

SDSF Product Update for z/OS 2.1

Session 14244

SHARE in Boston, Summer 2013

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Session Objectives

- Describe the SDSF support associated with several 2.1 enhancements
 - 64-bit support
 - 8-character job class
 - Print enhancements
 - Sort enhancements
 - JESPLex scoping
 - System symbolics support
 - REXX/Java enhancements (BROWSE and LOG)
 - Security Assist
 - Miscellaneous changes

64-bit support

▪ Problem Statement / Need Addressed

- Numbers of rows for many displays continues to increase as the number of jobs and output elements allowed increases
- SDSF receives ABEND878 and other symptoms due to tables getting too large, or simply due to storage fragmentation

• Solution

- SDSF row data moved to 64-bit storage
- 64-bit storage requested on SSI 80 (job information)
- ULOG buffers moved to 64-bit cell pool

• Benefit / Value

- Larger tables supported; storage fragmentation issues mitigated.

ISF121I message

- New ISF121I dialog message added when unable to obtain 64-bit storage
 - Issued once per session, after first failure
 - Will attempt to obtain 31-bit storage instead
 - If storage is not available request will result in ABEND if storage request was unconditional

ISF121I Module *modname* was unable to obtain *nnnnnnnnnn_nnnnnnnnn* bytes of storage (*nnn* segments). Check MEMLIMIT value.

8-character job class

- **Problem Statement / Need Addressed**

- One character for job class is inadequate
- JES2 supports 8-character classes starting in z/OS 2.1
 - JES3 has always supported them

- **Solution**

- Displays updated to support 8-character job class in JES2 environment

- **Benefit / Value**

- Longer job class names supported in both JES2 and JES3 environment

JC panel

- Column Changes
 - **ACTIVE**
 - Indicates whether job class is active (YES/NO)
 - Active status also controls highlighting of row
 - Overtypable (\$TJOBCLASS,ACTIVE=)
 - **GROUP**
 - Job class group
 - Now applies to both JES2 and JES3
 - Overtypable (\$TJOBCLASS,GROUP=)
 - By default is not at end of line but after STATUS column (Same location for both JES2 and JES3 display)
- Action changes
 - **ST** action is not allowed for multi-character job classes other than STC and TSU due to ST command syntax restrictions

New and changed columns on other panels



- **DA, I, ST, O, and H** panels
 - The job class column (**JCLASS**) is now up to 8 characters under JES2
 - For compatibility, width is 1 character if no job classes are defined other than A-Z and 0-9
 - Addition of classes more than 1 character in length will cause C column to increase to 8 characters wide
 - ARRANGE or ISFPARMS settings can be set to override this behavior



New and changed columns on other panels

- **INIT** panel
 - Existing **ICLASS** column represents list of classes
 - New **ICLASS1-8** columns display first 8 classes
 - ICLASS is overtypeable
 - Overtyping extension (+) allows up to 36 classes
 - ICLASS1 is overtypeable
 - Overtyping extension (+) allows up to 8 classes (or class groups)
 - When multi-character job classes or groups are present in class list:
 - ICLASS column is no longer overtypeable for that initiator
 - Any multi-character classes display as a period in ICLASS list
- **SO** panel
 - **SCLASS, SCLASS1-8** behave like ICLASS, ICLASS1-8 on INIT

INIT panel example

Display Filter View Print Options Search Help

SDSF INITIATOR DISPLAY SY1

LINE 1-17 (100)

COMMAND INPUT ==>

SCROLL ==> CSR

NP	ID	Status	Classes	Class1	Class2	Class3	Class4	Class5
	1	INACTIVE	..ABC	FRED	WILMA	A	B	C
	2	INACTIVE	N	N				
	3	DRAINED	A	A				
	4	DRAINED	JIFAB74	J	I	F	A	B
	5	DRAINED	EB74A	E	B	7	4	A
	6	DRAINED	BAG	B	A	G		
	7	DRAINED	AB	A	B			
	8	DRAINED	GAB	G	A	B		
	9	INACTIVE	S	S				
	10	DRAINED	AB	A	B			
	11	DRAINED	AB	A	B			
	12	DRAINED	AB	A	B			
	13	DRAINED	AB	A	B			
	14	DRAINED	AB	A	B			
	15	DRAINED	AB	A	B			
	16	DRAINED	AB	A	B			
	17	DRAINED	AB	A	B			

Class list oertype not allowed
FRED and WILMA replaced by .

