	0:00:04

Notes

If a task is not responding, for example, the task is suspended waiting for a write operation to a local file, you can perform a search to find all associated tasks in the CICSplex to see which one is causing the problem and take corrective action. An associated task is one that has the same NETUOWID or TRNGRPID

CICS Explorer – CICS TS V4.2

- Associated task search
 - Parent/child relationship for associated tasks (exploiting previous hop)
 - Sortable columns
 - Configurable columns
 - Paging of search results

- IP Network centric search
 - IP facility details (port/IP address) do not have specific CICS resources (like LU6.2 sessions)
 - Contained within IPCONNs, TCPIP Services
 - Explorer to provide task search based on this information and its correlation with Task Association data

Notes

- When a task becomes unresponsive you can perform a search to identify all associated tasks in the CICSplex. Using the search results you can identify the task that is causing the problem, and other tasks that will be affected when you take corrective action. An associated task is one that has the same NETUOWID or TRNGRPID.
- You can use transaction tracking to identify active tasks with the same origin IP address. The address might be the address of a workstation or a web service. You might do this if you have a number of unresponsive tasks and you are trying to determine if a particular origin point is causing the tasks to hang.

Transaction Tracking Example – Explorer views

Associated tasks, with previous hop data

Tasks	Transaction ID	Region	Start Time	Transaction ID	Run Status	Suspend Time	Suspend Reason	Prev Hop Count
0093712	CWBA	IYCWEGW2	13:19:55.1301	CWBA	SUSPEND...	0:00:10	IS_RECV	0
0000344	CSMI	IYCWEGG1	13:19:55.1313	CSMI	SUSPEND...	0:00:10	ICWAIT	1

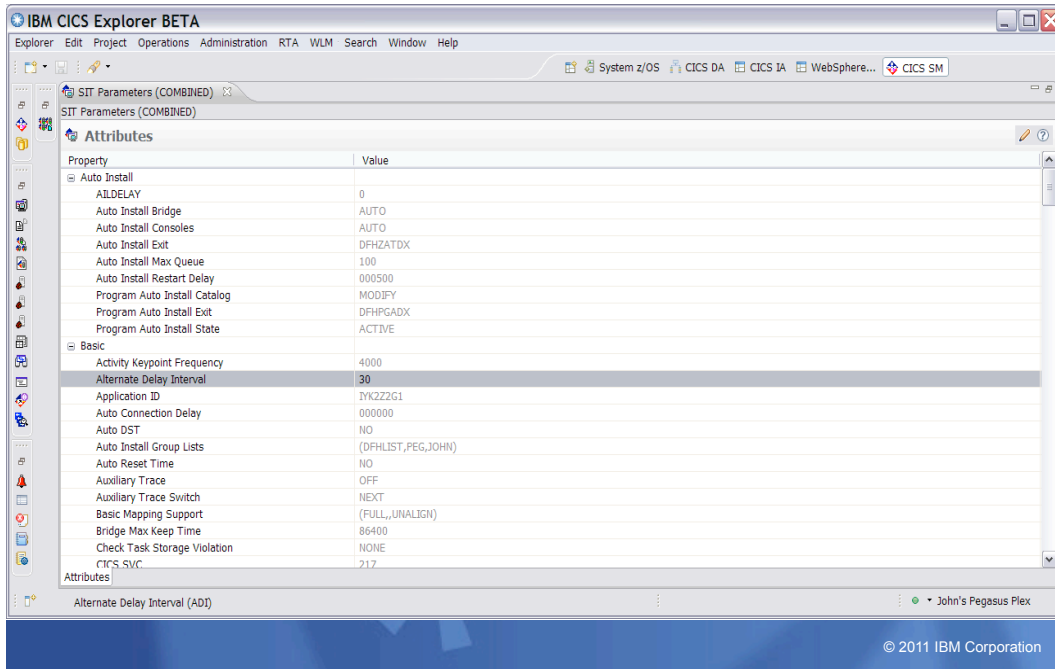
Tasks originating from an IP address

Tasks	Transaction ID	Region	Start Time	Transaction ID	Run Status	Suspend Time	Suspend Reason	Prev Hop Count
IYCSEXP1								
IYCWEGW2 0097158	CWBA	IYCWEGW2	16:09:40.4709	CWBA	SUSPEND...	0:00:12	IS_RECV	0
IYCWEGW2 0097182		IYCWEGW2	16:09:53.3207					0
IYCWEGG1 0000362	CSMI	IYCWEGG1	16:09:40.4722	CSMI	SUSPEND...	0:00:12	ICWAIT	1

Notes

- This slide shows the results of performing a associated task search and an IP network centric using CICS Explorer.

New CICSplex SM Resource: SYSPARM...



