



RMF Development Edition

z/OS
Resource Measurement Facility

RMF Monitor III Data Portal



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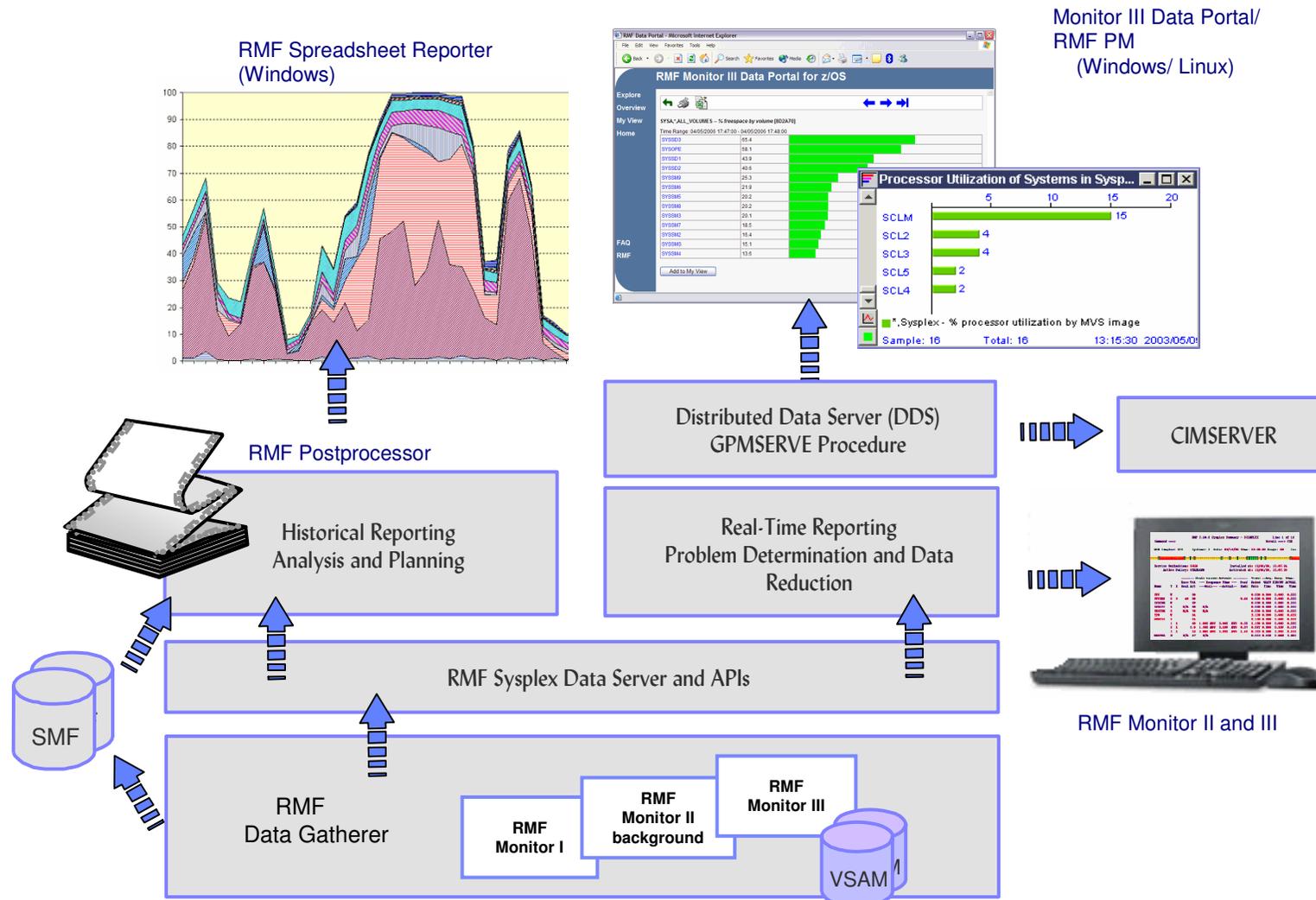
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The New Face of RMF

- ▶ RMF Overview
- ▶ RMF Data Portal
 - ▶ Distributed Data Server (DDS)
 - ▶ How to use
 - ▶ DDS HTTP request

RMF Product Overview



RMF Monitor III Data Portal

- ▶ direct connection to the RMF Distributed Data Server
- ▶ just specify <http://<hostname>:8803>
- ▶ Subset of RMF Monitor III Reports and metrics available
- ▶ Also available for Linux on zSeries and x86 Linux (check RMF Homepage)



RMF Data Portal - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://boesysc.boeblingen.de.ibm.com:8803/

RMF Monitor III Data Portal for z/OS

Explore
Overview
My View
Home

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Important notes:

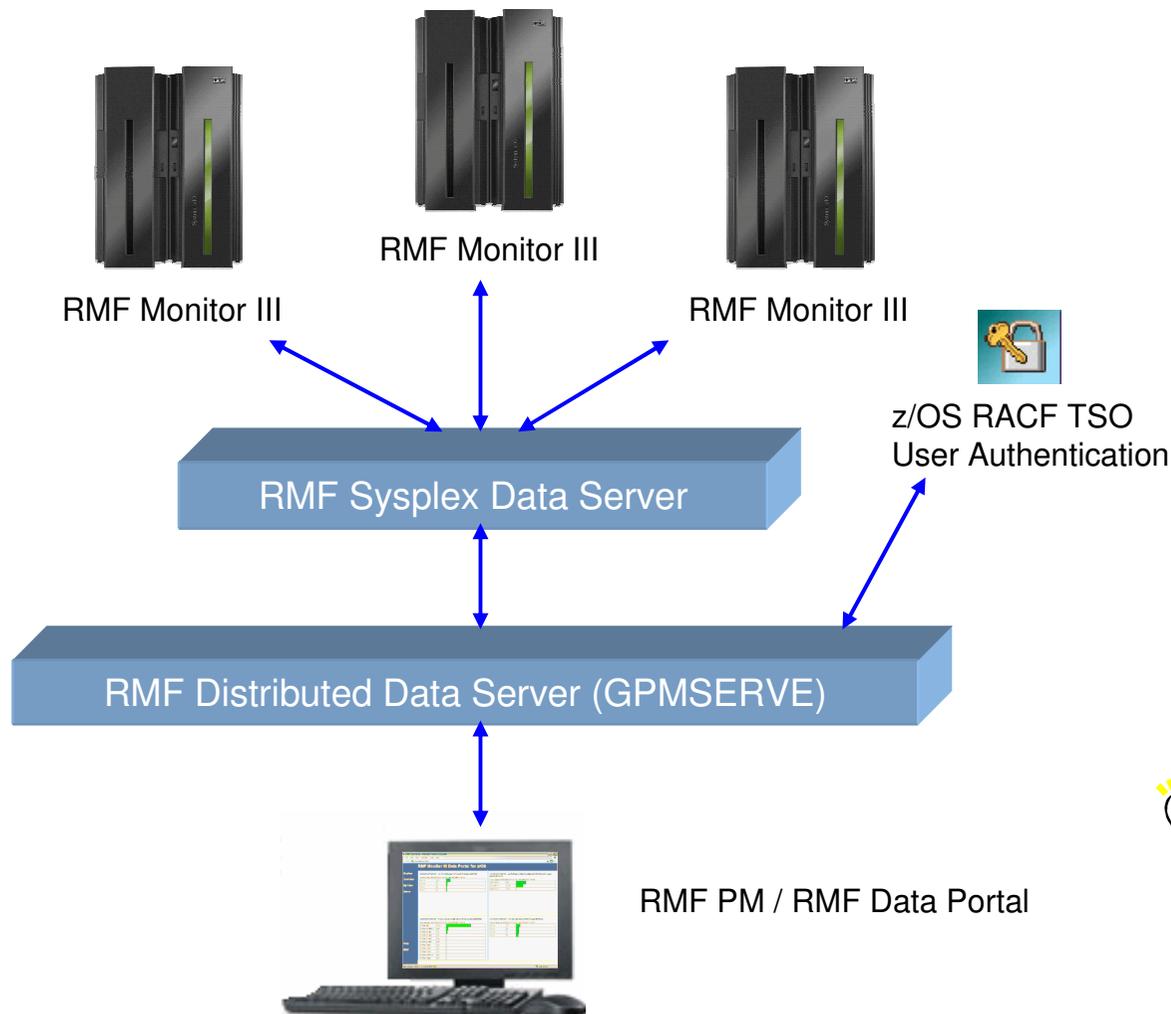
- When using this application you will be prompted to login to the Sysplex with a valid userid and password.
- This application requires Javascript to be enabled
- For some functions (such as "My View") you must allow your browser to store cookies.
- This application has been successfully tested with:
 - Microsoft Internet Explorer Version 6.0 or higher for Windows (Recommended: 7.0 or higher)
 - The Mozilla Suite or Firefox Browser Version 1.0 or higher from www.mozilla.org for various platforms. (Recommended: 2.0 or higher)
 - Netscape Browser Version 7.0 or higher for various platforms (Recommended: 8.0 or higher)

