



IBM Software Group

IBM Session Manager

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 business on demand.

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IBM Software Group

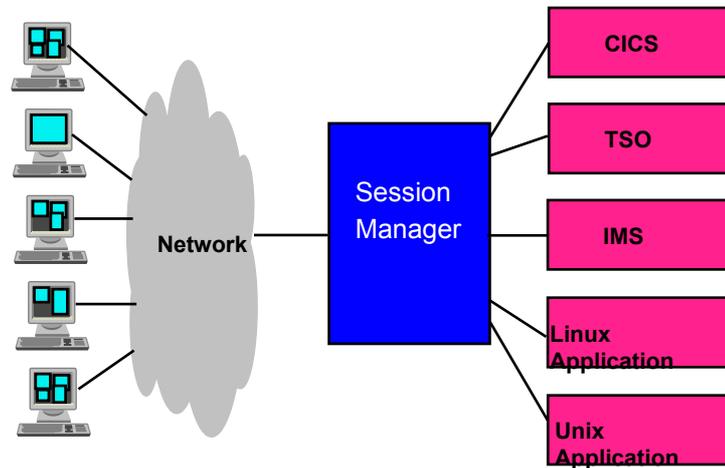


What is Session Manager for z/OS?

- **Provides secure access to multiple applications from a single terminal Session**
 - ▶ to VTAM applications on z/OS or OS/390
 - ▶ to TCP/IP applications
- **Supports access from terminal sessions in both SNA and TCP/IP networks**
 - ▶ 3270 terminals, 3270 emulators, Telnet TN3270 clients
- **Runs on z/OS or OS/390 and normally runs as a VTAM application**
 - ▶ VTAM not needed if a TCP/IP only environment
- **Supports External Security Manager for user authentication**
 - ▶ Standard SAF interface supported
- **Program Number 5655-K01**
 - ▶ Requires OS/390 V2.10 or any release of z/OS
 - ▶ General Availability - 31 January 2003
 - ▶ One-Time Charge pricing based on Value Units

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Session Manager for z/OS: Overview



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Session Manager for z/OS: Overview....

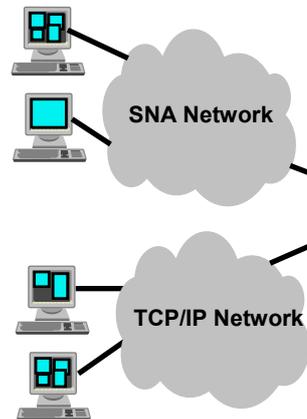
Network Environment --> [TCP/IP](#)

- Uses TCP/IP Telnet capabilities
- Telnet 3270 Server used with TN3270 protocol for connectivity to terminals
 - ▶ TN3270 server supplied with TCP/IP product
 - ▶ Or Session Manager supplied TN3270 Server
- Session Manager supplied Telnet Client used for connectivity to applications
 - ▶ TN3270 protocol
 - ▶ VT100/ VT220 protocol
 - ▶ Network Virtual Terminal (NVT) protocol
- Use of Session Manager TN3270 Server recommended for terminal connectivity
 - ▶ Significant performance advantages

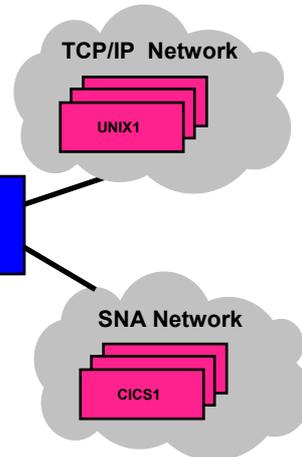
4

Session Manager for z/OS: Overview....

End Users



Applications



Session
Manager



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Session Manager for z/OS: Overview....

