



#### Batch Modernization in JES2 z/OS 2.1

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#### **Overview**

- This presentation will cover the following topics
  - JCL changes to JOB, OUTPUT, and JCLLIB cards
  - Input phase JCL/JECL error processing changes
  - Performing interpretation after conversion
  - JCL symbol processing changes
  - Eight character job classes
  - Job class security checks





# JOB card JCL changes

- New SYSTEM= keyword on JOB card
  - List MVS system names where job can run
  - Valid names are systems that are/were active in the JESPLEX (MAS)
- New SYSAFF= keyword on JOB card
  - List JES2 member names where job can run
  - Valid names are JES2 members defined in the JESPLEX (MAS)
  - Replaces function of SYSAFF on /\*JOBPARM
- SYSTEM and SYSAFF on job card are mutually exclusive
  - Both specified results in JCL error
  - Both support exclusion lists eg. SYSTEM=(-SY1, SY2)
    - Anywhere except SY1 and SY2
- JOBPARM SYSAFF ignored if JOB card SYSTEM or SYSAFF specified
  - New warning message generated





# **JOB** card **JCL** changes

- New UJOBCORR= keyword on JOB card
  - Specifies user portion of job correlator
  - 1-32 characters (A-Z, 0-9, Nationals, "\_")
  - "\_" requires value be placed in quotes
  - Parsed by JES2 during INPUT phase processing





# **OUTPUT** card changes

- New MERGE=YES keyword on OUTPUT card
  - Defines base values for OUTPUT level keywords
  - Only one MERGE=YES statement per context is used
    - First at the job or step level
      - Job level also applies to JESDS data sets
  - Applies to all SYSOUT in that context
  - Other OUTPUT statements still apply
  - Does not create additional instances of the data sets
  - Similar to JES3 non-specific FORMAT JECL
- New DDNAME= keyword on OUTPUT card
  - Points OUTPUT card to DD statements
    - Specify ddname or stepname.ddname or stepname.procstepname.ddname
  - Applies to all matching SYSOUT DDs in the context
    - Job or step level
  - Creates multiple instances of the data sets





## **OUTPUT** card changes

#### Sample job (instream data not included):

```
//IBMUSERA JOB (,2D07), MSGLEVEL=(1,1), CLASS=A, SYSAFF=(*)
           OUTPUT DEST=R1, MERGE=YES
//TEST
//*
//STEP1
            EXEC
                  PGM=IEBDG
//SYSPRINT
                SYSOUT=*
            DD
                SYSOUT=*
//DATASET1
            DD
//SYSIN
            DD
//*
//STEP2
            EXEC
                  PGM=IEBDG
//TEST2
           OUTPUT DEST=R2, MERGE=YES
//SYSPRINT
                SYSOUT=*
            DD
//DATASET1
                SYSOUT=*
            DD
//SYSIN
            DD
```

#### Results:

DDNAME	CC	StepName	Forms	Dest
JESMSGLG	1	JES2	STD	R1
JESJCL	1	JES2	STD	R1
JESYSMSG	1	JES2	STD	R1
SYSPRINT	1	STEP1	STD	R1
DATASET1	1	STEP1	STD	R1
SYSPRINT	1	STEP2	STD	R2
DATASET1	1	STEP2	STD	R2







## **OUTPUT** card changes

#### Sample job (instream data not included):

```
//IBMUSERA JOB (,2D07), MSGLEVEL=(1,1), CLASS=A, SYSAFF=(*)
//TEST1
           OUTPUT FORMS=TEST, DDNAME=DATASET1
//*
//STEP1
            EXEC
                  PGM=IEBDG
//SYSPRINT
            DD
                SYSOUT=*
                SYSOUT=*
//DATASET1
            DD
//SYSIN
            DD
//*
//STEP2
            EXEC
                  PGM=IEBDG
//SYSPRINT
                SYSOUT=*
            DD
//DATASET1
                SYSOUT=*
            DD
//SYSIN
            DD
```

