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CMS Pipelines Hands-On Workshop Exercise Answers

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March 12, 2012
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Slide 13

```
PIPE LITERAL Hello, World! | CONSOLE
Hello, World!

PIPE CONSOLE | CONSOLE
This is the first thing I typed
This is the first thing I typed
This is the second thing I typed
This is the second thing I typed
```

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```
PIPE < PROFILE EXEC A | > PROFILE COPY A
listfile profile * a
PROFILE  EXEC     A
PROFILE  COPY     A
erase profile copy a

PIPE < PROFILE EXEC A | CONSOLE
/* Rick's PROFILE EXEC */
Address 'COMMAND'
…
Exit
```

The lab user-id PROFILE EXECs will look much different.

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CPQ NAMES file used instead of CP Query NAMES so that everyone will get similar results.

```
/* PIPE CP QUERY NAMES | LOCATE /RSCS/ | CONSOLE */
PIPE < CPQ NAMES | LOCATE /RSCS/ | CONSOLE
ESAWEB01 - DSC , ESAADMIN - DSC , RSCSDNS2 - DSC , RSCSDNS1 – DSC
PAGEMAN  - DSC , TCPIP    - DSC , RSCSLOG  - DSC , RSCS3    - DSC
RSCS2    - DSC , RSCS     - DSC , HIDRO    - DSC , VMARCH   - DSC


PIPE < CPQ NAMES | SPLIT AT , | STRIP | LOCATE /RSCS/ | CONSOLE
RSCSDNS2 – DSC
RSCSDNS1 – DSC
RSCSLOG  - DSC
RSCS3    - DSC
RSCS2    - DSC
RSCS     - DSC
```

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```
PIPE < CPQ NAMES | FIND RSCS | CONSOLE
RSCS2    - DSC , RSCS     - DSC , HIDRO    - DSC , VMARCH   - DSC


PIPE < CPQ NAMES | SPLIT AT , | FIND RSCS | CONSOLE
RSCS2    - DSC


PIPE < CPQ NAMES | SPLIT AT , | STRIP | FIND RSCS | CONSOLE
RSCSDNS2 - DSC
RSCSDNS1 - DSC
RSCSLOG  - DSC
RSCS3    - DSC
RSCS2    - DSC
RSCS     - DSC
```

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```
PIPE CP QUERY NAMES | SPLIT AT , | NLOCATE /DSC/ | TAKE 5 | CONSOLE
 WALTERT2 -L000B
SEGGERL  -L0011
 VINCENJ  - 08B4
 SYSOP    - 08B1
 ESTEPC   -L0024
```

```
PIPE CMS QUERY ACCESSED | NFIND Mode | CONSOLE
A      R/W      2297  191   RB191B
D      R/O      1102  192   VMTOOL
S      R/O       709  190   MNT190
Y/S    R/O      1232  19E   MNT19E
```

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```
PIPE < CPQ NAMES | COUNT LINES | CONSOLE
30

PIPE < CPQ NAMES | COUNT WORDS | CONSOLE
420

PIPE < CPQ NAMES | SPLIT | SORT UNIQUE | COUNT WORDS | CONSOLE
132
```

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```
PIPE CMS QUERY ACCESSED | NLOCATE 1.4 /Mode/ | SORT 1.1 D | TAKE | CONSOLE
Y/S    R/O      1232  19E   MNT19E

PIPE CMS QUERY ACCESSED | NFIND Mode | SORT W1 D | TAKE | CONSOLE
Y/S    R/O      1232  19E   MNT19E
```

Slide 35-38 SPECS

Massaging CMS command output

- Use Query ACCESSED
- Show the access mode, virtual address or DIR, Label / Directory
- Align the columns
- Add a 2-digit record number to the front

Slide 39 SPECS – possible solutions

