



IBM Software Group

## IBM Tivoli OMEGAMON® XE for CICS on z/OS v4.2.0

[rburford@us.ibm.com](mailto:rburford@us.ibm.com)

April 15<sup>th</sup>, 2010



**Tivoli** software

© 2009 IBM Corporation

IBM Confidential

# OMEGAMON XE for CICS on z/OS v4.2.0

Please feel free to ask questions !

# OMEGAMON XE for CICS on z/OS v4.2.0

## OMEGAMON XE for CICS on z/OS v4.1.0

- Notes on the 4.1.0 release and Interim Feature 4

## OMEGAMON XE for CICS on z/OS v4.2.0

- Combined FMIDs
- Session switching with no relogin is supported
- Initialisation in CICS – RETRY parameter
- Initialisation in CICS – simplification of task start code
- Application Trace Facility
  - Real time option for 3270 ATF, which can be started using Resource Limiting
  - Natural program name in 3270 and TEP ATF display
  - TCB name available in TEP
- Service Task Analysis
  - Enhanced to display statistics related to Service Task Analysis dataspace utilisation.

# OMEGAMON XE for CICS on z/OS v4.2.0

- CICS/TS v4.1 exploitation
  - Application Bundles
  - Atom Services
  - Events
  - JVM Servers
  - XML Transforms
  - Resource Signature Data in 3270 interface

In the following slides some of the new reports have strange looking names; this is due to an installation problem on my laptop and will be corrected prior to the beta program's start.

- Service Level Analysis Batch Interface
- BIRT reporting
- LTA

# OMEGAMON XE for CICS on z/OS v4.1.0

- Significant re-architecting took place in 4.1.0
  - GLUEs are only activated if required
  - SMF data is buffered, and written as a new record, 112
  - Removal of requirement to add OMEGAMON EMPs to the MCT
    - MCT entries only required if you process the records and report on OMEGAMON fields
  - Integration with CICS PA
    - A new EMP, OMEGCICS, includes our unique data
  - Integration with Debug Tool
    - They dynamically turn off Resource Limiting (RLIM) for tasks running under Debug Tool
  - Interim Feature 4 is included in the v4.2.0 build
    - Dynamic Workspace Linking (DWL) to 3270
    - Application Trace Facility (ATF) in the Tivoli Enterprise Portal (TEP)

# OMEGAMON XE for CICS on z/OS v4.2.0

- Combined FMIDs
  - Previous releases installed separate FMIDs for C2 and XE (e.g. HKC2560 and HKC410); in this release we combined the two FMIDs into HKC5420.
- Session switching with no relogin
  - This enhancement provides the ability to logon to a menu system session, and switch to another region; provided you have the appropriate authority to monitor the switched to session you will not be prompted for a password.

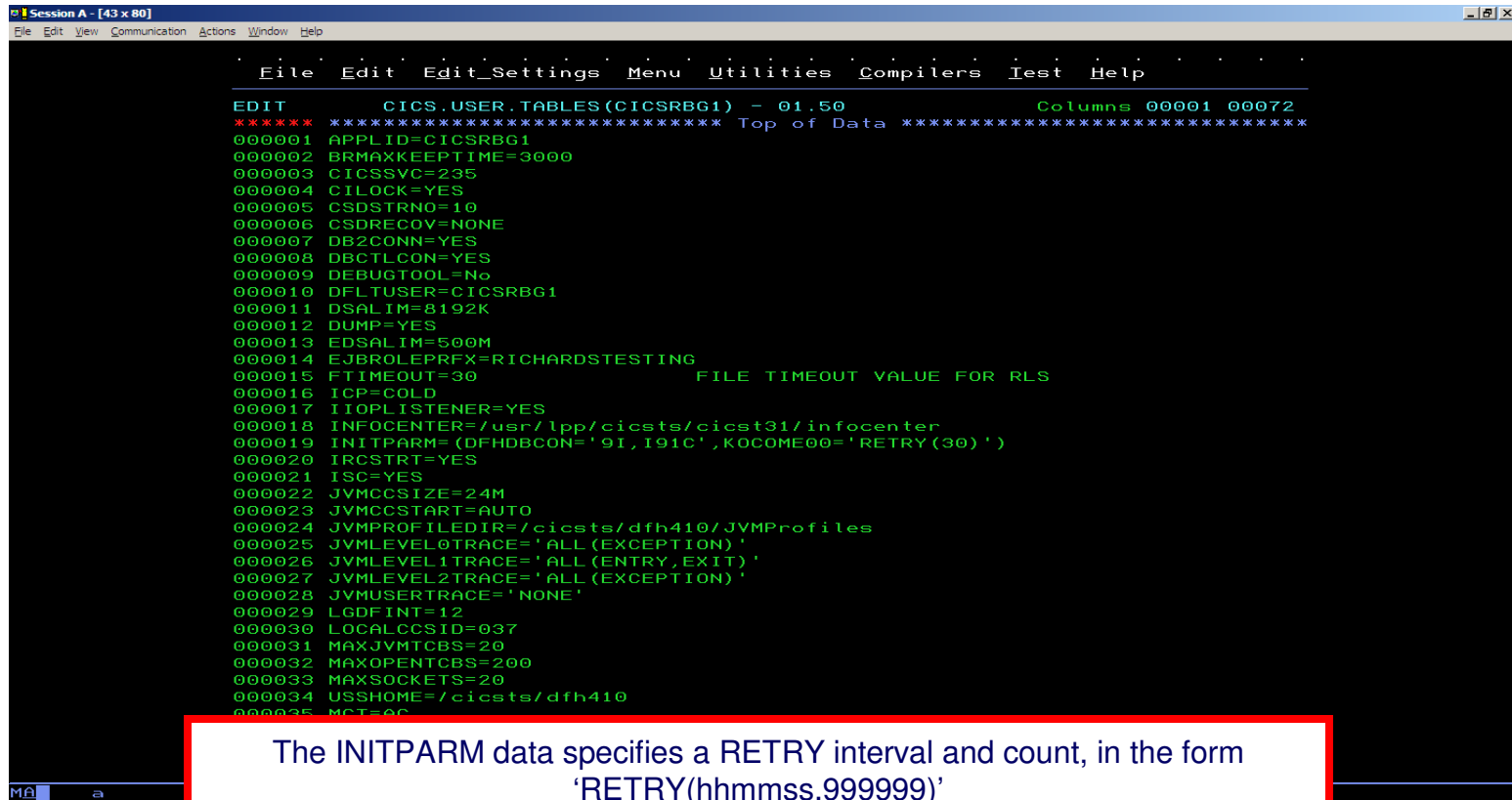
# OMEGAMON XE for CICS on z/OS v4.2.0

## RETRY option

- You enable this new feature by adding a parameter to the CICS INITPARM data, shown on a subsequent slide.
- If the parameter is available and in the correct format, OMEGAMON will use this to retry a connection to the common interface in the event that CICS starts before the common interface.
- Format is `RETRY(hhmmss,count)`
  - Time is specified as hhmmss (same as INTERVAL on CICS commands)
  - Count is 1-999999, if omitted retries are unlimited
- RETRY processing can be canceled using the OMEG CANCEL option
- Takes priority over OCCIREQ processing