#### Results:

DDNAME	CC	StepName	Forms	Dest
JESMSGLG	1	JES2	STD	LOCAL
JESJCL	1	JES2	STD	LOCAL
JESYSMSG	1	JES2	STD	LOCAL
SYSPRINT	1	STEP1	STD	LOCAL
DATASET1	1	STEP1	TEST	LOCAL
SYSPRINT	1	STEP2	STD	LOCAL
DATASET1	1	STEP2	TEST	LOCAL





# JCLLIB card changes

- New PROCLIB= keyword on JCLLIB card
  - Selects which JES2 PROCLIB concatenation to use for job
    - Specify entire DDNAME such as PROC01
    - If DDNAME does not exist, PROC00 is used
  - Same as PROCLIB= on JES2 JOBPARM JECL card
    - JCL error if specified on JCLLIB and JOBPARM
- JES2 PROCLIB support has been updated
  - Display now includes concatenation in the JES2 PROC
    - Displayed as "STATIC PROCLIB"s
    - Can be override as in previous releases
  - Static PROCLIBs can be "altered" more easily using \$T PROCLIB
    - Creates override based on static values
  - Quicker close/unallocate of unused concatenations



## Improved processing of input phase errors



- Input phase errors are now handled like other JCL errors
  - Most input phase errors do not stop job from converting
  - Messaging similar to existing error messages
  - Support for "warning" messages from input processing
  - JECL statements are now assigned statement numbers
  - JOBDEF JCLERR= is now ignored
    - Jobs with input errors always go to conversion

#### **Sample JCL:**

```
//IBMUSERA JOB
  (,2D07), MSGLEVEL=(1,1), CLASS=ABC, SYSAFF=(BAD)
/*JOBPARM PROC=PROC99
//*
//STEP1
            EXEC
                  PGM=IEBDG, REGON=OM
//SYSPRINT
            DD
                SYSOUT=*
//DATASET1
            DD SYSOUT=*
//SYSIN
            DD
                DATA, DLM=$$$$
```



## Improved processing of input phase errors



#### Current (pre-2.1) output:

```
//IBMUSERA JOB (,2D07), MSGLEVEL=(1,1), CLASS=ABC, SYSAFF=(BAD)
                                                                      JOB00767
******* ILLEGAL JOB CARD - VALUE OF CLASS= EXCEEDS 1 CHARACTER ********
/*JOBPARM PROC=PROC99
****** NON-VALID JOBPARM STMT - UNEXPECTED KEYWORD DETECTED - PROC
                                                                       *****
//*
//STEP1
       EXEC PGM=IEBDG, REGON=0M
//SYSPRINT DD
              SYSOUT=*
//DATASET1 DD
              SYSOUT=*
//SYSIN
              DATA,DLM=$$$$
           DD
****** NON-VALID DD
                                                    KEYWORD NOT VALID ******
                           STMT - VALUE FOR DLM
SHASP106 JOB DELETED BY JES2 OR CANCELLED BY OPERATOR BEFORE EXECUTION
----- JES2 JOB STATISTICS -----
          17 CARDS READ
           7 SYSOUT PRINT RECORDS
           O SYSOUT PUNCH RECORDS
           O SYSOUT SPOOL KBYTES
        0.00 MINUTES EXECUTION TIME
```



