

System Information for BPM:PS z/OS Labs

This handout contains information you need for the labs to customize *IBM Business Process Manager Advanced for z/OS: Process Server* (BPM:PS.)

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Basic z/OS system information:

<input type="checkbox"/> System name	WG31
<input type="checkbox"/> Sysplex name	WSLPLEX
<input type="checkbox"/> Operating System Level	z/OS 1.13
<input type="checkbox"/> System proclib	SYS1.PROCLIB
<input type="checkbox"/> System EXEC library	SYSS.WSC.SYSEXEC
<input type="checkbox"/> System parmlib	SYSS.PARMLIB

TCP/IP Information: (Substitute your team # for 'b#'.)

<input type="checkbox"/> TCPIP host name	wg31.washington.ibm.com	WG31
<input type="checkbox"/> FTP port	21	
<input type="checkbox"/> SSH	22	
<input type="checkbox"/> TN3270 port	23	
<input type="checkbox"/> Telnet port to USS	1023	
<input type="checkbox"/> Windows 2K hosts file location	C:\WINNT\system32\drivers\etc\hosts	
<input type="checkbox"/> TCP/IP addresses for hosts: (verify with “ping wg31” from TSO command line)		
<input type="checkbox"/> Team 1	192.168.17.201 or 192.168.17.211	
<input type="checkbox"/> Team #	192.168.17.20# or 192.168.17.21#	

Userid Information:

The following TSO UserIDs are already defined for you. (pw = userid.)

	USERID	GROUPID	UID	Home
DB2 SYSADM authority & SuperUser	SYSADM1	SYS1	0	/u/sysadm1
User with RACF Special authority	USER1	SYS1	8470391	/u/user1
Other TSO user	USER2	SYS1	8470392	/u/user2
WAS Administrator	B#ADMIN	B#CFG	8501 or auto- assigned	/wasv85config /b#cell/home /B#CFG

WebSphere V85 Library Information:

- WAS for z/OS level Version. 8.5.5.0
- BPM Adv.PS level Version 8.5.0.0
- WAS & BPM Adv.PS V8 SMP/E home dir. /shared/zWebSphere/V8R55BASEBPM850

WebSphere Configuration Information:

WAS standalone server is already configured for these labs with the following settings:

- zFS Configuration file-systems:
 - DMgr OMVS.B#CELL.B#DMNODE.CONFIG.ZFS at /wasv8config/b#cell/b#dmnode
 - NodeA OMVS.B#CELL.B#NODEA.CONFIG.ZFS at /wasv8config/b#cell/b#nodea
- Cell name B#CELL (long name = b#cell)
- Node name B#NODEA (long name = b#nodea)
- Server name B#SR01A (long name = b#sr01a)
- Admin Userid B#ADMIN (pw = b#admin)
- Ports 7500 – 7599
- Start Deployment Manager and Node Agent:
 - s b#dcr,env=b#cell.b#dmnode.b#dmgr,jobname=b#dmgr
 - s b#acra,env=b#cell.b#nodea.b#agnta,jobname=b#agnta

DB2 Information:

- DB2 level Version 10
- DB2 subsystem name DSNX
- DB2 communication char string -DSNX
- DB2 location name WG31DB2
- DB2 library names DSN1010.** (In Linklist)
- DB2 customized SDSNEXIT library DSN1010.SDSNEXIT
- DB2 customized RUNLIB library DSN1010.RUNLIB.LOAD
- DB2 home directory /shared/db21010/jdbc
- Start DB2 (MVS) Command: /-dsnx start db2
- Display DB2 Tracing /-dsnx disply trace (*)
- Stop Tracing /-dsnx stop trace (acctg)
/-dsnx stop trace (stat)
- Start tracing /-dsnx start trace (acctg) class(1,2,3,7,8)
/-dsnx start trace (stat) class(1,3,4,5,6)

TCP/IP - z/OS Console Commands:

- D TCPIP,{procname},HELP - display list of options.
 - DISPLAY, VARY, OMPROUTE, SYSPLEX, STOR.
- D TCPIP,{procname},Netstat,ALLCONN|CONN
- D TCPIP,{procname},Netstat,ARP
- D TCPIP,{procname},Netstat,DEVlinks
- D TCPIP,{procname},Netstat,HOME
- D TCPIP,{procname},Netstat,ROUTE