```
PIPE COMMAND QUERY ACCESSED | SPECS W1 1 W4.2 NW | CONSOLE
Mode Vdev  Label/Directory
A 191   RB191B
S 190   MNT190
X DIR   VMPOOL:BARLOWR.EXTRA_SPACE
Y/S 19E   MNT19E

PIPE COMMAND QUERY ACCESSED | SPECS W1 1.4 W4 NW.4 W5 NW | CONSOLE
Mode Vdev Label/Directory
A    191  RB191B
X    DIR  VMPOOL:BARLOWR.EXTRA_SPACE
S    190  MNT190
Y/S  19E  MNT19E

PIPE COMMAND QUERY ACCESSED | SPECS RECNO 1.2 RIGHT W1 NW.4 W4 NW.4 W5 NW |
CONSOLE
 1 Mode Vdev Label/Directory
 2 A    191  RB191B
 3 S    190  MNT190
 4 X    DIR  VMBSYS:BARLOWR.VM.STUFF
 5 Y/S  19E  MNT19E
```

Slide 49 possible solutions

```
PIPE < QV DASD | CONSOLE
DASD 0190 3390 VMBRES R/O        107 CYL ON DASD  320C SUBCHANNEL = 000C
DASD 0191 3390 VMBRES R/W         50 CYL ON DASD  320C SUBCHANNEL = 0004
DASD 019E 3390 VMBRES R/O        200 CYL ON DASD  320C SUBCHANNEL = 000E

PIPE < QV DASD | CONSOLE | SPECS /QUERY MDISK/ 1 W2 NW /DETAILS/ NW | CP |
CONSOLE
DASD 0190 3390 VMBRES R/O        107 CYL ON DASD  320C SUBCHANNEL = 000C
TargetID Tdev OwnerID  Odev Minidisk  DEVNO Duplex
BARLOWR  0190 MAINT    0190 Regular   No    Primary
DASD 0191 3390 VMBRES R/W         50 CYL ON DASD  320C SUBCHANNEL = 0004
TargetID Tdev OwnerID  Odev Minidisk  DEVNO Duplex
BARLOWR  0191 BARLOWR  0191 Regular   No    Primary
DASD 019E 3390 VMBRES R/O        200 CYL ON DASD  320C SUBCHANNEL = 000E
TargetID Tdev OwnerID  Odev Minidisk  DEVNO Duplex
BARLOWR  019E MAINT    019E Regular   No    Primary
```

Slide 49 possible solutions

```
PIPE < QV DASD | CHANGE // `/ | SPLIT AT ` | CONSOLE | LOCATE W1 |
 SPECS /QUERY MDISK/ 1 W2 NW /DETAILS/ NW | CP | CONSOLE

DASD 0190 3390 VMBRES R/O        107 CYL ON DASD  320C SUBCHANNEL = 000C
TargetID Tdev OwnerID  Odev Minidisk  DEVNO Duplex
BARLOWR  0190 MAINT    0190 Regular   No    Primary

DASD 0191 3390 VMBRES R/W         50 CYL ON DASD  320C SUBCHANNEL = 0004
TargetID Tdev OwnerID  Odev Minidisk  DEVNO Duplex
BARLOWR  0191 BARLOWR  0191 Regular   No    Primary

DASD 019E 3390 VMBRES R/O        200 CYL ON DASD  320C SUBCHANNEL = 000E
TargetID Tdev OwnerID  Odev Minidisk  DEVNO Duplex
BARLOWR  019E MAINT    019E Regular   No    Primary
```

Slide 50a possible solutions

```
PIPE < CPQ DASDALL | TAKE FIRST 10 | CONSOLE

DASD 3000 CP SYSTEM MVS003   3     SHARED
DASD 3001 CP OWNED  VMBPGA   4
DASD 3002 CP SYSTEM SSD101   3     SHARED
DASD 3003 CP SYSTEM VMB001   139
DASD 3004 CP SYSTEM VMB002   63
DASD 3005 CP SYSTEM VMB003   19
DASD 3006 CP SYSTEM VMB004   6
DASD 3007 CP SYSTEM VMB005   7
DASD 3008 CP SYSTEM VMB006   42
DASD 3009 CP SYSTEM VMB007   18
```

Slide 50b possible solutions

