



IBM Software Group – CICS Tools Development

# ***IBM Session Manager for z/OS V3.1***

***Improving User Access***



@business on demand software

**Last updated: Monday, 05 December 2011**

# IBM Session Manager for z/OS

- **What does it do?**

- Provides secure and user-friendly access to multiple z/OS systems from a single 3270 terminal
- Allows 3270 terminal sessions to exist on either a SNA or a TCP/IP network
- Simultaneous connection to and navigation between multiple VTAM and TCP/IP applications
- Real time management of resources across LPAR boundaries
- Recoverability when running in parallel sysplex environments

- **Benefits**

- Increased productivity
- Reduced hardware costs
- Common gateway to z/OS applications from a Windows environment



# IBM Session Manager for z/OS

## ■ Key features

- Access multiple z/OS systems from a single 3270 terminal - SNA and TCP/IP
- Session recovery across the Sysplex
- Centralized administration
- Provided Rexx like scripting language
  - Log-off procedures
  - Security checking
  - Audit logging
- Benefits to helpdesk and operations
  - Spy function
  - Broadcast messages
- Benefits in training staff – Demo function

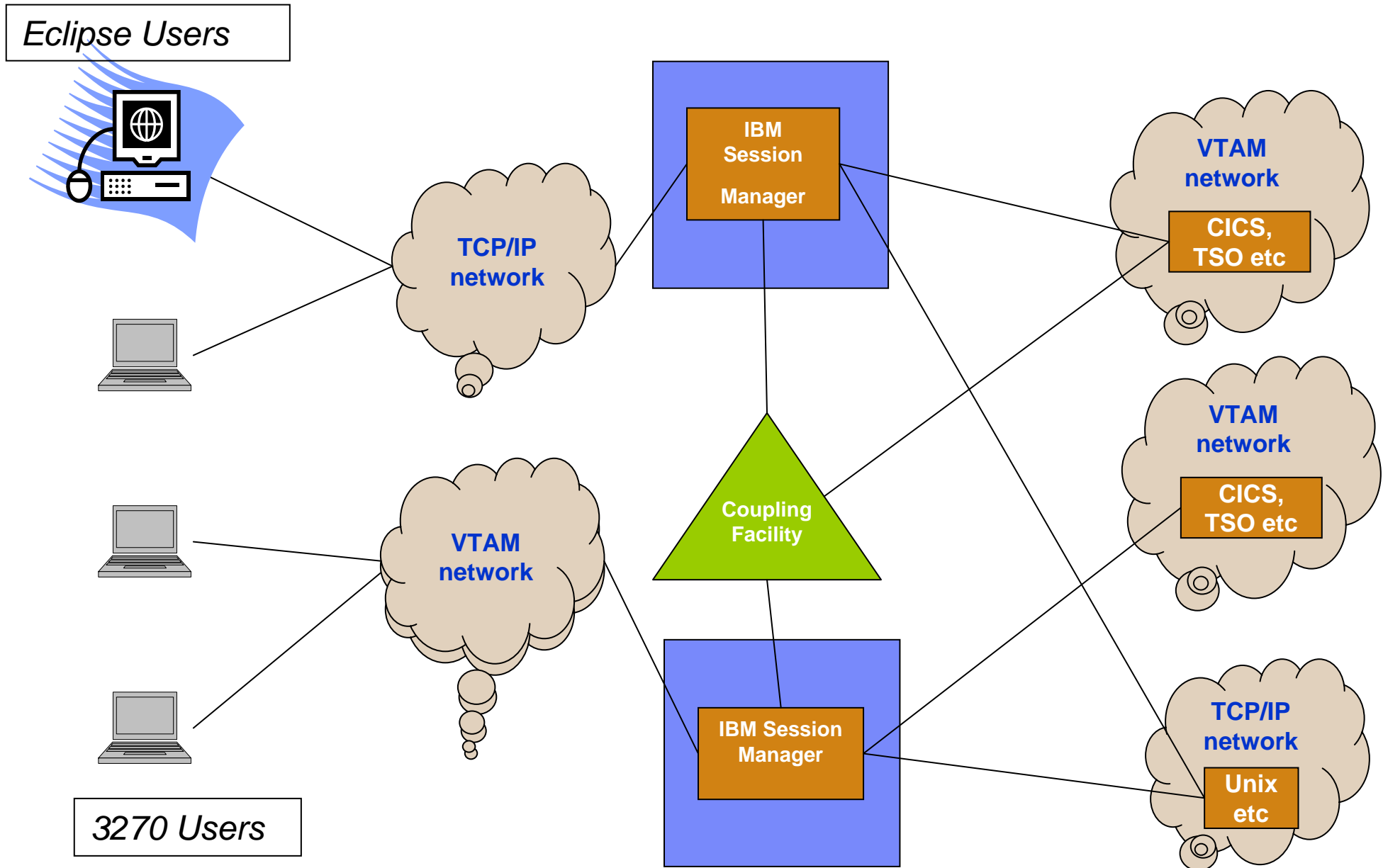
## Session Manager V3.1 GA

March 2011

- **New GUI interface**
  - **Delivered as a plug-in to the CICS Explorer**
- **Support for Password Phrases**
- **Further security, installation and configuration enhancements**



