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Dynamically Managing Hardware I/O Configuration Using VM

Traditional z/VM Commands - Examples

Rick Barlow
Nationwide Insurance

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Disclaimer

The examples presented here are for demonstration only. While they are based on real experience, there is no assurance that they will be applicable outside the original use at Nationwide Insurance.

Original VM Dynamic I/O Commands Examples

- Adding an OSA
- Adding a string of DASD
- Adding Channel Paths to DASD and bringing them online
- Removing Devices
- Add a CIP
- Add ESCON CTCs within a processor

Preparation

- Verify the CHPIDs are not in use

```
Query CHPIDS
        0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
     0x .  .  .  .  +  .  +  +  .  .  +  .  +  +  +  +
     ...
     2x +  +  .  +  .  +  +  +  +  +  +  -  +  +  +  +
     3x +  .  +  +  +  +  +  +  +  +  +  +  .  .  .  .
     ...
     8x +  -  +  +  -  .  .  .  +  .  +  +  +  +  +  +
     ...
     Bx +  .  +  +  +  +  +  +  +  +  +  +  +  .  +  .
     ...
     Dx .  -  .  .  .  .  -  .  .  .  .  .  +  +  +  +
     ...
     + Available
     - Offline
     . Not configured
```

Adding Two OSAs

- IOCP

```
CHPID PATH=(00),SHARED,                                          *
      PARTITION=((MVS1,VM1,VM2),(MVS1,VM1,VM2)),TYPE=OSA
CHPID PATH=(D8),SHARED,                                          *
      PARTITION=((VM1,VM2),(MVS1,VM1,VM2)),TYPE=OSA
CNTLUNIT CUNUMBR=8000,PATH=(00),UNIT=OSA
CNTLUNIT CUNUMBR=8001,PATH=(D8),UNIT=OSA
IODEVICE ADDRESS=(8000,002),CUNUMBR=(8000),STADET=Y,UNIT=OSA
IODEVICE ADDRESS=(8002,010),CUNUMMBR=(8000),STADET=Y,            *
      PARTITION=(VM1),UNIT=OSA
IODEVICE ADDRESS=800F,UNITADD=FE,CUNUMBR=(8001),STADET=Y,        *
      UNIT=OSAD
IODEVICE ADDRESS=(8010,002),UNITADD=00,CUNUMBR=(8001),           *
      STADET=Y,UNIT=OSA
IODEVICE ADDRESS=801F,UNITADD=FE,CUNUMBR=(8001),STADET=Y,        *
      UNIT=OSAD
```

- Commands to verify syntax
  - IOCP NEWIOCP1 (NOWRT DYN LPAR

Adding Two OSAs

- Convert IOCP statements to VM CP Dynamic I/O commands

```
          CHPID PATH=(00),SHARED,                                    *
               PARTITION=((MVS1,VM1,VM2),(MVS1,VM1,VM2)),TYPE=OSA

'CP DEFINE CHPID 00 TYPE OSA SHARED ACC MVS1 VM1 VM2 INIT MVS1 VM1 VM2'


          CNTLUNIT CUNUMBR=8000,PATH=(00),UNIT=OSA

'CP DEFINE CU 8000 TYPE OSA CHPID 00'


          IODEVICE ADDRESS=(8000,002),CUNUMBR=(8000),STADET=Y,UNIT=OSA

'CP DEFINE DEV 8000-8001 UNITADD 00 CU 8000 PART MVS1 VM1 VM2'


          IODEVICE ADDRESS=(8002,010),CUNUMMBR=(8000),STADET=Y,      *
               PARTITION=(VM1),UNIT=OSA

'CP DEFINE DEV 8002-800B UNITADD 02 CU 8000 PART VM1'


          IODEVICE ADDRESS=800F,UNITADD=FE,CUNUMBR=(8001),STADET=Y,  *
               UNIT=OSAD

'CP DEFINE DEF 800F      UNITADD FE CU 8000'
```

Adding Two OSAs

- Commands (in an EXEC)

```
/* Dynamically add an OSA */
Address 'COMMAND‘
'CP SPOOL CONSOLE TO * START NAME DYNAMIC IOCP‘
Signal On Error
Trace 'C'
'CP DEFINE CHPID 00 TYPE OSA SHARED ACC MVS1 VM1 VM2 INIT MVS1 VM1 VM2‘
'CP DEFINE CHPID D8 TYPE OSA SHARED ACC MVS1 VM1 VM2 INIT VM1 VM2‘

'CP DEFINE CU 8000 TYPE OSA CHPID 00‘
'CP DEFINE CU 8001 TYPE OSA CHPID D8'

'CP DEFINE DEV 8000-8001 UNITADD 00 CU 8000 PART MVS1 VM1 VM2‘
'CP DEFINE DEV 8002-800B UNITADD 02 CU 8000 PART VM1‘
'CP DEFINE DEF 800F      UNITADD FE CU 8000'
'CP DEFINE DEV 8010-8011 UNITADD 00 CU 8001 PART MVS1 VM1 VM2'
'CP DEFINE DEV 8012-801B UNITADD 02 CU 8001 PART VM1'
'CP DEFINE DEF 801F      UNITADD FE CU 8001'

Signal Off Error
'EXEC IOCP NEWIOCP1 (WRTA3 LPAR DYN IZP DESC1 SYS1 DESC2 IODF01'
Say 'IOCP RC='rc
If rc \> 4 Then Do
  'ERASE NEWIOCP1 LISTING'
  'CP SET IOCDS A3'
  End
Error:
erc = rc
'CP SPOOL CONSOLE STOP CLOSE'
Exit erc
```