TCP/IP - TSO Commands:

- NETSTAT option {TCP procname} - Display network status of local host. Use ? for list of options.
- NETSTAT ALLCON|CONN - Display port connections for the TCP/IP stack.
- NETSTAT ARP ALL|ipaddress - Display ARP cache for the TCP/IP stack.
- NETSTAT DEV - Display the status of the device(s) and link(s) for the TCP/IP stack.
- NETSTAT GATE|ROUTE - Display routing information for the TCP/IP stack. (Different views)
- NETSTAT HOME - Display IP address(es) for the stack.
- PING hostname – Send echo request to a host name to determine if the computer is accessible.
- TELNET hostname {port} - Log on to remote host. By default, port 23 is used.
- TRACERTE hostname - Trace hops from this host to destination host. Use ? for list of options

Workstation Set-up (This all needs verification – things have changed...)

- C:\wpswork\ folder for Spreadsheet and work files (or is it C:\bpmwork\ ??)
- WCT V8
- Set HOSTS file to use unique WG31 host address
 - C:\WINDOWS\system32\drivers\etc\hosts
 - 192.168.17.2y# wg31.washington.ibm.com wg31
- PCOM 3270 sessions (WG31.WS profiles):
 - Make sure Icons are on the desktop for 'user'
 - Fix PCOM profiles for good keyboard and char-set mapping to display brackets & braces:
 - Wide WG31.WS – Large screen 50 x 132
 - kens.KMP – keyboard mapping
 - TCPIP profile for large screen – in DSN=SYS1.TCPPARMS(PROFILEx)


```
TELNETDEVICE DYNAMIC ,D4C32XX3
```
 - (See Techdoc TD102151 "Creating dynamic 3270 screen sizes")
- TeraTerm - correct backspace in Setting- Keyboard - uncheck Bksp
- Putty - correct backspace in Settings - Keyboard – Bksp = Ctl-H
- PFE Editor
- FileZilla, and WS_FTP LE – GUI FTP clients

Sample Files on WG31 Systems

– Use for work files, and Sample apps:

HFS: /u/user1/wpswork

- BookOrderServiceEAR.ear
- DB2JccConfiguration.properties
- LabData – directory for Labs?
- ParticipatingTaskPrepare.zip
- WPSEcho.ear
- WPSHumanTask.ear
- ZOSBookOrderApp.ear
- addNewDS.py
- addNewDS.sh
- db2setup.sh
- favicon.ear
- oeascii
- updNewServer.py
- verifyDS.py
- verifyDS.sh
- viascii

USER1.WAS.CNTL:

- B#ADDVAR – Add WAS Env. Variables
- B#BOOTST – Run bootstrapDataBase.sh
- B#CELZFS – Created small Cell zFS
- B#CRDB2 – Create StoGrop & Databases
- B#EJBROL – EJBROLE profiles for BPM
- B#GRANTS – GRANTs for Cell database
- B#GRTSEQ – GRANTs for Sequences
- B#PORTS2 – Fix Port #s for 2nd Cluster
- B#RACUID – Define BPM Users, Groups
- B#RAC800 – Define WAS users, Profiles
- B#SIBRES – Reset the SIB DB2 tables
- B#WSADM – Run wsadmin.sh
- B#ZFSBAK – Backup Config zFS
- B#ZFSRST – Restore Config zFS

Web URLs:

BPM Information Center:

<http://publib.boulder.ibm.com/infocenter/dmndhelp/v8r5/index.jsp>

BPM Wiki: <http://wiki.lombardi.com/display/Dashboard/HOME>

WASv8 wg31 ISC:

<http://wg31.washington.ibm.com:8505/ibm/console>

BPE Explorer:

<http://wg31.washington.ibm.com:8567/bpc>

Business Space:

<http://wg31.washington.ibm.com:8587/BusinessSpace>

Process Admin Console:

