

z/OS Resource Measurement Facility

RMF's Treasure Box - Hints and Tips

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- Session 19667

Motivation ...

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <?xml-stylesheet type="text/xsl" href="include/ddsm1-pp.xsl"?>
3 <ddsm1 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
4     xsi:noNamespaceSchemaLocation="include/ddsm1.xsd">
5   <server>
6     <name>RMF-DDS-Server</name>
7     <version>ZOSV2R2</version>
8     <functionality>3202</functionality>
9     <platform>z/OS</platform>
10  </server>
11  <postprocessor><metric id="PCIE"><description>PCIE Activity Report</description><type>In
12  </resource><time-data><display-start locale="en-us">09/28/2015-15.44.35</display-start>
13  <segment id="1"><name>General PCIE Activity</name>
14  <part id="2">
15    <table id="3">
16      <column-headers><col type="T">Function ID</col><col type="T">Function PCHID</col><col type="T">Function PCHID</col><col type="T">Function PCHID</col><col type="T">Function PCHID</col>
17      <col type="T">Owner Address Space ID</col><col type="N">Function Allocation Time</col><col type="N">Function Allocation Time</col><col type="N">Function Allocation Time</col><col type="N">Function Allocation Time</col>
18      <col type="N">Refresh PCI Translations Operations Rate</col><col type="N">DMA Address Space Operations Rate</col><col type="N">DMA Address Space Operations Rate</col><col type="N">DMA Address Space Operations Rate</col>
19      <col type="N">Packets Transmitted Rate</col><col type="N">Work Units Processed Rate</col><col type="N">Work Units Processed Rate</col><col type="N">Work Units Processed Rate</col>
20      <row refno="1"><col>0021</col><col>037C</col><col>Hardware Accelerator</col><col>101404</col><col>101404</col><col>101404</col><col>101404</col><col>101404</col><col>101404</col>
21      <col>0</col><col></col><col></col><col></col><col></col><col></col><col></col><col></col>
22      <row refno="2"><col>0025</col><col>037C</col><col>Hardware Accelerator</col><col>101404</col><col>101404</col><col>101404</col><col>101404</col><col>101404</col>
23      <col>0</col><col></col><col></col><col></col><col></col><col></col><col></col><col></col>
24      <row refno="3"><col>0028</col><col>03BC</col><col>Hardware Accelerator</col><col>101404</col><col>101404</col><col>101404</col><col>101404</col><col>101404</col>
25      <col>0</col><col></col><col></col><col></col><col></col><col></col><col></col><col></col>
26      <row refno="4"><col>002B</col><col>03BC</col><col>Hardware Accelerator</col><col>101404</col><col>101404</col><col>101404</col><col>101404</col><col>101404</col>
27      <col>0</col><col></col><col></col><col></col><col></col><col></col><col></col><col></col>
28    </table></part></segment>
29    <segment id="4"><name>Hardware Accelerator Activity</name>
30    <part id="5">
31      <table id="6">
32        <column-headers><col type="T">Function ID</col><col type="N">Time Busy %</col><col type="N">Time Busy %</col><col type="N">Time Busy %</col><col type="N">Time Busy %</col>
33        <col type="N">Std Dev for Request Queue Time</col><col type="N">Request Size</col><col type="N">Request Size</col><col type="N">Request Size</col><col type="N">Request Size</col>
34        <row refno="1"><col>0021</col><col>0.036</col><col>47.4</col><col>0.759</col><col>74.8</col><col>74.8</col><col>74.8</col><col>74.8</col>
35        <row refno="2"><col>0025</col><col>0.001</col><col>43.8</col><col>4.56</col><col>689.5</col><col>689.5</col><col>689.5</col><col>689.5</col>
36        <row refno="3"><col>0028</col><col>0.001</col><col>43.3</col><col>4.59</col><col>685.7</col><col>685.7</col><col>685.7</col><col>685.7</col>
37        <row refno="4"><col>002B</col><col>0.001</col><col>41.6</col><col>6.23</col><col>657.7</col><col>657.7</col><col>657.7</col><col>657.7</col>
38      </table></part></segment>
39    <segment id="7"><name>Hardware Accelerator Compression Activity</name>
40    <part id="8">
41      <table id="9">
42        <column-headers><col type="T">Function ID</col><col type="N">Compression Request Rate</col><col type="N">Compression Request Rate</col><col type="N">Compression Request Rate</col><col type="N">Compression Request Rate</col>
43        <col type="N">Decompression Throughput</col><col type="N">Decompression Ratio</col><col type="N">Decompression Ratio</col><col type="N">Decompression Ratio</col><col type="N">Decompression Ratio</col>
44        <row refno="1"><col>0021</col><col>0.036</col><col>0.002</col><col>6.45</col><col>0</col><col>0</col><col>0</col>
45        <row refno="2"><col>0025</col><col>0.036</col><col>0.002</col><col>6.34</col><col>0</col><col>0</col><col>0</col>
46        <row refno="3"><col>0028</col><col>0.036</col><col>0.002</col><col>6.49</col><col>0</col><col>0</col><col>0</col>
47        <row refno="4"><col>002B</col><col>0.053</col><col>0.003</col><col>7.42</col><col>0</col><col>0</col><col>0</col>
48      </table></part></segment>
49  </postprocessor>

```

There is a new PCIE
Postprocessor report in
RMF?
Great!
Only in XML format?
Ohhh, how am I supposed to
read that?
Never done this before ...
Doesn't look like clearly
arranged ...

But which is better to read?

CPU ACTIVITY												PAGE	1		
z/OS V2R2				SYSTEM ID SYSE				DATE 09/28/2015				INTERVAL 15.00.000			
MODEL 732				RPT VERSION U2R2 RMF				TIME 16.14.34				CYCLE 1.000 SECONDS			
H/W MODEL H43				SEQUENCE CODE 000000000004255											
CPC CAPACITY 3665				HIPERDISPATCH=YES											
CHANGE REASON=NONE															
--CPU--															
NUM	TYPE	ONLINE	LPAR	BUSY	MVS	BUSY	PARKED	PROD	MT	UTIL	LOG PROC	--I/O INTERRUPTS--			
0	CP	100.00	1.24	1.20	0.00	0.00	0.00	100.00	1.24	32.2	MED	RATE	% VIA TPI		
1	CP	100.00	0.06	0.06	0.00	0.00	0.00	100.00	0.06	0.0	LOW	0.00	0.00		
2	CP	100.00	0.00	0.00	0.00	0.00	100.00	100.00	0.00	0.0	LOW	0.00	0.00		
TOTAL/AVERAGE			0.43	0.63				100.00	0.43	32.2		8.54	0.26		
MULTI-THREADING ANALYSIS															
CPU TYPE	MODE	MAX CF	CF	AUG ID											
CP	1	1.000	1.000	1.000											
RMF Postprocessor Interval Report [System SYSE] : CPU Activity Report															
RMF Version : z/OS V2R2 SMF Data : z/OS V2R2															
Start : 09/28/2015-15.59.34 End : 09/28/2015-16.14.34 Interval : 14:59:998 minutes Cycle : 1000 milliseconds															
▼ CPU Activity															
CPU : 2827 Model : 732 H/W Model : H43 Sequence Code : 0000000000004255 HiperDispatch : YES CPC Capacity : 3665 Change Reason : NONE															
Core ID	Thread ID	CPU Type	Time% Online	Time% LPAR Busy	Time% MVS Busy	Time% Parked	MT% Productivity	MT% Utilization	LOG PROC Share%	HiperDispatch P					
0	0	CP	100.00	1.25	1.21	0.00	100.00	1.25	32.2	MED					
1	0	CP	100.00	0.06	0.06	0.00	100.00	0.06	0.0	LOW					
2	0	CP	100.00	0.00	0.00	100.00	100.00	0.00	0.0	LOW					
TOTAL/AVERAGE		CP	0.44	0.64			100.00	0.44	32.2						
Multi-Threading Analysis															
CPU Type	Mode	Maximum Capacity Factor	Capacity Factor	Average Thread Density											
CP	1	1.000	1.000	1.000											

RMF Postprocessor Interval Report [System SYSE] : CPU Activity Report

RMF Version : z/OS V2R2 SMF Data : z/OS V2R2

Start : 09/28/2015-15:59:34 End : 09/28/2015-16:14:34 Interval : 14:59:998 minutes Cycle : 1000 milliseconds

CPU Activity

CPU : 2827 Model : 732 HW Model : H43 Sequence Code : 0000000000004255 HiperDispatch : YES CPC Capacity : 3665 Change Reason : NONE

Core ID	Thread ID	CPU Type	Time% Online	Time% LPAR Busy	Time% MVS Busy	Time% Parked	MT% Productivity	MT% Utilization	LOG PROC Share%	HiperDispatch Priority	I/O Interrupts Rate	I/O Interrupts% via TPI
0	0	CP	100.00	1.25	1.21	0.00	100.00	1.25	32.2	MED	8.13	0.19
1	0	CP	100.00	0.06	0.06	0.00	100.00	0.06	0.0	LOW	0.00	0.00
2	0	CP	100.00	0.00	0.00	100.00	100.00	0.00	0.0	LOW	0.00	0.00
TOTAL/AVERAGE		CP		0.44	0.64		100.00	0.44	32.2		8.13	0.19

Multi-Threading Analysis

CPU Type	Mode	Maximum Capacity Factor	Capacity Factor	Average Thread Density
CP	1	1.000	1.000	1.000

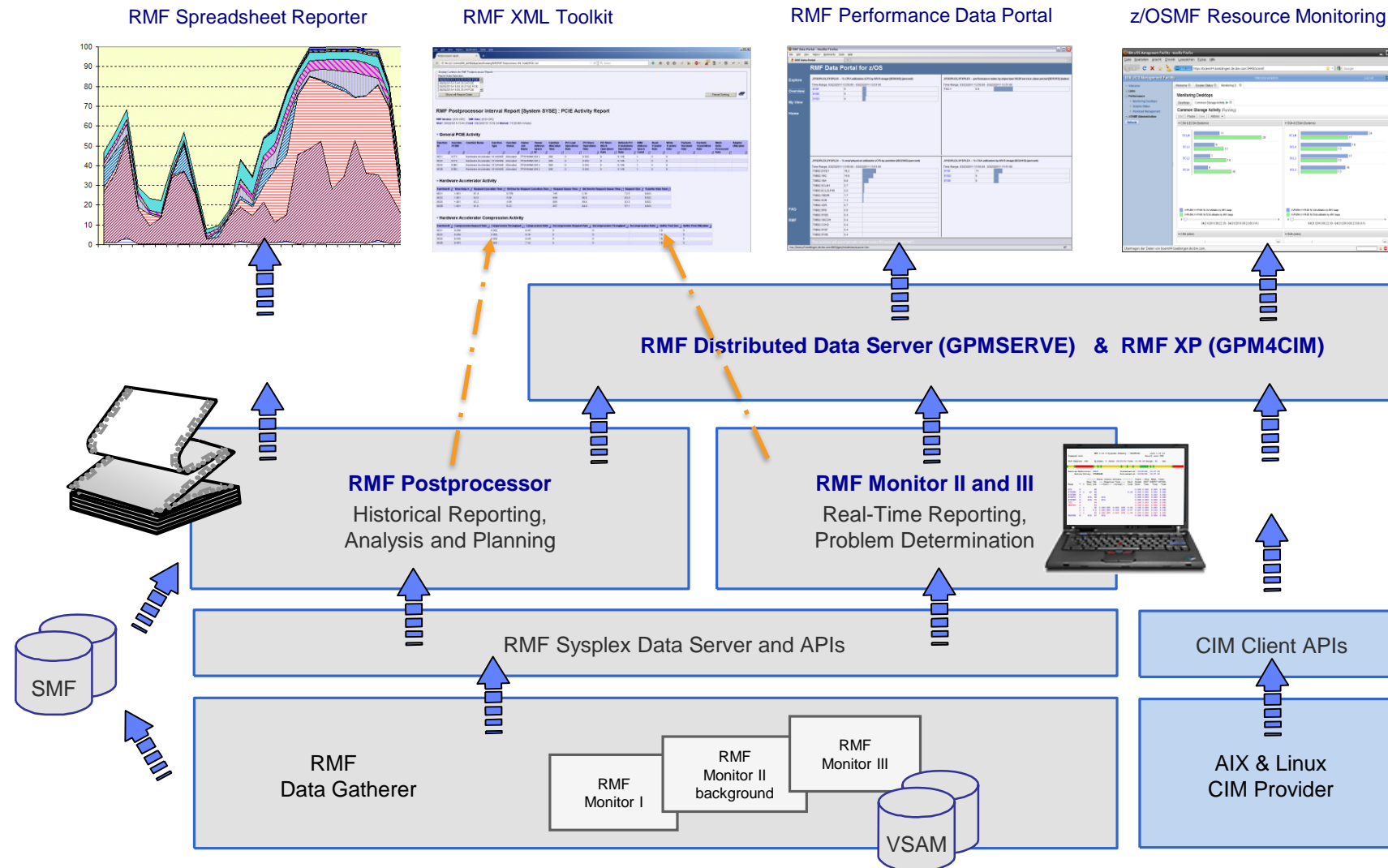
System Address Space Analysis

Type	Number of Address Spaces: MIN	Number of Address Spaces: MAX	Number of Address Spaces: AVG
IN Queue	60	62	60.4
IN READY Queue	0	5	0.0
OUT READY Queue	0	0	0.0
OUT WAIT Queue	0	0	0.0
LOGICAL OUT READY Queue	0	0	0.0
LOGICAL OUT WAIT Queue	111	113	112.6
BATCH Address Spaces	0	0	0.0
STC Address Spaces	168	168	168.0
TSO Address Spaces	2	2	2.0
ASCH Address Spaces	0	0	0.0
OMVS Address Spaces	3	3	3.0

Session objectives

- RMF Product Components
- RMF talks XML!
 - Expansion to XML format complete
 - Components dealing with XML
 - RMF Postprocessor XML formatted reports
 - RMF XML Toolkit
 - RMF Spreadsheet Reporter
 - RMF Distributed Data Server
- Take the short path!
 - RMF Postprocessor Overview Conditions
 - How to use Overview Reporting
 - RMF Spreadsheet Reporter
 - RMF Data Portal

RMF Product Overview



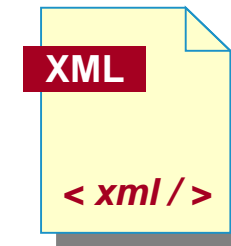
A short history of RMF XML

- z/OS ~1.5: DDS HTTP API for Monitor III data
 - Comprehensive resource model
 - Single & list-valued metrics
 - Full Monitor III report support with z/OS R1.8
- z/OS 1.11: Start of RMF Postprocessor „talking“ XML
- z/OS 1.12: Postprocessor reports can be requested via DDS HTTP API and Data Portal
- z/OS 2.1: All Postprocessor reports can be formatted as XML data, new ones are only available as XML data:
 - SDELAY (z/OS 1.13)
 - PCIE (z/OS 2.1)
 - SCM (z/OS 2.2)

XML formatted RMF reports

Rationale:

- No state-of-the-art display capability of RMF reports
 - RMF No state-of-the-art Monitor III reports only available via ISPF:
 - Limited selection of data columns visible in ISPF reports
 - Data resides in VSAM data sets
 - RMF Postprocessor reports are limited to a page width of 132 characters
 - Material sometimes squeezed because of width limitations
 - Always complete data shown in report, no chance to hide parts
- No flexible sorting capability for RMF data
- No easy access to RMF data for application programs
 - cumbersome to parse the text output
 - each report has its own layout



➔ RMF reports (Postprocessor and Monitor III) can be generated in XML format

Postprocessor XML formatted reports

z/OS V1R11 RMF	z/OS V1R12 RMF	z/OS V1R13 RMF	z/OS V2R1 RMF	z/OS V2R2 RMF
CPU Activity CRYPTO Activity ESS Disk Systems Activity FICON Director Activity OMVS Kernel Activity OVERVIEW Report	DEVICE Activity WORKLOAD Activity	PAGING Activity SDELAY (XML only)	CACHE Subsystem Activity CF Activity CHANNEL Path Activity ENQUEUE Activity HFS Statistics IOQ Activity PAGESP Activity PCIE Activity (XML only) SDEVICE Activity VSTOR Activity XCF Activity	SCM Activity (XML only)

- Summary and Exception reports as well as interval reports based on data collected by a Monitor II background session are not available in XML format.
- The XML format is the preferred RMF Postprocessor report format for the future.
- The XML format supersedes the text format. New reports might not be implemented in text format.

Postprocessor XML formatted reports ...

- The generation of Postprocessor reports in XML format is controlled by the new ddnames XPRPTS, XPXSRPTS and XPOVWRPT
- If the XML output is routed to permanent data sets rather than to SYSOUT, define the data set with RECFM=VB and LRECL between 256 and 8192. Specify an appropriate BLKSIZE

ddname	Contents	Allocations	Notes
XPRPTS	Combined single-system report in XML format	One ddname for one data set to contain all single system reports for each interval during the session.	There is no dynamic allocation of this ddname, you have to define it explicitly if you want to get all reports in XML format into one data set or output class. If you define this ddname, no MFRnnnnn files are created. If you define this ddname and PPRPTS, no XML output in file XPRPTS is created.
XPOVWRPT	Combined Overview report in XML format	One ddname for one data set to contain all overview reports for each system included in the input data.	There is no dynamic allocation of this ddname, you have to define it explicitly if you want to get all overview reports in XML format into one data set or output class. If you define this ddname, no PPORPnnn files are created.
XPXSRPTS	Combined sysplex-wide report in XML format	One ddname for one data set to contain all sysplex reports for each interval included in the input data.	There is no dynamic allocation of this ddname, you have to define it explicitly if you want to get all reports in XML format into one data set or output class. If you define this ddname, no MFRnnnnn files are created. If you define this ddname and PPXSRPTS, no XML output in file XPXSRPTS is created.

RMF Postprocessor JCL for XML Output

