

Dynamically Migrating to CF Peer-Mode Links

Dynamic I/O configuration changes are now supported for Coupling Facility Peer and Receiver channels on the **IBM ^ zSeries 800** and **IBM ^ zSeries 900**. Refer to *z/OS Hardware Configuration Definition User's Guide (SC33-7988)* for details on how to dynamically add, delete or modify coupling facility receiver and peer channels.

This support is provided by the combination of hardware and software only on **GA3 (Drv3G)** processors. The following hardware and software requirements must be met in order to use Dynamic I/O Configuration for coupling facility peer and receiver channels (Channel Type CBP, CBR, CFP, and CFR).

Hardware Requirement:

All the processors **must** be at Driver-3G with the following MCLs installed:

IBM ^ zSeries 800 - Device Type 2066
MCL024 in the J11211 (RI390ML) stream

IBM ^ zSeries 900 - Device Type 2064
MCL026 in the J11212 (I390ML) stream

Software Requirement:

The PTFs for APAR OW54538 must be installed on all OS/390 and z/OS systems:

OS/390 V2R8	:	UW89981
OS/390 V2R10	:	UW89982
z/OS V1R1	:	UW89986
z/OS V1R2	:	UW89983
z/OS V1R3	:	UW89984
z/OS V1R4	:	UW89985

If a Dynamic I/O change is attempted for one or more coupling facility peer and receiver channels without the required hardware installed, the following message will appear beneath message IOS500I

```
REASON=0332,CANNOT PROCESS REQUEST FOR RECEIVER OR PEER CHP xx  
REQUEST NOT SUPPORTED BY THIS PROCESSOR
```

If the required software (PTF for APAR OW54538) is not installed, the following message will appear beneath IOS599I

Dynamically Migrating to CF Peer-Mode Links

REASON=0332,CANNOT PROCESS REQUEST FOR RECEIVER OR PEER CHP **xx**
DESCTEXT=REQUEST NOT SUPPORTED BY THE SOFTWARE

Procedure to Dynamically change ISC-3 or ICB links to Peer-Mode

Dynamically changing ISC-3 or ICB links from compatibility to Peer-Mode requires the use of a dynamic activation of an IODF.

As with any *dynamic* activation of an IODF, an operating system image is required to be *active* on the CEC where the dynamic activation is to be performed. Therefore, when changing an ISC-3 or ICB link from compatibility to peer-mode, it will *only* be possible to dynamically change the definition of the end of the link attached to a CEC where an operating system image is present.

If one end of the ISC-3 or ICB link attaches to a stand-alone coupling facility, it will not be possible to dynamically change that end of the link, and it will be necessary to write the IOCDs and perform a POR (Power-on-Reset) on the stand-alone coupling facility to complete the change.

In the following example, an existing ISC-3 Compatibility Mode link will be migrated to an ISC-3 peer-mode link. The same procedure will apply for more than one link, and for converting ICB-2 (CBS/CBR) links to ICB-3 (CBP) links as well. Remember that changing from ICB-2 to ICB-3 links does require different hardware to be installed in your machine. Also, z800 does not support ICB-2 links.

The Internal Coupling Channel (IC) links are not included in this discussion, because they can only be defined in peer-mode, but the dynamic support just added will allow you to add and/or delete IC links dynamically.

1. Create a new Production IODF with links defined as Peer-Mode

Here is an example of the IOCP statements of an ISC-3 CFS/CFR Link, which will be dynamically configured to a peer-mode link.

```
CHPID PATH=(06),SHARED,  
      PARTITION=((OSP1,OSP2,OSP3,OSP4),(OSP1,OSP2,OSP3,OSP4,OS  
      PA,OSP7,OSP8,OSP9)),TYPE=CFS  
CNTLUNIT CUNUMBR=FFF3,PATH=(06),UNIT=CFS  
IODEVICE ADDRESS=(FFD4,002),CUNUMBER=(FFF3),UNIT=CFS  
  
CHPID PATH=(07),PARTITION=((OSPD),(OSPD)),TYPE=CFR
```

The IOCP statements for peer-mode will be as follows:

Dynamically Migrating to CF Peer-Mode Links

```
CHPID PATH=(06),SHARED,  
PARTITION=((OSP1,OSP2,OSP3,OSP4),(OSP1,OSP2,OSP3,OSP4,  
OSPA,OSP7,OSP8,OSP9)),TYPE=CFP  
CNTLUNIT CUNUMBR=FFF3,PATH=(06),UNIT=CFP  
IODEVICE ADDRESS=(FFC8,07),CUNUMBR=(FFF3),UNIT=CFP  
  
CHPID PATH=(07),SHARED,PARTITION=((OSPD),(OSPD)),TYPE=CFP
```

