# z/OS V1R13

# BCP system logger: Logger IXGCNFxx parm

### Session objectives

- Understand how to tailer logger offload monitoring intevals
- Understand the logger parmlib syntax
- Understand the relevant SETLOGR and SET commands
- Understand the DISPLAY IXGCNF command to display parmlib options

#### Overview

- Problem Statement / Need Addressed
  - Logger provides monitoring for log stream offload data set allocations and recalls and produces warning and action message after predefined intervals
  - The default values for issuing warning message IXG310 are 30 seconds for ALLOCATING a data set and 60 seconds for RECALLING a data set
  - The default values for issuing action messages IXG311 and IXG312 are 60 seconds for ALLOCATING a data set and 120 seconds for RECALLING a data set.
    - Relevant messages:

 $\hbox{\tt IXG310I SYSTEM LOGGER CURRENT OFFLOAD IS NOT PROGRESSING FOR LOGSTREAM } logstream \ \hbox{\tt STRUCTURE: strname request} \\ \hbox{\tt DSN=dsnhlq.dsnlsn.dsnllq}$ 

IXG3111 SYSTEM LOGGER CURRENT OFFLOAD HAS NOT PROGRESSED DURING THE PAST seconds SECONDS FOR LOGSTREAM logstream STRUCTURE: strname request DSN=dsnhlq.dsnlsn.dsnllq

IXG312E OFFLOAD DELAYED FOR logstream, REPLY "MONITOR", "IGNORE", "FAIL", "AUTOFAIL", OR "EXIT".

- Problem Statement / Need Addressed
  - For many installations the default values are either
    - Too late action should have been taken earlier to prevent outage
    - Too early messages are over-alarming
  - Logger should provide a mechanism to allow installations to change the default values
- Solution
- The IXGCNFxx parmlib member was developed to allow altering offload monitoring intervals on a system basis
- Benefit / Value
  - Installations can modify offload monitoring intervals
  - Parmlib extended to allow ctrace member specification
- Logger now has a parmlib member to customize logger behavior on a system basis

### Usage and invocation -- Overview

- IXGCNFxx syntax and specification
- SET IXGCNF syntax and specification
- SETLOGR CTRACE and SETLOGR MONITOR syntax and specification
- D LOGGER, IXGCNF syntax and specification

#### Usage and invocation -- IXGCNFxx parmlib member

- IXGCNFxx SYS1.PARMLIB member has options:
  - MONITOR
    - OFFLOAD
      - WARNALLOC(initial\_delay\_interval)
        - » Seconds before log stream offload monitor will issue warning message IXG310 when delayed allocating an offload data set
        - » Between 5 and 86400
        - » Default is 30
      - WARNRECALL(initial\_delay\_interval)
        - » Seconds before log stream offload monitor will issue warning message IXG310 when delayed waiting for recall of a migrated data set
        - » Between 5 and 86400
        - » Default is 60
- IXGCNFxx SYS1.PARMLIB member has options:
  - MONITOR
    - OFFLOAD
      - ACTIONALLOC(secondary\_delay\_interval)
        - » Seconds before log stream offload monitor will issue error messages IXG311/IXG312 when delayed allocating an offload data set
        - » Between 5 and 86400
        - » Default is 60
      - ACTIONRECALL(secondary\_delay\_interval)

- » Seconds before log stream offload monitor will issue error messages IXG311/IXG312 when delayed waiting for recall of a migrated data set
- » Between 5 and 86400
- » Default is 120
- Behavior when action interval is less than equal to warning interval:
  - Logger will only produce action messages IXG311, IXG312 after specified interval
- IXGCNFxx SYS1.PARMLIB member has options:
  - CTRACE(parmlib\_member\_name)
    - CtnLOGxx parmlib member that specifies the logger ctrace options
    - Alternative to system command TRACE CT,ON,COMP=SYSLOGR,PARM=CTnLOGxx
    - Default CTILOG00