#### Improved processing of input phase errors



#### Output with 2.1:

```
12.43.45 JOB00042 IEFC452I IBMUSERA - JOB NOT RUN - JCL ERROR 533
 ---- JES2 JOB STATISTICS -----
          17 CARDS READ
          24 SYSOUT PRINT RECORDS
            O SYSOUT PUNCH RECORDS
           1 SYSOUT SPOOL KBYTES
        0.00 MINUTES EXECUTION TIME
       1 //IBMUSERA JOB (,2D07), MSGLEVEL=(1,1), CLASS=ABC, SYSAFF=(BAD)
        2 /*JOBPARM PROC=PROC99
         //*
       3 //STEP1 EXEC PGM=IEBDG, REGON=OM
       4 //SYSPRINT DD SYSOUT=*
       5 //DATASET1 DD
                        SYSOUT=*
                         DATA,DLM=$$$$
        6 //SYSIN
                     DD
STMT NO. MESSAGE
       1 HASP110 value of CLASS= parameter is not valid
       1 HASP112 value of SYSAFF= parameter is not valid
        2 HASP107 UNEXPECTED KEYWORD DETECTED - PROC
        3 TEFC630T UNIDENTIFIED KEYWORD REGON
       6 HASP107 value for DLM keyword not valid
```





- First pass of processing JCL is called conversion processing
  - Deals with PROCs and INCLUDEs.
  - Does basic parsing of JCL into "text units"
  - Currently run in subtask in JES2 address space in conversion phase
- Interpretation processing creates control blocks for initiator to run job
  - Fully validates JCL (values of parameters)
    - Certain errors only detected by the interpreter
  - Currently runs in the initiator when a job is selected
- OUTPUT card processing cannot be done until the interpreter is run
  - Needs to run against control blocks interpreter creates
  - OUTPUT cards (including JESDS= and MERGE=YES) are not applied if the job does not run
    - JCL error, job canceled, etc.





- New option to run interpreter after converter before job runs
  - New keyword on JOBDEF (scope is a member)
    - INTERPRET=INIT|JES
      - INIT Run interpreter when job is selected to run
        - Default traditional way to run
      - JES Run interpreter after conversion
        - Converter and interpreter run in conversion phase
- When job is selected, interpreter is not run again
  - Control block are read from SPOOL and relocated
- Must be all z/OS 2.1 and \$ACTIVATE at LEVEL=Z11 to run this way
  - Otherwise setting has no effect
- Job must have gone through input phase on z/OS 2.1
- **NOTE:** No LOCATE processing is done for data sets used in JCL





- If INTERPRET=JES is selected
  - Both converter and interpreter run in a new address space
    - Address space name jesxClxx jesx subsystem name, xx is an instance number
    - Define address space to RACF same as JES2
      - Needs access to all PROCLIB data sets.
      - Does VERIFY CREATE for jobs being converted
  - PCEDEF CNVNUM= controls number of converters run
  - CISUB\_PER\_AS=nn indicates how many subtasks per JES2CI
    - Default is 5 per address space
    - Default number of converters is 10
    - Default number of JES2CI address spaces is 2 (10/5) JES2CI01 and JES2CI02





- Implications of code change
  - CNVT code to read IOT CBs moved to subtask
    - Calls CBIO exit 8 instead of exit 7
  - Exit 6 compatibly updated with this release
    - Same data passed to exit in registers 0 and 1
    - New is an XPL in register 2
      - XPL makes it easier to set job CLASS, SCHENV, and HOLD
    - Existing exits should continue to function without change
      - Presuming they use data areas passed to the exit
      - CNVT DTE (\$DTECNV) structure has changed significantly
        - Many field moved to \$CIWORK
  - New internal data set to store interpreter output
    - \$SWABLKS DD name
    - Always created by z/OS 2.1 JES2 during input phase





- Implications of setting INTERPRET=JES
  - Converter and interpreter run outside the JES2 address space
    - Exit 8 cannot access JES2 private storage
  - New exit 60 to perform function of exit 6
    - Exact same parameters as exit 6 (New XPL in register 2)
      - XPL includes setting job CLASS, SCHENV, and HOLD
    - Gets control in USER environment (R11 is HCCT)
    - Run in JES2CI address space (cannot access JES2 private storage)
    - New sample exits HASX60A and HASX60B
- New exit 59
  - Invoked after interpreter call and after processing OUTPUT cards
  - Invoked before writing data to \$SWABLKS DD
  - Same XPL as exit 60 (but passed in register 1)