The screenshot shows the IBM CICS Explorer BETA application window. The main pane displays the 'SIT Parameters (COMBINED)' view for the 'CICS SM' resource. The interface includes a menu bar (Explorer, Edit, Project, Operations, Administration, RTA, WLM, Search, Window, Help) and a toolbar. The left sidebar shows a tree view with 'SIT Parameters (COMBINED)' selected. The main area contains a table of attributes and their values.

Property	Value
Auto Install	
AIDELAY	0
Auto Install Bridge	AUTO
Auto Install Consoles	AUTO
Auto Install Exit	DFHZATDX
Auto Install Max Queue	100
Auto Install Restart Delay	000500
Program Auto Install Catalog	MODIFY
Program Auto Install Exit	DFHPCADIX
Program Auto Install State	ACTIVE
Basic	
Activity Keypoint Frequency	4000
Alternate Delay Interval	30
Application ID	RYK2Z2G1
Auto Connection Delay	000000
Auto DST	NO
Auto Install Group Lists	(DFHLIST,PEG,JOHN)
Auto Reset Time	NO
Auxiliary Trace	OFF
Auxiliary Trace Switch	NEXT
Basic Mapping Support	(FULL,UNALIGN)
Bridge Max Keep Time	86400
Check Task Storage Violation	NONE
CICS SVC	217

Attributes

Alternate Delay Interval (ADI)

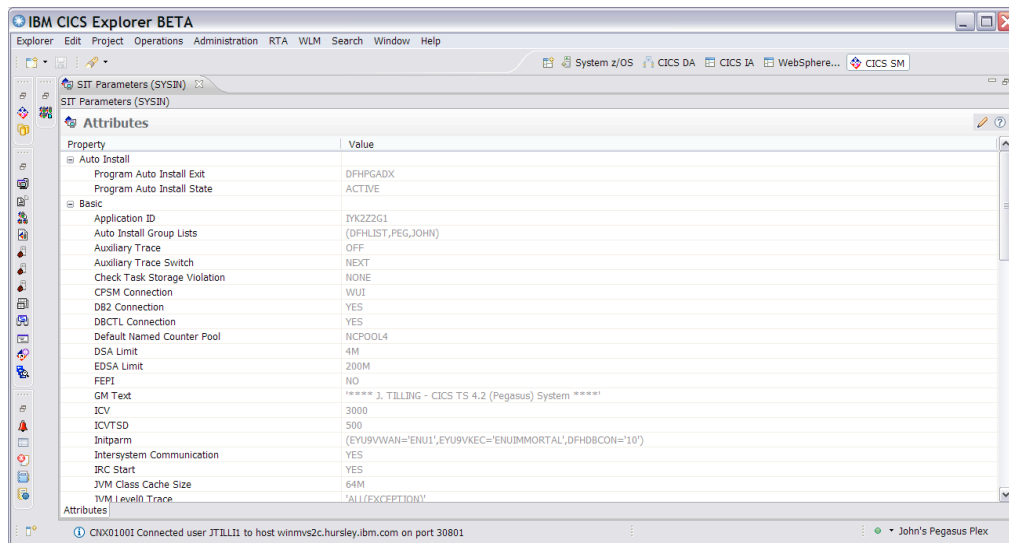
John's Pegasus Plex

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Notes

- The slide shows the Combined SIT parameters view in CICS Explorer.

New CICSplex SM Resource: SYSPARM...

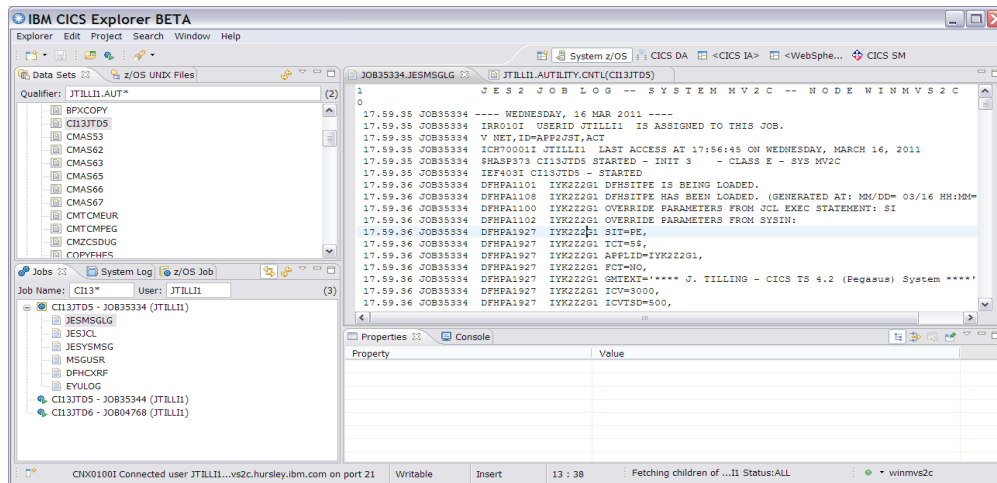


Notes

- The slide shows the SYSIN SIT parameters view in CICS Explorer.

