SDSF Product Update for z/OS 2.2

SHARE Orlando, Session 17432
Monday, August 10, 2015

Gary Puchkoff
Poughkeepsie, NY
puchkoff@us.ibm.com
Trademarks

The following are trademarks of the International Business Machines Corporation in the United States and/or other countries.

- IBM®
- MVS™
- Redbooks®
- RETAIN®
- z/OS®
- zSeries®

The following are trademarks or registered trademarks of other companies.

- Java and all Java-related trademarks and logos are trademarks of Sun Microsystems, Inc., in the United States and other countries.
- Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.
- Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.
- UNIX is a registered trademark of The Open Group in the United States and other countries.
- SET and Secure Electronic Transaction are trademarks owned by SET Secure Electronic Transaction LLC.
- All other products may be trademarks or registered trademarks of their respective companies.

Notes:
Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.
IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply.
All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.
This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM Business contact for information on the product or services available in your area.
All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.
Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.
Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.
I am not Tom Wasik

• Gary Puchkoff
  – z/OS and z/OSMF brand focal point
    • Content prioritization
  – SDSF, JES2, JES3, z/OSMF
    • Roadmaps and content
  – RFE focal point
  – Previous to z/OS
    • WebSphere on z/OS, zAAP processor, Manager
    • OS/390 Scheduler, Application programmer
The most significant release of SDSF since we delivered SDSF REXX

Cadence

- Plan for a 6 month cadence of new optional features
- Approximately 12/2015, 6/2016, 12/2016

New features focused on System Programmer

- Display sysplex wide system information, enqs, tasks, loaded modules, catalogs, mountpoints
- System Datasets (parmlib, apf, linklist, lpa, smf, page etc)
- Virtual Storage Map, Subsystems, SMS, System Exits, XCF, Generic tracker, WLM,
- Improved caching, improved performance
- Improved (JM) memory display, even contents
Session Objectives

• Discuss the enhancements to SDSF in z/OS 2.2
  – JJExxxx component elimination
  – zIIP exploitation
  – System command improvements
  – UI enhancements
  – Batch Parallelism
  – Job Step display
  – Job Detail displays
  – Rexx enhancements
    • Custom row actions
    • Sample Rexx exec generator
  – Miscellaneous enhancements
• Migration and Installation considerations
JJE component elimination

- **Problem Statement / Need Addressed**
  - Since z/OS 1.10, SDSF has had a second component (JJExxxS) which contains parts which require JES2 control blocks
    - LOG, non-RMF DA, JES2 offset table, etc.
  - This increases the complexity of SDSF installs

- **Solution**
  - All JES data is now obtained via interfaces (such as the SSI) rather than by traversing JES2 control blocks.
  - The need for a second JJExxxS component has been eliminated

- **Benefit / Value**
  - Simplifies SDSF installation and maintenance
  - JES2 control block changes no longer require reassemblies of SDSF parts
  - More later in Migration and Installation topics
zIIP exploitation

• Problem Statement / Need Addressed
  – Some CPU-intensive SDSF work can be offloaded to a zIIP

• Solution
  – Some CPU-Intensive SDSF work now runs under a zIIP
    • Sorting for “large” panels

• Benefit / Value
  – Some CPU-Intensive SDSF work now runs under a zIIP.
System Command Improvements

• Problem Statement / Need Addressed
  – Increase number of saved slash commands on the slash popup
  – Simplify management of saved slash commands

• Solution
  – Redesigned System Command Extension (slash) pop-up
    • Implement slash command groups, comments
  – Number of saved commands increased from 20 to 50 by default
  – Up to 2000 commands can be saved with optional ISPF table defined (ISFTABL DD)

• Benefit / Value
  – More slash commands can be saved
  – Slash commands can be categorized based on task being performed
Usage & Invocation

• Redesigned System Command Extension (slash) pop-up
  – Access using / (with no parameters) or /+ (trailing +)
    • For example: /slip set,+

  – New input areas
    • Associated comment
    • Group name
    • Show pattern

  – New details pop-up (PF6) – displays full command text
  – New save command (PF10) – save command without issuing it
  – Enhanced clear capability (PF11) – delete groups of commands
  – New action bar choices: Edit, Options, Help
New System Command Extension Panel

Display  Filter  View  Print  Options  Search  Help
-----------------------------------------------------------------------------------------------
HQX77A0  -----------------  SDSF PRIMARY OPTION MENU  -------------------------------
COMMAND INPUT ===> /  SCROLL ===> CSR

DA    Active users                      INIT  Initiators
I     Input queue                       PR    Printers
O     Output queue                      PUN   Punches
H     Held output queue                 RDR   Readers
ST    Status of jobs                    LINE  Lines
JG    Job groups                        NODE  Nodes
SO    Spool offload
LOG   System log                        SP    Spool volumes
SR    System requests                   NS    Network servers
MAS   Members in the MAS                NC    Network connections
JC    Job classes
SE    Scheduling environments           RM    Resource monitor
RES   WLM resources                     CK    Health checker
ENC   Enclaves
PS    Processes                         ULOG  User session log
END   Exit SDSF

System Command Extension

===>
d r,l
===>

Comment  Display Replies

Group  MVS  Show *  (F4 for list)

More: +

= d r,l
=> f sdsf,refresh,m=01
=> f sdsf,refresh
=> f sdsf,d,c
=> f sdsf,d
=> $dq
=> $da
=> $sspl(spool2)
=> setomvs ipcsmsgqbytes=2g
=> d omvs,o
=> d omvs
=> d prog,lnklst

F5=FullScr  F6=Details  F7=Up  F8=Down  F10=Save  F11=Clear  F12=Cancel

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
## Filter commands by group

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA</td>
<td>Active users</td>
</tr>
<tr>
<td>I</td>
<td>Input queue</td>
</tr>
<tr>
<td>O</td>
<td>Output queue</td>
</tr>
<tr>
<td>H</td>
<td>Held output queue</td>
</tr>
<tr>
<td>ST</td>
<td>Status of jobs</td>
</tr>
<tr>
<td>JG</td>
<td>Job groups</td>
</tr>
<tr>
<td>SO</td>
<td>Spool offload</td>
</tr>
<tr>
<td>LOG</td>
<td>System log</td>
</tr>
<tr>
<td>SR</td>
<td>System requests</td>
</tr>
<tr>
<td>MAS</td>
<td>Members in the MAS</td>
</tr>
<tr>
<td>JC</td>
<td>Job classes</td>
</tr>
<tr>
<td>SE</td>
<td>Scheduling environments</td>
</tr>
<tr>
<td>RES</td>
<td>WLM resources</td>
</tr>
<tr>
<td>ENC</td>
<td>Enclaves</td>
</tr>
<tr>
<td>PS</td>
<td>Processes</td>
</tr>
<tr>
<td>END</td>
<td>Exit SDSF</td>
</tr>
</tbody>
</table>

### System Command Extension

- **Edit Options Help**

  `===>` **System Command Extension**

  `===>`

  `===>`

  **Comment**

  ```
  Group __________________ Show SDSF__________ (F4 for list)
  
  More: +
  ```

  ```
  => f sdsf,refresh,m=01
  => f sdsf,refresh
  => f sdsf,d,c
  => f sdsf,d
  =>
  =>
  =>
  =>
  =>
  =>

  F5=FullScr F6=Details F7=Up F8=Down F10=Save F11=Clear F12=Cancel
  ```

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
Details View (F6)

System Command Extension - Details  Row 1 to 6 of 15

Command ===> System Command Extension - Details

Sort by group (F5), command (F6), or last used (F10).

Selection  Group *

Number Group Comment
1.  =>  d  r,l  Display Replies
2.  =>  $da  Display jobs
3.  =>  $dq  Display queue
4.  =>  $sspl(spool2)  Add Spool
5.  =>  d  r,l  Display replies
6.  =>  d t  Display Time

Select command from list by number

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
Group Selection Pop-up

Enter / in either Group or Show field to select group from a list, or select PF4 when the cursor is in one of those fields.

Select group from list by number.