End-User Interaction --> [Application Access](#)

■ Session Manager Signon

- ▶ Either Session Manager Signon screen or Application Menu screen displayed
- ▶ Userid and Password can be specified in VTAM logon to bypass Signon screen

■ Application selected from Applications listed in Menu screen

■ Signon and Application Menu screens can be customised

■ Single function key, commands, or escape sequence used to

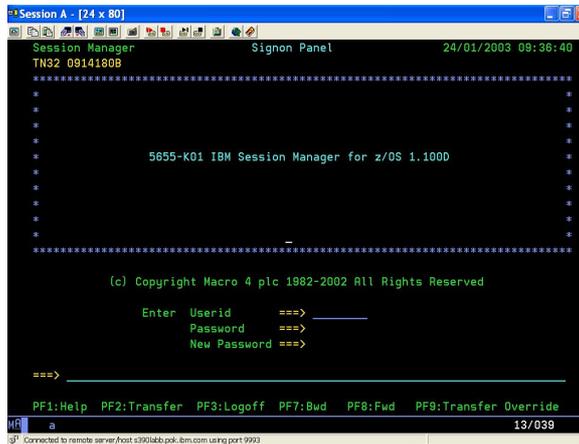
- ▶ Switch between application sessions
- ▶ Switch from application session to Session Manager Menu screen
- ▶ Create and switch between session windowst



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Session Manager for z/OS: Overview....

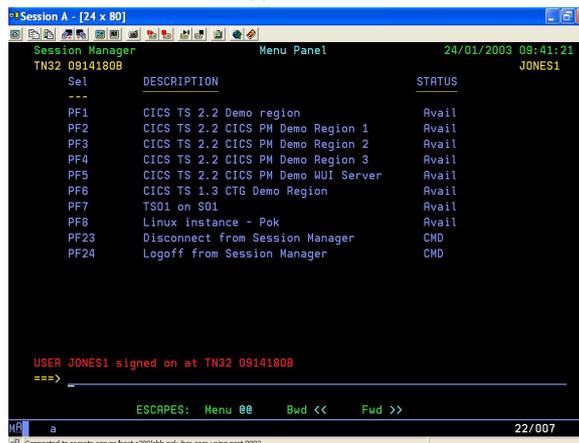
End-User Interaction --> [Application Access](#)



Default Session Manager signon panel

Session Manager for z/OS: Overview....

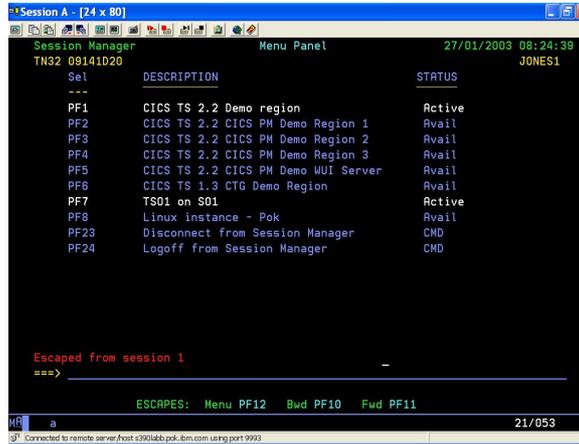
End-User Interaction --> [Application Access](#)



Default Application selection panel

Session Manager for z/OS: Overview....

End-User Interaction --> [Application Access](#)

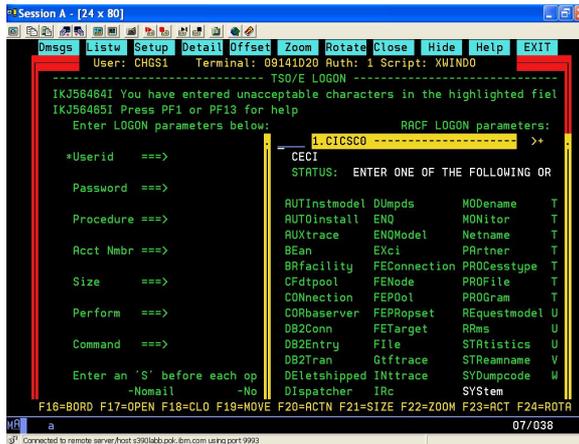


Application selection panel with escape characters changed to PF keys



Session Manager for z/OS: Overview....

End-User Interaction --> [Windows Feature](#)



PC type windows



Session Manager for z/OS: Overview....