Adding Two OSAs

- Verify CHPID status

  `Query CHPIDS`

```
     0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
0x   -  .  .  .  +  .  +  +  .  .  +  .  +  +  +  +
...
3x   +  .  +  +  +  +  +  +  +  +  +  +  .  .  .  .
...
8x   +  -  +  +  -  .  .  .  +  .  +  +  +  +  +  +
...
Bx   +  .  +  +  +  +  +  +  +  +  +  +  +  .  +  .
...
Dx   .  -  .  .  .  .  -  .  -  .  .  .  +  +  +  +
...
+ Available
- Offline
. Not configured
```

- Query the paths to the device

  `Query PATHS 8000`

```
Device 8000 does not exist
```

Adding Two OSAs

- Vary the channel path online

```
vary on chpid 00
Channel path 0000 was successfully varied online
Device 8000 is available and online.
Device 8001 is available and online.
Device 8002 is available and online.
Device 8003 is available and online.
Device 800F is available and online.
```

- Query the devices

```
q 8000-8003 800f
OSA  8000 FREE , OSA  8001 FREE , OSA  8002 FREE , OSA  8003 FREE
OSA  800F FREE
```

Adding Two OSAs

- Verify CHPID status

  Query CHPIDS

```
     0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
0x   +  .  .  .  +  .  +  +  .  .  +  .  +  +  +  +
...

+ Available
- Offline
. Not configured
```

- Query CHPID

  Query CHPID 00

```
Path 00 online to devices 8000 8001 8002 8003 800F
Path 00 offline to devices 8004 8005 8006 8007 8008 8009 800A 800B
```

- Query the paths to the device

  Query PATHS 8000

```
Device 8000, Status ONLINE
 CHPIDs to Device 8000 (PIM)  : 00
  Physically Available (PAM)  : +
  Online               (LPM)  : +
                       Legend     + Yes - No
```

Adding a String of DASD

- IOCP

```
CHPID PATH=(05),SHARED,                                          *
      PARTITION=((MVS1,VM1,VM2),(MVS1,VM1,VM2)),SWITCH=01,       *
      TYPE=CNC
CHPID PATH=(31),SHARED,                                          *
      PARTITION=((MVS1,VM1,VM2),(MVS1,VM1,VM2)),SWITCH=01,       *
      TYPE=CNC
CHPID PATH=(89),SHARED,                                          *
      PARTITION=((MVS1,VM1,VM2),(MVS1,VM1,VM2)),SWITCH=02,       *
      TYPE=CNC
CNTLUNIT CUNUMBR=1340,PATH=(05,89),UNITADD=((00,128)),           *
      LINK=(A1,A1),UNIT=3990
CNTLUNIT CUNUMBR=1440,PATH=(31),UNITADD=((00,128)),              *
      LINK=(E1),UNIT=3990
IODEVICE ADDRESS=(4000,128),CUNUMBR=(1340,1440),STADET=Y,        *
      UNIT=3390
```

- Commands to verify syntax
  - IOCP NEWIOCP2 (NOWRT DYN LPAR

Adding a String of DASD

- Commands (in an EXEC)

```
/* Dynamically add a string of DASD */
Address 'COMMAND'
'CP SPOOL CONSOLE TO * START NAME DYNAMIC IOCP'
Signal On Error
Trace 'C'
'CP DEFINE CHPID 05 TYPE CNC SWITCH 01',
                   'SHARED ACC MVS1 VM1 VM2 INIT MVS1 VM1 VM2'
'CP DEFINE CHPID 31 TYPE CNC SWITCH 01',
                   'SHARED ACC MVS1 VM1 VM2 INIT MVS1 VM1 VM2'
'CP DEFINE CHPID 89 TYPE CNC SWITCH 02',
                   'SHARED ACC MVS1 VM1 VM2 INIT MVS1 VM1 VM2'

'CP DEFINE CU 1340 TYPE ESCON UNITADD 00-7F LINK A1 PATH 05 89'
'CP DEFINE CU 1440 TYPE ESCON UNITADD 00-7F LINK E1 PATH 31'

'CP DEFINE DEV 4000-407F UNITADD 00 CU 1340 1440 DASD STAT'

Signal Off Error
'EXEC IOCP NEWIOCP2 (WRTA4 LPAR DYN IZP DESC1 SYS1 DESC2 IODF02'
Say 'IOCP RC='rc
If rc \> 4 Then Do
  'ERASE NEWIOCP2 LISTING'
  'CP SET IOCDS A4'
  End
Error:
erc = rc
'CP SPOOL CONSOLE STOP CLOSE'
Exit erc
```

Adding a String of DASD

- Verify CHPID status

  `Query CHPIDS`

```
     0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
0x   +  .  .  .  +  -  +  +  .  .  +  .  +  +  +  +
...
3x   +  -  +  +  +  +  +  +  +  +  +  +  .  .  .  .
...
8x   +  -  +  +  -  .  .  .  +  -  +  +  +  +  +  +
...
Bx   +  .  +  +  +  +  +  +  +  +  +  +  +  .  +  .
...
Dx   .  -  .  .  .  .  -  .  -  .  .  .  +  +  +  +
...
+ Available
- Offline
. Not configured
```

- Query the paths to the device

  `Query PATHS 4000`

```
Device 4000 does not exist
```

Adding a String of DASD

- Vary the channel path online

```
vary on chpid 05
Channel path 0005 was successfully varied online
Device 4000 is available and online.
Device 4001 is available and online.
...
Device 407F is available and online.
```

- Query the devices

```
q 4000-407f
DASD 4000 IB4000, DASD 4001 IB4001, DASD 4002 IB4002, DASD 4003 IB4003,
DASD 4004 IB4004, DASD 4005 IB4005, DASD 4006 IB4006, DASD 4007 IB4007,
...
DASD 407C IB407C, DASD 407D IB407D, DASD 407E IB407E, DASD 407F IB407F
```