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
## Clear Pop-up (F11)

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA</td>
<td>Active users</td>
</tr>
<tr>
<td>I</td>
<td>Input queue</td>
</tr>
<tr>
<td>O</td>
<td>Output queue</td>
</tr>
<tr>
<td>H</td>
<td>Held output queue</td>
</tr>
<tr>
<td>ST</td>
<td>Status of jobs</td>
</tr>
<tr>
<td>JG</td>
<td>Job groups</td>
</tr>
<tr>
<td>SO</td>
<td>Spool offload</td>
</tr>
<tr>
<td>LOG</td>
<td>System log</td>
</tr>
<tr>
<td>SR</td>
<td>System requests</td>
</tr>
<tr>
<td>MAS</td>
<td>Members in the MAS</td>
</tr>
<tr>
<td>JC</td>
<td>Job classes</td>
</tr>
<tr>
<td>SE</td>
<td>Scheduling environments</td>
</tr>
<tr>
<td>RES</td>
<td>WLM resources</td>
</tr>
<tr>
<td>ENC</td>
<td>Enclaves</td>
</tr>
<tr>
<td>PS</td>
<td>Processes</td>
</tr>
<tr>
<td>END</td>
<td>Exit SDSF</td>
</tr>
</tbody>
</table>

Select Clear Option

Select an option to clear commands. The number of commands affected is shown in parentheses.

1. Recent matching the value for Show (0)
2. All matching the value for Show (0)
3. From list...

F1=Help  F12=Cancel

1. Clears all commands in recent list (last 20) in shown group(s)
2. Clears all commands in shown group(s)
3. Accesses detail popup to select command to delete by number

F5=FullScr  F6=Details  F7=Up  F8=Down  F10=Save  F11=Clear  F12=Cancel
Migration & Coexistence Considerations

• Slash commands saved on down level systems are considered ungrouped when processed by V2R2 system
  – Ungrouped commands will be added to the current frequent list
    • If command text and group name (ungrouped) match existing command, order of command in list remains the same
    • If command text and group name (ungrouped) does not match an existing command, command added to bottom of recent list
  • Ungrouped commands on V2R2 system visible to down level systems
    – Only first 20 ungrouped commands are saved
UI enhancements

• Problem Statement / Need Addressed
  – Issuing actions against many rows can be cumbersome.

• Solution
  – A command-line interface to issue actions against multiple rows is added
  – An optional row number column can be added
  – The size of the NP column can be expanded beyond the current limits and tailored on a display-by-display basis

• Benefit / Value
  – Reduces keystrokes when performing repetitive tasks
Line shortcut command

- On the command line, specify the line number or up to 3 ranges of line numbers, followed by an action to issue that action against multiple rows.
- For example:
  - 2 D — issues the D action against the second row
  - 1-5 P — issues the P action against rows 1-5
  - 1-3 6-10 14 C — issues the C action against rows 1-3, 6-10, and 14
- Also allows overtypes when action is 'column-name=value'
  - 1-3 Q=A — overtypes the Q column with the value A for rows 1-3
- Works the same as a set of line/block prefix commands
  - SET CONFIRM setting is honored
  - One confirmation is issued per range, just as it would with multiple line commands or blocks
  - Rows do not have to be “on screen” to use row number

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
### SDSF Status Display Example

**Line 11-25 (25)**

**Command Input**: `11-13 16-20 24 d`

**Prefix**: `*`
**Destination**: `(ALL)`
**Owner**: `*`
**Sysname**: `*`


<table>
<thead>
<tr>
<th>NP</th>
<th>JOBNAME</th>
<th>JobID</th>
<th>Owner</th>
<th>Prty</th>
<th>Queue</th>
<th>C</th>
<th>Pos</th>
<th>SAff</th>
<th>Asys</th>
<th>Stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>//</td>
<td>MONITOR</td>
<td>JOB00001</td>
<td>JES2</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D96CLW1</td>
<td>JOB00025</td>
<td>D96CLW1</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>//</td>
<td>SYSLOG</td>
<td>JOB00002</td>
<td>+MASTER+</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>//</td>
<td>HZSPROC</td>
<td>JOB00005</td>
<td>SYSTASK</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>//</td>
<td>PRIMEPSA</td>
<td>JOB00006</td>
<td>SYSTASK</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>//</td>
<td>BPXAS</td>
<td>JOB00010</td>
<td>OMVS.KERN</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>//</td>
<td>TCPIPALP</td>
<td>JOB00011</td>
<td>SYSTASK</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SDSF</td>
<td>JOB00012</td>
<td>SDSF</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TCAS</td>
<td>JOB00013</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VTAM44</td>
<td>JOB00014</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RMF</td>
<td>JOB00015</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BPXAS</td>
<td>JOB00018</td>
<td>OMVS.KERN</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RACF</td>
<td>JOB00024</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>READTCP</td>
<td>JOB00003</td>
<td>SYSTASK</td>
<td>15</td>
<td>PRINT</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DIP</td>
<td>JOB00004</td>
<td>SYSTASK</td>
<td>15</td>
<td>PRINT</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
</tbody>
</table>

---

**This line command is equivalent to this set of actions**

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
SET ROWNUM command

• Use the **SET ROWNUM** command to turn row numbering on and off

**SET ROWNUM <ON|OFF|?>**
  – **ON** – turns row numbering on
  – **OFF** – turns row numbering off
  – **?** - displays popup

• Row number column appears between the NP column and the fixed field and remains fixed when scrolling left and right
  – Represents the row number within the display as a whole, not just the current screen

• Column title is ####### with a width of at least 4
  – Wider if there are more than 9999 rows
<table>
<thead>
<tr>
<th>Row</th>
<th>Job Name</th>
<th>Job ID</th>
<th>Owner</th>
<th>Prty</th>
<th>Queue</th>
<th>C</th>
<th>Pos</th>
<th>SAff</th>
<th>ASys</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>MONITOR</td>
<td>JOB00001</td>
<td>JES2</td>
<td>15</td>
<td>EXECUTION</td>
<td></td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>12</td>
<td>D96CLW1</td>
<td>JOB00025</td>
<td>D96CLW1</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>13</td>
<td>SYSLOG</td>
<td>JOB00002</td>
<td>MASTER</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>14</td>
<td>HZSPROC</td>
<td>JOB00005</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>15</td>
<td>PRIMEPSA</td>
<td>JOB00006</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>16</td>
<td>BPXAS</td>
<td>JOB00010</td>
<td>OMVSKERN</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>17</td>
<td>TCPIPALP</td>
<td>JOB00011</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>18</td>
<td>SDSF</td>
<td>JOB00012</td>
<td>SDSF</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>19</td>
<td>TCAS</td>
<td>JOB00013</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>20</td>
<td>VTAM44</td>
<td>JOB00014</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>21</td>
<td>RMF</td>
<td>JOB00015</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>22</td>
<td>BPXAS</td>
<td>JOB00018</td>
<td>OMVSKERN</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>23</td>
<td>RACF</td>
<td>JOB00024</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
</tr>
<tr>
<td>24</td>
<td>READTCP</td>
<td>JOB00003</td>
<td>SYSTASK</td>
<td>15</td>
<td>PRINT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>DIP</td>
<td>JOB00004</td>
<td>SYSTASK</td>
<td>15</td>
<td>PRINT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NP column width

• Pre-2.2 – the NP column was a fixed width for each display (usually 4), with a + action that expanded the column to a larger fixed width (usually 6)

• NP column can now be expanded to a specified width via +nn action, where nn is a value 4 to 20.
  – This value is temporary and is reset via RESET command or leaving the display.

• NP column can be more permanently expanded via the ARRANGE command
  – ARR NP nn – sets the default width of the NP column for the current tabular display to nn
  – Also can be set via the ARRANGE popup
  – Each tabular has its own NP width
  – Values are saved in ISPF profile
Sn (BrowseLocDS) action

- New **Sn** action (BrowseLocDs) on DA, I, ST, O, H, and JS panels allows browse to begin at a specified data set.
  - *n* represents the dataset number not the dsid (similar to NEXT command).
  - A negative value (**S-n**) can be specified to specify an offset from the bottom.

- Examples
  - **S5** – positions to the fifth data set.
  - **S-2** – positions to the next-to-last data set.