```
PIPE (endchar ~)| < CPQ DASDALL| T:TAKE FIRST 10 | F:FANIN| CONSOLE ~ T:| TAKE LAST 10 | ELASTIC | F:

DASD 3000 CP SYSTEM MVS003   3     SHARED
DASD 3001 CP OWNED  VMBPGA   4
DASD 3002 CP SYSTEM SSD101   3     SHARED
DASD 3003 CP SYSTEM VMB001   139
DASD 3004 CP SYSTEM VMB002   63
DASD 3005 CP SYSTEM VMB003   19
DASD 3006 CP SYSTEM VMB004   6
DASD 3007 CP SYSTEM VMB005   7
DASD 3008 CP SYSTEM VMB006   42
DASD 3009 CP SYSTEM VMB007   18
DASD 35AA OFFLINE , DASD 35AB OFFLINE , DASD 35AC OFFLINE , DASD 35AD OFFLINE
DASD 35AE OFFLINE , DASD 35AF OFFLINE , DASD 3CCE BOXED   , DASD 3CCF BOXED
DASD 3CE0 BOXED   , DASD 3CE3 BOXED   , DASD 3CEF BOXED   , DASD 3FC7 BOXED
DASD 3FCA BOXED   , DASD 3FCC BOXED   , DASD 3FCF BOXED   , DASD 3FD2 BOXED
DASD 3FDE BOXED   , DASD 3FE0 BOXED   , DASD 3FE2 BOXED   , DASD 3FE4 BOXED
DASD 3FE8 BOXED   , DASD 3FEF BOXED   , DASD 3FF1 BOXED   , DASD 3FF3 BOXED
DASD 3FF7 BOXED   , DASD 3FFE BOXED   , DASD 801F OFFLINE , DASD 8148 OFFLINE
DASD 815D OFFLINE , DASD D410 OFFLINE , DASD D411 OFFLINE , DASD D512 OFFLINE
DASD D513 OFFLINE , DASD D53D OFFLINE , DASD D547 OFFLINE , DASD D549 OFFLINE
DASD D54A OFFLINE , DASD D841 OFFLINE , DASD D843 OFFLINE
```

Slide 50b possible solutions

- The linear representation of this Pipeline specification is beginning to be difficult to type and read

```
PIPE (endchar ~)| < CPQ DASDALL| T:TAKE FIRST 10 | F:FANIN| CONSOLE ~ T:| TAKE LAST 10 | ELASTIC | F:
```

- The portrait representation is a bit easier to read

```
'PIPE (endchar ~) |',
  '< CPQ DASDALL |',
  'NLOCATE /OFFLINE/ |',
  'NLOCATE /BOXED/ |',
'T:TAKE FIRST 10 |',
'F:FANIN |',
  'CONSOLE',
'~',
'T:',
  'TAKE LAST 10 |',
  'ELASTIC |',
  'F:'
```

Slide 50c possible solutions

```
'PIPE (endchar ~) |',
  '< CPQ DASDALL |',
  'NLOCATE /OFFLINE/ |',
  'NLOCATE /BOXED/ |',
'T:TAKE FIRST 10 |',
'F:FANIN |',
  'CONSOLE',
'~',
'T:',
  'TAKE LAST 10 |',
  'ELASTIC |',
  'F:'
```