Server running on: Sysplex: SYSAPLEX, SMF-Id: SYSC, System Name: SYSC, OS Type+Version: z/OS 1.9.0 SP7.0.9
Trademarks: z/OS, zSeries, and RMF are trademarks of the IBM Corporation. Windows (NT,95,98,ME,2000,XP,Vista) and Internet Explorer are trademarks of the Microsoft Corporation. Netscape Navigator is a trademark of the Netscape Communications Corporation. Linux is a registered trademark of Linus Torvalds. Mozilla and Firefox are trademarks of the the Mozilla Foundation.

Done



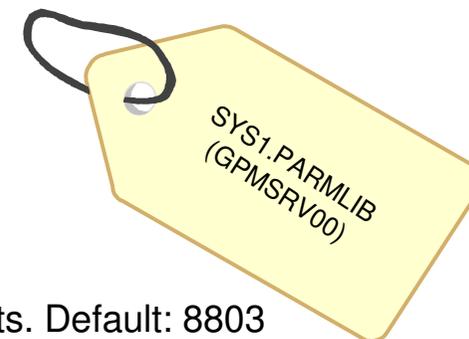
RMF Distributed Data Server



- ▶ has Sysplex-wide scope
- ▶ Gets the data from RMF Monitor III
- ▶ talks XML over HTTP
- ▶ Simple RACF definition
- ▶ no configuration needed!
- ▶ just enter `F RMF, DDS` on one image in the Sysplex

 RMF Data Portal / RMF PM data based on Monitor III intervals

DDS Setup



- Parmlib member SYS1.PARMLIB(GPMSRV00)
 - ▶ HTTP_PORT:
is the port number where the server is listening for incoming HTTP requests. Default: 8803
 - ▶ HTTP_ALLOW:
specifies the host names that can use the HTTP interface Default: HTTP_ALLOW(*)

Examples: HTTP_ALLOW(*.ibm.com)
 HTTP_ALLOW(9.164.*.*)
 HTTP_ALLOW(bhbe.de.ibm.com)

Wildcards * and ?
are allowed

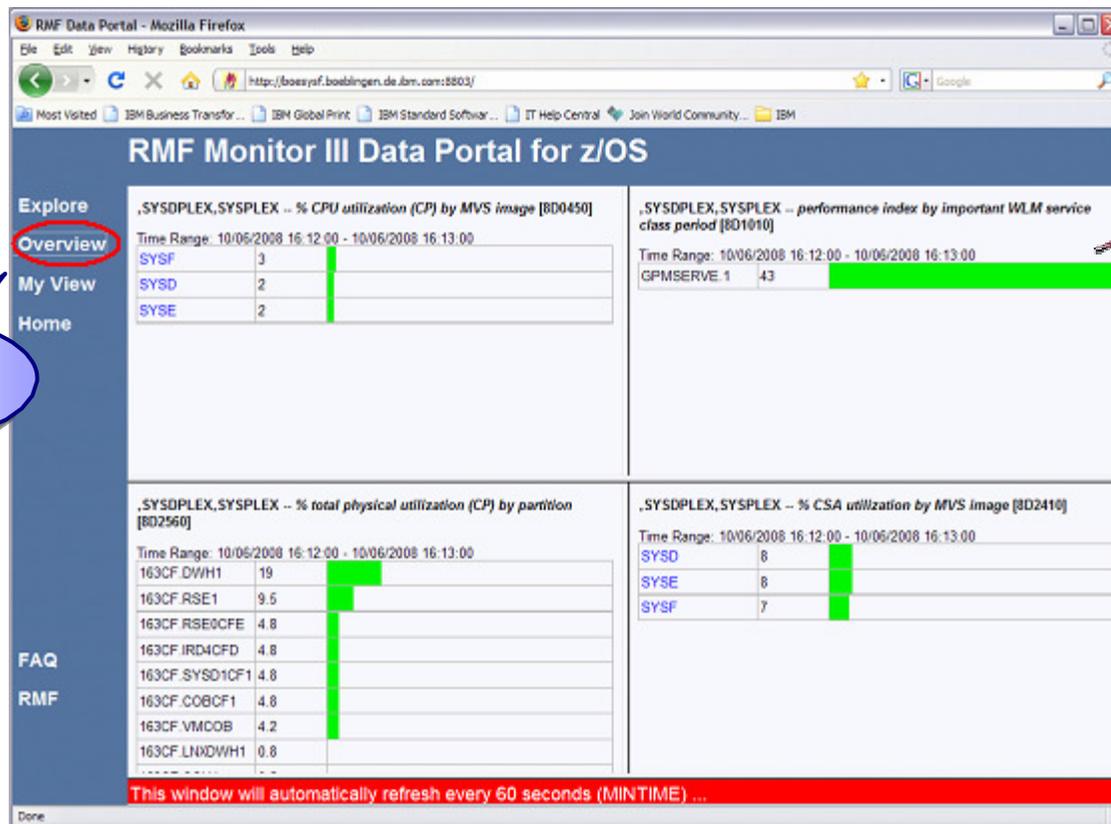
- ▶ HTTP_NOAUTH:
specifies the host names that can use the HTTP interface without authentication (userid/password). Wildcards * and ? are allowed. Default: HTTP_NOAUTH
- Start DDS via *MODIFY RMF,DDS* Command

```
F RMF,DDS
ERB140I RMF: DDS OPTION ACCEPTED
S GPMSERVE.RMFDDS01
ERB141I RMF: STARTING DISTRIBUTED DATA SERVER
$HASP100 GPMSERVE ON STCINRDR
$HASP373 GPMSERVE STARTED
IEF403I GPMSERVE - STARTED - TIME=13.45.45
IEE252I MEMBER GPMSRV00 FOUND IN SYS4.PARMLIB
GPM060I RMF DISTRIBUTED DATA SERVER READY FOR COMMANDS
```

