

E51

V8 Introducing IMS Single Point of Control

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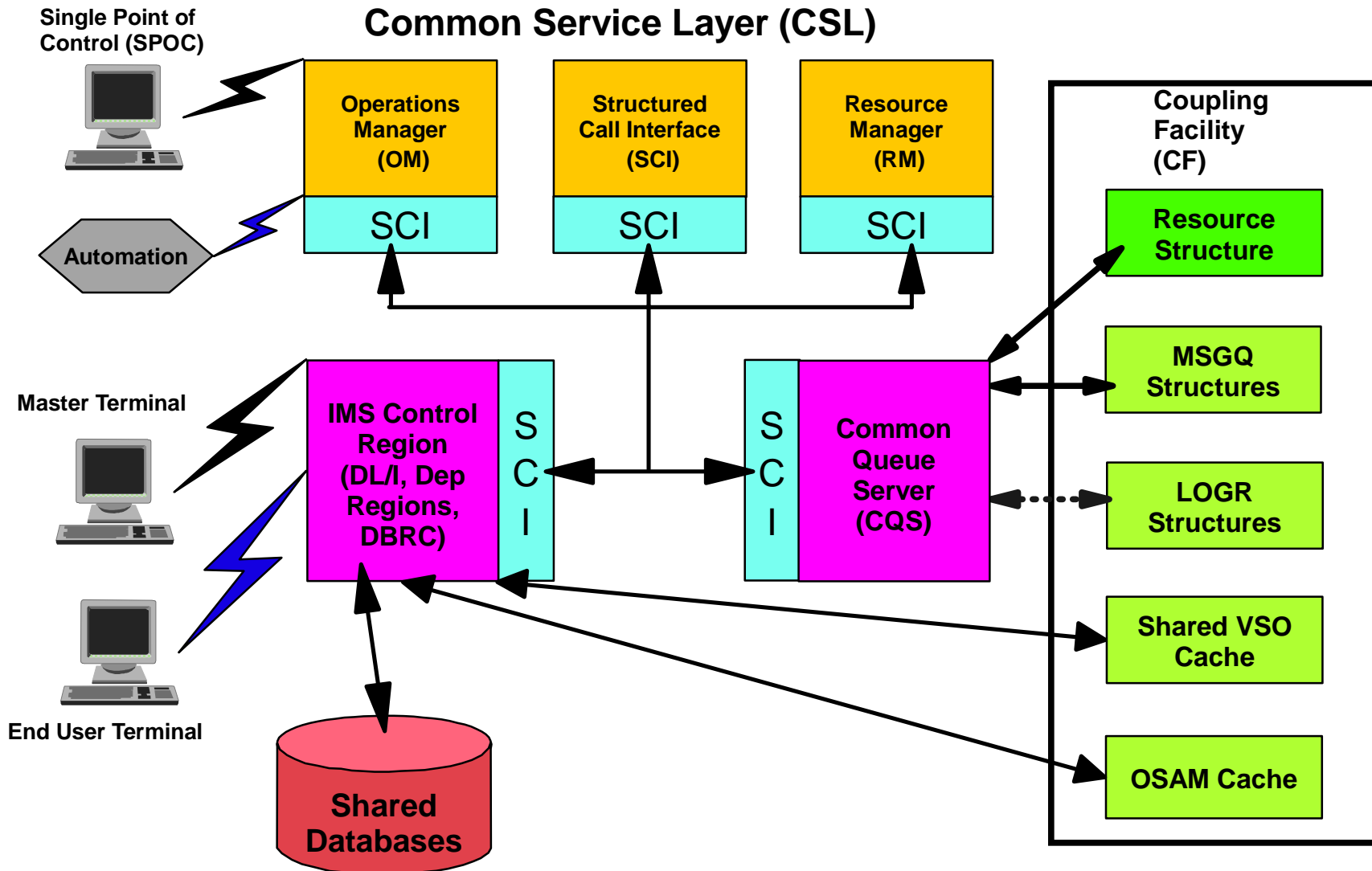
speaker notes

Bio:

I was an MVS system programmer for several years and then in MVS tools support for several years.

Now I work in IMS development, working on ISPF oriented programs.

