IBM Education Assistance for z/OS V2R2

Item: BCPii SMF Recording
Element/Component: BCPii

Material current as of May 2015

Agenda

- Trademarks
- Presentation Objectives
- Overview
- Usage & Invocation
- Installation
- Presentation Summary
- Appendix

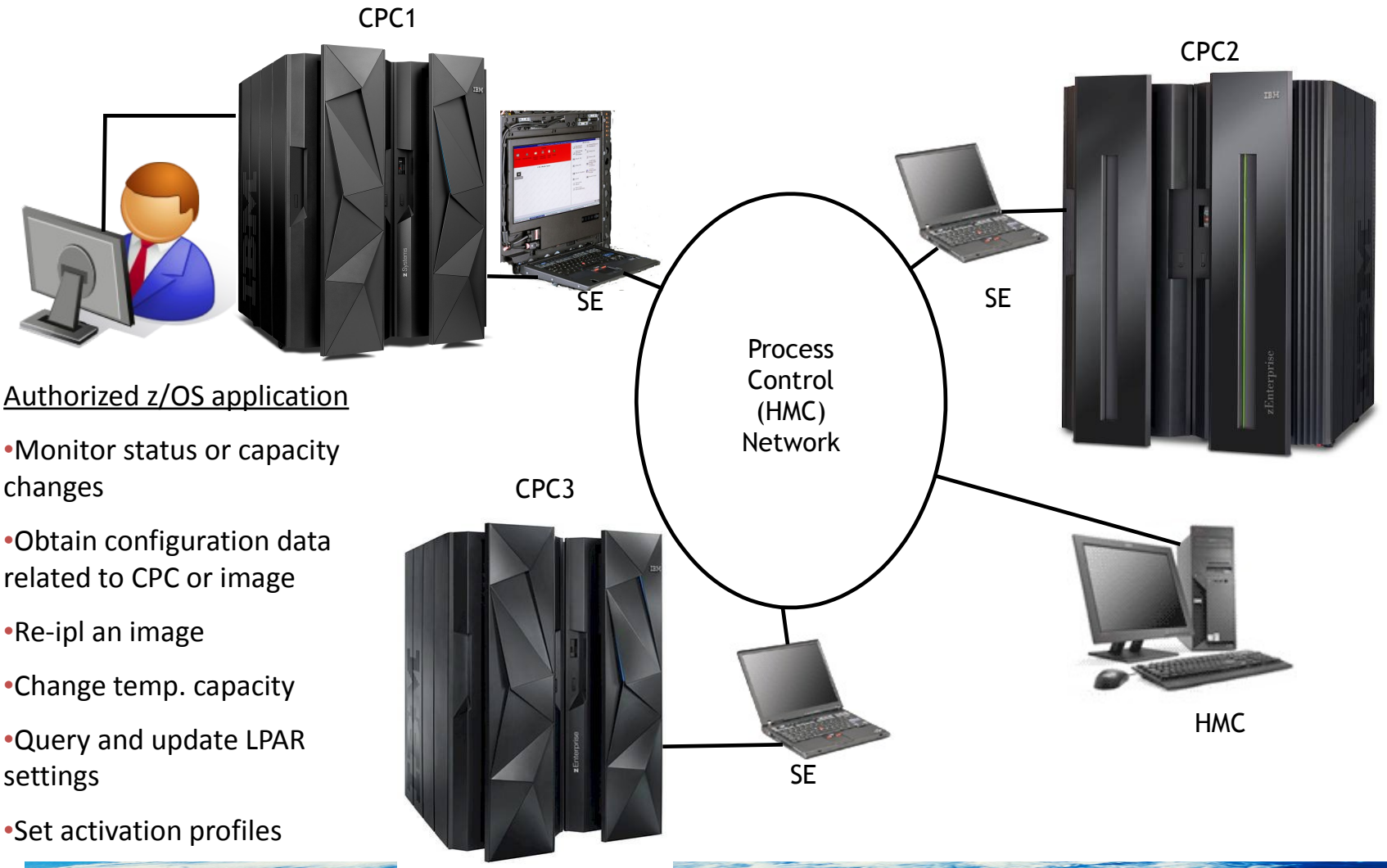
Trademarks

- See url http://www.ibm.com/legal/copytrade.shtml for a list of trademarks.