# OMEGAMON XE for CICS on z/OS v4.2.0

## RETRY option



```
Session A - [43 x 80]
File Edit View Communication Actions Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT          CICS.USER.TABLES(CICSRBG1) - 01.50          Columns 00001 00072
*****
000001 APPLID=CICSRBG1
000002 BRMAXKEEP=3000
000003 CICSSVC=235
000004 CILOCK=YES
000005 CSDSTRNO=10
000006 CSDRECOV=NONE
000007 DB2CONN=YES
000008 DBCTLCON=YES
000009 DEBUGTOOL=No
000010 DFLUSER=CICSRBG1
000011 DSALIM=8192K
000012 DUMP=YES
000013 EDSALIM=500M
000014 EJBROLEPRFX=RICHARDSTESTING
000015 FTIMEOUT=30          FILE TIMEOUT VALUE FOR RLS
000016 ICP=COLD
000017 IIOPLISTENER=YES
000018 INFOCENTER=/usr/lpp/cicsts/cicst31/infocenter
000019 INITPARM=(DFHDBCON='91,I91C',KOCOME00='RETRY(30)')
000020 IRCSTR=YES
000021 ISC=YES
000022 JVMCCSIZE=24M
000023 JVMCCSTART=AUTO
000024 JVMPROFILEDIR=/cicsts/dfh410/JVMProfiles
000025 JVMLEVEL0TRACE='ALL (EXCEPTION) '
000026 JVMLEVEL1TRACE='ALL (ENTRY, EXIT) '
000027 JVMLEVEL2TRACE='ALL (EXCEPTION) '
000028 JVMUSERTRACE='NONE'
000029 LGDFINT=12
000030 LOCALCCSID=037
000031 MAXJVMTCBS=20
000032 MAXOPENTCBS=200
000033 MAXSOCKETS=20
000034 USSHOME=/cicsts/dfh410
000035 MCT=0C
```

The INITPARM data specifies a RETRY interval and count, in the form 'RETRY(hhmmss,999999)'



# OMEGAMON XE for CICS on z/OS v4.2.0

## RETRY option

```

Session A - [43 x 80]
File Edit View Communication Actions Window Help
-----
Display Filter View Print Options Help
-----
SDSF OUTPUT DISPLAY CICSRBG1 STC21177 DSID      2 LINE 262      COLS 22- 101
COMMAND INPUT ==>
OC1022 OCOMEG OMEGAMON II FOR CICS SUCCESSFULLY DE-INSTALLED
OC1023 OCOMEG RKANMOD IS IN USE FOR PROGRAM LOADING
KCP1040I OCOMEG OMEGAMON II FOR CICS WILL RETRY: INTERVAL 000030 NOLIMIT
OC0033: XMCR CICS IS USING 'RKC2XM07' DD NAME
OC0026 OCXMST CICS, KOCCI AND GLOBALS MUST BE AT THE SAME SERVICE LEVEL
OC1034 EXEN MODULE KOCOME00 WILL RUN IN THREADSAFE MODE
OC2020I EXEN VSAM GLUE CODE HAS BEEN ENABLED
OC1147 EXEN CICS MONITORING IS BEING TURNED ON
OC1148 EXEN PERFORMANCE CLASS IS BEING TURNED ON
OC1149 EXEN EXIT INITIALIZATION COMPLETED
KCP1120I UMEX EXTRACTION ROUTINE PROCESSING DFHMCTAC
KCP1128I UMEX OMEGAMON CICS DATA FOR THE FOLLOWING EMPS IS AVAILABLE
KCP1129I UMEX OMEGAMON CICS DATA FOR CICS PA (OMEGCICS)
KCP1133I UMEX MCT PROCESSING HAS COMPLETED
OC1170 OCSETI STARTING OMEGAMON II FOR CICS OCEXEC PROCESSING
OC1166 OCSETI KOCEXE INTERFACE HAS BEEN RESTARTED
OC1213 OCSR1 SERVICE TASK INITIALIZATION COMPLETED
OC1019 OCOMEG OMEGAMON II FOR CICS INITIALIZATION IS COMPLETE
OC1242 OCSR2 SECONDARY SERVICE TASK WAITING FOR WORK
OC1231 OCSR3 SERVICE TASK WAITING FOR WORK
JOB MSGLEVEL=1                                STC21177
EXEC CICSRBG1
PROC START='COLD',                             00010020
'CICS41',                                       00020000
'DFH.V4R1M6P.CICS',                             00030046
'RBG1',                                         00040000
',',                                           00050000
'YES',                                         00060000
='YES',                                         00070000
',',                                           00080017
',',                                           00091000
T,ACT, ID=CICS66                               00092000
SETPROG APF,FORMAT=DYN                         00092110
SETPROG APF,ADD.DSN=&INDEX2, SDFJAUTH.VOLUME=PP0H1P 00092248

```

Here we see OMEGAMON attempting to connect to the common interface, which was not started. The specified parameter, RETRY(30) indicates that the connection will be retried every 30 seconds.

RETRY attempts can be cancelled by using the new OMEG CANCEL option.