# IBM Session Manager 3.1 – Major Components



# ISM Overview – Network Environment – TCP/IP

- Session manager acts as a TCP/IP Telnet Server
- Support for TCP/IP uses the TELNET application server support
  - Via the TN3270 protocol
  - Client support via
    - TN3270 protocol
    - VT100/VT200 protocol
    - ANSI or Network Virtual Terminal (NVT) protocols of TELNET
- Any TN3270 client can access Session Manager as a server using the TN3270 Telnet server support within the product (which creates a virtual LU in VTAM for Session Manager)
- TCP/IP users can operate Session Manager without VTAM
- TELNET/TN3270 Client Support
  - Allows a Session Manager user to access and run any Server application which is available to the TCP/IP network.
  - Requires a Telnet Server supporting NVT.

## ISM Overview – End User Interaction – Application Access

- Session Manager Signon
  - Either Session Manager Signon screen or Application Menu screen displayed
  - Userid and Password/Password Phrase 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 customized
- 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 windows

# ISM Overview – Administration, Training, and Management – Security

- End-User authentication by an External Security Manager
  - Implemented via User Exits
  - Sample User Exits provided for
    - RACF, CA-ACF2, CA-Top Secret, and general SAF interface
    - Plus a User Exit for the Session Manager VSAM based repository
    - Now includes support for Certificate Express Logon and Password Phrases
- Basic End-User authentication by ISM
  - Userids and passwords stored in the Configuration file
- End-User authentication via ISM VSAM based repository
  - Uses VSAM KSDS to maintain Userids, Passwords, Profiles
  - Online administration of the KSDS via the ADMIN command
- Session Manager commands
  - Each command has an associated security code level
  - Security code level is defined for each user

# Dynamic menus

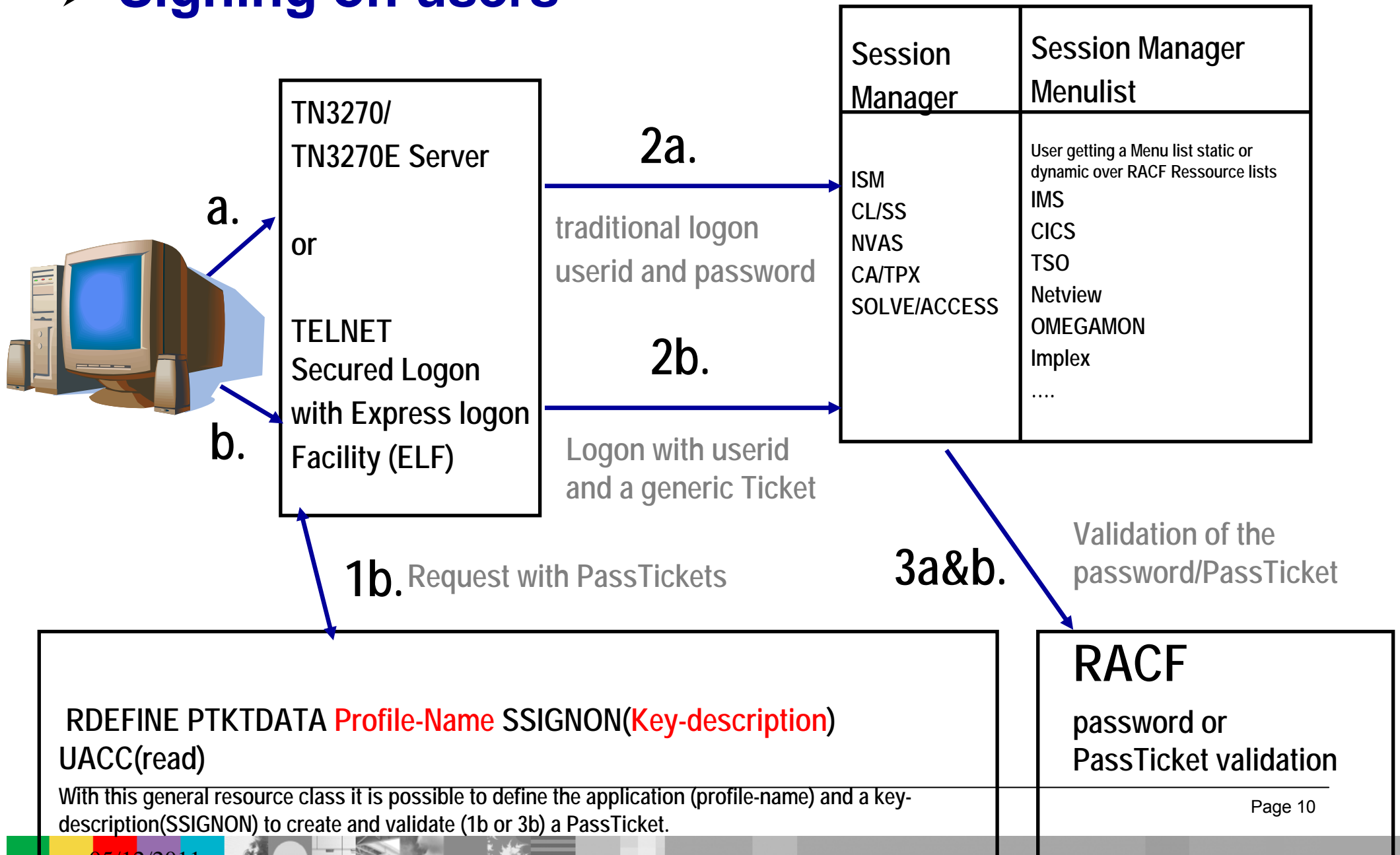
- The E21 (sign on validation) user exit is retained
- This user exit performs security clearance checking of users using an installation's external security system
- The E22 user exit establishes the number of sessions available to the user as follows:
  - Each **APPL** in the default **PROFILE** is checked against external security system resource profiles
  - RACF the resource profile ISZ.APPL.xxxxxxxx would be checked in CLASS=FACILITY
  - Each application will be 'unhidden' by specifying an **APPL** to which the user has READ access
    - ISZ.APPL.TSO CLASS ( FACILITY ) ID ( ISMUSER ) ACCESS ( READ )
    - ISZ.APPL.CICSTOR1 CLASS ( FACILITY ) ID ( ISMUSER ) ACCESS ( NONE )