Adding a String of DASD

- Verify CHPID status

Query CHPIDS

```
      0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
0x    +  .  .  .  +  +  +  +  .  .  +  .  +  +  +  +
...
3x    +  -  +  +  +  +  +  +  +  +  +  +  .  .  .  .
...
8x    +  -  +  +  -  .  .  .  +  -  +  +  +  +  +  +
...
Bx    +  .  +  +  +  +  +  +  +  +  +  +  +  .  +  .
...
Dx    .  -  .  .  .  .  -  .  -  .  .  .  +  +  +  +
...
+ Available
- Offline
. Not configured
```

Adding a String of DASD

- Query the paths to the device

```
Query PATHS 4000
      Device 4000, Status ONLINE
        CHPIDs to Device 4000 (PIM)  : 05 31 89
         Physically Available (PAM)  : +  -  -
         Online               (LPM)  : +  -  -
                              Legend     + Yes - No
```

Adding Another CHPID to the CNTLUNIT

- IOCP

```
CHPID PATH=(31),SHARED,                                          *
      PARTITION=((MVS1,VM1,VM2),(MVS1,VM1,VM2)),SWITCH=01,       *
      TYPE=CNC
CNTLUNIT CUNUMBR=1440,PATH=(31,B1),UNITADD=((00,128)),           *
      LINK=(E1,E1),UNIT=3990
```

- Commands to verify syntax
  - IOCP NEWIOCP3 (NOWRT DYN LPAR

Adding Another CHPID to the CNTLUNIT

- Commands (in an EXEC)

```
/* Dynamically add a CHPID to a DASD control unit */
Address 'COMMAND'
'CP SPOOL CONSOLE TO * START NAME DYNAMIC IOCP'
Signal On Error
Trace 'C'
'CP DEFINE CHPID B1 TYPE CNC SWITCH 01',
                    'SHARED ACC MVS1 VM1 VM2 INIT MVS1 VM1 VM2'
'CP MODIFY CU 1440 CHPID 31 ADD CHPID B1 LINK E1'

Signal Off Error
'EXEC IOCP NEWIOCP3 (WRTA0 LPAR DYN IZP DESC1 SYS1 DESC2 IODF03'
 Say 'IOCP RC='rc
 If rc \> 4 Then Do
  'ERASE NEWIOCP3 LISTING'
  'CP SET IOCDS A0'
  End
Error:
erc = rc
'CP SPOOL CONSOLE STOP CLOSE'
Exit erc
```

Adding Another CHPID to the CNTLUNIT

- Verify CHPID status

  Query CHPIDS

```
     0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
0x   +  .  .  .  +  +  +  +  .  .  +  .  +  +  +  +
...
3x   +  -  +  +  +  +  +  +  +  +  +  +  .  .  .  .
...
8x   +  -  +  +  -  .  .  .  +  -  +  +  +  +  +  +
...
Bx   +  -  +  +  +  +  +  +  +  +  +  +  +  .  +  .
...
Dx   .  -  .  .  .  .  -  .  -  .  .  .  +  +  +  +
...
+ Available
- Offline
. Not configured
```

Adding Another CHPID to the CNTLUNIT

- Query the paths to the device

```
Query PATHS 4000
      Device 4000, Status ONLINE
        CHPIDs to Device 4000 (PIM)  : 05 31 89 B1
         Physically Available (PAM)  : +  -  -  -
         Online               (LPM)  : +  -  -  -
                              Legend     + Yes – No
```

- Vary the other CHPIDs online

```
vary on chpid 31
Channel path 0031 was successfully varied online
vary on chpid 89
Channel path 0089 was successfully varied online
vary on chpid b1
Channel path 00B1 was successfully varied online
```

Adding Another CHPID to the CNTLUNIT

- Verify CHPID status

  Query CHPIDS

```
     0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
0x   +  .  .  .  +  +  +  +  .  .  +  .  +  +  +  +
...
3x   +  +  +  +  +  +  +  +  +  +  +  +  .  .  .  .
...
8x   +  -  +  +  -  .  .  .  +  +  +  +  +  +  +  +
...
Bx   +  +  +  +  +  +  +  +  +  +  +  +  +  .  +  .
...
Dx   .  -  .  .  .  .  -  .  -  .  .  .  +  +  +  +
...
+ Available
- Offline
. Not configured
```

Adding Another CHPID to the CNTLUNIT

- Query the paths to the device

```
Query PATHS 4000
      Device 4000, Status ONLINE
        CHPIDs to Device 4000 (PIM)  : 05 31 89 B1
         Physically Available (PAM)  : +  +  +  +
         Online               (LPM)  : +  +  +  +
                              Legend     + Yes – No
```

Removing Devices

- IOCP

  Delete the macros for the devices to be removed from the IOCP source

```
CHPID PATH=(05),SHARED,                                          *
      PARTITION=((MVS1,VM1,VM2),(MVS1,VM1,VM2)),SWITCH=01,       *
      TYPE=CNC
CHPID PATH=(31),SHARED,                                          *
      PARTITION=((MVS1,VM1,VM2),(MVS1,VM1,VM2)),SWITCH=01,       *
      TYPE=CNC
CHPID PATH=(89),SHARED,                                          *
      PARTITION=((MVS1,VM1,VM2),(MVS1,VM1,VM2)),SWITCH=02,       *
      TYPE=CNC
CHPID PATH=(B1),SHARED,                                          *
      PARTITION=((MVS1,VM1,VM2),(MVS1,VM1,VM2)),SWITCH=02,       *
      TYPE=CNC
CNTLUNIT CUNUMBR=1340,PATH=(05,89),UNITADD=((00,128)),           *
      LINK=(A1,A1),UNIT=3990
CNTLUNIT CUNUMBR=1440,PATH=(31,B1),UNITADD=((00,128)),           *
      LINK=(E1,E1),UNIT=3990
IODEVICE ADDRESS=(4000,128),CUNUMBR=(1340,1440),STADET=Y,        *
      UNIT=3390
```