# Using system symbols in batch JCL

- New option on JOBCLASS to allow system symbols substitution
  - SYSSYM=DISALLOW|ALLOW
  - ALLOW performs system symbol substitution in batch jobs
  - Set via \$T JOBCLASS command (MAS scope)
    - Remembers setting over restarts
- Most work is in the converter, JES2 owns the external
  - Only applies if job converted on a z/OS 2.1 converter





# Controlling where a job converts

- Currently conversion is controlled by factors like system affinity
  - Includes new SYSTEM and SYSAFF from JOB card
  - Also includes minimum MVS level set at input phase
    - Due to use of symbols
- New in z/OS 2.1 is ability to select conversion system based on SCHENV
  - New option on JOBDEF (scope MAS)
    - CNVT\_SCHENV=IGNORE|HONOR
    - Scheduling Environment parsed at input phase (or assigned)
    - HONOR says to only convert where SCHENV is available
      - When not available, job waits to convert (AWAITING CONVERSION)
  - Only applies if
    - The job that went through input on z/OS 2.1
    - Job is being selected by z/OS 2.1 converters
      - Down level members can select even if HONOR is set.





# Instream symbol substitution

- Symbols can now be used in instream data (similar to in JCL)
  - Instream data created by JES or converter
- Substitution occurs when application reads data
  - Using current value of any symbol
- Symbols can come from
  - JCL symbols made available using the EXPORT JCL statement
  - JES symbols created using JES Symbol Service (IAZSYMBL)
  - MVS system symbols either from conversion or execution system
- Substitution is controlled by a new keyword SYMBOLS
  - On DD data or DD \* statement
    - The default is not to perform symbol substitution
- Optional diagnostic logging of substitution can be requested
  - Controlled by the second value of the SYMBOLS keyword





# Instream symbol substitution

- Format of SYMBOLS= keyword on DD \* or DD DATA SYMBOLS=[(] JCLONLY | EXECSYS CNVTSYS [, DDname
- SYMBOLS=JCLONLY
  - Substitute EXPORTed JCL symbols and JES symbols (IAZSYMBL)
- SYMBOLS=EXECSYS
  - Substitute EXPORTed JCL, JES symbols and MVS system symbols
    - Execution system MVS symbols used
- SYMBOLS=CNVTSYS
  - Substitute EXPORTed JCL, JES symbols and MVS system symbols
    - Conversion system MVS symbols used (consistent with SYSSYM)
- DDname
  - Optional DD name which will receive the symbol substitution log
    - Any output DD name in the step can be used





## Instream symbol substitution - Example

```
//
          EXPORT SYMLIST=(DSN, VOL)
//
          SET DSN='ABC.DATA', VOL='123456'
//STEP1
          EXEC PGM=USERPGM1
//DATA
          DD
             DSN=&DSN, DISP=SHR
//SYSIN
          DD *, SYMBOLS=EXECSYS
   SYSTEM=&SYSNAME, DSNAME=&DSN, VOLUME=&VOL
   FUNCTION='&APPL NAME'
/ *
```

- Application created JES symbol APPL\_NAME
  - Value set to 'RECORD SEARCH'.
- Application reading data on SY1 will see these records SYSTEM=SY1, DSNAME=ABC.DATA, VOLUME=123456 FUNCTION='RECORD SEARCH'



# Instream symbol substitution – Log example



```
SYSOUT=A
//MYLOG
          DD
//SYSIN
          DD
               *, SYMBOLS=(EXECSYS, MYLOG)
SYSTEM=&SYSNAME, DSNAME=&DSN, VOLUME=&VOL
```