# OMEGAMON XE for CICS on z/OS v4.2.0

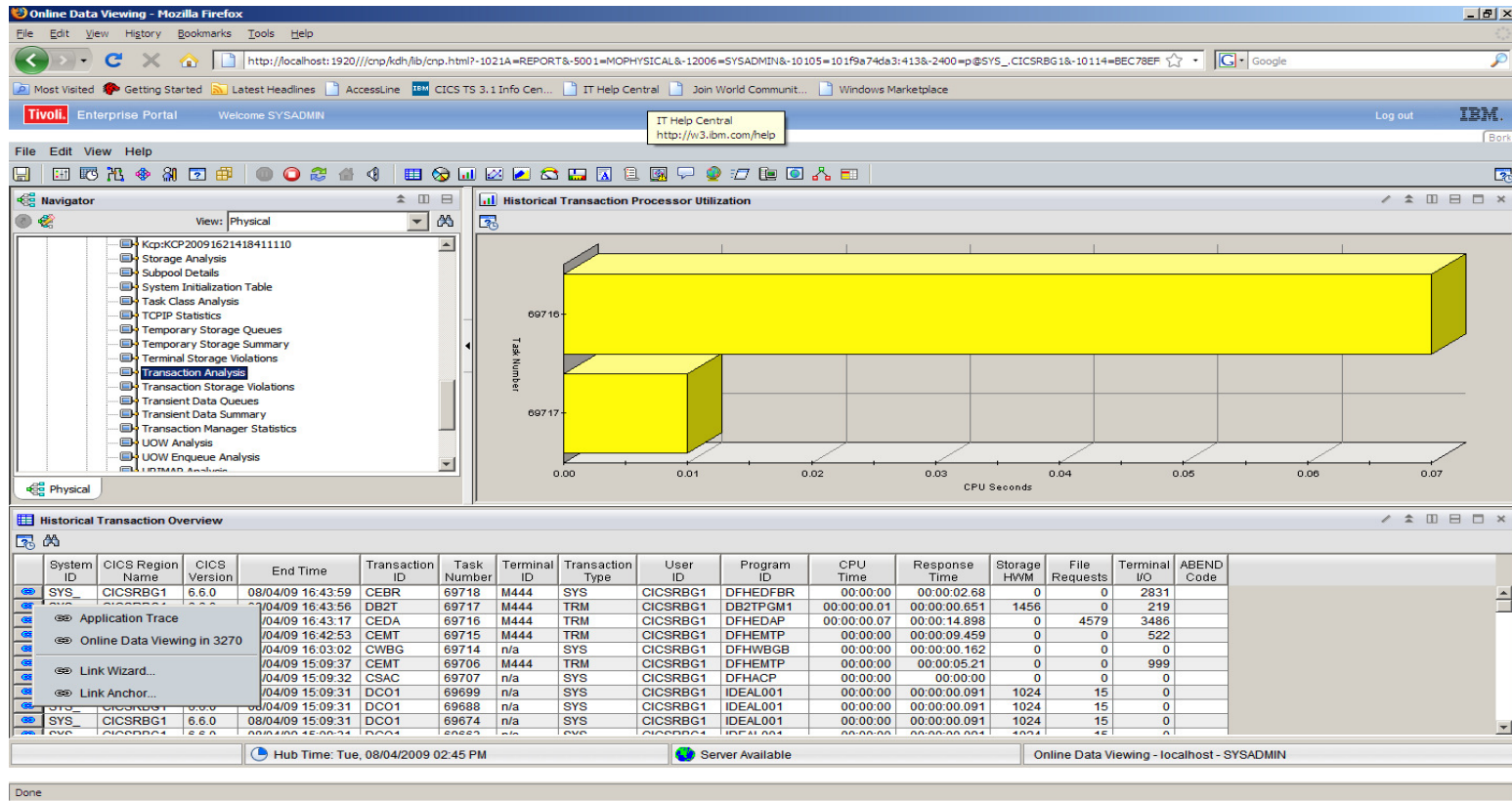
## Changes to TASK start processing

- Code executed during TASK start processing has been simplified in two main areas;
  - This removes a CICS GETMAIN from every task that we monitor, and
  - Simplifies code that is executed as a part of RLIM initialisation
- This should result in a small, but measurable, CPU reduction for tasks monitored by OMEGAMON CICS which use Resource Limiting

# OMEGAMON XE for CICS on z/OS v4.2.0

- Application Trace Facility enhancements
  - Interim Feature 4, released earlier this year, made ATF available in the Tivoli Enterprise Portal
  - V4.2.0 extends those changes by adding support for Software Ag's Natural programming language and adding the TCB on which a request was executed.
  - In v4.2.0 you can now specify that a task which exceeds an RLIM warning threshold will automatically start ATF recording, and the ATF data can be viewed on the 3270 in real time. You can also start the tarce for a task which is currently executing.

# OMEGAMON XE for CICS on z/OS v4.2.0 Application Trace Facility enhancements



# OMEGAMON XE for CICS on z/OS v4.2.0 Application Trace Facility enhancements

The screenshot shows the Application Trace Facility interface in Mozilla Firefox. The main window displays a table of trace details with columns: Date Time, Type, Function, Program, Offset, Resource, Response, and TCB Name. The TCB Name column is color-coded: green for QR and orange for L8003. A red box highlights the row where the TCB Name is L8003.

Date Time	Type	Function	Program	Offset	Resource	Response	TCB Name
16:43:56.4215034482	TSKSTRT	1ST DISPATCH	DB2TPGM1	+0			QR
16:43:56.4392894763	EXECIN	RETRIEVE	DB2TPGM1	+C4			QR
16:43:56.4495939067	EXECOUT	RETRIEVE	DB2TPGM1	+C4		ENDDATA	QR
16:43:56.4496048129	RMIIN	RESOURCE MANAGER	DB2TPGM1	+706	DSNCSQL		QR
16:43:56.5626568127	EXECIN	RETURN	DSNCUEXT	+1DE			QR
16:43:56.8980797253	RMIOUT	RESOURCE MANAGER	DSNCUEXT	FFFFFFFF	DSNCSQL	00000000	L8003
16:43:56.8981061003	EXECIN	WRITEQ TS	DB2TPGM1	+83C	CEBRM444		QR
16:43:56.9829965319	EXECOUT	WRITEQ TS	DB2TPGM1	+83C	CEBRM444	NORMAL	QR
16:43:56.9830118444	EXECIN	START (ATT/BRX)	DB2TPGM1	+24E	CEBR		QR
16:43:57.0191881948	EXECOUT	START (ATT/BRX)	DB2TPGM1	+24E	CEBR	NORMAL	QR
16:43:57.0192014760	EXECIN	RETURN	DB2TPGM1	+264			QR

**In this example which is modified from the default, calls executed on the QR TCB are green while those executed on an open TCB are orange. This makes the threadsafe behaviour of the program simpler to visualise.**