```
DASD 3000 CP SYSTEM MVS003   3     SHARED
DASD 3001 CP OWNED  VMBPGA   4
DASD 3002 CP SYSTEM SSD101   3     SHARED
DASD 3003 CP SYSTEM VMB001   139
DASD 3004 CP SYSTEM VMB002   63
DASD 3005 CP SYSTEM VMB003   19
DASD 3006 CP SYSTEM VMB004   6
DASD 3007 CP SYSTEM VMB005   7
DASD 3008 CP SYSTEM VMB006   42
DASD 3009 CP SYSTEM VMB007   18
DASD DFF7 CP SYSTEM          0
DASD DFF8 CP SYSTEM          0
DASD DFF9 CP SYSTEM          0
DASD DFFA CP SYSTEM          0
DASD DFFB CP SYSTEM          0
DASD DFFC CP SYSTEM          0
DASD DFFD CP SYSTEM          0
DASD DFFE CP SYSTEM          0
DASD DFFF CP SYSTEM          0
DASD 6E75 FDR1IB
```

Slide 50d possible solutions

```
'PIPE (endchar ~) |',
  '< CPQ DASDALL |',
  'NLOCATE /OFFLINE/ |',
  'NLOCATE /BOXED/ |',
  'LOCATE W6 |',
'T:TAKE FIRST 10 |',
'F:FANIN |',
  'CONSOLE',
'~',
'T:',
  'TAKE LAST 10 |',
  'ELASTIC |',
  'F:'
```

```
DASD 3000 CP SYSTEM MVS003   3     SHARED
DASD 3001 CP OWNED  VMBPGA   4
DASD 3002 CP SYSTEM SSD101   3     SHARED
DASD 3003 CP SYSTEM VMB001   139
DASD 3004 CP SYSTEM VMB002   63
DASD 3005 CP SYSTEM VMB003   19
DASD 3006 CP SYSTEM VMB004   6
DASD 3007 CP SYSTEM VMB005   7
DASD 3008 CP SYSTEM VMB006   42
DASD 3009 CP SYSTEM VMB007   18
DASD DFA4 CP SYSTEM OC101F   0     SHARED
DASD DFA5 CP SYSTEM OC1020   0     SHARED
DASD DFA6 CP SYSTEM OC1021   0     SHARED
DASD DFA7 CP SYSTEM OC1022   0     SHARED
DASD DFA8 CP SYSTEM OC1023   0     SHARED
DASD DFA9 CP SYSTEM OC1024   0     SHARED
DASD DFAA CP SYSTEM OC1025   0     SHARED
DASD DFAB CP SYSTEM OC1026   0     SHARED
DASD DFAC CP SYSTEM OC1027   0     SHARED
DASD DFAD CP SYSTEM MVSRA1   0     SHARED
```

Slide 51 possible solutions

```
'PIPE (endchar ~ name SLIDE51)|',
  'LITERAL PIPUSR00 PIPUSR01 PIPUSR02 PIPUSR03 PIPUSR04',
          'PIPUSR05 PIPUSR06 PIPUSR07 PIPUSR08 PIPUSR09',
          'PIPUSR10 PIPUSR11 PIPUSR12 PIPUSR13 PIPUSR14',
          'PIPUSR15 PIPUSR16 PIPUSR17 PIPUSR18 PIPUSR19',
          'PIPUSR20 PIPUSR21 PIPUSR22 PIPUSR23 PIPUSR24',
          'PIPUSR25 PIPUSR26 PIPUSR27 PIPUSR28 PIPUSR29 |',
  'SPLIT |',
  'SPECS /QUERY USER/ 1 W1 NW|',
  'CONSOLE|',
'R:CP|',
'G:GATHER|',
  'JOIN 1 /; /|',
  'CONS',
'~',
'R:|',
  'SPEC /RC =/ 1 1-* NW|',
  'G:'
```