# Usage and invocation -- IXGCNFxx parmlib member

- IXGCNF
  - Can be specified at IPL as IXGCNF=
  - Can be specified in an IEASYSxx member as IXGCNF=
  - Allows for multiple members IXGCNF=(aa,bb,...)
  - The 'L' option is allowed but ignored
  - Parmlib member not required
- IXGCNFxx parmlib member syntax rules:
  - Cols 1-71 may be used; 72-80 are ignored
  - Comments /\* ... \*/ are allowed
  - Blank lines are allowed
  - Upper and lowercase allowed, Logger folds to uppercase
  - Statements delimited by blanks
  - Members are parsed in order specified
  - Can specify statements more than once
  - The last value for a statement across all members is used
- A syntax error in any member will cause the default or previous specifications to be used. Remaining members will be parsed for syntax.
- Notable messages
  - IXG731I LOGGER PARAMETER PROCESSING COMPLETED SUCCESSFULLY
    - Look for D LOGGER, IXGCNF output message IXG607 to follow
  - IXG735I LOGGER PARMETER PROCESSING FAILED
    - look for IXG732I messages
  - IXG732I describes an error in a parmlib member
  - See Appendix F for message details
- When processing a set of members, syntax errors in any member will cause logger not to use any of the contents of any member in the set. Messages IXG732I will highlight all of the syntax errors, and IXG735 will be issued.
- For example if someone IEASYSxx member contained IXGCNF=(AA,BB,CC) and IXGCNFCC included a syntax error, none of the parameters in IXGCNFAA, IXGCNFBB or IXGCNFCC would be used; logger would use default values.

#### Usage and invocation -- SET IXGCNF

- Syntax
  - SET IXGCNF=xx
  - SET IXGCNF=(xx)
  - SET IXGCNF=(xx,yy,...)
- Example:
- T IXGCNF=(N1,N2,Y3)
- Same rules as IPL specification
- UPDATE authority to resource MVS.SET.IXGCNF required
- Notable messages
  - IXG721I SET IXGCNF COMMAND ACCEPTED
  - IXG722I SET IXGCNF COMMAND FAILED

#### SETLOGR CTRACE and SETLOGR MONITOR

- SETLOGR command now allows parmlib specifications
- SETLOGR Confinant now allows painings
   SETLOGR FORCE, DISCONNECT, LSN=x

,DELETE,LSN=x ,NORECALL,DSN=x

CTRACE(CTnLOGxx)

MONITOR,OFFLOAD,WARNALLOC(xx)

,ACTIONALLOC(xx) ,WARNRECALL(xx) ,ACTIONRECALL(xx)

- Example:
- $\begin{array}{ll} \mathtt{SETLOGR} & \mathtt{MONITOR}, \mathtt{OFFLOAD}, \mathtt{WARNALLOC}(\mathtt{10}), \mathtt{ACTIONRECALL}(\mathtt{33}) \\ \end{array}$
- Keywords have same syntax rules as parmlib processing
- Example output in Appendices C-E

### Usage and invocation - Display Logger, IXGCNF

- Syntax D LOGGER, IXGCNF(,MON | ,MONITOR)
- MONITOR or MON
  - Requests a display of all the system logger MONITOR statement parameter options

### Usage and invocation – Display Logger, IXGCNF Example

- Assume the following SYS1.PARMLIB members are defined
  - IXGCNFNN

CTRACE(CTILOG01)

- IXGCNFN1

MONITOR OFFLOAD

WARNALLOC(5)

- IXGCNFN2

MONITOR OFFLOAD

ACTIONRECALL(26)

■ IEASYSxx member used during IPL contained IXGCNF=NN

SET IXGCNF=(n1,n2) was then issued

SETLOGR MONITOR, OFFLOAD, ACTIONALLOC(20) was then issued

#### DISPLAY LOGGER, IXGCNF

SY1 IXG607I 18.00.56 LOGGER DISPLAY 395

LOGGER PARAMETER OPTIONS KEYWORD SOURCE VALUE

CTRACE IPL (NN) CTILOG01

MONITOR OFFLOAD

WARNALLOC SET (N1) 00005
ACTIONALLOC SETLOGR 00020
WARNRECALL DEFAULT 00060
ACTIONRECALL SET (N2) 00026

### Interactions and dependencies

- Software Dependencies
  - None
- Hardware Dependencies
  - None
- Exploiters
- None

#### Migration and coexistence considerations

■ None

#### Installation

None

### Session summary

- You should now understand Logger's IXGCNF parmlib member and relevant commands
- Refer to the appendix for additional information