INIT panel oertype extension example

Display Filter View Print Options Search Help

SDSF INITIATOR DISPLAY SY1 LINE 1-17 (100)

COMMAND INPUT ==> SCROLL ==> CSR

NP

Oertype Extension

Column Classes
Maximum length 36

Type a value.
==> ABCDEFGHIJ

F1=Help F12=Cancel

9	INACTIVE	S	S
10	DRAINED	AB	A B
11	DRAINED	AB	A B
12	DRAINED	AB	A B
13	DRAINED	AB	A B
14	DRAINED	AB	A B
15	DRAINED	AB	A B
16	DRAINED	AB	A B
17	DRAINED	AB	A B

INIT panel overtyp extension example

Display Filter View Print Options Search Help

SDSF INITIATOR DISPLAY SY1

COMMAND INPUT ==>

NP	ID	Status
1		INACTIVE
2		INACTIVE
3		DRAINED
4		DRAINED
5		DRAINED
6		DRAINED
7		DRAINED
8		DRAINED
9		INACTIVE
10		DRAINED
11		DRAINED
12		DRAINED
13		DRAINED
14		DRAINED
15		DRAINED
16		DRAINED
17		DRAINED

LINE 1-17 (100)

SCROLL ==> CSR

Class4	Class5
B	C
A	B
4	A
AB	A
AB	A
AB	A

Overtyp Extension

Column Class1
Maximum length 8

Type values or use blanks to
erase values.

==> FRED

==> WILMA

==> A

==> B

==> C

==> _____

==> _____

==> _____

F1=Help F12=Cancel

Print Enhancements

▪ Problem Statement / Need Addressed

- Printing to SYSOUT always allocates RECFM=VBA, LRECL=240
- Printing always uses ASA carriage control
- No ability to specify writer name when printing to SYSOUT
- Print “as is” functionality is desirable

• Solution

- Print to SYSOUT now allows RECFM, LRECL, and writer name
- Print to SYSOUT can use source data SYSOUT attributes
- Carriage control based on RECFM of destination data set

• Benefit / Value

- Print “as is” is now possible

Print to SYSOUT Panel

SDSF Open Print

COMMAND INPUT ===>

SCROLL ===> CSR

Enter SYSOUT attributes below:

Class ===> (A through Z, 0 through 9)

Copies ===> (1 to 255)

Forms ===> **

Destination ===>

FCB ===>

UCS ===>

Process Mode ===> **

Pagedef ===> **

Formdef ===> **

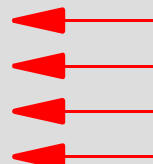
Output Descriptor Name ===> (Omit with fields marked with **)

Writer name ===> NEW **

Record format ===> NEW

Record length ===> NEW

Use source attributes ===> NEW (YES or NO)



Print to SYSOUT panel

- **Writer name**
 - Specifies the writer name to be associated with the SYSOUT
- **Record format**
 - Specifies the RECFM of the SYSOUT (Default: VBA)
- **Record length**
 - Specifies the LRECL of the SYSOUT (Default: 240)
- **Use source attributes**
 - Attempts to obtain the following attributes from the source data:
 - Class, forms, destination, FCB, UCS, writer, process mode, RECFM, and LRECL
 - Panel is redisplayed with obtained values
 - Some properties may be unavailable in some contexts
 - LRECL is maximum LRECL of all datasets selected

Rexx/Java

- New Rexx variables
 - **isfpqrtwritername** – specifies the writer name for a Print to SYSOUT request
 - **isfpqrtsourceatts** = 'YES' or 'NO' – indicates whether source attributes are to be fetched on a Print to SYSOUT
 - Explicitly specified attributes will be honored even if isfsourceatts='YES'
 - **isfpqrtrecfm** and **isfpqrtlrecl** – now honored for Print to SYSOUT
- New Java methods in ISFPrintSysoutSettings and ISFPrintDatasetSettings
 - **addISFPrtWriter()**, **removeISFPrtWriter()**
 - **addISFPrtSourceAttributes()**, **removeISFPrtSourceAttributes()**

Carriage control

- Prior to z/OS 2.1, all printed data received ASA carriage control (regardless of output RECFM)
 - Machine carriage control was converted to ASA
 - ASA carriage control was inserted if none existed
- In z/OS 2.1, printed data can receive carriage control based on RECFM of output data set (Print SYSOUT and Print Data Set) if desired
 - RECFM ending in A (VBA, FA, etc.) receives ASA carriage control
 - Converted from machine or inserted if necessary
 - RECFM ending in M (VBM, FM, etc.) receives machine carriage control
 - Converted from ASA or inserted if necessary
 - All others (VB, F, etc) receive no carriage control
 - Machine or ASA carriage control is stripped

Carriage control

- The new **SET PRTCCASA** command can be used to control new carriage control behavior
- The syntax is as follows:

SET PRTCCASA ON | OFF | ?

where

ON indicates that all datasets should be printed with ASA carriage control regardless of output RECFM

OFF indicates that carriage control should be updated to be consistent with the output RECFM

? indicates the current value is to be queried

- The value of SET PRTCCASA is saved in the ISPF profile across SDSF sessions.