```
//ERBSAMPP JOB (ACCT), 'PGMRNAME', CLASS=A, REGION=32M, ...  
//*  
//* RMF POSTPROCESSING  
//*  
//RMFPP EXEC PGM=ERBRMFPP  
//MFPINPUT DD DISP=SHR, DSN=<Input_SMF_Data>  
//MFPMSGDS DD SYSOUT=*  
//XPRPTS DD SYSOUT=* CUMULATIVE OUTPUT OF INTERVAL REPORTS  
//XPXSRPTS DD SYSOUT=*  
//SYSOUT DD SYSOUT=*  
//SYSIN DD *  
SUMMARY(INT, TOT)  
REPORTS(ALL)  
SYSRPTS(ALL)  
SYSOUT(A)
```

- Use **XPOVWRPT** for Overview Conditions
- Replace **X** by **P** to generate „old“ text report output

RMF Postprocessor Job: SDSF Output

```

SDSF STATUS DISPLAY ALL CLASSES                                LINE 1-1 (1)
COMMAND INPUT ==>                                           SCROLL ==> CSR
NP   JOBNAME  JobID   Owner    Prty Queue      C  Pos  SAff  ASys Status
?   ERBSAMPP JOB07476 B...      1 PRINT      A

```

```

SDSF JOB DATA SET DISPLAY - JOB ERBSAMPP (JOB07476)        LINE 1-7 (7)
COMMAND INPUT ==>                                           SCROLL ==> CSR
NP   DDNAME   StepName ProcStep DSID Owner      C Dest              Rec-Cnt Page
      JESMSGLG JES2           2 B...      H LOCAL              30
      JESJCL   JES2           3 B...      H LOCAL              36
      JESYSMSG JES2           4 B...      H LOCAL              35
      MFPMSGDS RMFPP          103 B...     H LOCAL              23
      XPXSRPTS RMFPP          104 B...     H LOCAL            107,469
      XPRPTS   RMFPP          105 B...     H LOCAL             59,278

```

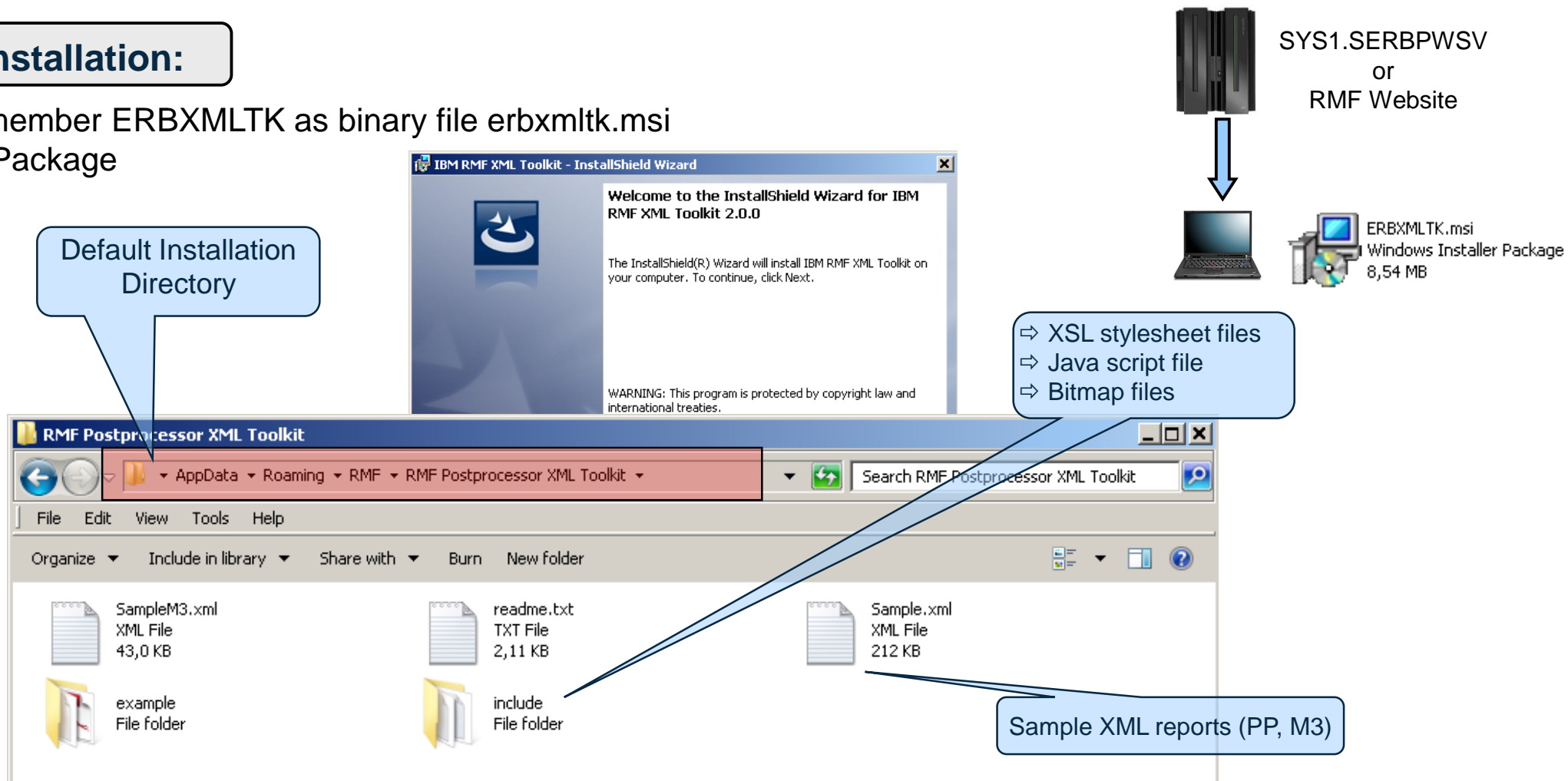
- These screen shots from SDSF show where the generated XML output for the requested system and sysplex interval reports can be found after the RMF Postprocessor job has finished.

RMF XML Toolkit

- New RMF XML Toolkit shipped with RMF since z/OS 1.13
- Simplifies display of RMF Postprocessor XML reports in a web browser

➔ Toolkit Installation:

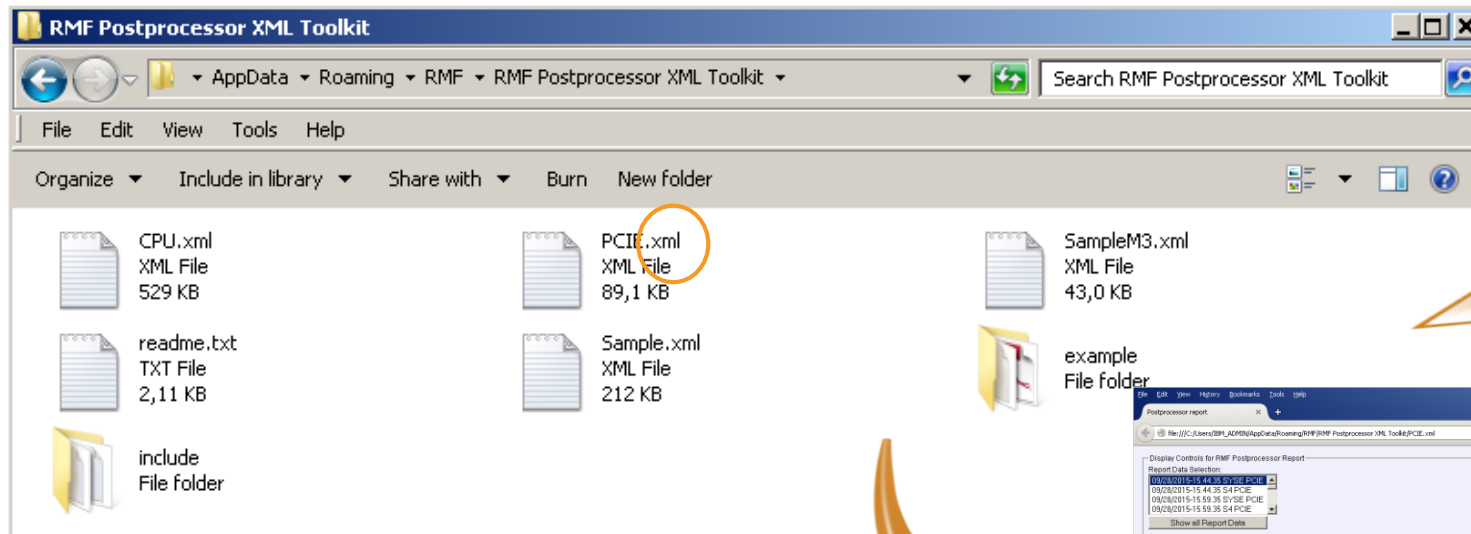
1. Download member ERBXMLTK as binary file erbxmltk.msi
2. Install MSI Package



RMF XML Toolkit ...

➔ Toolkit Usage:

1. Download Postprocessor XML report into Toolkit directory



BKGE.PCIE.XML

Download in
ASCII format

2. Open XML report with web browser

FileEditViewHelpTools

Postprocessor report

File (C:\Users\BPM_KC\Documents\homing\RMF\RMF Postprocessor VNA Tool\PCIE.xml)Search

Display Controls for RMF Postprocessor Report

Report Data Selection

09/28/2015-15:44:35 PCIE
09/28/2015-15:55:35 PCIE
09/28/2015-15:55:35 PCIE
Show all Report Data

Reset Sorting

RMF Postprocessor Interval Report [System SYSE] : PCIe Activity Report

RMF Version : 2005 V2R2 SME Data: 2005 V2R2
Start : 09/28/2015-15:44:35 End : 09/28/2015-15:55:34 Interval : 15:00:00 minutes

▼ General PCIe Activity

Function ID	Function PCID	Function Name	Function Type	Function Status	Owner Job Name	Owner Address Space	Function Allocation Time	PCI Load Operations Rate	PCI Store Operations Rate	PCI Store Block Operations Rate	Refresh PCI Translations Operations Rate	DMA Address Space Count	Read Transfer Rate	Write Transfer Rate	Packets Received Rate	Packets Transmitted Rate	Work Units Processed Rate	Adapter Utilization
0021	037C	Hardware Accelerator 1014844B	Allocated		FPGHAWM 0012	900	0	0.003	0	0.196	1	0	0	0	0	0	0	0
0025	037C	Hardware Accelerator 1014844B	Allocated		FPGHAWM 0012	900	0	0.003	0	0.196	1	0	0	0	0	0	0	0
0028	038C	Hardware Accelerator 1014844B	Allocated		FPGHAWM 0012	900	0	0.003	0	0.196	1	0	0	0	0	0	0	0
002B	038C	Hardware Accelerator 1014844B	Allocated		FPGHAWM 0012	900	0	0.002	0	0.196	1	0	0	0	0	0	0	0

▼ Hardware Accelerator Activity

Function ID	Time Busy %	Request Execution Time	Std Dev for Request Execution Time	Request Queue Time	Std Dev for Request Queue Time	Request Size	Transfer Rate Total
0021	+ .001	47.4	0.759	745	2.30	72.5	0.003
0025	+ .001	43.8	4.56	689	60.6	82.0	0.002
0028	+ .001	43.3	4.59	685	59.6	82.0	0.002
002B	+ .001	41.8	5.23	657	64.9	57.1	0.003

▼ Hardware Accelerator Compression Activity

Function ID	Compression Request Rate	Compression Throughput	Compression Ratio	Decompression Request Rate	Decompression Throughput	Decompression Ratio	Buffer Pool Size	Buffer Pool Utilization
0021	0.036	0.002	6.45	0	0	0	16	0
0025	0.036	0.002	6.34	0	0	0	16	0
0028	0.036	0.002	6.49	0	0	0	16	0
002B	0.053	0.003	7.42	0	0	0	16	0

Spreadsheet Reporter – XML Support

The image displays the IBM RMF Spreadsheet Reporter application interface. On the left, the main window shows a file explorer with 'Resources' and 'Systems' tabs. The 'Resources' tab is active, showing a tree view of folders: 'All Resources', 'Remote' (containing 'SMF Dump Data', 'Report Listings', 'Overview Records'), and 'Local' (containing 'Report Listings', 'Overview Records', 'Working Sets', and 'Spreadsheets'). A red circle highlights the 'Spreadsheets' folder. A red arrow points from this circle to the 'Reports' tab in the 'Options' dialog box. The 'Options' dialog box has two tabs: 'General' and 'Reports'. The 'Reports' tab is selected, showing 'General Processing Options'. A red circle highlights the 'Reports' tab. A red arrow points from this circle to the 'Options' dialog box. The 'Options' dialog box has two tabs: 'General' and 'Reports'. The 'Reports' tab is selected, showing 'RMF Postprocessor Report Types'. A blue speech bubble points to this list, stating 'List of currently available reports in XML format'. The list includes various report types with checkboxes. The 'Use XML Report Format' option is checked. The 'Options' dialog box has 'Ok' and 'Cancel' buttons at the bottom.

IBM RMF Spreadsheet Reporter

File Define View Settings Create

Resources Systems

All Resources

Remote

- SMF Dump Data
- Report Listings
- Overview Records

Local

- Report Listings
- Overview Records
- Working Sets
- Spreadsheets

Options

General Reports

General Processing Options

- ☒ Create Overview Records
- ☐ Delete Postprocessor Datasets after Download
- ☐ Ignore specified Duration Period
- ☐ Ignore specified Interval Time
- ☒ Save Password with System Profile
- ☐ Scratch Overview Records after Conversion
- ☐ Scratch Report Listings after Conversion
- ☒ Scratch extracted OVW Files after Conversion
- ☒ Scratch extracted RPT Files after Conversion
- ☐ Sort SMF Datasets
- ☒ Use XML Report Format

RMF Postprocessor Report Types

- ☐ Cache Subsystem Activity
- ☐ Channel Path Activity
- ☐ Coupling Facility Activity
- ☒ CPU Activity
- ☒ Crypto Hardware Activity
- ☐ DASD Device Activity
- ☐ Enqueue Activity
- ☐ Enterprise Disk Systems
- ☐ FICON Director Activity
- ☐ HFS Statistics
- ☐ I/O Queuing Activity
- ☐ OMVS Kernel Activity
- ☐ Page Data Set Activity
- ☒ Paging Activity
- ☒ PCIE Activity
- ☒ Storage Class Memory Activity
- ☒ Serialization Delays
- ☐ Shared DASD Device Activity
- ☐ Shared TAPE Device Activity
- ☐ TAPE Device Activity
- ☐ Virtual Storage Activity
- ☐ Workload Activity (Report Classes)
- ☐ Workload Activity (Service Classes)
- ☒ XCF Activity

Ok Cancel

Ok Cancel

List of currently available reports in XML format

Spreadsheet Reporter XML Support...

Postprocessor report

File Edit View History Bookmarks Tools Help

file:///C:/Users/IBM_ADMIN/AppData/Roaming/RM Search

Display Controls for RMF Postprocessor Report

Report Data Selection:

09/28/2015-16.14.34 S4 CPU
09/28/2015-16.29.34 SYSE CPU
09/28/2015-16.29.34 S4 CPU
09/28/2015-16.44.34 SYSE CPU

Show all Report Data

Reset Sorting

RMF Postprocessor Interval Report [System S4] : CPU Activity Report

RMF Version : z/OS V2R2 SMF Data : z/OS V2R1
Start : 09/28/2015-16.14.34 End : 09/28/2015-16.29.34 Interval : 14:59:999 minutes Cycle : 1000 milliseconds

▼ CPU Activity

CPU : 2827 Model : 732 H/W Model : H43 Sequence Code : 0000000000004255 HiperDispatch : YES CPC Capacity : 3665 Change Reas

CPU Number	CPU Type	Time% Online	Time% LPAR Busy	Time% MVS Busy	Time% Parked	LOG PROC Share%	HiperDispatch Priority	I/O Interrupts Rate	I/O Interrupts% via TPI
0	CP	100.00	1.21	1.17	0.00	32.2	MED	8.35	0.31
1	CP	100.00	0.04	0.04	0.00	0.0	LOW	0.00	0.00
2	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
TOTAL/AVERAGE CP			0.42	0.61		32.2		8.35	0.31

System Address Space Analysis

Type	Number of Address Spaces: MIN	Number of Address Spaces: MAX	Number of Address Spaces: AVG
IN Queue	57	60	57.4
IN READY Queue	0	2	0.0
OUT READY Queue	0	0	0.0
OUT WAIT Queue	0	0	0.0
LOGICAL OUT READY Queue	0	0	0.0

IBM RMF Spreadsheet Reporter Java TM Technology Edition (SYSF)

File Define View Settings Create Messages Help

Resources Systems

All Resources

Remote

SMF Dump Data

Report Listings

Overview Records

Local

Report Listings

Overview Records

Working Sets

Spreadsheets

MVS1.D127.T112039.lis

SCLM.D215.T1133732.lis

SCLM.D215.T1133808.lis

SYSF.D212.T114702.xml

SYSF.D215.T113455.xml

SYSF.D215.T113918.xml

Sample.lis

Start

View

New

Rename

Delete

Properties



HTTP API to access RMF Interactive & Historical Data

- Application programs can use Distributed Data Server (DDS) HTTP API to retrieve RMF Monitor III & Postprocessor XML reports
- All RMF Postprocessor XML formatted reports supported
- Web browser can be used as Monitor III & Postprocessor Data Portal



Postprocessor report

File:///C:/Users/IBM_ADMIN/AppData/Roaming/RMF/RMF Postpr...

Display Controls for RMF Postprocessor Report

Report Data Selection:

04/21/2015-01.15.00 CB8E CPU
 04/21/2015-01.15.00 CB8D CPU
 04/21/2015-01.30.00 CB8A CPU
 04/21/2015-01.30.00 CB8C CPU

Show all Report Data

Reset Sorting

RMF Postprocessor Interval Report [System CB8E] : CPU Activity Report

RMF Version : z/OS V2R2 SMF Data : z/OS V2R2
 Start : 04/21/2015-01.15.00 End : 04/21/2015-01.30.00 Interval : 15.00:013 minutes Cycle : 1000 milliseconds

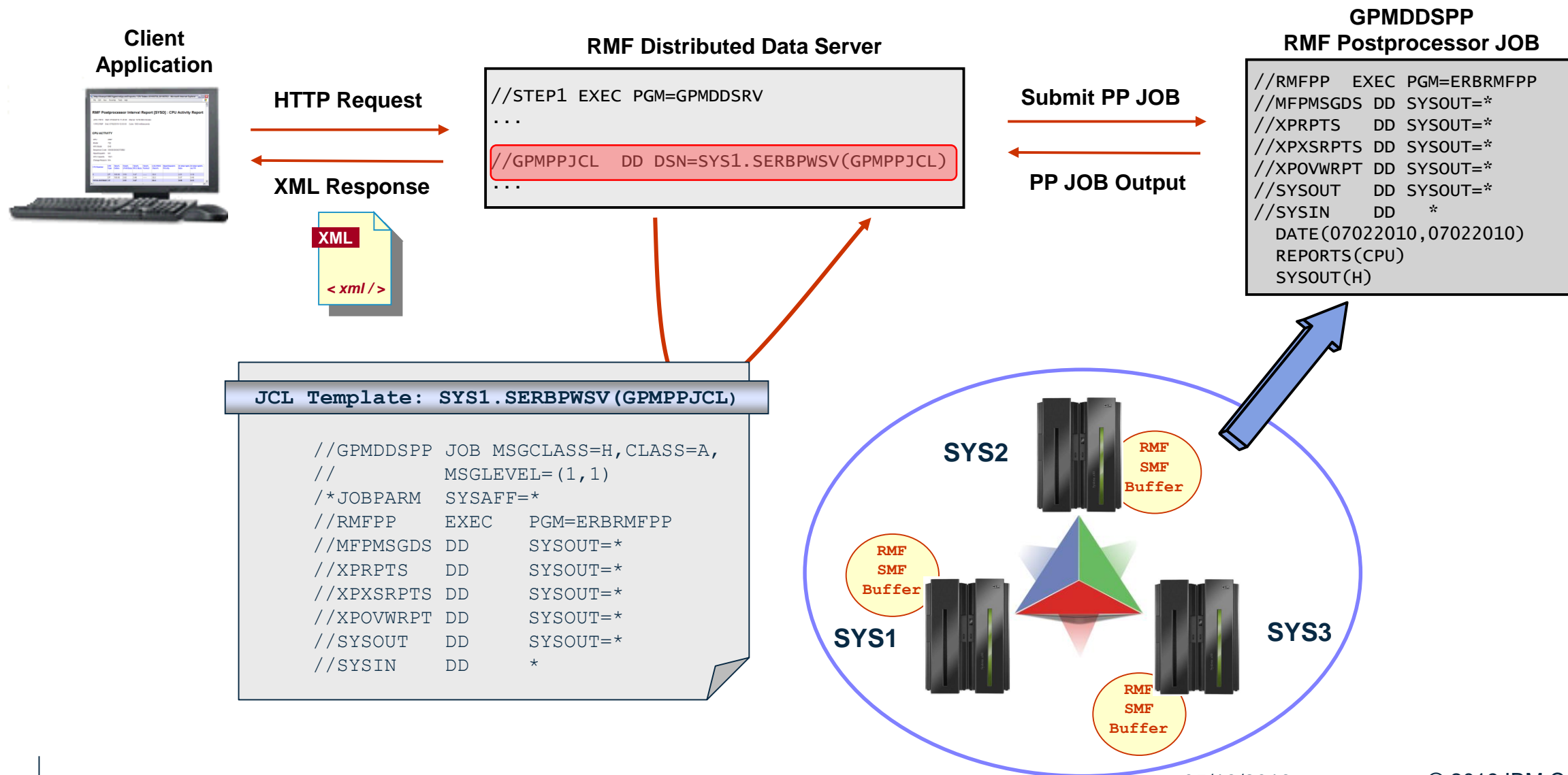
▼ CPU Activity

CPU : 2964 Model : 762 HW Model : N96 Sequence Code : 000000000009CB07 HiperDispatch : YES CPC Capacity : 6938 Change Reason : NONE

CPU Number	CPU Type	Time% Online	Time% LPAR Busy	Time% MVS Busy	Time% Parked	LOG PROC Share%	HiperDispatch Priority	I/O Interrupts Rate	I/O Interrupts% via TPI
0	CP	100.00	59.77	59.76	0.00	100.0	HIGH	583.1	23.88
1	CP	100.00	60.15	60.20	0.00	74.7	MED	9.19	16.54
2	CP	100.00	62.54	62.59	0.00	74.7	MED	407.6	4.61
3	CP	100.00	1.30	15.03	91.33	0.0	LOW	0.00	0.00
4	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