<http://wg31.washington.ibm.com:8587/ProcessAdmin>

ProcessCenter (on wspctr.wsclab.washington.ibm.com):

ISC for Process Center:

<http://wspctr.wsclab.washington.ibm.com:9060/ibm/console>

<http://9.82.31.232:9060/ibm/console>

(pcadmin or root/pr0cess)

<http://192.168.17.232:9060/ibm/console>

Process Center:

<http://wspctr.wsclab.washington.ibm.com:9080/ProcessCenter> (tw_admin)

<http://192.168.17.232:9080/ProcessCenter>

Process Administration:

<http://wspctr.wsclab.washington.ibm.com:9080/ProcessAdmin> (tw_admin)

Starting everything:

```
ulimit -n 9000
```

```
~/start.sh
```

Stopping everything:

```
~/stop.sh
```

Starting PC AppServer:

```
/opt/IBM/WebSphere/AppServer/profiles/pcnodea/bin/startServer.sh pcsr01a
```

Stopping PC AppServer:

```
/opt/IBM/WebSphere/AppServer/profiles/pcnodea/bin/stopServer.sh pcsr01a -username pcadmin  
-password pcadmin
```

Server logs:

```
/opt/IBM/WebSphere/AppServer/profiles/pcnodea/logs/pcsr01a/SystemOut.log
```

```
Dmgr logs: /opt/IBM/WebSphere/AppServer/profiles/PCDmgr01/logs/dmgr/SystemOut.log
```

Process Designer:

In the PD directory (C:\IBM\ProcessDesigner\v8)

The file eclipse.ini has this:

```
-Dcom.ibm.bpm.processcenter.url=http://192.168.17.232:9080
```

Handy MVS Commands

Here are a few useful MVS commands you may find helpful. Type a slash (/) before them when issued from SDSF command line, but not if entered from the SDSF "System Command Extension."

Display Commands:

```

d asm          page data sets & utilization of page space
d d           dump data sets
d grs,c       global resource serialization - contention
d iplinfo     ipl time & bootstrap parms
d logger,l    logger logstreams
d m           CPUs (m=cpu), Memory (m=stor) & Channels
d parmlib     parmlib data sets used for this IPL
d omvs,a=all  UNIX address spaces (processes)
d omvs,f      HFS/zFS file systems currently in use or mounted
d omvs,mf     HFS/zFS Mount Failures
d omvs,o      UNIX current configuration settings
d omvs,p      PFS (physical file system) configuration information
d omvs,pid=nnnn Processes with accumulated CPU time
d omvs,w      Delays (Waiters) for latch contention & WTORs
d opdata      operator command prefixes
d r,l         outstanding WTORs (Write To Operator with Replies)
d rrs         Resource Recovery Services
d smf         SMF recording dataset status
d symbols     system symbolics
d t           Time & Date (Local & GMT)
d tcpip,,n,portl TCP/IP ports being listened on
d tcpip,,n,routes TCP/IP routes
d tcpip,,n,home TCP/IP home
d trace       all trace settings
d u,dasd,online,,99 online dasd devices
d wlm,dynappl=* dynamic application environments
d xcf,cpl     XCF parameters and couple data sets
$dspl        JES2 spool utilization

```

Other MVS Commands:

```

Start RRS          start atrrrs,sub=mstr
Stop RRS           setrrs cancel
Start MQ           -mqsl start qmgr
Stop MQSeries     -mqsl stop
Disable ARM        setxcf stop,policy,type=arm
Start RMF          s  rmf
Start data gatering f  rmf,s iii
Modify RMF interval f  rmf, Modify zz,SYNC(RMF,0), interval(2M)
Switch SMF datasets i  smf
Switch to new SMF parms set smf=99
Clear SMF dataset  s  clrsmf,man=1 {or man=2}
Display TCP/IP V6 setting d tcpip,,netstat,home
Refresh TCP/IP Profile parms v tcpip,,o,sysl.tcparms(profilex)
Send message to TSO user send 'msg',u=(userid)
Add a Page dataset to relieve Aux.Storage issues: PA PAGE=PAGE.WSL003.LOCAL
* See TSO Command below to Define the new Page dataset.