Rexx/Java

- New Rexx variables
 - **isfpirtccasa** – corresponds to the SET ISFPRTCCASA command
 - Valid values are ON and OFF
- New Java methods in ISFPrintSysoutSettings and ISFPrintDatasetSettings
 - **addISFPrtCCASA(*boolean-value*)**
 - **removeISFPrtCCASA()**

Custom properties

- **Print.CCTL.AlwaysUseASA**

- Defines the default to use if SET PRTCCASA was not specified by the user
- When set to TRUE, by default, all printed data sets receive ASA carriage control (as in pre-2.1 SDSF)
- When set to FALSE, by default, all printed datasets receive carriage control consistent with the RECFM of the output data set
- Default: TRUE

Extended Console Name

▪ Problem Statement / Need Addressed

- ULOG display allocates extended console for ULOG based on either TSO userid or SET CONSOLE value (from ISPF profile)
- Multiple instances of SDSF (split screen or multiple logons) send messages to initial session's ULOG
- SET CONSOLE can be changed manually for each but this is an inadequate solution if needed frequently
- This can also be an issue for REXX if isfulog. is used

• Solution

- If console is in use, SDSF will optionally attempt to use a different extended console name (by appending one character)

• Benefit / Value

- Unique ULOGs for each session for split screen or multiple logons

SET CONMOD

- The new **SET CONMOD** command is used to control modification of the console name when the console name is in use.
- The syntax is as follows:

SET CONMOD ON | OFF | ?

where

ON indicates that console name modification is to be done if activation fails due to the console name being in use

OFF indicates that the console name is not to be modified

? indicates the current value is to be queried

- The value of SET CONMOD is saved in the ISPF profile across SDSF sessions.

Rexx/Java

- New Rexx variables
 - **isfconmod** – corresponds to the SET CONMOD command
 - Valid values are YES and NO
- New Java methods
 - **addISFConMod(), removeISFConmod()**

CONMOD custom properties

- **Console.EMCS.NoConMod**
 - When set to TRUE, **SET CONMOD ON** is not allowed. The first instance of the extended console will always be used.
 - Default: FALSE
- **Console.EMCS.ConModChars**
 - Specifies a list of up to 32 characters to choose from (in order) when appending a character to the extended console name
 - Valid characters are A-Z, 0-9, \$, #, @
 - Default: \$#@12345

Split screen example

```
Display Filter View Print Options Search Help
-----
SDSF ULOG  CONSOLE D96CLW1                LINE 0          COLUMNS 02- 133
COMMAND INPUT ==> set conmod on           SCROLL ==> CSR
***** TOP OF DATA *****
SY1      2013023  18:42:33.52             ISF031I CONSOLE D96CLW1 ACTIVATED
***** BOTTOM OF DATA *****
```

Messages from top session go to
top session's ULOG

```
. . . . .
Display Filter View Print Options Search Help
-----
SDSF ULOG  CONSOLE D96CLW1$              LINE 0          COLUMNS 02- 133
COMMAND INPUT ==>                        SCROLL ==> CSR
***** TOP OF DATA *****
SY1      2013023  18:45:28.70             ISF041I CONSOLE NAME D96CLW1 MODIFIED
SY1      2013023  18:45:28.70             ISF031I CONSOLE D96CLW1$ ACTIVATED
***** BOTTOM OF DATA *****
```

Messages from bottom session
go to bottom session's ULOG

Sort Enhancements

- **Problem Statement / Need Addressed**
 - SDSF supports only 2 sort criteria at a time
 - There are scenarios where more are needed
- **Solution**
 - Maximum number of sort criteria increased to 10
 - Additional SET DISPLAY options to display sort criteria and filters
- **Benefit / Value**
 - More flexibility in sorting panel data

SORT Command

- Up to 10 total sort criteria can be associated with each panel
- SORT command continues to support only two criteria at a time on command line
 - **isfsort** Rexx variable supports up to 10 (split into several commands)
- Sort criteria can now be qualified with a plus (+) or minus (-) to add or remove criteria from the list
 - For example
 - SORT JOBNAME A JOBID A**
Sets jobname and job id as ascending sort criteria
 - SORT +TGNUM A TGPCT A**
Adds TGNUM and TGPCT as a third and fourth sort criteria
- **SORT OFF** remembers prior sort criteria
- Sort popup can be used to specify complete list
 - List replaces “Major” and “Minor” column specification

SORT Popup

Display Filter View Print Options Search Help

```
-----  
SDSF STATUS DISPLAY ALL  
COMMAND INPUT ==>  
PREFIX=**  DEST=(ALL)  O  
PrtDest,EQ,LOCAL  
ACTION=//,=,+,?,A,C,CA,C  
NP  JOBNAME  JobID  O  
    $MASCOMM S0000001 J  
    BPXAS     S0000025 O  
    BPXAS     S0000026 O  
    BPXAS     S0000027 O  
    BPXAS     S0000028 O  
    BPXAS     S0000029 O  
    DIP       S0000015 S  
    D96CLW1   T0000033 D  
    FTPD      S0000030 S  
    GTZ       S0000003 S  
    HZSPROC   S0000016 S  
    INETD     S0000031 S  
    INIT      S0000017 S  
    INIT      S0000018 S  
    INIT      S0000019 S  
    INIT      S0000020 S
```

Sort

Command ==> _____

Type sort criteria. Type / for Column Title to see a list. Press F11/23 to clear all sort criteria.