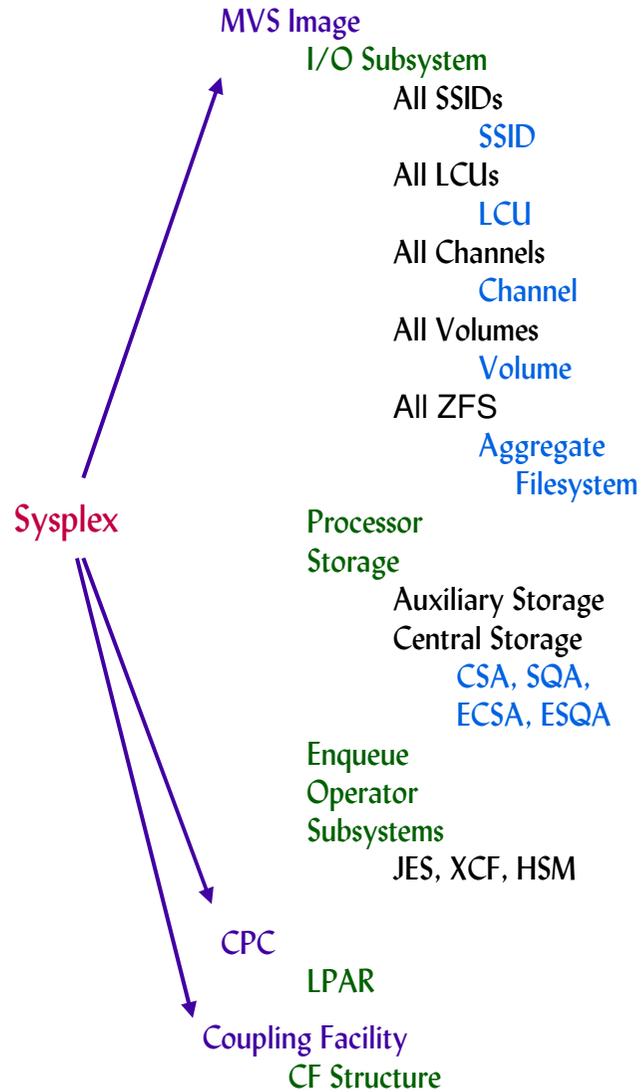
The Overview PerfDesk

✓ High level health-check

- ▶ Processor % CPU utilization (CP) by MVS image
- ▶ CEC % total physical utilization (CP) by partition
- ▶ Storage % CSA utilization by MVS image
- ▶ WLM performance index by WLM service class period



The Resource Model



➔ The Sysplex is the top-level resource

RMF Monitor III Data Portal for z/OS

Welcome, you are connected to:
,SYSAPLEX,SYSPLEX

Icon	Resource	Metrics	Attributes	Res-Type
	,SYSAPLEX,SYSPLEX	Metrics	Show	SYSPLEX

RMF-DDS-Server - Functionality Level: 2366

RMF Monitor III Data Portal for z/OS

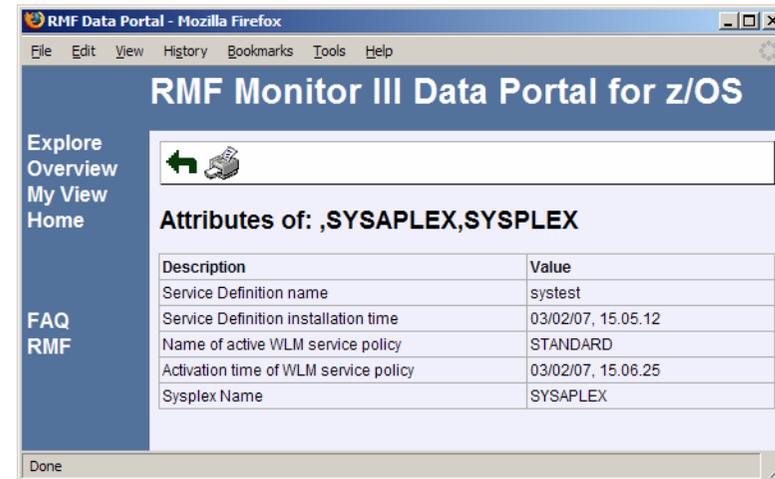
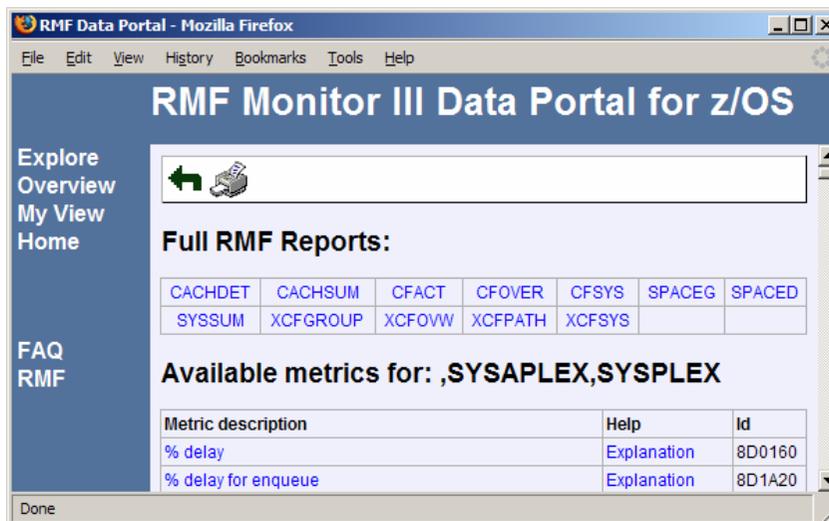
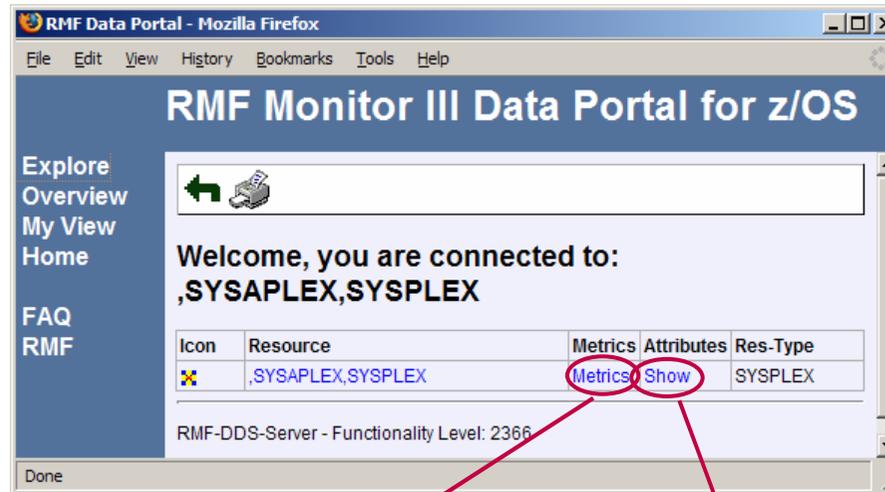
Children of: **,SYSAPLEX,SYSPLEX**

Icon	Resource	Metrics	Attributes	Res-Type
	,SYSA,MVS_IMAGE	Metrics	Show	MVS_IMAGE
	,SYSB,MVS_IMAGE	Metrics	Show	MVS_IMAGE
	,SYSC,MVS_IMAGE	Metrics	Show	MVS_IMAGE
	,CF01,COUPLING_FACILITY	Metrics	Show	COUPLING_FACILITY
	,CF02,COUPLING_FACILITY	Metrics	Show	COUPLING_FACILITY
	,16F7A,CPC	Metrics	Show	CPC

The Resource Model...