- Useful in conjunction with line shortcut commands.
  - **1-3 S3** – Browses the jobs associated with rows 1-3 and positions to the third data set in the job.
  - **3-5 S-1** – Browses the jobs associated with rows 3-5 and positions to the last data set in the job.
Batch Parallelism

• Problem Statement / Need Addressed
  – In z/OS 2.2, JES2 adds support for Dependent Job Control and Job Groups
  – SDSF support is needed for end users to manage the new functionality.

• Solution
  – Two new panels are added:
    • JG – Primary panel to display Job Groups
    • JP – Secondary panel to display dependencies for a job, or all dependencies within a job group.
  – ST (Status) panel can be accessed as a secondary panel from JG to display details about all of the jobs associated with a group.

• Benefit / Value
  – Simplifies management of the new JES2 functionality.
### SDSF Main Panel

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA</td>
<td>Active users</td>
</tr>
<tr>
<td>I</td>
<td>Input queue</td>
</tr>
<tr>
<td>O</td>
<td>Output queue</td>
</tr>
<tr>
<td>H</td>
<td>Held output queue</td>
</tr>
<tr>
<td>ST</td>
<td>Status of jobs</td>
</tr>
<tr>
<td>JG</td>
<td>Job groups</td>
</tr>
<tr>
<td>LOG</td>
<td>System log</td>
</tr>
<tr>
<td>SR</td>
<td>System requests</td>
</tr>
<tr>
<td>MAS</td>
<td>Members in the MAS</td>
</tr>
<tr>
<td>JC</td>
<td>Job classes</td>
</tr>
<tr>
<td>SE</td>
<td>Scheduling environments</td>
</tr>
<tr>
<td>RES</td>
<td>WLM resources</td>
</tr>
<tr>
<td>ENC</td>
<td>Enclaves</td>
</tr>
<tr>
<td>PS</td>
<td>Processes</td>
</tr>
<tr>
<td>END</td>
<td>Exit SDSF</td>
</tr>
</tbody>
</table>

**New JG option to access job group panel**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INIT</td>
<td>Initiators</td>
</tr>
<tr>
<td>PR</td>
<td>Printers</td>
</tr>
<tr>
<td>PUN</td>
<td>Punches</td>
</tr>
<tr>
<td>RDR</td>
<td>Readers</td>
</tr>
<tr>
<td>LINE</td>
<td>Lines</td>
</tr>
<tr>
<td>NODE</td>
<td>Nodes</td>
</tr>
<tr>
<td>SO</td>
<td>Spool offload</td>
</tr>
<tr>
<td>SP</td>
<td>Spool volumes</td>
</tr>
<tr>
<td>SR</td>
<td>System requests</td>
</tr>
<tr>
<td>MAS</td>
<td>Members in the MAS</td>
</tr>
<tr>
<td>NC</td>
<td>Network connections</td>
</tr>
<tr>
<td>RM</td>
<td>Resource monitor</td>
</tr>
<tr>
<td>CK</td>
<td>Health checker</td>
</tr>
<tr>
<td>ULOG</td>
<td>User session log</td>
</tr>
</tbody>
</table>

**Commands:**

- **CSR**
- **DA**
- **I**
- **O**
- **H**
- **ST**
- **JG**
- **LOG**
- **SR**
- **MAS**
- **JC**
- **SE**
- **RES**
- **ENC**
- **PS**
- **END**
### Job Group Display

Each row represents a job group
Columns represent various attributes of the group
Several flavors of actions exist:
- **JES Action commands** – A, C, H, P, etc.
- **JES Display commands** – D, DE, DJ, DL, DN, DP
- **Browse and Print** – S and X
- **ST** – invokes STATUS as a secondary display
- **JP** – Invokes new Job Dependency display as a secondary

<table>
<thead>
<tr>
<th>NP</th>
<th>JOBGROUP</th>
<th>JobGrpID</th>
<th>Owner</th>
<th>Status</th>
<th>Current-CC</th>
<th>SAff</th>
<th>Scheduling-Env</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAYROLL</td>
<td>G0000043</td>
<td>D96CLW1</td>
<td></td>
<td>ACTIVE, INIT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
### Status Display (from JG display)

<table>
<thead>
<tr>
<th>NP</th>
<th>JOBNAME</th>
<th>JobID</th>
<th>Owner</th>
<th>Prty</th>
<th>Queue</th>
<th>Max-RC</th>
<th>C</th>
<th>Pos</th>
<th>SAff</th>
<th>ASys</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JOBA</td>
<td>J0000044</td>
<td>D96CLW1</td>
<td>14</td>
<td>SETUP</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JOBB</td>
<td>J0000045</td>
<td>D96CLW1</td>
<td>14</td>
<td>SETUP</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JOBC</td>
<td>J0000046</td>
<td>D96CLW1</td>
<td>14</td>
<td>SETUP</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JOBD</td>
<td>J0000047</td>
<td>D96CLW1</td>
<td>14</td>
<td>SETUP</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JOBE</td>
<td>J0000048</td>
<td>D96CLW1</td>
<td>14</td>
<td>SETUP</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JOBF</td>
<td>J0000049</td>
<td>D96CLW1</td>
<td>14</td>
<td>SETUP</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JOBG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Title line indicates secondary from group display**

Rows for jobs expected to be in group but not yet in system are displayed.
Status Display – new columns and actions

New columns (on far right of display) for new job attributes related to dependent control and deadline scheduling

Notable new actions

DP – Issues new JES2 $DJ,AFT,BEF,CON command
JP – Access to Job Dependency display
### SDSF DEPENDENCY DISPLAY - JOB JOBC (J0000046) LINE 1-3 (3)

**COMMAND INPUT ===>

<table>
<thead>
<tr>
<th>NP</th>
<th>JOBNAME</th>
<th>JobID</th>
<th>Dependency</th>
<th>DJobName</th>
<th>DJobID</th>
<th>Time</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JOBC</td>
<td>J0000046</td>
<td>AFTER</td>
<td>JOBA</td>
<td>J0000044</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JOBC</td>
<td>J0000046</td>
<td>BEFORE</td>
<td>JOBE</td>
<td>J0000048</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JOBC</td>
<td>J0000046</td>
<td>HOLDUNTIL</td>
<td></td>
<td></td>
<td>04/15/2015 17:00:00</td>
<td></td>
</tr>
</tbody>
</table>

Displays all dependencies associated with selected job

Selected job is always listed first in BEFORE, AFTER, and CONCURRENT dependencies
Displays all dependencies associated with all jobs in group
SELECT command can be used to narrow dependencies to just those for a specific job. Can be used for “missing” jobs as well.
Job Step Display

• Problem Statement / Need Addressed
  – Long-standing requirement to easily be able to find the completion information for steps within a job
  – Information is available but requires some investigation to locate

• Solution
  – A new JS secondary panel is added to display step completion information

• Benefit / Value
  – Easy determination of job step completion information
Job Step Display

• The **JS** action is added to the I, ST, O, H, and DA displays to display a new tabular containing job step completion information
  – One row per step
  – “Flushed” steps are displayed
  – Some information is displayed for the active step if the job is active

• Step data may not be available for every job
  – Only available when new EVENTLOG special data set exists for the associated job

• JES2 only
### SDSF JOB STEP DISPLAY - JOB D96CLW1Z (J0000059)

**COMMAND INPUT**: 

- **PREFIX=** *
- **DEST=** (ALL)
- **OWNER=** *
- **SYSNAME=**

**ACTION=** +, //, %, ?, =, S, Sn, SB, SE, SJ, X, XC, XD, XDC, XF, XFC, XS, XSC

<table>
<thead>
<tr>
<th>NP</th>
<th>STEPNAME</th>
<th>ProcStep</th>
<th>Pgm-Name</th>
<th>Step-CC</th>
<th>AbendRsn</th>
<th>StepNum</th>
<th>SysName</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>STEP1</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>CC 0020</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>STEP2</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>CC 0000</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>STEP3</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>CC 0057</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>STEP4</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>ABEND S0C1 00000001</td>
<td>4</td>
<td>SY1</td>
</tr>
<tr>
<td>5</td>
<td>STEP5</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>ABEND S09D 0000FFFF</td>
<td>5</td>
<td>SY1</td>
</tr>
<tr>
<td>6</td>
<td>STEP6</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>ABENDU0919 0000FFFF</td>
<td>6</td>
<td>SY1</td>
</tr>
<tr>
<td>7</td>
<td>STEP7</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>FLUSH</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>STEP8</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>FLUSH</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>STEP9</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>FLUSH</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>STEPA</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>CC 0000</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td>OUTER1</td>
<td>INNER</td>
<td></td>
<td>RETCODE</td>
<td>CC 0000</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>12</td>
<td>OUTER2</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>CC 0000</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>INNER</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>CC 0000</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>14</td>
<td>SPIN01</td>
<td></td>
<td></td>
<td>RETCODE</td>
<td>CC 0000</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td>SPINLOOP</td>
<td>ACTIVE</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>
Where does Job Step information come from? (and why do I care?)