Sorting is ON

Column Title	A or D (Ascending or Descending)
--------------	----------------------------------

<u>JOBNAME</u>	<u>A</u>
----------------	----------

<u>JOBID</u>	<u>A</u>
--------------	----------

<u>TGNUM</u>	<u>A</u>
--------------	----------

<u>TGPCT</u>	<u>A</u>
--------------	----------

<u>/</u>	<u>—</u>
----------	----------

<u> </u>	<u>—</u>
----------	----------

<u> </u>	<u>—</u>
----------	----------

<u> </u>	<u>—</u>
----------	----------

<u> </u>	<u>—</u>
----------	----------

<u> </u>	<u>—</u>
----------	----------

SORT Popup (criteria selection)

Display Filter View Print Options Search Help

SDSF STATUS DISPLAY ALL
COMMAND INPUT ==>
PREFIX=** DEST=(ALL) O
PrtDest,EQ,LOCAL
ACTION=//,=,+,?,A,C,CA,C
NP JOBNAME JobID O
\$MASCOMM S0000001 J
BPXAS S0000025 O
BPXAS S0000026 O
BPXAS S0000027 O
BPXAS S0000028 O
BPXAS S0000029 O
DIP S0000015 S
D96CLW1 T0000033 D
FTPD S0000030 S
GTZ S0000003 S
HZSPROC S0000016 S
INETD S0000031 S
INIT S0000017 S
INIT S0000018 S
INIT S0000019 S
INIT S0000020 S

Sort
Column Select Row 1 to 15 of 45

Command ==> _____

Selection: _____

1. JOBNAME
2. JobID
3. Owner
4. Prty
5. Queue
6. C
7. Pos
8. SAff
9. ASys
10. Status
11. PrtDest
12. SecLabel
13. TGNum
14. JobID
15. C

Release compatibility with >2 sort criteria

- Prior to z/OS 2.1, all sort criteria are saved in ISPF profile as one big ISPF variable (ISFSRTC for JES2, ISFSRTC3 for JES3)
- In z/OS 2.1, sort criteria for each display are stored in separate variables (ISF2Snnn for JES2, ISF3Snnn for JES2)
 - ISFSRTC and ISFSRTC3 are still maintained for compatibility, but only populated with the first 2 sort criteria
 - If both new and compatibility variables exist,
 - The new variable is used if the first two criteria match the compatibility variable.
 - The compatibility variable is used if they are different.
 - This ensures that:
 - if the sort criteria are changed on a pre-2.1 release, the changes are honored
 - if the sort criteria are not changed on a pre-2.1 release, up to 10 sort criteria are remembered when returning to 2.1

SET DISPLAY

- Pre-z/OS 2.1
 - **SET DISPLAY ON** shows up to 2 sort criteria and count of filters
- z/OS 2.1
 - **SET DISPLAY ON** still shows up to 2 sort criteria and count of filters
 - If more than 2 sort criteria, the number of additional criteria are listed as “+n”
 - For example, 3 criteria will display the first 2 and a “+1”
 - New **SET DISPLAY LONG** will show all sort criteria and will list all filters as “colname,op,value” triplets
 - May exceed 2 lines of display

SET DISPLAY ON example

Display Filter View Print Options Search Help											
SDSF STATUS DISPLAY ALL CLASSES						LINE 1-15 (33)					
COMMAND INPUT ==> set display on						SCROLL ==> CSR					
PREFIX=** DEST=(ALL) OWNER=* SORT=JOBNAME/A JobID/A +2 SYSNAME=*											
FILTERS=5											
NP	JOBNAME	JobID	Owner	Prty	Queue	C	Pos	SAff	ASys	Statu	
	\$M\$SCOMM	S0000001	JES2	15	PRINT		1				
	BPXAS	S0000025	OMVSKERN	1	PRINT		12				
	BPXAS	S0000026	OMVSKERN	15	EXECUTION			SY1	SY1		
	BPXAS	S0000027	OMVSKERN	1	PRINT		10				
	BPXAS	S0000028	OMVSKERN	15	EXECUTION			SY1	SY1		
	BPXAS	S0000029	OMVSKERN	1	PRINT						
	DI				NT						
	D9				CUTION						
	FTPD	S0000030	SYSTASK	1	PRINT						
	GTZ	S0000003	SYSTASK	15	EXECUTION			SY1	SY1		
	HZSPROC	S0000016	SYSTASK	15	EXECUTION			SY1	SY1		
	INETD	S0000031	SYSTASK	1	PRINT		9				
	INIT	S0000017	SYSTASK	15	EXECUTION			SY1	SY1		
	INIT	S0000018	SYSTASK	15	EXECUTION			SY1	SY1		
	INIT	S0000019	SYSTASK	15	EXECUTION			SY1	SY1		
	INIT	S0000020	SYSTASK	15	EXECUTION			SY1	SY1		
	INIT	S0000021	SYSTASK	15	EXECUTION			SY1	SY1		

Indicates five total filters

Indicates two additional sort criteria (total of four)