IMS V8 IMSplex



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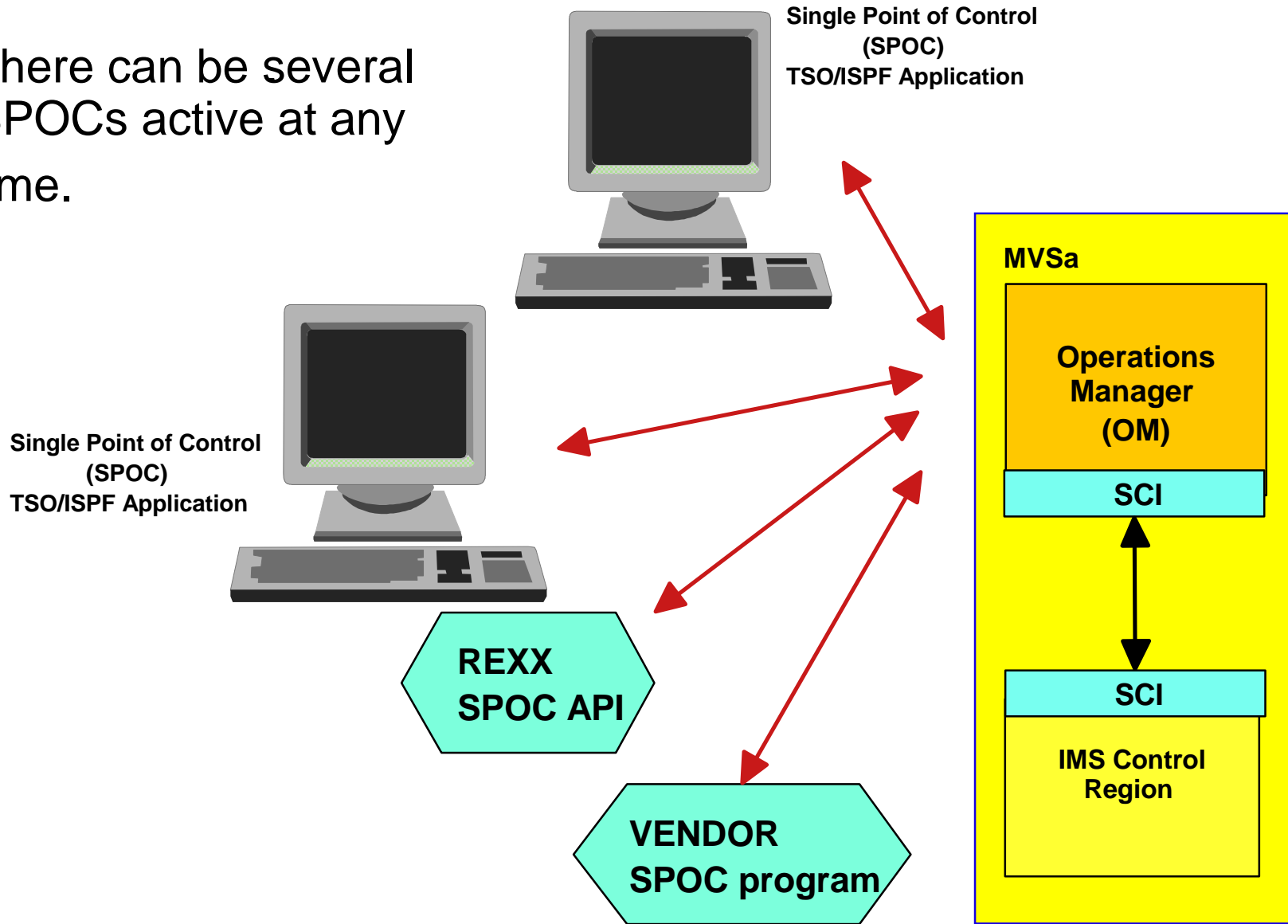
IMS allows multiple IMS systems to work together as a single image, sharing databases and / or message queues. This environment is called an IMSplex. To simplify systems management, IMS V8 adds new functions such as the Operations Manager Application Programming Interface (OM API) which allows operator commands to be entered and the responses to be retrieved.

