

Monitoring CICS® TS Version 5 Application Performance

*Billy Bigelow – BMC Software, Inc.
March 3, 2015
Session 16559*



#SHAREorg



SHARE is an independent volunteer-run information technology association that provides **education, professional networking and industry influence.**



Agenda

- What is an Application?
- CICS TS Version 5 Application ‘Review’
- Application Monitoring Challenges
 - Monitoring Resource Usage
 - Monitoring Performance Problems

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

What is an Application?

- ‘Programmatic’ resources
 - Programs (ASM, Java, COBOL, etc.)
 - Displays (BMS maps, document templates)
 - Libraries, transactions, URIMAPs, etc.
- ‘Data’ resources
 - Files
 - Queues
 - Data bases
 - etc.
- ‘Communication’ resources
 - Connections, sessions, TCPIP Services, IPCONNs, etc.

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

CICS TS Version 5 Application Review

- What is the CICS TS Version 5 Application?
 - A collection of related CICS resources
 - Those directly associated with the Application – the code
 - Those required by the Application – the dependencies
 - Some resources may be ‘versioned’
 - Changes in the Application provide a new version
 - Managed as a single entity (by CPSM)
 - Actions affect Application as a whole
 - Install, Enable, Disable, Discard
 - Deployed (installed) on a pre-defined set of CICS regions (Platform)

CICS TS Version 5 Application Review

- What are the pieces that make up a CICS Application?
 - Three basic parts
 - The Platform – where is Application is to execute
 - The Bundles – groups of resources needed to execute
 - Created resources (those built by the application)
 - Existing resources (those needed to pre-defined)
 - The Policy – how is the Application supposed to behave

CICS TS Version 5 Application Review

- Defined resources vs. Existing resources
 - A defined resource is one that is to be created as part of the Application
 - A existing resource is one that is provided by the CICS regions (pre-defined)
 - Both are needed for the Application to execute

CICS TS Version 5 Application Review

- Defined Resources
 - The CICS resources dynamically created when the Application is installed
 - They include the versioned resources
 - PROGRAM and LIBRARY definitions
 - Other resources that can be defined using bundles
 - Transactions, URIMAPs, Files, JVM Servers, OSGi
 - TCPIP Services, Pipelines, WebServices, Events
- Explorer built XML stream for these resources contains the RDO attributes used to create the resource when installed

CICS TS Version 5 Application Review

- Existing Resources
 - Those CICS resources that must be available to the Platform (pre-defined)
 - These are linked into the Bundle and may be:
 - Required – if they are not present on the Platform, the Application fails
 - Optional – may emit message if resource is unavailable
 - Types of dependent resources:
 - ATOMSERVICE, DB2CONN, DB2ENTRY, DB2TRAN, DOCTEMPLATE, ENQMODEL, EPADAPTER, EPADAPTERSET, EVENTBINDING, FILE, JOURNALMODEL, JVMSERVER, LIBRARY, MAPSET, MQCONN, PARTITIONSET, PIPELINE, PROCESSTYPE, PROGRAM, SCACOMPOSITE, TCPIPService, TDQUEUE, TRANSACTION, TSQMODEL, URIMAP, WEBSERVICE, XMLTRANSFORM
 - (Note that this includes resources that may also be created)

CICS TS Version 5 Application Review

- Policy – How should an application behave
 - CICS provides Policy to automatically perform an action against an application task based upon performance criteria
 - Actions are:
 - Issue a message
 - Emit an Event
 - ABEND the task

CICS TS Version 5 Application Review

- Application Policy criteria
 - There are 35 ‘choices’ across . . .
 - Time (CPU and elapsed)
 - Storage (size/requests for task and shared areas)
 - TD requests
 - TS (size/requests for aux and main)
 - Database (SQL) and file requests (browse, read, write, etc.)
 - Program LINKs
 - Transaction STARTs

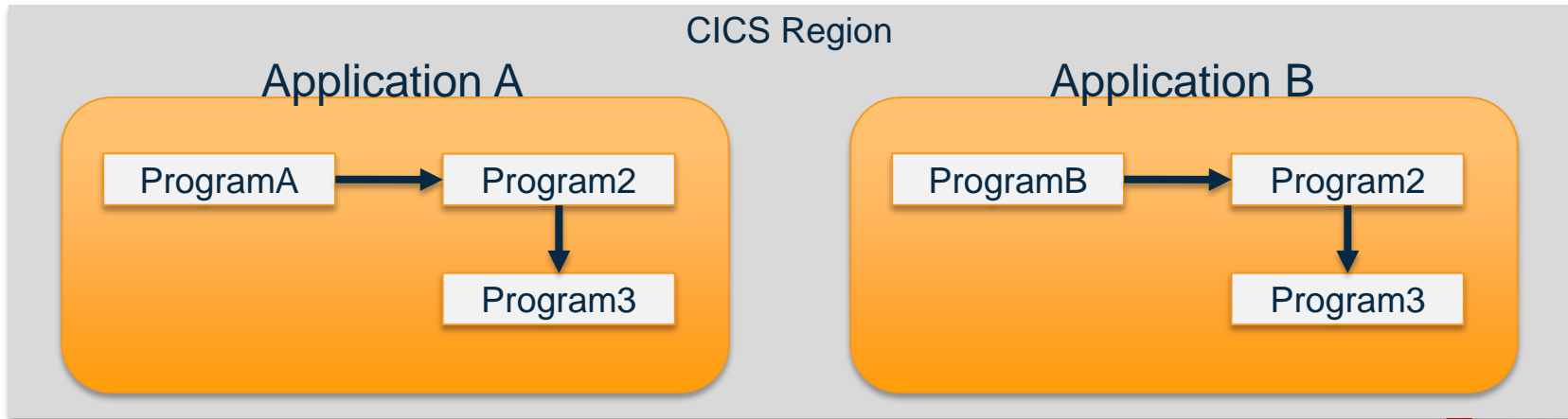
Application Monitoring Challenges

- CICS Applications contain “Private” resources
 - Program (and library) usage may not be available online
- Entry to CICS Applications not through TRAN IDs
 - Programs
 - LINK/XCTL from other CICS programs
 - EXEC CICS INVOKE APPLICATION() OPERATION()
 - URIMAPs (WEBSERVICEs)