#### The MYLOG data set will show results of the substitution

SYSIN RECORD 1 BEFORE SUBSTITUTION

SYSTEM=&SYSNAME, DSNAME=&DSN, VOLUME=&VOL SYSIN

SYSTN RECORD 1 AFTER SUBSTITUTION

SYSTEM=SY1, DSNAME=ABC.DATA, VOLUME=123456 SYSIN





## Instream symbol substitution rules

- Symbols and value can be different lengths
- Substitution attempts to preserve columns
  - Will compress out blanks to right of symbol

12345678901234567890123456789012345678901234567890123456789 SYSTEM=&SYSNAME, DSNAME=&DSN, VOLUME=&VOL Comment

&SYSNAME=SY1 &DSN=ABC.DATA.TEXT &VOI=WORK12 Comment SYSTEM=SY1, DSNAME=ABC.DATA.TEXT, VOLUME=WORK12

If not enough blanks, data is shifted right

&SYSNAME=SY1 &DSN=ABCDEFG.DATASET.TEXT &VOL=WORK12 SYSTEM=SY1, DSNAME=ABCDEFG.DATASET.TEXT, VOLUME=WORK12 Comment

- Data can be shifted beyond LRECL
  - Will present long record to application (potentially causing I/O error)
  - Application can attempt to recover from error by passing longer buffer
- JCL coder's responsibility to ensure enough room for substitution





#### Minimum MVS level

- New minimum z/OS level associated with a job
  - Set if JOB uses certain functions only available in a specific release
  - Can be set by
    - JES2 during input processing.
      - eg. If symbols passed on the initiator
    - The MVS converter
      - eg. If SYMBOL= on DD card is specified
    - JES2 parameter settings
      - eg. If DSENQSHR=AUTO on JOBCLASS
  - Displays using \$DJ,LONG keyword REQUIRES\_ZOS=
    - Level effectively alters job affinity
  - Future releases or maintenance may add new requirements





# Multi character job class

- Add support for longer job classes (1-8 character)
  - New limit is 512 job classes including 1 character and STC/TSU
  - Valid characters are A-Z and 0-9
- New commands created to ADD and DELETE job classes
  - The 36 traditional classes are predefined and cannot be deleted
- Traditional job class cannot be deleted but they can be set inactive
  - New attribute for BATCH job classes (traditional and 8 character)
  - Set via \$T operator command
    - ACTIVE=YES|NO
  - ACTIVE=NO job class cannot be used during input processing
    - Prevents new use of the job class
    - Also applies if class is a default (be careful)
  - Does NOT impact other processing (jobs in class still run)





# Job class groups

- Group batch job classes to simplify specification
  - New attribute of a job class is the GROUP name
  - Each job class can be associated with only one group
    - Applies to traditional and multi-character batch job classes
  - Group names must be unique and cannot match any job class
    - Cannot have 1 character group names
  - Command to display groups and classes in group
  - Group name can be specified on initiator or device selection
    - Round robin selection is done for classes in a group





#### JOBCLASS commands

- The \$ADD JOBCLASS command defines a new job class
  - Same operands as \$T JOBCLASS or JOBCLASS init statement
  - Class name cannot match an existing job class group
  - All members must be z/OS 2.1
  - Must be in z11 \$ACTIVATE mode

```
$ADD JOBCLASS(CLASS1), ACTIVE=YES, MODE=WLM
```

```
$HASP837 JOBCLASS(CLASS1)
                               ACTIVE=YES, GROUP=, MODE=WLM,
$HASP837
                               OAFF=(ANY), OHELD=NO, SCHENV=,
$HASP837
                               XEOCOUNT=(MAXIMUM=*, CURRENT=0),
$HASP837
                               XEOMEMBER (IBM1) = (MAXIMUM=*,
                               CURRENT=0)
SHASP837
```





#### JOBCLASS commands

- The \$DEL JOBCLASS command deletes a job class
  - Cannot delete 1 character job classes or STC/TSU
  - Class must be set to ACTIVE=NO before deleting it
  - Class deleted from
    - Group (if any) it is in
    - Any selection list (removed from list)
    - Default job class (replace with JOBDEF default class)
      - Cannot delete from all default setting be careful
  - Filters are supported

```
$DEL JOBCLASS(CLASS1)
```