Resource specific actions:

- ▶ List metrics
- ▶ Show attributes



The Resource Model...

Resource specific actions:

▶ View a metric

RMF Data Portal - Mozilla Firefox

RMF Monitor III Data Portal for z/OS

Explore Overview My View Home

Full RMF Reports:

CACHDET	CACHSUM	CFACT	CFOVER	CFSYS	SPACE
SYSSUM	XCFGROUP	XCFOWW	XCFPATH	XCFSYS	

Available metrics for: ,SYSAPLEX,SYSPLEX

Metric description	Help	Id
% delay	Explanation	8D0160
# users	Explanation	8D0D50

select Metric from List

Get metric help

click Add to My View for Persistence

RMF Data Portal - Mozilla Firefox

RMF Monitor III Data Portal for z/OS

Explore Overview My View Home

,SYSAPLEX,SYSPLEX -- # users [8D0D50]

Time Range: 03/07/2008 14:59:00 - 03/07/2008 15:00:00

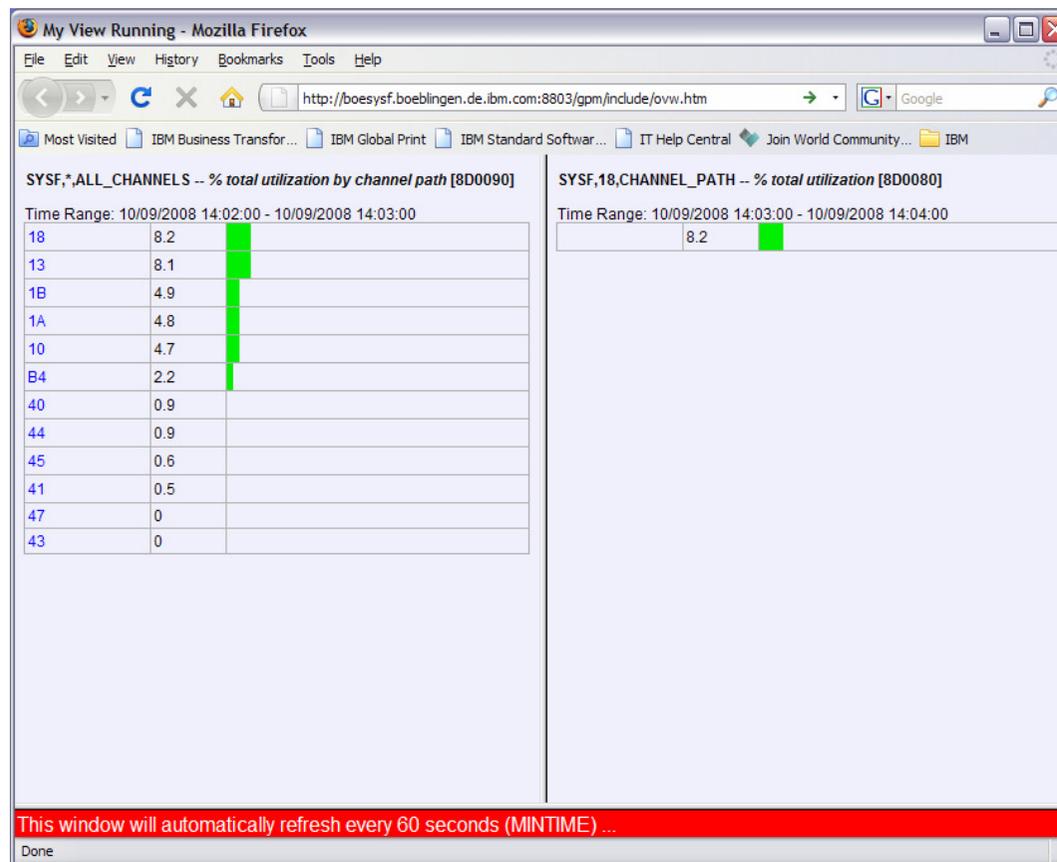
503

Add to My View

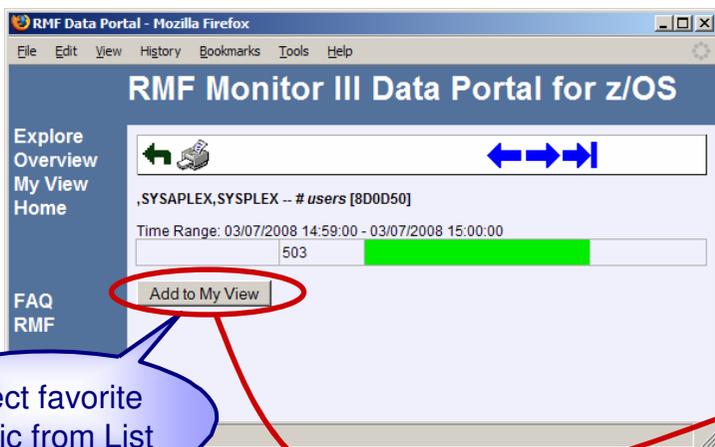
Done

Resources and Metrics

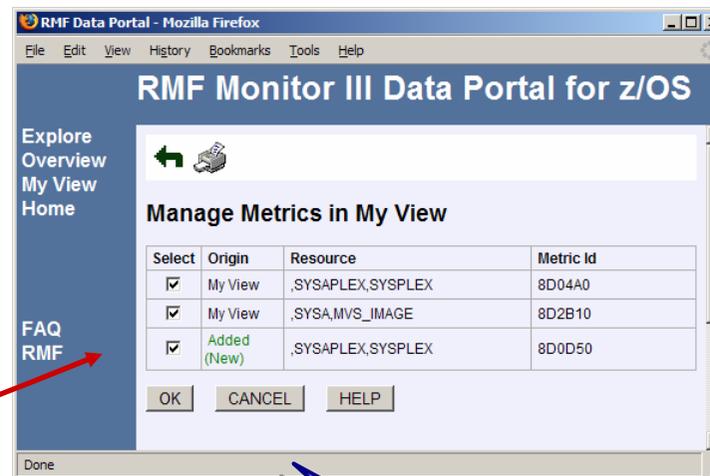
- Each resource is associated with various metrics
- Two basic metric types:
 - ▶ Single valued metrics - consists of exactly one value
 - ▶ List valued metrics - is represented by a list of name/value pairs



