



IBM Software Group

IMS11

IMS Control Center for Distributed IMS Operations through DB2

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Benefits of using the IMS Control Center

- Simplify IMS Administration and Problem Determination
- Consistency and integration of IBM user interfaces
- Provide a platform for modernization of the IMS systems' management user interface
- Provide an easy to use GUI for the Common Service Layer Operations Manager
- Reduce skill level required for IMS administration with an *easy to use* GUI
- Make IMS administration an attractive skill for new administrators

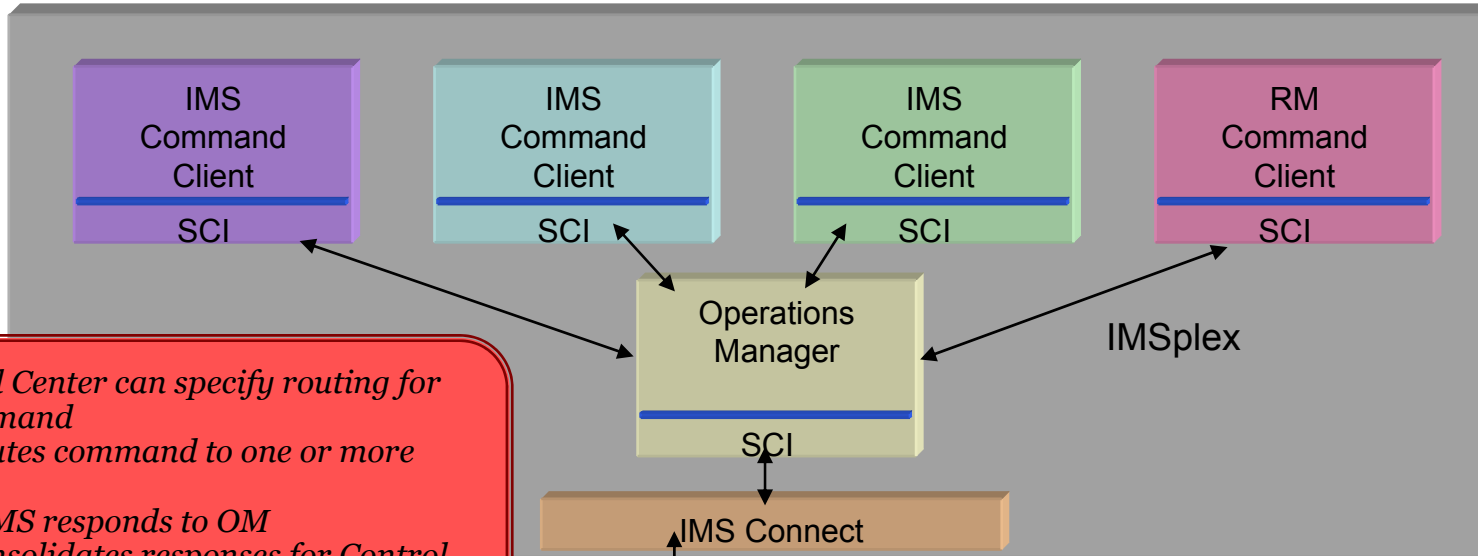
Context of IMS Control Center

- Within the scope of the resource types addressed in IMS V8 (and now IMS V9) systems management
- DB2 Control Center as the IBM solution for system administration



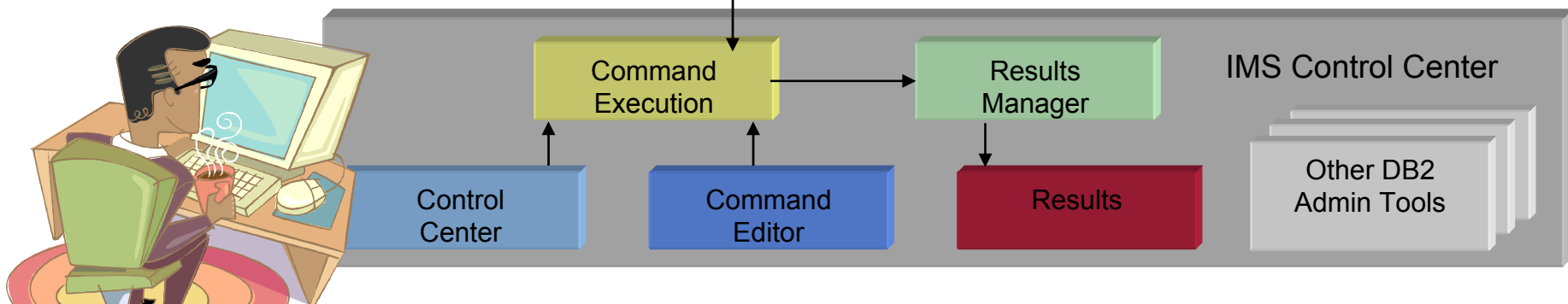
IMS Control Center Overview

z/OS



- ★ Control Center can specify routing for any command
- ★ OM routes command to one or more IMSs
- ★ Each IMS responds to OM
- ★ OM consolidates responses for Control Center

Workstation



The IMS Common Service Layer

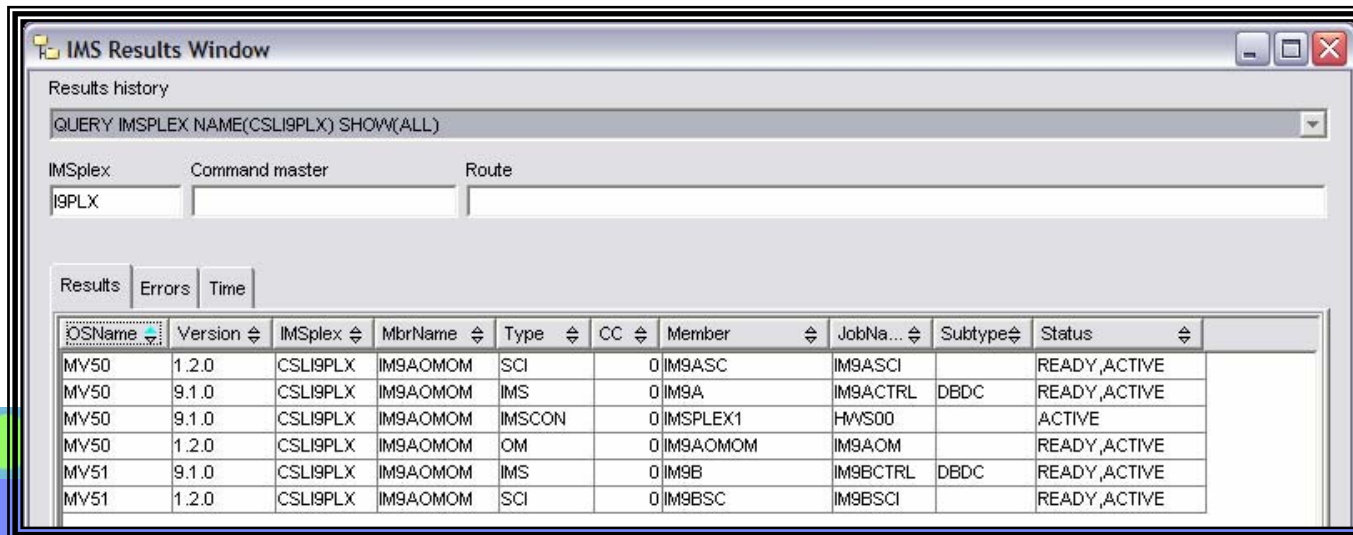
- Common Service Layer (CSL)
 - ▶ **An architecture**, not an address space
 - ▶ **Optional** in IMS V8 and IMS V9