# **Appendix - References**

- Publications
  - SYS1.SAMPLIB example IXGCNFXX contents
  - SETLOGR CTRACE example
  - SETLOGR MONITOR example 1
  - SETLOGR MONITOR example 2
  - Message changes
    - IXG651, IXG652, IXG653, IXG607I, IXG721I, IXG722I, IXG731I, IXG732I, IXG733I, IXG735I

# **Appendix A: Publications**

- z/OS MVS Initialization and Tuning Reference (SA22-7592)
  - IEASYSxx IXGCNF= keyword
  - IXGCNFxx SYS1.PARMLIB member
- z/OS MVS Setting up a Sysplex (SA22-7625)
  - Offload and service task monitoring
- z/OS MVS System Commands (SA22-7627)
  - SET IXGCNF
  - SETLOGR
  - DISPLAY LOGGER
- z/OS MVS System Messages (SA22-7640)
- z/OS MVS Diagnosis: Tools and Service Aids (GA22-7589)
  - System logger (SYSLOGR) component trace

#### Appendix B: IXGCNFXX sys1.samplib example

#### CTRACE(CTILOG00)

MONITOR OFFLOAD WARNALLOC(30) ACTIONALLOC(60) WARNRECALL(60) ACTIONRECALL(120)

# Appendix C: SETLOGR CTRACE example

```
SETLOGR CTRACE(CTILOGN0)
SY1 IXG6511 SETLOGR CTRACE COMMAND ACCEPTED FOR LOGGER SYSTEM CONFIGURATION CHANGE
SY1 IXG731I LOGGER PARAMETER PROCESSING COMPLETED SUCCESSFULLY FOR SETLOGR REQUEST
SY1 TXG607T 18 02 10 LOGGER DISPLAY
  LOGGER PARAMETER OPTIONS
         SOURCE VALUE
  KEYWORD
                     SETLOGR CTILOGNO
  CTRACE
  MONITOR OFFLOAD
   WARNALLOC
                     SET (N1) 00005
   ACTIONALLOC
                     SET (N1) 00015
DEFAULT 00060
   WARNRECALL
   ACTIONRECALL
                      SET (N2) 00026
{\tt SY1} ITT0381 ALL OF THE TRANSACTIONS REQUESTED VIA THE TRACE CT COMMAND WERE SUCCESSFULLY EXECUTED.
SY1 IEE839I ST=(ON,0001M,00004M) AS=ON BR=OFF EX=ON MO=OFF MT=(ON,024K)
  ISSUE DISPLAY TRACE CMD FOR SYSTEM AND COMPONENT TRACE STATUS ISSUE DISPLAY TRACE,TT CMD FOR TRANSACTION TRACE STATUS
D trace,comp=syslogr
SY1 IEE843I 18.02.40 TRACE DISPLAY 432 C SYSTEM STATUS INFORMATION
  ST=(ON,0001M,00004M) AS=ON BR=OFF EX=ON MO=OFF MT=(ON,024K)
  COMPONENT MODE BUFFER HEAD SUBS
  JOBNAMES *NOT SUPPORTED* }OPTIONS CONNECT, RECOVERY, SERIAL, LOGSTRM, STORAGE, DATASET WRITER *NONE*
```

#### Appendix D: SETLOGR MONITOR example 1

SETLOGR MONITOR, OFFLOAD, WARNALLOC (15) SY1 IXG651I SETLOGR MONITOR COMMAND ACCEPTED FOR LOGGER SYSTEM CONFIGURATION CHANGE SY1 IXG731I LOGGER PARAMETER PROCESSING COMPLETED SUCCESSFULLY FOR SETLOGR REQUEST SY1 IXG607I 17.16.59 LOGGER DISPLAY 658 LOGGER PARAMETER OPTIONS SOURCE VALUE KEYWORD CTRACE DEFAULT CTILOG00 MONITOR OFFLOAD
WARNALLOC SE
ACTIONALLOC DE
WARNRECALL DE SETLOGR 00015 DEFAULT 00060 DEFAULT 00060 ACTIONRECALL DEFAULT 00120