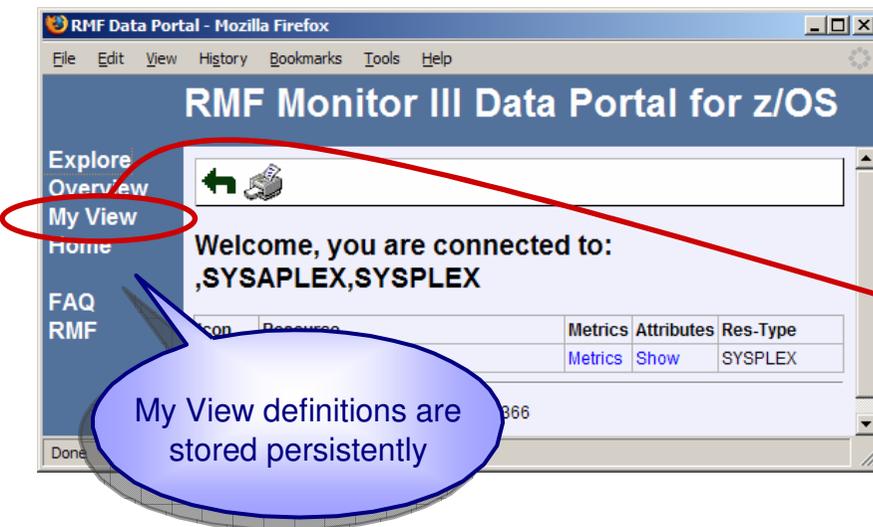
Customizing Views



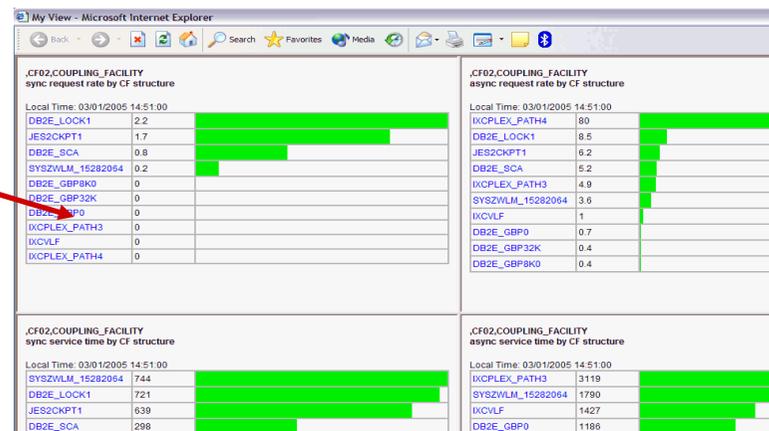
select favorite Metric from List



Manage My View



My View definitions are stored persistently



Spreadsheet Export

Export action on Microsoft Internet Explorer initiates **Web Query** of Microsoft Excel

The screenshot shows the RMF Monitor III Data Portal for z/OS in Microsoft Internet Explorer. The browser window displays the URL `http://boesysf.boeblingen.de.ibm.com:8803/`. The main content area shows a table of data for the query `,CF02,COUPLING_FACILITY -- async service time by CF structure [8D20F0]` with a time range of `10/27/2008 14:00:00 - 10/27/2008 14:01:00`. The table lists various CF structures and their service times. A context menu is open over the 'Export to Microsoft Excel' button, which is circled in red. A red arrow points from this button to the corresponding data in the Microsoft Excel spreadsheet shown in the foreground.

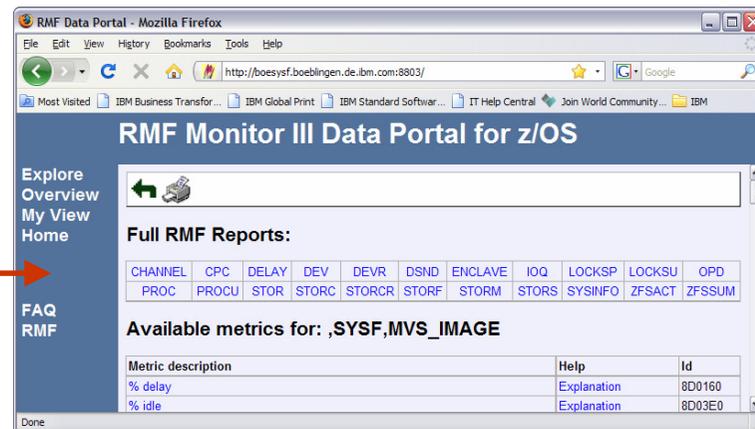
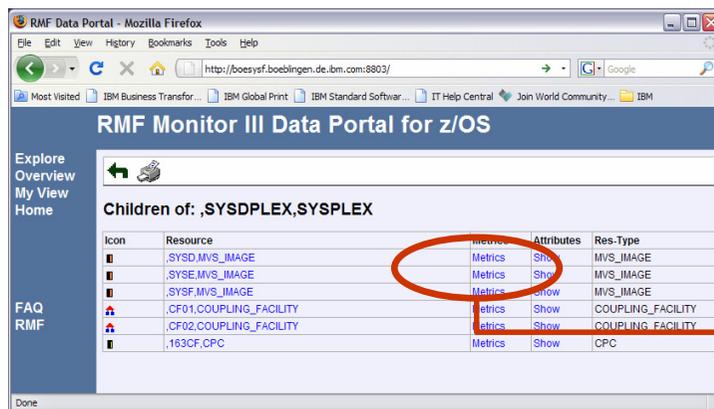
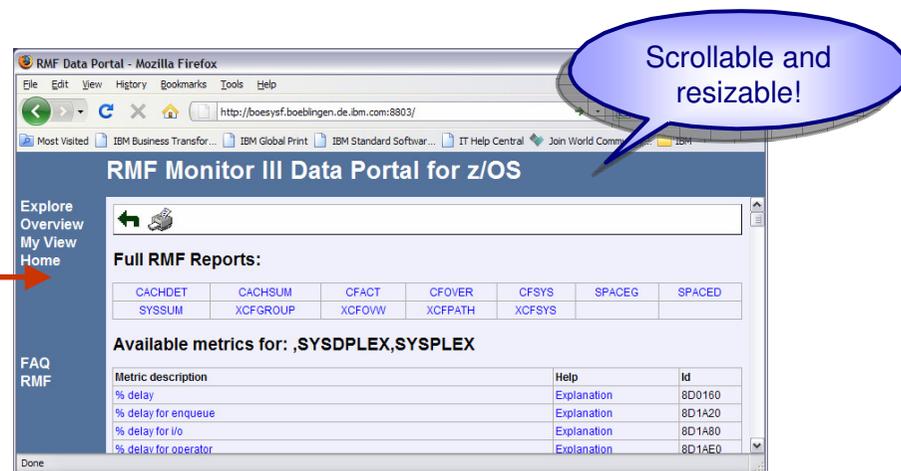
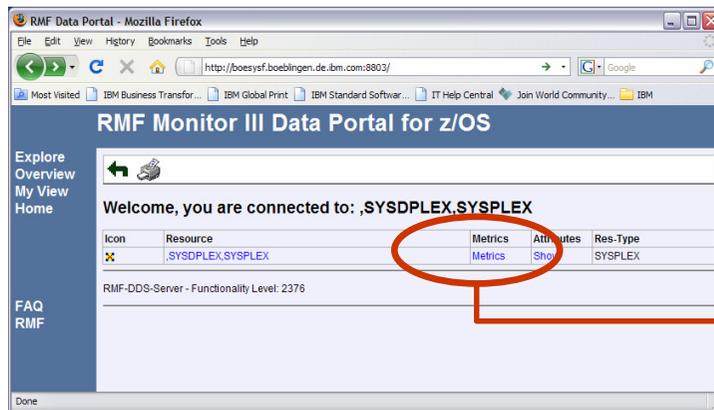
CF Structure	Service Time
IXCVLF	997
IXCPLEX_PATH4	722
JES2CKPT1	631
SYSZWLM_63CF2094	502
IXCPLEX_PATH3	497
IGWLOCK00	0
RLSLCK1	0
RLSLCK2	0

Microsoft Excel - Book3

A	B	C
1	Back	Print Window Get data in CSV format (Excel, Lotus123 ...)
2		
3	,CF02,COUPLING_FACILITY -- async service time by CF structure [8D20F0]	
4	Time Range: 10/27/2008 14:00:00 - 10/27/2008 14:01:00	
5	IXCVLF	997
6	IXCPLEX_PATH4	722
7	JES2CKPT1	631
8	SYSZWLM_63CF2094	502
9	IXCPLEX_PATH3	497
10	IGWLOCK00	0
11	RLSLCK1	0
12	RLSLCK2	0
13		
14	Add to My View	
15		

Monitor III Reports

- ✓ Sysplex-wide reports and single system reports available via *Metrics* selection
- ✓ View full RMF Monitor III Reports (also hidden fields) with state-of-the-art frontend



Monitor III Reports...