SET DISPLAY LONG example

Display Filter View Print Options Search Help

```

SDSF STATUS DISPLAY ALL CLASSES                                LINE 1-14 (33)
COMMAND INPUT ==> set display long                               SCROLL ==> CSR
PREFIX=**  DEST=(ALL)  OWNER=*  SORT=JOBNAME/A JobID/A TGNu/A TGPct/A
SYSNAME=*  FILTERS=TGPct,GE,0 TGNu,GE,1 JobID,EQ,* JOBNAME,EQ,*
PrtDest,EQ,LOCAL
NP  JOBNAME JobID  Owner  Prty Queue  C  Pos  SAff  ASys Statu
$MASCOM S0000001 JES2    15 PRINT  1
BPXAS   S0000025 OMVSKERN 1 PRINT 12
BPXAS   S0000026 OMVSKERN 15 EXECUTION SY1 SY1
BPXAS   S0000027 OMVSKERN 1 PRINT 10
BPXAS   S0000028 OMVSKERN 15 EXECUTION
BPXAS
DIP
D96CLW1 T0000034 D96CLW1 15 EXECUTION SY1 SY1
FTPD    S0000030 SYSTASK 1 PRINT 8
GTZ     S0000003 SYSTASK 15 EXECUTION SY1 SY1
HZSPROC S0000016 SYSTASK 15 EXECUTION SY1 SY1
INETD   S0000031 SYSTASK 1 PRINT 9
INIT    S0000017 SYSTASK 15 EXECUTION SY1 SY1
INIT    S0000018 SYSTASK 15 EXECUTION SY1 SY1
INIT    S0000019 SYSTASK 15 EXECUTION SY1 SY1
INIT    S0000020 SYSTASK 15 EXECUTION SY1 SY1
  
```

All five filters are listed

All four sort criteria are listed

JES Plex Scoping

- **Problem Statement / Need Addressed**

- Some SDSF panels (DA, CK, PS, ENC) have SYSPLEX scope
- Some installations have multiple JES Plexes in a single SYSPLEX, with separate operations for each

- **Solution**

- Panels with SYSPLEX scope can now optionally be given JES Plex scope (via custom properties)

- **Benefit / Value**

- JES Plexes within a SYSPLEX can now be managed more independently

JES Plex Scoping

- New custom properties added
 - **Panel.DA.JES PlexScope**
 - **Panel.CK.JES PlexScope**
 - **Panel.PS.JES PlexScope**
 - **Panel.ENC.JES PlexScope**
 - **Panel.All.JES PlexScope**
 - Sets value for DA, CK, PS, ENC, and any future panels which default to SYSPLEX scope
- When set to TRUE, the corresponding panel has JES Plex scope
 - All systems on which an active member of the JES Plex exists, regardless of whether it's primary or secondary.
 - Jobs still display if running on one of these systems, even if running poly-JES and the job is not associated with the JES Plex.

Symbolics and Filtering

- **Problem Statement / Need Addressed**

- For some display filters, it makes sense for filters to have different values on different systems (e.g. system name)

- **Solution**

- System symbolics may now be specified within filter values

- **Benefit / Value**

- Filters can now have different values on different systems

Using symbolics in filters

- System symbolics can now be used as the filter value, or as part of the filter value, on the SET FILTER command
- Substrings of system variables can be used (similar to JCL)
- Symbols are not substituted until the filter is applied
- For example
 - **FILTER ASYS EQ &SYSNAME**
 - Filter on all rows where ASYS is equal to the value of the local system
 - **FILTER ASYS EQ &SYSNAME(1:2).***
 - Filter on all rows where ASYS begins with the first two characters of &SYSNAME
- Symbolics available may be viewed and selected from the filter popup by selecting Prompt (PF4) with a / in the value column.
 - Current symbolic values are also shown for reference

Symbolic filter example

Display Filter View Print Options Search Help

SDSF STATUS DISPLAY ALL CLASSES

LINE 1-16 (22)

COMMAND INPUT ==> filter ?

SCROLL ==> CSR

PREFIX=** DEST=LOCAL OWNER=* SORT=Pos/A SYSNAME=

FILTERS=ASys,EQ,&SYSNAME(1:2).* JOBNAME,EQ,&JOBNAME.%

NP	JOBNAME	JobID	Owner	Prty Queue	C	Pos	SAff	ASys	Statu
	D96CLW1	T0000070	D96CLW1	15 EXECUTION			SY1	SY1	
	D96CLW1A	J0000123	D96CLW1	15 EXECUTION			SY2	SY2	

Symbolic is not resolved until applied

Filter Popup

Display Filter View Print Options Search Help

SDSF STATUS DISPLAY ALL
COMMAND INPUT ==> filt
PREFIX=** DEST=LOCAL
FILTERS=ASys,EQ,&SYSNAM
NP JOBNAME JobID
D96CLW1 T0000070
D96CLW1A J0000123

Filter

Row 1 to 9 of 25

Command ==> _____

Type filter criteria. Press F4/16 in the Column or Oper field for values, or in the Value field for system symbols. Press F11/23 to clear all filter criteria.

