

IBM Education Assistance for z/OS V2R2

Item: Enhanced Gain CF Ownership Processing
BCP/XCF: Cross-System Coupling Facility



Agenda

- Trademarks
- Presentation Objectives
- Overview
- Usage & Invocation
- Migration & Coexistence Considerations
- Installation
- Presentation Summary
- Appendix



Trademarks

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



Presentation Objectives

- Explain purpose of Gain CF Ownership Enhancements
- Identify new/changed installation procedures for this item
- Define the functional content and benefit
- Explain any migration issues or concerns
- Explain how the function is invoked
- Indicate list of Publications and References



Overview

- Problem Statement / Need Addressed
 - Configuration errors can cause multiple sysplexes to attempt to use the same coupling facility (CF). The operator must decide whether a sysplex should use the CF or not – with little provided information. Incorrectly deciding to use the CF can cause a sysplex outage.
- Solution
 - Provide new COUPLExx CFRMTAKEOVERCF keyword to control whether the operator is prompted or XCF rejects use of a CF that may be in use by another sysplex. New default is NO.
- Benefit / Value
 - Avoid operator errors by forcing the installation to reactivate a CF in order to pass it from one sysplex to another



Overview - Continued

- CF authority (sysplex name and TOD) storage
 - Authority stored in the CF before used by a sysplex
 - XCF also stores same authority in CFRM couple data set (CDS)
 - Authority in CF cleared when removing CF from sysplex (if possible)
 - Authority in CF (non-zero authority) generally indicates CF is in use
- CF authorities in CFRM CDS
 - When sysplex is initialized authorities in CFRM CDS are **old**
 - While running, authorities stored in CFRM CDS are **current**
- Gain ownership (storing a new authority in a CF)
 - Only happens when the CF is in the CFRM active policy
 - No questions asked if CF has no authority (zero authority)
 - No questions asked if CF authority matches a **current** authority in the CFRM CDS (for example total connectivity loss/re-gain)



Overview - Continued

- Gain ownership (storing a new authority in a CF)
 - If CF authority matches the **old** authority in the CFRM CDS (for example, sysplex-wide IPL), depends on COUPLExx
 - CFMOWNEDCFPROMPT(NO) – default
 - Sysplex will gain ownership
 - CFMOWNEDCFPROMPT(YES)
 - Operator will be prompted and need to decide
 - Other CF authority mismatches (for example, sysplex-wide IPL with a new CFRM CDS)
 - CFMTAKEOVERCF(NO) – new default
 - XCF will reject use of the CF
 - CFMTAKEOVERCF(PROMPT) – old behavior
 - Operator will be prompted and need to decide



Overview - Continued

- Why would an **old** authority in the CFRM CDS match the CF?
 - Sysplex-wide IPL
 - Fine to use CF
 - IPL another sysplex (different sysplex CDS) using a copy (from mirroring or otherwise) of the CFRM CDS
 - Bad if sysplex using current copy of CFRM CDS still using CF
- Why would an authority in the CFRM CDS NOT match the CF at all?
 - Sysplex-wide IPL with a different CFRM CDS
 - Fine to use CF
 - IPL another sysplex (different sysplex CDS) using an old copy (from mirroring or otherwise) of the CFRM CDS
 - Bad if sysplex using current copy of CFRM CDS still using CF
 - IPL another sysplex (different sysplex CDS) with a CFRM policy that has a CF that does not belong to it
 - Bad



Usage & Invocation

- SYS1.PARMLIB(COUPLExx)

```
COUPLE  
  CFRMTAKEOVERCF(NO)  
  ...
```

- Statements for the “safest” configuration
 CFRMOWNEDCFPROMPT(YES)
 CFRMTAKEOVERCF(NO) /* z/OS V2R2 new default behavior */
- Statements with most automatic gain ownership of CF
 (susceptible to more configuration/operator errors)
 CFRMOWNEDCFPROMPT(NO) /* default */
 CFRMTAKEOVERCF(PROMPT) /* pre-z/OS V2R2 behavior */