The image shows two overlapping browser windows of the RMF Monitor III Data Portal. The background window shows the main navigation menu with a red circle around the 'STOR' link in the 'Full RMF Reports' section. A blue callout bubble with the text 'Select MIII Report' points to this link. The foreground window shows the 'STOR (Storage Delays)' report for the job 'SYSF,MVS_IMAGE'. The report includes a table with columns for Jobname, ASID (dec), Type, Service Class, Active Frames, Fixed Frames, Idle, Working Set, and Working Set Expanded. The time range is 10/29/2008 10:24:00 - 10/29/2008 10:25:00.

Available metrics for: ,SYSC,MVS IM

Select MIII Report

RMF Report [SYSF,MVS_IMAGE] : STOR (Storage Delays)
Time Range: 10/29/2008 10:24:00 - 10/29/2008 10:25:00

Jobname	ASID (dec)	Type	Service Class	Active Frames	Fixed Frames	Idle	Working Set	Working Set Expanded
MASTER	0001	S	SYSTEM	3904	2382	0	3904	
PCAUTH	0002	S	SYSTEM	124	69	0	124	
RASP	0003	S	SYSTEM	317	305	0	317	
TRACE	0004	S	SYSTEM	1132	1096	0	1132	
DUMPSRV	0005	S	SYSTEM	360	124	0	360	
XCFAS	0006	S	SYSTEM	9214	2142	0	9214	
GRS	0007	S	SYSTEM	8169	503	0	8169	
SMSPDSE	0008	S	SYSTEM	3156	1398	0	3156	
SMSVSAM	0009	S	SYSTEM	11529	502	0	11529	
CONSOLE	0010	S	SYSTEM	3458	138	0	3458	
WLM	0011	S	SYSTEM	2506	187	0	2506	
ANTMAIN	0012	S	SYSTEM	1358	149	0	1358	
ANTAS000	0013	S	STCDEF	1267	131	0	1267	
DEVMAN	0014	S	SYSTEM	164	55	0	164	

Monitor III Reports...

RMF Data Portal - Mozilla Firefox

http://boesysf.boeblingen.de.ibm.com:8803/

RMF Monitor III Data Portal for z/OS

Explore Overview My View Home

RMF Report [.,SYSF,MVS_IMAGE] : STOR (Storage Delays)

Time Range: 10/09/2008 13:53:00 - 10/09/2008 13:54:00

Jobname	ASID	ASID	Free Frames	Fixed Frames	Idle	Working Set	Working Set Expanded
MASTER	0001	The address space id of a Job, TSO Userid, started task or USS address space. Unless otherwise indicated RMF displays the ASID number in decimal and not in hexadecimal notation.	1	2249	0	3861	
XCFAS	0006		1	2147	0		
SMSPDSE	0008		2	1401	0		
TRACE	0004		4	1101	0		
GRS	0007		7	499	0	8307	
SMSVSAM	0009		11324	489	0	11324	
ALLOCAS	0005		4188	389	0	4188	
JES2	0045		3598	364	0	3598	
TN3270	0032	S SYSSTC	2028	345	0	2028	
APPC	0044	S SYSSTC	1600	343	0	1600	
OMVS	0015	S SYSTEM	15916	337	0	15916	
RASP	0003	S SYSTEM	335	323	0	335	

Done

Timing adjustments:
 - step backward, forward
 - jump to current time
 - key in a time stamp
 - use GO mode

ASID
 The address space id of a Job, TSO Userid, started task or USS address space. Unless otherwise indicated RMF displays the ASID number in decimal and not in hexadecimal notation.

Fly over help!

Sort: Ascending or Descending

Monitor III Reports...

✓ Flip to vertical view to focus on one single row

The image shows two screenshots of the RMF Monitor III Data Portal for z/OS. The left screenshot displays a wide table with columns: Structure Name, Structure Type, Structure Status, Extended Structure Status, System Name, CF Utilization %, and Structure Execution %. A red circle highlights the 'IGWLOCK00' entry in the Structure Name column, and a red arrow points from it to the right. The right screenshot shows the vertical view for 'IGWLOCK00', displaying detailed metrics for that structure.

Structure Name	Structure Type	Structure Status	Extended Structure Status	System Name	CF Utilization %	Structure Execution %
IGWLOCK00	LOCK	AP	ActiveDuplexPrimary	*ALL	51.8	0.1
	LOCK			SYSD		
	LOCK			SYSE		
	LOCK			SYSF		
	LOCK	AS	ActiveDuplexAlternate	*ALL	29.2	0.1
	LOCK			SYSD		
	LOCK			SYSE		
	LOCK			SYSF		
ISGLOCK	LOCK	A	ActiveInUse	*ALL	8.1	0.0
	LOCK			SYSD		
	LOCK			SYSE		
	LOCK			SYSF		
ISTGENERIC	LIST	A	ActiveInUse	*ALL	0.0	0.0
	LIST			SYSD		
	LIST			SYSE		
	LIST			SYSF		

RMF Report - One Row [.,SYSDPLEX,SYSPLEX] : CFACT (Coupling Facility Activity)	
Structure Name	IGWLOCK00
Structure Type	LOCK
Structure Status	AP
Extended Structure Status	ActiveDuplexPrimary
System Name	*ALL
CF Utilization %	51.8
Structure Execution %	0.1
Sync Rate	0.0
Sync Avg Service Time	0
Sync Request Count	0
Async Rate	0.0
Async Avg Service Time	0
Async Request Count	0
Async Changed %	0.0
Async Delay %	0.0
Avg Queued Request Time	0
Converted Request Count	0
Operation Count Delayed for Dump Serialization	0
Queued Operation Count	0
Maximum Number of Users	16
Total Number of Users	3
Number of Problem Users	0
Rebuild %	0

Monitor III Reports...

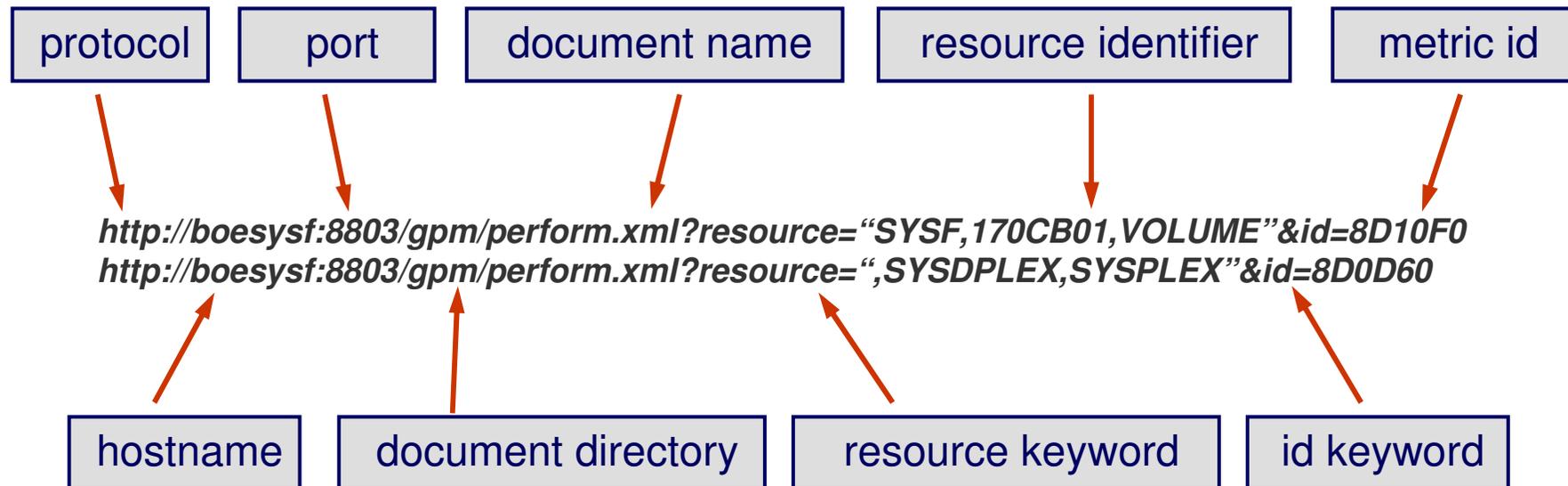
- ✓ Persistence: print reports or export data to your Spreadsheet Application (CSV Format)