```

Useful TSO Commands:

- Define Page dataset: `DEFINE PAGESPACE (NAME('PAGE.volser.LOCAL') VOLUME(volser) CYLINDERS(nnn))`
- Turn Prefixing Off: `PROFILE NOPREFIX`
- To reverse it: `PROFILE PREFIX(HUTCH) or PREFIX(USER1)`
- Get BPX Message info: `bpxmtext 5620062`
- RACF Commands:
 - Refresh a RACF Class: `SETROPTS RACLIST(EJBROLE) REFRESH`
 - `permit QQCELL.administrator CL(EJBROLE) id(hutch) acc(read)`
 - `CONNECT hutch group(QQCFG)`
- DASD Volume Space Info: `space vol(BP`

Useful Unix Commands:**General:**

<code>man <cmd></code>	use "help" facility for <cmd>
<code>exit</code>	exit the UNIX shell (or exit Super User State)
<code>df</code>	display file systems
<code>set -o vi</code>	make the vi editor handle command mode (j/k = up/down stack)
<code>su</code>	switch to privileges of a superuser
<code>su <userid></code>	switch to privileges of another userid

Managing Directories

<code>pwd</code>	list current directory
<code>ls -al</code>	list contents of the current directory
<code>cd <dir></code>	change to directory 'dir'
<code>rmdir <dir></code>	remove (delete) a directory
<code>mkdir -p sub1/sub2</code>	create sub-directories
<code>chmod 755 *.*</code>	grant authority to access your directory
<code>chown owner path</code>	change ownership of a file (-R option for subdirects)

Working with Files

<code>cat filename</code>	list the file
<code>find . -name "xy"</code>	list all files starting with "xy" in this directory or any sub directories
<code>head filename</code>	display first 10 lines of a file
<code>tail filename</code>	display last 10 lines
<code>obrowse filename</code>	browse a file
<code>oedit filename</code>	edit a file (ISPF editor)
<code>cp fromfile tofile</code>	copy a file, specify from/to
<code>sort myfile >sout</code>	sort "myfile" into "sout" file
<code>rm old.txt</code>	remove (delete) a file (old.txt)
<code>egrep "string" xx.yy</code>	search for "string" in file "xx.yy"

File Transfer

<code>ftp <hostname></code>	connect to remote host to get or put files
<code>bin <or> ascii</code>	set Binary or ASCII/EBCDIC mode
<code>lcd <loc-dir></code>	change to local directory
<code>cd <rem-dir></code>	change to remote directory
<code>pwd</code>	display present working directory
<code>prompt</code>	sets prompting mode on/off (toggle)
<code>get <filename></code>	get a remote filename from the remote host
<code>mget <file-list></code>	get multiple files
<code>put <filename></code>	put file onto remote host
<code>mput <file-list></code>	put multiple files
<code>quit</code>	exit FTP

Visual Editor (vi) cheat-sheet

This page shows you some commonly used vi commands to edit a file. For a complete list of commands, see “Learning the vi Editor” (O’Reilly), or type “man vi” in the UNIX shell (if it works)

Edit a file: vi filename.ext Edit filename.ext with the vi editor

:set all Display settings.

:set nu Set line numbering on (:set nonu turns it off)

:set ic Ignore case (:set noic turns it off)

:set showmode Show the editing mode at the bottom of the screen

:q! Quit editing without saving.

:w Save the file, and continue in edit.

:wq Save the file and then exit editing.

:r fn Get (retrieve) file named ‘fn’.

:w fn Put (write) to file named ‘fn’.

Moving around in a file:

G Move to bottom the file

1G Move to the top of the file

Ctrl-F Move forward one page (screen)

Ctrl-B Move backwards on page

/abcd Search forward for string “abcd”

?efgh Search backward for string “efgh”

n Find next occurrence (after a search command)

% Find matching brace { -- }

Text Insertion Commands: (lower case and Upper Case meanings)

a A Enters insert mode after the current cursor position/A= at end of line (= \$a).

i I Enters insert mode before the current cursor position/before 1st nonblank char (= [i)

o O Opens up a new line after/before the current line and enters insert mode on it.

r R Replaces characters with the next character typed/chars typed until ESC.

