

z/OS



Resource Measurement Facility Report Analysis

examples

RMF CF Reporting

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Session A - [24 x 80]
File Edit View Communication Actions Window Help
DNET855 ERB3SPL      RMF Sysplex Report Selection Menu
Enter selection number or command for desired report.

Sysplex Reports
1 SYSSUM  Sysplex performance summary          (SUM)
2 SYSRTD  Response time distribution              (RTD)
3 SYSWKM  Work Manager delays                 (WKM)
4 SYSEQ   Sysplex-wide Enqueue delays     (ES)
5 CFOVER  Coupling Facility overview       (CO)
6 CFSYS   Coupling Facility systems        (CS)
7 CFACT   Coupling Facility activity       (CA)
8 CACHSUM Cache summary                      (CAS)
9 CACHDET Cache detail                     (CAD)
10 RLSSC  VSAM RLS activity by storage class (RLS)
11 RLSDS  VSAM RLS activity by data set    (RLD)
12 RLSLRU VSAM LRU overview

Data Index
D DSINDEX  Data index

Selection ==> █

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Coupling Facility Overview Report

The Coupling Facility Overview report (CFOVER) gives you information about all coupling facilities which are connected to the sysplex. You might start the investigation of the performance of the coupling facilities in your sysplex with the CFOVER report.

You get an overview about all coupling facilities showing the utilization of the processors and the storage. If you experience high values for these resources, this might indicate contention in the coupling facilities which could lead to internal queues causing performance problems.

In addition, you can evaluate the request rates to analyze whether the usage of the coupling facilities is as balanced as you want. This, of course, will not be the case if you have one coupling facility for production and the other one just as stand-by.

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Session A - [24 x 80]
File Edit View Communication Actions Window Help

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DNET855 ERB3BFL      RMF V1R9  CF Overview      - DEMOPLX      Line 1 of 1
Samples: 100      Systems: 3      Date: 03/31/08  Time: 09.21.40  Range: 100  Sec
CF Policy: POLICY2      Activated at: 02/05/08 18.09.55

----- Coupling Facility ----- Processor ----- Request - Storage --
Name      Type  Model Lvl  Dyn  Util% Def Shr Wgt Effect  Rate  Size  Avail
{ CF2      2094  S18  15  ON   2.3   1  1  10  0.0   62.9  423M  336M

Command ==> █
Scroll ==> CSR

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The name of this Coupling Facility

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MA a

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Data Index
D DSINDEX Data index (DI)

Selection ==> █

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Coupling Facility Systems Report

The Coupling Facility Systems report (CFSYS) gives you information about the distribution of coupling facility requests among the systems and about the activities in the subchannels and paths attached to the coupling facilities in the sysplex.

Using the CFSYS report, you see for each coupling facility all systems connected to it, and their activities. High values are indicators for contention and possible bottlenecks in the configuration.

The pop-up panel with the details provides information about the configuration and you see the path IDs for all channels which are connecting each coupling facility with a system. You can use the CHANNEL report to get the link utilization for each path.

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MA a 24/017
Connected to remote server/host 9.39.64.151 using lu/pool TCP00078 and port 23
HP LaserJet 4P on LK9757A5_P1

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B3BFE RMF V1R9 CF Systems - DEMOPLX Line 1 of 3

Samples: 100 Systems: 3 Date: 03/31/08 Time: 09.21.40 Range: 100 Sec

CF Name	System	Subchannel		-- Paths --		-- Sync ---		----- Async -----			
		Delay %	Busy %	Avail	Delay %	Rate	Avg Serv	Rate	Avg Serv	Chng %	Del %
CF2	DEMOMVS	0.0	0.3	2	0.0	6.7	485	39.9	911	0.0	0.0
	DEMOMVS2	0.0	0.1	2	0.0	0.7	611	7.4	1817	0.0	0.0
	DEMOMVS3	0.0	0.0	2	0.0	1.1	465	1.6	1781	0.0	0.0