# Pass Ticket support in IBM Session Manager

- Generated automatically by IBM Session Manager
- Passed to the application in an internal variable using exits and scripts
- Uses 2 common session parameters
  - PSTKAPPL
  - PSTKUSER
- Users can log onto IBM Session Manager without entering their userid/password
- The host session must be configured for SSL and client authentication, using a digital certificate to a supported TN3270 server
- Uses ISM ACB name unless the GENRESNAME system parm is used

# ➤ Signing on users



```
RDEFINE PTKTDATA Profile-Name SSIGNON(Key-description)
UACC(read)
```

With this general resource class it is possible to define the application (profile-name) and a key-description(SSIGNON) to create and validate (1b or 3b) a PassTicket.

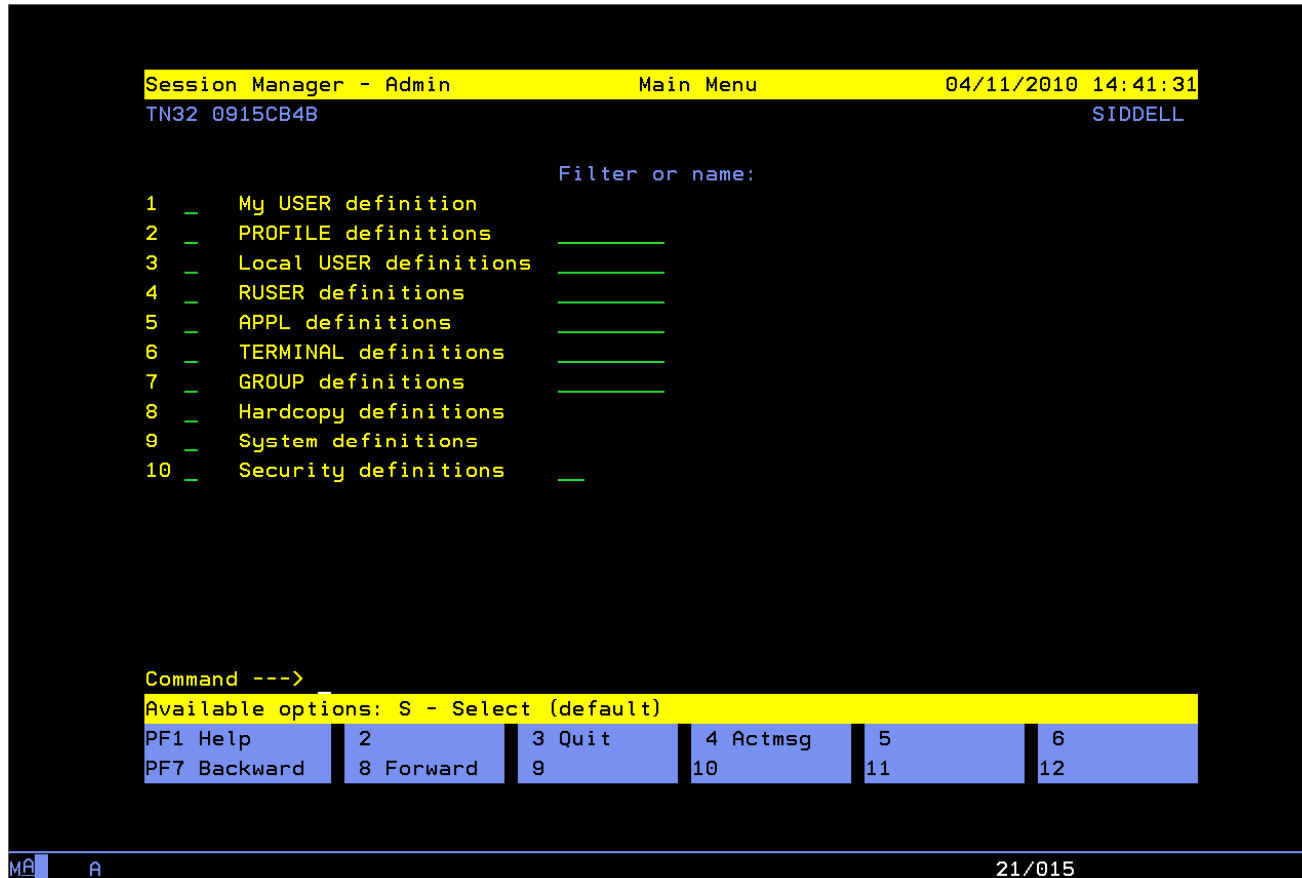
# ISM Overview – Administration, Training, and Management – User Exits