Object Manipulation:

y Moves the object to the appropriate buffer; the source is not changed (“yank” or “copy”)

C Changes to the end of the current line. = c\$

D Deletes to the end of the current line. = d\$

x Deletes the current character. This is equivalent to the dl command.

Y Yanks the current line. This is equivalent to the yy command.

l dd Delete the current line

l yy Copy (yank) the current line

:%s/old/new/g Change all occurrences of ‘old’ to ‘new’

Miscellaneous Commands:

J Joins count lines together. ('i' enter to split line)

P p Paste buffer contents after the cursor. ('p' puts text before the cursor.)

u U Undoes last/all change. If repeated, you undo the undo

ZZ Writes the file out, if changed, and then exits.

. Repeats the last command.

for s in \$(ls *.jar); do echo \$s; jar -tvf \$s | grep xxxString; done

Search through jars for xxxString

Tips:

Use the escape key to leave insert, change or append mode and enter command mode.

Always use the cursor keys (→ ↑ ← ↓) to move around in the file. (Never use the mouse!)

Re-Cloning the VM Guest

Connect to zVM at 9.82.24.186 (should have at least 60(?) lines - I used ScreenSize=60x80)

- Logon to the clone's VM system, just as you do to IPL it, and logoff which effectively kills it.
- Logon to the master (230) system, and go into \$\$GEN3.SETUP.CNTL and submit these jobs: (All of the jobs run on the master start with MC so in SDSF you'll want to do PREFIX MC.)
 - **WSLINITx** where x is the letter designation of the clone. (See list below.)
 - After that runs successfully, you submit **WSLCOPYx**. That will run 15 jobs.
 - After all 15 have completed successfully (no return codes > 4) submit **WSLLABLx**.
- After that runs successfully, logoff of the master, and logon to VM for the respective clone WEBGEN3x.
- Hit enter and you'll be prompted for how you want to proceed.
- Reply 'Y' to IPL.
- Reply 'R 00 ,CONTINUE' to this message: ILR031A REPLY 'DENY' TO PREVENT ACCESS, 'CONTINUE' TO ALLOW USE OF PAGE.WSLPGE.PLPA.
- Then just wait unit SOF finishes and you're done.

Re-IPLing z/OS on the VM Guest:

- Login as webgen3# (pw = webgen3#) where # = the alphabetic letter corresponding to the last two digits of your ipaddress (see chart at the bottom of this note.)
- Hit the 'clear' key to go to the MVS console. (Do NOT Log Off or the VM guest will go away.)
- To IPL, hit <PA1>, and type '#cp i cms' and take all the defaults
- Reply "Y" to IPL with no Prompts.
- Type "R 0 ,I" when you see this message: IXC420D REPLY I TO INITIALIZE SYSPLEX WSLPLEX, OR R TO REINITIALIZE XCF. REPLYING I WILL IMPACT OTHER ACTIVE SYSTEMS.
- Wait for all IPL start-up messages to complete. ("SOF ENDED")
- Then hit the <PA1> key and type 'disc' to disconnect.

Team Numbers and VM Guest Machine Assignments:

- | | |
|------------------|-----------|
| • 201 = a | • 216 = p |
| • 202 = b | • 217 = q |
| • 203 = c | • 218 = r |
| • 204 = d | • 219 = s |
| • 205 = e | • 220 = t |
| • 206 = f | |
| • 207 = g | |
| • 208 = h | |
| • 209 = i | |
| • 210 = j | |
| • 211 = k | |
| • 212 = l ('el') | |
| • 213 = m | |
| • 214 = n | |
| • 215 = o | |

To Warm-Start JES2: change SYSS.PARMLIB(COMMNDZ9) on a cloned system, and re-IPL.
COM='S JES2 ,SUF=5 ,PARM='WARM ,NOREQ' '

IPLing the zLinux machine

- 1) Start PCOMM session to 9.82.24.186
- 2) Logon as "wpspctr" with password "pr0cess"
- 3) Reply "y" to the prompt about IPLing Linux
- 4) When you get to the login: prompt hit "PA1" and enter #CP DISC HOLD