End-User Interaction --> [Windows Feature](#)

```

Session A - [24 x 80]
-----
Dmsgs Listw Setup Detail Offset Zoom Rotate Close HELP EXIT
User: CHGS1 Terminal: 09141D20 Auth: 1 Script: SARWINDO
-----
TSO/E LOGON
-----
IKJ56464I You have entered unacceptable characters in the highlighted field
IKJ56465I Press PF1 or PF13 for help
Enter LOGON parameters below: RACF LOGON parameters:

*Userid ==>
Password ==> New Password ==>

1.CICSCO >>
-----
CECI
STATUS: ENTER ONE OF THE FOLLOWING OR HIT ENTER FOR DEFAULT

AUTInstmodel Dumps MONName TDqueue
AUTOinstall ENQ MONitor TERminal
AUXtrace ENQModel Netname TRAnsaction
BEar EXCI PRtner TRUmocode
BRFacility FEConnection PRoCesstype TSModel
CFdipool FENode PRoFile TSPool
COInection FERoel PRoGram TSQueue
COBserver FERoPset REquestmodel UON

F17=OPEN F18=CLOSE F20=ACTION F22=ZOOM F23=ACTIVATE F24=ROTATE
17/062
  
```

CUA type windows

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Session Manager for z/OS: Overview....

End-User Interaction --> [Push-Pull](#)

- Save a screen image for subsequent recall
 - ▶ e.g for educational use or help in problem determination
- Screens saved via the PUSH command sequence or PF key
 - ▶ Default is /> sequence
 - ▶ Saved with a description (default is date and time)
- Screens recalled via the PULL command sequence or PF key
 - ▶ Default is /. sequence
 - ▶ Selection made from an index of saved screens
- Saved screen images deleted at user logoff
- Maximum number of saved screens specified via configuration parameter
 - ▶ Each saved screen requires approximately 2K of storage

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Session Manager for z/OS: Overview....

End-User Interaction --> [Cut and Paste](#)

- Copy data from one session image to another, or within same session image
- Data that is cut is NOT deleted from original screen image
- Invoked via the Cut and Paste command sequences
 - ▶ Default is *c and *p
- Cut and Paste areas defined via PF keys
- Cut and Paste rules....
 - ▶ 3270 attribute bytes not copied
 - ▶ Non-display fields not copied
 - ▶ Cannot paste over a protected field

Session Manager for z/OS: Overview....

End-User Interaction --> [Messaging](#)

- Implemented via the MSG, BROADCAST AND FLASH commands
- MSG and BROADCAST send messages to specific users or to groups of users
 - ▶ HOLD and URGENT options
 - ▶ Text may be up to 256 characters in length
- The BROADCAST command....
 - ▶ is only available to privileged users
 - ▶ supports the ALL option as the destination
 - ▶ supports the use of a pattern for the destination rather than specific name
- The FLASH command is use to place text in the Flash area of screen panels
 - ▶ System Flash area or Session Flash area
 - Use and panel location of flash areas are an installation option
 - ▶ Text may be up to 256 characters in length

Session Manager for z/OS: Overview....

End-User Interaction --> [Hardcopy](#)

- Creates a copy of the current screen image
- Invoked via PF key, HARDCOPY command, or command sequence
 - ▶ Default is /h
- Can include header and trailer information
 - ▶ e.g. Date, Time, User ID, Application ID
- Output sent to a SYSOUT dataset

Session Manager for z/OS: Overview....

Application Interaction and Customisation--> [Panels and Scripts](#)

- A Panel defines a screen with associated processing
 - ▶ e.g. Application selection menu
- A Script defines a set of executable parameters and verbs to perform tasks
 - ▶ Session Manager program
- The Panel and Script Language (TPSL) adds logic to panels and scripts
 - ▶ e.g. generate next input depending on fields in last screen output
 - ▶ e.g. automate input sequences
- Panels, Scripts and TPSL enable installation specific customisation
- Supplied default Panels provided include
 - ▶ Session Manager signon
 - ▶ Application selection menu
- Supplied default Scripts provided include Windows scripts
- Documented in the Panels, Scripts and Variables manual

Session Manager for z/OS: Overview....

Administration, Training, Management --> [Spy Facility](#)

- Enables a user to simultaneously view the screen contents currently displayed at the terminal of another Session Manager user
- Primarily intended for use by System Administrators, Network Controllers, Technical Support, or Help Desk staff
- Invoked via the SPY command
 - ▶ Normally privileged
- Usage controlled by the SPYGROUP and SPYABLE configuration parameters
- Spy requests are rejected if.....
 - ▶ target user is inactive
 - ▶ target user is already spying on another user
 - ▶ target user has SPYABLE OFF set
 - ▶ target user not in SPYGROUP defined for the user issuing the command
 - ▶ user issuing the command is currently demonstrating
 - ▶ target user has SPYABLE TELL set and rejects the spy request
 - ▶ target terminal is incompatible with the terminal issuing the spy request

Session Manager for z/OS: Overview....