5	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
6	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
7	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
8	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
9	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
A	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
B	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
C	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
D	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
TOTAL/AVERAGE	CP		13.13	59.57		249.4		999.9	15.96
E	IIP	100.00	0.18	0.18	0.00	54.0	MED		
F	IIP	100.00	0.04	0.04	0.00	54.0	MED		
TOTAL/AVERAGE	IIP		0.11	0.11		108.0			



HTTP API to access Historical Data ...



RMF Data Portal: Postprocessor XML Formatted Reports...

Firefox

RMF Data Portal

boesys:8803

RMF Data Portal for z/OS Home Explore Overview My View ? RMF

Welcome, you are connected to: ,SYSDPLEX,SYSPLEX

RMF Monitor III Data:

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

RMF Postprocessor Reports:

Reports:

☐ CACHE ☐ CHAN ☐ CPU ☐ CRYPTO ☐ DEVICE ☐ ENQ ☐ ESS ☐ FCD ☐ HFS ☐ IOQ ☐ OMVS ☐ PAGESP ☐ PAGING ☐ PCIE ☐ SDELAY ☐ VSTOR ☐ XCF

☐ CF ☐ SDEVICE ☒ WLMGL

☐ OVW

Filter Options:

Date(Start,End) 20130927,20130927

SysID

Time of Day 0800.1600

Duration 0100

POLICY

RCLASS

RCPER

SCLASS BATCHHI

SCPER

SYSNAM

WGPER

WGROUP

Enhanced GUI

Extended Filtering Options

en-US

RMF Data Portal: Postprocessor XML Formatted Reports...

Postprocessor report

file:///C:/Users/IBM_ADMIN/AppData/Roaming/RMF/RMF Postprocessor XML

Display Controls for RMF Postprocessor Report

Report Data Selection:

- 04/21/2015-01.15.00 CB8E CPU
- 04/21/2015-01.15.00 CB8D CPU
- 04/21/2015-01.30.00 CB8A CPU
- 04/21/2015-01.30.00 CB8C CPU

Show all Report Data

Reset Sorting

RMF Postprocessor Interval Report [System CB8E] : CPU Activity Report

RMF Version : z/OS V2R2 SMF Data : z/OS V2R2
Start : 04/21/2015-01.15.00 End : 04/21/2015-01.30.00 Interval : 15:00:013 minutes Cycle : 1000 milliseconds

▼ CPU Activity

CPU : 2964 Model : 762 HW Model : N96 Sequence Code : 000000000009CB07 HiperDispatch : YES CPC Capacity : 6938 Change Reason : NONE

CPU Number	CPU Type	Time% Online	Time% LPAR Busy	Time% MVS Busy	Time% Parked	LOG PROC Share%	HiperDispatch Priority	I/O Interrupts Rate	I/O Interrupts% via TPI
0	CP	100.00	59.77	59.76	0.00	100.0	HIGH	583.1	23.88
1	CP	100.00	60.15	60.20	0.00	74.7	MED	9.19	16.54
2	CP	100.00	62.54	62.59	0.00	74.7	MED	407.6	4.61
3	CP	100.00	1.30	15.03	91.33	0.0	LOW	0.00	0.00
4	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
5	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
6	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
7	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
8	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
9	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
A	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
B	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
C	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
D	CP	100.00	0.00	-----	100.00	0.0	LOW	0.00	0.00
TOTAL/AVERAGE	CP		13.13	59.57		249.4		999.9	15.96
E	IIP	100.00	0.18	0.18	0.00	54.0	MED		
F	IIP	100.00	0.04	0.04	0.00	54.0	MED		
TOTAL/AVERAGE	IIP		0.11	0.11		108.0			

Sort columns

Postprocessor XML Formatted Reports...

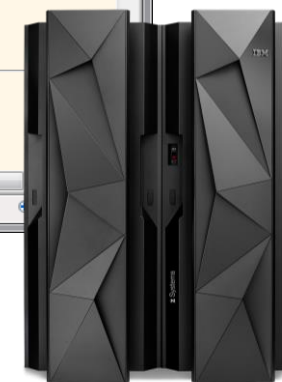
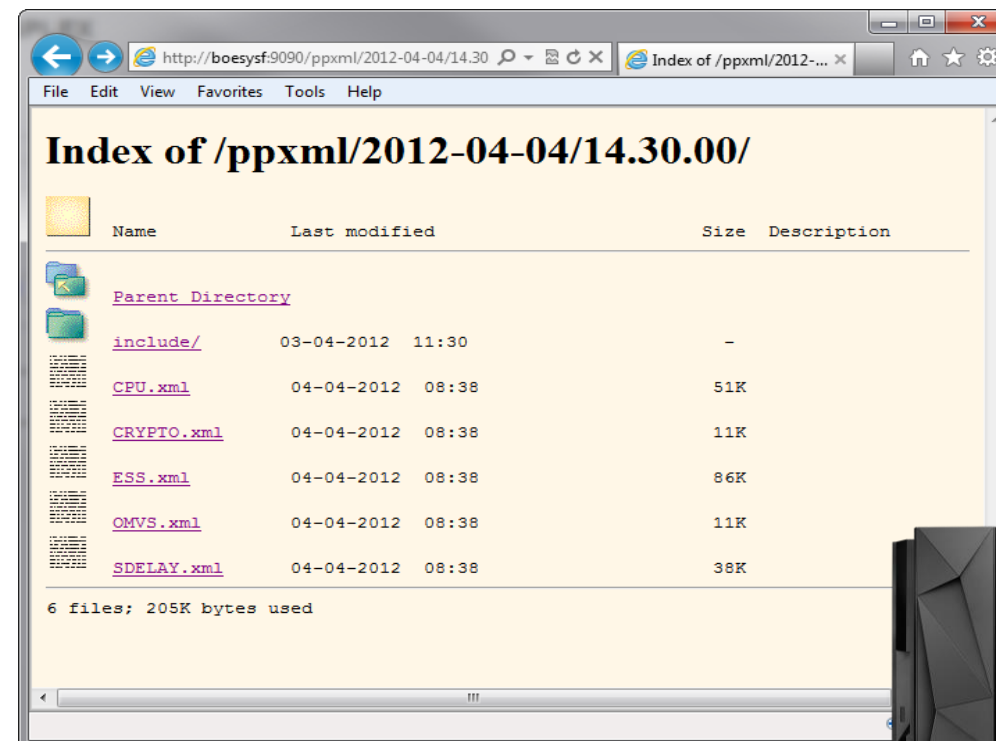
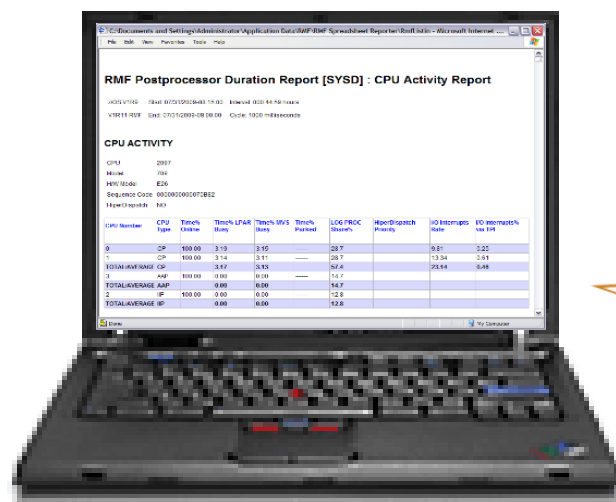
```
//PRGRNnnX JOB (DE03141,,),'PGMRNAME',CLASS=A,USER=SHARAnn,  
//          MSGCLASS=H,MSGLEVEL=(1,1),NOTIFY=SHARAnn  
//*  
//XMLPP     PROC REPORT=  
//RMFPP     EXEC PGM=ERBRMFPP  
//MFPINPUT  DD DISP=SHR,DSN=<SMF_Input_Data>  
//MFPMSGDS  DD SYSOUT=*  
//XPRPTS    DD PATH='/ppxm1/2012-04-04/14.30.00/&REPORT..xml',  
//          PATHOPTS=(OWRONLY,OCREAT,OTRUNC),  
//          PATHMODE=(SIRUSR,SIWUSR,SIRGRP),FILEDATA=TEXT  
//XPXSRPTS  DD PATH='/ppxm1/2012-04-04/14.30.00/&REPORT..xml',  
//          PATHOPTS=(OWRONLY,OCREAT,OTRUNC),  
//          PATHMODE=(SIRUSR,SIWUSR,SIRGRP),FILEDATA=TEXT  
//          PEND  
//PPCPU     EXEC PROC=XMLPP,REPORT=CPU  
//RMFPP.SYSIN DD *  
//          REPORTS(CPU)  
//PPWLMGL   EXEC PROC=XMLPP,REPORT=WLMGL  
//RMFPP.SYSIN DD *  
//          SYSRPTS(WLMGL(SCPER,POLICY))  
//
```

Execute the Postprocessor JCL and redirect the output to any HFS directory



The RMF Data Portal is currently limited to the SMF Buffer of the RMF Sysplex Data Server.
No SMF Dump Data Sets can be specified

Postprocessor XML Report Access via HTTP Server



- Instant access to all reports
- No maintenance of raw data archives

- Alternative: Use SMB Service to map USS directory

RMF Data Portal: Monitor III data

RMF Data Portal for z/OS [Home](#) [Explore](#) [Overview](#) [M](#)

Children of: ,SYSDPLEX,SYSPPLEX

Icon	Resource	Metrics	Attributes	Res-T
	,S4,MVS_IMAGE	Metrics	Show	MVS
	,SYSF,MVS_IMAGE	Metrics	Show	MVS
	,SYSE,MVS_IMAGE	Metrics	Show	MVS
	,CF01,COUPLING_FACILITY	Metrics	Show	COUPL
	,CF02,COUPLING_FACILITY	Metrics	Show	COUPL
	,4255,CPC	Metrics	Show	CPC

Full RMF Reports:

CHANNEL	CPC	DELAY	DEV	DEVR	DSND	ENCLAVE	ENQ	HSM	JES	IOQ
LOCKSP	LOCKSU	OPD	PCIE	PROC	PROCU	SCM	STOR	STORC	STORCR	STORF
STORM	STORR	STORS	SYSINFO	USAGE	ZFSACT	ZFSSUM				

Available metrics for: ,SYSE,MVS_IMAGE

Metric description	Help	Id
% delay	Explanation	8D0160
% idle	Explanation	8D03E0
% unknown	Explanation	8D0470
% using	Explanation	8D04A0

RMF Data Portal for z/OS [Home](#) [Explore](#) [Overview](#) [My View](#) [?](#) [RMF](#)

20151002121700

RMF Report [,SYSE,MVS_IMAGE] : PCIE (PCIE Activity)

Time Range: 10/02/2015 12:17:00 - 10/02/2015 12:18:00

Function Id	Function PID	Function Type	Jobname	ASID	Function Status	% Alloc Time	Allocation Date	Allocation Time	Load Operations Rate	Store Operations Rate	Store Block Operations Rate	Refresh PCI Translations Operations Rate	Xfer Read Rate	Xfer Write Rate	HWA Time % Busy	HWA Transfer Rate	Requ Exec Time
0021	037C	zEDC	FPGHWAM	0012	Alloc	100	09/28/15	10.24.17	0	0.017	0	0.267	0	0	0.001	0.016	42.4
0025	037C	zEDC	FPGHWAM	0012	Alloc	100	09/28/15	10.24.17	0	0	0	0.267	0	0	0	0	
0028	03BC	zEDC	FPGHWAM	0012	Alloc	100	09/28/15	10.24.17	0	0	0	0.267	0	0	0	0	
002B	03BC	zEDC	FPGHWAM	0012	Alloc	100	09/28/15	10.24.17	0	0	0	0.267	0	0	0	0	

RMF Data Portal: Monitor III data

RMF Report - One Row [,SYSF,MVS_IMAGE] : PCIE (PCIE Activity)

Time Range: 05/04/2015 10:02:00 - 05/04/2015 10:03:00

Function Id	0022
Function PID	037C
Function Type	zEDC
Jobname	FPGHWAM
ASID	0012
Function Status	Alloc
% Alloc Time	100
Allocation Date	04/30/15
Allocation Time	16.02.43
Load Operations Rate	0
Store Operations Rate	0
Store Block Operations Rate	0
Refresh PCI Translations Operations Rate	0
Xfer Read Rate	0
Xfer Write Rate	0
HWA Time % Busy	0
HWA Transfer Rate	0
Request Execution Time	
Request Queue Time	
Request Size	
Request Execution Time StdDev	
Request Queue Time StdDev	
Compression Request Rate	0
Decompression Request Rate	0
Compression Throughput	0
Decompression Throughput	0
Compression Ratio	
Decompression Ratio	
Buffer Pool Memory Size	16
Buffer Pool % Utilization	
# DMA AS	1
HWA Type	zCompression
Received Packets Rate	
Transmitted Packets Rate	
Work Unit Rate	
Adapter Utilization	

http://hostname:8803/gpm/rmfm3.xml?report=PCIE&resource=,sysid,MVS_IMAGE

RMF Data Portal for z/OS

[Home](#)
[Explore](#)
[Overview](#)
[My View](#)
[?](#)

RMF Report [,SYSF,MVS_IMAGE] : PCIE (PCIE Activity)

Time Range: 05/04/2015 10:02:00 - 05/04/2015 10:03:00

Function Id	Function PID	Function Type	Jobname	ASID	Function Status	% Alloc Time	Allocation Date	Allocation Time	Load Operations Rate
0022	037C	zEDC	FPGHWAM	0012	Alloc	100	04/30/15	16.02.43	0
0026	037C	zEDC	FPGHWAM	0012	Alloc	100	04/30/15	16.02.43	0
0029	03BC	zEDC	FPGHWAM	0012	Alloc	100	04/30/15	16.02.43	0
002C	03BC	zEDC	FPGHWAM	0012	Alloc	100	04/30/15	16.02.43	0

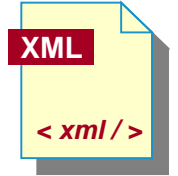
Sort Rows

ISPF Fields

Hyperlink to vertical View

Problems solved ... with XML formatted RMF reports

- No state-of-the-art display capability of RMF reports
 - RMF Monitor III reports only available via ISPF, data in VSAM data sets
 - ➔ use zOSMF, Data Portal, XML Toolkit, DDS HTTP API
 - RMF Postprocessor reports are limited to a page width of 132 characters
 - ➔ use Spreadsheet Reporter, Data Portal, XML Toolkit, DDS HTTP API
- No flexible sorting capability for RMF data
 - ➔ use Data Portal, XML Toolkit, Spreadsheet Reporter
- No easy access to RMF data for application programs
 - cumbersome to parse the text output
 - each report has its own layout
 - ➔ use DDS HTTP API (like e.g. zOSMF and OMEGAMON XE)



Session objectives

- RMF Product Components
- RMF talks XML!
 - Expansion to XML format complete
 - Components dealing with XML
 - RMF Postprocessor XML formatted reports
 - RMF XML Toolkit
 - RMF Spreadsheet Reporter
 - RMF Distributed Data Server
- Take the short path!
 - RMF Postprocessor Overview Conditions
 - How to use Overview Reporting
 - RMF Spreadsheet Reporter
 - RMF Data Portal

Motivation

W O R K L O A D A C T I V I T Y

PAGE 1

z/OS V2R2

SYSPLX UTCPLXCB
RPT VERSION V2R2 RMF

DATE 04/21/2015
TIME 01.15.00

INTERVAL 15.00.013 MODE = GOAL

MODE = GOAL

POLICY ACTIVATION DATE/TIME 04/03/2015 00.08.43

- SERVICE CLASS(ES)

REPORT BY: POLICY=BASEPOL WORKLOAD=SYSTEM SERVICE CLASS=SYSSTC RESOURCE GROUP=*NONE
CRITICAL =NONE
DESCRIPTION =STARTED TASK DEFAULT

--TRANSACTIONS--		TRANS-TIME	HHH.MM.SS.TTT	--DASD I/O--	---SERVICE---		SERVICE TIME		---APPL %---		--PROMOTED--		---STORAGE---		
AVG	253.29	ACTUAL	1.311	SSCHRT	474.2	IOC	2237K	CPU	6153.266	CP	672.77	BLK	0.000	AVG	53003.11
MPL	253.29	EXECUTION	143	RESP	3.3	CPU	356803K	SRB	70.355	AAPCP	0.00	ENQ	0.002	TOTAL	13425085
ENDED	28	QUEUED	1.167	CONN	2.5	MSO	0	RCT	0.325	IIPCP	0.01	CRM	0.000	SHARED	95538.02
END/S	0.03	R/S AFFIN	0	DISC	0.6	SRB	4123K	IIT	11.223			LCK	8.443		
#SWAPS	2828	INELIGIBLE	0	Q+PEND	0.1	TOT	363163K	HST	0.000	AAP	0.00	SUP	0.000	-PAGE-IN	RATES-
EXCTD	0	CONVERSION	224	IOSQ	0.0	/SEC	403512	AAP	0.000	IIP	20.02			SINGLE	0.0
AVG ENC	0.00	STD DEV	465					IIP	180.186					BLOCK	0.0
REM ENC	0.00					ABSRPTN	1593							SHARED	0.0
MS ENC	0.00					TRX SERV	1593							HSP	0.0

-----SERVICE CLASSES BEING SERVED-----

IMSLow