```
QUERY USER PIPUSR00
HCPCQU045E PIPUSR00 not logged on; RC = 45
QUERY USER PIPUSR01
HCPCQU045E PIPUSR01 not logged on; RC = 45
QUERY USER PIPUSR02
HCPCQU045E PIPUSR02 not logged on; RC = 45
QUERY USER PIPUSR03
HCPCQU045E PIPUSR03 not logged on; RC = 45
QUERY USER PIPUSR04
HCPCQU045E PIPUSR04 not logged on; RC = 45
…
QUERY USER PIPUSR25
HCPCQU045E PIPUSR25 not logged on; RC = 45
QUERY USER PIPUSR26
HCPCQU045E PIPUSR26 not logged on; RC = 45
QUERY USER PIPUSR27
HCPCQU045E PIPUSR27 not logged on; RC = 45
QUERY USER PIPUSR28
HCPCQU045E PIPUSR28 not logged on; RC = 45
QUERY USER PIPUSR29
HCPCQU045E PIPUSR29 not logged on; RC = 45
```

Slide 51 possible solutions

```
'PIPE (endchar ~ name SLIDE51B)|',
  'XRANGE 00' D2X(30)'|',
  'DEBLOCK 1|',
  'SPECS PAD 0 /QUERY USER PIPUSR/ 1 W1 C2D N.2 RIGHT|',
  'CONSOLE|',
'R:CP|',
'G:GATHER|',
  'JOIN 1 /; /|',
  'CONS',
'~',
'R:|',
  'SPEC /RC =/ 1 1-* NW|',
  'G:'
```

```
QUERY USER PIPUSR00
HCPCQU045E PIPUSR00 not logged on; RC = 45
QUERY USER PIPUSR01
HCPCQU045E PIPUSR01 not logged on; RC = 45
QUERY USER PIPUSR02
HCPCQU045E PIPUSR02 not logged on; RC = 45
QUERY USER PIPUSR03
HCPCQU045E PIPUSR03 not logged on; RC = 45
QUERY USER PIPUSR04
HCPCQU045E PIPUSR04 not logged on; RC = 45
…
QUERY USER PIPUSR25
HCPCQU045E PIPUSR25 not logged on; RC = 45
QUERY USER PIPUSR26
HCPCQU045E PIPUSR26 not logged on; RC = 45
QUERY USER PIPUSR27
HCPCQU045E PIPUSR27 not logged on; RC = 45
QUERY USER PIPUSR28
HCPCQU045E PIPUSR28 not logged on; RC = 45
QUERY USER PIPUSR29
HCPCQU045E PIPUSR29 not logged on; RC = 45
```

Slide 54 possible solution

```
/* MYLOOKUP EXEC */
'pipe (endchar ?) |',
  '< SELECT LIST |',          /* read detail records */
'l: lookup w1 w2 |',          /* find matches */
  '> MATCHING RECORDS A |',   /* write matching masters and details */
'?',                          /* start of second pipeline */
  '< CPQ DASDALL |',          /* read master records */
  'SPLIT AT , |',             /* remove OFFLINE and BOXED */
  'NLOCATEL /OFFLINE/BOXED/ |',
'l: |',                       /* define secondary streams for LOOKUP */
  '> UNREF DETAILS A |',      /* write details without masters */
'?',                          /* start of third pipeline */
'l: |',                       /* define tertiary output for LOOKUP */
  '> UNREF MASTERS A'         /* write masters without details */
Exit rc
```

Slide 54 possible solution

```
 MATCHING RECORDS  A1  V 80  Trunc=80 Size=12
====>
      |...+....1....+....2....+....3....+....
00000 * * * Top of File * * *
00001 3003
00002 DASD 3003 CP SYSTEM VMB001   139
00003 3103
00004 DASD 3103 CP SYSTEM VMB009   205
00005 3203
00006 DASD 3203 CP SYSTEM VMB035   5
00007 3303
00008 DASD 3303 CP SYSTEM VMB10B   4
00009 3403
00010 DASD 3403 CP SYSTEM VMB017   33
00011 3503
00012 DASD 3503 CP SYSTEM VMB025   54
00013 * * * End of File * * *
```

- UNREF DETAIL should be empty
- UNREF MASTERS will contain all of the rest of the records from CPQ DASDALL
  - Notice the order; LOOKUP sorts the tertiary stream on the key fields