- Three new address spaces built on the Base Primitive Environment (BPE)
 - ▶ **Structured Call Interface (SCI)**
 - ▶ **Operations Manager (OM)**
 - ▶ **Resource Manager (RM)**

- Purpose
 - ▶ Infrastructure for system management tasks in one or more IMS systems within an IMSplex
 - ▶ Foundation for future IMS architecture and Parallel Sysplex enhancements

Terminology - The “IMSplex”

- A set of one or more IMS address spaces that **work together as a unit**
 - ▶ Typically these address spaces:
 - Share either databases or resources or message queues (or any combination of these)
 - Run in an OS/390 or z/OS sysplex environment
 - Include an **IMS Common Service Layer**
 - ▶ The address spaces in an IMSplex are referred to as **IMSplex components**
 - ▶ All IMSplex components within one IMSplex share the same IMSplex name
 - Specified by **IMSPLEX=** in a proclib member for each address space



Results history

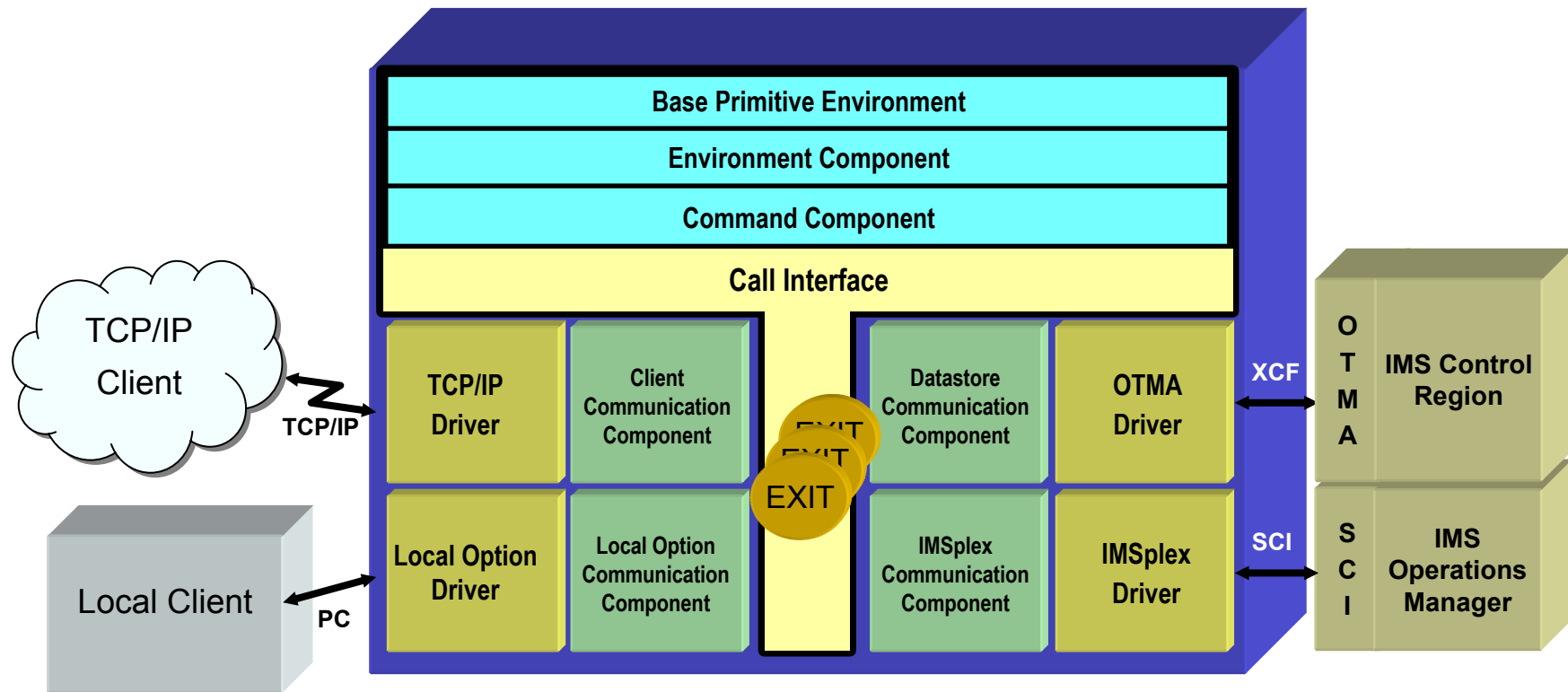
QUERY IMSPLEX NAME(CSLI9PLX) SHOW(ALL)

IMSplex: I9PLX Command master: Route:

Results Errors Time

OSName	Version	IMSplex	MbrName	Type	CC	Member	JobNa...	Subtype	Status
MV50	1.2.0	CSLI9PLX	IM9AOMOM	SCI	0	IM9ASC	IM9ASCI		READY_ACTIVE
MV50	9.1.0	CSLI9PLX	IM9AOMOM	IMS	0	IM9A	IM9ACTRL	DBDC	READY_ACTIVE
MV50	9.1.0	CSLI9PLX	IM9AOMOM	IMSCON	0	IMSPLEX1	HWS00		ACTIVE
MV50	1.2.0	CSLI9PLX	IM9AOMOM	OM	0	IM9AOMOM	IM9AOM		READY_ACTIVE
MV51	9.1.0	CSLI9PLX	IM9AOMOM	IMS	0	IM9B	IM9BCTRL	DBDC	READY_ACTIVE
MV51	1.2.0	CSLI9PLX	IM9AOMOM	SCI	0	IM9BSC	IM9BSCI		READY_ACTIVE