- Starting in z/OS 2.2 JES2 stores some job-related SMF information on spool in a new EVENTLOG dataset
  - The key record for step completion data is SMF 30, subtype 4.
  - SMF 30 subtype 4 data is obtained by accessing
    `userid.jobname.jobid.EVENTLOG.SMFSTEP`
  - If that data is unavailable (there is a JES2 option to disable SMF data collection), a subset of this information can be obtained from
    `userid.jobname.jobid.EVENTLOG.STEPDATA`
  - Both data set views are SAF protected (JESSPOOL)
- SDSF uses SMFSTEP view of EVENTLOG if available
- If SMFSTEP view is not available due to the JES2 JOBDEF SUP_EVENTLOG_SMF option, or if SAF Access is not allowed, the STEPDATA view is used instead if available and access is allowed
  - Only 9 of the 29 columns are available if SMF data is not used.
Job Step Display – Columns and Actions

- Columns displayable when STEPDATA is found:
  - STEPNAME  ProcStep  Pgm-Name  Step-CC  AbendRsn
  - StepNum  SysName  Step-Begin  Step-End

- Additional columns displayable when SMF data is available for that job:
  - Elapsed  CPU-Time  SRB-Time  EXCP-Cnt  Conn
  - Serv  Workload  Page  Swap  VIO
  - Swaps  Region  Rgn-Used  MemLimit  Mlim-Used
  - zIIP-Time  zICP-Time  zIIP-NTime  HiCPU%  HiCPUPgm

- Actions:
  - **S, SB, SE** (Browse) actions, and **X** (Print) actions show only data sets associated with the selected step
  - **?** (JDS) action displays list of data sets for the selected step
  - **SJ** shows JCL for entire job
Job Detail displays

• Problem Statement / Need Addressed
  – Additional information about resources used by job can be useful for diagnosis of job or system problems.

• Solution
  – Three new panels are added:
    • **JD** (Job Device) – Secondary panel to display devices/pseudo-devices that are owned/allocated by a job
    • **JM** (Job Memory) – Secondary panel to display memory utilization by subpool/key
    • **JY** (Job Delay) – Secondary panel to display job-related delays

• Benefit / Value
  – Displays additional information useful for diagnosing job-related issues
Job Device panel

- Accessible via JD action from panels where individual rows represent (or can represent) an active address space.
  - DA
  - I, ST
  - INIT
  - NS (for NETSERV address spaces)
- ASID, ASIDX, and SYSNAME columns are added to those displays where they were absent.
- Rows on JD secondary panel are generated for
  - Active allocations (data sets or devices)
  - CF connections
  - Connections to remote IP addresses
  - Listens on local IP ports
Job Device panel – Columns of interest

- Type column value can be one of the following
  - DD
    - Fixed field = DD name
    - Interesting columns include:
      - Seq  DataSetName  VolSer  Unit  LrecLRecFm  BlkSize  EXCPct
  - CF
    - Fixed field = Name used to couple to CF
    - Interesting columns include:
      - StrName  VolSer  Policy  Status
  - IP
    - Fixed Field = TCP/IP Server name
    - Interesting columns include:
      - IPAddr  Port  Status  BytesIn  BytesOut  Start-Time
      - Last-Time  Stack  Resource-ID  ApplData
## Job Device Detail Display Example (DD rows)

**Display** | **Filter** | **View** | **Print** | **Options** | **Search** | **Help**
---|---|---|---|---|---|---
SDSF JOB DEVICE SY1 ASID 0027 D96CLW1 JOB00025 LINE 1-17 (57)

**COMMAND INPUT ====>**

**SCROLL ====>**  CSR

**PREFIX=*/ DEST=(ALL) OWNER=* SYSNAME=*  
**ACTION=+,,%,=,DA,DAL,DB,DBL,DC,DN,DNL,DP,DR,DRD,DRDL,DRL,DS**

<table>
<thead>
<tr>
<th>NP</th>
<th>NAME</th>
<th>Seq</th>
<th>Type</th>
<th>Status</th>
<th>DataSetName</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ISFTABL</td>
<td>1</td>
<td>DD</td>
<td>Open</td>
<td>D96CLW1.SDSF.TABL</td>
</tr>
<tr>
<td>2</td>
<td>ISPILIB</td>
<td>1</td>
<td>DD</td>
<td>Alloc</td>
<td>ISP.SISPSPAMP</td>
</tr>
<tr>
<td>3</td>
<td>ISPMLIB</td>
<td>1</td>
<td>DD</td>
<td>Open</td>
<td>ISP.SISPMENU</td>
</tr>
<tr>
<td>4</td>
<td>ISPMLIB</td>
<td>2</td>
<td>DD</td>
<td>Open</td>
<td>SYS1.HRFMSG</td>
</tr>
<tr>
<td>5</td>
<td>ISPMLIB</td>
<td>3</td>
<td>DD</td>
<td>Open</td>
<td>ISFPP.SDSF322.SISFPLIB</td>
</tr>
<tr>
<td>6</td>
<td>ISPMLIB</td>
<td>4</td>
<td>DD</td>
<td>Open</td>
<td>SYS1.SBLSMSG0</td>
</tr>
<tr>
<td>7</td>
<td>ISPMLIB</td>
<td>5</td>
<td>DD</td>
<td>Open</td>
<td>SYS1.DGTMLIB</td>
</tr>
<tr>
<td>8</td>
<td>ISPMLIB</td>
<td>6</td>
<td>DD</td>
<td>Open</td>
<td>SYS1.SBPXMENU</td>
</tr>
<tr>
<td>9</td>
<td>ISPMLIB</td>
<td>7</td>
<td>DD</td>
<td>Open</td>
<td>SYS1.SERBMENU</td>
</tr>
<tr>
<td>10</td>
<td>ISPMLIB</td>
<td>8</td>
<td>DD</td>
<td>Open</td>
<td>SYS1.SCBDMENU</td>
</tr>
<tr>
<td>11</td>
<td>ISPMLIB</td>
<td>9</td>
<td>DD</td>
<td>Open</td>
<td>MVSBUILD.WMQ60.SCSQMSGE</td>
</tr>
<tr>
<td>12</td>
<td>ISPPLIB</td>
<td>1</td>
<td>DD</td>
<td>Open</td>
<td>ISFSHR.V4R8M0.PANELS</td>
</tr>
<tr>
<td>13</td>
<td>ISPPLIB</td>
<td>2</td>
<td>DD</td>
<td>Open</td>
<td>ISFPP.SDSF322.SISFPLIB</td>
</tr>
<tr>
<td>14</td>
<td>ISPPLIB</td>
<td>3</td>
<td>DD</td>
<td>Open</td>
<td>ISP.SISPSPENU</td>
</tr>
<tr>
<td>15</td>
<td>ISPPLIB</td>
<td>4</td>
<td>DD</td>
<td>Open</td>
<td>SYS1.HRFSPANL</td>
</tr>
<tr>
<td>16</td>
<td>ISPPLIB</td>
<td>5</td>
<td>DD</td>
<td>Open</td>
<td>SYS1.SBLSPNL0</td>
</tr>
<tr>
<td>17</td>
<td>ISPPLIB</td>
<td>6</td>
<td>DD</td>
<td>Open</td>
<td>SYS1.DGTPLIB</td>
</tr>
</tbody>
</table>

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
### Job Device Detail Display Example (IP rows)