2. Rebuild “move” all the structures out of the Coupling Facility to which the LINK is to be dynamically configured, to another coupling facility in the parallel sysplex. Display the CF to make sure no structures are allocated in this CF.

```
D XCF,CF,CFNAME=CFD  
IXC362I 17.50.46 DISPLAY XCF 258
```

CFNAME: CFD

```
COUPLING FACILITY      : 002064.IBM.02.000000010B2E  
PARTITION: D  CPCID: 00
```

```
POLICY DUMP SPACE SIZE: 10000 K
```

```
ACTUAL DUMP SPACE SIZE: 10240 K
```

```
STORAGE INCREMENT SIZE: 256 K
```

CONNECTED SYSTEMS:

```
SYSA      SYSB      SYSC      SYSD
```

NO STRUCTURES ARE IN USE BY THIS SYSPLEX IN THIS COUPLING FACILITY

3. Configure all of the sender (CFS) CHPIDs to the CF offline from every image connected to the CF. It will be required to use the FORCE operand on the MVS CONFIG command, when configuring the last link to the CF offline.

Reply **CONTINUE** to the WTORs IXL127A

Message IXC518I will indicate that no Image is using this Coupling Facility.

Dynamically Migrating to CF Peer-Mode Links

4. Configure the receiver (CFR) CHPID offline on the CF LPAR. From the Hardware Management Console (HMC), using the operating system messages panel, issue the following command:

```
Command:    config 07 off
Response:   CF0149I CHPID 7 offline
```

5. Using the production IODF created in step 1, from the MVS Console, issue:

ACTIVATE IODF=xx,TEST

Message IOS500I will be issued because the ACTIVATE request contains deletes/adds

```
IOS500I ACTIVATE RESULTS 786
TEST DETECTED CONDITIONS WHICH WOULD RESULT IN ACTIVATE FAILURE
REASON=A880,DYNAMIC ACTIVATE REQUEST CONTAINS MODIFICATIONS TO CF
CONNECTIONS. ENSURE THAT S/W CHANGES ARE DONE PRIOR TO
H/W CHANGES.
COMPID=SC1XL
```

```
NOTE = A886,FOLLOWING DEVICES ARE DELETED FROM PROCESSOR WSCCEC3:
FFD4-FFD5
REASON=0150,REQUEST CONTAINS DELETE(S), BUT FORCE OPTION NOT
SPECIFIED
COMPID=SC1C3
```

From the MVS console, issue:

ACTIVATE IODF=xx,FORCE

You will see messages like the ones shown below and ACTIVATE will complete

```
IOS504I COUPLING FACILITY CONFIGURATION CHANGED
WARN = 0384,XES PROCESSING MAY NOT HAVE COMPLETED
SUCCESSFULLY COMPID=SCIXL
```

```
COUPLING FACILITY DEVICE(S) DELETED
FFD4-FFD5.
COUPLING FACILITY DEVICE(S) ADDED
FFC8-FFD5.
COUPLING FACILITY CU(S) DELETED
FFF3.
COUPLING FACILITY CU(S) ADDED
FFF3.
```

Dynamically Migrating to CF Peer-Mode Links

```
CF CHPID(S) DELETED
  06-07.
CF CHPID(S) ADDED
  06-07.
IOS501I ACTIVATE CLEANUP COMPLETE
```

6. Configure the CFP CHPID online to ALL images that are to be connected to this CF on this CHPID. Messages IXL158I will be issued, indicating the channel path now not-operational to the CF.

From the HMC, configure the Coupling Facility CFP CHPID online:

```
Command:      config 07 on
Response:     CF0140I  CHPID 7 online type CFP
```

7. Display the channel path by issuing the MVS Display Matrix command from an MVS console and you will see that the channel path type is now a peer-mode link.

```
D M=CHP(6)
IEE174I 16.22.27 DISPLAY M 832
CHPID 06:  TYPE=22, DESC=COUPLING FACILITY PEER, ONLINE
COUPLING FACILITY 002064.IBM.02.000000010B2E
PARTITION: D  CPCID: 00
NAMED CFD          CONTROL UNIT ID: FFF3
```

SENDER PATH	PHYSICAL	LOGICAL	CHANNEL TYPE
06	ONLINE	ONLINE	CFP

COUPLING FACILITY	DEVICE	SUBCHANNEL	STATUS
	FFC8	2E7D	OPERATIONAL/IN USE
	FFC9	2E7E	OPERATIONAL/IN USE
	FFCA	2E7F	OPERATIONAL/IN USE
	FFCB	2E80	OPERATIONAL/IN USE
	FFCC	2E81	OPERATIONAL/IN USE
	FFCD	2E82	OPERATIONAL/IN USE
	FFCE	2E83	OPERATIONAL/IN USE

8. Rebuild the structures back to this CF that were moved in step 2.

Dynamically Migrating to CF Peer-Mode Links