IMS Connect Support of Operations Manager

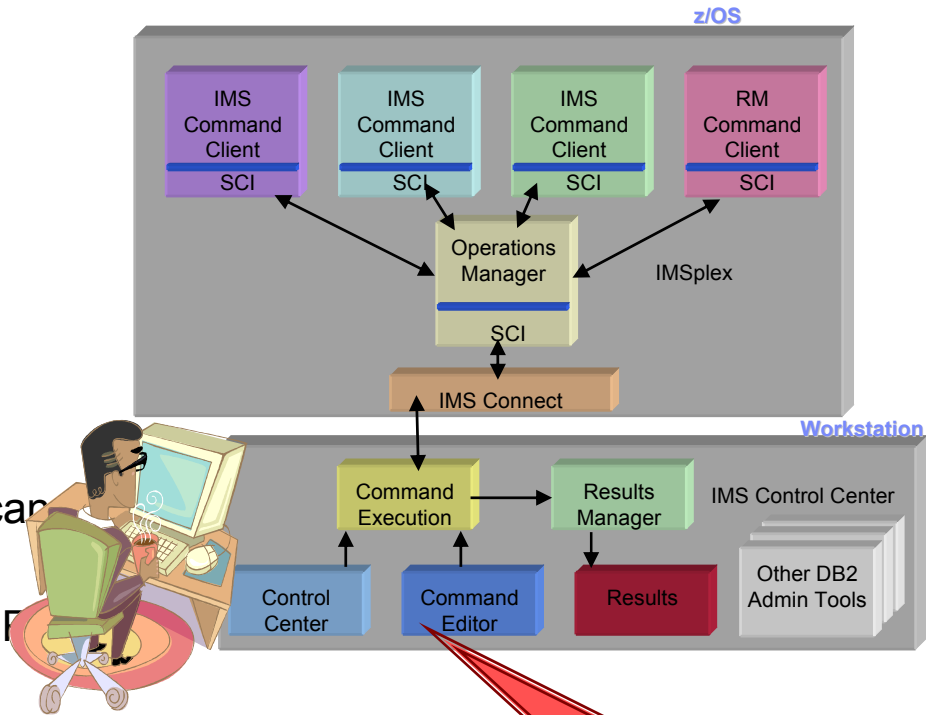


Commands in IMS from V8 onwards

Two "types" of Commands:

- Type-1 Commands**

- ▶ In original "pre-IMS V8" command syntax
 - ▶ For example
 - /DISPLAY ACT
 - ▶ Most type-1 IMS commands (/DBD, etc.) can be issued as through the "traditional" methods)
 - IMS commands specific to an input LTER
 - For example:
 - /FORMAT, /EXIT (without keywords), /RCLSDST, /CANCEL



** Type-1 commands can be issued through the Command Editor*


- Type-2 Commands**

- ▶ **New** from IMS V8 onwards
 - ▶ Can ONLY be issued through the OM API

Type-1 Commands

- IMS command **verbs** and certain **primary keywords** can be issued through the OM API
 - ▶ **Command verb** can be in **long** form or **short** form
 - ▶ For example:
 - **DIS**
 - **DISPLAY**
 - ▶ Only one format of the **primary keywords** is supported
 - For example the following are **not** supported:
 - **DIS ACTIVE, DIS A**
 - For example the following **are** supported:
 - **DIS ACT, DISPLAY ACT**

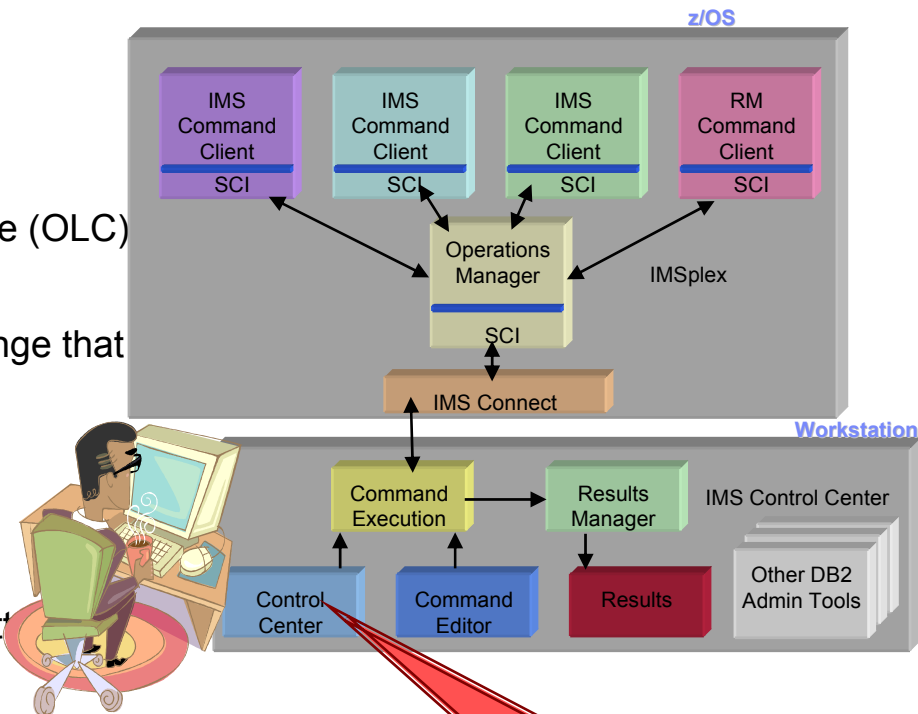
Command (long form)	Command (short form)	Primary Keywords
/ACTIVATE	/ACT	LINK, NODE
/ASSIGN	/ASS	CLASS, CPRI, INPUT, LCT
/BROADCAST	/BRO	ACT, LINE, LTERM, MASTER, NODE, PTERM, USER
/DISPLAY	/DIS	ACT, AFFIN, AOITKN, APPC, AREA, ASMT, CCTL, CONV, CPLOG, CQS, DB, DBD...etc.



▪ See IMS Version 9 Command Reference, SC18-7814, Chpt. 1, IMS Command Language, "Commands Supported by the OM API" for a detailed table.