Filtering is ON

AND/OR between columns AND (AND/OR)
AND/OR within a column OR (AND/OR)

Column	Oper	Value (may include * and %)
<u>ASYS</u>	<u>EQ</u>	<u>&SYSNAME(1:2).*</u>
<u>JOBNAME</u>	<u>EQ</u>	<u>&JOBNAME.%</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Press PF4 with cursor in Value column to obtain list of symbols.

Filter Popup

Display Filter View Print Options Search Help

```
-----  
SDSF STATUS DISPLAY ALL  
COMMAND INPUT ==> filt  
PREFIX=** DEST=LOCAL  
FILTERS=ASys,EQ,&SYSNAM  
NP  JOBNAME  JobID  
    D96CLW1  T0000070  
    D96CLW1A J0000123
```

Filter Row 1 to 9 of 25

System Symbols Row 1 to 12 of 32

Command ==> _____

The values may change. Use them only as examples.

Selection: _____

	Symbol	Value
1.	&DAY.	31
2.	&DSQUAL.	D96CLW1
3.	&HHMMSS.	213119
4.	&HOSTNAME.	CHIPWOOD
5.	&HR.	21
6.	&JDAY.	031
7.	&JESDRVR.	DRZD07
8.	&JLWTST.	TEST
9.	&JOBNAME.	D96CLW1
10.	&LHHMMSS.	163119
11.	&LHR.	16
12.	&LJDAY.	031

Select by number

Selected variable is
appended to the current
value for the filter

System symbolic considerations

- Characters () : and . (parens, colon, and period) are allowed as values on SET SCHARS (generic and placeholder characters)
 - If you use these characters in SCHARs, strings may change and you may not achieve the desired filter
- Symbols may be defined on one system but not another
 - If symbol is used but not defined, no substitution will occur, which may also prevent the desired filtering
- You can disallow the use of system symbolics in filters by setting the custom property **Command.FILTER.SymbolsDisabled** to **TRUE**
 - System symbolic substitution is not attempted
 - Value popup with list of available symbolics is disabled

Rexx/Java Browse

▪ Problem Statement / Need Addressed

- Interface to browse data sets in Rexx and Java too cumbersome
 - **PARM(NP SA)** or **PARM(NP SJA)** requires user to manage allocations of individual data sets
 - The number of concurrent allocations for jobs with many data sets can result in other problems (such as below-the-line storage shortages)

• Solution

- New ISFBROWSE command to browse data
 - Lines returned in isfline. stem variable
- Most ISFBROWSE features extend to existing ISFLOG command

• Benefit / Value

- Easier to look at spool data sets and syslog/operlog from Rexx/Java
- SDSF manages all allocation/unallocation and OPEN/CLOSE calls

ISFBROWSE command (REXX)

ISFBROWSE *panel_name* TOKEN(*token*) (*options*)

- ***panel_name*** is the panel name
 - DA, ST, I, O, H, and CK are supported
- ***token*** is the row token returned by ISFEXEC/ISFACT
 - Multiple tokens or stem variables are not supported
- ***options***
 - **JCL** option
 - Browse the JCL for the job
 - **CCASIS** option
 - ASA carriage control is not added to records with no carriage control

ISFBROWSE command (REXX)

ISFBROWSE *panel_name* TOKEN(*token*) (*options*

- *options*
 - **NOCLOSE** option
 - Data sets are not closed/unallocated unless necessary. Subsequent requests for the same row do not need to redo the open/allocation.
 - All datasets/unallocations are done when EOF is reached, or a call without NOCLOSE is done
 - **VERBOSE** option
 - Additional diagnostic messages are returned in **isfmsg2**.

REXX variables (Input)

- **isflinelim** – maximum number of lines to return on this request
- **isfstartlinetoken** – represents first line to be returned
 - If null or unspecified, top-of-file is used
- **isfscrolltype** – represents any scrolling action to be done
 - **UP/DOWN** – scroll up or down
 - **NEXT/PREV** – scroll up and down by data sets
 - **FINDNEXT/FINDPREV** – find next or previous instance of a string
 - **TOP** – go to the top
 - **BOTTOM** – go to **isflinelim** lines from the bottom
- **isfscroll** – the number of lines to scroll (UP/DOWN) or number of data sets to scroll (NEXT/PREV)
 - All scrolling is relative to line passed in **isfstartlinetoken**

REXX variables (Input)

- **isffind** – indicates a string to be located when FINDNEXT or FINDPREV
 - Case-insensitive search is done
- **isffindlim** – maximum number of lines to search
- **isffindstartcol** -
 - Starting column for find string
 - Minimum start column if isffindendcol is specified
- **isffindendcol** – Maximum end column for find string

REXX variables (Output)

- **isfline.** stem variable – the output lines
- **isfmsg, isfmsg2.** - messages
- **isffirstlinetoken** – token representing first line
 - If null, indicates TOF was reached
- **isfnextlinetoken** – token representing next line after the last one that was returned
 - If null, indicates EOF was reached
- **isffirstlinedsid, isflastlinedsid** – dsids of the datasets in which the first and last line returned are located
- **isffirstlinerecn, isflastlinerecn** – record number within dataset of the first and last line returned