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Command ==> █

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```

```

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12 RLSLRU   VSAM LRU overview              (RL)

Data Index
D DSINDEX  Data index                    (DI)

Selection ==> █

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CFACT - Coupling Facility Activity Report

The Coupling Facility Activity report (CFACT) gives you information about the activities in each structure. You can use this report for analyzing in detail each structure in your coupling facilities. You see the type of a structure and the activities from each system that uses a structure.

If you want to get more details, you will receive them through cursor-sensitive control. A pop-up panel shows the allocation details and the name of the address space which is currently using the structure. If you experience performance problems for one or several structures in your coupling facilities, you should investigate into the appropriate applications.

example
DB2
Data
Sharing

RMF V1R9 CF Activity - DEMOPLX Line 1 of 5

Samples: 100 Systems: 3 Date: 03/31/08 Time: 09.21.40 Range: 100 Sec

CF: ALL Type ST System CF --- Sync --- ----- Async -----
Util Rate Avg Rate Avg Chng Del
% % Serv % % % %

Structure Name	Type	ST	System	CF Util %	Sync Rate %	Avg Serv	Async Rate %	Avg Serv	Chng %	Del %
DSNSG_GBPO	CACHE	A	*ALL	N/A	<0.1	14	0.2	1992	0.0	0.0
DSNSG_LOCK1	LOCK	A	*ALL	N/A	1.4	130	7.4	1289	0.0	0.0
DSNSG_SCA	LIST	A	*ALL	N/A	0.1	907	4.0	1581	0.0	0.0
ISGLOCK	LOCK	A	*ALL	N/A	7.1	557	36.3	977	0.0	0.0
SYSIGGCAS_ECS	CACHE	A	*ALL	N/A	<0.1	764	1.1	926	0.0	0.0

Command ==> █ Scroll ==> CSR

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HP LaserJet on LK9757A5_P1

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CF:

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DSN

DSN

DSN

ISG

SYS

DNET855 ERB3PC3 RMF Coupling Facility - Structure Details

Cache Structure : DSNSG_GBP0
Coupling Facility : CF2
System : *ALL

Structure Size	: 32M	Connection Name	:
Direct. Entries Total	: 26702	Jobname	:
Current	: 48	Status	:
Data Elements Total	: 5338	ASID	:
Current	: 9	CF Level	:
Request Rate	: 0.2		
Read Rate	:		
Write Rate	:		
Castout Rate	:		
XI Rate	:		
Directory Reclaims	:		

Press Enter to return to the Report panel.
If data is missing, see Help panel.

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Data Index
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Selection ==> █

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Cache Summary Report

The Cache Summary report (CACHSUM) provides an overview about the activities in the cache subsystem for all SSIDs. You might take this as starting point when analyzing I/O performance to get a first impression about the I/O processing.

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MA a 24/017
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HP LaserJet 4P on LK9757A5_P1

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RMF V1R9 Cache Summary - DEMOPLX Line 1 of 9

Samples: 100 Systems: 3 Date: 03/31/08 Time: 09.21.40 Range: 100 Sec
 CDate: 03/31/08 CTime: 09.21.36 CRange: 100 Sec

SSID	CUID	Type-Mod	Size	I/O Rate	Hit %	Hit Rate	-- Miss Total	--- Stage	Read %	Seq Rate	Async Rate	Off Rate
CC00	0680	2105-E20	3072M	263.4	99.7	262.6	0.8	0.7	75.5	1.8	3.6	0.0
CC10	0700	2105-E20	3072M	202.5	99.7	201.9	0.7	0.6	92.0	1.4	1.3	0.0
CC20	081E	2105-E20	3072M	565.9	99.5	563.2	2.6	2.2	98.4	57.5	3.4	0.0
CC30	0926	2105-E20	3072M	218.9	100	218.8	0.1	0.1	99.6	215.1	0.1	0.0
CC40	0A17	2105-E20	3072M	31.9	100	31.9	0.0	0.0	94.0	0.0	0.7	0.0
CC50	0B46	2105-E20	3072M	5.2	100	5.2	0.0	0.0	96.9	0.0	0.1	0.0
CC60	0C16	2105-E20	3072M	3.1	95.5	3.0	0.1	0.0	50.8	0.0	1.0	0.0
CC80	0E74	2105-E20	3072M	55.4	99.7	55.2	0.2	0.2	88.7	3.6	0.4	0.0
D000	D014	1750-511	1315M	82.4	100	82.4	0.0	0.0	59.9	0.0	27.4	0.0

Command ==> █ Scroll ==> CSR

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HP LaserJet 4P on LK9757A5_P1

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Data Index