Administration, Training, Management --> [Demonstration and View](#)

- Enables both input and output screen displays at one terminal to be automatically displayed on other terminals
 - ▶ Controlling terminal is known as the demonstrating terminal
 - ▶ Users of the terminals which it is driving are known as viewers
- Initiated by the DEMO command at a Session Manager menu screen
- Users join the demonstration by using the VIEW command
- Automatic or controlled display of screens to viewers
- Viewers generally have passive role, although....
 - ▶ A single viewer can be defined as eligible for entering input
 - ▶ Viewers can take hardcopies of screen displays received
 - ▶ Viewers can save screen displays with Push-Pull
- Any number of terminals may be demonstrating concurrently
- Each demonstration may have up to 999 simultaneous viewers

Session Manager for z/OS: Overview....

Administration, Training, Management --> [Record-Replay](#)

- Automatically records input and output data streams
- Can be useful for user education purposes or for use by System Administrators, Network Controllers, Technical Support and Help Desk staff
- Invoked via the RECORD and REPLAY commands
- Each record contains one input, one output, and one setup output
- Replays can be displayed in three formats....
 - ▶ As recorded
 - ▶ Dump format
 - ▶ Data Stream Analysis
- Only outputs recorded if terminal is in Spy or View mode
- Max number of records held defined by RECORDLIMIT configuration parameter
- Records deleted at user logoff

Session Manager for z/OS: Overview....

Administration, Training, Management --> [Security](#)

- **Basic End-User authentication by Session Manager**
 - ▶ Userid's and passwords stored in the Configuration file
- **End-User authentication via Session Manager VSAM based repository**
 - ▶ Uses VSAM KSDS to maintain Userid's, Passwords, Profiles
 - ▶ Online administration of the KSDS via the ADMIN command
- **End-User authentication by an External Security Manager**
 - ▶ Implemented via User Exits
 - ▶ Sample User Exits provided for
 - RACF, ACF2, general SAF interface
 - plus a User Exit for the Session Manager VSAM based repository
- **Session Manager commands**
 - ▶ Each command has an associated security code level
 - General access is a code of 1
 - Privileged is a code of 9
 - ▶ Security code level is defined for each user

Session Manager for z/OS: Overview....

Administration, Training, Management --> [Performance Monitoring](#)

■ Performance Monitor

- ▶ Collects performance statistics on Session Manager itself
 - Average number of terminal inputs and outputs per second
 - Average number of application session inputs and outputs per second
 - CPU time used by Session Manager
- ▶ Produces an in-storage record for ten minute intervals
 - Wrap-around table containing 100 records
- ▶ Customisation possible via a User Exit
- ▶ PERFPAN command used to view the statistics

■ Response Time Monitor

- ▶ Collects session level statistics on response times
 - Network Response, Application Response, Total Response .
- ▶ Maintains for each of these sets of responses.....
 - Average response time, Five latest response times, Five longest responses
 - Three counts for fast, medium, and slow responses
- ▶ QUERY USER command used to view and reset the statistics

Session Manager for z/OS: Overview....

Network Support --> [Network Data Reduction](#)

■ Network Data Minimiser (MISER)

- ▶ Reduces the amount of data to and from applications
 - Maintains an image of the data displayed on the terminal in storage
 - Outbound Erase Writes replaced by Writes wherever possible
 - Read Buffer (RBUF) replaced by Read Modified (RMOD) where possible
- ▶ Miser 3270 datastream support limitations
 - Output must be for Implicit Partition Zero
 - Create Partition structured field not supported
 - Graphics not supported, e.g. Object Image Outbound Structured Fields

■ Runlength Data Compression

- ▶ Replaces repeated characters in datastream with Repeat to Address (RA) order
- ▶ Sequence of five or more identical characters compressed to four byte RA order
- ▶ No savings if efficient applications already use RA orders to build data stream

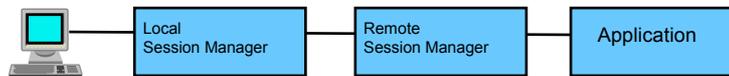
■ Statistics data produced to help make judgement on using these functions

- ▶ Additional CPU and storage costs

Session Manager for z/OS: Overview....