The IMS operator can issue commands to any or all of the command processing members of the IMSplex with a program that utilizes the OM API. That is, the IMSplex can be managed from a single place! This 'Single Point of Control' is referred to as a SPOC.

'Single' does not mean 'only': any number of IMS operators can start their own SPOC sessions.

'Single' does not mean 'only'

There can be several SPOCs active at any time.



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Single Point of Control (SPOC) means that you can issue commands to all members of an IMSplex at one time. There can be any number of SPOC users active at any time.

A SPOC can be a TSO SPOC user, a rexx program using the REXX SPOC API, or a vendor product that was written to use the OM API.

TSO SPOC setup

Setup is done by allocating files to the TSO userid.

Usage	Dataset
TSOLIB command or STEPLIB	IMS.SDFSRESL
FILE(ISPPLIB)	IMS.SDFSPLIB
FILE(ISPMLIB)	IMS.SDFSMLIB
FILE(ISPTLIB)	user.ISPTLIB IMS.SDFSTLIB
FILE(ISPTABL)	user.ISPTLIB
FILE(SYSPROC)	IMS.SDFSEXEC

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The executables must be available to the TSO session. In addition to the load modules, other dataset types are required. The datasets are typical for use with ISPF.

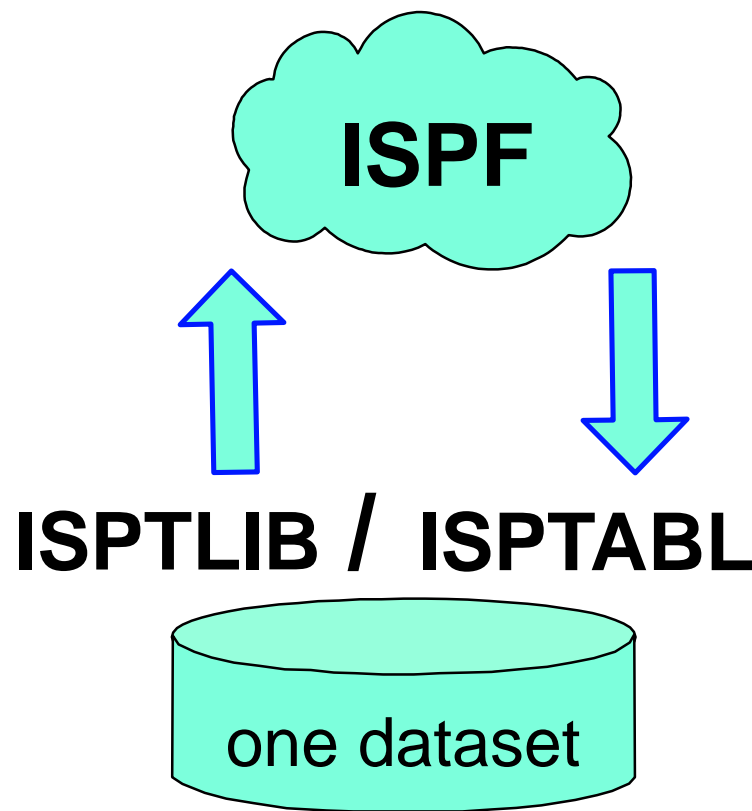
TSOLIB is a command that establishes a STEPLIB-like dataset without having to modify the logon procedure.

NOTE: The dataset allocated to ISPTABL is specific to the user. Because of the way ISPF uses tables, the ISPTABL dataset must also be allocated in the ISPTLIB concatenation and ahead of the IMS.SDFSTLIB dataset.

TSO User Setup - ISPF tables

The same user ISPF table dataset is in both ISPTABL and in ISPTLIB.

It reads from the ISPTLIB concatenation and writes to ISPTABL (a single dataset).



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The ISPTABL dataset is the output dataset when the command history is saved. There should only be one dataset in the ISPTABL file. ISPTLIB is the input dataset for the command history. The same dataset in ISPTABL needs to be in the ISPTLIB concatenation.

Some background: a file allocation that consists of multiple PDSes cannot be opened for output, so two file names are used. One is input (ISPTLIB) and the other is for output (ISPTABL).

Separate from ISPTABL, the ISPF profile dataset is used to save the default preferences. It should already be allocated for normal ISPF usage.