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Application Resource Monitoring Challenges

- Private resources belonging to an application
 - Multiple CICS Applications forced a need for greater ‘privacy’
 - Consider the following pair of applications . . .



Application Resource Monitoring Challenges



- Private resources belonging to an application
 - LIBRARIES associated with CICS Applications are unavailable outside the application
 - Programs that are not application entry points cannot be the target of LINK/XCTL from outside the application
 - These are also unavailable from the CICS Explorer, CEMT INQUIRE or EXEC CICS INQUIRE
 - Only available in statistics report (DFHSTUP)

Complete your session evaluations online at www.SHARE.org/Seattle-Eval



Application Resource Monitoring

- Statistics Data for Private Programs and Libraries
 - Contains same data as Public resources . . . plus . . .
 - Platform Name
 - Application Name
 - Application Major, Minor and Micro Versions
 - Operation (entry points only)

Application Resource Monitoring

- DFHSTUP Report (TYPE=PROGRAM)

```

Platform      : Platform_DEV69PF_CTS52
Application   : application.psbappl
Major version:      1
Minor version:      0
Micro version:      0
Program      Times      Fetch      Average Lbry Newcopy Program      Times Current LIBRARY
Name         Used        Count Fetch Time Ofst   Count   Size Removed Location Name      LIBRARY Data Set Name
-----
PSBP010A      0          0 0:00.00000  0      0      0      0 None
Operation: bcvm.psbappl.enqueue
PSBP010B     5334          1 0:00.00112  1      0     1120      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
Operation: bcvm.psbappl.ts.process
PSBP010C     5208          1 0:00.01320  1      0      992      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
Operation: bcvm.psbappl.file.process
PSBP010D    206881          1 0:00.00243  1      0      888      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
Operation: bcvm.psbappl.null
PSBP010E     2021          1 0:00.00153  1      0      992      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
Operation: bcvm.psbappl.null.linker
PSBP010F     4106          1 0:00.00174  1      0     1152      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
Operation: bcvm.psbappl.worker
PSBP0100        1          1 0:00.00528  1      0     5536      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
Operation: bcvm.psbappl.main
PSBP0101        1          1 0:00.00145  1      0     2648      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
Operation: bcvm.psbappl.router
PSBP0102        0          0 0:00.00000  0      0        0      0 None
Operation: bcvm.psbappl.browse
PSBP0103     9440          1 0:00.00179  1      0     1024      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
PSBP0104     9440          1 0:00.00134  1      0     1296      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
PSBP0105     9440          1 0:00.00344  1      0     1256      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
PSBP0106     9440          1 0:00.00083  1      0     1304      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
PSBP0107     9314          1 0:00.00176  1      0     1160      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
PSBP0108     9314          1 0:00.00128  1      0      776      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD
PSBP0109     9314          1 0:00.00132  1      0      960      0 ERDSA   PSBAPPLD BCVM.PSBAPPL.LOAD

```

Complete your session

Application Resource Monitoring

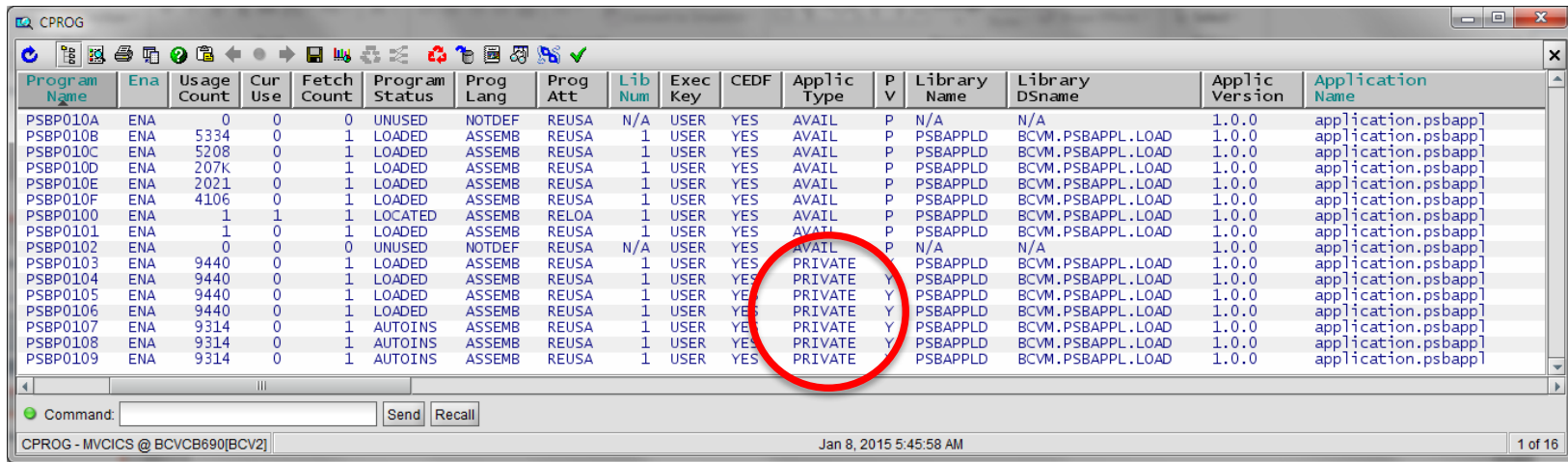
- Private Program Statistics
 - CICS Explorer