Presentation Objectives

- Quick BCPii overview
- Why the need for BCPii SMF recording?
- What is being recorded?
- How do I enable this recording?

Overview - What is BCPii?



Authorized z/OS application

- Monitor status or capacity changes
- Obtain configuration data related to CPC or image
- Re-ipl an image
- Change temp. capacity
- Query and update LPAR settings
- Set activation profiles
-

Overview - Typical resources settable by HWISET API

- Examples of information you can set
  - CPC information
    - Acceptable status values
    - Next Reset activation profile name
    - Processor Running Time
  - Image information
    - Various processor weights
  - Activation Profile Information
    - Most activation profile values

Overview - Typical actions using the HWICMD API

- Examples of commands that can be issued:
  - CPC commands
    - Activate, Deactivate an entire CPC
    - CBU request
      - **Activate or Undo**
    - On/Off Capacity on Demand request
      - **Activate or Undo**
    - Switch Power Savings Mode
    - Sysplex Timer (STP) commands
  - Image commands
    - SysReset, SysReset with IPL Token
    - Load
    - Start, Stop all CPs
    - Add or remove temporary capacity
    - Issue operating system command
    -

Overview

- **Problem Statement / Need Addressed**
  - Whenever a BCPii application issues an API that modifies hardware resources, there are not sufficient audit trails to keep track of which application/user modified the resources (SHARE Top 50 requirement SSMVSE12018)
- **Solution**
  - BCPii now cuts SMF 106 records for **successful** HWISET and HWICMD API calls
- **Benefit / Value**
  - Sufficient audit information to know what resources were modified by BCPii applications

Usage & Invocation

- New SMF 106 record
  - IEASYSxx points to SMFPRMxx member
  - SMFPRMxx member
    - SYS(TYPE(106))
- 2 subtypes
  - Subtype 1 (HWISET) SYS(TYPE(106(1)))
    - Cuts detailed information about each successful HWISET call
  - Subtype 2 (HWICMD) SYS(TYPE(106(2)))
    - Cuts detailed information about each successful HWICMD call

Usage & Invocation

- Mapped by BCPii SMF Type 106 mapping macro
  - SYS1.MACLIB(HWISMF6A)
- Supplied sample formatting JCL
  - HWI6AFMT
    - Copies BCPii SMF Type 106 records from a data set or logstream to a temporary dataset
    - Using the DFSORT-provided ICETOOL:
      - Sorts the type 106, subtype 1 and subtype 2 records
      - Produces a summary report for the type 106 records
      - Produces a detailed report for type 106 for subtype 1 and subtype 2
  - HWIRPTMP
    - SMF type 106 JCL variable map as input to the DFSORT-provided ICETOOL

Usage & Invocation

- What is actually cut by BCPii in the SMF Record Type106?
  - Connection Type of the HWISET or HWICMD request
    - CPC, Image, Reset activation profile, Image activation profile, or Load activation profile
  - CPC Name
  - Request parameter
    - Either the image name or activation profile name specified by the requester
  - ASID
  - Job name
  - User ID

Usage & Invocation

- Detailed information in Subtype 1 (HWISET):
  - SetType
    - Resource that was modified
  - Set Type Value Length
    - Length of the value being set
  - Set Parameter
    - The actual value being set

Usage & Invocation

- Detailed information in Subtype 2 (HWICMD):
  - Command Type
    - Command that was issued
  - Command parameter list passed to BCPii
  - Optional XML data sent on request

Usage & Invocation

- Sample report output:

SUBTYPE 1 RECORDS SUMMARY REPORT 02/03/15 10:18:52

```
CPC Name  IBM390PS.H87

   LEN       SEG    FLG     RTY         TME           DTE    SID     WID        STP
------    ------    ---    ----    --------    ----------    ----    ----    ------
   397         0    DE      106    10:45:05    2015/02/03    BCPJ    JES2         1

VERSION    PROD NAME    MVS PROD    SYSTEM NAME    CONN TYPE    CPC
-------    ---------    --------    -----------    ---------    -----------------
01         BCPII        SP7.2.2     BCPJ                   2    IBM390PS.H87

RTN                    ASD    JOBNAME     USER         SET TYPE      SET PARM LEN
---------------    ------    --------    --------    -----------    ------------
LP8                2D     HWASEY04    SWARREN            116               4

TDA
--------------------------------
000003E700000000000000000000000
```

Usage & Invocation

- Sample report output:

SUBTYPE 2 RECORDS SUMMARY REPORT 02/13/15 14:47:02 - 1

```
CPC Name  IBM390PS.H87

   LEN      SEG    FLG    RTY        TME          DTE    SID    WID       STP
------    ------   ---   ----   --------   ----------   ----   ----   ------
  3955        0    DE     106   14:34:05   2015/02/13   BCPJ   JES2        2

 VERSION   PROD NAME   MVS PROD   SYSTEM NAME   CONN TYPE   CPC
 -------   ---------   --------   -----------   ---------   ----------------
 01        BCPII       SP7.2.2    BCPJ                1   IBM390PS.H87

RTN                  ASID   JOBNAME    USER       COMMAND TYPE
---------------    ------   --------   --------   ------------
                       47   HWAECX16   IBMUSER              14
CMD XML or IPLToken
--------------------------------
0000000123DE04100000005C00000000
```

Usage & Invocation

- Sample report output:

HWI_CMD_TEMPCAP SMF RECORDS REPORT 02/13/15 14:47:02 - 1

LEN	SEG	FLG	RTY	TME	DTE	SID	WID	STP
3955	0	DE	106	14:34:05	2015/02/13	BCPJ	JES2	2

CTY	TEMPCAPTYPE	CAPXMLPTR	CAPXMLSIZE	XMLData
14	1	23DE0410	5C	<add><recordid>0

Installation

- To activate BCPii SMF recording:
  - –Parmlib method
    - Add the necessary statements to the SMFPRMxx parmlib member for SMF Type 106
      - SYS(TYPE(106))
      - SYS(TYPE(106(1)))
      - SYS(TYPE(106(2)))
      - SYS(TYPE(106(1:2)))
    - Issue the SET SMF=xx command to activate the parmlib changes
  - –On the fly method
    - SETSMF command

Presentation Summary

- The need for BCPii SMF recording
- What information is recorded and when
- How recording is enabled

Appendix

- **z/OS 2.2 MVS Programming: Callable Services for High-Level Languages:**
  - Primary BCPii documentation including installation instructions and BCPii API documentation (including BCPii REXX support)
- **z/OS 2.1 MVS System Management Facilities (SMF)**
  - BCPii's primary SMF documentation on SMF Type 106 records

BCPii Blog

- Great new way to get tips, insight and the latest BCPii technical information
  - Hosted on IBM Mainframe Insights
  - **https://www-304.ibm.com/connections/blogs/systemz/entry/bcpii_and_rexx_walking_arm_in_arm?lang=en_us**

BCPii Blog

- Some blog entries:
  - Putting our clients first: The z/OS BCPii journey
  - z/OS BCPii and REXX: A cool combo for automation
  - BCPii and REXX: Walking arm in arm
  - The wait is over! Improved performance for BCPii's HWILIST and HWIQUERY services
  - Top 10 questions from BCPii customers
  - We heart z/OS BCPii
  - How about a slice of BCPii? (Discussion of BCPii samples)
  - A slice of pizza, a cup of coffee and a quick SSDPP…
  - Steve Warren, z/OS BCPii Technical Lead, Answers Your Questions