TSO SPOC setup using LIBDEF

Sample member DFSSPSRT is available in the SDFSEEXEC dataset.

```
/* rexx */
Address TSO "ALLOC F(SPOCTLIB) dsn(spoc.isptlib,",
           " 'IMS.SDFSTLIB') SHR REU"
Address TSO "ALTLIB  ACTIVATE APPLIC(CLIST)",
           "DSN('IMS.SDFSCLIB')  "
Address ISPEXEC
"LIBDEF ISPLLIB DATASET ID('IMS.SDFSRESL') "
"LIBDEF ISPMLIB DATASET ID('IMS.SDFSMLIB') "
"LIBDEF ISPPLIB DATASET ID('IMS.SDFSPLIB') "
"LIBDEF ISPTLIB LIBRARY ID(SPOCTLIB) "
"LIBDEF ISPTABL DATASET ID(SPOC.ISPTLIB) "
"SELECT CMD(DFSSPOC) NEWAPPL(CSLU) PASSLIB"
"LIBDEF ISPLLIB"
"LIBDEF ISPMLIB"
"LIBDEF ISPPLIB"
"LIBDEF ISPTLIB"
"LIBDEF ISPTABL"
Address TSO "ALTLIB  RESET"
```

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An alternative is to use the ISPF LIBDEF service to temporarily allocate the ISPF related datasets. In this case, the SDFSRESL library would be allocated to ISPLLIB. Use the ALTLIB command to temporarily allocate the SYSPROC dataset.

A sample rexx program is DFSSPSRT in the SDFSEEXEC library.

TSO SPOC - Preferences

IMS Single Point of Control Preferences

Command ==>

Select your options and press the Enter key.

Default IMSplex. . . . PLEX1

Default routing. . . . IMS1_____

Wait interval. . . . 2:45 (MM:SS)

Waiting preference . . 1 1. Wait for command to complete.
2. Do not wait for command response.

Command shortcuts. . . 1 1. Use command shortcuts.
2. Do not use command shortcuts.

Shortcut processing. . 1 1. Merge explicit and default parameters.
2. Explicit parameters override defaults.

Initial view 1 1. SPOC command panel.
2. SPOC status list.

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The preferences panel is used to set default values and to select some processing options.

- IMSPLEX - the name of the IMSplex
- routing - names of command processors. Leave blank for all systems in the IMSplex.
- wait interval - the OM timeout value. OM will stop waiting and return to you a 'timed out' status.
- wait preference - do you want to wait for command response or look for it later in the command status panel
- command shortcuts - whether to use the short cuts or not.
- shortcut processing - merge or override parameters.
- initial view - do you want to see the command entry panel first or the command status panel.

These values are saved in the ISPF profile dataset and are used the next time you use DFSSPOC.

TSO SPOC - IMSplex Command response

```
File  Display  View  Options  Help
-----
                    IMS Single Point of Control
Command ===> _____

----- Plex . _____ Route . _____ Wait . _____
Response for: QUERY IMSPLEX SHOW(TYPE,STATUS,SUBTYPE)
IMSplex  MbrName      CC Member    Type  Subtype  Status
CSLPLEX1 OM1OM          0  SYS3      IMS   DBDC     ACTIVE
CSLPLEX1 OM1OM          0  OM1OM     OM            READY,ACTIVE
CSLPLEX1 OM1OM          0  USRT002   AOP           ACTIVE
CSLPLEX1 OM1OM          0  IMS2      IMS   DBDC     ACTIVE
CSLPLEX1 OM1OM          0  SCI1SC    SCI           READY,ACTIVE
CSLPLEX1 OM1OM          0  RM1RM     RM    SNGLRM   READY,ACTIVE

F13=Help F15=Exit F16=Showlog F18=Expand F21=Retrieve F24=Cancel
```

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The IMSplex command response is shown in a tabular format. The data is displayed in columns. Character fields are typically left aligned. Numeric fields are typically right aligned. Alignment is set by the XML tags.

The list is sorted according to key fields and priority set in the XML created by the command processor. The user can sort the list by positioning the cursor on a column heading and pressing Enter. Another option is to use the action bar to sort: use View -> Sort and select the column heading.