- User exits are provided for installation customization and may be:
  - Assembler programs, COBOL programs, or Session Manager Scripts
- Session Manager exit points
  - Session Manager initialization time (E01)
  - Configuration statement processing time (E05)
  - Application status change (E06)
  - Timer interval exit (E08)
  - CALLEXIT invocation from a script (E09)
  - At logon to the Session Manager system (E11)
  - At signon validation (E21) and at signon completion (E22)
  - At logoff or disconnect from Session Manager (E29)
  - Slave session pre-initiation (E31), post-initiation (E33), termination (E39)
  - When UPDATE EXIT command issued (E71)
  - Session switch exit (E79)
  - Session Manager termination (E99)

# Online Administration (OLA)

- User friendly interface to dataset configuration
- User based security
  - Define Implementers, Administrators, Users, etc
  - Configuration access
  - Actions – Modify, Delete, Display, etc
  - What gets displayed
- On-line help
  - OLA help
  - End-user field help
- Field validation
- Temporary and permanent updates
- Immediate activation of changes
- Automatically merges User, Profile and System data

# Sample OLA Screen shots



# Batch Administration

- Designed for mass changes or regular service
  - To one or more ISMs
- Three utilities
  - Search
    - Extract configuration information
      - Customizable report generation
    - Extracted data may be changed and utilized in Update feature
  - Update
    - Update configuration information
    - Can generate data for Activation feature
  - Activate
    - Activate changes to any defined ISMs
- Run-time audit logs generated
- Supplied examples



## Workload balancing with SYSPLEX and Generic Resources

- Balances the user session load among the SM instances in a Parallel Sysplex environment based on the z/OS WLM (Workload Management) policies.
- **GENERICACB** parameter is set on SYSTEM configuration statement
- Define **SYSPLEXGroup** is set on SYSTEM config:
  - **SYSPLEXGroup** xxxx
- Define a logger structure and logstream



## Enhanced Sysplex Summary and Menu

- System information
- Display all users across Sysplex
  - Issue commands against users
- Display all IBM SM instances (nodes)
  - Issue commands against instances
- Display VTAM application Access Control Block information
- Issue commands across IBM SMs within the Sysplex
- View combined IBM SM audit logs



# Enhanced Sysplex Summary and Menu

```
Session Manager          Sysplex Summary and Menu          04/11/2010 14:57:38
LU IYA8TC74              Sysplex Group ISMSMGR              SIDDELL
Sysplex group summary

  Sysplex name           PLEXA
  S/MGR Sysplex group    ISMSMGR
  Active nodes           4
  Terminals              1
  Users                  1
  BROADCAST node        SYS@CNTL
  This Z/OS image        MVA0
  This S/MGR node        ISZSMG0

Select a function

  _ Display users _____ NODE * _____
  _ Display nodes
  _ Display ACB summary
  _ Group commands
  _ Sysplex audit log for group ISMSMGR

--->
Available options: Enter value or 'S' to select an option
PF1:Help                PF2:Reset                PF3:Quit
MA B                                                              22/007
```