Region	Name	Status	Use Count	Concurrent Use Count	Language	Share Status	CEDF Status	NEWCOPY Status
BCVDB690	PSBP010A	✓ ENABLED	0	0	NOTDEFINED	PRIVATE	CEDF	NOTREQUIRED
BCVDB690	PSBP010B	✓ ENABLED	5334	0	ASSEMBLER	PRIVATE	CEDF	NOTREQUIRED
BCVDB690	PSBP010C	✓ ENABLED	5208	0	ASSEMBLER	PRIVATE	CEDF	NOTREQUIRED
BCVDB690	PSBP010D	✓ ENABLED	206881	0	ASSEMBLER	PRIVATE	CEDF	NOTREQUIRED
BCVDB690	PSBP010E	✓ ENABLED	2021	0	ASSEMBLER	PRIVATE	CEDF	NOTREQUIRED
BCVDB690	PSBP010F	✓ ENABLED	4106	0	ASSEMBLER	PRIVATE	CEDF	NOTREQUIRED
BCVDB690	PSBP0100	✓ ENABLED	1	1	ASSEMBLER	PRIVATE	CEDF	NOTREQUIRED
BCVDB690	PSBP0101	✓ ENABLED	1	0	ASSEMBLER	PRIVATE	CEDF	NOTREQUIRED
BCVDB690	PSBP0102	✓ ENABLED	0	0	NOTDEFINED	PRIVATE	CEDF	NOTREQUIRED

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Application Resource Monitoring

- Private Program Statistics
 - MVCICS Explorer (CPROG View)



Program Name	Ena	Usage Count	Cur Use	Fetch Count	Program Status	Prog Lang	Prog Att	Lib Num	Exec Key	CEDF	Applic Type	P	Library Name	Library DSname	Applic Version	Application Name
PSBP010A	ENA	0	0	0	UNUSED	NOTDEF	REUSA	N/A	USER	YES	AVAIL	P	N/A	N/A	1.0.0	application.psbappl
PSBP010B	ENA	5334	0	1	LOADED	ASSEMB	REUSA	1	USER	YES	AVAIL	P	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010C	ENA	5208	0	1	LOADED	ASSEMB	REUSA	1	USER	YES	AVAIL	P	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010D	ENA	207K	0	1	LOADED	ASSEMB	REUSA	1	USER	YES	AVAIL	P	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010E	ENA	2021	0	1	LOADED	ASSEMB	REUSA	1	USER	YES	AVAIL	P	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010F	ENA	4106	0	1	LOADED	ASSEMB	REUSA	1	USER	YES	AVAIL	P	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010G	ENA	1	1	1	LOCATED	ASSEMB	RELOA	1	USER	YES	AVAIL	P	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010H	ENA	1	0	1	LOADED	ASSEMB	REUSA	1	USER	YES	AVAIL	P	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010I	ENA	0	0	0	UNUSED	NOTDEF	REUSA	N/A	USER	YES	AVAIL	P	N/A	N/A	1.0.0	application.psbappl
PSBP010J	ENA	9440	0	1	LOADED	ASSEMB	REUSA	1	USER	YES	PRIVATE	Y	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010K	ENA	9440	0	1	LOADED	ASSEMB	REUSA	1	USER	YES	PRIVATE	Y	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010L	ENA	9440	0	1	LOADED	ASSEMB	REUSA	1	USER	YES	PRIVATE	Y	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010M	ENA	9440	0	1	LOADED	ASSEMB	REUSA	1	USER	YES	PRIVATE	Y	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010N	ENA	9314	0	1	AUTOINS	ASSEMB	REUSA	1	USER	YES	PRIVATE	Y	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010O	ENA	9314	0	1	AUTOINS	ASSEMB	REUSA	1	USER	YES	PRIVATE	Y	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl
PSBP010P	ENA	9314	0	1	AUTOINS	ASSEMB	REUSA	1	USER	YES	PRIVATE	Y	PSBAPPLD	BCVM.PSBAPPL.LOAD	1.0.0	application.psbappl

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Application Resource Monitoring

- DFHSTUP Report (TYPE=LIBRARY)