Type-2 Commands

- **INIT (INITiate process)**
 - ▶ INIT OLC - starts a global online change (OLC)
- **TERM (TERMinate process)**
 - ▶ TERM OLC - stops a global online change that
- **DEL (DELeTe resource)**
 - ▶ DEL LE - deletes runtime LE options
- **UPD (UPDate resource)**
 - ▶ UPD LE - updates runtime LE options
 - ▶ UPD TRAN - updates selected TRAN at
- **QRY (QueRY resource)**
 - ▶ QRY IMSPLEX - returns the names of the members in the IMSplex
 - ▶ QRY LE - returns runtime LE options
 - ▶ QRY MEMBER - returns status and attributes of the IMS member
 - ▶ QRY OLC - returns OLC library and resource information
 - ▶ QRY TRAN - returns TRAN info similar to /DIS TRAN
 - ▶ QRY STRUCTURE - returns structure information of the RM resource structure

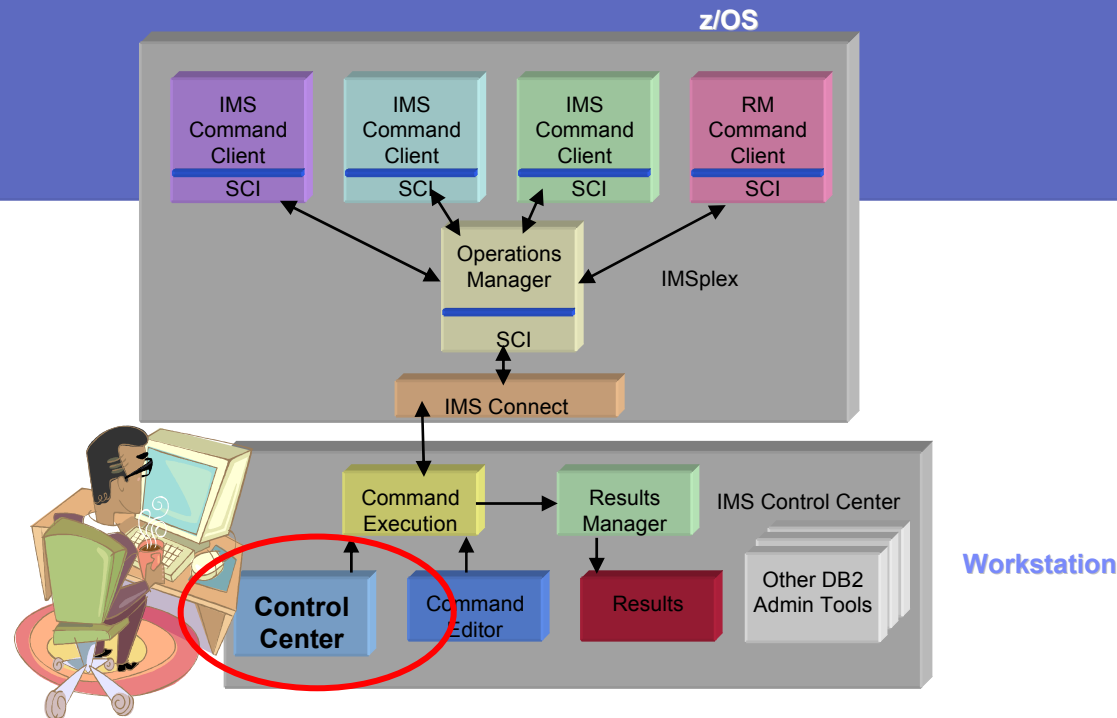


*Type-2 commands can be issued through the Control Center AND the Command Editor

New Type-2 Commands in IMS V9

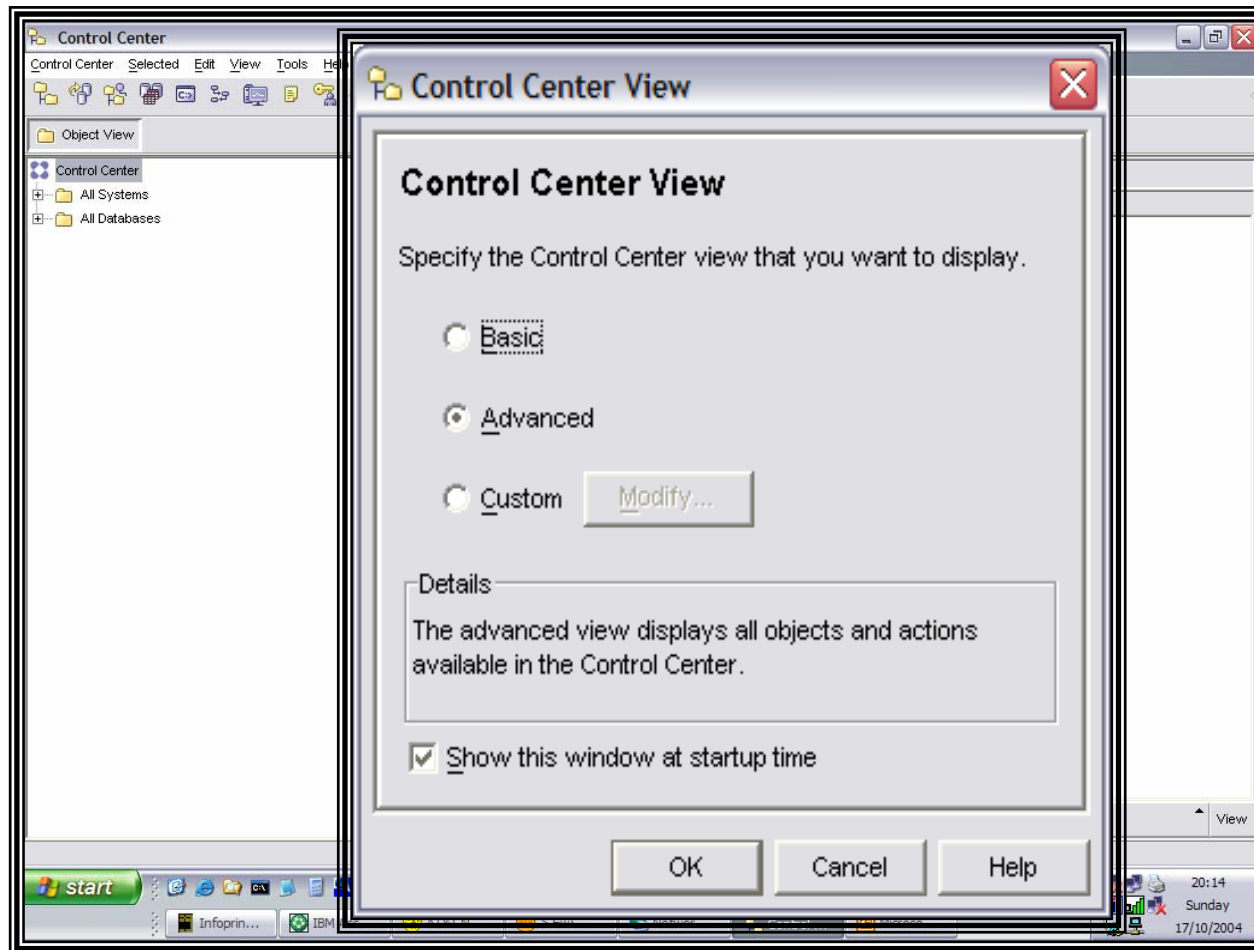
- **INIT (INITiate process)**
 - ▶ INIT OLREORG - starts an Online Reorganization (OLR) for HALDB, or reinitiates a suspended OLR
- **TERM (TERMinate process)**
 - ▶ TERM OLREORG – suspends an OLR
- **UPD (UPDate resource)**
 - ▶ UPD DB – similar to /DBD DB, /DBR DB, /LOCK DB, UNLOCK DB, /START DB, /STOP DB
 - ▶ UPD AREA – similar to /DBR AREA, /START AREA, /STOP AREA
 - ▶ UPD DATAGRP – similar to /DBR DATAGROUP, /START DATAGROUP, /STOP DATAGROUP
 - ▶ UPD OLREORG – modify OLR in progress
- **QRY (QueRY resource)**
 - ▶ QRY DB - similar to /DIS DB, /DIS STATUS DB
 - ▶ QRY AREA – similar to /DIS AREA
 - ▶ QRY OLREORG – query OLRs in progress