- Commands to verify syntax
  - IOCP NEWIOCP4 (NOWRT DYN LPAR

Removing Devices

- Vary the devices offline

```
vary off 4000-407f
4000 varied offline
...
407F varied offline
128 device(s) specified; 128 device(s) successfully varied offline
```

- Vary the subchannels offline

```
vary off subch 4000-407f
4000 subchannel varied offline
...
407F subchannel varied offline
128 device(s) specified; 128 device(s) successfully varied
subchannel offline
```

Removing Devices

- Commands (in an EXEC)

```
/* Dynamically delete a DASD string */
Address 'COMMAND'
'CP SPOOL CONSOLE TO * START NAME DYNAMIC IOCP'
Signal On Error
Trace 'C'
'CP DELETE DEVICE 4000-407F UNITADD 00 CU 1340'

'CP DELETE CU 1340'
'CP DELETE CU 1440'

'CP DELETE CHPID 05'
'CP DELETE CHPID 31'
'CP DELETE CHPID 89'
'CP DELETE CHPID B1'

Signal Off Error
'EXEC IOCP NEWIOCP4 (WRTA1 LPAR DYN IZP'
Say 'IOCP RC='rc
If rc \> 4 Then Do
  'ERASE NEWIOCP4 LISTING'
  'CP SET IOCDS A1'
  End
Error:
erc = rc
'CP SPOOL CONSOLE STOP CLOSE'
Exit erc
```

Removing Devices

- Verify CHPID status

Query CHPIDS

```
      0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
0x    +  .  .  .  +  .  +  +  .  .  +  .  +  +  +  +
...
3x    +  .  +  +  +  +  +  +  +  +  +  +  .  .  .  .
...
8x    +  -  +  +  -  .  .  .  +  .  +  +  +  +  +  +
...
Bx    +  .  +  +  +  +  +  +  +  +  +  +  +  .  +  .
...
Dx    .  -  .  .  .  .  -  .  -  .  .  .  +  +  +  +
...
+ Available
- Offline
. Not configured
```

Removing Devices

- Query the paths to the device

```
Query PATHS 4000
      Device 4000 does not exist
```

Adding a CIP

- IOCP

  Delete the macros for the devices to be removed from the IOCP source

```
ID    MSG1='NEWIOCP5',MSG2='PSYS.IODF09 - 1997-08-22 06:51',  *
      SYSTEM=(9672,6),                                        *
      TOK=('P3',00000008019096720651561301012 61F00000000,00000*
      000,‘97-08-22','06:51:56','PSYS','IODF09')
RESOURCE PARTITION=((CP1,A),(MVS1,3),(VM1,5),(VM2,6))
CHPID PATH=(22),PARTITION=((VM1),(VM1,MVS1,VM2),REC),TYPE=BL
CNTLUNIT CUNUMBR=B226,PATH=(22),UNITADD=((60,032)),SHARED=N,  *
      PROTOCL=S4,UNIT=3088
IODEVICE ADDRESS=(8C60,032),CUNUMBR=(B226),TIMEOUT=N,STADET=N,*
      UNIT=CTC
```

- Command to verify syntax
  - IOCP NEWIOCP5 (NOWRT DYN LPAR

Adding a CIP

- Commands (in an EXEC)

```
/* Add CISCO CIP (like 3172) at 8C60,32     Upd: 1997-08-22  8:50:48 */
Address 'COMMAND'
Parse Source With . exec_nm .
'CP SPOOL CONSOLE TO * START NAME' exec_nm 'CONLOG‘
Signal On Error
Trace 'C'
  'CP DELETE CHPID 22'
  'CP DEFINE CHPID 22 TYPE BLOCK DEDICATED_REC ACC VM1 MTI SYD VM2 INIT VM1'
  'CP DEFINE CU B226 TYPE S4 UNITADD 60-7F PATH 22'
  'CP DEFINE DEV 8C60-8C7F UNITADD 60 CU B226 NOTDASD'

Signal Off Error
fm = 'B'
  'EXEC IOCP P3097234 (WRTA0 LPAR DYN IZP'
  Say 'IOCP RC='rc
  If rc \> 4 Then Do
    'ERASE P3097234 LISTING' fm
    'CP SET IOCDS A0'
    End
Error:
'CP SPOOL CONS STOP CLOSE TERM'
Exit rc
```

Adding a CIP

- Verify CHPID status

```
Query CHPIDS
          0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
        ...
        2x  +  +  .  +  .  +  +  +  +  +  +  -  +  +  +  +
        ...
        + Available
        - Offline
        . Not configured
```

- Query the paths to the device

```
Query PATHS 8C60
      Device 8C60 does not exist
```

Adding a CIP

- Vary the channel path online

```
vary on chpid 22
Channel path 0022 was successfully varied online
Device 8C60 is available and online.
Device 8C61 is available and online.
...
Device 8C7F is available and online.
```

- Query the devices

```
q 8c60-8c7f
CTC  8C60 FREE , CTC  8C61 FREE , CTC  8C62 FREE , CTC  8C63 FREE
CTC  8C64 FREE , CTC  8C65 FREE , CTC  8C66 FREE , CTC  8C67 FREE
CTC  8C68 FREE , CTC  8C69 FREE , CTC  8C6A FREE , CTC  8C6B FREE
CTC  8C6C FREE , CTC  8C6D FREE , CTC  8C6E FREE , CTC  8C6F FREE
...
CTC  8C7C FREE , CTC  8C7D FREE , CTC  8C7E FREE , CTC  8C7F FREE
```

Adding a CIP

- Verify CHPID status

  Query CHPIDS

```
          0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
...
2x        +  +  +  +  .  +  +  +  +  +  +  -  +  +  +  +
...
+ Available
- Offline
. Not configured
```