CICS Explorer...

- The System z/OS perspective
 - Contains new views to help you manage your system z artifacts
 - Data Sets, Jobs, z/OS Unix Files and the Console



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Notes

The System z/OS perspective contains a set of new views to help you manage your system z artifacts.

Data Sets: Use the Data Sets view to manage your z/OS data sets, edit, and submit jobs. When you edit a data set it opens in the data set editor. In the screen capture, the editor is shown in the center of the image.

Jobs: Use the Jobs view to see completed jobs. You can expand the job to show the output data sets, and open them to show the content.

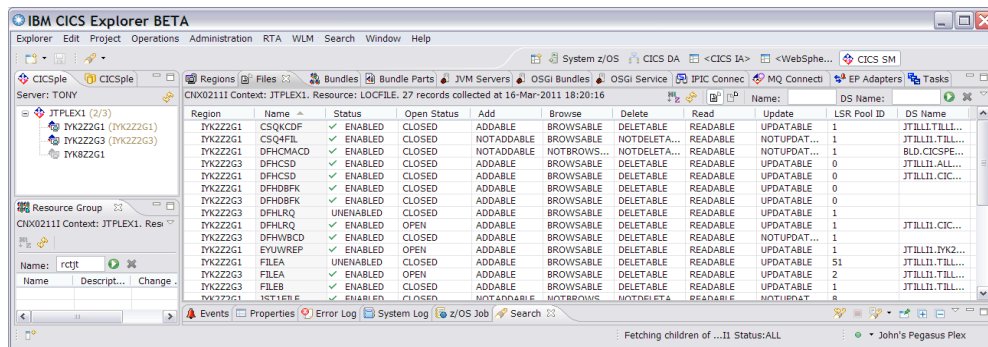
z/OS Unix Files: Use the z/OS Unix Files view to see the HFS and zFS file system structure and contents.

Console: Use the Console view to see a history of the actions you have performed, such as submitting jobs and changing data sets.

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CICS Explorer...

- Click on a column to sort the data
 - Each click will cycle to the next sort order
 - Sort ascending
 - Sort descending
 - Default sort order



Notes

In the CICS Explorer views you can now click the column name to sort the data. Each time you click the column name the data is refreshed and displayed in the next sort order in the rotation. The sort order cycles in the following way:

- Sort ascending
- Sort descending
- Default sort order

You must be connected to a CICS TS version 4.2 or later system, and use the CMCI interface.

Summary

- Transaction Tracking for tracking and correlating transactions across CICS systems
- CICSplex Systems Manager
 - WLM routing change for IPIC connections
 - New WLM routing algorithms
 - SYSPARM resource
- Extensions to CICSplex SM CMCI
- CICS Explorer enhancements



Questions

Other Sessions

- *Monday*
 - **9322:** [CICS TS V4.2 Technical Overview](#)
- *Tuesday*
 - **9327:** [CICSplex What Is It, and Why Do I Care?](#)
 - **9600:** [CICS TS and the Cloud](#)
 - **9605:** [What's New in CICS V4.2 Systems Management Best Practices](#)
 - **9331:** [CICS Explorer: The New Frontier](#)
- *Wednesday*
 - **9319:** [CICS Emerging Technologies Hands-on Lab Part 1 of 2](#)
 - **9320:** [CICS Emerging Technologies Hands-on Lab Part 2 of 2](#)
- *Thursday*
 - **9606:** [CICS ... It's Not Just COBOL: Java Support](#)
 - **9607:** [CICS for Java Developers and Java for System Programmers - Two Sides of the Same Coin](#)
 - **9613:** [CICS Question Box and Pot Luck](#)
- *Friday*
 - **9614:** [CICS Nuts, Bolts and Gotchas](#)

More Information

- IBM CICS Explorer
 - <http://www.ibm.com/software/http/cics/explorer/>
- SHARE (Past Conferences)
 - 8514: CICS ExplorerUpdate
 - <http://share.confex.com/share/116/webprogram/Session8514.html>
 - 8265: CICS JVM Server
 - <http://share.confex.com/share/116/webprogram/Session8265.html>
 - 8272: Best Practices for CICS Systems Management
 - <http://share.confex.com/share/116/webprogram/Session8272.html>
- Podcasts
 - <http://www-01.ibm.com/software/http/cics/tserver/v42/ibm.com/findevr4.html>
- Blog
 - <http://masterterminal.wordpress.com/>
- developerWorks Forum
 - <http://www.ibm.com/developerworks/forums/forum.jspa?forumID=1475>