# Nodes in a Sysplex Display

```

Session Manager      Nodes in Sysplex Group ISMSMGR      04/11/2010 15:01:42
LU   IYA8TC74       Sysplex Group ISMSMGR      SIDDELL

z/OS   JOBNAME  NODE      Status      Standby      Standby      Standby/Controller
      MVA0     IBMSM220 ISZSMG0  Online      ISZSMG1     ISZSMG1     Synchronized
      MVA1     IBMSM221 ISZSMG1  Online      ISZSMG0     ISZSMG0     Synchronized
      MVA0     ISMCNTRL SYS@CNTRL CONTROLLER SYS@STBY     Normal
      MVA1     ISMSTNBY SYS@STBY  STANDBY-C   SYS@CNTRL   Synchronized

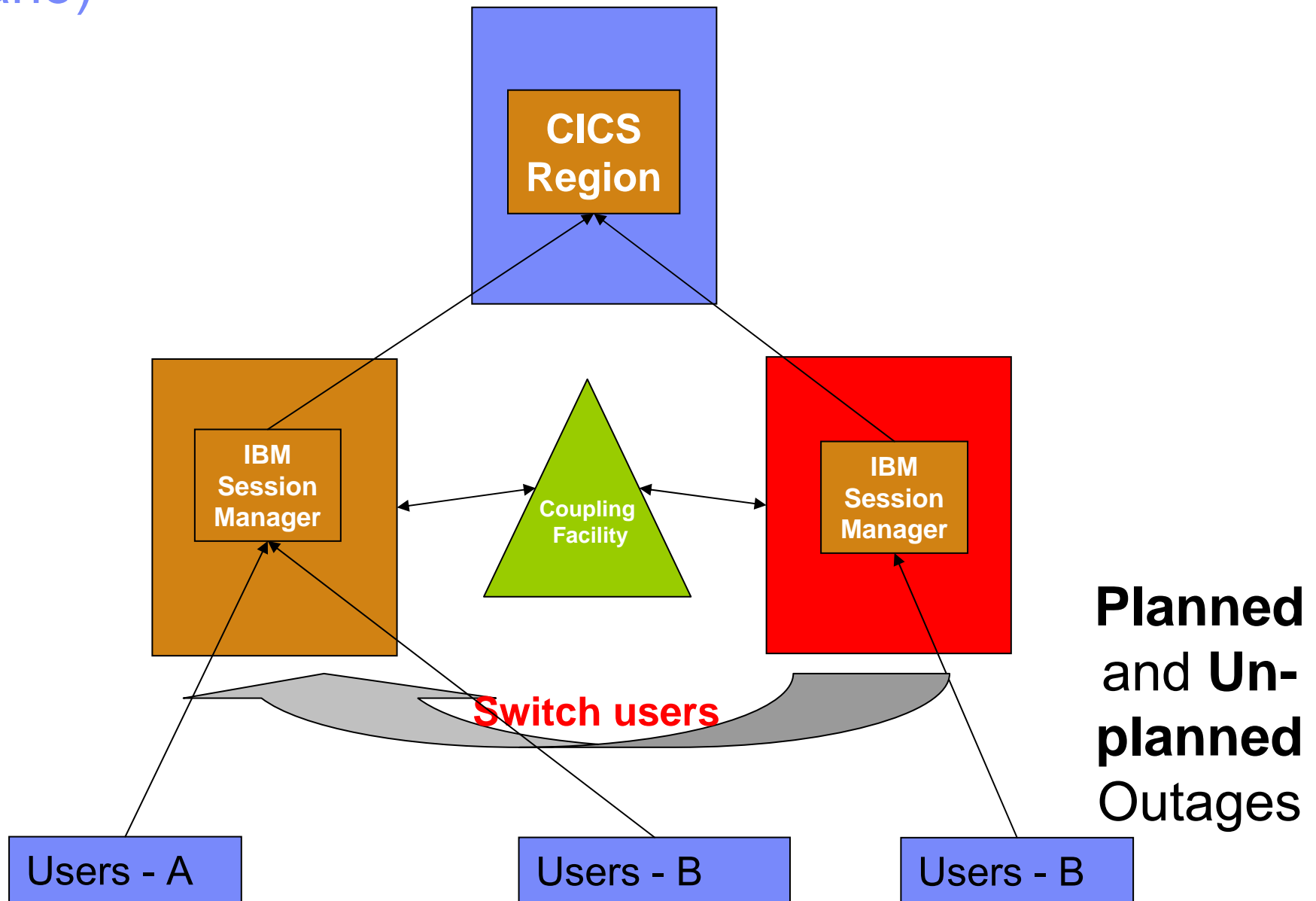
===>
Available options:  D - Delete  Q - Query  S - Select (default)
PF1:Help           PF2:Refresh      PF3:Quit          PF7:Back          PF8:Forward
MA  B                                                    22/007
    
```



## ISM Overview – Session Recoverability

- **Recovery Level None** — Where no recoverability is available for the session in the event of a session manager failure or a planned takeover. This option would be used for sessions that are not critical to the running of the customer's business.
- **Recovery Level Intermediate** — Allows recovery for application sessions in the event of the owning session manager failing in some way.
- **Recovery Level High** — Provides recovery for sessions in the event of failure of both the Session manager instance and the Session Manager instance and the Session Manager controller. This option could be used for customer's most critical applications.