Network Support --> [Session Manager Networking](#)

- Allows communication between two or more Session Manager systems
 - ▶ Enables network data reduction for access to remote applications
 - ▶ Enables multiple Session Managers to execute with different priorities
- Session Managers connected by....
 - ▶ A Channel-to-Channel Adaptor (dedicated to Session Manager's use), or
 - ▶ A VTAM session (either cross-domain or local domain)
- Routing possible via intermediate nodes as well as adjacent nodes



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Session Manager for z/OS: Overview....

Network Support --> [CICS Front-end](#)

- Session Manager may be optionally accessed from CICS
- Two CICS programs supplied to enable this
 - ▶ Customisation possible via modification of the starter program
- Session Manager invoked via default transaction ID of ISZT
- LU6.2 connection used between CICS and Session Manager
- Connection to multiple instances of Session Manager supported



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Configuring Session Manager

■ Session Manager environment specified via control statements that define....

- ▶ Applications, Users, Terminals, Profiles, Groups
- ▶ Panels, Scripts
- ▶ Various System Manager options

■ Control statements.....

- ▶ are read from source members in a PDS (Classic)
 - referred to as the configuration file
- ▶ are processed at System Manager initialisation time
- ▶ are also processed when the Update command is issued
- ▶ can be modified during processing
 - via the Session Manager User exit (exit point E05)
 - via logic statements within the configuration file

Online Administration

- Available with IBM Session Manager 1.1 with PTFs applied
- Standard with Session Manager 1.2 (available from Sept 2004)
- Configuration held in 22 different PDSE's instead of the 'classic' setup that had all data in one dataset
- Allows additions / deletions and update to all configuration parms
- OLA uses easy to use panels with help screens available

Sample OLA Screen shots

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```

Session Manager - Admin      Common session parameters      16/08/2004 13:45:48
TN32 09911375              DM10240

Parameter                   Setting ( APPL or inherited )
-----
- ACB                        ISZ001
- ADDSID(s)
- ALARM                       NO
- ALLOWESCAPE                 YES
- APPLID                      pgxzt
- APPLSEL
- AUTOSCRIPIT
- AUTOSTART                   NO
- BRDVAR
- CMO
- COMPRESS                    YES
- DATA
- DESCRIPTION                 TSO
- DISCACTIVE                  YES
- ENDSCRIPIT
- ENVIRONSCRIPIT
- HIDE                        NO
- ILLU                        NO
- INITSCRIPIT
- LOGMODE
- LOGOFF                      RESET
- MISER                       no