Example

```
rc=isfcalls("on")
```

```
Address SDSF "ISFEXEC ST" /* Access status panel */
```

```
do ix=1 to JNAME.0 /* For all jobs */
```

```
if JNAME.ix = "D96CLW1" then /* Examine job name */
```

```
do
```

```
isflinelim = 100 /* Return 100 lines at a time */
```

```
do until isfnextlinetoken= /* Loop until EOF reached */
```

```
Address SDSF "ISFBROWSE ST TOKEN("token.ix")" /* Read lines */
```

```
do jx=1 to isfline.0
```

```
say isfline.jx /* Display lines */
```

```
end
```

```
isfstartlinetoken = isfnextlinetoken /* Set next read origin */
```

```
end
```

```
end
```

```
end
```

```
rc = isfcalls("off")
```


Java changes

- New **browse()** and **browseJCL()** methods added (in addition to existing **browseAllocate()** method) for ISFActive, ISFStatus, etc.
- New methods to define browse parameters in ISFRequestSettings
 - **addISFStartLineToken()**, **addISFScroll()**, **addISFScrollType()**, **addISFFind()**, **addISFFindLim()**, etc.
- New **getLineResults()** method added to ISFRequestResults to get to line information
 - **getLineRecordList()** to obtain list of output lines
 - Other properties such as **getFirstLineToken()**, **getNextLineToken()**, etc. to obtain additional information
- See Javadoc for details.

ISFLOG Enhancements

- New options on ISFLOG
 - **ISFLOG READ TYPE(SYSLOG|OPERLOG) (*options***
- **WTOR** option – returns all WTORs in isfwtor. stem variable
- **CCASIS** option – returns all records without carriage control

REXX variables (Input)

- **isflinelim** – maximum number of lines to return on this request
- **isfstartlinetoken** – represents first line to be returned
- **isfscrolltype** – represents any scrolling action to be done
 - **UP/DOWN** – scroll up or down
 - **FINDNEXT/FINDPREV** – find next or previous instance of a string
 - **TOP** – go to the top
 - **BOTTOM** – go to isflinelim lines from the bottom
- **isfscroll** – the number of lines to scroll (UP/DOWN) or number of data sets to scroll (NEXT/PREV)
 - All scrolling is relative to line passed in isfstartlinetoken

REXX variables (Input)

- **isffind** – indicates a string to be located when FINDNEXT or FINDPREV
 - Case-insensitive search is done
- **isffindlim** – maximum number of lines to search
- **isffindstartcol** -
 - Starting column for find string
 - Minimum start column if isffindendcol is specified
- **isffindendcol** – Maximum end column for find string
- **isflogstartdate, isflogstarttime, isflogstopdate, isflogstoptime**
 - Restrict the range of records within the log to be processed

REXX variables (Output)

- Output
 - **isfline.** stem variable – the output lines
 - **isfwtor.** stem variable – list of WTORs if WTOR option was specified
 - **isfmsg, isfmsg2.** - messages
 - **isffirstlinetoken** – token representing first line
 - If null, indicates TOF was reached
 - **isfnextlinetoken** – token representing next line after the last one that was returned
 - If null, indicates EOF was reached
 - **isffirstlinedate, isffirstlinetime** – date and time associated with the first line returned
 - **isflastlinedate, isflastlinetime** – date and time associated with the last line returned

Java changes

- Use **readOperlog()** or **readSyslog()** method to obtain log data (as you do today)
- New methods to define new parameters in ISFRequestSettings
 - **addISFStartLineToken()**, **addISFScroll()**, **addISFScrollType()**, **addISFFind()**, **addISFFindLim()**, etc.
- New **getLineResults()** method added to ISFRequestResults to get to line information
 - Can use **getLineRecordList()** to obtain list of output lines
 - Other properties such as **getFirstLineToken()**, **getNextLineToken()**, etc. to obtain additional information
- See Javadoc for details.

Security Assist

- **Problem Statement / Need Addressed**

- Difficult to determine why a user cannot access functions in SDSF
- TRACE facility potentially exposes too much information to end user

- **Solution**

- New SECTRACE facility added
- Documents the results of security decisions (SAF and non-SAF) made by SDSF
- Intent is to diagnose why access to panels, commands, or actions is denied
- Row-by-row decisions (such as MLS checks) are not traced

- **Benefit / Value**

- Access issues easier to diagnose

SET SECTRACE

- The new **SET SECTRACE** command is used to control whether new security trace message are to be issued
- The syntax is as follows:

SET SECTRACE ON | ULOG | WTP | OFF | ?

where

ON or **ULOG** indicates that messages are placed in ULOG

WTP indicates that messages are to be issued as write-to-programmer

OFF indicates that no messages are to be issued

? indicates the current value is to be queried

- The value of SET SECTRACE is not saved in the ISPF profile across SDSF sessions.