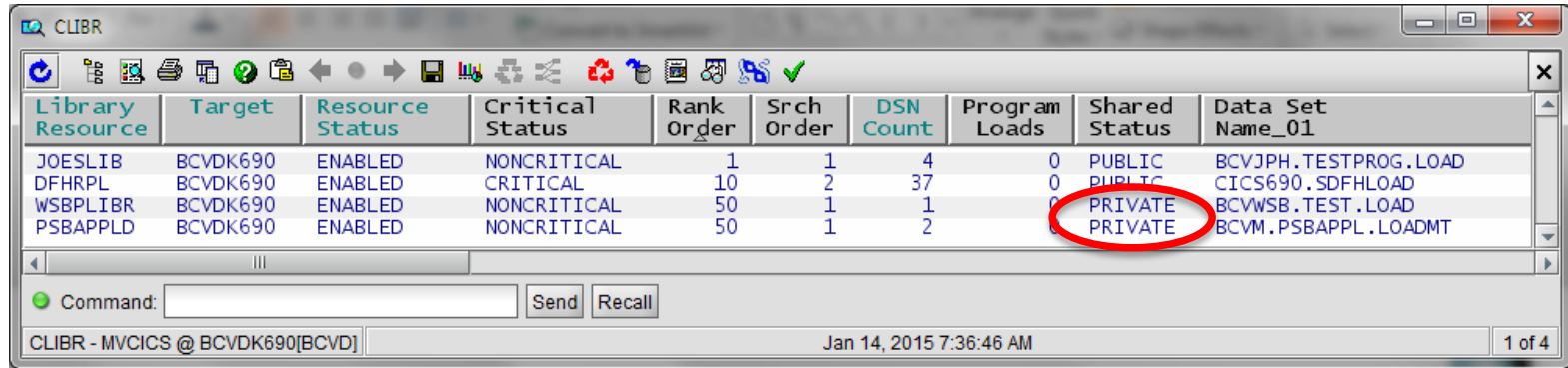
```
Platform      : Platform_DEV69PF_CTS52
Application   : application.psbappl
Major version:      1
Minor version:      0
Micro version:      0
```

LIBRARY Name	Search Position	Ranking	Critical	Enable Status	Program Loads	Number Dsnames	Concat-enation	LIBRARY Dsname
PSBAPPLD	1	50	n/a	Enabled	1	2	000 001	BCVM.PSBAPPL.LOADMT BCVM.PSBAPPL.LOAD

- Private Library Data is Unavailable from CICS Explorer

Application Resource Monitoring

- MVCICS Explorer (CLIBR view)



Library Resource	Target	Resource Status	Critical Status	Rank Order	Srch Order	DSN Count	Program Loads	Shared Status	Data Set Name_01
JOESLIB	BCVDK690	ENABLED	NONCRITICAL	1	1	4	0	PUBLIC	BCVJPH.TESTPROG.LOAD
DFHRPL	BCVDK690	ENABLED	CRITICAL	10	2	37	0	PUBLIC	CICS690.SDFHLOAD
WSBPLIBR	BCVDK690	ENABLED	NONCRITICAL	50	1	1	0	PRIVATE	BCWSB.TEST.LOAD
PSBAPPLD	BCVDK690	ENABLED	NONCRITICAL	50	1	2	0	PRIVATE	BCVM.PSBAPPL.LOADMT

Command: Send Recall

CLIBR - MVCICS @ BCVDK690[BCVD] Jan 14, 2015 7:36:46 AM 1 of 4

– Full concatenation available in detail form

Application Performance Challenges

- Entry points are not traditional TRAN IDs
 - Many current monitoring techniques are based on the transaction ID
 - Vendor monitor products
 - Home grown monitors and reports
 - This can include CPU charge-back systems

Application Performance Monitoring Data

- CICS Provides data in SMF110 to identify applications

451 (TYPE-C, 'ACAPPLNM', 64 BYTES)

The 64-character name of the application in the application context data.

452 (TYPE-C, 'ACPLATNM', 64 BYTES)

The 64-character name of the platform in the application context data.

453 (TYPE-A, 'ACMAJVER', 4 BYTES)

The major version of the application in the application context data, expressed as a 4-byte binary value.

454 (TYPE-A, 'ACMINVER', 4 BYTES)

The minor version of the application in the application context data, expressed as a 4-byte binary value.

455 (TYPE-A, 'ACMICVER', 4 BYTES)

The micro version of the application in the application context data, expressed as a 4-byte binary value.

456 (TYPE-C, 'ACOPERNM', 64 BYTES)

The 64-character name of the operation in the application context data.

Application Performance Monitoring Data

- Sample data from DFHMOLS

```

-----FIELD-NAME-----UNINTERPRETED-----INTERPRETED-----
DFHTASK  C001    TRAN          D7E2C2C4          PSBD
...
DFHTASK  C004    TTYPE        E2400000          S
DFHCICS  T005    START        CE58382200C87C5C 2015/01/12 11:58:27.142791
DFHCICS  T006    STOP         CE58382202CBAA58 2015/01/12 11:58:27.151034
DFHTASK  P031    TRANNUM      0012734C          12734
DFHTASK  A109    TRANPRI      00000001          1
DFHTASK  C166    TCLSNAME     D7E2C2E6 D9D2D3C4 PSBWRKLD
...
DFHPROG  C071    PGMNAME      D7E2C2D7 F0F1F0C4    PSBP010D
...
DFHTASK  C451    ACAPPLNM     81979793 898381A3 8996954B 97A28281 97979300 application.psbappl
DFHTASK  C452    ACPLATNM     D79381A3 86969994 6DC4C5E5 F6F9D7C6 6DC3E3E2 Platform_DEV69PF_CTS
          +X0014  F5F20000 00000000 00000000 00000000 00000000 52
DFHTASK  A453    ACMAJVER     00000001          1
...
DFHTASK  C456    ACOPERNM     8283A594 4B97A282 81979793 4B95A493 93000000 bcvm.psbappl.null
...