# OMEGAMON XE for CICS on z/OS v4.2.0 Application Trace Facility enhancements

```

Session A - [43 x 80]
File Edit View Communication Actions Window Help
> PF1 Help      ZTKALL      VTM      CICSRBG1 V420./C SYS 08/04/09 16:51:07
> PF3 Back      PF4 Main Menu PF7 Up     PF8 Down    PF11 Zoom
> A-All B-Master C-Waiting D-Over MAXR E-Running F-Other G-Kill H-Rate
> IO-IO J-OTE   K-Storage L-User Data
-----
>
> TASK
TASK
+-----+-----+-----+-----+-----+-----+-----+-----+
+      Tran      Task      Number of tasks selected: 28 Skipped: 0
+      ID         Number  State  Facility  Resource  Resource  CPU
+      -----  -----  -----  Type=ID   Type      Name      Time
+-----+-----+-----+-----+-----+-----+-----+
+ LN20          69719  Suspend Trm=M444  ZCIOWAIT  DFHZARQ1  0.004779
+ OSEC          69713  Suspend Task      USERWAIT  SR2WORK   0.002804
+ OSRV          69712  Suspend Task      USERWAIT  SRVWORK   0.001397
+ CKAM          48      Suspend Task      (none)     (none)    n/a
+ CSNE          46      Suspend Task      ZC         DFHZNAC1  n/a
+ CISE          43      Suspend Task      IS_ERROR   IS_ERR00  n/a
+ CISR          42      Suspend Task      IS_INPUT   IS_PRO00  n/a
+ CSHQ          40      Suspend Task      SHSYSTEM   (none)    n/a
+ CEX2          34      Suspend Task      USERWAIT   CDB2TIME  n/a
+ CDBO          33      Suspend Task      (none)     DLCNTRL   n/a
+ CONL          31      Suspend Task      ICWAIT     (none)    n/a
+ CSNC          29      Suspend Task      CSNC       MROQUEUE  n/a
+ CFQR          28      Suspend Task      FCCFQR     (none)    n/a
+ CFQS          27      Suspend Task      FCCFQS     (none)    n/a
+ CSTP          12      Suspend Task      TCP_NORM   DFHZDSP   n/a
+ CSSY          10      Suspend Task      ICEXPYRY   DFHAPTIX  n/a
+ CSSY          9       Suspend Task      ICMDNTE    DFHAPTIM  n/a
+ LGdomain     None    Suspend LGdomain  LGHARTBT  LG_MGRST  n/a
+ CEPM          5       Suspend Task      EPECQEMT  EPSUSPND  n/a
+ CSOL          3       Suspend Task      SODOMAIN  SO_NOWOR  n/a
+ APdomain     None    Running  APdomain  DSTSKDEF  ...EUE    n/a
+ TIdomain     None    Suspend TIdomain  TIEXPIRY  DS_NUDGE  n/a
+ RXdomain     None    Suspend RXdomain  RRMSEXIT  RESYNC    n/a
+ RXdomain     None    Suspend RXdomain  RRMSEXIT  NOTIFICA  n/a
+ SMdomain     None    Suspend SMdomain  smsyre    smva_ecb  n/a
+ SMdomain     None    Suspend SMdomain  SMSYSTEM  (none)    n/a
+ DMdomain     None    Suspend DMdomain  ENF       NOTIFY    n/a
+ CSSY          32      Suspend Task      KCCOMPAT  SINGLE    n/a
-----

```

# OMEGAMON XE for CICS on z/OS v4.2.0 Application Trace Facility enhancements

```

Session A - [43 x 80]
File Edit View Communication Actions Window Help
ZZTASK VTM CICSRBG1 V420./C SYS 08/04/09 16:51:45
> PF1 Help PF3 Back PF4 Main Menu PF7 Up PF8 Down PF11 Zoom

=====
> TASK DETAIL INFORMATION
=====
> TASK NUMBER 00069719
+
+ Task Detail Information
+ Transaction ID . . . . . : LN20 Task number . . . . . : 69719
+ Resource type . . . . . : ZC10WAIT Resource name . . . . . : DFHZARQ1
+ Userid . . . . . : CICSRBG1 Task state . . . . . : Suspend
+ Purgeable suspend . . . . . : Yes Originated by . . . . . : LN20
+ Purge status . . . . . : No purge Task queue . . . . . : Executbl
+ Time of suspend . . . . . : 16:50:55 Suspend timeout due . . . . . : None
+ Time in suspend . . . . . : 0:00:49 Suspend type . . . . . : Suspend
+ Attaching domain . . . . . : XM TCB affinity . . . . . : QR
+ Dispatching priority . . . . . : 4:54:32
+ Facility ID (local) . . . . . : M444 Facility type (local) . . . . . : Term
+ Real transaction ID . . . . . : LN20 Umbrella transaction ID . . . . . : None
+ Program ID - first . . . . . : CSLINK20 Umbrella program . . . . . : None
+ Program ID - current . . . . . : CSLINK20 Attach time . . . . . : 16:50:55
+ Suspend area address . . . . . : 33B0C980
+ DTA address . . . . . : 33B0C980
+ TXN address . . . . . : 16D74300
+ System TCA address . . . . . : 1500A200
+ User TCA address . . . . . : 1500A100
+ EIB address . . . . . : 160000D0
+ Association data . . . . . : 15ECB030
+ TWA address . . . . . : 16000628
+ TMA address . . . . . : 15E4A000
+ OC task area address . . . . . : 15E4C080
+ Application Trace . . . . . : Active
+
+ No remote information available for this task
+
+ Current Storage Usage
+ Storage elements <16M . . . . . : 0 Storage elements >16M . . . . . : 4
+ Storage used <16M . . . . . : 0 Storage used >16M . . . . . : 3K
+ Storage allocated <16M . . . . . : 0 Storage allocated >16M . . . . . : 1028K
+
+ Storage Statistics
+ Getmains <16M . . . . . : 0 Getmains >16M . . . . . : 43
+ HWM <16M . . . . . : 0 HWM >16M . . . . . : 560
=====
MA a 01/002
    
```

# OMEGAMON XE for CICS on z/OS v4.2.0

## Resource Signature Data

```

Session A - [43 x 80]
File Edit View Communication Actions Window Help
ZZTABLE VTM CICSRBG1 V420./C SYS 08/04/09 16:52:42
> PF1 Help PF3 Back PF4 Main Menu PF7 Up PF8 Down PF11 Zoom
=====
>
TABL PPT ID='CSLINK20'
=====
+
+ General Information
+ Program ID . . . . . : CSLINK20 PPTe address . . . . . : 15EB9750
+ Program status . . . . . : Enabled Defined program language: NotDefin
+ Resource security level : n/a Deduced program language: Assemblr
+ Program length . . . . . : 8664 Total use count . . . . . : 1
+ Current use count . . . . . : 1 Total load count . . . . . : 1
+ Current copies . . . . . : 1 Load status . . . . . : Loaded
+ Load point . . . . . : 000C5320 Load location . . . . . : SDSA
+ Entry point . . . . . : 800C5320 Loaded from . . . . . : Library
+ Library . . . . . : OMEGTEST
+ RPL dataset . . . . . : TDCICST.C5420USR.LOAD
+
+ Usage Attributes
+ Command level . . . . . : Yes PCLASS=system . . . . . : No
+ CEDF allowed . . . . . : Yes Install type . . . . . : Catalog
+ Amode . . . . . : 31 Rmode . . . . . : 24
+ Program attribute . . . . . : Reusable Data location . . . . . : Any
+ Exec key . . . . . : USER Concurrency . . . . . : Quasirt
+ API . . . . . : Cicsapi
+
+ Program Statistics
+ Use count . . . . . : 1 Fetch count . . . . . : 1
+ Deletes by compression : 0 Refreshes . . . . . : 0
+ Statistics last reset . : 15:02:36
+
+ Resource Signature
+ CSD Group Name . . . . . : TEST
+ Define Time . . . . . : 11:58:49 Define Date . . . . . : 11/11/08
+ Change Userid . . . . . : CICSRBG1 Change Agent . . . . . : CSDAPI
+ Change Agent Level . . . . . : 8838
+ Change Time . . . . . : 11:58:53 Change Date . . . . . : 11/11/08
+ Install Userid . . . . . : CICSRBG1 Install Agent . . . . . : CSDAPI
+ Install Time . . . . . : 16:11:28 Install Date . . . . . : 08/03/09
=====
MA a 01/002
    
```