# IBM SM V3.1 – Addressing Outages (Switch-over scenario)



# Performance Monitoring and Configuring Storage Usage

- The REGION parameter of the EXEC statement should be OM to allow Session Manager to manage storage efficiently:
  - // EXEC PGM=ISZSMGR,REGION=0M
- Getmain freemain storage routine (GFS)
  - Routine improves performance by reducing the number of CPU cycles required to allocate and deallocate dynamic buffer storage.
- **INQINTERVAL processing**
  - Enhances INQINTERVAL ability to control the interval at which Session Manager checks on the status of applications for display on menu screens, resulting in improved CPU utilization.
- STORCALC - used to determine the dynamic storage requirement for ISM



# IBM Session Manager V3.1

- What's new in IBM Session Manager v3.1?
  - The ISM plug-in to the CICS Explorer

## The advent of the ISM plug-in

- A new Eclipse GUI has been added to the product
- This installs as a plug-in to the CICS Explorer
  - ISM customers can download the CICS Explorer even though they do not have CICS – there's no license restriction
- This is the first iteration of the plug-in
  - Much more is planned in future releases

# ISM plug-in for CICS Explorer – Overview perspective

IBM CICS Explorer

Explorer Edit Project Search Window Help

System z/OS IBM Sessio... CICS IA CICS PA CICS CM CICS DA CICS SM

Nodes

- MV2E (WinMVS2E)
  - WinMVSA0

System Users Applids Links

Node: MV2E. Refreshed: 21-Jan-2011 10:03:24

### Overview

**Environment**

Program: 5655-U98 IBM Session Manager for z/OS  
 Version: 3.100A  
 Loaded: 20-Jan-2011 10:06:05  
 VTAM: 6.1.B

**Features**

Enabled features:

VIEW	WINDOWS	NETWORK	ENTRWEB	MISER
SPY	C/PASTE	TCP	APPLBLD	SESRECV
DOS VWL	XA/ESA	ONLINE		

**Broadcasts/Flash**

Current Broadcasts

Id	Node	Expires	Text

Flash:

Overview Audit Log Storage Performance



# ISM plug-in for CICS Explorer – Users and Session view

The screenshot displays the IBM CICS Explorer interface. The main window is titled 'IBM CICS Explorer' and contains a menu bar (Explorer, Edit, Project, Search, Window, Help) and a toolbar. Below the toolbar, there are tabs for 'System', 'Users', 'Applids', and 'Links'. The 'Users' tab is active, showing a table of users for node 'MV2E'. The status bar indicates 'Node: MV2E. Users: 2. Refreshed: 21-Jan-2011 10:03:34'. Below this, a table lists two users: SIDDELL and SIDDELL 4, both using the EDUCPROF profile.

User	Node	Terminal	Loc...	Spy...	Tra...	Profiles
SIDDELL	MV2E	TN32 091...				EDUCPROF
SIDDELL 4	MV2E	ECLP 107...				EDUCPROF

Below the Users view, the 'Sessions' view for user 'SIDDELL' is active. The status bar indicates 'Node: MV2E. User: SIDDELL. Sessions: 4. Refreshed: 10:06:01'. A table below shows four sessions with columns for S..., Applid, ACB, Node, Logmode, Sta..., Script, and Tra....

S...	Applid	ACB	Node	Logmode	Sta...	Script	Tra...
1	IYCYZTSO	ISZ003	MV2E	D4B32792	ACT		
2	IYCYZC29	ISZ003	MV2E	D4B32792	ACT		
810	HELPDESK	USER	MV2E		ACT	ISZCOMDK	
820	SMM	ISZ310	MV2E		ACT	ISZCOMEN	

# ISM plug-in for CICS Explorer – Sysplex view

**IBM CICS Explorer**

Explorer Edit Project Search Window Help

System z/OS IBM Sessio... CICS IA CICS PA CICS CM CICS DA CICS SM

Nodes

- WinMVS2E
  - ISMSMGR (WinMVS0A)
    - ISZSMG0
    - ISZSMG1
    - SYS@CNTL
    - SYS@STBY

System z/OS IBM Sessio... CICS IA CICS PA CICS CM CICS DA CICS SM

Sysplex: ISMSMGR. Refreshed: 21-Jan-2011 10:08:44

Node	State	z/OS I...	JobName	Users	Standby	Standby...	Standby State
ISZSMG0	Active	MVA0	IBMSM310	1	ISZSMG1	ISZSMG1	Synchronized
ISZSMG1	Active	MVA1	IBMSM311	0	ISZSMG0	ISZSMG0	Synchronized
SYS@CN...	Active	MVA0	ISMCTRL	0	SYS@ST...		Normal
SYS@ST...	Active	MVA1	ISMSTNBY	0		SYS@CN...	Synchronized

Overview Sysplex Log Group Nodes ACBs

ISZSMG0

Sysplex: ISMSMGR. Node: ISZSMG0. Refreshed: 21-Jan-2011 10:08:56

Node

Sysplex group ISMSMGR  
z/OS Image MVA0  
Job Name IBMSM310  
Node Name ISZSMG0  
Status Active  
Standby for ISZSMG1 Synchronized  
Standby is ISZSMG1

Users

Primary Signed on 1  
RecoveryLevel High 0  
RecoveryLevel Intermediate 0  
RecoveryLevel None 0

Standby Mirrored 0  
RecoveryLevel High 0  
RecoveryLevel Intermediate 0

ACBs

Primary RecoveryLevel High 1  
RecoveryLevel Intermediate 0  
RecoveryLevel None 0