```

Application Performance Monitoring Data

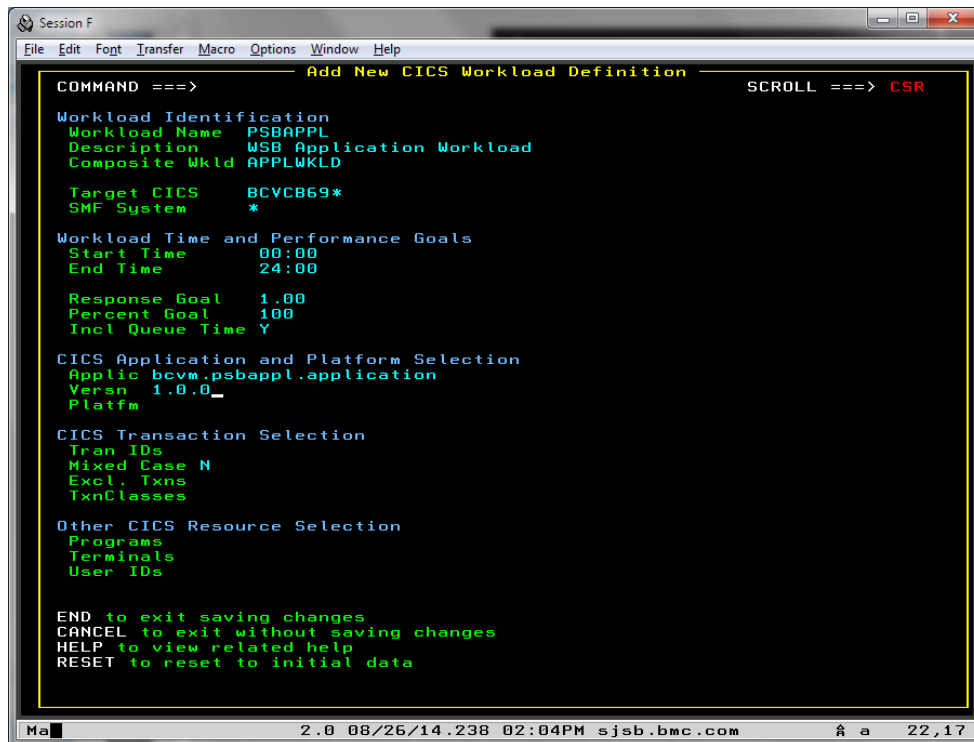
- Batch reporting to provide key performance data
 - Total CPU for the application in a period (chargeback)
 - Average times for key application performance fields
 - CPU/Response/Suspend time
 - File control calls / Storage HWM

Summary of Some Key Application Performance Fields						
APPLCATN NAME	TOTAL	CPU REAL TIME	RESPONSE TIME	SUSPEND TIME	FILE COUNT	STORAGE HI_WATER_MARK
application.psbappl	21377	24.669227 0.001154	3834.323193 0.179367	1941.077996 0.090802	974471 46	53001040 2479

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Online Application Performance Data

- Monitors must change too
 - MVCICS Workloads
 - New selection criteria
 - Application Name
 - Version
 - Platform
 - Provides performance indicators (over time)
 - Used in to determine SLAs and resolve problems



```

Session F
File Edit Font Transfer Macro Options Window Help
COMMAND ==> Add New CICS Workload Definition SCROLL ==> CSR

Workload Identification
Workload Name PSBAPPL
Description WSB Application Workload
Composite Wkld APPLWKLD

Target CICS BCVCB69*
SMF System *

Workload Time and Performance Goals
Start Time 00:00
End Time 24:00

Response Goal 1.00
Percent Goal 100
Incl Queue Time Y

CICS Application and Platform Selection
Applic bcvm.psbappl.application
Versn 1.0.0_
Platfm

CICS Transaction Selection
Tran IDs
Mixed Case N
Excl. Txns
TxnClasses

Other CICS Resource Selection
Programs
Terminals
User IDs

END to exit saving changes
CANCEL to exit without saving changes
HELP to view related help
RESET to reset to initial data

Ma 2.0 08/26/14.238 02:04PM sjsb.bmc.com ^ a 22,17
  
```

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Online Application Performance Data