Usage & Invocation - Continued

- Use of CF may be rejected for CFRMTAKEOVERCF(NO)

```
IXC518I  SYSTEM S1 NOT USING
          COUPLING FACILITY SIMDEV.IBM.EN.ND0100000000
                                PARTITION: 00          CPCID: 00
                                LP NAME:  N/A           CPC NAME: TINK6
          NAMED LF01
          AUTHORITY DATA: PLEX1 01/30/2015 08:08:55.195784
          REASON: TAKEOVER PROHIBITED.
          REASON FLAG: 13340009.
```

- Messages IXC500I, IXC517I, and IXC518I enhanced with additional information when available
 - Partition and CPC name
 - Additional authority data TOD resolution
 - Authority data is new for IXC517I and IXC518I



Usage & Invocation - Continued

- Additional authority data in messages IXC500I, IXC518I, and IXC362I (result of DISPLAY XCF,CF,CFNAME=) when applicable

```
IXC362I  18.13.16  DISPLAY XCF
CFNAME:  LF02
COUPLING FACILITY      :  SIMDEV.IBM.EN.ND0200000000
                        PARTITION: 00  CPCID: 00
SITE                   :  SITE1
POLICY DUMP SPACE SIZE:  1 M
ACTUAL DUMP SPACE SIZE:  1 M
STORAGE INCREMENT SIZE:  1 M

AUTHORITY DATA        :  PLEX1 01/30/2015 18:06:13.281887
CFRM AUTHORITY         :  PLEX1 01/30/2015 17:53:35.128473
```

- AUTHORITY DATA is from the CF
- CFRM AUTHORITY is from the CFRM CDS (not provided if none stored)



Usage & Invocation - Continued

- Enhanced explanations in IXL150I (result of DISPLAY CF)

```
IXL150I  18.18.51  DISPLAY CF
COUPLING FACILITY SIMDEV.IBM.EN.ND0100000000
                PARTITION: 00  CPCID: 00
                LP NAME: N/A    CPC NAME: TINK6
                CONTROL UNIT ID: 0001

NAMED LF01
```

NOT IN USE BY SYSTEM

- NOT IN USE BY SYSTEM (Hint: see IXC518I)
- NOT CONNECTED TO SYSTEM (Hint: check paths)
- NOT IN THE CFRM ACTIVE POLICY (Hint: check CFRM policy)



Usage & Invocation - Continued

- XCF_CF_CONNECTIVITY health check
 - New message IXCH0459E for specific case where CF is connected and in the CFRM active policy, but not in use by the sysplex
 - Hint: See IXC518I



Migration & Coexistence Considerations

- Migration action
 - Update COUPLExx to specify **CFRMTAKEOVERCF(PROMPT)** if new CFRMTAKEOVERCF(NO) behavior is not desired
- Coexistence consideration when using **CFRMOWNEDCFPROMPT(YES)**
 - A downlevel system clears CF authorities in the CFRM CDS when initializing the sysplex (sysplex-wide IPL)
 - This may cause a z/OS V2R2 system using CFRMTAKEOVERCF(NO) to reject use of a CF when the desired behavior might have been to PROMPT
 - To avoid the strange behavior, do one of the following
 - Create a new COUPLExx for z/OS V2R2 with CFRMTAKEOVERCF(PROMPT)
 - Update COUPLExx to use CFRMOWNEDCFPROMPT(NO)
- No toleration/coexistence APARs/PTFs



Installation

- Nothing needed if new CFRMTAKEOVERCF(NO) behavior is acceptable
- Update COUPLExx PARMLIB member to specify CFRMTAKEOVERCF(PROMPT) if new CFRMTAKEOVERCF(NO) behavior is not desired
- May still need a copy of the COUPLExx without the CFRMTAKEOVERCF keyword for use by downlevel systems that do not support the keyword



Presentation Summary

- CFRMTAKEOVERCF(NO) is new behavior and the z/OS V2R2 default
 - Avoid operator errors by forcing the installation to reactivate a CF in order to pass it from one sysplex to another
- CFRMTAKEOVERCF(PROMPT) can get old behavior, but not as “safe”
- Relationship with CFRMOWNEDCFPROMPT(YES) for migration



Appendix

- *MVS Initialization and Tuning Reference* (SA23-1380-05)
- *MVS System Messages Vol. 10 (IXC-IZP)* (SA38-0677-03)
- *IBM Health Checker for z/OS Users Guide* (SC23-6843-03)