IMS Control Center



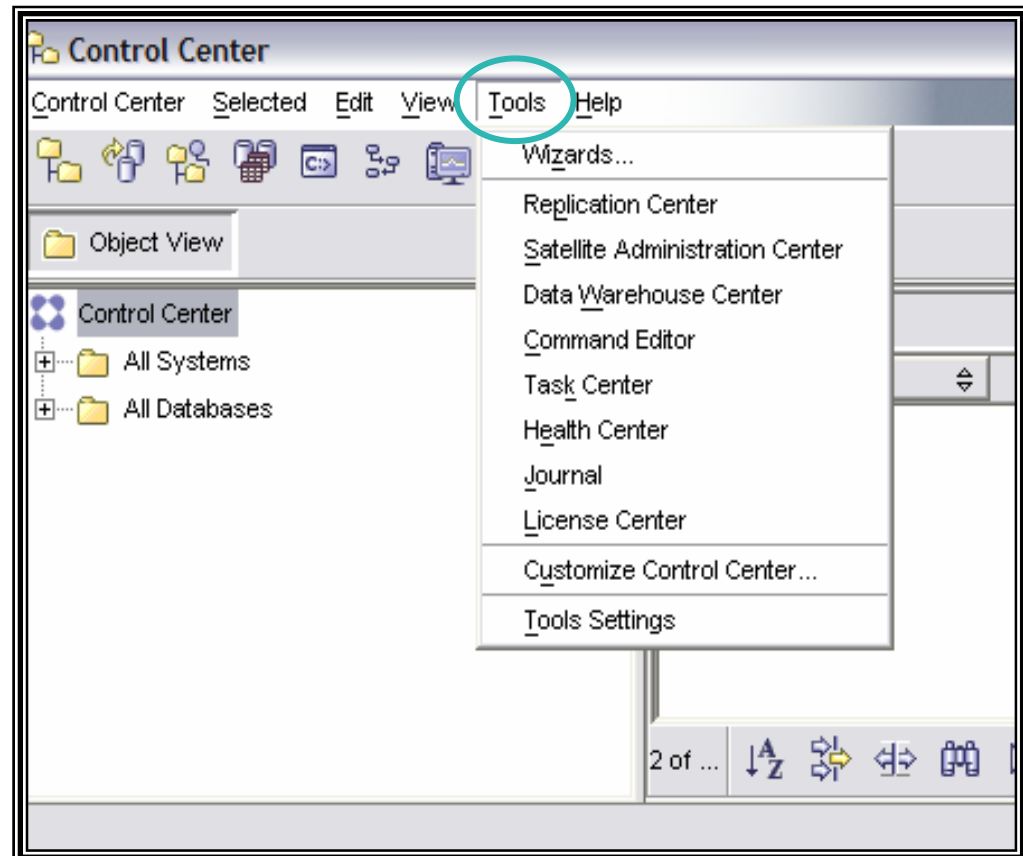
IMS Control Center Overview ...

Start->Programs->IBM DB2->General Administration Tools->Control Center.



Control Center – DB2 System Tree

- Manage DB2 workstation systems / instances
- Manage DB2 for z/OS subsystems
- Create databases and related objects
- Explorer-style tree structure for navigation
- Wizards and simple dialogs for ease of use
- Launch the other GUI admin tools
 - ▶ Command Editor
 - ▶ Health Center
 - ▶ Task Center and Journal
 - ▶ Data Warehouse Center
 - ▶ License Center
 - ▶ Satellite Admin Center
 - ▶ Replication Center



Control Center Overview ...

- Control Center supports IMS V8 and later versions

- Allows you to issue **type-2** commands from either:
 - ▶ Command windows or
 - ▶ Wizards
 - Provide more guided assistance

- Results displayed in IMS Results window

Control Center – Add IMSplex System

- Add an IMSplex from a pop-up menu of the Systems root of the Control Center tree
- Specify the **IMSplex name**
 - ▶ as specified in CSLSIxxx proclib member
- Specify the **z/OS host IP address**
- Specify the **port** where IMS Connect is listening

Control Center – Add IMSplex

Select "IMS"

IMSplex name

Host TCP/IP Address

Host Port No.

Name	Node name	Operating system	Type	Protocol	Protocol parameters	Comment
ACOUGHT...	ACOUGHTR	Windows	DB2 V8	LOCAL	Instance name=DB2D... Local work...	
PISC1	PISC1	OS/390 or z/OS	IMS	TCP/IP	Host name=9.20.101...	

Add System

System Type: DB2 IMS

System name: PISC1

Host name: 9.20.101.28

Port Number: 9999

Operating system: OS/390 or z/OS

Comment:

Buttons: OK, Cancel, Apply, Reset, Show Command, Help

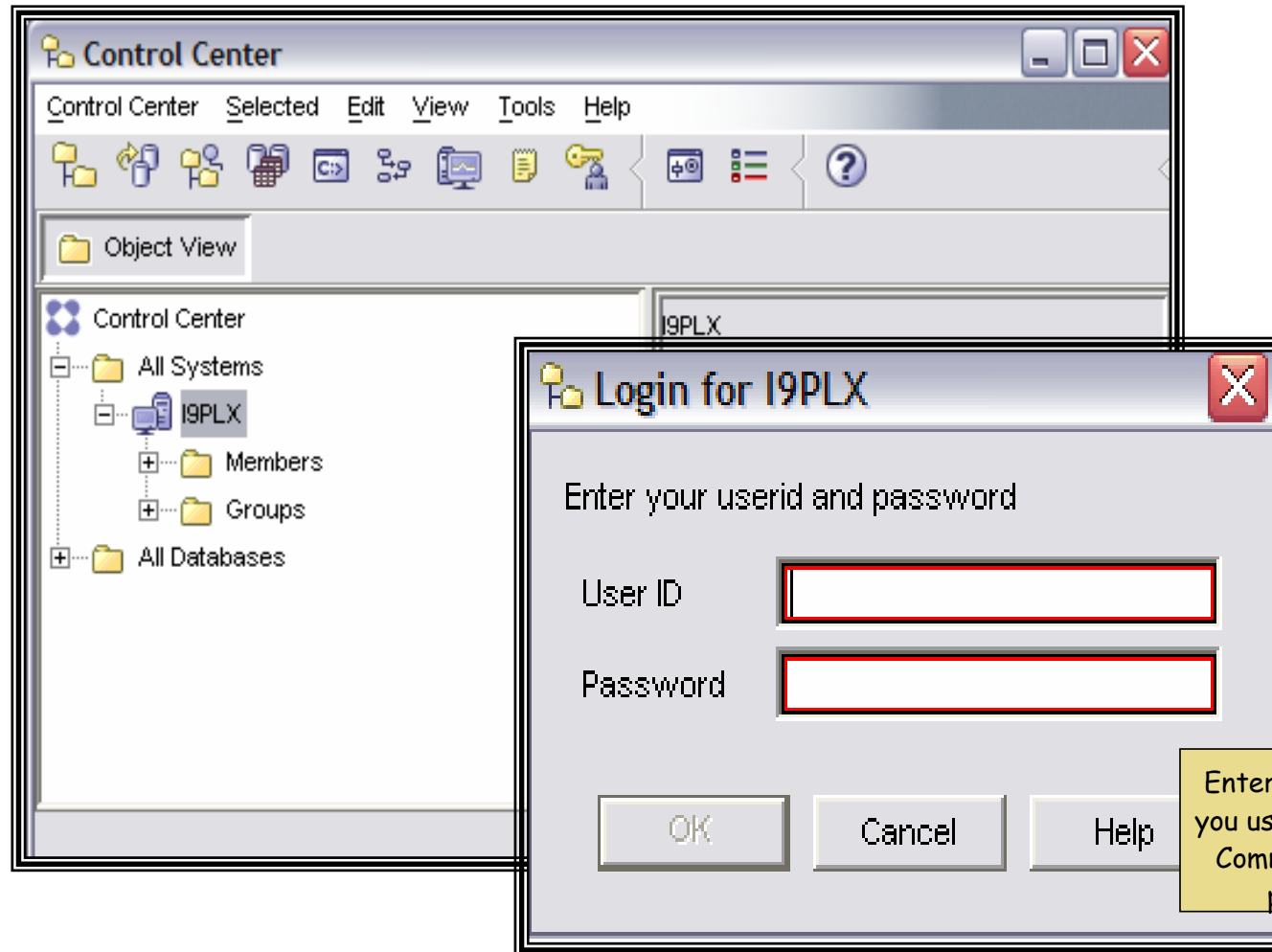
IMSpdex Login

- Security provided on z/OS by RACF or equivalent security tool
- **User ID** and **Password** entered on client
- Login required for every session before active members become visible

Login is to establish connection to IMS Connect, which in turns registers with SCI to enable the communication to members (e.g., OM, IMSs) in the IMSpdex.



Control Center – IMSplex Login

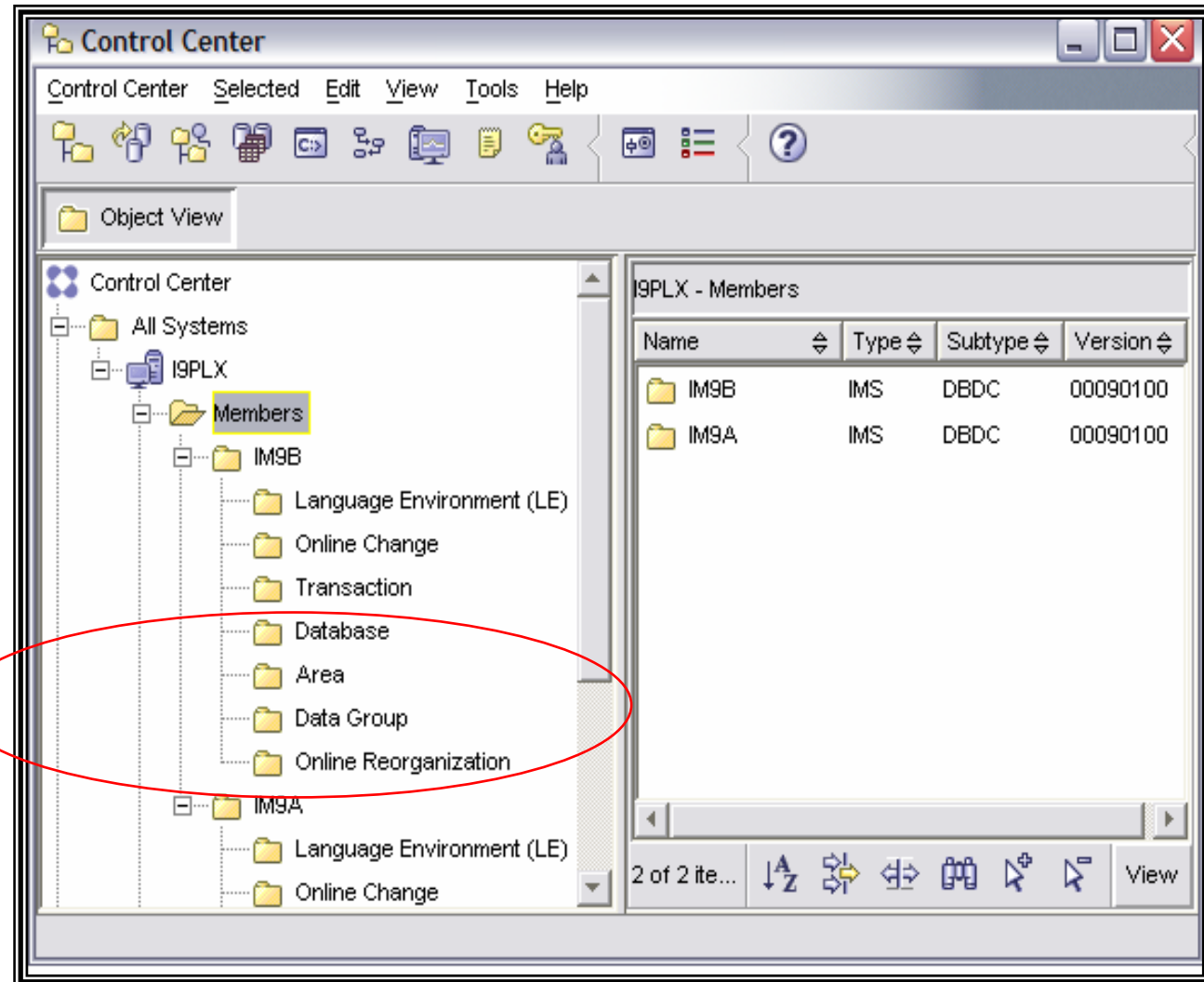


IMSplex Tree

- Lists the IMSplexes you have added
- Lists active IMSplex command client members (in V8, IMS and RM type members)
- Lists resource types for each member
- During a session, the list of members can be updated using **Refresh** from the IMSplex menu
- All IMSplex members can be listed using **Query...** from the IMSplex pop-up menu