<table>
<thead>
<tr>
<th>Name</th>
<th>IPAddr</th>
<th>Port</th>
<th>ApplData</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTPD1</td>
<td>9.56.58.133</td>
<td>63791</td>
<td>EZAFTP0S C D96CLW1</td>
</tr>
<tr>
<td>FTPD1</td>
<td>0.0.0.0</td>
<td>21</td>
<td>EZAFTP0D</td>
</tr>
</tbody>
</table>

**SDSF JOB DEVICE** SY1  ASID 0035 FTPD1  JOB00010  LINE 1-17 (57)

**COMMAND INPUT ====>**

**PREFIX=*/  DEST=(ALL)  OWNER=*  SYSNAME=*  
ACTION=+,//,%,=,DA,DAL,DB,DBL,DC,DN,DNL,DP,DR,DRD,DRDL,DRL,DS

<table>
<thead>
<tr>
<th>NP</th>
<th>###</th>
<th>NAME</th>
<th>Seq</th>
<th>Type</th>
<th>Status</th>
<th>DatasetName</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FTPD1</td>
<td>IP</td>
<td>Establish</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>FTPD1</td>
<td>IP</td>
<td>Listen</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Job Device Detail Display Example (CF rows)

<table>
<thead>
<tr>
<th>Display</th>
<th>Filter</th>
<th>View</th>
<th>Print</th>
<th>Options</th>
<th>Search</th>
<th>Help</th>
</tr>
</thead>
</table>

**SDSF JOB DEVICE SY1 ASID 0017 IXGLOGR LINE 1-17 (57)**

**COMMAND INPUT ==>**  
**SCROLL ==> CSR**

**PREFIX=* DEST=(ALL) OWNER=SYSNAME=***

**ACTION=+,,=%,=,DA,DAL,DB,DL,DC,DN,DNL,DP,DR,DRD,DRDL,DRL,DS**

<table>
<thead>
<tr>
<th>NP</th>
<th>####</th>
<th>NAME</th>
<th>Seq</th>
<th>Type</th>
<th>Status</th>
<th>DataSetName</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IXGLOGR_SY1</td>
<td></td>
<td>CF</td>
<td>Allocate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Scroll right)

<table>
<thead>
<tr>
<th>Display</th>
<th>Filter</th>
<th>View</th>
<th>Print</th>
<th>Options</th>
<th>Search</th>
<th>Help</th>
</tr>
</thead>
</table>

**SDSF JOB DEVICE SY1 ASID 0017 IXGLOGR LINE 1-17 (57)**

**COMMAND INPUT ==>**  
**SCROLL ==> CSR**

**PREFIX=* DEST=(ALL) OWNER=SYSNAME=***

**ACTION=+,,=%,=,DA,DAL,DB,DL,DC,DN,DNL,DP,DR,DRD,DRDL,DRL,DS**

<table>
<thead>
<tr>
<th>NP</th>
<th>####</th>
<th>NAME</th>
<th>StrName</th>
<th>VolSer</th>
<th>Unit</th>
<th>UnitCt</th>
<th>IPAddr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IXGLOGR_SY1</td>
<td>LIST01</td>
<td>LF01</td>
<td>CF</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Job Device panel – Actions

- Allowable actions are all displays and vary by row type
  - **DD**
    - No actions defined
  - **CF**
    - Display actions are different forms of D XCF command
      - **DC** (DisplayCF) – Displays the CF using D XCF command
      - **DS** (Display Structure) – Displays the structure using D XCF
      - **DP** (DisplayPolicy) – Displays the policy using D XCF
  - **IP**
    - Display actions are different forms of D TCPIP command
      - **DA** (DisplayAll) - D TCPIP,stack,N,ALL,IPP=
      - **DN** (DisplayConn) - D TCPIP,stack,N,CO,APPLDATA,IPP=
      - **DB** (DisplayByteinfo) – D TCPIP,stack,N,BYTE,IDLETIME,IPA=
      - **DR** (DisplayRoute) - D TCPIP,stack,N,ROUTE,IPA=
Job Memory panel

- Accessible via JM action from panels where individual rows represent (or can represent) an active address space.
  - DA
  - I, ST
  - INIT
  - NS (for NETSERV address spaces)

- Rows on JM secondary panel are generated for
  - Each subpool/key combination for which memory is allocated
  - 64-bit private storage (by key)
  - 64-bit common storage owned by address space (by key)
  - CSA and SQA owned by address space (if CSA tracking is active)
## SDSF JOB MEMORY SY1

**ASID 0024 SDSF JOB00012 LINE 1-15 (15)**

**COMMAND INPUT ====>**

**PREFIX=* DEST=(ALL) OWNER=* SYSNAME=***

**ACTION=+,//,%=**

<table>
<thead>
<tr>
<th>NP</th>
<th>TYPE</th>
<th>SP</th>
<th>Key Fix</th>
<th>FP</th>
<th>Total</th>
<th>Total-24</th>
<th>Total-31</th>
<th>Total-64</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIVATE</td>
<td>0</td>
<td>1</td>
<td>NO</td>
<td>YES</td>
<td>120KB</td>
<td>120KB</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSQA</td>
<td>205</td>
<td>0</td>
<td>DREF</td>
<td>NO</td>
<td>912KB</td>
<td>912KB</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSQA</td>
<td>215</td>
<td>0</td>
<td>DREF</td>
<td>YES</td>
<td>132KB</td>
<td>132KB</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSQA</td>
<td>225</td>
<td>0</td>
<td>YES</td>
<td>YES</td>
<td>68KB</td>
<td>68KB</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIVATE</td>
<td>229</td>
<td>1</td>
<td>NO</td>
<td>YES</td>
<td>4KB</td>
<td>4KB</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIVATE</td>
<td>229</td>
<td>5</td>
<td>NO</td>
<td>YES</td>
<td>28KB</td>
<td>28KB</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIVATE</td>
<td>230</td>
<td>0</td>
<td>NO</td>
<td>NO</td>
<td>136KB</td>
<td>136KB</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIVATE</td>
<td>230</td>
<td>1</td>
<td>NO</td>
<td>NO</td>
<td>7164KB</td>
<td>64KB</td>
<td>7100KB</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>PRIVATE</td>
<td>230</td>
<td>5</td>
<td>NO</td>
<td>NO</td>
<td>4KB</td>
<td>4KB</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIVATE</td>
<td>236</td>
<td>1</td>
<td>NO</td>
<td>NO</td>
<td>1500KB</td>
<td>780KB</td>
<td>720KB</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>PRIVATE</td>
<td>252</td>
<td>0</td>
<td>NO</td>
<td>NO</td>
<td>1512KB</td>
<td>16KB</td>
<td>1496KB</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LSQA</td>
<td>255</td>
<td>0</td>
<td>YES</td>
<td>NO</td>
<td>9688KB</td>
<td>32KB</td>
<td>9656KB</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>COMMON-64</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>1MB</td>
<td>1MB</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSA</td>
<td>2912</td>
<td></td>
<td></td>
<td></td>
<td>2912</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQA</td>
<td>424</td>
<td></td>
<td></td>
<td></td>
<td>424</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Job Delay panel

• Accessible via JY action from DA panel
  – Not available from non-RMF version of DA
• Rows on JY secondary panel are generated for
  – Current delay information reported by WLM
  – All delays for latest interval as reported via RMF
SDSF JOB DELAY SY1 ASID 002C IBMUSERZ J0000021 LINE 1-9 (9)

COMMAND INPUT ===>                                            SCROLL ===> CSR
PREFIX=* DEST=(ALL) OWNER=* SYSNAME=*  
ACTION=+,//,%,=

<table>
<thead>
<tr>
<th>NP</th>
<th>TYPE</th>
<th>Src</th>
<th>Samples</th>
<th>Percent</th>
<th>Interval</th>
<th>MinTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IDLE</td>
<td>WLM</td>
<td>100</td>
<td>100.00</td>
<td></td>
<td>0.250</td>
</tr>
<tr>
<td>2</td>
<td>Total RMF Samples</td>
<td>RMF</td>
<td>100</td>
<td>100.00</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Unknown</td>
<td>RMF</td>
<td>2</td>
<td>2.00</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>On Processor</td>
<td>RMF</td>
<td>23</td>
<td>23.00</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>All Delays</td>
<td>RMF</td>
<td>75</td>
<td>75.00</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>Processor Delay</td>
<td>RMF</td>
<td>2</td>
<td>2.00</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>7</td>
<td>Operator Delay</td>
<td>RMF</td>
<td>73</td>
<td>73.00</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>8</td>
<td>Message_Delay</td>
<td>RMF</td>
<td>72</td>
<td>72.00</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>Logical Swap</td>
<td>RMF</td>
<td>72</td>
<td>72.00</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>
SNAPSHOT command