To retrieve a command use the ISPF retrieve key or position the cursor on the command text below the command line and press Enter.

The panel includes fields for the name of the IMSplex, the specific members within the IMSplex, and the wait time for the command execution. These are temporary overrides of defaults set in the 'preferences' panel. These values are discarded after you exit SPOC.

IMSplex command response scrolling

```
File  Display  View  Options  Help
-----
                    IMS Single Point of Control
Command ==> _____

----- Plex . _____ Route . _____ Wait . _____
Response for: QRY TRAN NAME(SKS*) SHOW(ALL) More: +>
Trancode MbrName      CC PSBname      QCnt LCLs      LQCnt  LLCT LPLCT
SKS1     IMS2          0          STLDDLT1      5      1      0      2 65535
SKS1     IMS2          0 STLDDLT1      0      1      0      2 65535
SKS1     SYS3          0 STLDDLT1      0      1      0      2 65535
SKS2     IMS2          0          0            0      2      0      2 65535
SKS2     IMS2          0 STLDDLT2      0      2      0      2 65535
SKS2     SYS3          0 STLDDLT2      0      2      0 65535 65535
SKS3     IMS2          0          0            0      3      0      2 65535
SKS3     IMS2          0 STLDDLT3      0      3      0      2 65535
SKS3     SYS3          0 STLDDLT3      0      3      0      4      4

F13=Help F15=Exit F16=Showlog F18=Expand F21=Retrieve F24=Cancel
```

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pages with a lot of data will contain a scrolling indicator:

"More: <-+>".

- < more data to the left
- more data below
- + more data above
- > more data to the right

Some IMSplex command responses will have key columns that do not scroll horizontally, so the user can have a point of reference. The columns are defined as keys by the XML tags. In the example, the TranCode and MbrName values will not scroll horizontally.

TSO SPOC - Classic IMS Command response

```
File  Display  View  Options  Help
-----
                    IMS Single Point of Control
Command ==> _____

----- Plex . _____ Route . _____ Wait . _____
Log for . . . : DIS STATUS
IMSp1ex . . . . : PLEX1
Routing . . . . :
Start time. . . . : 2002.208 08:48:17.87
Stop time . . . . : 2002.208 08:48:17.90
Return code . . . : 00000000
Reason code . . . : 00000000
Command master. . : IMS2

MbrName  Messages
-----
IMS2      **TRAN***PSBNAME
IMS2      STATUS UNRESTRICTED
IMS2      **DATABASE**
IMS2      AUTODB      NOTOPEN
IMS2      BANKATMS   NOTINIT, NOTOPEN, STOPPED
F13=Help F15=Exit F16=Showlist F18=Expand F21=Retrieve F24=Cancel
```



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The command response for classic IMS commands is in a sequential format.

At top are some execution statistics and information.

Below are the messages produced by the classic IMS command. The text is in the same format as that of prior releases. The text is prefixed by the member name. Information from each member is grouped together.

IMSpIex commands may have log information too if there were some messages to display. For example, one system may say 'no resources found' while other systems provide valid resource information. The 'no resources' indication would appear in the log.

Use the action bar to see different 'displays'

File	Display	View	Options	Help
PLEX1	3	1. Cmd entry & response		oint of Control
Comma		2. Cmd entry & log		
		3. Command status		
		4. Command shortcuts	x .	Route .
Respo		5. Expand command...		

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You can display different command oriented panels using the action bar. Position the cursor on the 'display' word in the action bar and press Enter.

Choose an option by typing the number or by positioning the cursor and pressing Enter

TSO SPOC - Command Status

```
File  Display  View  Options  Help
-----
                    IMS Single Point of Control
COMMAND ===> _____

----- Plex .           Route .           Wait .
Enter '/' to view command response, 'I' to reissue a command, or
'd' to delete a command.
Act   Status      Command
____ Executing    QRY IMSPLEX NAME(PLEX1,PLEXB)
____ Complete    UPDATE TRAN NAME(ABC007) SET(CLS(4))
____             QRY TRAN NAME(*) CLS(4) SHOW(CLS)
***** Bottom of data *****
```

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The command status panel contains a list of previously entered commands. They are in timestamp order, with the most recent shown first.