Standby RecoveryLevel High 0  
RecoveryLevel Intermediate 0

Sessions

Primary RecoveryLevel High 0  
RecoveryLevel Intermediate 0

# IBM Session Manager V3.1

- What's new in IBM Session Manager v3.1?
  - Support for Password Phrases

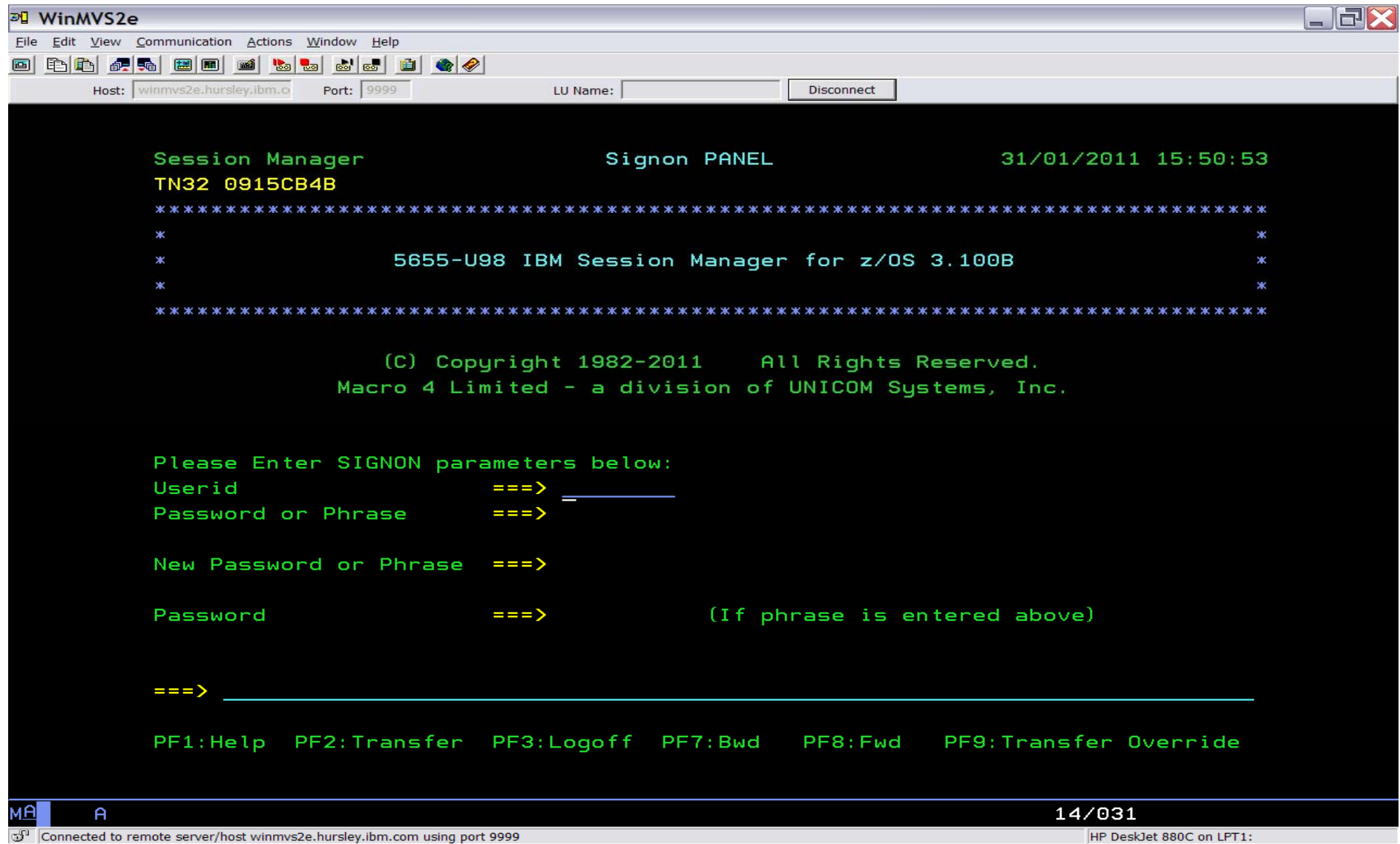


# Password Phrases

- A password phrase is an alternative to a password that allows a longer length and a larger character set. RACF supports password phrases from 9 to 100 characters in length, made up of mixed case letters, numbers, and special characters, including blanks. When the new-password-phrase exit (ICHPWX11) is present and allows it, the password phrase can be 9-100 characters. When ICHPWX11 is not present, the password phrase must be 14-100 characters.
- RACF enforces a basic set of rules for password phrases:
  - Maximum length: 100 characters
  - Minimum length:
    - 9 characters, when ICHPWX11 is present and allows the new value
    - 14 characters, when ICHPWX11 is not present
  - The user ID (as sequential upper case characters or sequential lower case characters) is not part of the password phrase
  - At least 2 alphabetic characters are specified (A - Z, a - z)
  - At least 2 non-alphabetic characters are specified (numerics, punctuation, special characters, blanks)
  - No more than 2 consecutive characters are identical
- The installation has the option of using the new-password-phrase exit to augment RACF function when validating a new password phrase.