• A new SNAPSHOT (SNAP) command is added to capture the contents of a tabular display into a browse/edit session
  – Can use PRINT command (from SDSF Browse) or Copy (from ISPF Edit) to move data to a more permanent location if desired
  – Rows/column data are captured in the same order as on the display
  – Column widths are maximized to prevent data loss and numeric scaling

• Syntax:
  – SNAP [S|SB|SE]
    • S – Use SDSF Browse to view data
    • SB - Use ISPF Browse to view data (requires ISPF)
    • SE – Use ISPF Edit to view data (requires ISPF)
    • Default is specified via SET SNAP command
  – SET SNAP [S|SB|SE|?]  
    • Sets the default method of viewing SNAP data
    • ? - invokes popup to input choice
## SNAP command output example (SDSF Browse)

**Display** | **Filter** | **View** | **Print** | **Options** | **Search** | **Help**
---|---|---|---|---|---|---

**SDSF OUTPUT DISPLAY *SNAP**

**COMMAND INPUT ===>**

---

**TOP OF DATA**

<table>
<thead>
<tr>
<th>JOBNAME</th>
<th>JobID</th>
<th>Owner</th>
<th>Prty</th>
<th>Queue</th>
<th>C</th>
<th>Pos</th>
<th>SAff</th>
<th>ASys</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>MONITOR</td>
<td>JOB00001</td>
<td>JES2</td>
<td>15</td>
<td>EXECUTION</td>
<td></td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>D96CLW1</td>
<td>JOB00025</td>
<td>D96CLW1</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>SYSLOG</td>
<td>JOB00002</td>
<td>+MASTER+</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>HZSPROC</td>
<td>JOB00005</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>PRIMEPSA</td>
<td>JOB00006</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>BPXAS</td>
<td>JOB00010</td>
<td>OMVSKERN</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>TCPIPALP</td>
<td>JOB00011</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>SDSF</td>
<td>JOB00012</td>
<td>SDSF</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>TCAS</td>
<td>JOB00013</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>VTAM44</td>
<td>JOB00014</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>RMF</td>
<td>JOB00015</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>BPXAS</td>
<td>JOB00018</td>
<td>OMVSKERN</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>RACF</td>
<td>JOB00024</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>BPXAS</td>
<td>JOB00026</td>
<td>OMVSKERN</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>RMFGAT</td>
<td>JOB00028</td>
<td>SYSTASK</td>
<td>15</td>
<td>EXECUTION</td>
<td>A</td>
<td></td>
<td></td>
<td>SY1</td>
<td></td>
</tr>
<tr>
<td>READTCP</td>
<td>JOB00003</td>
<td>SYSTASK</td>
<td>15</td>
<td>PRINT</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIP</td>
<td>JOB00004</td>
<td>SYSTASK</td>
<td>15</td>
<td>PRINT</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYMUPD12</td>
<td>JOB00007</td>
<td>SYSTASK</td>
<td>15</td>
<td>PRINT</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
Rexx enhancements

• Problem Statement / Need Addressed
  – Samples for Rexx execs need to be expanded
  – Rexx functionality needs to allow access to a selected row more easily

• Solution
  – New **RGEN** command to create custom sample based on current context (e.g. to show how to access that panel via Rexx)
    • Tailored using current setting such as PREFIX, OWNER, and FILTER values
  – New % prefix character to allow Rexx execs to be run as actions against a row

• Benefit / Value
  – Better examples to get started writing Rexx execs
  – Common tasks can be more easily performed by creating custom Rexx actions
RGEN command

- **RGEN** command generates a custom Rexx exec based on the current panel
  - Generates ISFEXEC command and ISFACT command (for secondaries) to get to current panel
  - Generates code to access rows on the panel and issue ISFACT against them
  - From Browse, issues ISFEXEC/ISFACT/ISFBROWSE commands needed to read current data
  - From LOG, issues ISFLOG
  - From ULOG, issues ISFSLASH
  - PREFIX, OWNER, and FILTER values are automatically added as appropriate to limit rows returned
  - **RGEN X** or **RGEN EXAMPLE** to select additional samples

- Generated EXECs are expected to need additional tailoring.
- Generated EXEC is presented in an ISPF edit session
  - Can be copied elsewhere using CREATE, COPY, etc.
Additional guidance is provided via **NOTE**, **MSG**, and **INFO** type lines.
### RGEN generated exec

```
SDSF EDIT    RGEN D96CLW1.SPFTEMP1.CNTL
Command ===>  hilite_rexx
Columns 00001 00080
Scroll ===> CSR
```

<table>
<thead>
<tr>
<th>Line</th>
<th>Code/Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>000028</td>
<td>/* Configure environment with special variables */</td>
</tr>
<tr>
<td>000029</td>
<td>/* Configure environment with special variables */</td>
</tr>
<tr>
<td>000030</td>
<td>=NOTE= Tip: Not all variables may be needed in your exec.</td>
</tr>
<tr>
<td>000031</td>
<td>=NOTE= Tip: You must be authorized to the corresponding command</td>
</tr>
<tr>
<td>000032</td>
<td>to set the variable.</td>
</tr>
<tr>
<td>000033</td>
<td>isfprefix='<em>' /</em> Corresponds to PREFIX command */</td>
</tr>
<tr>
<td>000034</td>
<td>isfowner='<em>' /</em> Corresponds to OWNER command */</td>
</tr>
<tr>
<td>000035</td>
<td>isfsysname='<em>' /</em> Corresponds to SYSNAME command */</td>
</tr>
<tr>
<td>000036</td>
<td>isfdest= ' '</td>
</tr>
<tr>
<td>000037</td>
<td>' '</td>
</tr>
<tr>
<td>000038</td>
<td>' '</td>
</tr>
<tr>
<td>000039</td>
<td>' ' /* Dest name 4 */</td>
</tr>
<tr>
<td>000040</td>
<td>/* Access the ST panel */</td>
</tr>
<tr>
<td>000041</td>
<td>Address SDSF &quot;ISFEXEC 'ST' (&quot; verbose &quot;)&quot;</td>
</tr>
<tr>
<td>000042</td>
<td>lrc=rc</td>
</tr>
<tr>
<td>000043</td>
<td>=NOTE= Tip: Always check the return code after each request.</td>
</tr>
<tr>
<td>000044</td>
<td>call msg rtn &quot;ISFEXEC 'ST'&quot;)&quot; /* List messages */</td>
</tr>
<tr>
<td>000045</td>
<td>if lrc&lt;&gt;0 then /* If command failed */</td>
</tr>
<tr>
<td>000046</td>
<td>do</td>
</tr>
<tr>
<td>000047</td>
<td>Say &quot;** ISFEXEC failed with rc=&quot;lrc&quot;.&quot; &quot;</td>
</tr>
<tr>
<td>000048</td>
<td>exit 20</td>
</tr>
<tr>
<td>000049</td>
<td>end</td>
</tr>
<tr>
<td>000050</td>
<td>/* The special variable sdsfocols is a word delimited */</td>
</tr>
<tr>
<td>000051</td>
<td>list of column names returned on the request.</td>
</tr>
<tr>
<td>000052</td>
<td>=NOTE= Tip: The special variable sdsfocols is a word delimited</td>
</tr>
<tr>
<td>000053</td>
<td>call colsrtn isfrows &quot;.&quot; sdsfocols /* List all rows and columns */</td>
</tr>
<tr>
<td>000054</td>
<td>numrows=isfrows /* Copy number of rows returned */</td>
</tr>
<tr>
<td>000055</td>
<td>/* Loop for all rows returned */</td>
</tr>
<tr>
<td>000056</td>
<td>do ix=1 to numrows</td>
</tr>
</tbody>
</table>

---

Use HILITE command to hillight REXX syntax

Saved in EDIT profile ISFREXX

---

Complete your session evaluations online at [www.SHARE.org/Orlando-Eval](http://www.SHARE.org/Orlando-Eval)
### RGEN EXAMPLE popup