SECTRACE start option

- **SECTRACE(ON)**, **SECTRACE(ULOG)**, or **SECTRACE(WTP)** can be specified as a start option when invoking SDSF
 - Access to checks done before command processing is available
 - Group assignment
 - Main panel construction
 - Can be turned off by SET SECTRACE once SDSF is up.

Rexx/Java

- The new **isfsectrace** variable is used to control whether new security trace messages are to be issued
- Values are slightly different in meaning
 - ON** indicates that messages are placed in isfmsg2.
 - ULOG** indicates that messages are placed in isfulog.
 - WTP** indicates that messages are to be issued as write-to-programmer
 - OFF** indicates that no messages are to be issued
- Early tracing (group assignment etc.) is always done in Rexx/Java when ON, ULOG, or WTP is specified

What does SECTRACE trace?

- USER, GROUP, PROC, and terminal name
 - Message issued when SECTRACE is turned on
 - This information factors into subsequent decisions
 - Will be reissued every time SET SECTRACE ON/ULOG/WTP is entered
- SAF decisions
 - Resource, access requested, and result are issued for non-MLS security checks
- SAF overrides by ISFUSER exit
- Return codes from JES indicating SAF failures in service
- Non-SAF decisions based on ISFPARMS or ISFUSER
 - Usually fallback scenarios when SAF profile doesn't exist

Examples of SECTRACE messages

- ISF050I USER=D96CLW1 GROUP=ISFSPROG PROC=SDSF31EJ TERMINAL=LOCALC11
- ISF051I SAF Access allowed SAFRC=0 ACCESS=READ CLASS=SDSF RESOURCE=ISFCMD.DSP.STATUS.JES2
- ISF051I SAF Access denied SAFRC=8 ACCESS=UPDATE CLASS=SDSF RESOURCE=ISFATTR.JOB.CLASS
- ISF051I SAF No decision SAFRC=4 ACCESS=UPDATE CLASS=SDSF RESOURCE=ISFATTR.JOB.PRTY
- ISF051I SAF Access denied SAFRC=4 ACCESS=UPDATE CLASS=SDSF RESOURCE=ISFATTR.JOB.PRTY
- ISF058I COLUMN=Prty Access allowed USERLEVEL=7 REQLEVEL=3
- ISF053I COMMAND=PREFIX Access allowed
- ISF055I ACTION=H Access denied USERLEVEL=7 REQLEVEL=3 BPXAS S0000027 RSN=08 job name in exclude list
- ISF057I GROUP=ISFSPROG Access allowed USERAUTH=OPER,ACCT,JCL REQAUTH=OPER,ACCT,JCL
- ISF051I SAF Access allowed SAFRC=0 ACCESS=READ CLASS=JESSPOOL RESOURCE=SYSA1N.D96CLW1.D96CLW1.T0000036.D0000002.JESMSG LG
- ISF115E Security error detected by *modname* on OPEN for *ddname*, *datasetname*

Miscellaneous changes

- New columns are added to several panels
- DA, I, O, H, ST panels
 - **JobCorrelator** column displays user portion of job correlator
- I, ST panels
 - **DelayRsn** column displays reasons for job delay
- JC panel
 - **SysSym** and **DsEnqShr** correspond to new JOBCCLASS parameters
- ENC panel
 - **CPUCrit**, **Arrival-Time**, **Arrival-Int**, and **IOPrioGrp** added
- JDS panel
 - **LRECL** of data set added

Migration & Coexistence Considerations

- Sharing SDSF z/OS 2.1 Server Params with lower releases of SDSF
 - If you are sharing ISFPRMxx or ISPF profiles with SDSF 1.10 systems or higher you must install the toleration PTFs associated with APARs **PM37714**, **PM78102**, and **PM87996**
 - For SDSF 1.10, you must install PTFs **UK90037**, **UK90708**, and **UK96207**
 - For SDSF 1.11, you must install PTFs **UK90036**, **UK90709**, and **UK96208**
 - For SDSF 1.12, you must install PTFs **UK90034**, **UK90710**, and **UK95562**
 - For SDSF 1.13, you must install PTFs **UK90035**, **UK90711**, and **UK95563**

Migration & Coexistence Considerations

- Other migration & coexistence considerations:
 - GROUP column on JES2 JC display by default is inserted after STATUS column
 - May affect applications that rely on columns at specific locations on screen
 - ISFPARMS can change the default order/width if required.
 - If you create a filter containing a system symbolic, it may be deleted if you later use a pre-z/OS 2.1 version of SDSF.

Session Summary

- Describe the SDSF support associated with several line items
 - 64-bit support
 - 8-character job class
 - Print enhancements
 - Sort enhancements
 - JES Plex scoping
 - System symbolics support
 - REXX/Java enhancements (BROWSE and LOG)
 - Security Assist

Appendix

- SDSF Operator and Customization, SA22-7670-15
- SDSF REXXHELP command
 - Contains SDSF/REXX usage, syntax, and examples
- SDSF Javadoc
 - Contains all SDSF Java documentation
- SDSF SEARCH command
 - Searches SDSF help system for word or phrase