```
REPORT BY: POLICY=BASEPOL      WORKLOAD=SYSTEM      SERVICE CLASS=SYSTEM      RESOURCE GROUP=*NONE
                                CRITICAL            =NONE
                                DESCRIPTION           =HIGH PRIORITY SYSTEM WORK
```

-TRANSACTIONS-		TRANS-TIME	HHH.MM.SS.TTT	--DASD	I/O--	---SERVICE---		SERVICE TIME	---APPL %---	--PROMOTED--	----STORAGE----	
AVG	224.00	ACTUAL	0	SSCHRT	6809	IOC	769142	CPU 1645.944	CP 448.40	BLK 0.000	AVG	60068.93
MPL	224.00	EXECUTION	0	RESP	1.3	CPU	92376K	SRB 2367.668	AAPCP 0.00	ENQ 0.000	TOTAL	13455308
ENDED	0	QUEUED	0	CONN	0.8	MSO	0	RCT 0.000	IIPCP 0.00	CRM 0.000	SHARED	103.00
END/S	0.00	R/S AFFIN	0	DISC	0.4	SRB	136665K	IIT 22.044		LCK 0.000		
#SWAPS	0	INELIGIBLE	0	Q+PEND	0.1	TOT	229810K	HST 0.000	AAP 0.00	SUP 0.000	-PAGE-IN	RATES-
EXCTD	0	CONVERSION	0	IOSQ	0.0	/SEC	255344	AAP 0.000	IIP 0.00		SINGLE	0.0
AVG ENC	0.00	STD DEV	0					IIP 0.000			BLOCK	0.0
REM ENC	0.00					ABSRPTN	1140				SHARED	0.0
MS ENC	0.00					TRX SERV	1140				HSP	0.0

On which page do I find the data for this service class for 2 hours later?

RMF Overview Conditions

Problem(s):

- Important data is spread over many intervals, thus over many pages
- Important data is surrounded by lots of other data which is not so important for the investigation

Solution:

Use RMF Overview Conditions!

- Data points recorded by RMF can be retrieved individually
→ Allows easier analysis of specific data points from multiple reports in one step
- Duration reports can be generated for periods longer than default RMF interval by using DINTV

RMF Overview Conditions: Example from WLMGL

TRANSAVG TRANSMPL TRANSTOT TRANS SPERTRA ENCAVG ENCREM ENCMS		RTIMETOT RTIME RTIMEQUE TRANSADT TRANSIQT TRANSCVT		IOSRV CPUSRV MSOSRV SRBSRV TOTSRV ABSRPTN TRXSERV		TCBSEC SRBSEC RCTSEC IITSEC HSTSEC AAPSEC IIPSEC		APPLSEC/APPLPER APPLIFCP APPLIPCP APPLAAP APPLIIP AAPCPSEC		PAGE 1																																																																																																																																																																																					
POLICY=BASEPOL		WORKLOAD=SYSTEM		CRITICAL =NONE		DESCRIPTION =STARTED TASK DEFAULT		GROUP=*NONE		CLASS (ES)																																																																																																																																																																																					
<table><tr><td colspan="2">-TRANSACTIONS-</td><td colspan="2">TRANS-TIME</td><td colspan="2">HHH.MM.SS.TTT</td><td colspan="2">--DASD I/O--</td><td colspan="2">---SERVICE---</td><td colspan="2">SERVICE TIME</td><td colspan="2">---APPL %---</td><td colspan="2">--PROMOTED--</td><td colspan="2">----STORAGE----</td></tr><tr><td colspan="2">AVG 253.29</td><td colspan="2">ACTUAL</td><td colspan="2">1.311</td><td colspan="2">SSCHRT 474.2</td><td colspan="2">IOC 2237K</td><td colspan="2">CPU 6153.266</td><td colspan="2">CP 672.77</td><td colspan="2">BLK 0.000</td><td colspan="2">AVG 53003.11</td></tr><tr><td colspan="2">MPL 253.29</td><td colspan="2">EXECUTION</td><td colspan="2">143</td><td colspan="2">RESP 3.3</td><td colspan="2">CPU 356803K</td><td colspan="2">SRB 70.355</td><td colspan="2">AAPCP 0.00</td><td colspan="2">ENQ 0.002</td><td colspan="2">TOTAL 13425085</td></tr><tr><td colspan="2">ENDED 23</td><td colspan="2">QUEUED</td><td colspan="2">1.167</td><td colspan="2">CONN 2.5</td><td colspan="2">MSO 0</td><td colspan="2">RCT 0.325</td><td colspan="2">IIPCP 0.01</td><td colspan="2">CRM 0.000</td><td colspan="2">SHARED 95538.02</td></tr><tr><td colspan="2">END/S 0.03</td><td colspan="2">R/S AFFIN</td><td colspan="2">0</td><td colspan="2">DISC 0.5</td><td colspan="2">SRB 4123K</td><td colspan="2">IIT 11.223</td><td colspan="2">LCK 8.443</td><td colspan="2">LCK 8.443</td><td colspan="2"></td></tr><tr><td colspan="2">#SWAPS 2823</td><td colspan="2">INELIGIBLE</td><td colspan="2">0</td><td colspan="2">Q+PEND 0.1</td><td colspan="2">TOT 363163K</td><td colspan="2">HST 0.000</td><td colspan="2">AAP 0.00</td><td colspan="2">SUP 0.000</td><td colspan="2">-PAGE-IN RATES-</td></tr><tr><td colspan="2">EXCTD 0</td><td colspan="2">CONVERSION</td><td colspan="2">224</td><td colspan="2">IOSQ 0.0</td><td colspan="2">/SEC 403512</td><td colspan="2">AAP 0.000</td><td colspan="2">IIP 20.02</td><td colspan="2"></td><td colspan="2">SINGLE 0.0</td></tr><tr><td colspan="2">AVG ENC 0.00</td><td colspan="2">STD DEV</td><td colspan="2">465</td><td colspan="2"></td><td colspan="2">ABSRPTN 1593</td><td colspan="2">IIP 180.186</td><td colspan="2"></td><td colspan="2"></td><td colspan="2">BLOCK 0.0</td></tr><tr><td colspan="2">REM ENC 0.00</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">TRX SERV 1593</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">SHARED 0.0</td></tr><tr><td colspan="2">MS ENC 0.00</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">HSP 0.0</td></tr></table>												-TRANSACTIONS-		TRANS-TIME		HHH.MM.SS.TTT		--DASD I/O--		---SERVICE---		SERVICE TIME		---APPL %---		--PROMOTED--		----STORAGE----		AVG 253.29		ACTUAL		1.311		SSCHRT 474.2		IOC 2237K		CPU 6153.266		CP 672.77		BLK 0.000		AVG 53003.11		MPL 253.29		EXECUTION		143		RESP 3.3		CPU 356803K		SRB 70.355		AAPCP 0.00		ENQ 0.002		TOTAL 13425085		ENDED 23		QUEUED		1.167		CONN 2.5		MSO 0		RCT 0.325		IIPCP 0.01		CRM 0.000		SHARED 95538.02		END/S 0.03		R/S AFFIN		0		DISC 0.5		SRB 4123K		IIT 11.223		LCK 8.443		LCK 8.443				#SWAPS 2823		INELIGIBLE		0		Q+PEND 0.1		TOT 363163K		HST 0.000		AAP 0.00		SUP 0.000		-PAGE-IN RATES-		EXCTD 0		CONVERSION		224		IOSQ 0.0		/SEC 403512		AAP 0.000		IIP 20.02				SINGLE 0.0		AVG ENC 0.00		STD DEV		465				ABSRPTN 1593		IIP 180.186						BLOCK 0.0		REM ENC 0.00								TRX SERV 1593								SHARED 0.0		MS ENC 0.00																HSP 0.0	
-TRANSACTIONS-		TRANS-TIME		HHH.MM.SS.TTT		--DASD I/O--		---SERVICE---		SERVICE TIME		---APPL %---		--PROMOTED--		----STORAGE----																																																																																																																																																																															
AVG 253.29		ACTUAL		1.311		SSCHRT 474.2		IOC 2237K		CPU 6153.266		CP 672.77		BLK 0.000		AVG 53003.11																																																																																																																																																																															
MPL 253.29		EXECUTION		143		RESP 3.3		CPU 356803K		SRB 70.355		AAPCP 0.00		ENQ 0.002		TOTAL 13425085																																																																																																																																																																															
ENDED 23		QUEUED		1.167		CONN 2.5		MSO 0		RCT 0.325		IIPCP 0.01		CRM 0.000		SHARED 95538.02																																																																																																																																																																															
END/S 0.03		R/S AFFIN		0		DISC 0.5		SRB 4123K		IIT 11.223		LCK 8.443		LCK 8.443																																																																																																																																																																																	
#SWAPS 2823		INELIGIBLE		0		Q+PEND 0.1		TOT 363163K		HST 0.000		AAP 0.00		SUP 0.000		-PAGE-IN RATES-																																																																																																																																																																															
EXCTD 0		CONVERSION		224		IOSQ 0.0		/SEC 403512		AAP 0.000		IIP 20.02				SINGLE 0.0																																																																																																																																																																															
AVG ENC 0.00		STD DEV		465				ABSRPTN 1593		IIP 180.186						BLOCK 0.0																																																																																																																																																																															
REM ENC 0.00								TRX SERV 1593								SHARED 0.0																																																																																																																																																																															
MS ENC 0.00																HSP 0.0																																																																																																																																																																															
-----SERVICE CLASSES BEING SERVED-----																																																																																																																																																																																															
IMSLOW																																																																																																																																																																																															
REPORT BY: POLICY=BASEPOL WORKLOAD=SYSTEM SERVICE CLASS=SYSTEM RESOURCE GROUP=*NONE																																																																																																																																																																																															
CRITICAL =NONE																																																																																																																																																																																															
DESCRIPTION =HIGH PRIORITY SYSTEM WORK																																																																																																																																																																																															
<table><tr><td colspan="2">-TRANSACTIONS-</td><td colspan="2">TRANS-TIME</td><td colspan="2">HHH.MM.SS.TTT</td><td colspan="2">--DASD I/O--</td><td colspan="2">---SERVICE---</td><td colspan="2">SERVICE TIME</td><td colspan="2">---APPL %---</td><td colspan="2">--PROMOTED--</td><td colspan="2">----STORAGE----</td></tr><tr><td colspan="2">AVG 224.00</td><td colspan="2">ACTUAL</td><td colspan="2">0</td><td colspan="2">SSCHRT 6809</td><td colspan="2">IOC 769142</td><td colspan="2">CPU 1645.944</td><td colspan="2">CP 448.40</td><td colspan="2">BLK 0.000</td><td colspan="2">AVG 60068.93</td></tr><tr><td colspan="2">MPL 224.00</td><td colspan="2">EXECUTION</td><td colspan="2">0</td><td colspan="2">RESP 1.3</td><td colspan="2">CPU 92376K</td><td colspan="2">SRB 2367.668</td><td colspan="2">AAPCP 0.00</td><td colspan="2">ENQ 0.000</td><td colspan="2">TOTAL 13455308</td></tr><tr><td colspan="2">ENDED 0</td><td colspan="2">QUEUED</td><td colspan="2">0</td><td colspan="2">CONN 0.8</td><td colspan="2">MSO 0</td><td colspan="2">RCT 0.000</td><td colspan="2">IIPCP 0.00</td><td colspan="2">CRM 0.000</td><td colspan="2">SHARED 103.00</td></tr><tr><td colspan="2">END/S 0.00</td><td colspan="2">R/S AFFIN</td><td colspan="2">0</td><td colspan="2">DISC 0.4</td><td colspan="2">SRB 136665K</td><td colspan="2">IIT 22.044</td><td colspan="2">LCK 0.000</td><td colspan="2">LCK 0.000</td><td colspan="2"></td></tr><tr><td colspan="2">#SWAPS 0</td><td colspan="2">INELIGIBLE</td><td colspan="2">0</td><td colspan="2">Q+PEND 0.1</td><td colspan="2">TOT 229810K</td><td colspan="2">HST 0.000</td><td colspan="2">AAP 0.00</td><td colspan="2">SUP 0.000</td><td colspan="2">-PAGE-IN RATES-</td></tr><tr><td colspan="2">EXCTD 0</td><td colspan="2">CONVERSION</td><td colspan="2">0</td><td colspan="2">IOSQ 0.0</td><td colspan="2">/SEC 255344</td><td colspan="2">AAP 0.000</td><td colspan="2">IIP 0.00</td><td colspan="2"></td><td colspan="2">SINGLE 0.0</td></tr><tr><td colspan="2">AVG ENC 0.00</td><td colspan="2">STD DEV</td><td colspan="2">0</td><td colspan="2"></td><td colspan="2">ABSRPTN 1140</td><td colspan="2">IIP 0.000</td><td colspan="2"></td><td colspan="2"></td><td colspan="2">BLOCK 0.0</td></tr><tr><td colspan="2">REM ENC 0.00</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">TRX SERV 1140</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">SHARED 0.0</td></tr><tr><td colspan="2">MS ENC 0.00</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2">HSP 0.0</td></tr></table>												-TRANSACTIONS-		TRANS-TIME		HHH.MM.SS.TTT		--DASD I/O--		---SERVICE---		SERVICE TIME		---APPL %---		--PROMOTED--		----STORAGE----		AVG 224.00		ACTUAL		0		SSCHRT 6809		IOC 769142		CPU 1645.944		CP 448.40		BLK 0.000		AVG 60068.93		MPL 224.00		EXECUTION		0		RESP 1.3		CPU 92376K		SRB 2367.668		AAPCP 0.00		ENQ 0.000		TOTAL 13455308		ENDED 0		QUEUED		0		CONN 0.8		MSO 0		RCT 0.000		IIPCP 0.00		CRM 0.000		SHARED 103.00		END/S 0.00		R/S AFFIN		0		DISC 0.4		SRB 136665K		IIT 22.044		LCK 0.000		LCK 0.000				#SWAPS 0		INELIGIBLE		0		Q+PEND 0.1		TOT 229810K		HST 0.000		AAP 0.00		SUP 0.000		-PAGE-IN RATES-		EXCTD 0		CONVERSION		0		IOSQ 0.0		/SEC 255344		AAP 0.000		IIP 0.00				SINGLE 0.0		AVG ENC 0.00		STD DEV		0				ABSRPTN 1140		IIP 0.000						BLOCK 0.0		REM ENC 0.00								TRX SERV 1140								SHARED 0.0		MS ENC 0.00																HSP 0.0	
-TRANSACTIONS-		TRANS-TIME		HHH.MM.SS.TTT		--DASD I/O--		---SERVICE---		SERVICE TIME		---APPL %---		--PROMOTED--		----STORAGE----																																																																																																																																																																															
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#SWAPS 0		INELIGIBLE		0		Q+PEND 0.1		TOT 229810K		HST 0.000		AAP 0.00		SUP 0.000		-PAGE-IN RATES-																																																																																																																																																																															
EXCTD 0		CONVERSION		0		IOSQ 0.0		/SEC 255344		AAP 0.000		IIP 0.00				SINGLE 0.0																																																																																																																																																																															
AVG ENC 0.00		STD DEV		0				ABSRPTN 1140		IIP 0.000						BLOCK 0.0																																																																																																																																																																															
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RMF Overview Conditions: Example from CPU Activity

		CPU ACTIVITY		PAGE 1
z/OS V	2964	SYSTEM ID CB88	DATE 04/21/2015	INTERVAL 14.59.994
MODEL 762	6938	RPT VERSION V2R2 RMF	TIME 01.30.00	CYCLE 1.000 SECONDS
H/W MODEL N96	NONE	SEQUENCE CODE 00000000009CB07		
		HIPERDISPATCH=YES		

---CPU---		----- TIME % -----		LOG PROC		--I/O INTERRUPTS--	
NUM	TYPE	ONLINE	LPAR BUSY	MVS BUSY	PARKED	SHARE %	RATE % VIA TPI
0	CP	100.00	72.00	72.03	0.00	100.0 HIGH	147.5 38.86
1	CP	100.00	65.67	65.71	0.00	100.0 HIGH	131.6 32.53
2	CP	100.00	58.99	59.04	0.00	100.0 HIGH	1415 28.79
3	CP	100.00	40.05	42.76	0.00	100.0 HIGH	726.1 11.13
4	CP	100.00	48.12	48.15	0.00	98.8 MED	87.02 37.40
5	CP	100.00	0.68	34.10	98.00	0.0 LOW	0.00 0.00
6	CP	100.00	0.24	100.0	99.76	0.0 LOW	0.00 0.00
7	CP	100.00	0.24	100.0	99.76	0.0 LOW	0.00 0.00
8	CP	100.00	0.25	100.0	99.75	0.0	
9	CP	100.00	0.24	100.0	99.76	0.0	
A	CP	100.00	0.24	100.0	99.76	0.0	
B	CP	100.00	0.23	100.0	99.77	0.0	
C	CP	100.00	0.22	100.0	99.77	0.0	
D	CP	100.00	0.22	100.0	99.78	0.0	
TOTAL/AVERAGE			20.53	57.60		498.8	
E	IIP	100.00	0.97	0.96	0.00	54.0	
F	IIP	100.00	0.17	0.17	0.00	54.0	
10	IIP	100.00	0.12	-----	100.00	0.0	
11	IIP	100.00	0.12	-----	100.00	0.0	
TOTAL/AVERAGE			0.34	0.68		108.0	

z/OS V2R2	SYSTEM ID CB88
	RPT VERSION V2R2 RMF
NUMBER OF INTERVALS 30	TOTAL LENGTH OF INTERVALS 07.30.00
DATE TIME INT	LACS
MM/DD HH.MM.SS HH.MM.SS	
04/21 01.30.00 00.14.59	286
04/21 01.45.00 00.15.00	287
04/21 02.00.00 00.14.59	293
04/21 02.15.00 00.15.00	300
04/21 02.30.00 00.15.00	305
04/21 02.45.00 00.15.00	305
04/21 03.00.00 00.14.59	304

NUMPROC	NUMBER OF INTERVALS 30	TOTAL LENGTH OF INTERVALS 07.30.00
NUMAAP	DATE TIME INT	CPS ZAAPS ZIIIPS
NUMIIP	MM/DD HH.MM.SS HH.MM.SS	
	04/21 01.30.00 00.14.59	14.0 0 4

Postprocessor: Overview Reporting

OVW syntax: OVW(control-statement-name(condition-name[(qualifier)]))

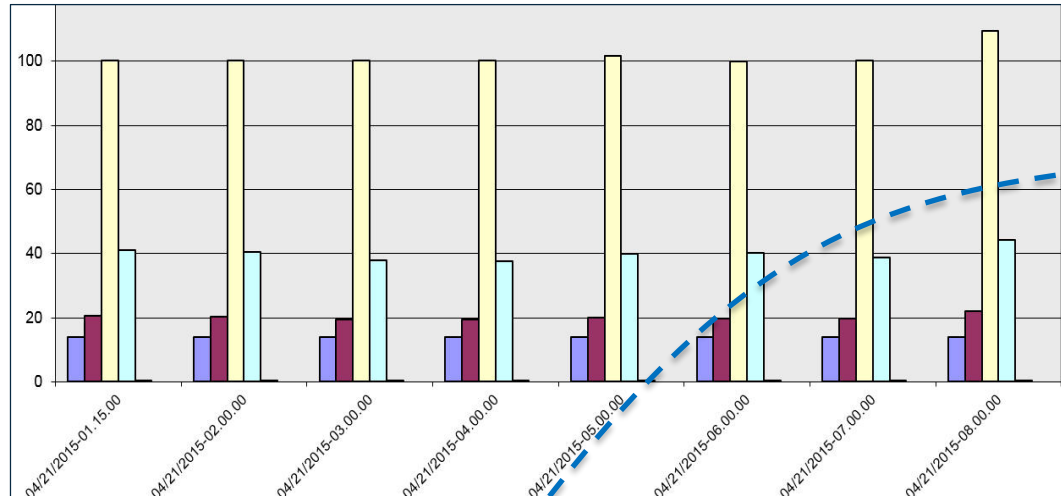
```
OVERVIEW (REPORT)
OVW (PROCS (NUMPROC) )
OVW (CPUBSY (CPUBSY) )
OVW (APPLC (APPLPER (S.SYSSTC) ) )
OVW (APPLM (APPLPER (S.SYSTEM) ) )
OVW (TRANSC (TRANS (S.SYSSTC) ) )
OVW (TRANSM (TRANS (S.SYSTEM) ) )
OVW (RTIMEC (RTIME (S.SYSSTC) ) )
OVW (RTIMEM (RTIME (S.SYSTEM) ) )
DINTV (0100)
```

Combining data:

- from CPU Activity and WLMGL report
- from two service classes
- for 1 hour intervals

RMF OVERVIEW REPORT											PAGE 00
z/OS V2R2			SYSTEM ID CB88			START 04/21/2015-01.30.00		INTERVAL 00.58.07			
			RPT VERSION V2R2 RMF			END 04/21/2015-09.00.00		CYCLE 1.000 SECONDS			
NUMBER OF INTERVALS 8			TOTAL LENGTH OF INTERVALS 07.44.59								
DATE	TIME	INT	PROCS	CPUBSY	APPLC	APPLM	TRANSC	TRANSM	RTIMEC	RTIMEM	
MM/DD	HH.MM.SS	HH.MM.SS									
04/21	01.15.00	00.45.00	14.0	20.6	100.2	41.0	0.01	0.00	0.198	0.000	
04/21	02.00.00	01.00.00	14.0	20.3	100.3	40.5	0.01	0.00	0.178	0.000	
04/21	03.00.00	01.00.00	14.0	19.3	100.1	37.9	0.01	0.00	0.163	0.000	
04/21	04.00.00	01.00.00	14.0	19.3	100.3	37.7	0.01	0.00	0.214	0.000	
04/21	05.00.00	01.00.00	14.0	20.1	101.5	40.0	0.01	0.00	0.176	0.000	
04/21	06.00.00	01.00.00	14.0	19.8	100.0	40.3	0.01	0.00	15755.31	0.000	
04/21	07.00.00	01.00.00	14.0	19.7	100.2	38.9	0.01	0.00	0.107	0.000	
04/21	08.00.00	00.59.59	14.0	22.0	109.3	44.2	0.07	0.00	0.060	0.000	

Postprocessor: Overview Reporting



(via XML)

RMF Postprocessor Duration Report [System CB8E] : RMF Overview Report

RMF Version : z/OS V2R2 SMF Data : z/OS V2R2

Start : 04/21/2015-01:15:00 End : 04/21/2015-09:00:00 Interval : 00:05:07 hours Cycle : 1000 milliseconds

Overview Report

Number of Intervals : 8 Total Length of Intervals : 07:45:00

Date (mm/dd)	Time (hh.mm.ss)	Interval Length (hh.mm.ss)	PROCS NUMPROC	CPUBSY CPUBSY	APPLC APPLPER S.SYSSTC	APPLM APPLPER S.SYSTEM	TRANSC TRANS S.SYSSTC	TRANSM TRANS S.SYSTEM	RTIMEC RTIME S.SYSSTC	RTIME RTIME S.SYSTEM
04/21	01:15:00	00:45:00	14.0	13.3	90.2	48.2	0.00	0.00	0.227	0.000
04/21	02:00:00	01:00:00	14.0	15.7	91.8	48.1	0.00	0.00	0.098	0.000
04/21	03:00:00	01:00:00	14.0	20.6	94.3	54.0	0.00	0.00	0.123	0.000
04/21	04:00:00	01:00:00	14.0	20.3	93.4	55.0	0.00	0.00	0.099	0.000
04/21	05:00:00	01:00:00	14.0	12.8	91.6	44.0	0.00	0.00	0.072	0.000
04/21	06:00:00	01:00:00	14.0	13.0	90.9	45.8	0.00	0.00	0.056	0.000
04/21	07:00:00	01:00:00	14.0	19.2	93.2	51.3	0.00	0.00	0.061	0.000
04/21	08:00:00	01:00:00	14.0	21.0	93.1	57.8	0.00	0.00	71685.63	0.000

(via Spreadsheet Reporter)