- Query CHPID

  Query CHPID 22

```
Path 22 online to devices 8C60 8C61 8C62 8C63 8C64 8C65 8C66 8C67
Path 22 offline to devices 8C68 8C69 8C6A 8C6B 8C6C 8C6D 8C6E 8C6F
Path 22 offline to devices 8C70 8C71 8C72 8C73 8C74 8C75 8C76 8C77
Path 22 offline to devices 8C78 8C79 8C7A 8C7B 8C7C 8C7D 8C7E 8C7F
```

- Query the paths to the device

  Query PATHS 86C0

```
Device 8C60, Status ONLINE
 CHPIDs to Device 8C60 (PIM)  : 22
  Physically Available (PAM)  : +
  Online               (LPM)  : +
                       Legend     + Yes - No
```

Add ESCON CTCs within a processor

- IOCP before change
  (note that the CHPIDs are already ESCON CTCs or CNCs)

```
ID    MSG1='OLDIOCP6',MSG2='PSYS.IODF02 - 2002-04-18 05:00',  *
      SYSTEM=(2064,1),                                        *
      TOK=('VM-TOKEN',F0F661F1F761F0F2F1F27AF4F77AF1F740404040X
      ,00000000,'06/17/02','12:47:17','PSYS','IODF02')
RESOURCE PARTITION=((CP2,A),(MVS2,8),(VM1,5),(VM2,6))
*
CHPID PATH=(53),SHARED,                                       *
      PARTITION=((MVS2,VM1,VM2),(MVS2,VM1,VM2)),SWITCH=01,    *
      TYPE=CTC
CHPID PATH=(71),SHARED,                                       *
      PARTITION=((MVS2,VM1,VM2),(MVS2,VM1,VM2)),SWITCH=02,    *
      TYPE=CTC
CHPID PATH=(8E),SHARED,                                       *
      PARTITION=((MVS2,VM1,VM2),(MVS2,VM1,VM2)),SWITCH=02,    *
      TYPE=CNC
CHPID PATH=(AC),SHARED,                                       *
      PARTITION=((MVS2,VM1,VM2),(MVS2,VM1,VM2)),SWITCH=01,    *
      TYPE=CNC
*
```

Add ESCON CTCs within a processor

- IOCP before change (continued)

```
CNTLUNIT CUNUMBR=1335,PATH=(53),UNITADD=((00,016)),LINK=(9D), *
      CUADD=5,UNIT=SCTC
CNTLUNIT CUNUMBR=1336,PATH=(53),UNITADD=((10,016)),LINK=(9D), *
      CUADD=6,UNIT=SCTC
CNTLUNIT CUNUMBR=1535,PATH=(AC),UNITADD=((00,064)),LINK=(97), *
      CUADD=5,UNIT=SCTC
CNTLUNIT CUNUMBR=1536,PATH=(AC),UNITADD=((00,064)),LINK=(97), *
      CUADD=6,UNIT=SCTC
CNTLUNIT CUNUMBR=1B35,PATH=(8E),UNITADD=((00,064)),LINK=(9D), *
      CUADD=5,UNIT=SCTC
CNTLUNIT CUNUMBR=1B36,PATH=(8E),UNITADD=((00,080)),LINK=(9D), *
      CUADD=6,UNIT=SCTC
CNTLUNIT CUNUMBR=1D35,PATH=(71),UNITADD=((20,048)),LINK=(97), *
      CUADD=5,UNIT=SCTC
CNTLUNIT CUNUMBR=1D36,PATH=(71),UNITADD=((00,016)),LINK=(97), *
      CUADD=6,UNIT=SCTC
IODEVICE ADDRESS=(C00,013),CUNUMBR=(1B36),STADET=Y,           *
      PARTITION=(MVS2),UNIT=SCTC
IODEVICE ADDRESS=(C0D,003),CUNUMBR=(1B36),STADET=Y,           *
      PARTITION=(MVS2),UNIT=BCTC
IODEVICE ADDRESS=(C10,013),CUNUMBR=(1536),STADET=Y,           *
      PARTITION=(MVS2),UNIT=SCTC
IODEVICE ADDRESS=(C1D,003),CUNUMBR=(1536),STADET=Y,           *
      PARTITION=(MVS2),UNIT=BCTC
```

Add ESCON CTCs within a processor

- IOCP before change (continued)