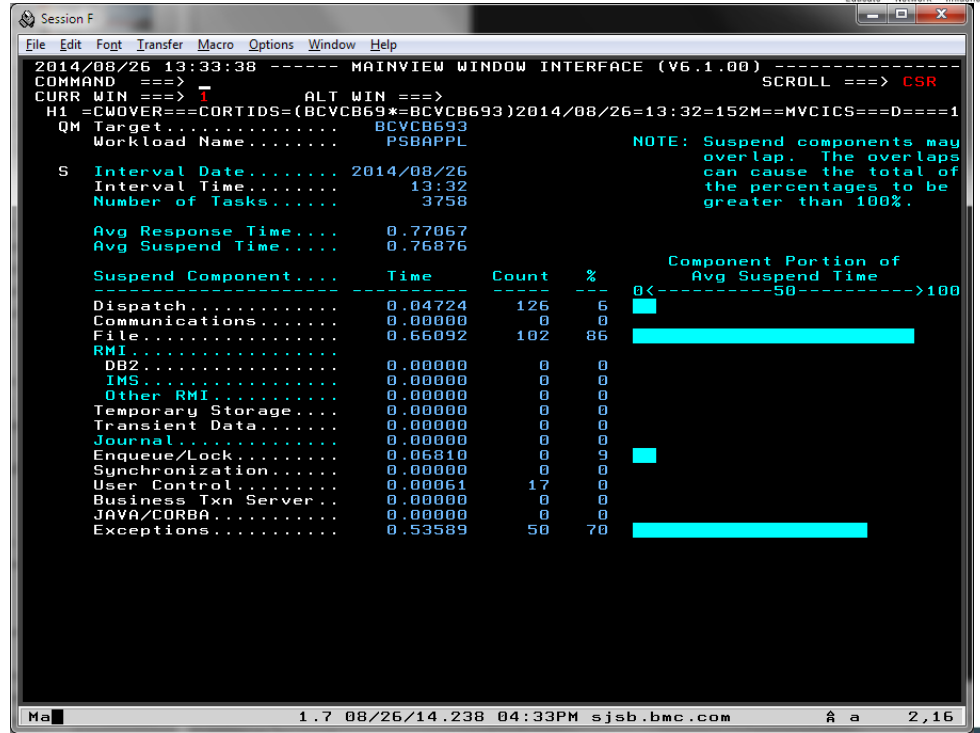
Target	Interval	Intvl	Workload	Num of	Avg	%	Avg	%	%	%	%	%	%	%	%	%	%	%	%	%
Date		Time		Tasks	Resp	Cpu	Sus	Avg	Dsq	Com	FC	DB2	IMS	ORF	TD	TS	Exc	JC	Eng	S
BCVCB690	2014/08/26	13:32	PSBAPPL	3700	0.224	1	99	0.222	5	92	92	46	46	5	7					
BCVCB691	2014/08/26	13:32	PSBAPPL	2582	0.222	1	99	0.221	5	92	92	62	62	7						
BCVCB692	2014/08/26	13:32	PSBAPPL	3754	0.437	100	99	0.435	3	80	80	47	47	15	19					
BCVCB693	2014/08/26	13:32	PSBAPPL	3758	0.771	100	99	0.769	6	86	86	57	57	6	5					
BCVCB690	2014/08/26	13:30	PSBAPPL	21452	0.197	1	99	0.195	6	92	92	43	43	7						

Complete your session evaluations online at www.SHARE.org/Seattle-Eval



Online Application Performance Data

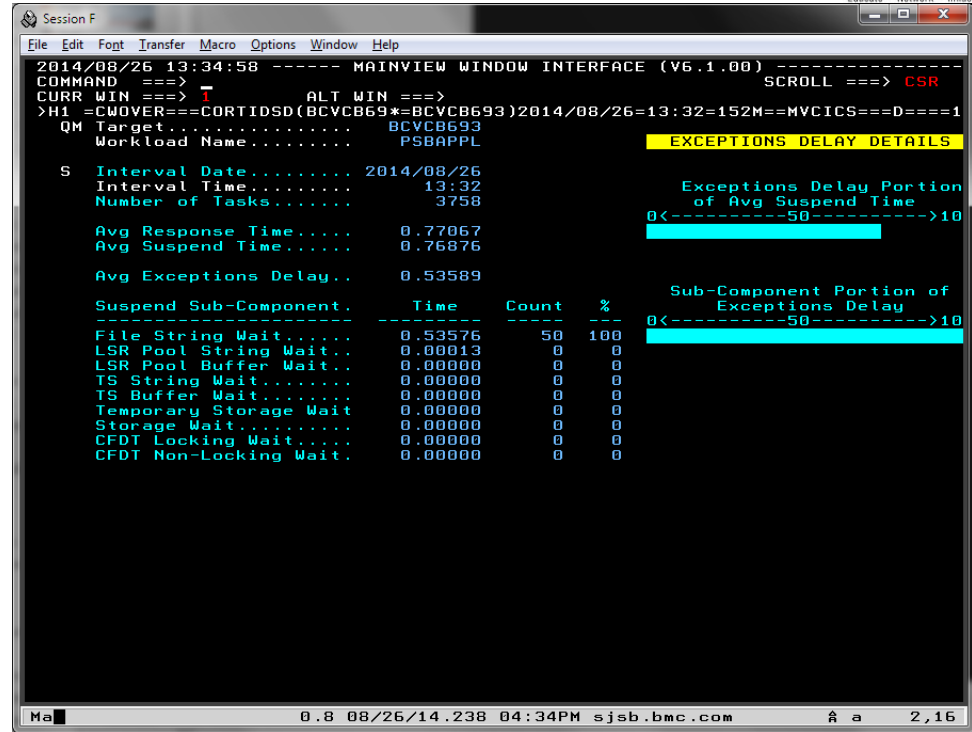
- Expanding the interval to see where the problem lies
 - Exception and file waits overlap and consume most of the average response time



Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Online Application Performance Data

- Drilling down further
 - All of the exception time for this interval was spent waiting for file strings
 - ... but who (or is that whom)?



```
Session F
File Edit Font Transfer Macro Options Window Help
2014/08/26 13:34:58 ----- MAINVIEW WINDOW INTERFACE (V6.1.00) -----
COMMAND ==>
CURR WIN ==> ALT WIN ==> SCROLL ==> CSR
>H1 =CWOVER==CORTIDSD(BCVCB69*BCVCB693)2014/08/26=13:32=152M==MVCICS===D===1
QM Target..... BCVCB693
Workload Name..... PSBAPPL
EXCEPTIONS DELAY DETAILS
S Interval Date..... 2014/08/26
Interval Time..... 13:32
Number of Tasks..... 3758
Exceptions Delay Portion
of Avg Suspend Time
0<-----50----->10
Avg Response Time.... 0.77067
Avg Suspend Time..... 0.76876
Avg Exceptions Delay.. 0.53589
Sub-Component Portion of
Exceptions Delay
-----50----->10
Suspend Sub-Component. Time Count %
-----
File String Wait..... 0.53576 50 100
LSR Pool String Wait.. 0.00013 0 0
LSR Pool Buffer Wait.. 0.00000 0 0
TS String Wait..... 0.00000 0 0
TS Buffer Wait..... 0.00000 0 0
Temporary Storage Wait 0.00000 0 0
Storage Wait..... 0.00000 0 0
CFDT Locking Wait.... 0.00000 0 0
CFDT Non-Locking Wait. 0.00000 0 0
Ma 0.8 08/26/14.238 04:34PM sjsb.bmc.com a a 2,16
```