Control Center – IMSplex and Members

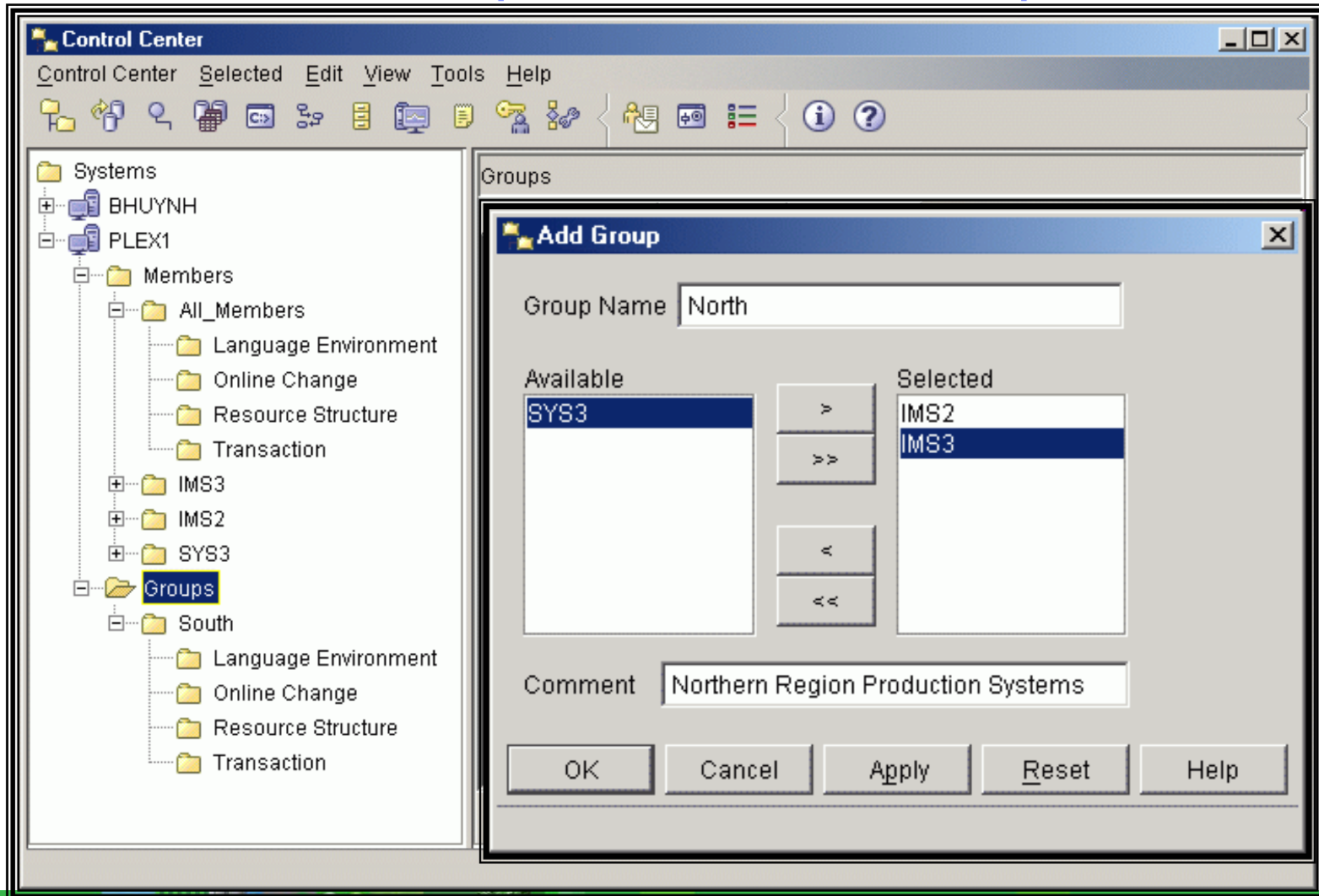


IMS V9 Resources






IMSplex Member Groups

- Named groups for any subset of members
- All_Members group provided as the single-point-of-control (SPOC)
- A command sent to a group is sent to **all members** of that group
- OM gathers all member responses before returning results to the Control Center

Control Center – IMSplex Member Groups



Type-2 Commands

- In IMS V8:
 - ▶ Query IMSplex
 - ▶ Query Member
 - ▶ Query LE
 - ▶ Update LE
 - ▶ Delete LE
 - ▶ Initiate Online Change
 - ▶ Query Online change
 - ▶ Terminate Online change
 - ▶ Query Structure (Resource Structure)
 - ▶ Query Tran 
 - ▶ Update Tran 
- Additionally in IMS V9:
 - ▶ Query Database 
 - ▶ Update Database 
 - ▶ Query Area
 - ▶ Update Area
 - ▶ Update Data Group 
 - ▶ Initiate Online Reorganization
 - ▶ Query Online Reorganization
 - ▶ Terminate Online Reorganization