# Appendix E: SETLOGR MONITOR example 2

SETLOGR MONITOR, OFFLOAD, ACTIONALLOC (25) SY1 IXG651I SETLOGR MONITOR COMMAND ACCEPTED
FOR LOGGER SYSTEM CONFIGURATION CHANGE
SY1 IXG731I LOGGER PARAMETER PROCESSING COMPLETED SUCCESSFULLY FOR SETLOGR REQUEST SY1 IXG6071 17.17.44 LOGGER DISPLAY 664 LOGGER PARAMETER OPTIONS KEYWORD SOURCE VALUE CTRACE DEFAULT CTILOG00 MONITOR OFFLOAD WARNALLOC ACTIONALLOC WARNRECALL SETLOGR 00015 SETLOGR 00025 DEFAULT 00060 ACTIONRECALL DEFAULT 00120

# Appendix F: IXG651

- IXG651I SETLOGR operation action COMMAND ACCEPTED
- FOR resourcetype resourcename
- operation
  - FORCE
  - · Force action against logger resources
  - MONITOR
    - · Update logger monitor variables
  - CTRACE
  - · Update logger Ctrace parmlib
- action

- DISCONNECT
  - · action to remove (disconnect) all the connections to the named log stream from the system.
- **DELETE** 
  - action to delete the log stream from the LOGR CDS.
- NORECALL
- · action to cause Logger to stop waiting on an outstanding asynchronous recall request for the data set.
- resourcetype
  - LOGŚTREAM=
    - indicates a log stream resource is the target of the command.
  - DSNAME=
  - indicates a log stream data set resource is the target of the command.

     LOGGER SYSTEM CONFIGURATION CHANGE
  - - · indicates the systems configuration parameters are the target of the command.
- resourcename
  - When resourcetype is LOGSTREAM, then identifies the name of the target log stream.
  - When resourcetype is DSNAME, then identifies the name of the target log stream data set.
  - Blank when resourcetype is ALL LOGSTREAMS or LOGGER SYSTEM CONFIGURATION CHANGE

# Appendix F: IXG652I

■ IXG652I SETLOGR operation action COMMAND NOT PROCESSED

FOR resourcetype resourcename

DUE TO: reason

- operation
  - -FORCE
    - Force action against logger resources
  - -MONITOR
    - · Update logger monitor variables
  - -CTRACE
    - Update logger Ctrace parmlib
- action
  - -DISCONNECT
    - action to remove (disconnect) all the connections to the named log stream from the system.
  - -DELETE
    - action to delete the log stream from the LOGR CDS.
  - -NORECALL
    - action to cause Logger to stop waiting on an outstanding asynchronous recall request for the data
- resourcetype
  - LOGSTREAM=
    - indicates a log stream resource is the target of the command.
  - DSNAME=
    - · Indicates a log stream data set resource is the target of the command.
  - LOGGER SYSTEM CONFIGURATION CHANGE
    - indicates the systems configuration parameters are the target of the command.
- resourcename
  - When resourcetype is LOGSTREAM, then identifies the name of the target log stream.
  - When resourcetype is DSNAME, then identifies the name of the target log stream data set.
  - Blank when resourcetype is LOGGER SYSTEM CONFIGURATION CHANGE.
- - THE SPECIFIED LOGSTREAM IS NOT CONNECTED ON THIS SYSTEM
  - THE SPECIFIED DATA SET IS NOT BEING RECALLED ON THIS SYSTEM
  - THE REQUEST FAILED FOR AN UNEXPECTED REASON
  - LOGR COUPLE DATA SET NOT AVAILABLE
  - THE SYSTEM LOGGER IS NOT AVAILABLE
  - LOGGER PARAMETER PROCESSING IS NOT AVAILABLE

# Appendix F: IXG653

IXG653I SETLOGR operation COMMAND NOT PROCESSED

FOR resourcetype resourcename

RETCODE=retcode, RSNCODE=rsncode

DIAGNOSTIC INFORMATION: diag1 diag2 diag3 diag4

- operation
  - FORCE
    - · Force action against logger resources
  - MONITOR
    - · Update logger monitor variables

  - CTRACE · Update logger Ctrace parmlib
- resourcetype
  - LOGSTREAM=
    - · indicates a log stream resource is the target of the command.
  - DSNAME=

- indicates a log stream data set resource is the target of the command.
- LOGGER SYSTEM CONFIGURATION CHANGE
- Indicates the systems configuration parameters are the target of the command.
- resourcename
  - When resourcetype is LOGSTREAM, then identifies the name of the target log stream.
  - When resourcetype is DSNAME, then identifies the name of the target log stream data set.
  - Blank when resourcetype is LOGGER SYSTEM CONFIGURATION CHANGE.