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Online Application Performance Data

- Expansion of the large interval (15 minutes) down to single minute slices shows the offending set of tasks for this application (in red)

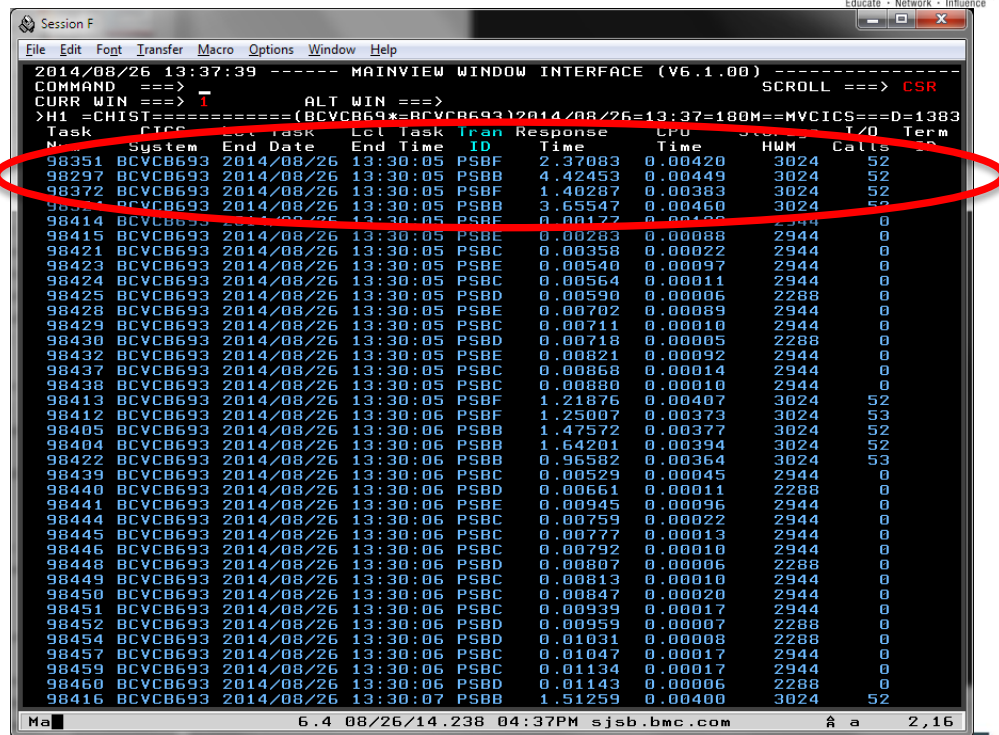
```

Session F
File Edit Font Transfer Macro Options Window Help
2014/08/26 13:35:52 ----- MAINVIEW WINDOW INTERFACE (V6.1.00) -----
COMMAND ==>
CURR WIN ==> ALT WIN ==>
>H1 =CHISTINT===== (BCVCB69*=BCVCB693)2014/08/26=13:35=180M==MVCICS====D====6
Target Lcl Intv LIntv No of Average Average Average Average Average
CICS End Date ETime Tasks Response CPU Suspend Stg HWM IO
BCVCB693 2014/08/26 13:31 1383 1.81384 0.00187 1.81162 2839 20
BCVCB693 2014/08/26 13:32 1424 0.13958 0.00139 0.13788 2832 18
BCVCB693 2014/08/26 13:33 1424 0.19420 0.00152 0.19246 2852 20
BCVCB693 2014/08/26 13:34 1428 0.16246 0.00147 0.16078 2841 20
BCVCB693 2014/08/26 13:35 1440 0.11485 0.00126 0.11335 2827 17
BCVCB693 2014/08/26 13:36 1060 0.14658 0.00144 0.14492 2839 20
Ma 3.5 08/26/14.238 04:35PM sjsb.bmc.com a a 2,16
  
```

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Online Application Performance Data