```

OVERVIEW(RECORD,REPORT)
OVW(PROCS(NUMPROC))
OVW(CPUBSY(CPUBSY))
OVW(APPLC(APPLPER(S.SYSSTC)))
OVW(APPLM(APPLPER(S.SYSTEM)))
OVW(TRANSC(TRANS(S.SYSSTC)))
OVW(TRANSM(TRANS(S.SYSTEM)))
OVW(RTIMEC(RTIME(S.SYSSTC)))
OVW(RTIMEM(RTIME(S.SYSTEM)))
DINTV(0100)
  
```

R M F O V E R V I E W R E P O R T											PAGE 001
z/OS V2R2			SYSTEM ID CB88			START 04/21/2015-01.30.00		INTERVAL 00.58.07			
			RPT VERSION V2R2 RMF			END 04/21/2015-09.00.00		CYCLE 1.000 SECONDS			
NUMBER OF INTERVALS 8			TOTAL LENGTH OF INTERVALS 07.44.59								
DATE	TIME	INT	PROCS	CPUBSY	APPLC	APPLM	TRANSC	TRANSM	RTIMEC	RTIMEM	
MM/DD	HH.MM.SS	HH.MM.SS									
04/21	01.15.00	00.45.00	14.0	20.6	100.2	41.0	0.01	0.00	0.198	0.000	
04/21	02.00.00	01.00.00	14.0	20.3	100.3	40.5	0.01	0.00	0.178	0.000	
04/21	03.00.00	01.00.00	14.0	19.3	100.1	37.9	0.01	0.00	0.163	0.000	
04/21	04.00.00	01.00.00	14.0	19.3	100.3	37.7	0.01	0.00	0.214	0.000	
04/21	05.00.00	01.00.00	14.0	20.1	101.5	40.0	0.01	0.00	0.176	0.000	
04/21	06.00.00	01.00.00	14.0	19.8	100.0	40.3	0.01	0.00	15755.31	0.000	
04/21	07.00.00	01.00.00	14.0	19.7	100.2	38.9	0.01	0.00	0.107	0.000	
04/21	08.00.00	00.59.59	14.0	22.0	109.3	44.2	0.07	0.00	0.060	0.000	

RMF Postprocessor JCL for Overview Conditions

```
//ERBSAMPP JOB (ACCT), 'PGMRNAME', CLASS=A, REGION=0M, ...  
//*  
//* RMF POSTPROCESSING  
//*  
//RMFPP EXEC PGM=ERBRMFPP  
//MFPINPUT DD DISP=SHR, DSN=<Input_SMF_Data>  
//MFPMSGDS DD SYSOUT=*  
//SYSOUT DD SYSOUT=*  
//SYSIN DD *  
OVERVIEW(REPORT)  
OVW(PROCS(NUMPROC))  
OVW(CPUBSY(CPUBSY))  
OVW(APPLC(APPLPER(S.SYSSTC)))  
OVW(APPLM(APPLPER(S.SYSTEM)))  
OVW(TRANSC(TRANS(S.SYSSTC)))  
OVW(TRANM(TRANS(S.SYSTEM)))  
OVW(RTIMEC(RTIME(S.SYSSTC)))  
OVW(RTIMEM(RTIME(S.SYSTEM)))  
DINTV(0100)
```

⇒ Use **XPOVWRPT** DDNAME to generate XML output for Overview Conditions

RMF Postprocessor Job for OVW: SDSF Output

- These screen shots from SDSF show where the generated text output for the requested OVW report can be found after the RMF Postprocessor job has finished.
- XML output for DD card XPOVWRPT cumulates all data in one output file.

- One ddname for each of the systems included in the input data
- One ddname for sysplex

```
SDSF STATUS DISPLAY ALL CLASSES                                LINE 1-1 (1)
COMMAND INPUT ==>                                           SCROLL ==> CSR
NP  JOBNAME  JobID   Owner    Prty Queue    C  Pos  SAff  ASys  Status
?   ERBSAMPP JOB01068 B...      1 PRINT      A
```