**REXX Examples**  
Row 1 to 15 of 22

**Command ===>**

**Sort by type (F5) or description (F6).**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>Cancel a job</td>
</tr>
<tr>
<td>Action</td>
<td>Cancel a set of jobs</td>
</tr>
<tr>
<td>Action</td>
<td>Invoke an EXEC with the % action character</td>
</tr>
<tr>
<td>Action</td>
<td>List action characters</td>
</tr>
<tr>
<td>Action</td>
<td>List job data sets</td>
</tr>
<tr>
<td>Action</td>
<td>Modify a value for a set of jobs</td>
</tr>
<tr>
<td>Action</td>
<td>Modify values for selected jobs (overtype)</td>
</tr>
<tr>
<td>Browse</td>
<td>Browse a single data set with EXECIO</td>
</tr>
<tr>
<td>Browse</td>
<td>Browse a single data set with ISFBROWSE</td>
</tr>
<tr>
<td>Browse</td>
<td>Browse check output</td>
</tr>
<tr>
<td>Browse</td>
<td>Browse check output from check history</td>
</tr>
<tr>
<td>Browse</td>
<td>Browse check output with ISFBROWSE</td>
</tr>
<tr>
<td>Browse</td>
<td>Browse job output with EXECIO</td>
</tr>
<tr>
<td>Browse</td>
<td>Browse job output with ISFBROWSE</td>
</tr>
<tr>
<td>Browse</td>
<td>Browse job output with ISFBROWSE - groups of lines</td>
</tr>
</tbody>
</table>
Custom Rexx Actions

• Use % action character on a row to execute a Rexx exec against the row
  – Syntax:
    • `%execname userparms`
      – execname – The name of the exec in SYSEXEC or SYSPROC
        • Must be a REXX exec
      – userparms – any user parameters to be passed to the exec
    • % by itself generates a popup where the exec name and parameters can be filled in
  – Input parameters to the REXX exec include:
    • The current panel identifier (can be used to limit the scope of the command)
    • The primary panel identifier (needed for ISFACT / ISFGET / ISFBROWSE calls)
    • The row token of the selected row (needed for ISFACT / ISFGET / ISFBROWSE calls)
    • The user parameters specified on the command
Custom Rexx Action Example

<table>
<thead>
<tr>
<th>NP</th>
<th>JOBNAME</th>
<th>JobID</th>
<th>Owner</th>
<th>TGPct</th>
<th>Prty</th>
<th>Queue</th>
<th>Max-RC</th>
</tr>
</thead>
<tbody>
<tr>
<td>%myexec p1 p2 p3</td>
<td>SYSLOG</td>
<td>S00000005</td>
<td>+MASTER+</td>
<td>0.18</td>
<td>15</td>
<td>EXECUTION</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RMF</td>
<td>S00000010</td>
<td>SYSTASK</td>
<td>0.14</td>
<td>15</td>
<td>EXECUTION</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HZSPROC</td>
<td>S00000015</td>
<td>SYSTASK</td>
<td>0.14</td>
<td>15</td>
<td>EXECUTION</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TCAS</td>
<td>S00000006</td>
<td>SYSTASK</td>
<td>0.09</td>
<td>15</td>
<td>EXECUTION</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SDSF</td>
<td>S00000008</td>
<td>SDSF</td>
<td>0.09</td>
<td>15</td>
<td>EXECUTION</td>
<td></td>
</tr>
</tbody>
</table>

- Use **ARR NP n** command or **+nn** action to increase size of NP area if necessary.
- Can also issue from command line via 1 '%%myexec p1 p2 p3'

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
**Rexx Action Popup**

[Image of the interface with text]

**REXX Exec**

**Command ===>**

**Supply the exec name and arguments, separated by blanks.**

**Exec**  |  **Arguments**
--- | ---
MYEXEC  |  P1 P2 P3

F1=Help  F5=Generate REXX  F12=Cancel

**Popup is invoked if either:**
- `%` is issued in the NP area with no Exec name
  - Exec name/arguments not pre-filled in popup
- `%` is issued with a `+` as the last character
  - Exec name/arguments up to `+` are pre-filled
- Above example shows popup for `%myexec p1 p2 p3+`
Parameters passed to Rexx Action Exec

- Format is `sdsfparms ( userparms`
  - `sdsfparms` include several parameters
    - Current display
    - Primary display
    - Row token

- Sample Rexx code to parse parameters

```rexx
/* REXX */
Parse arg sdsfparms '(' userparms
Parse var sdsfparms curr_panel prim_panel in_token .
...
Address SDSF 'ISFGET' prim_panel "TOKEN('"in_token"")"
```
Accessing current SDSF values from EXEC

- Some SDSF settings from the “parent” instance of SDSF may be useful to propagate to ISFEXEC / ISFACT / ISFGET / ISFBROWSE etc.
  - A new `isfquery()` function can be called to
    - Determine if a parent instance of SDSF exists
    - Return values from that parent instance into `isfxxxx` variables
  - For example
    - `isfquery()` - indicates whether or not parent instance exists
    - `isfquery("ALL")` gets all defined variables
    - `isfquery("isfprefix")` gets current PREFIX value into `isfprefix`
    - `isfquery("isfprefix", isfowner")` gets PREFIX and OWNER
    - etc.
  - Variable names supported are either:
    - Values which SDSF requires on input (such as PREFIX and OWNER)
    - Values which correspond to the WHO command (such as server name, JES subsystem name, etc)
### isfquery() Variables

<table>
<thead>
<tr>
<th>Variable names allowed by isfquery()</th>
</tr>
</thead>
<tbody>
<tr>
<td>isfappc</td>
</tr>
<tr>
<td>isfdate</td>
</tr>
<tr>
<td>isfdupds</td>
</tr>
<tr>
<td>isfgrpname</td>
</tr>
<tr>
<td>isfjesrel</td>
</tr>
<tr>
<td><strong>isfowner</strong></td>
</tr>
<tr>
<td>isfrmfrel</td>
</tr>
<tr>
<td>isfsysname</td>
</tr>
<tr>
<td>isftimeout</td>
</tr>
<tr>
<td>isfuserid</td>
</tr>
</tbody>
</table>

### Variable categories allowed by isfquery() ... color key

| ALL | INIT | WHO |
Miscellaneous Rexx Changes

- With the addition of the JG and JS panels, it is now possible for “secondary” displays to nest more than two levels deep
  - For example, JG → ST → JS → JDS would be a reasonable request (datasets associated with a particular step from a particular job in a job group)
- The current REXX variables defined pairs of variables (such as isffilter and isffilter2) to represent the primary and secondary panels, respectively
  - This scheme breaks down when the number of levels is >2.
- A new set of variables is defined to specifically represent the “deepest” level associated with the request
  - These variable names begin with the characters “sdsf” and the PREFIX value from the request (e.g. \texttt{st_sdsficols})
  - isfxxx2 variables always return values from the deepest secondary
- A second optional parameter is added to isfreset() to specify a prefix to apply to deleting the new special variables
# New SDSF special variables

<table>
<thead>
<tr>
<th>New variable</th>
<th>Existing variables</th>
<th>Input/Output</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sdsficols</td>
<td>isfcols, isfcols2</td>
<td>Input</td>
<td>Column list (input)</td>
</tr>
<tr>
<td>sdsfocols</td>
<td>isfcols, isfcols2</td>
<td>Output</td>
<td>Column list (output)</td>
</tr>
<tr>
<td>sdsfucols</td>
<td>isfucols, isfucols2</td>
<td>Output</td>
<td>Update column list</td>
</tr>
<tr>
<td>sdsfdcols</td>
<td>isfdcols, isfdcols2</td>
<td>Output</td>
<td>Delayed column list</td>
</tr>
<tr>
<td>sdsfrcols</td>
<td>isfrcols, isfrcols2</td>
<td>Output</td>
<td>Related column list</td>
</tr>
<tr>
<td>sdsfcolumngroups</td>
<td>isfcolumngroups</td>
<td>Output</td>
<td>Column Group list</td>
</tr>
<tr>
<td>sdsftitles</td>
<td>isftitles, isftitles2</td>
<td>Output</td>
<td>Column title list</td>
</tr>
<tr>
<td>sdsffilter</td>
<td>isffilter, isffilter2</td>
<td>Input</td>
<td>Display Filter</td>
</tr>
<tr>
<td>sdsffiltermode</td>
<td>isffiltermode, isffiltermode2</td>
<td>Input</td>
<td>Display Filter Mode</td>
</tr>
<tr>
<td>sdsfsort</td>
<td>isfsort, isfsort2</td>
<td>Input</td>
<td>Sort parameters</td>
</tr>
</tbody>
</table>
Rexx Changes – COMPACT mode