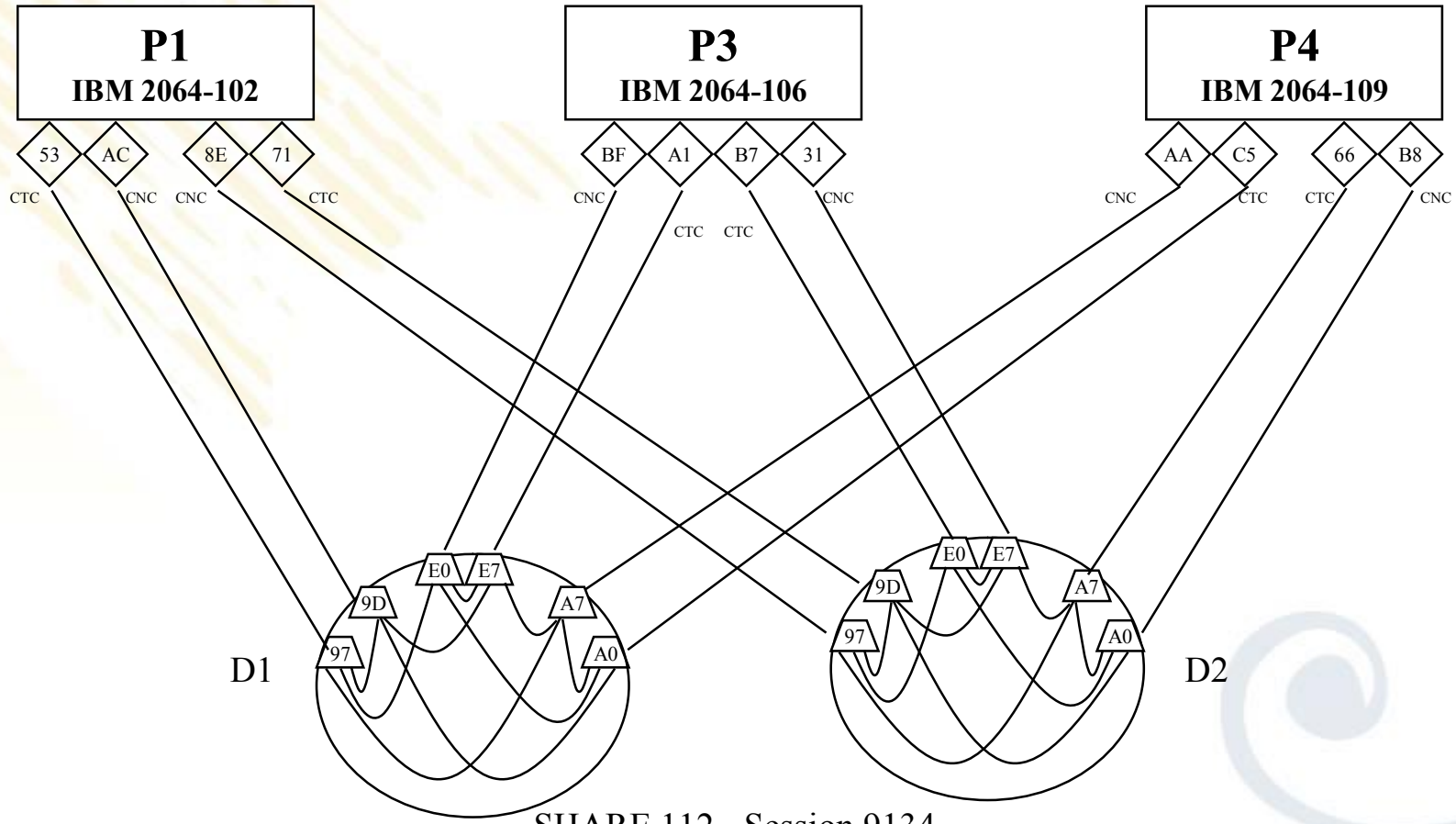
```
IODEVICE ADDRESS=(CC20,013),UNITADD=10,CUNUMBR=(1535),          *
      STADET=Y,PARTITION=(VM2),UNIT=SCTC
IODEVICE ADDRESS=(CC20,013),UNITADD=10,CUNUMBR=(1336),          *
      STADET=Y,PARTITION=(VM1),UNIT=SCTC
IODEVICE ADDRESS=(CC2D,003),UNITADD=1D,CUNUMBR=(1535),          *
      STADET=Y,PARTITION=(VM2),UNIT=SCTC
IODEVICE ADDRESS=(CC2D,003),UNITADD=1D,CUNUMBR=(1336),          *
      STADET=Y,PARTITION=(VM1),UNIT=SCTC
IODEVICE ADDRESS=(CC40,013),CUNUMBR=(1B36),STADET=Y,            *
      PARTITION=(VM1),UNIT=SCTC
IODEVICE ADDRESS=(CC40,013),CUNUMBR=(1D35),STADET=Y,            *
      PARTITION=(VM2),UNIT=SCTC
IODEVICE ADDRESS=(CC4D,003),CUNUMBR=(1B36),STADET=Y,            *
      PARTITION=(VM1),UNIT=BCTC
IODEVICE ADDRESS=(CC4D,003),CUNUMBR=(1D35),STADET=Y,            *
      PARTITION=(VM2),UNIT=BCTC
IODEVICE ADDRESS=(CD00,013),UNITADD=20,CUNUMBR=(1535),          *
      STADET=Y,PARTITION=(MVS2),UNIT=SCTC
IODEVICE ADDRESS=(CD0D,003),UNITADD=2D,CUNUMBR=(1535),          *
      STADET=Y,PARTITION=(MVS2),UNIT=BCTC
IODEVICE ADDRESS=(CD10,013),UNITADD=30,CUNUMBR=(1D35),          *
      STADET=Y,PARTITION=(MVS2),UNIT=SCTC
IODEVICE ADDRESS=(CD1D,003),UNITADD=3D,CUNUMBR=(1D35),          *
      STADET=Y,PARTITION=(MVS2),UNIT=BCTC
```

Add ESCON CTCs within a processor

1531	1331	1B31	1D31	1
1532	1332	1B32	1D32	2
1533	1333	1B33	1D33	3
1534	1334	1B34	1D34	4
1535	1335	1B35	1D35	5
1536	1336	1B36	1D36	6
1538	1338	1B38	1D38	8

3E11	3C31	3831	3C91	1
3E22	3C32	3832	3C92	2
----	3C33	3833	3C93	3
3E14	3C34	383D	3C94	4
3E15	3C35	3835	3C95	5
3E16	3C36	3836	3C96	6
3E18	3C38	383E	3C98	8

4BF1	3D37	3537	43F1	1
4B3A	4CF2	44F2	433A	2
4B3B	4CF3	44F3	433B	3
4BF4	3D38	3538	43F4	4
4B3C	4CF5	44F5	433C	5
4BF6	4CF6	44F6	43F6	6
----	4CF8	44F8	----	8



Add ESCON CTCs within a processor

- What changes are needed?
  - Modify 2 CNTLUNITs to change the range of unit addresses
  - Add 8 SCTC on one pair of CHPIDs
  - Add 7 SCTC and 1 BCTC on the other pair of CHPIDs