```
SDSF JOB DATA SET DISPLAY - JOB ERBSAMPP (JOB01068)        LINE 1-12 (12)
COMMAND INPUT ==>                                           SCROLL ==> CSR
NP  DDNAME   StepName ProcStep DSID  Owner    C  Dest                      Rec-Cnt
Page
    JESJCLIN                1 B...    H                      50
    JESMSG LG  JES2          2 B...    H LOCAL                   20
    JESJCL   JES2          3 B...    H LOCAL                   51
    JESYSMSG JES2          4 B...    H LOCAL                  172
    SYSIN    RMFPP         101 B...    H                      11
    DUMMY                                102 B...    H                      18
    MFPMMSGDS RMFPP         103 B...    H LOCAL                   24
    PPORP001 RMFPP         171 B...    A LOCAL                   16
    PPORP002 RMFPP         172 B...    A LOCAL                   16
    PPORP003 RMFPP         173 B...    A LOCAL                   16
    PPORP004 RMFPP         174 B...    A LOCAL                   16
    PPORP005 RMFPP         175 B...    A LOCAL                   16
```

RMF Overview Reporting: Performance Tuning Tips

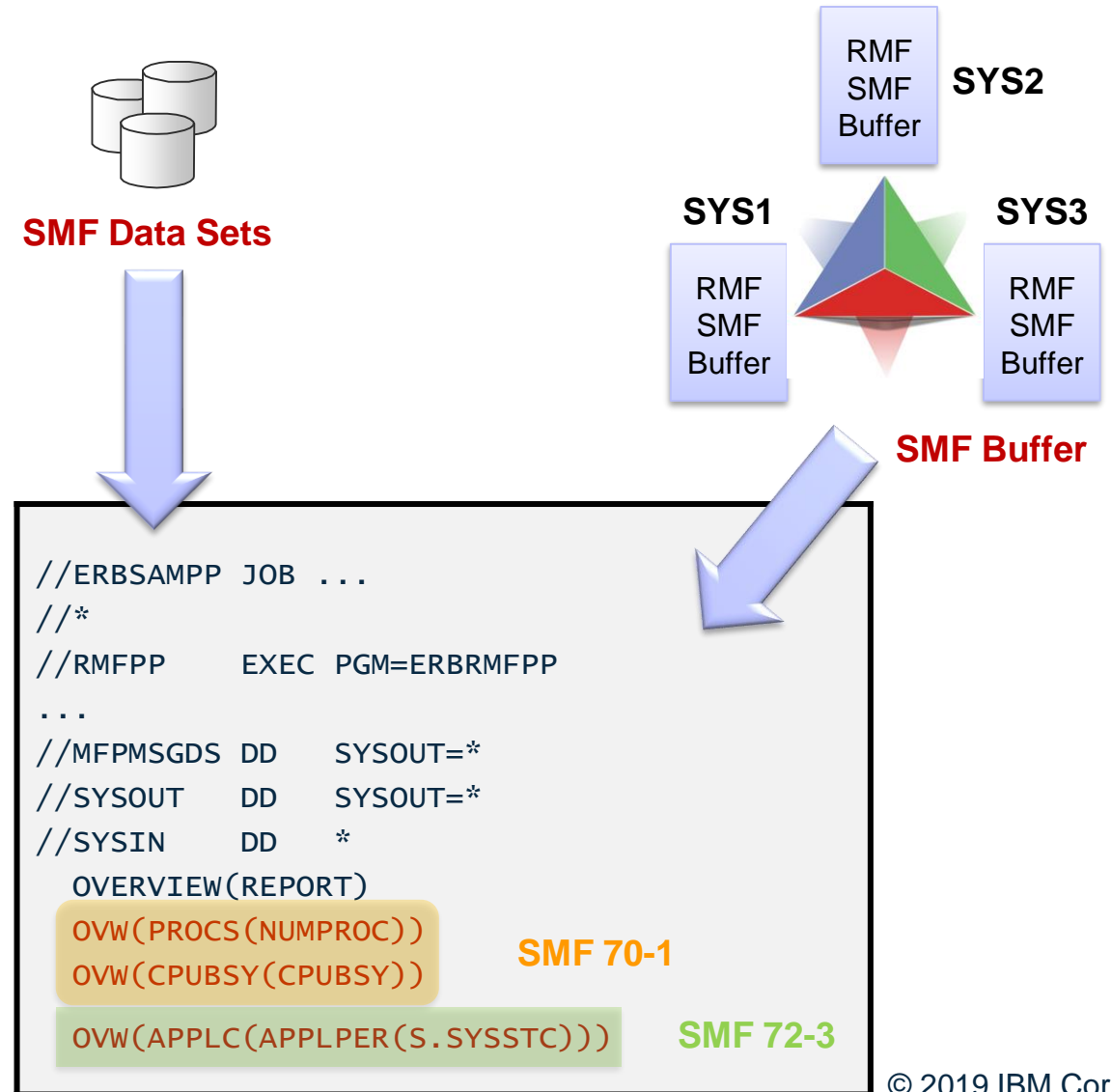
- RMF Postprocessor retrieves data from all available intervals in SMF input stream
- RMF Overview Reporting processes all SMF data



Resource consumption (CPU & Storage) of Postprocessor JOB directly related to amount of SMF data

⇒ Use pre-processing step to reduce amount of SMF data:

- SMF records from SMF buffer: ERBAPPL
- SMF records from SMF Data Sets: IFASMFDL



RMF Overview Reporting: Performance Tuning Tips ...

STEP 1A

Working with SMF data sets

```
//GETSMF EXEC PGM=IFASMFDP
//IDD1 DD DISP=SHR,DSN=<input_smfdata_system1>
//IDD2 DD DISP=SHR,DSN=<input_smfdata_system2>
// :
//IDDN DD DISP=SHR,DSN=<input_smfdata_systemN>
//SMFDATA DD DISP=(NEW,PASS),SPACE=(CYL,(10,10),RLSE),
// UNIT=SYSDA,DCB=(RECFM=VBS,LRECL=32760,BLKSIZE=0)
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
INDD(IDD1,OPTIONS(DUMP))
INDD(IDD2,OPTIONS(DUMP))
:
INDD(IDDN,OPTIONS(DUMP))
OUTDD(SMFDATA,TYPE(70(1),72(3)))
```

STEP 2

```
//*
//RMFPP EXEC PGM=ERBRMFPP
//MFPINPUT DD DISP=(OLD,PASS),DSN=*.GETSMF.SMFDATA
//MFPMMSGDS DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//SYSIN DD *
OVERVIEW(REPORT)
OVW(PROCS(NUMPROC))
OVW(CPUBSY(CPUBSY))
OVW(APPLC(APPLPER(S.SYSSTC)))
```

STEP 1B

Working with the SMF buffer