• A new **COMPACT** option is added to ISFACT, ISFEXEC, and ISFGET
  – When specified, row data is returned in a single stem variable (**sdsfrow.x**, adjusted by PREFIX value) rather than a separate stem variable for each column
  – Additional variables are returned to indicate where the values for each column begin and end
    • **sdsfcolstart** – the starting location in each sdsfrow variable for the value of the variable (suitable for use with substr() function)
    • **sdsfcollen** – the length of the value at this location
    • **sdsfcolcount** – the number of values at the specified location (each being sdsfcollen characters long)
    • Each variable is a list of words which correspond to the words in the sdsfocols variable (column list)
  – This can result in significantly fewer variables being returned for large displays
  – Only variables specified in isfcols/sdsficols are returned
COMPACT mode example

/* REXX */

rc = isfcalls("ON")

Address SDSF 'ISFEXEC ST ( COMPACT PREFIX ST_'
Do ix=1 to st_sdsfrw.0
    Say '***** ROW' ix '*******'
    Do jx=1 to words(st_sdsfocols) /* For each column */
        w1 = word(st_sdsfocols,jx)    /* Get the column name */
        w2 = word(st_sdsfcolstart,jx) /* Get the corresponding data start index */
        w3 = word(st_sdsfollen,jx)    /* Get the corresponding data length */
        w4 = word(st_sdsfcolcount,jx) /* Get the number of related fields */
        /* Use substr function to parse the value from sdsfrw variable for row */
        Do kx=1 to w4
            Say w1 = substr(st_sdsfrw.ix,w2,w3)
            w2=w2+w3     /* Add the column length to get the next related value */
        End
    End
End

rc = isfcalls("OFF")

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
COMPACT mode example - variable values

\texttt{st_sdsfocols} = "JNAME JOBID OWNERID JPRIO QUEUE JCLASS POS SYSAFF ACTSYS STATUS PRTDEST SECLABEL TGNUM TGPCT ORIGNODE EXECNODE DEVID OFFDEVS RETCODE SRVCLS WLMPOS SCHENV DELAY SSMODE SPIN PHASENAME PHASE JTYPE DELAYRSN JOBCORR ASID ASIDX SYSNAME JOBGROUP JOBGRPID JOBSET JGSTATUS FLUSHACT HOLDUNTIL STARTBY WITH"

\texttt{st_sdsfcolstart} = "1 10 19 28 39 50 59 70 231 240 290 299 310 322 331 340 359 375 386 395 406 423 427 432 437 458 469 474 603 636 647 658 667 676 685 694 703 712 735 758"

\texttt{st_sdsfcollen} = "8 8 10 10 8 10 5 8 30 18 8 10 11 8 8 18 15 10 8 10 16 3 4 4 20 10 4 128 32 10 10 8 8 8 8 8 22 22 8"

\texttt{st_sdsfcolcount} = "1 1 1 1 1 1 32 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1"

\texttt{st_sdfsrow.1} = "IBMUSER TSU00044 IBMUSER 15 EXECUTION SY1
SY1 LOCAL SYSMULTI 1 0.05 LOCAL LOCAL
0 NO JES NO EXECUTING 14 TSU 45 002D SY1"
Miscellaneous changes

• JES3 OUTDISP Support
  – OUTDISP columns on O and H enabled for JES3 (no overtype)
  – New overtypeable OUTDISP column on JDS display (JES3 only)

• JES2 Dynamic checkpoint tuning
  – HOLD and DORMANCY columns on MAS panel are not overtypeable when dynamic checkpoint tuning is being used
  – (MASDEF CYCLEMGT=AUTO)
  – Columns are still displayed and show values being used internally
  – MAS display title line indicator when in effect

• Userid included on enclave display
Migration & Coexistence Considerations

- SDSF V2R2 can coexist with SDSF V1R13 and V2R1
  - Toleration APAR PI04906 needed to share ISFPRMxx:
    - SDSF V1R13 (HQX7780) - PTF UI90015
    - SDSF V2R1 (HQX7790) – PTF UI90016
  - Apply these PTFs any time prior to installing SDSF V2R2
- ISPF profiles are compatible
  - Saved arrange, sort, filter, print criteria
  - Saved slash commands
- SDSF/REXX execs will run unchanged in SDSF V2R2
  - Exploitation of new function will preclude exec running on down level SDSF
- SDSF/Java applications will run unchanged in SDSF V2R2
Migration & Coexistence Considerations ...

- **HASPINDX removal**
  - HASPINDX no longer used in SDSF V2R2
    - Was used to chronologically order JES2 syslog data sets
  - HASPINDX related keywords in ISFPARMS/ISFPRMxx now obsolete
    - ISFPMAC / OPTIONS keywords ignored:
      - NIDBUF, IDBLKS, INDEX ,INDXVOL
    - Logon proc or initial clist does not need to ALLOC FI(HASPINDX)
- **HASPINDX sharing**
  - HASPINDX could be shared between different levels of SDSF
    - For example, SDSF V1R13 and V2R1 could use the same physical data set
    - HASPINDX not used in SDSF V2R2
  - If you are sharing HASPINDX:
    - You can delete data set when all systems are at V2R2 level
Installation

• SDSF V2R2 now installed as single FMID: HQX77A0
  – SDSF now only installs in SMP/E BCP zone
  – ServerPac option for SDSF only SMP/E zone removed

• JES2 dependent feature JJE77xS now removed in SDSF V2R2
  – Feature was used for all modules that had dependency on JES2 distributed macros
    • Provided means for reassembling SDSF when JES2 macros were changed
  – SDSF V2R2 no longer uses the macros and hence reassembly no longer needed

• Data sets used by JJE77xS no longer needed in SDSF V2R2:
  – ISF.SISFJCL1 / ISF.AISFJCL1
  – ISF.SISFMOD1 / ISF.AISFMOD1 (remove SISFMOD1 from Inklst)
  – ISF.SISFSRC1 / ISF.AISFSRC1
Installation ...

- ISFPARMS moved from JJE77xS to HQX77A0
  - If you modify ISFPARMS
    - Update your SMP/E apply job to specify right FMID
    - Source moved from ISF.SISFSRC1 to ISF.SISFSRC
      - IBM recommends you use ISFPRMxx instead of ISFPARMS
- UCLIN and reassembly sample jobs deleted
  - ISFISUCL – ran UCLIN for JES2 zone
  - ISFASMP – reassembled SDSF JES2 dependent parts
- Allocation and DDDEF sample jobs removed
  - ISFJ2ALC – allocated JJE77xS data sets
  - ISFJ2DDD – created DDDEF entries in JES2 zone
- Sample job ISFISALC no longer allocates HASPINDX
Installation ...

- **z/OSMF SDSF/UI plug-in**
  - If you previously imported the plug-in using z/OSMF Import Manager in V2R1 no need to re-import plug-in
  - If you have not previously imported the plug-in and want to use the z/OSMF SDSF UI:
    - Review z/OSMF Import Manager online help for procedure to import z/OSMF SDSF plug-in
      - Launch Import Manager under z/OSMF Administration category
      - Import /usr/lpp/sdsf/zosmf/sdsf.properties
Session Summary

• Discuss the enhancements to SDSF in z/OS 2.2
  – JJExxxx component elimination
  – zIIP exploitation
  – System command improvements
  – Batch Parallelism
  – Job Step display
  – Job Detail displays
  – UI enhancements
  – Rexx enhancements
    • Custom row actions
    • Sample Rexx exec generator
  – Miscellaneous enhancements

• Migration and Installation considerations
Questions?
Complete your session evaluations online at www.SHARE.org/Orlando-Eval
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