\$HASP837 JOBCLASS(CLASS1)

FLEMENT DELETED





#### JOBCLASS commands

- \$T JOBCLASS command updated with new operands
  - Is job class usable for new jobs entering the systems
    - ACTIVE=YESINO
  - Specifies the job class group the job is in
    - GROUP=*grpname*

```
$T JOBCLASS(CLASS1, CLASS2), GROUP=XYZ, ACTIVE=YES
$HASP837 JOBCLASS(CLASS1)
                               ACTIVE=YES, GROUP=XYZ, MODE=JES,
$HASP837
                               QAFF=(ANY), QHELD=NO, SCHENV=,
$HASP837
                               XEOCOUNT=(MAXIMUM=*, CURRENT=0),
$HASP837
                               XEOMEMBER (IBM1) = (MAXIMUM=*,
$HASP837
                               CURRENT=0)
$HASP837 JOBCLASS(CLASS2)
                               ACTIVE=YES, GROUP=XYZ, MODE=JES,
$HASP837
                               OAFF=(ANY), OHELD=NO, SCHENV=,
$HASP837
                               XEOCOUNT=(MAXIMUM=*, CURRENT=0),
$HASP837
                               XEOMEMBER (IBM1) = (MAXIMUM=*,
$HASP837
                               CURRENT=0)
```





#### **CLASSGRP** commands

- New command to display job class groups
  - Displays group name and list of classes in the group
  - \$D CLASSGRP(name)

```
$D CLASSGRP
```

```
$HASP816 CLASSGRP(TEST)
                               B, NONE, A
$HASP816 CLASSGRP(XYZ)
                               CLASS1, CLASS2
```





# Specifying job classes

- Specifying job class selection list (CLASS=)
  - Applies to \$T INITnn, OFFn.JR and OFFn.JT
  - Two syntax now supported
    - List of 1-36 single character classes
    - List of 1-8 job classes or job class groups
- Traditional syntax 1-36 single character classes CLASS=**ABCD**
- New syntax 1-8 classes or class groups CLASS=(CLASSX, CLASSY, GROUP1) CLASS=(A,B,C,D)
- Presence of parenthesis indicates syntax in use
  - Beware of CLASS=TEMP vs CLASS=(TEMP)
    - First is 4 classes T,E,M,P second is 1 class (or group) TEMP





#### Initialization statements

- New JOBCLASS operands added to initialization statement
  - ACTIVE and GROUP operands
    - As with other operands, only applies on cold start
- New job classes can be added on any start
  - Any JOBCLASS in the init deck that does not exist is added
    - All members must be 2.1 and must be z11 \$ACTIVATE mode
    - Operands set (or defaulted) on new class are honored
    - CAN RESURRECT DELETED JOB CLASS
      - Always keep init deck current
- Cannot delete JOBCLASS using init deck
- Changes to CLASS= specification also apply to init statements
  - CLASS=TEMP vs CLASS=(TEMP)





## JCL, SMF records, etc.

- CLASS= on JOB card updated to support 1-8 characters
- General philosophy for 1 character class fields in multiple CBs
  - Existing 1 byte fields set to 1st character of multi character class
- MVS JMR updated to support longer class value
  - New extended JMR created to add space to the JMR
    - At end of current JMR area
    - JMRVERSN set to 1 if extension exists
  - New job class field JMRCLAS8 (always set to job class)
- SMF field SMF26WJC set to full job class value
- SMF field SMF30CL8 (formerly JES3 only) used for JES2 class value
- SSIs already had 8 character fields for job class
  - Code now populates/uses entire 8 character field