```
//GETSMF EXEC PGM=ERBAPPL, PARM='*/*/70,72'
//SMFDATA DD DISP=(NEW,PASS),UNIT=SYSDA,SPACE=(CYL,(10,10))
//ERBLIST DD DUMMY
```

ERBAPPL Parameters:

FORMAT OF PARAMETER STRING:
'<start>/<end>/<recordlist>'

<start> : - Start date and time in format
YYYYMMDDHHMMSS
- * to indicate a date in the
past
- ? to indicate the most
current SMF interval
<end> : - End date and time in format
YYYYMMDDHHMMSS
- * to indicate "NOW"
<recordlist>: SMF record numbers, separated
by commas. Ranges can be defined
in the form nn:mm

EXAMPLES:

PARM='19960101000000/19971231235959/30,42,70:79'
PARM='*/*/71,74,76'

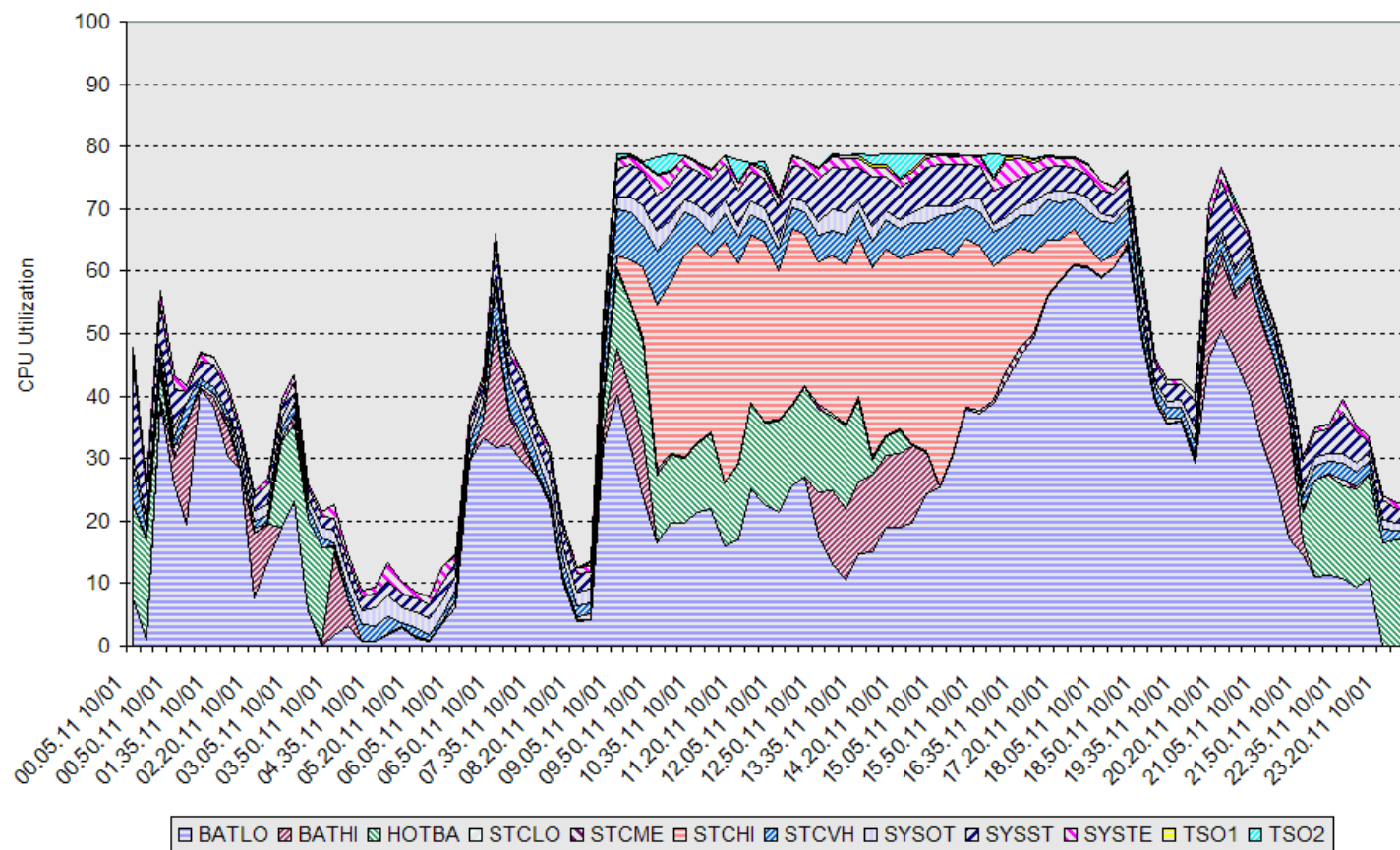


For sysplex-related
overview conditions
use a sort step after
step 1A/1B

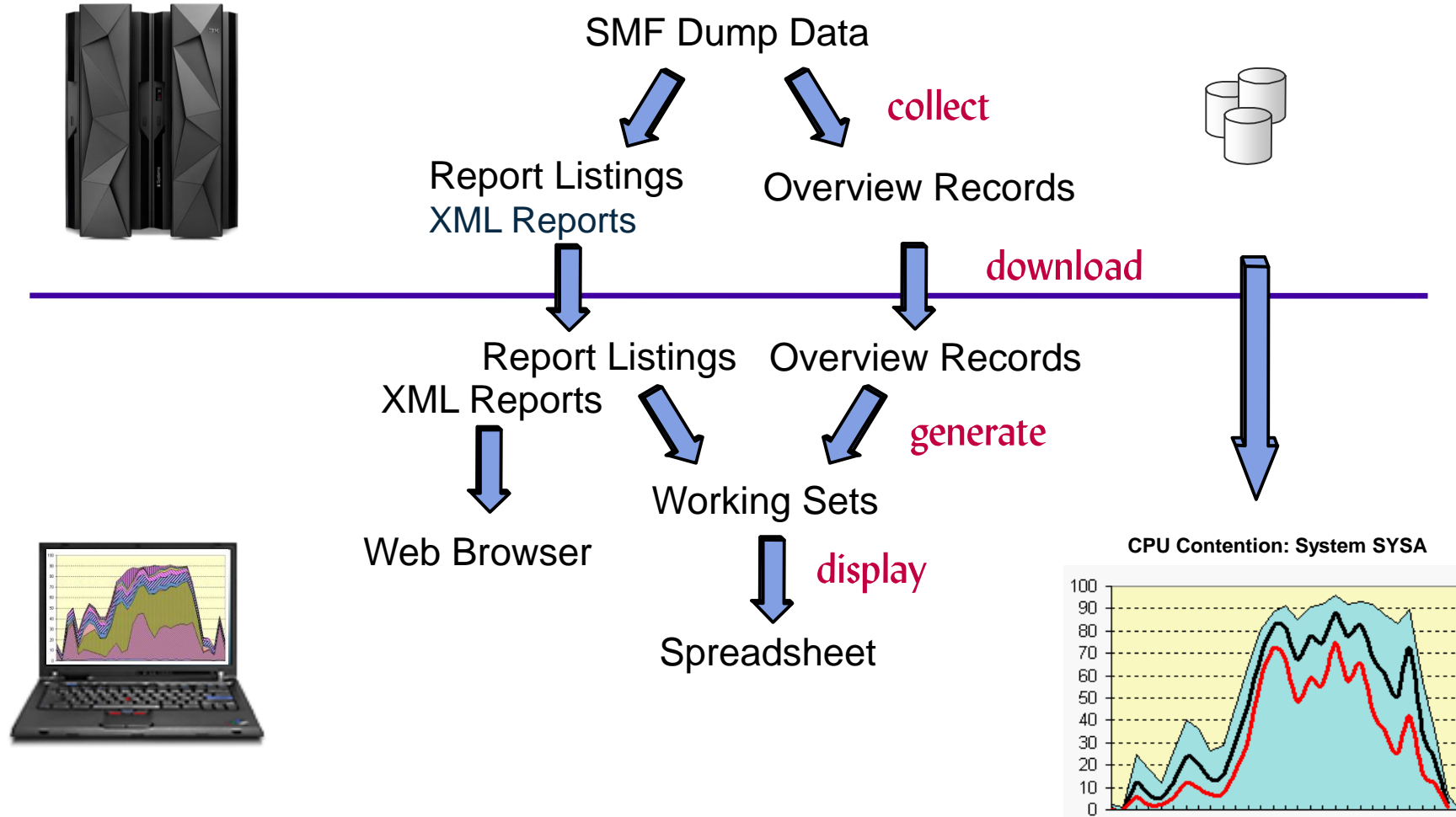
RMF Spreadsheet Reporter

- converts SMF data to Spreadsheet format
- creates graphical views for Trend Analysis
- can be downloaded from the host (SYS1.SERBPWSV) or the RMF Homepage

Workload Utilization for System: UIG1, Reporting Date: 10/01/2006

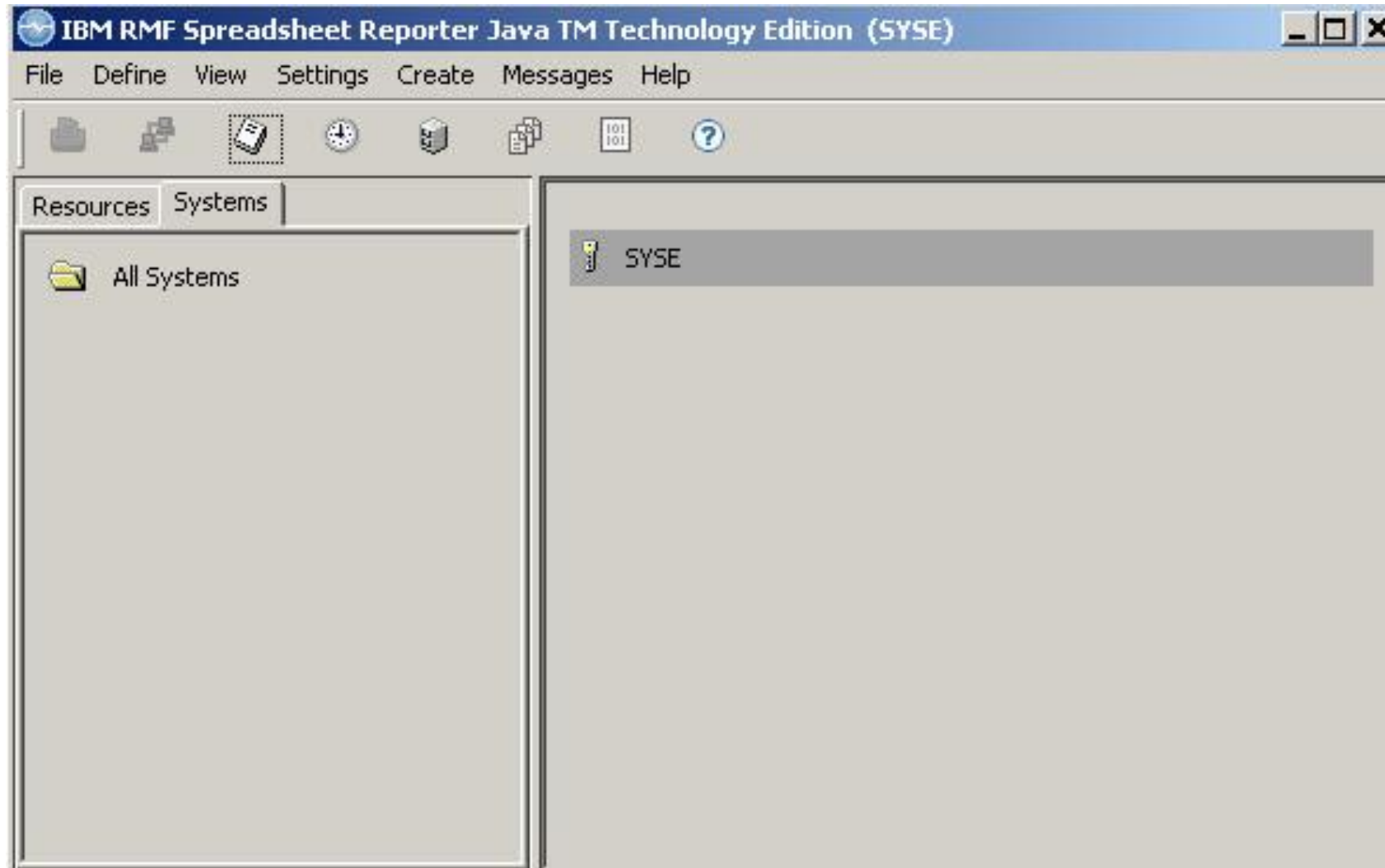


RMF Spreadsheet Reporter



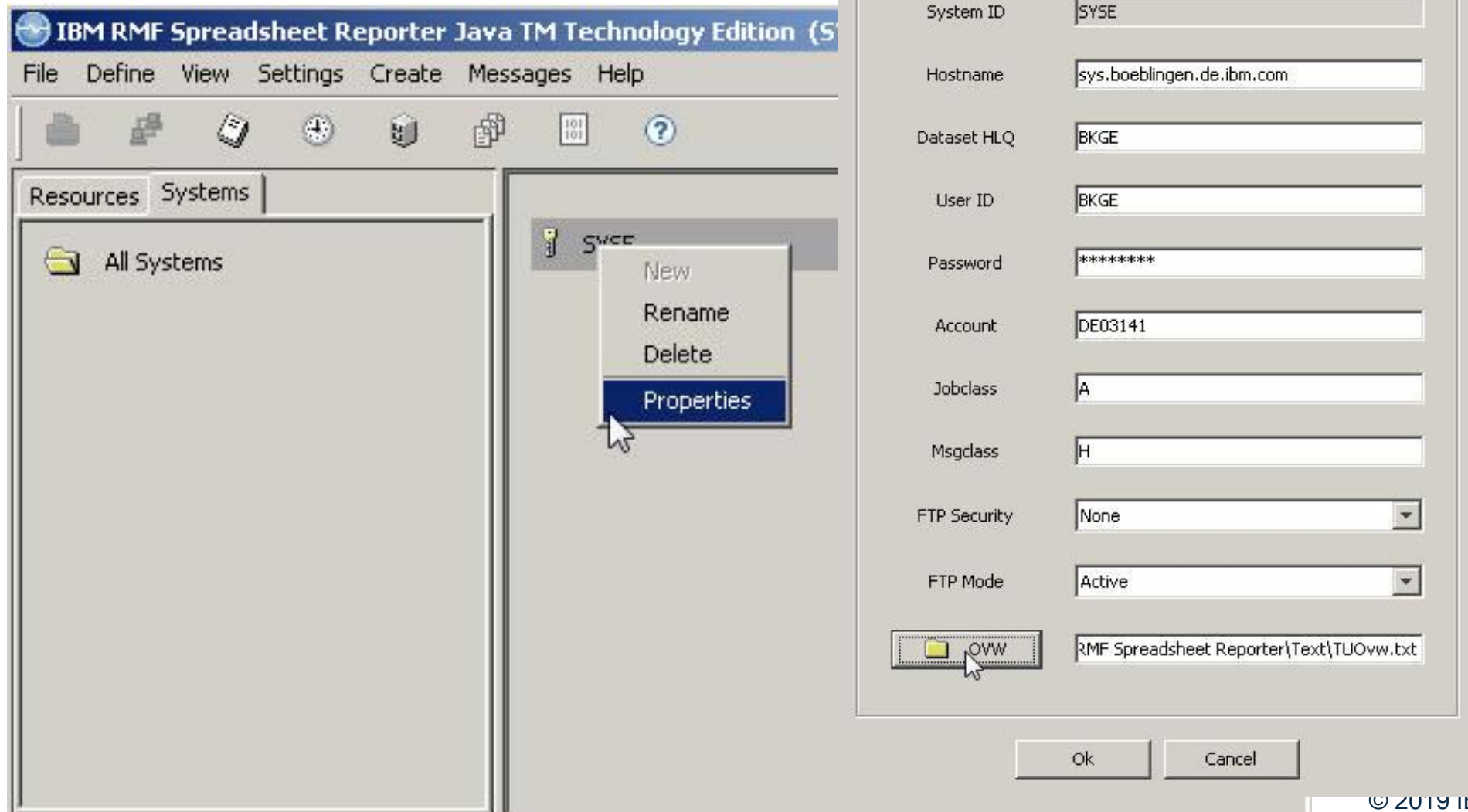
RMF SR: How to create an Overview Spreadsheet (1)

→ Open Spreadsheet Reporter and select 'Systems' tab



RMF SR: How to create an Overview Spreadsheet (2)

→ Right click mouse and select 'Properties'



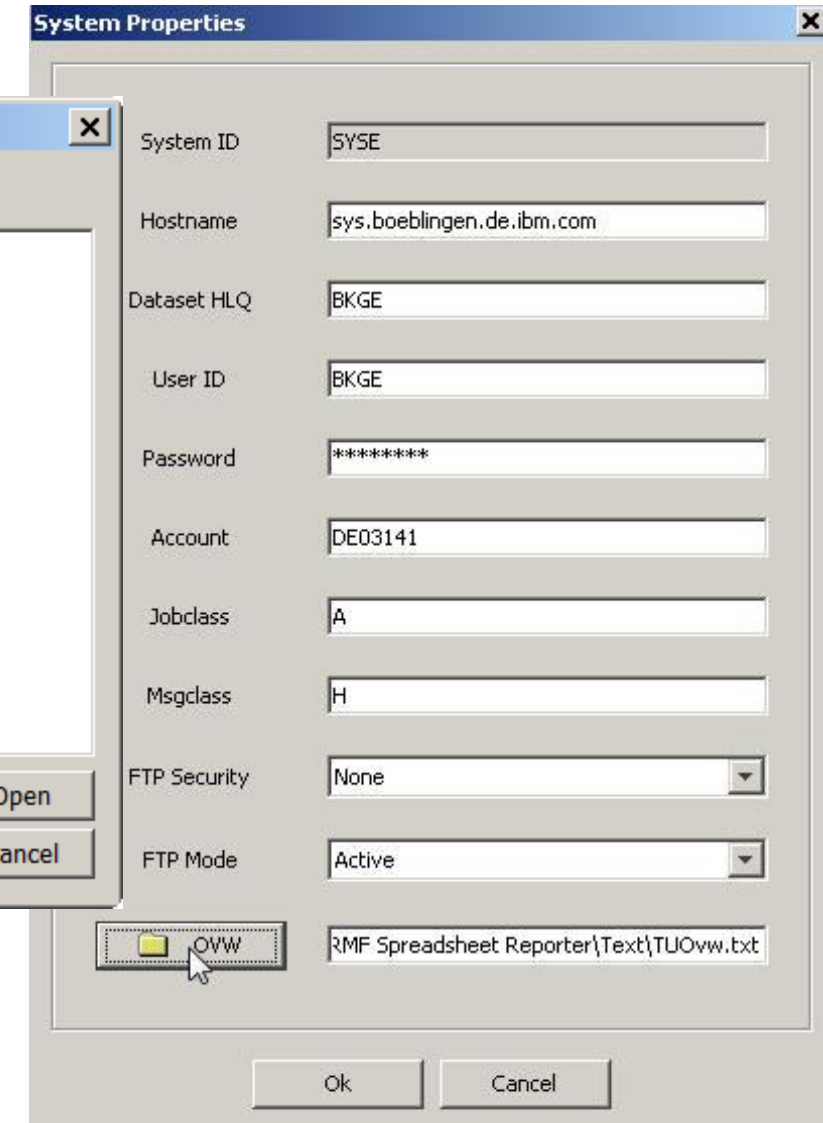
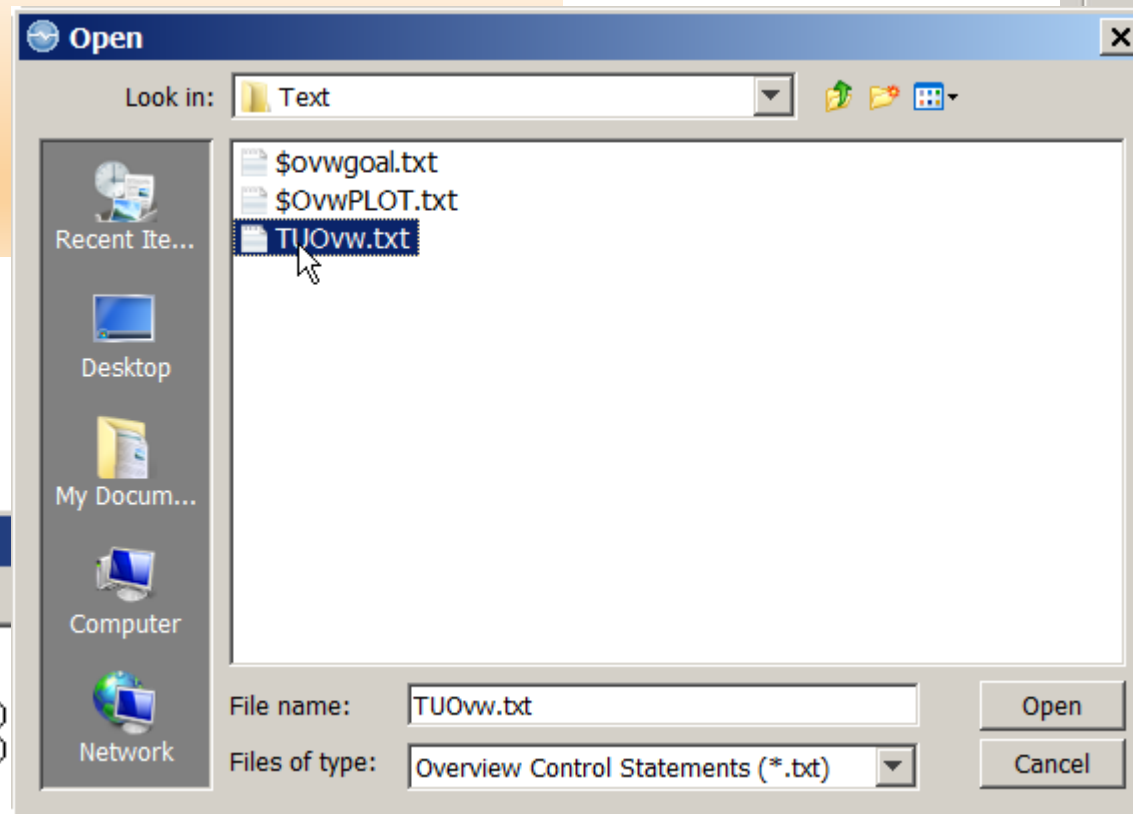
RMF SR: How to create an Overview Spreadsheet (3)

→ Select file name for OVW report statements

→ Edit this file and define OVW statements

TUOvw.txt - Notepad