# Appendix F: IXG607I

IXG607I hh:mm:ss LOGGER DISPLAY

LOGGER PARAMETER OPTIONS

KEYWORD SOURCE VALUE

keyword source [(xx)] value

- Explanation: This message is issued
  - In response to a DISPLAY LOGGER, IXGCNF[, options] command.
  - During system logger (IXGLOGR) initialization processing at IPL or when logger (IXGLOGR address space) is restarted.
  - During SET IXGCNF command processing.
  - During SETLOGR IXGCNF command processing.
- keyword -- The system logger keyword parameter. Each keyword will be displayed on its own message line. Refer to SYS1.PARMLIB
  member IXGCNFxx for a description of the logger parameters.
- source [(xx)] -- The origin of the keyword parameter, which is one of the following:
  - DEFALII T
    - System logger default parameter value
  - IPL (xx)
    - parameter value used as result of IXGCNF= specification in IEASYSxx or in response to "SPECIFY SYSTEM OPTIONS" during z/OS IPL.
  - SET (xx)
    - parameter value used as result of SET IXGCNF= command.
  - SETLOGR
    - parameter value used as result of SETLOGR command.
  - Where xx represents the suffix of a IXGCNFxx parmlib member, when displayed.
- value --The value for the keyword parameter. If the value is too long for the single line, then the value will be truncated on the first line followed by the text ' +', and then the remainder of the value will be continued on the 2nd line.
- System Action: System logger reveals the parameter information and then continues.
- Operator Response: None.
- Source: System logger (SCLOG)
- Detecting Module: IXGP1DSP
- Routing Code: 2 (?)
- **Descriptor Code**: 4,5,8,9 (?)

# Appendix F: IXG721I

- IXG721I SET IXGCNF COMMAND ACCEPTED
- EXPLANATION: The SET IXGCNF command was accepted.
- SYSTEM ACTION: The command has been sent to System Logger and it will be processed.
- OPERATOR RESPONSE: Check the log for messages IXG731I, IXG735I or related messages to determine the success or failure of the set operation.
- USER RESPONSE: None.
- PROGRAMMER RESPONSE: None.
- **SYSTEM PROGRAMMER RESPONSE**: None.
- Source: System Logger (SCLOG)
- Detecting Module: IXGSETCF
- Routing Code: -
- Descriptor Code: 5

# Appendix F: IXG722I

- IXG722I SET IXGCNF COMMAND FAILED
- DUE TO: reason
- EXPLANATION: The SET IXGCNF command was not successfully processed. The action failed due to the given reason.
- reasor
  - THE REQUEST FAILED FOR AN UNEXPECTED REASON
    - System Logger returned an unexpected error code.
  - THE SYSTEM LOGGER IS NOT AVAILABLE
    - System Logger Address Space is not yet available for function requests on this system. LOGGER PARAMETER PROCESSING IS NOT AVAILABLE
      - Logger is not accepting SET IXGCNF requests due to a Logger or system error, refer to message IXG733I.
- SYSTEM ACTION: Processing of the SET IXGCNF command stops before it is completed.
- OPERATOR RESPONSE: If the request failed for an unexpected reason, then system logger component encountered an error, contact
  the System programmer. If system logger is not active, ask the System programmer to activate system logger and reissue desired
  commands.
- USER RESPONSE: None.
- PROGRAMMER RESPONSE: None.
- SYSTEM PROGRAMMER RESPONSE: Verify that system logger is active. If the problem persists contact IBM Support.
- Source: System Logger (SCLOG) Detecting Module: IXGSETCF Routing Code: Descriptor Code: 5

### Appendix F: IXG7311

- IXG731I LOGGER PARAMETER PROCESSING COMPLETED SUCCESSFULLY FOR request
- EXPLANATION: Logger parameter processing completes successfully.
- request