# IBM Session Manager – Password Phrase support



```

WinMVS2e
File Edit View Communication Actions Window Help
Host: winmvs2e.hursley.ibm.c Port: 9999 LU Name: Disconnect

Session Manager                               Signon PANEL                               31/01/2011 15:50:53
TN32 0915CB4B
*****
*                                                                                               *
*                               5655-U98 IBM Session Manager for z/OS 3.100B                       *
*                                                                                               *
*****

(C) Copyright 1982-2011 All Rights Reserved.
Macro 4 Limited - a division of UNICOM Systems, Inc.

Please Enter SIGNON parameters below:
Userid                ==> _____
Password or Phrase    ==>
New Password or Phrase ==>
Password              ==> (If phrase is entered above)

==> _____

PF1:Help PF2:Transfer PF3:Logoff PF7:Bwd PF8:Fwd PF9:Transfer Override

MA A 14/031
Connected to remote server/host winmvs2e.hursley.ibm.com using port 9999 HP DeskJet 880C on LPT1:

```

# IBM Session Manager – Password Phrase support

WinMVS2e

File Edit View Communication Actions Window Help

Host: winmvs2e.hursley.ibm.com Port: 9999 LU Name: Disconnect

```

Session Manager - Admin  PASSPHRASE Sub Parameter list  31/01/2011 15:53:19
TN32 0915CB4B           Name of entry: ISZSYS02                SIDDELL

  Sub Parameter:      Setting ( SYSTEM or inherited )
  - PASSPHRASE       YES
  - PASSWORDREQ      YES

Command ==>
Available options: S - Select (default)  D - Delete  R - Reset  H - Help
PF1 Help           2           3 End           4 Actmsg       5           6
PF7 Backward       8 Forward    9              10            11           12 Cancel
    
```

MA A 21/015

Connected to remote server/host winmvs2e.hursley.ibm.com using port 9999 | HP DeskJet 880C on LPT1:

# IBM Session Manager V3.1

- What's new in IBM Session Manager v3.1?
  - Further Customer, Installation and Configuration enhancements

# Installing IBM Session Manager

- SMP/E install
- Dataset naming convention has been simplified:
  - *SISZBnnn* - for base install datasets
  - *SISZSnnn* - for system datasets
  - *SISZCnnn* - for customer datasets
- Additional sample jobs have been included in the config library



## Further enhancements

- New fields for ISZVARS screen. This displays the variables in effect for the user
- Improvements to processing of users that are defined to RACF with the SPECIAL attribute
- New command to refresh the global MVS system variables
- Improvements to modified data tag (MDT) handling by scripts
- OLA parser additional conflict checks
- Authority can be added to users at a group level
- Blank parameter can be defined in the USER definition to override the PROFILE parameters
- Provide ability to keep a user's ACB across Sign-off/On
- Route audit log to dataset
- The IP address is now present in all sign on messages

# ISM Summary

- Provides secure concurrent access to multiple applications from a single terminal
  - z/OS and OS/390 VTAM applications
  - TCP/IP applications on any platform
  - Multiple Windows supported
- Supports both VTAM-SNA and TCP/IP based terminal sessions
  - 3270 terminals, 3270 emulators, Telnet TN3270 clients
- Provides features for customization including...
  - Panels, Scripts, The Panel and Script Language (TPSL)
  - User Exits
- Provides features for education and training including...
  - Demonstration and View
  - Record-Replay
  - Push-Pull
- Provides features for management and support including...
  - Spy
  - Network Data Reduction
  - Performance Monitoring
  - Enhancements to the sysplex support for session recoverability options when running in parallel sysplex environments,



## ISM Further Information

- Program Number 5655-U98
- Requires z/OS v 1.9 or higher
  - Web page – <http://ibm.com/cics/smanag/>
- Publications Web page –
  - [http://ibm.com/software/sw-library/en\\_US/products/M173604J94306O69](http://ibm.com/software/sw-library/en_US/products/M173604J94306O69)
- Session Manager publications
  - IBM Session Manager for z/OS - Program Directory, GI13-0564
  - IBM Session Manager for z/OS - Installation and Customization, GC34-7146
  - IBM Session Manager for z/OS - Technical Reference, SC34-7147
  - IBM Session Manager for z/OS – User and Administration, SC34-7150
  - IBM Session Manager for z/OS - Panels, Scripts and Variables, SC34-7148
  - IBM Session Manager for z/OS - Messages and Codes, GC34-7152
  - IBM Session Manager for z/OS – Online and Batch Administration, SC34-7149
  - IBM Session Manager for z/OS - Quick Reference, SC34-7151

# Questions?

धन्यवाद  
Hindi

多謝  
Traditional Chinese

ขอบพระคุณ  
Thai

Спасибо  
Russian

Gracias  
Spanish

Merci  
French

Thank You  
English

شكراً  
Arabic

Obrigado  
Brazilian Portuguese

Grazie  
Italian

多谢  
Simplified Chinese

Danke  
German

நன்றி  
Tamil

ありがとうございました  
Japanese

Teşekkürler  
Turkish

감사합니다  
Korean