Add ESCON CTCs within a processor

- IOCP after change

```
ID    MSG1='NEWIOCP6',MSG2='PSYS.IODF02 - 2002-04-18 05:00',   *
      SYSTEM=(2064,1),                                         *
      TOK=('VM-TOKEN',F1F061F1F261F0F2F1F87AF1F07AF3F640404040X
     ,00000000,'10/12/02','18:10:36','PSYS','IODF11')
RESOURCE PARTITION=((CP2,A),(MVS2,8),(VM1,5),(VM2,6))
*
CHPID PATH=(53),SHARED,                                        *
      PARTITION=((MVS2,VM1,VM2),(MVS2,VM1,VM2)),SWITCH=01,     *
      TYPE=CTC
CHPID PATH=(71),SHARED,                                        *
      PARTITION=((MVS2,VM1,VM2),(MVS2,VM1,VM2)),SWITCH=02,     *
      TYPE=CTC
CHPID PATH=(8E),SHARED,                                        *
      PARTITION=((MVS2,VM1,VM2),(MVS2,VM1,VM2)),SWITCH=02,     *
      TYPE=CNC
CHPID PATH=(AC),SHARED,                                        *
      PARTITION=((MVS2,VM1,VM2),(MVS2,VM1,VM2)),SWITCH=01,     *
      TYPE=CNC
*
```

Add ESCON CTCs within a processor

- IOCP after change (continued)

```
CNTLUNIT CUNUMBR=1335,PATH=(53),UNITADD=((00,016)),LINK=(9D), *
      CUADD=5,UNIT=SCTC
CNTLUNIT CUNUMBR=1336,PATH=(53),UNITADD=((10,048)),LINK=(9D), *
      CUADD=6,UNIT=SCTC
CNTLUNIT CUNUMBR=1535,PATH=(AC),UNITADD=((00,064)),LINK=(97), *
      CUADD=5,UNIT=SCTC
CNTLUNIT CUNUMBR=1536,PATH=(AC),UNITADD=((00,064)),LINK=(97), *
      CUADD=6,UNIT=SCTC
CNTLUNIT CUNUMBR=1B35,PATH=(8E),UNITADD=((00,064)),LINK=(9D), *
      CUADD=5,UNIT=SCTC
CNTLUNIT CUNUMBR=1B36,PATH=(8E),UNITADD=((00,080)),LINK=(9D), *
      CUADD=6,UNIT=SCTC
CNTLUNIT CUNUMBR=1D35,PATH=(71),UNITADD=((20,048)),LINK=(97), *
      CUADD=5,UNIT=SCTC
CNTLUNIT CUNUMBR=1D36,PATH=(71),UNITADD=((10,048)),LINK=(97), *
      CUADD=6,UNIT=SCTC
IODEVICE ADDRESS=(C00,013),CUNUMBR=(1B36),STADET=Y,           *
      PARTITION=(MVS2),UNIT=SCTC
IODEVICE ADDRESS=(C0D,003),CUNUMBR=(1B36),STADET=Y,           *
      PARTITION=(MVS2),UNIT=BCTC
IODEVICE ADDRESS=(C10,013),CUNUMBR=(1536),STADET=Y,           *
      PARTITION=(MVS2),UNIT=SCTC
IODEVICE ADDRESS=(C1D,003),CUNUMBR=(1536),STADET=Y,           *
      PARTITION=(MVS2),UNIT=BCTC
```

Add ESCON CTCs within a processor

- IOCP after change (continued)

```
IODEVICE ADDRESS=(BBE0,008),UNITADD=00,CUNUMBR=(1335),          *
      STADET=Y,PARTITION=(VM1),UNIT=SCTC
IODEVICE ADDRESS=(BBE8,007),UNITADD=28,CUNUMBR=(1B35),          *
      STADET=Y,PARTITION=(VM1),UNIT=SCTC
IODEVICE ADDRESS=(BBEF,001),UNITADD=2F,CUNUMBR=(1B35),          *
      STADET=Y,PARTITION=(VM1),UNIT=BCTC
IODEVICE ADDRESS=(BBF0,008),UNITADD=00,CUNUMBR=(1535),          *
      STADET=Y,PARTITION=(VM1),UNIT=SCTC
IODEVICE ADDRESS=(BBF8,007),UNITADD=28,CUNUMBR=(1D35),          *
      STADET=Y,PARTITION=(VM1),UNIT=SCTC
IODEVICE ADDRESS=(BBFF,001),UNITADD=2F,CUNUMBR=(1D35),          *
      STADET=Y,PARTITION=(VM1),UNIT=BCTC
IODEVICE ADDRESS=(CC20,013),UNITADD=10,CUNUMBR=(1535),          *
      STADET=Y,PARTITION=(VM2),UNIT=SCTC
IODEVICE ADDRESS=(CC20,013),UNITADD=10,CUNUMBR=(1336),          *
      STADET=Y,PARTITION=(VM1),UNIT=SCTC
IODEVICE ADDRESS=(CC2D,003),UNITADD=1D,CUNUMBR=(1535),          *
      STADET=Y,PARTITION=(VM2),UNIT=SCTC
IODEVICE ADDRESS=(CC2D,003),UNITADD=1D,CUNUMBR=(1336),          *
      STADET=Y,PARTITION=(VM1),UNIT=SCTC
```