The screenshot shows the RMF Monitor III Data Portal interface in Mozilla Firefox and a Microsoft Excel spreadsheet. The browser window displays the 'RMF Monitor III Data Portal for z/OS' with a sidebar on the left containing 'Explore', 'Overview', 'My View', and 'Home'. The main content area shows a report for 'CPC (Central Processor Complex)'. A red circle highlights the 'Print' and 'Export' icons in the top navigation bar. An arrow points from the 'Export' icon to the Excel spreadsheet, which contains a table of data corresponding to the report's content.

LPAR Name	Defined MSU	Actual MSU	Capping Option	Logical processors	Logical eff. time %	Logical total time %	Physical total util%	Physical eff. time %	Physical total time %	Type
*CP							11.1	89.3	80.4	CS
CFE	0	0	YES	1.0	0.8	0.9	0.0	0.1	0.1	CP
CFF	0	2	YES	2.0	2.3	2.5	0.1	0.7	0.7	CP
CIM4	0	2	NO	3.0	2.1	2.5	0.2	0.9	1.1	CP
KEY3	0	4	NO	5.0	2.2	2.5	0.2	1.6	1.8	CP
KEY4	0	8	NO	4.0	5.5	5.9	0.2	3.1	3.3	CP
SYSA	0	8	NO	5.0	5.0	5.3	0.2	3.6	3.8	CP
SYSB	0	6	NO	5.0	3.7	4.0	0.2	2.7	2.8	CP
SYSC	0	8	NO	5.0	3.2	3.5	0.2	2.3	2.5	CP
SYSD	100	5	NO	4.0	3.9	4.2	0.2	2.2	2.4	CP
SYSE	0	6	NO	4.0	4.1	4.5	0.2	2.3	2.6	CP
SYSF	100	7	NO	3.0	6.5	6.9	0.2	2.8	3.0	CP
VMA	0	108	NO	7.0	47.1	47.8	0.8	47.1	47.8	CP
PHYSICAL							8.5		8.5	CY

DDS - Request Format (metrics)

- RMF Distributed Dataserver responds to standard HTTP requests
- Example: request the single metric response time for volume *170CB01* located in the i/o subsystem of system *SYSF*
request the list metric number of users MVS Image of sysplex *SYSDPLEX*



- ▶ contained.xml returns the contained resources
- ▶ listmetrics.xml returns the list of associated metrics
- ▶ details.xml returns the properties of the resource
- ▶ perform.xml returns the metric specified by the id parameter

DDS - XML Response Format (single metric)

- ▶ RMF Distributed Dataserver returns XML documents
- ▶ The requested metric can be extracted from the col tag
- ▶ Example: XML document for *response time for volume 170CB01 of SYSF*

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="/gpm/include/perform.xsl"?>
<ddsml xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:noNamespaceSchemaLocation="/gpm/include/ddsml.xsd">
  <server>
    <name>RMF-DDS-Server</name>
    <version>ZOSV1R9</version>
    <functionality>2344</functionality>
  </server>
  <report>
    <metric id="8D10F0">
      <description>response time</description>
      <format>single</format>
      <numcols>2</numcols>
    </metric>
    <resource>
      <reslabel>SYSF,170CB01,VOLUME</reslabel>
      <restype>VOLUME</restype>
      <reslabelurl>SYSF,170CB01,VOLUME</reslabelurl>
    </resource>
    <time-data>
      <local-start>20070321084500</local-start>
      <local-end>20070321084600</local-end>
      <gatherer-interval unit="seconds">60</gatherer-interval>
    </time-data>
    <row refno="1" percent="66.6667">
      <col></col><col>1.5</col>
    </row>
  </report>
</ddsml>
```

DDS - XML Response Format (list metric)

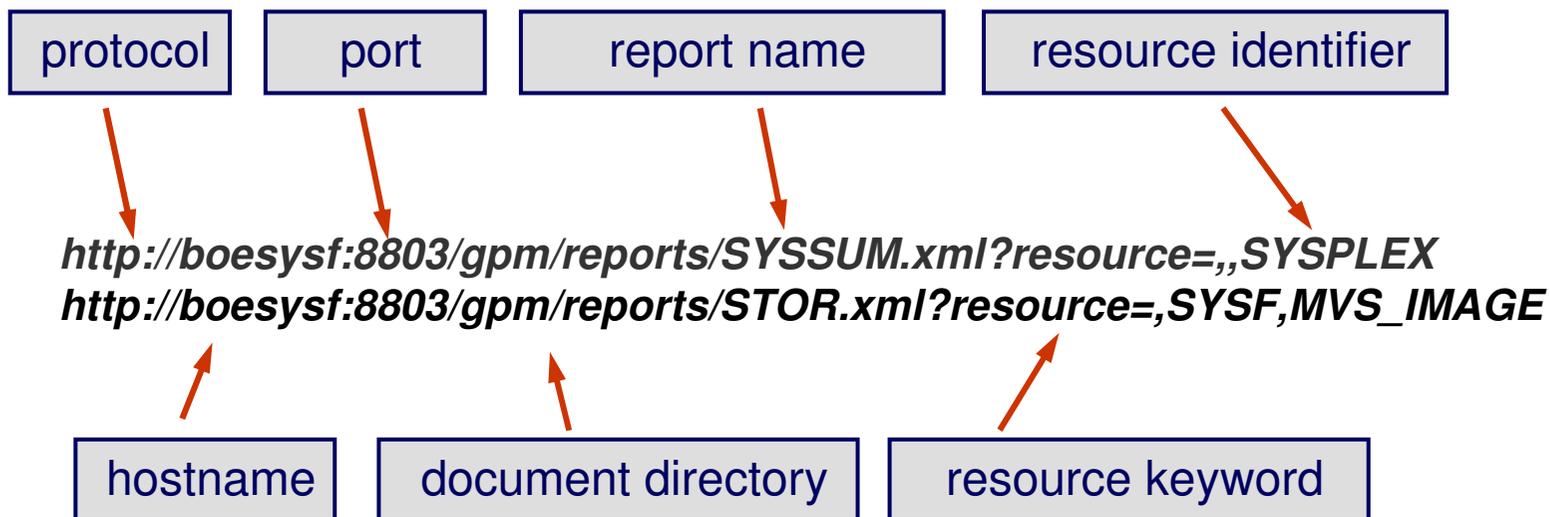
- ▶ Example: XML document for *# users by MVS Image of sysplex SYSDPLEX*:

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl"
  href="/gpm/include/perform.xsl"?>
<ddsml xmlns:xsi=
  "http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation=
  "/gpm/include/ddsml.xsd">
<server>
<name>RMF-DDS-Server</name>
<version>ZOSV1R10</version>
<functionality>2376</functionality>
<platform>z/OS</platform>
</server>
<report>
<metric id="8D0D60">
<description># users by MVS image</description>
<format>list</format>
<numcols>2</numcols>
<listtype>M</listtype>
<workscope>,,G</workscope>
<filter>HI=20</filter>
<unit>count</unit>
</metric>
<resource>
<reslabel>,,SYSDPLEX,SYSPPLEX</reslabel>
<restype>SYSPPLEX</restype>
```

```
<reslabelurl>,,SYSDPLEX,SYSPPLEX</reslabelurl>
</resource>
<time-data>
<local-start>20081027175000</local-start>
<local-end>20081027175100</local-end>
<utc-start>20081027165000</utc-start>
<utc-end>20081027165100</utc-end>
<local-prev>20081027174930</local-prev>
<local-next>20081027175130</local-next>
<display-start locale="en-us">10/27/2008 17:50:00</display-start>
<display-end locale="en-us">10/27/2008 17:51:00</display-end>
<gatherer-interval unit="seconds">60</gatherer-interval>
<data-range unit="seconds">60</data-range>
</time-data>
<row refno="1" attributes="YES" percent="100">
<col>SYSE</col><col>162</col>
</row>
<row refno="2" attributes="YES" percent="97.5309">
<col>SYSD</col><col>158</col>
</row>
<row refno="3" attributes="YES" percent="68.5185">
<col>SYSF</col><col>111</col>
</row>
</report>
</ddsml>
```