Command ==>
Available options: S - Select (default)  D - Delete  R - Reset
Pfk1 Help      2          3 Quit      4 Act msgs  5          6
Pfk7 Backward  8 Forward  9          10         11         12

```

Dynamic Menus

- Sessions can be defined with a parm of HIDE set to 'yes' or 'no'
- Invoked by two supplied source exits ISZE21RA and ISZE22DM
- Customer assembles and link-edits into exit points E21 and E22
- Exits can be customised !
- Exit documentation available in Facilities Reference Guide
- Facility RACF class :-
 - ▶ RDEF FACILITY ISZ.APPL.** UACC(NONE) OWNER(SYS1)
PERMIT.APPL.** CLASS(FACILITY) ID(DMUSERS) ACCESS(READ)
 - ▶ PERMIT ISZ.APPL.CICSPLX1 CLASS(FACILITY) ID(DM10240)
ACCESS(NONE)
- Session Manager provides a script for Security Refreshing called 'SECFRESH'.

Dynamic Menus screenshots

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Session Manager Menu2 Panel 16/08/2004 14:01:25
 TN32 09911375 DM10240

Sel	DESCRIPTION	APPLID	STATUS	ACBNAME	LOGMODE	NODE
PF1	TSO	TSO	Active	ISZ001	D4B32793	ONLINE1
PF2	CICSplex System Manager	CICSPLX1	Avail			
PF3	CICS Web User Interface 1	CICSWUI1	Unavail			
PF4	CICS Web User Interface 2	CICSWUI2	Avail			
PF5	CICS TS 2.2 SWG UK Region	CICSA	Active	ISZ002	D4B32793	ONLINE1
PF6	CICS TS 2.2 SWG UK Region	CICSB	Avail			
PF7	CICS TS 1.3 SWG UK Region	CICSC	Avail			
PF8	IMSA DC System	IMSACTL	Avail			
PF23	Disconnect from Session Man	CMD				
PF24	Logoff from Session Manager	CMD				
800	Online Administration	OLA	Start	ISZ001		ONLINE1
999	Administrator function	ADMIN	Avail	ISZADMN		

HARDCOPY = /H
 ESC: Menu PA3 Bwd << Fwd >> Cut *c Paste *p Push /> Pull /.

30/007

Dynamic Menus screenshots

2/3

Session Manager Menu2 Panel 16/08/2004 14:06:22
 TN32 09911375 DM10240

Sel	DESCRIPTION	APPLID	STATUS	ACBNAME	LOGMODE	NODE
PF1	TSO	TSO	Active	ISZ001	D4B32793	ONLINE1
PF5	CICS TS 2.2 SWG UK Region	CICSA	Active	ISZ002	D4B32793	ONLINE1
PF8	IMSA DC System	IMSACTL	Avail			
PF23	Disconnect from Session Man	CMD				
PF24	Logoff from Session Manager	CMD				
800	Online Administration	OLA	Start	ISZ001		ONLINE1
999	Administrator function	ADMIN	Avail	ISZADMN		

HARDCOPY = /H
 ESC: Menu PA3 Bwd << Fwd >> Cut *c Paste *p Push /> Pull /.

30/007

Dynamic Menu screenshots

3/3

Session Manager Menu2 Panel 16/08/2004 14:12:15
TN32 09911375 DM10240

Sel	DESCRIPTION	APPLID	STATUS	ACBNAME	LOGMODE	NODE
PF1	TSO	TSO	Active	ISZ001	D4B32793	ONLINE1
PF23	Disconnect from Session Man		CMD			
PF24	Logoff from Session Manager		CMD			
800	Online Administration	OLA	Avail			
999	Administrator function	ADMIN	Avail	ISZADMIN		

HARDCOPY = /H
===>

ESC: Menu PA3 Bwd << Fwd >> Cut *c Paste *p Push /> Pull /.

MB a 30/007

Connected to remote server/host ukcmvs1.gfd.uk.ibm.com using port 3004

Batch Administration – VTAM Definitions

Session A - [32 x 80]

File Edit Edit_Settings Menu Utilities Compilers Test Help

```

VIEW          DMSYS.CICTOOLS.ISMV110.CONTROL(VTAMBTCH) - 01.0 Columns 00001 00072
Command ==>                               Scroll ==> CSR_
***** Top of Data *****
000001 S09SDBAT APPL  ACBNAME=S09SDBAT ,
000002                AUTH=(ACD,NVPAGE),
000003                PARSESS=YES,
000004                EAS=200,
000005                VPACING=0,
000006                MODETAB=ISZVMODE
000007 S09SDON1 APPL ACBNAME=S09SDON1 ,
000008                AUTH=(ACD,NVPAGE),
000009                PARSESS=YES,
000010                EAS=200,
000011                VPACING=0,
000012                MODETAB=ISZVMODE
***** Bottom of Data *****

```

F1=Help F2=Split F3=Exit F5=Rfind F6=Rchange F7=Up
F8=Down F9=Swap F10=Left F11=Right F12=Cancel

MB a 29/012

Connected to remote server/host ukcmvs1.gfd.uk.ibm.com using port 3004

Batch Administration – Add a User

1/2

```

Session A - [32 x 80]
File Edit View Communication Actions Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help
VIEW      DMSYS.CICTOOLS.ISMV110.CUSTOMER.CONFIG(EXMASK1) Columns 00001 00072
Command ==>                               Scroll ==> CSR_
***** ***** Top of Data *****
000001 #SRCH_TITLE* Example 1
000002 ADD DDN(%SRCH_DDN) MBR(PANDORA)
000003 %SRCH_ALL_KEYW %SRCH_ALL_KEYW_VALUE
***** ***** Bottom of Data *****

F1=Help      F2=Split    F3=Exit     F5=Rfind    F6=Rchange   F7=Up
F8=Down     F9=Swap     F10=Left   F11=Right   F12=Cancel

```

Batch Administration – Add a User

2/2