# OMEGAMON XE for CICS on z/OS v4.2.0 Application Trace Facility enhancements

```

Session A - [43 x 80]
File Edit View Communication Actions Window Help

ZZTASK VTM CICSRBG1 V420./C SYS 08/04/09 16:53:05 84
+ RMI DLI request time . : 0.000000 RMI MQM request time . : 0.000000
+ RMI CP/SM request time : 0.000001 RMI TCPIP request time : 0.000000
+
+ General Statistics
+ Primary term input msgs : 1 Primary term output msgs: 2
+ Primary term input chars: 58 Prmary term output chars: 78
+ Sec LU61 input msgs . : 0 Sec LU61 output msgs . : 0
+ Sec LU61 input chars . : 0 Sec LU61 output chars . : 0
+ Sec LU62 input msgs . : 0 Sec LU62 output msgs . : 0
+ Sec LU62 input chars . : 0 Sec LU62 output chars . : 0
+ TD gets . . . . . : 0 TD puts . . . . . : 0
+ TD purges . . . . . : 0 TS gets . . . . . : 0
+ TS puts to aux . . . . : 0 TS puts to main . . . . : 0
+ Shared TS wait count . : 0 PC links . . . . . : 1
+ PC loads . . . . . : 0 PC xctls . . . . . : 0
+ JC writes . . . . . : 0 IC starts . . . . . : 0
+ Syncpoint requests . . : 0 BMS requests . . . . . : 2
+ BMS map requests . . . : 0 BMS in requests . . . . : 0
+ BMS out requests . . . : 2 CICS logger writes . . . : 0
+ PC link URMs . . . . . : 0 IC requests . . . . . : 0
+ 3270 bridge tran ID . . : n/a TS total requests . . . . : 0
+ DPL requests . . . . . : 0 IMS/DBCTL requests . . . : 0
+ DB2 requests . . . . . : 0 OO class requests . . . . : 0
+ SSL bytes encrypted . . : 0 SSL bytes decrypted . . . : 0
+ CICS TCBS attached . . . : 0 TCB Mode Switches . . . . : 2
+ WEB Receive requests . . : 0 WEB Characters received . : 0
+ WEB Send requests . . . : 0 WEB Characters sent . . . . : 0
+ WEB total request count : 0 WEB Repository READS . . : 0
+ WEB Repository WRITES . . : 0
+ Signal Event count . . . : 0 Filter Operation count : 0
+ Captured Event count . . : 0
+ Client IP address . . . . : n/a
+ Tran Group ID (char) . . : ..USCAC001.ATERM444Do..v...
+ Tran Group ID (hex) . . . : 11EECCDFF4CECDDFFF9735AF90
+ A142313601B13594444465BESDC0
+ TRGID: X'1A11E4E2C3C1C3D6F0F14BC1E3C5D9D4F4F4F4C496753B5EA5FD9C00'
+
+ Application Trace Active
+
+ File Control Statistics
+ Local Browsers . . . . . : 5 Local Gets . . . . . : 40
+ Local Adds . . . . . : 21 Local Puts . . . . . : 20
+
MA a 01/002
    
```

# OMEGAMON XE for CICS on z/OS v4.2.0

## Application Trace Facility enhancements

```

Session A - [43 x 80]
File Edit View Communication Actions Window Help
=====
ZZTKTR   VTM   CICSRBG1 V420./C SYS 08/04/09 16:54:03 210
+ EXECIN  CSLINK20 22C  DELETE TEST01 0.000000
+ EXECOUT CSLINK20 22C  DELETE TEST01 0.000541
+ EXECIN  CSLINK20 262  WRITE  TEST01 0.000002
+ EXECOUT CSLINK20 262  WRITE  TEST01 0.000451
+ EXECIN  CSLINK20 298  READ   TEST01 0.000000
+ EXECOUT CSLINK20 298  READ   TEST01 0.000006
+ EXECIN  CSLINK20 2CE  REWRITE TEST01 0.000000
+ EXECOUT CSLINK20 2CE  REWRITE TEST01 0.000566
+ EXECIN  CSLINK20 314  STARTBR TEST02 0.000001
+ EXECOUT CSLINK20 314  STARTBR TEST02 0.011433
+ EXECIN  CSLINK20 33A  HANDLE CONDITION 0.000007
+ EXECOUT CSLINK20 33A  HANDLE CONDITION 0.000008
+ EXECIN  CSLINK20 37A  READNEXT TEST02 0.000000
+ EXECOUT CSLINK20 37A  READNEXT TEST02 0.000030
+ EXECIN  CSLINK20 33A  HANDLE CONDITION 0.000000
+ EXECOUT CSLINK20 33A  HANDLE CONDITION 0.000001
+ EXECIN  CSLINK20 37A  READNEXT TEST02 0.000000
+ EXECOUT CSLINK20 37A  READNEXT TEST02 0.000003
+ EXECIN  CSLINK20 33A  HANDLE CONDITION 0.000000
+ EXECOUT CSLINK20 33A  HANDLE CONDITION 0.000001
+ EXECIN  CSLINK20 37A  READNEXT TEST02 0.000000
+ EXECOUT CSLINK20 37A  READNEXT TEST02 0.000002
+ EXECIN  CSLINK20 33A  HANDLE CONDITION 0.000003
+ EXECOUT CSLINK20 33A  HANDLE CONDITION 0.000001
+ EXECIN  CSLINK20 37A  READNEXT TEST02 0.000000
+ EXECOUT CSLINK20 37A  READNEXT TEST02 0.000003
+ EXECIN  CSLINK20 3B2  ENDBR  TEST02 0.000000
+ EXECOUT CSLINK20 3B2  ENDBR  TEST02 0.000011
+ EXECIN  CSLINK20 3E2  SEND TEXT CSLINK.. 0.000001
+ EXECOUT CSLINK20 3E2  SEND TEXT CSLINK.. 0.000415
+ EXECIN  CSLINK20 40C  RECEIVE 0.000001
=====

```

Dynamic ATF (activated when a task exceeds an RLIM threshold) is enabled using a new GLOBAL parameter;

`ENABLE_APPLICATION_TRACE=AUTO|NOAUTO`

# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – Atom Services

The screenshot shows the Tivoli Enterprise Portal interface in a Mozilla Firefox browser. The main content area displays the 'Atom Feed Summary' for a selected system. The summary table is as follows:

System ID	CICS Region Name	Atom Service Name	Atom Service Status	Atom Service Type	Resource Type
SYS_	CICSRBG1	ABC	ENABLED	COLLECTION	FILE

The left-hand 'Navigator' pane shows a tree view of the system hierarchy: Enterprise > z/OS Systems > SYS > CICS > SYS\_CICSRBG1. The selected item is 'Kcp:KCP20091621418411068'.

# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – Atom Services

The screenshot shows the Tivoli Enterprise Portal interface in a Mozilla Firefox browser. The main content area displays the 'Atom Feed Summary' for a selected system. The summary table is as follows:

System ID	CICS Region Name	Atom Service Name	Atom Service Status	Atom Service Type	Resource Type
SYS_	CICSRBG1	ABC	ENABLED	COLLECTION	FILE

Below the summary table, the 'Atom Feed Details' section provides a more granular view of the service configuration:

Atom Service Name	System ID	CICS Region Name	Atom Service Status	Atom Service Type	Resource Type	Resource Name	Reference Count	Reference Disabled	Atom Service Bindfile	Atom Service Configuration
ABC	SYS_	CICSRBG1	ENABLED	COLLECTION	FILE	FILEA	0	0	/cicsts/dth410/samples/web2.0/atom/filea.xsdbind	/cicsts/dth410/samples/web2.0/atom/filea.xml

The left-hand 'Navigator' pane shows a tree view of the system hierarchy, with the selected system path being: Enterprise > z/OS Systems > SYS > CICS > Kcp:KCP20091621418411068.

# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – XML Transforms

The screenshot displays the 'XML Transformer Details' page in a Mozilla Firefox browser. The browser's address bar shows a URL for a report. The page header includes 'Tivoli Enterprise Portal' and 'Welcome SYSADMIN'. The main content area is divided into three sections:

- Navigator:** A tree view on the left showing various analysis categories like 'Temporary Storage Queues', 'Transaction Analysis', and 'UOW Analysis'. The selected item is 'Kcp3KCP20091621418411174'.
- XML Transformer Summary:** A table with the following data:
 

System ID	CICS Region Name	XML Transforms Name	XML Transforms Status	Bundle Name	XML Transforms use count	Validation Status
SYS_	CICSRBG1	ABCC4965D0BD67C6D0F	Enabled		0	NoValidation
- XML Transformer Details:** A detailed table for the selected transform:
 

XML Transforms Name	System ID	CICS Region Name	XML Transforms Status	Bundle Name	XML Transforms use count	Mapping Level	Minimum runtime level	Validation Status	Coded Character Set ID	XML Schema	XML Bind
ABCC4965D0BD67C6D0F	SYS_	CICSRBG1	Enabled		0	3.0	3.0	NoValidation	00001047	/cicsts/dfh410/samples/web2.0/atom/filea.xsd	/cicsts/dfh410/samples/web2.0/atom/filea.xsd

# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – Event Processing

The screenshot displays the 'Event Processing Summary' web interface. The browser window title is 'Event Processing Summary - Mozilla Firefox'. The address bar shows a URL: `http://localhost:1920/cnp/kdh/lib/cnp.html?~1021A=REPORT&-5001=MOPHYSICAL&-12006=SYSADMIN&-10105=121301fc9bb&-2400=SYS_CICSRBG1&-10114=AB8A1E7D66`. The page header includes 'Tivoli Enterprise Portal' and 'Welcome SYSADMIN'. The main content area is divided into a 'Navigator' on the left and two data tables on the right.

**Event Processing Status**

System ID	CICS Region Name	Event Processing Status
SYS_	CICSRBG1	STARTED

**Event Processing Summary**

System ID	CICS Region Name	Event Binding	Status
SYS_	CICSRBG1	LatestTestBinding	ENABLED

# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – Event Processing

The screenshot displays the Tivoli Enterprise Portal interface. The top navigation bar includes 'Tivoli Enterprise Portal' and 'Welcome SYSADMIN'. The main content area is divided into three sections:

- Navigator:** A tree view on the left showing various analysis categories. The 'Kcp:KCP20091621418411078' item is selected.
- Event Processing Summary:** A table showing the following data:
 

System ID	CICS Region Name	Event Binding	Status
SYS_	CICSRBG1	LatestTestBinding	ENABLED
- Event Processing Details:** A table showing event processing information:
 

Event Binding	Capture Specification	Capture Point Name	Capture Point Type	Event Name	Captured events
LatestTestBinding	Latest_Capture_Specification	WRITEQ_TS	PostCommand	This_is_the_latest_test	40

# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – Event Processing

```

Session A - [43 x 80]
File Edit View Communication Actions Window Help

ZZONDV VTM CICSRBG1 V420./C SYS 08/04/09 17:05:58 54
General Statistics
+ Primary term input msgs : 1 Primary term output msgs: 0
+ Primary term input chars: 4 Primary term output chars: 0
+ Sec LU61 input msgs . . . 0 Sec LU61 output msgs . . . 0
+ Sec LU61 input chars . . . 0 Sec LU61 output chars . . . 0
+ Sec LU62 input msgs . . . 0 Sec LU62 output msgs . . . 0
+ Sec LU62 input chars . . . 0 Sec LU62 output chars . . . 0
+ TD gets . . . . . 0 TD puts . . . . . 2
+ TD purges . . . . . 0 TS gets . . . . . 0
+ TS puts to aux . . . . . 20 TS puts to main . . . . . 20
+ Shared TS wait count . . . 0 PC links . . . . . 1
+ PC loads . . . . . 0 PC xctls . . . . . 0
+ JC writes . . . . . 0 IC starts . . . . . 0
+ Syncpoint requests . . . . 3 BMS requests . . . . . 0
+ BMS map requests . . . . . 0 BMS in requests . . . . . 0
+ BMS out requests . . . . . 0 CICS logger writes . . . . 0
+ PC link URMs . . . . . 0 IC requests . . . . . 0
+ 3270 bridge tran ID . . . . n/a TS total requests . . . . . 42
+ DPL requests . . . . . 0 IMS/DBCTL requests . . . . 0
+ DB2 requests . . . . . 0 OO class requests . . . . . 0
+ SSL bytes encrypted . . . . 0 SSL bytes decrypted . . . . 0
+ CICS TCBS attached . . . . 0 TCB Mode Switches . . . . 2
+ WEB Receive requests . . . . 0 WEB Characters received . . 0
+ WEB Send requests . . . . . 0 WEB Characters sent . . . . 0
+ WEB total request count . . 0 WEB Repository READs . . . 0
+ WEB Repository WRITES . . . 0 Local container bytes . . . 0
+ Remote IC channel starts: . 0 Remote IC channel data . . . 0
+ Total channel requests . . 80 Browse channel requests . . 0
+ Get container requests . . . 0 Put container requests . . . 80
+ Move container requests . . . 0 Total bytes for GETs . . . . 0
+ Total bytes for PUTs . . . . 9720 Filter Operation count : 40
+ Signal Event count . . . . . 0
+ Captured Event count . . . . 40
+ Client IP address . . . . . n/a
+ Tran Group ID (char) . . . . ..USCAC001.ATERM444Do...W..
+ Tran Group ID (hex) . . . . .11EECCDFF4CECDFFF9761CE20
+ .A142313601B135944444684AF600
+ TRGID: X'1A11E4E2C3C1C3D6F0F14BC1E3C5D9D4F4F4F4C49678641ACFE62000'
+
+ Storage Statistics
+ Getmains <16M . . . . . 2 Getmains >16M . . . . . 0
+ HWM <16M . . . . . 464 HWM >16M . . . . . 0
    
```



# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – JVM Server

The screenshot displays the OMEGAMON XE for CICS JVM Analysis interface. The Navigator on the left shows a tree view of analysis tools, with 'JVM Analysis' selected. The main area contains several data tables:

- Java Virtual Machine Analysis:** A table with columns: System ID, CICS Region Name, Token, Age, Allocated Age, Task, Profile, Phasingout Status, Execution Key, Classcache Status, Reuse Status.
- JVM Server Analysis:** A table with columns: System ID, CICS Region Name, JVM Server Name, JVM Server Status, JVM Profile, Runtime Options, Thread Limit, Current Threads, Maximum Threads in use, Thread waits, Current Thread waits, Maximum Thread Waits.
 

System ID	CICS Region Name	JVM Server Name	JVM Server Status	JVM Profile	Runtime Options	Thread Limit	Current Threads	Maximum Threads in use	Thread waits	Current Thread waits	Maximum Thread Waits
SYS_	CICSRBG1	JVMSERV1	DISABLED	DFHJVMAX	DFHAXRO	20	0	0	0	0	0
SYS_	CICSRBG1	JVMSER02	DISABLED	DFJVMAX	DFHAXRO	200	0	0	0	0	0
- JVMProfile Analysis:** A table with columns: System ID, CICS Region Name, JVMProfile, Classcache Status, Reuse Status, HFS File Name.
- JVM Classcache Details:** A table with columns: System ID, CICS Region Name, Status, Cache Size, Cache Free, Start Time and Date, Total JVMs, Reuse Status, Autostart, Profile, Number of Old Caches, Phasing Out JVMs.
 

System ID	CICS Region Name	Status	Cache Size	Cache Free	Start Time and Date	Total JVMs	Reuse Status	Autostart	Profile	Number of Old Caches	Phasing Out JVMs
SYS_	CICSRBG1	Stopped	24576	0		0	Unknown	Enabled		0	0
- JVMPPOOL Statistics:** A table with columns: System ID, CICS Region Name, JVM Profile, Classcache Status, Reuse Status, HFS File Name.

# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – JVM Server DWL to Thread TCBs

**Dispatcher Summary for JVM Resources - Mozilla Firefox**

URL: http://localhost:1920///cnp/kdh/lib/cnp.html?~1021A=REPORT&~5001=MOPHYSICAL&~12006=SYSADMIN&~10105=121743845658-2400=pp@SYS\_CICSRBG1&~10114=88AEBD03E9

IBM Enterprise Portal | Welcome SYSADMIN | Log out

---

**Dispatcher Summary**

System ID	CICS Region Name	Start Time	CPU Time since reset	SRB Time since reset	Current ICV Time	Current ICVR Time	Current ICVTSD Time	Current PRTYAGING Time	MRO (QR) Batching Value	Concurrent Subtasks	Current Num of Tasks
SYS_	CICSRBG1	08/04/09 15:02:36	00:00:16.653	00:00:03.897	1000	20000	100	500	1	0	

---

**Dispatcher TCB Pools**

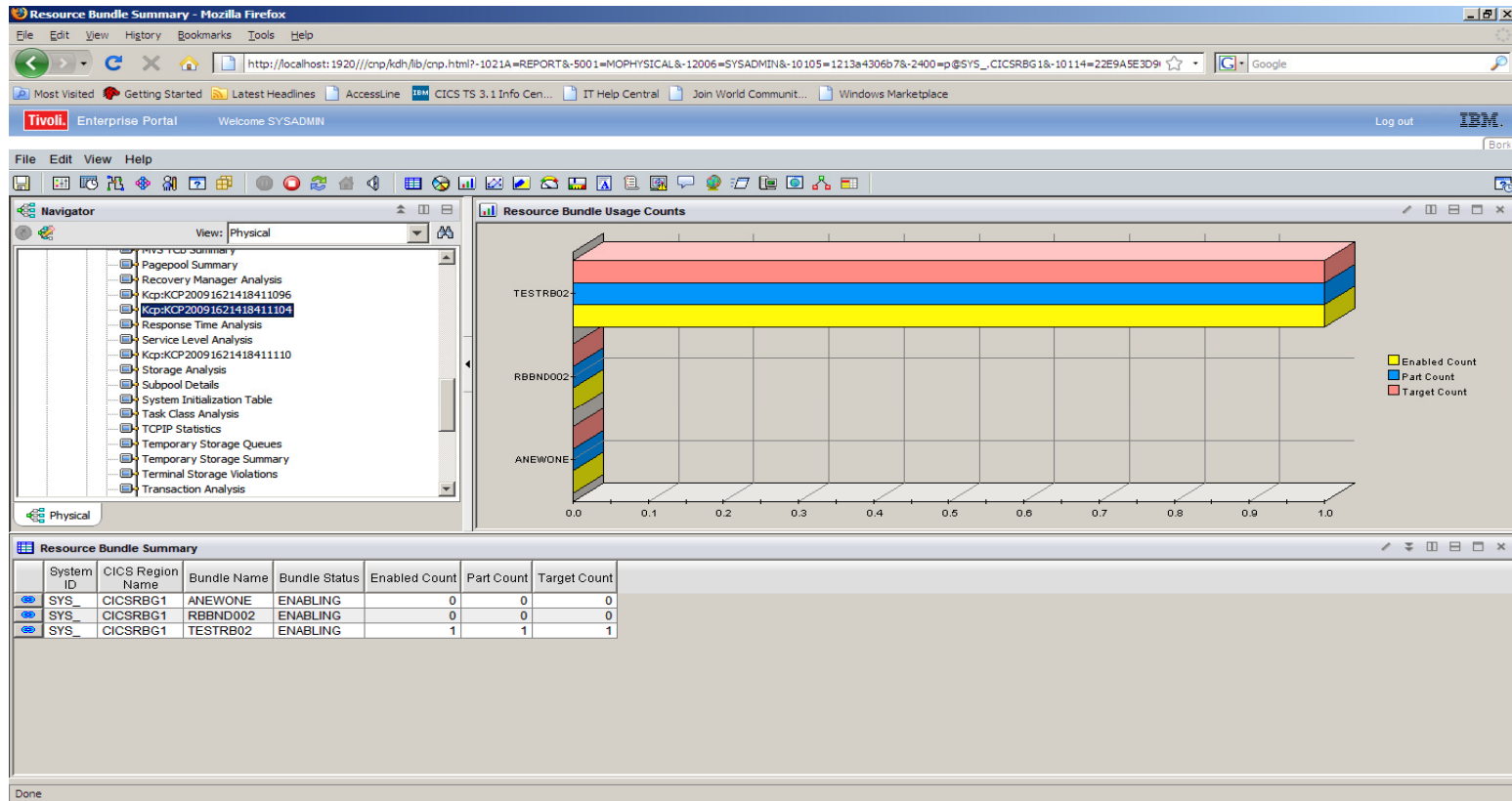
System ID	CICS Region Name	TCB Pool Name	Maximum TCBs	Current TCBs attached	Peak TCBs attached	Current TCBs in use	Peak TCBs in use	Times at limit	Total time at limit	Current waiting time	Time waiting for MVS storage	Total number of waits	TCB requests delayed for MVS storage	Current tasks waiting	Peak tasks waiting	TCB mismatch waits	TCB mismatch time
SYS_	CICSRBG1	Open	200	10	10	2	9	0	00:00:00	00:00:00	00:00:00	0	0	0	0	0	00:00:00
SYS_	CICSRBG1	JVM	20	0	0	0	0	0	00:00:00	00:00:00	00:00:00	0	0	0	0	0	00:00:00
SYS_	CICSRBG1	XPLink	5	0	0	0	0	0	00:00:00	00:00:00	00:00:00	0	0	0	0	0	00:00:00
SYS_	CICSRBG1	SSL	8	0	0	0	0	0	00:00:00	00:00:00	00:00:00	0	0	0	0	0	00:00:00
SYS_	CICSRBG1	Threaded	220	0	0	0	0	0	00:00:00	00:00:00	00:00:00	0	0	0	0	0	00:00:00