DDS - Request Format (reports)

- Can be also used to get Sysplex and single system reports
- Example: request the System Summary report of the resource **SYSPLEX**
 request the Storage Delay report of the resource **MVS_IMAGE SYSF**



- ▶ Reports assigned to SYSPLEX resource:
CACHDET, CACHSUM, CFACT, CFOVER, CFSYS, SPACEG, SPACED, SYSSUM, XCFGROUP, XCFOVW, XCFPATH, XCFSYS
- ▶ Reports assigned to MVS_IMAGE resource:
CHANNEL, CPC, DELAY, DEV, DEVR, DSND, ENCLAVE, IOQ, OPD, LOCKSP, LOCKSU, OPD, PROC, PROCU, STOR, STORC, STORCR, STORF, STORM, STORS, SYSINFO, ZFSACT, ZFSSUM

DDS - XML Response Format (reports)

- ▶ Example: XML document for *Storage Delay Report for MVS_IMAGE SYSF*

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl"
  href="/gpm/include/reports.xsl"?>
<ddsml xsi:noNamespaceSchemaLocation=
"/gpm/include/ddsml.xsd">
<server>
<name>RMF-DDS-Server</name>
<version>ZOSV1R10</version>
<functionality>2376</functionality>
<platform>z/OS</platform>
</server>
<report>
<metric id="STOR">
<description>STOR (Storage Delays)</description>
<format>report</format>
<numcols>9</numcols>
</metric>
<resource>
<reslabel>,SYSF,MVS_IMAGE</reslabel>
<restype>MVS_IMAGE</restype>
<reslabelurl>,SYSF,MVS_IMAGE</reslabelurl>
</resource>
<time-data>
<local-start>20081027165800</local-start>
<local-end>20081027165900</local-end>
<utc-start>20081027155800</utc-start>
<utc-end>20081027155900</utc-end>
```

```
<local-prev>20081027165730</local-prev>
<local-next>20081027165930</local-next>
<display-start locale="en-us">10/27/2008 16:58:00</display-start>
<display-end locale="en-us">10/27/2008 16:59:00</display-end>
<gatherer-interval unit="seconds">60</gatherer-interval>
<data-range unit="seconds">60</data-range>
</time-data>
<row refno="1">
<col>*MASTER*</col>
<col>0001</col>
<col>S</col>
<col>SYSTEM</col>
<col>4056</col>
<col/>
</row>
....
<column-headers>
<col type="T">STRPJOB</col>
<col type="N">STRPASI</col>
<col type="T">STRPCLA</col>
<col type="T">STRPSVCL</col>
<col type="N">STRPACTV</col>
<col type="N">STRPFIXD</col>
</column-headers>
</report>
</ddsml>
```

DDS - Optional Parameters

&filter	reduces the amount of data by specifying thresholds and name patterns
&workscope	focuses on individual worksopes (e.g service classes)
&range	specifies an individual interval

<code>&filter="PAT=CICS* IMS*"</code>	only instances with the name patterns CICS* and IMS* are returned
<code>&filter="LB=10"</code>	specifies a lower bound threshold value
<code>&filter="UB=10"</code>	specifies an upper bound threshold value
<code>&filter="HI=5"</code>	specifies the number of list elements (containing highest values)
<code>&filter="LO=5"</code>	specifies the number of list elements (containing lowest values)
<code>&filter="ORD=NA" (NA/ND/VA/VD)</code>	specifies the order (ascending/descending names or values)
<code>&workscope="STCHIGH,1,P"</code>	focus on Period 1 of Service Class STCHIGH
<code>&workscope=",STCHIGH,S"</code>	focus on Service Class STCHIGH
<code>&workscope=",BATCH,W"</code>	focus on Workload BATCH
<code>&workscope=",CATALOG,J"</code>	focus on Job Catalog
<code>&range=20070128161000,20070128161140</code>	return data from 16:10:00 to 16:11.40 at 01/28/2007

Information and Tools

RMF homepage: www.ibm.com/servers/eserver/zseries/zos/rmf/

- Product information, newsletters, presentations, ...
- Downloads
 - ▶ Spreadsheet Reporter
 - ▶ RMF PM Java Edition
 - ▶ RMF data collector for Linux

RMF email address: rmf@de.ibm.com

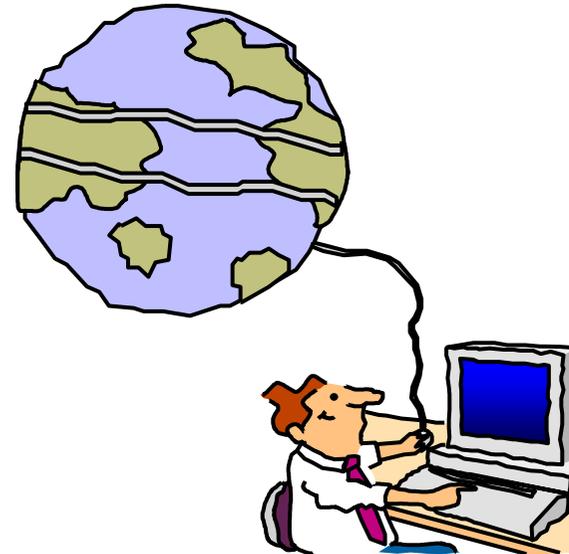
Documentation and news:

- RMF Performance Management Guide, SC33-7992
- RMF Report Analysis, SC33-7991
- RMF User's Guide, SC33-7990
- Latest version of PDF files can be downloaded from:

<http://www.ibm.com/systems/z/os/zos/bkserv/r10pdf/>

- RMF Redbook: Effective zSeries Performance Monitoring Using Resource Measurement Facility, SG24-6645-00

<http://www.redbooks.ibm.com>



IBM
524-6645-00

Effective zSeries Performance Monitoring using Resource Measurement Facility (RMF)

Review of the traditional facilities

Learn about all the new features
and how their setup

How to use RMF for
performance monitoring



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Raimo Korhonen
Peter Hildner
Michael Tauffel

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