- SET IXGCNF REQUEST
- · A SET IXGCNF= system command request.
- SETLOGR REQUEST
  - · A SETLOGR system command request.
- STARTUP IXGCNF PROCESSING
  - · Logger startup is processing parmlib members specified at IPL.
- SYSTEM ACTION: The parameter updates have been processed successfully by system logger and logger processing continues. Logger issues a DISPLAY LOGGER, IXGCNF and the whole parameter set is displayed in message IXG6011.
- OPERATOR RESPONSE: Check the log for messages IEE536I, to show which parmlibs were processed, or message IXG601I for which parameters are in effect.
- USER RESPONSE: None.
- PROGRAMMER RESPONSE: None.
- SYSTEM PROGRAMMER RESPONSE: None.
- Source: System Logger (SCLOG)
   Detecting Module: IXGE3CNF Routing Code: 2 Descriptor Code: 5,4

#### Appendix F: IXG732I

- IXG732I ERROR IN type memname KEYWORD: errorkey type2 linenum type3 col REASON: reason
- EXPLANATION: Logger parameter processing failed due to an error interpreting keyword at position for the reason.
- type
  - PARMLIB MEMBER:
  - SETLOGR REQUEST:
- memname -- parmlib member in error or blank for setlogr request.
- errorkey -- keyword in error
- type2
  - LINF:
  - POS:
- linenum -- line/position of error
- type3
  - COL:
- col -- column of error
- reason
  - UNEXPECTED CHARACTERS
  - TOO SHORT
  - TOO LONG
  - UNRECOGNIZED KEYWORD
  - OUT OF RANGE
  - OTHER UNEXPECTED ERROR
- SYSTEM ACTION: Logger parameter processing fails and no parameters have been updated. Logger will process remaining parameters for syntax.
- OPERATOR RESPONSE: Correct the noted parameters and re-enter the desired parameters by SET IXGCNF command or SETLOGR command.
- USER RESPONSE: None.
- PROGRAMMER RESPONSE: None.
- SYSTEM PROGRAMMER RESPONSE: None.
- Source: System Logger (SCLOG)
- Detecting Module: IXGE3CNF
- Routing Code: 2
- Descriptor Code: 5,4

#### Appendix F: IXG7331

- IXG733I LOGGER PARAMETER PROCESSING UNAVAILABLE
- EXPLANATION: Logger parameter processing is unavailable for the life of IXGLOGR.
- SYSTEM ACTION: Parameters specified during IPL for IXGCNF are not in effect, SET IXGCNF and related SETLOGR commands are not accepted. Logger operations continue with defaults.
- OPERATOR RESPONSE: Notify the system programmer.
- USER RESPONSE: None.
- PROGRAMMER RESPONSE: None.
- SYSTEM PROGRAMMER RESPONSE: The system will continue with default parameters. If this is not acceptable, Restart logger-- FORCE IXGLOGR, ARM then S IXGLOGRS, to clear the situation, or contact IBM Support.
- Source: System Logger (SCLOG)
- Detecting Module: IXGBLF01
- Routing Code: 2,10
- Descriptor Code: 4

#### Appendix F: IXG735I

- IXG735I LOGGER PARMETER PROCESSING FAILED FOR request REASON: reason
- EXPLANATION: Logger parameter processing failed.
- request
  - SET IXGCNF REQUEST
  - SETLOGR REQUEST

- STARTUP IXGCNF PROCESING
- reason
  - IXGCNF MEMBER ERROR
  - SETLOGR COMMAND ERROR
  - PARMLIB ALLOCATION FAILURE
  - PARMLIB SERVICE LOAD ERROR
  - THE REQUEST FAILED FOR AN UNEXPECTED REASON
- SYSTEM ACTION: No logger parameters are changed, system logger processing continues.
- **OPERATOR RESPONSE**: Notify the system programmer.
- USER RESPONSE: None.
- PROGRAMMER RESPONSE: None.
- SYSTEM PROGRAMMER RESPONSE: For IXGCNF MEMBER ERROR, correct errors noted by IXG732I messages
  and submit a SET IXGCNF command. For SETLOGR COMMAND ERROR, correct errors noted by IXG732I messages
  and re-submit the SETLOGR command. For PARMLIB ALLOCATION FAILURE, determine why SYS1.PARMLIB can
  not be allocated or contact IBM Support. For other reasons, contact IBM Support.
- Source: System Logger (SCLOG)
- Detecting Module: IXGE3CNF
- Routing Code: 2Descriptor Code: 5,4