- Further expansion of individual tasks show some with extended response time



Task ID	CICS	System	End Date	Lcl Task	Lcl Task ID	Response Time	CPU Time	HWM	Calls
98351	BCVCB693	2014/08/26	13:30:05	PSBF	2.37083	0.00420	3024	52	
98297	BCVCB693	2014/08/26	13:30:05	PSBB	4.42453	0.00449	3024	52	
98372	BCVCB693	2014/08/26	13:30:05	PSBF	1.40287	0.00383	3024	52	
98371	BCVCB693	2014/08/26	13:30:05	PSBB	3.65547	0.00460	3024	52	
98414	BCVCB693	2014/08/26	13:30:05	PSBE	0.00177	0.00100	2944	0	
98415	BCVCB693	2014/08/26	13:30:05	PSBE	0.00283	0.00088	2944	0	
98421	BCVCB693	2014/08/26	13:30:05	PSBC	0.00358	0.00022	2944	0	
98423	BCVCB693	2014/08/26	13:30:05	PSBE	0.00540	0.00097	2944	0	
98424	BCVCB693	2014/08/26	13:30:05	PSBC	0.00564	0.00011	2944	0	
98425	BCVCB693	2014/08/26	13:30:05	PSBD	0.00590	0.00006	2288	0	
98428	BCVCB693	2014/08/26	13:30:05	PSBE	0.00702	0.00089	2944	0	
98429	BCVCB693	2014/08/26	13:30:05	PSBC	0.00711	0.00010	2944	0	
98430	BCVCB693	2014/08/26	13:30:05	PSBD	0.00718	0.00005	2288	0	
98432	BCVCB693	2014/08/26	13:30:05	PSBE	0.00821	0.00092	2944	0	
98437	BCVCB693	2014/08/26	13:30:05	PSBC	0.00868	0.00014	2944	0	
98438	BCVCB693	2014/08/26	13:30:05	PSBC	0.00880	0.00010	2944	0	
98413	BCVCB693	2014/08/26	13:30:05	PSBF	1.21876	0.00407	3024	52	
98412	BCVCB693	2014/08/26	13:30:06	PSBF	1.25007	0.00373	3024	53	
98405	BCVCB693	2014/08/26	13:30:06	PSBB	1.47572	0.00377	3024	52	
98404	BCVCB693	2014/08/26	13:30:06	PSBB	1.64201	0.00394	3024	52	
98422	BCVCB693	2014/08/26	13:30:06	PSBB	0.96582	0.00364	3024	53	
98439	BCVCB693	2014/08/26	13:30:06	PSBC	0.00529	0.00045	2944	0	
98440	BCVCB693	2014/08/26	13:30:06	PSBD	0.00661	0.00011	2288	0	
98441	BCVCB693	2014/08/26	13:30:06	PSBE	0.00945	0.00096	2944	0	
98444	BCVCB693	2014/08/26	13:30:06	PSBC	0.00759	0.00022	2944	0	
98445	BCVCB693	2014/08/26	13:30:06	PSBC	0.00777	0.00013	2944	0	
98446	BCVCB693	2014/08/26	13:30:06	PSBC	0.00792	0.00010	2944	0	
98448	BCVCB693	2014/08/26	13:30:06	PSBD	0.00807	0.00005	2288	0	
98449	BCVCB693	2014/08/26	13:30:06	PSBC	0.00813	0.00010	2944	0	
98450	BCVCB693	2014/08/26	13:30:06	PSBC	0.00847	0.00020	2944	0	
98451	BCVCB693	2014/08/26	13:30:06	PSBC	0.00939	0.00017	2944	0	
98452	BCVCB693	2014/08/26	13:30:06	PSBD	0.00959	0.00007	2288	0	
98454	BCVCB693	2014/08/26	13:30:06	PSBD	0.01031	0.00008	2288	0	
98457	BCVCB693	2014/08/26	13:30:06	PSBC	0.01047	0.00017	2944	0	
98459	BCVCB693	2014/08/26	13:30:06	PSBC	0.01134	0.00017	2944	0	
98460	BCVCB693	2014/08/26	13:30:06	PSBD	0.01143	0.00006	2288	0	
98416	BCVCB693	2014/08/26	13:30:07	PSBB	1.51259	0.00400	3024	52	

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Online Application Performance

- One last expansion shows it to be a specific file giving the issue

```

Session C
File Edit Font Transfer Macro Options Window Help
2014/08/27 05:13:30 ----- MAINVIEW WINDOW INTERFACE (V6.1.00) -----
COMMAND ==>
CURR WIN ==> ALT WIN ==> SCROLL ==> CSR
>H1 =CHIST===CHISTDIO(BCVCB69*#BCVCB693)2014/08/27=05:11=1440M=MVCICS===D===1
  > Target..... BCVCB693
  < Task Number..... 98297
  < Transaction ID..... PSBB
Resource Usage Total Average
Type Count Time Time
-----
Detach Date (Local).. 2014/08/26
Detach Time (Local).. 13:30:05.1 CICS FCT 52 0.5108 0.00982
Expanded Data Avail.. YES DB2
Files Used by Txn... 1 PROGRAM
Programs Used by Txn. N/A CONNECTN
Connectn Used by Txn. 0 SESSION
Sessions Used by Txn. 0 TDQUEUE
TDQueues Used by Txn. 0 TSQUEUE
TSQueues Used by Txn. 0 PSEUDO
Pgm. Timing Incmplt.. N/A CMRCUEX
Session Data Incmplt. NO
Res. overflow flags.. 0000000000
Res. overflow count.. 0

< First 5 Resources > Name Type Count Time Avg Time
-----
. Expand data for ==> CMRVS10 CICS FCT 52 0.5108 0.00982
. Expand data for ==>
. Expand data for ==>
. Expand data for ==>
. Expand data for ==>
  
```

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Conclusion

- CICS TS5 Applications provide challenges to monitoring
 - Data for resource monitoring may be harder to locate
 - This can cause issues in problem diagnosis
 - Old performance monitors may need updates
 - Batch programs need to look for different identifiers
 - Online monitors need similar changes
 - Performance indicators need to be examined across CICS regions to satisfy POLICY across the PLATFORM

Conclusion

- CICS TS5 Applications provide opportunities to monitoring
 - Application name provides access to performance data
 - Allows for a looser connection between the systems performance group and development
 - Decreases need for systems groups to intimately know every resource (transaction, program, etc.) that make the application work