There are a few line commands supported.

- '/' - If the command was issued in this SPOC session, you can display the command response using the '/' line command.
- 'd' - You can delete a command from the list using 'd'.
- 'l' - You can re-issue a command.
- 'E' - You can edit a command using the command editor.

TSO SPOC - Command Shortcuts

```
File Display View Options Help
-----
                          SPOC Command Shortcuts
Command ==> _____

----- Plex . _____ Route . _____ Wait . _____
Act   Command                Additional Parameters
-----
_____ &QRYPLX _____ QRY_IMSPLEX SHOW (STATUS) _____
_____ QRY_USER _____ SHOW (ALL) _____
_____ QRY_TRAN _____ SHOW (CLS PSB QCNT STATUS) _____
_____ MON_LINE_ABC07 PTERM_ALL _____

***** Bottom of data *****
```

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NOTE: The 'Use command shortcuts' option has to be chosen in the 'Preferences' panel before defined shortcuts are used.

The shortcut table is a set of user defined commands. When a command is issued in TSO SPOC and it matches an entry in the table, the additional parameters are either appended to or replaced explicit command parameters (depending on user preferences).

Use the blank line to add new commands.

If an ampersand (&) character is used as the first character, the entire command is replaced instead of being appended to.

Use 'd' to delete an entry, or 'i' to issue the command.

TSO SPOC - Expanded command

```
EDIT          Single Point of Control Command
Command ==> _____ Scroll ==> PAGE
```

```
----- Plex . _____ Route . _____ Wait . _____
```

```
***** ***** Top of Data *****
```

```
000001 QRY IMSPLEX +
```

```
000002 NAME (IMS5,IMS4,IMSA)
```

```
***** ***** Bottom of Data *****
```

F13=Help

F15=Exit

F17=Rfind

F18=Rchange

F24=Cretriev

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Use 'expand command' to issue commands longer than 145 characters. Long commands are edited using the ISPF editor. You can issue commands as long as 1024 bytes. The command in the editor can span multiple lines. Standard TSO continuation rules apply.

The user uses the normal editor commands. The 'copy', 'create', and 'replace' commands are used to get the command from a dataset and to save the command to a dataset.

Comments can be included by using REXX comment delimiters (/ * this is a comment. */). Comments are ignored when the command is sent to the IMSplex member.

ISPF editor conventions apply:

- F3 - Ends the editor with the information preserved and executes the command.
- If the user types 'cancel', the command is not executed.

TSO SPOC - Group Definitions

Help

Single Point of Control Group Definitions

COMMAND ===> _____

Enter a group name and member names to add a new group. Enter 's'
to select a default, or 'd' to delete a group.

Default routing . . . : IMSG2

Act	Group	IMSpIex members
	IMSG1	IMS2 SYS3 IMSC IMSD
	IMSG2	IMS5 IMS4 IMSA

***** Bottom of data *****

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Use the group definition dialog to create user defined groupings of command processors. When a command routed to this group, only the command processors listed will execute the command.

Use the blank line to create a new group. Use the 's' to select a default group, or 'd' to delete a group definition.

If you delete a group name that is in the default routing list, you get prompted to confirm the delete.

Gotcha Issues

- Setup requires the use of TSOLIB command or libdef commands.
- The scroll keys follow CUA guidelines, but may not be the ones users expect. Left is shift/F7 and Right is shift/F8
- Current command history table will keep growing and may cause dataset full conditions for ISPTABL. Some user maintenance is required.
- ISPF 'split screen' allows multiple TSO SPOC screens per user. The last one to exit is prompted for clean up. But if attention is pressed, the count cannot go to zero and user must log off to clear control blocks.

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The TSOLIB command is used to modify the standard search order, or LIBDEF commands can be used, or the logon procedure can be changed.

Use shift/F7 for up and shift/F8 for down.

The command history keeps growing - there is no expiration date. Over time, this will cause the ISPTABL dataset to fill. The user must manually delete unneeded entries.

Normally, the user's last instance of DFSSPOC will prompt for cleanup processing. If one instance of DFSSPOC was interrupted, the usage count cannot go to zero. Over time, the user's private storage will fill with DFSSPOC control blocks and the user must log off to clean up.