```

Session A - [32 x 80]
File Edit View Communication Actions Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help
VIEW      DMSYS.CICTOOLS.ISMV110.CONTROL(BATCHJB1) - 01.0 Columns 00001 00072
Command ==>                               Scroll ==> CSR_
000063 //BATCHGO EXEC PROC=ISMBATCH
000064 //STEP01.SEO DD * COMMAND SCRIPT AND PARAMETERS TO BE EXECUTED
000065 *
000066 ISZSRCH
000067 STATEMENT(USER)
000068 KEYWORD(IS(USER(DM10240)))
000069 OUTPUT(DDN(CONFIG EXCTRL1) REP_MASK(DDN(CONFIG EXMASK1)))
000070 *
000071 ISZUPDT
000072 INPUT(DDN(CONFIG EXCTRL1))
000073 ACTIVATE(DDN(CONFIG EXACTV1) REP)
000074 *
000075 ISZACTV
000076 INPUT(DDN(CONFIG EXACTV1))
000077 /*
***** ***** Bottom of Data *****

F1=Help      F2=Split    F3=Exit     F5=Rfind    F6=Rchange   F7=Up
F8=Down     F9=Swap     F10=Left   F11=Right   F12=Cancel

```

Batch Administration – Delete a User

1/2

```

Session A - [32 x 80]
File Edit View Communication Actions Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW      DMSYS.CICTOOLS.ISMV110.CUSTOMER.CONFIG(EXMASK2) Columns 00001 00072
Command ==> Scroll ==> CSR_
***** Top of Data *****
000001 #SRCH TITLE# Example 2
000002 DEL DDN(%SRCH_DDN) MBR(%SRCH_MBR)
***** Bottom of Data *****

F1=Help      F2=Split    F3=Exit     F5=Rfind    F6=Rchange  F7=Up
F8=Down     F9=Swap     F10=Left   F11=Right   F12=Cancel

04/015

```

Batch Administration – Delete a User

2/2

```

Session A - [32 x 80]
File Edit View Communication Actions Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW      DMSYS.CICTOOLS.ISMV110.CONTROL(BATCHJB2) - 01.0 Columns 00001 00072
Command ==> Scroll ==> CSR_
000063 //BATCHGO EXEC PROC=ISMBATCH
000064 //STEP01.SEQ DD * COMMAND SCRIPT AND PARAMETERS TO BE EXECUTED
000065 ISZSRCH
000066 STATEMENT(USER)
000067 KEYWORD(IS(USER(PANDORA)))
000068 OUTPUT(DDN(CONFIG EXCTRL2) REP MASK(DDN(CONFIG EXMASK2)))
000069 *
000070 ISZUPDT
000071 INPUT(DDN(CONFIG EXCTRL2))
000072 /*
***** Bottom of Data *****

F1=Help      F2=Split    F3=Exit     F5=Rfind    F6=Rchange  F7=Up
F8=Down     F9=Swap     F10=Left   F11=Right   F12=Cancel

05/015

```

Example of storage requirements

- **An Installation requires 100 users to have an average of 4 active sessions each:**
 - Session Manager itself 2500K
 - Permanent allocation 400K
 - Terminals logged on (100) 1000K
 - Active session (400) MISER Yes 2800K
 - All Help panels 1080K
 - Remaining Configuration 450K
 - Broadcast to all users (100) 1000K
 - **Total size 9230K**
- In systems where storage-usage is not a constraint, MAXSTOR=Y further reduces the possibility of storage fragmentation;
- It may increase storage used by up to 100 percent. If used, the value set for STORLIM should be doubled.
- **(1) If MAXSTOR is set to N, then define STORLIM as 10 or 11M.**
- **(2) If MAXSTOR is set to Y, then set STORLIM to 22M.**
- **(3) You are allocated a default region of 32M.**

Session Manager for z/OS: Further information

- **Announcement letter**
 - ▶ 202-349
- **Web page**
 - ▶ <http://www.ibm.com/software/ts/cics/sessionmgr/>
- **Publications Web page**
 - ▶ <http://www.ibm.com/software/ts/cics/library/>
- **Session Manager publications**
 - ▶ Facilities Reference (SC34-6287)
 - ▶ Panels, Scripts and Variables (SC34-6288)
 - ▶ Technical Reference (SC34-6286)
 - ▶ Installation and Getting Started (GC34-6285)
 - ▶ Messages and Codes (SC34-6289)
 - ▶ Quick Reference (SC34-6290)

Summary

References :-

<http://www-306.ibm.com/software/htp/cics/products/tools.html>

Contact details

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