Add ESCON CTCs within a processor

- IOCP after change (continued)

```
IODEVICE ADDRESS=(CC40,013),CUNUMBR=(1B36),STADET=Y,          *
     PARTITION=(VM1),UNIT=SCTC
IODEVICE ADDRESS=(CC40,013),CUNUMBR=(1D35),STADET=Y,          *
     PARTITION=(VM2),UNIT=SCTC
IODEVICE ADDRESS=(CC4D,003),CUNUMBR=(1B36),STADET=Y,          *
     PARTITION=(VM1),UNIT=BCTC
IODEVICE ADDRESS=(CC4D,003),CUNUMBR=(1D35),STADET=Y,          *
     PARTITION=(VM2),UNIT=BCTC
IODEVICE ADDRESS=(CCE0,008),UNITADD=30,CUNUMBR=(1336),        *
     STADET=Y,PARTITION=(VM2),UNIT=SCTC
IODEVICE ADDRESS=(CCE8,007),UNITADD=38,CUNUMBR=(1B36),        *
     STADET=Y,PARTITION=(VM2),UNIT=SCTC
IODEVICE ADDRESS=(CCEF,001),UNITADD=3F,CUNUMBR=(1B36),        *
     STADET=Y,PARTITION=(VM2),UNIT=BCTC
IODEVICE ADDRESS=(CCF0,008),UNITADD=30,CUNUMBR=(1536),        *
     STADET=Y,PARTITION=(VM2),UNIT=SCTC
IODEVICE ADDRESS=(CCF8,007),UNITADD=38,CUNUMBR=(1D36),        *
     STADET=Y,PARTITION=(VM2),UNIT=SCTC
IODEVICE ADDRESS=(CCFF,001),UNITADD=3F,CUNUMBR=(1D36),        *
     STADET=Y,PARTITION=(VM2),UNIT=BCTC
IODEVICE ADDRESS=(CD00,013),UNITADD=20,CUNUMBR=(1535),        *
     STADET=Y,PARTITION=(MVS2),UNIT=SCTC
IODEVICE ADDRESS=(CD0D,003),UNITADD=2D,CUNUMBR=(1535),        *
     STADET=Y,PARTITION=(MVS2),UNIT=BCTC
IODEVICE ADDRESS=(CD10,013),UNITADD=30,CUNUMBR=(1D35),        *
     STADET=Y,PARTITION=(MVS2),UNIT=SCTC
IODEVICE ADDRESS=(CD1D,003),UNITADD=3D,CUNUMBR=(1D35),        *
     STADET=Y,PARTITION=(MVS2),UNIT=BCTC
```

Add ESCON CTCs within a processor

- Command to verify IOCP syntax
  - IOCP NEWIOCP6 (NOWRT DYN LPAR

Add ESCON CTCs within a processor

- Commands (in an EXEC)

```
/* Add VM loop-back SCTCs        Updated on: 2002-09-20 at: 14:32:08 */
Address 'COMMAND'
Parse Source With . exec_nm .
'CP SPOOL CONSOLE TO * START NAME' exec_nm 'CONLOG‘
Trace 'C'
Signal On Error
  'CP MODIFY CU 1336 ADD            UNITADD 20-3F'
  'CP MODIFY CU 1D36 ADD            UNITADD 10-3F‘
  'CP MODIFY CU 1D36 DEL            UNITADD 00-0F‘

  'CP DEFINE DEV BBE0-BBE7 UNITADD 00 CU 1335 CTCA EXT STAT PART VM1'
  'CP DEFINE DEV BBE8-BBEE UNITADD 28 CU 1B35 CTCA EXT STAT PART VM1'
  'CP DEFINE DEV BBEF      UNITADD 2F CU 1B35 CTCA BAS STAT PART VM1'
  'CP DEFINE DEV BBF0-BBF7 UNITADD 00 CU 1535 CTCA EXT STAT PART VM1'
  'CP DEFINE DEV BBF8-BBFE UNITADD 28 CU 1D35 CTCA EXT STAT PART VM1'
  'CP DEFINE DEV BBFF      UNITADD 2F CU 1D35 CTCA BAS STAT PART VM1'

  'CP DEFINE DEV CCE0-CCE7 UNITADD 30 CU 1336 CTCA EXT STAT PART VM2'
  'CP DEFINE DEV CCE8-CCEE UNITADD 38 CU 1B36 CTCA EXT STAT PART VM2'
  'CP DEFINE DEV CCEF      UNITADD 3F CU 1B36 CTCA BAS STAT PART VM2'
  'CP DEFINE DEV CCF0-CCF7 UNITADD 30 CU 1536 CTCA EXT STAT PART VM2'
  'CP DEFINE DEV CCF8-CCFE UNITADD 38 CU 1D36 CTCA EXT STAT PART VM2'
  'CP DEFINE DEV CCFF      UNITADD 3F CU 1D36 CTCA BAS STAT PART VM2'

Signal Off Error
```

Add ESCON CTCs within a processor

- Commands (in an EXEC)

```
iocp_fn = 'NEWIOCP6'
IOCDS = 'A0'
token1 = 'PSYS'
token2 = 'IODF11'

'EXEC CLR‘                                  /* get rid of extraneous disks */
'EXEC VDISK 75000'                          /* work vdisk as fm B */
'EXEC PLNK MAINT BBB (C(STACK QUIET'        /* R/W IOCP disk as fm C */
Pull . fm va .
If rc = 0 Then Do
  'XCOPY' iocp_fn 'IOCP C = = B (PREER'
  'EXEC IOCP' iocp_fn '(WRT'IOCDS 'LPAR DYN DESC1' token1 'DESC2' token2
  Say 'IOCP RC='rc
  If rc \> 4 Then Do
    'ERASE' iocp_fn 'LISTING B'
    'CP SET IOCDS' IOCDS
    'CP SET TOKEN DESC1' token1 'DESC2' token2
    'XCOPY' iocp_fn 'IOCP B = = C (PREER OLDD ERASE'
    End
  End
'EXEC CLR'
Error:
'CP SPOOL CONS STOP CLOSE TERM'
Exit rc
```

Add ESCON CTCs within a processor

- No need to take anything Offline/Online for this change
- Devices become available immediately

- Query the devices

```
Query BBE0-BBFF
CTCA BBE0 FREE , CTCA BBE1 FREE , CTCA BBE2 FREE , CTCA BBE3 FREE
...
CTCA BBFC FREE , CTCA BBFD FREE , CTCA BBFE FREE , CTCA BBFF FREE
```

Contact Information

Rick Barlow

Systems Engineering Consultant

Phone: (614) 249-5213

Internet: Richard.Barlow@nationwide.com