D DSINDEX  Data index

Selection ==> █

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Cache Detail Report

The CACHDET report provides detailed information about the activities of one cache subsystem.

If the cursor is placed on any field of the first two columns, a pop-up panel appears showing details for the selected volume. Cursor-sensitive control of the third column leads you to a pop-up panel with details for the selected SSID.

See next two slide examples.

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DNET855 ERB3BFF      RMF V1R9 Cache Detail - DEMOPLX      Line 211 of 613

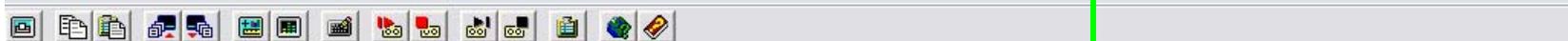
Samples: 100      Systems: 3      Date: 03/31/08      Time: 09.21.40      Range: 100      Sec
CDate: 03/31/08      CTime: 09.21.36      CRange: 100      Sec

Volume /Num SSID      I/O I/O      Hit - Cache Hit Rate - - DASD I/O - Seq Async
      % Rate      % Read DFW CFW Total Stage Rate Rate

DMEOS4 065F CC00      0.1 0.2      100 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0
DMZU09 082E CC20      0.0 0.2      88.2 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0
TCT015 D00E D000      0.2 0.2      100 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1
DMEU04 061B CC00      0.1 0.2      88.2 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0
TZ1U00 0B0B CC50      3.3 0.2      100 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0
TCT017 D010 D000      0.2 0.2      100 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0
TZ1LX2 D019 D000      0.2 0.2      100 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1
DMZU07 082C CC20      0.0 0.1      93.3 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1
TC2011 D07F D000      0.2 0.1      100 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1
DMPU16 0650 CC00      0.1 0.1      100 0.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0
DMEP14 0676 CC00      0.1 0.1      100 0.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0
DMPU11 0661 CC00      0.1 0.1      93.3 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0
TC3011 D091 D000      0.2 0.1      100 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1
DMPU41 D0B4 D000      0.2 0.1      100 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0
DMEOS1 0604 CC00      0.1 0.1      100 0.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0

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DNE

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Vol

DME

DMZ

TCT

DME

TZ1

TCT

TZ1

DMZ

TC2

DMP

DME

DMP

TC3

DMP

DME

Com

DNET855 ERB3PC9 **RMF Cache Volume Detail**

The following details are available for Volume TCT015 on SSID D000
Press Enter to return to the Report panel.

Cache: Active DFW: Active Pinned: None

		----- Read -----			----- Write -----				Read	Tracks
		Rate	Hit	Hit%	Rate	Fast	Hit	Hit%	%	
TCT	Norm	0.1	0.1	100	0.1	0.1	0.1	100	41.2	0.0
DME	Seq	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TZ1	CFW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TCT	Total	0.1	0.1	100	0.1	0.1	0.1	100	41.2	

----- Misc ----- - Non-Cache - --- CKD --- - Record Caching -

TC2 DFW Bypass : 0.0 ICL : 0.0 Write: 0.1 Read Miss : 0.0

DMP CFW Bypass : 0.0 Bypass: 0.0 Hits : 0.1 Write Prom: 0.0

DME DFW Inhibit: 0.0

DNET855 ERB3BFF RMF V1R9 Cache Detail - DEMOPLX Line 211 of 613

Sam

DNET855 ERB3PC8 RMF Cache SSID Detail

The following details are available for SSID D000
 Press Enter to return to the Report panel.

DME	DMZ	TCT	Read			Write				Read %	Tracks
			Rate	Hit	Hit%	Rate	Fast	Hit	Hit%		
	Norm		48.4	48.3	100	32.4	32.4	32.4	100	59.9	0.0
	Seq		1.0	1.0	100	0.7	0.7	0.7	100	59.1	0.0
	TZ1	CFW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	TCT	Total	49.3	49.3	100	33.1	33.1	33.1	100	59.9	
	TZ1										
	DMZ	----- Misc ----- - Non-Cache - --- CKD ---- - Record Caching -									
	TC2	DFW Bypass :	0.0	ICL :	0.0	Write:	34.9	Read Miss :	0.0		
	DMP	CFW Bypass :	0.0	Bypass:	0.0	Hits :	34.9	Write Prom:	32.3		
	DME	DFW Inhibit:	0.0								
	DMP										
	TC3										
	DMP										
	DME										
	Com										