#### Coexistance

- MAS with down level releases supported (with appropriate) maintenance)
  - However cannot start down level member if
    - A multi character job class is defined
    - A job is in a job class group
  - If a job class is ACTIVE=NO
    - Down levels can start but they ignore ACTIVE setting
- Cannot \$ACTIVATE to z2 level if
  - A multi character job class is defined
  - A job is in a job class group





# Exit considerations (exploitation actions)

- Once 8 character job classes defined:
  - 36 class queue heads in the \$HCT (\$JQHEADI) not updated
    - For new and existing classes
  - JQETYPE does not reflect job class for 8 character classes
    - JQETYPE unchanged for 1 character classes
  - 8 character field set in new field in \$JCT (in an IBM) extension)
- To simplify exit writing do not update class in JCT/JQE if possible
  - Use fields in XPLs to update job class (1 or 8 byte value)
  - Exit 6 updated with XPL and field in XPL to set class
  - Other exits (2, 4, 50, 52, 54 etc) already had class fields





# SAF/RACF checks for job classes

- JES2 now supports verifying a jobs access to a job class
  - This eliminates a number of customer exits to do similar check
- The check verifies READ access to a entity name in the JESJOBS class
  - JOBCLASS.nodename.jobclass.jobname
    - nodename is the local NJE node name
    - jobclass is the job class to be associated with the job
    - jobname is the job name of the job being submitted
- The check is activated by 2 profiles in the FACILITY class
  - JES.JOBCLASS.OWNER controls an owner check
  - JES.JOBCLASS.SUBMITTER controls a submitter check
    - If both profiles exist, 2 AUTH checks are made
      - Both checks must PASS for job to continue
  - Only search for discrete (non generic) profiled in the FACILITY class.
  - Access list and UACC of FACILITY class profiles are not used





# SAF/RACF usage example

- User TOM submits a CLASS=C job named TEST with USER=TONI
  - NJE Note name is POK
- If there is a JES.JOBCLASS.OWNER profile in the FACILITY class
  - A check is made if user TONI has READ access to JESJOBS profile
    - JOBCLASS.POK.C.TEST
- If there is a JES.JOBCLASS.SUBMITTER profile in the FACILITY class
  - A check is made if user TOM has READ access to JESJOBS profile JOBCLASS.POK.C.TEST
- If both FACILITY class profiles exist, then TOM and TONI must have access to the JESJOBS class profile





#### JESJOBS class considerations

- Activating JOBCLASS checking considerations:
  - Ensure profiles exist to permit jobs that need to run have access
    - Start with a JOBCLASS.\*\* profile with UACC of read
      - Blanket permits every job to run
    - Add profiles to restrict job classes
      - Consider warn mode at first
      - JOBCLASS.\*.R.\* restricts class R for all job names and nodes
  - If JESJOBS class never used
    - Ensure before starting that SUBMIT.\*\* has appopriate access
    - Review documentation on CANCEL.\*\*
    - Refrain from a \* profile with UACC other than NONE
  - If JESJOBS class is in use, check for \* profiles
    - OK if UACC of NONE, not a good idea if not NONE
- Create facility class profile AFTER setting up JESJOBS profiles.



#### IBM



## System z Social Media

- System z official Twitter handle:
  - @ibm\_system\_z
- Top Facebook pages related to System z:
  - Systemz Mainframe
  - IBM System z on Campus
  - IBM Mainframe Professionals
  - Millennial Mainframer
- Top LinkedIn Groups related to System z:
  - Mainframe Experts Network
  - Mainframe
  - IBM Mainframe
  - System z Advocates
  - Cloud Mainframe Computing



- Leading Blogs related to System z:
  - Evangelizing Mainframe (Destination z blog)
  - Mainframe Performance Topics
  - Common Sense
  - Enterprise Class Innovation:
     System z perspectives
  - Mainframe
  - MainframeZone
  - Smarter Computing Blog
  - Millennial Mainframer

- YouTube
  - IBM System z





#### **Questions?**

# Questions?

Session 14233