---

**Dispatcher TCB Modes for TP and T8 TCBs**

System ID	CICS Region Name	TCB Mode Name	Open Status	TCB Mode Pool	TCB Attaches	TCB Attach Failures	Current TCBs Attached	Peak TCBs Attached	Current TCBs in use	Peak TCBs in use	TCBs Allocated	TCB detaches Unclean	TCB detaches Stolen	TCB detaches Excess	TCB detaches Other	Number of TCB steals	Number of TCB mismatches
SYS_	CICSRBG1	TP	Not Open	n/a	2	0	0	2	0	2	n/a	n/a	n/a	n/a	2	n/a	n/a
SYS_	CICSRBG1	T8	Unknown	n/a	0	0	0	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a

# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – Application Bundles



# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – Application Bundles

The screenshot displays the Tivoli Enterprise Portal interface in Mozilla Firefox. The main content area is divided into three sections:

- Resource Bundle Summary:** A table listing bundles for system SYS\_ in CICS Region CICSRBG1.
- Resource Bundle Details:** A table providing specific details for the selected bundle TESTRB02.
- Resource Bundle Parts:** A table listing the components that make up the bundle TESTRB02.

System ID	CICS Region Name	Bundle Name	Bundle Status	Enabled Count	Part Count	Target Count
SYS_	CICSRBG1	ANEWONE	ENABLING	0	0	0
SYS_	CICSRBG1	RBBND002	ENABLING	0	0	0
SYS_	CICSRBG1	TESTRB02	ENABLING	1	1	1

Bundle Name	System ID	CICS Region Name	Bundle Status	Base Scope	Bundle Directory
TESTRB02	SYS_	CICSRBG1	ENABLING		/u/rburf/cics2/LatestTestProject/

Bundle Name	System ID	CICS Region Name	Bundle Part Name	Bundle Part Status	Bundle Part Class	Bundle Part Type	Bundle Part Metadata File
TESTRB02	SYS_	CICSRBG1	LatestTestBinding	ENABLED	DEFINITION	http://www.ibm.com/xmlns/prod/cics/bundle/EVENTBINDING	/LatestTestBinding.evbind

# OMEGAMON XE for CICS on z/OS v4.2.0 CICS/TS v4.1 exploitation – Service Task Analysis

The screenshot shows the 'Service Task Details' page in Mozilla Firefox. The browser address bar shows a local URL. The page title is 'Service Task Details - Mozilla Firefox'. The main content area is divided into three sections:

- Navigator:** A tree view on the left showing various analysis categories. The 'Service Level Analysis' category is expanded, and 'Kcp:KCP20091621418411110' is selected.
- Message Log:** A table with the following data:
 

Status	ID	Display Item	Origin Node	Global Timestamp	Local Timestamp	Node	Type
Open	Test_File	CICSRBG1	SYS_CICSRBG1	08/04/09 13:03:31	08/04/09 13:03:31	HUB_JBM-CD0AED2E066	Sampled
Open	MS_Offline		SYS_CICSXX64	08/04/09 10:55:31	08/04/09 10:55:31	HUB_JBM-CD0AED2E066	Sampled
Open	MS_Offline		SYS_CICSRBG2	08/04/09 10:55:31	08/04/09 10:55:31	HUB_JBM-CD0AED2E066	Sampled
Open	MS_Offline		SYS_CICSR27L	08/04/09 10:55:31	08/04/09 10:55:31	HUB_JBM-CD0AED2E066	Sampled
Open	MS_Offline		SYS_CICD41A	08/04/09 10:55:31	08/04/09 10:55:31	HUB_JBM-CD0AED2E066	Sampled
Open	MS_Offline		RKCPXM07:SYSA:CPIRA	08/04/09 10:55:31	08/04/09 10:55:31	HUB_JBM-CD0AED2E066	Sampled
Open	Test_File	CICSR07L	SYS_CICSR07L	08/04/09 10:48:31	08/04/09 10:48:31	HUB_JBM-CD0AED2E066	Sampled
- OMEGAMON Service Task Diagnostics:** A table with the following data:
 

System ID	CICS Region Name	OMEGAMON Initialisation Status	OMEGAMON Global Data Area	OMEGAMON XMIT DD name	Common Interface STC name	Service Task Execution Result	WLM Blocks	WLM Transaction Data Current percent	WLM Transaction Data Peak percent	WLM Accumulation Data Current percent	WLM Accumulation Data Peak percent
SYS_	CICSRBG1	Complete	KC2GLBG1	RKC2XM07	CPOC040L	Request was completed successfully	236	0.0	27.2	0.0	

As well as data used by the DWL to 3270 code, such as TN3270 port number and host name, this report has been enhanced with data that is helpful if you wish to tune the Service Level Analysis feature.

## OMEGAMON XE for CICS on z/OS v4.2.0 Service Level Analysis Batch Interface

- A batch interface designed to allow you to easily manage SLA definitions.
  - Definitions can be extracted from SLA
  - Modified
  - Input back to SLA

**Thank You for joining us today**

# **Question and Answer Session**