```
File Edit Format View Help
OVW(PROCS(NUMPROC))
OVW(CPUBSY(CPUBSY))
OVW(APPLC(APLPER(S.SYSSTC)))
OVW(APPLM(APLPER(S.SYSTEM)))
OVW(TRANSC(TRANS(S.SYSSTC)))
OVW(TRANSM(TRANS(S.SYSTEM)))
OVW(RTIMEC(RTIME(S.SYSSTC)))
OVW(RTIMEM(RTIME(S.SYSTEM)))
```



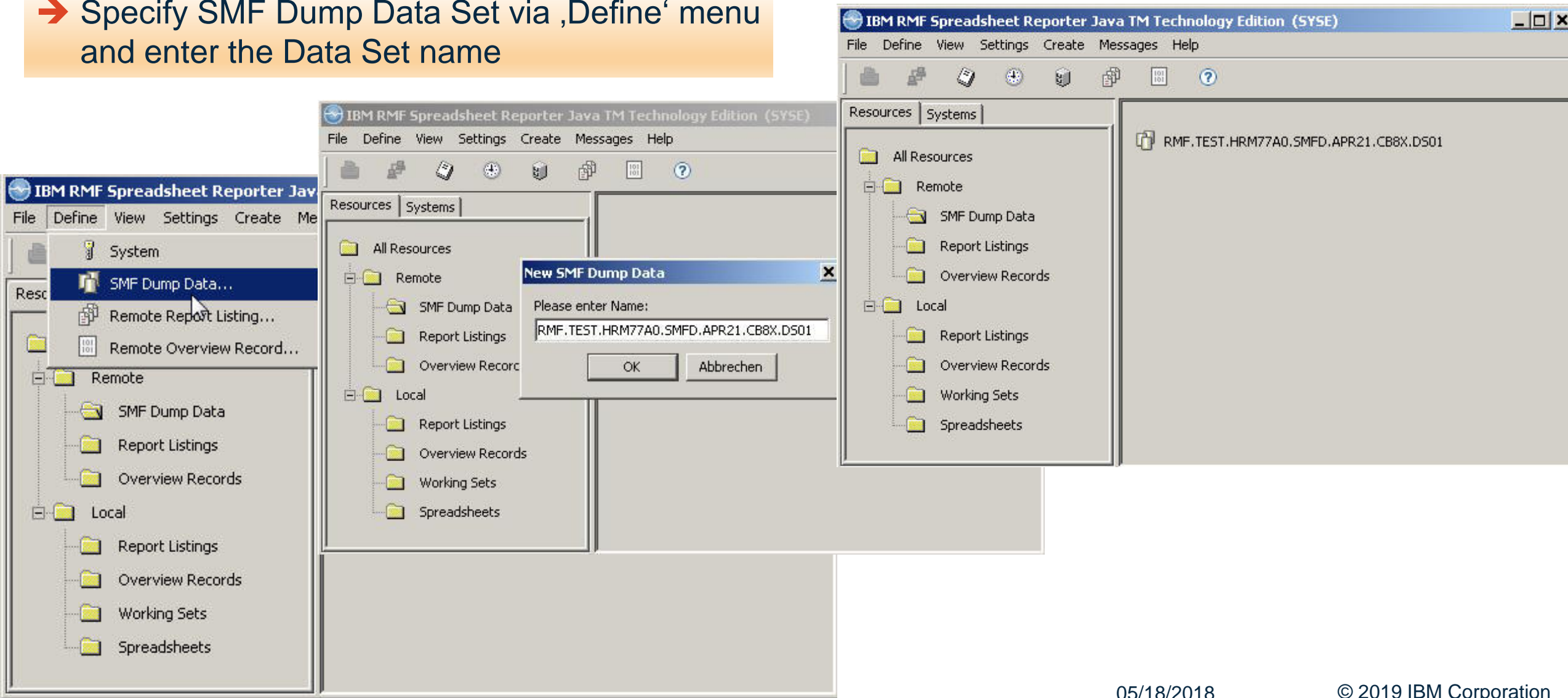
RMF SR: How to create an Overview Spreadsheet (4)

The screenshot displays the IBM RMF Spreadsheet Reporter Java TM Technology Edition (SYSE) application window. The main window has a menu bar (File, Define, View, Settings, Create, Messages, Help) and a toolbar. The 'Resources' tab is selected, showing a tree view with 'All Systems' and 'SYSE'. An orange arrow points from the 'Clock' icon in the toolbar to the 'Intervals' dialog box. The 'Intervals' dialog box has two sections: 'From' and 'To'. The 'From' section shows a date of 'Oktober 01, 2014' and time of '00:00'. The 'To' section shows a date of 'Oktober 01, 2015' and time of '24:00'. Below these are two sliders for 'Duration': 'Hours: 1' and 'Minutes: 0'. At the bottom are 'Ok', 'Cancel', and 'Defaults' buttons.

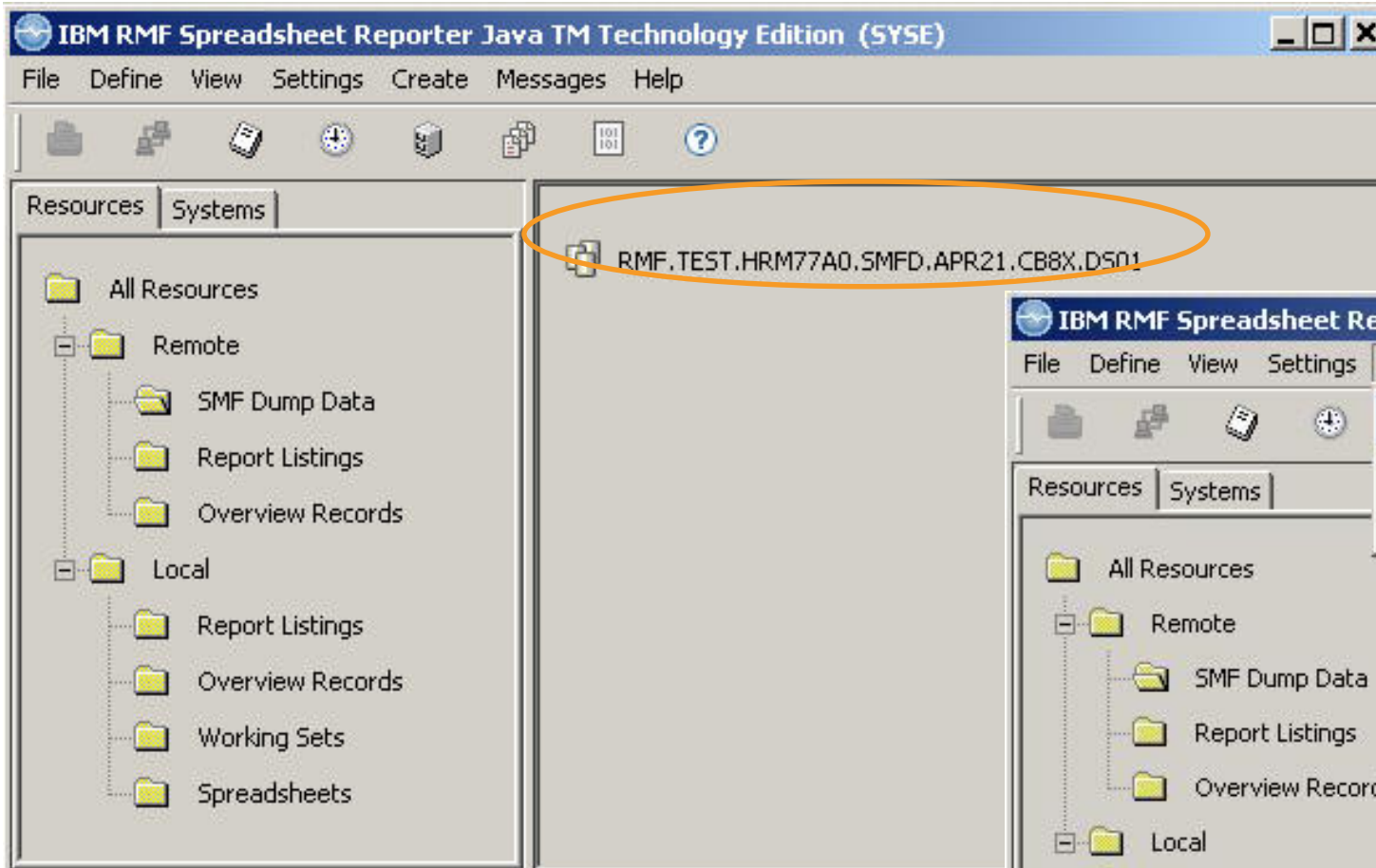
→ Specify intervals and duration:
Use ,Clock' symbol or ,Settings' menu

RMF SR: How to create an Overview Spreadsheet (5)

➔ Specify SMF Dump Data Set via ,Define' menu and enter the Data Set name



RMF SR: How to create an Overview Spreadsheet (6)



→ Select the SMF Dump Data Set and choose 'Create', 'Working Set'

RMF SR: How to create an Overview Spreadsheet (7)

Create Working Set

SMF Dump Input Data

RMF.TEST.HRM77A0.SMFD.APR21.CB8X.DS01

RMF Postprocessor Data Sets

Remote

BKGE.D274.T133855.OVWREC

Local

SYSE.D274.T133855.rec

New Working Set

Name

TUOvw.SYSE.D274.T133855

Location

aming\RMF\RMF Spreadsheet Reporter\WorkingSets\TUOvw.SYSE.D274.T133855

Run Cancel

→ Click ,Run‘

→ Wait for completion, then click ,Ok‘

Create Working Set

SMF Dump Input Data

RMF.TEST.HRM77A0.SMFD.APR21.CB8X.DS01

RMF Postprocessor Data Sets

Remote

BKGE.D274.T133855.OVWREC

Local

SYSE.D274.T133855.rec

New Working Set

Name

TUOvw.SYSE.D274.T133855

Location

aming\RMF\RMF Spreadsheet Reporter\WorkingSets\TUOvw.SYSE.D274.T133855

Run Ok

Working Set Creation completed

RMF SR: How to create an Overview Spreadsheet (8)

➔ Double click ,Open RMF Overview' from Spreadsheets subfolder, then your Spreadsheet Application starts

IBM RMF Spreadsheet Reporter Java TM Technology Edition (SYSE)

File Define View Settings Create Messages Help

Resources Systems

All Resources

- Remote
 - SMF Dump Data
 - Report Listings
 - Overview Records
- Local
 - Report Listings
 - Overview Records
 - Working Sets
 - Spreadsheets

All Spreadsheets

- Cache Subsystem Overview Report
- Cache Subsystem Report
- Channel Overview Report
- Coupling Facility Trend Report
- Create Overview Control Statements
- DASD Activity Report
- Device Overview Report
- Filter DASD or Cache Reports
- I/O Subsystem Report
- LPAR Overview Report
- LPAR Trend Report
- Open RMF Overview Spreadsheets
- Open RMF Report Spreadsheets
- Summary Report
- System Overview Report
- Tape Mount Report
- Workload Activity Trend Report
- Workload Overview Report
- XCF Trend Report

Overview Report

This spreadsheet processes any overview working set and automatically creates charts.

➔ Select ,To start' ...

Create a copy...

To start

Select Overview Working Set and process data...

To add additional data

Select Overview Working Set and add to existing data...

The Overview Working Set must be created using the same set of Overview Control statements

To save results

Save as...

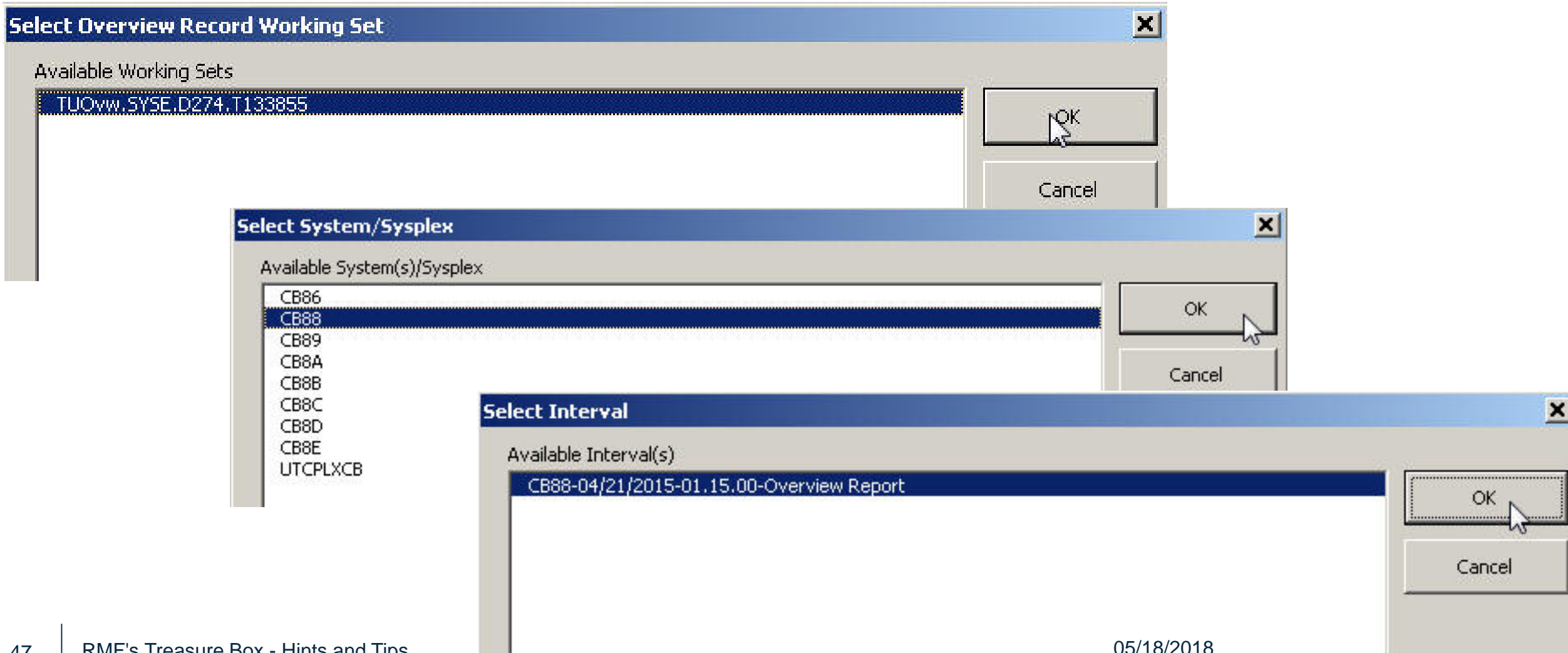
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DISCLAIMER OF WARRANTIES:

The following [enclosed] macro is sample code created by IBM Corporation. This sample macro is not part of any standard IBM product and is provided to you solely for the purpose of assisting you in the development of your applications. The code is provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of such sample code, even if you have been advised of the possibility of such damage.

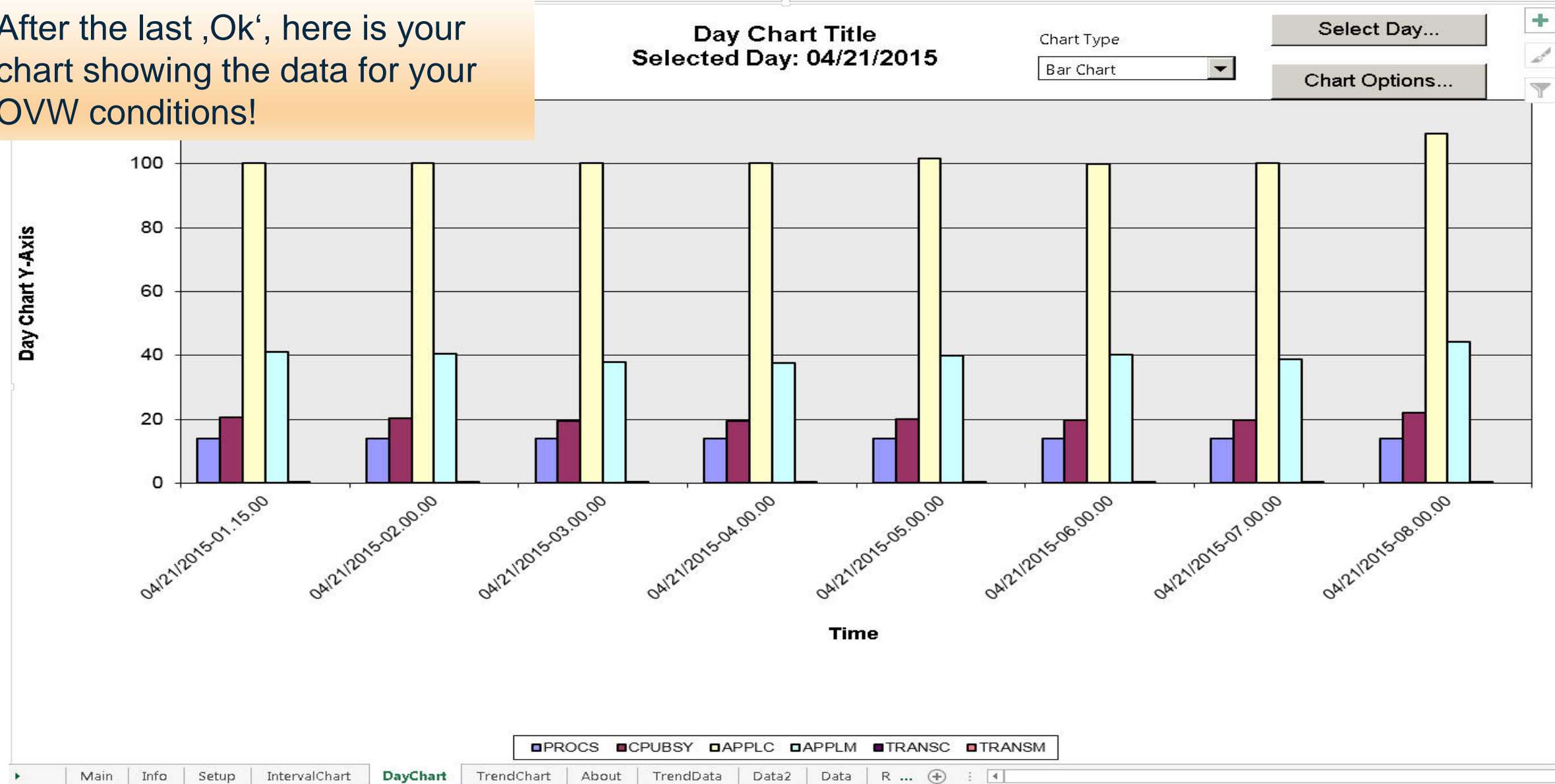
RMF SR: How to create an Overview Spreadsheet (9)

→ Specify working set, system and interval of interest



RMF SR: How to create an Overview Spreadsheet (10)

➔ After the last ,Ok', here is your chart showing the data for your OVW conditions!



Overview Conditions: RMF Data Portal

File Edit View History Bookmarks Tools Help

RMF Data Portal

boesyse:8803

RMF Data Portal for z/OS Home Explore Overview My View ? RMF

Welcome, you are connected to: ,SYSDPLEX,SYSPLEX

RMF Monitor III Data:

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

RMF Postprocessor Reports:

Reports:

☐ CACHE ☐ CHAN ☐ CPU ☐ CRYPTO ☐ DEVICE ☐ ENQ ☐ ESS ☐ FCD ☐ HFS ☐ IOQ ☐ OMVS ☐ PAGESP ☐ PAGING ☐ PCIE ☐ SCM

☐ CF ☐ SDEVICE ☐ WLMGL

☒ OVV

Filter Options:

Date(Start,End)

SysID

Time of Day

Duration

Control Statements

Show Report

Select "OVV"

Specify system (optional)

Specify Overview Conditions

Overview Conditions: RMF Data Portal

File Edit View History Bookmarks Tools Help

RMF Data Portal

boesys:8803

Search

RMF Data Portal for z/OS Home Explore Overview My View ? RMF

Display Controls for RMF Postprocessor Report

Report Data Selection:

10/01/2015-09.59.34 SYSE OVW

Show all Report Data

Reset Sorting

RMF Postprocessor Interval Report [System SYSE] : RMF Overview Report

RMF Version : z/OS V2R2 SMF Data : z/OS V2R2

Start : 10/01/2015-09.59.34 End : 10/01/2015-12.14.33 Interval : 000:15:00 hours Cycle : 1000 milliseconds

Overview Report

Number of Intervals : 9 Total Length of Intervals : 02.15.00

Date (mm/dd)	Time (hh.mm.ss)	Interval Length (hh.mm.ss)	PROCS NUMPROC	CPUBSY CPUBSY	APPLC APPLPER S.SYSSTC	APPLM APPLPER S.SYSTEM	TRANSC TRANS S.SYSSTC	TRANSM TRANS S.SYSTEM	RTIMEC RTIME S.SYSSTC	RTIMEM RTIME S.SYSTEM
10/01	09.59.34	00.14.59	3.0	0.8	0.4	0.3	0.00	0.00	0.000	34199.83
10/01	10.14.34	00.14.59	3.0	0.8	0.4	0.4	0.00	0.00	0.000	0.000
10/01	10.29.34	00.15.00	3.0	0.8	0.4	0.3	0.00	0.00	0.000	0.000
10/01	10.44.34	00.15.00	3.0	0.9	0.5	0.4	0.00	0.00	0.043	0.000
10/01	10.59.34	00.14.59	3.0	1.0	0.4	0.3	0.00	0.00	0.000	0.000
10/01	11.14.34	00.15.00	3.0	0.8	0.4	0.3	0.00	0.00	0.000	0.000
10/01	11.29.34	00.15.00	3.0	1.0	0.4	0.3	0.00	0.00	0.000	0.000
10/01	11.44.34	00.15.00	3.0	0.9	0.5	0.4	0.00	0.00	0.038	0.000
10/01	11.59.34	00.14.59	3.0	0.8	0.4	0.3	0.00	0.00	0.000	0.000

OVW Control-statement-name
OVW Condition-name
OVW Qualifier (Resource name)

Resume

With RMF Overview Conditions, you can ...

- ... retrieve important data points individually
- ... combine data from different Postprocessor reports
- ... combine data from different resources
- ... aggregate data for longer time intervals than stored in SMF

Information and Tools

- Website <https://github.com/IBM/IBM-Z-zOS/tree/master/zOS-RMF> with product information, newsletters, presentations, ...
- Downloads from <ftp://public.dhe.ibm.com/eserver/zseries/zos/rmf/>
 - Spreadsheet Reporter
 - Postprocessor XML Toolkit
- RMF email address: rmf@de.ibm.com
- Documentation and news:
 - RMF Report Analysis, SC34-2665
 - RMF User's Guide, SC34-2664
 - RMF Programmer's Guide, SC34-2667
 - Latest version of PDF files can be downloaded from:
<https://www.ibm.com/servers/resourcelink/svc00100.nsf/pages/zOSV2R3RmfPublications?OpenDocument>