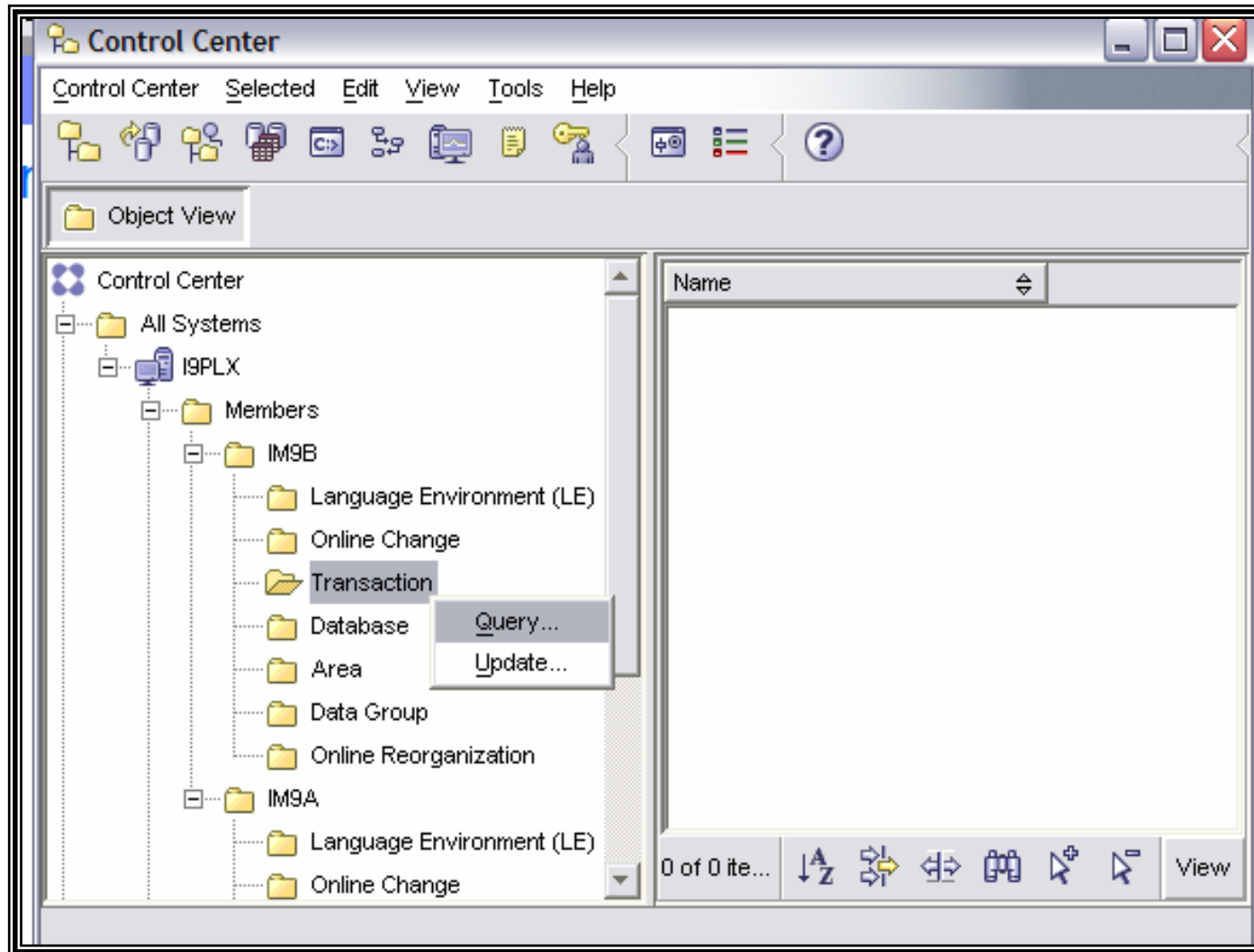
 ***“Wizards” can be launched for the more complex commands, giving step-by-step prompts and instructions***

Command Wizards

- Wizards for the more complex commands
- Query wizards displayed automatically when clicking on a resource type folder
- Launched from pop-up menus in Control Center or objects in Results window
- Provide step-by-step prompts and instructions
- Previous names remembered in history list



Control Center – Type-2 Commands



Command Wizards



Task Overview

Address: http://localhost:51000/help/index.jsp?topic=/com.ibm.db2.udb.cc.doc/ims_plex/db2imsc_v8.htm

DB2 Information Management Software Information center

Search: [GO](#) [Advanced Search](#)

Contents

- Product overviews
- Migrating
- Installing
- Configuring
- Designing
- Administering**
 - Database systems
 - Federated systems
 - Replication and event publishing
 - Administering XML metadata with the XML Metadata Registry
 - Business intelligence
 - Mainframe and midrange servers
 - Administering DB2 Connect systems
 - Administering DB2 Universal Database for z/OS and OS/390
 - Administering an IMSplex
 - IMS groups
 - Logging into an IMSplex
 - Changing an IMSplex
 - Issuing commands with the Command Editor
 - Results and attributes values for QUERY MEMBER
 - Status for QUERY MEMBER TYPE(IMS) command
 - Results and attributes values for QUERY STRUCTURE
 - Results for QUERY TRAN
 - Deleting previously defined parameter overrides
 - Displaying previously defined parameter overrides
 - Querying an IMSplex member
 - Querying online change
 - QUERY OLC results
 - Return, reason, and completion codes for QUERY OLC
 - Querying a resource structure
 - Querying a transaction using the wizard**
 - Terminating an online change
 - Defining language environment (LE) overrides
 - Updating a transaction using the wizard
 - Querying transactions
 - Updating a transaction
 - Results for UPDATE TRAN
 - Viewing the command

Administering

Querying a transaction using the wizard

Use the Query Transaction wizard to display information about transactions across the IMSplex. The Query Transaction wizard issues a `QUERY TRAN` command. The syntax for this command is defined in XML and is available to automation programs which communicate with OM.

The transaction information displayed depends if the IMS issuing the `QUERY TRAN` command is running with Resource Manager (RM) services or not. If `QUERY TRAN` is issued by an IMS command master running without RM, all transaction information local to that IMS is returned. If `QUERY TRAN` is issued by an IMS command master running with RM, the IMS command master retrieves global information from CQS or RM as specified.

If `QUERY TRAN` is routed for global information to all IMSs in an environment where some IMSs use RM services and other IMSs do not, the command results will vary because any of the IMSs can be the command master. The RM environment of the IMS command master affects the type of transaction information that is displayed. You may want to route `QUERY TRAN` to specific IMSs if some IMSs are using RM. Below are two examples of why you may receive different command results:

- The IMSplex has non-cloned systems and the transaction is only defined by an IMS that has `RMENV=N`. The IMS command master is running with RM services, but because the transaction is not defined to RM, no global information is obtained. The results are two response lines:
 - The IMS command master returns the transaction name as invalid.
 - The IMS with `RMENV=N` returns its local information.
- The IMSplex has non-cloned systems. If global queue counts are requested, and the IMS command master does not have RM running, no global queue counts are returned for transactions that are not defined locally at the command master. All other IMSs return only their local information.

To query a transaction using the Query Transaction wizard:

- [Open the Query Transaction wizard.](#)
- Complete each of the applicable wizard pages. Each page is discussed below.
- Click **Finish** to query a transaction.

Name

On this page, you specify the names of the transactions that you want to query. The options that you specify here are reflected the `NAME` keyword parameter in your command syntax.

Select

Select whether you want to filter your transaction queries by `CLASS`, `QCNT`, or `STATUS`. If a `STATUS`, `CLASS`, or `QCNT` filter is not specified, all of the transactions matching the transaction name are returned.

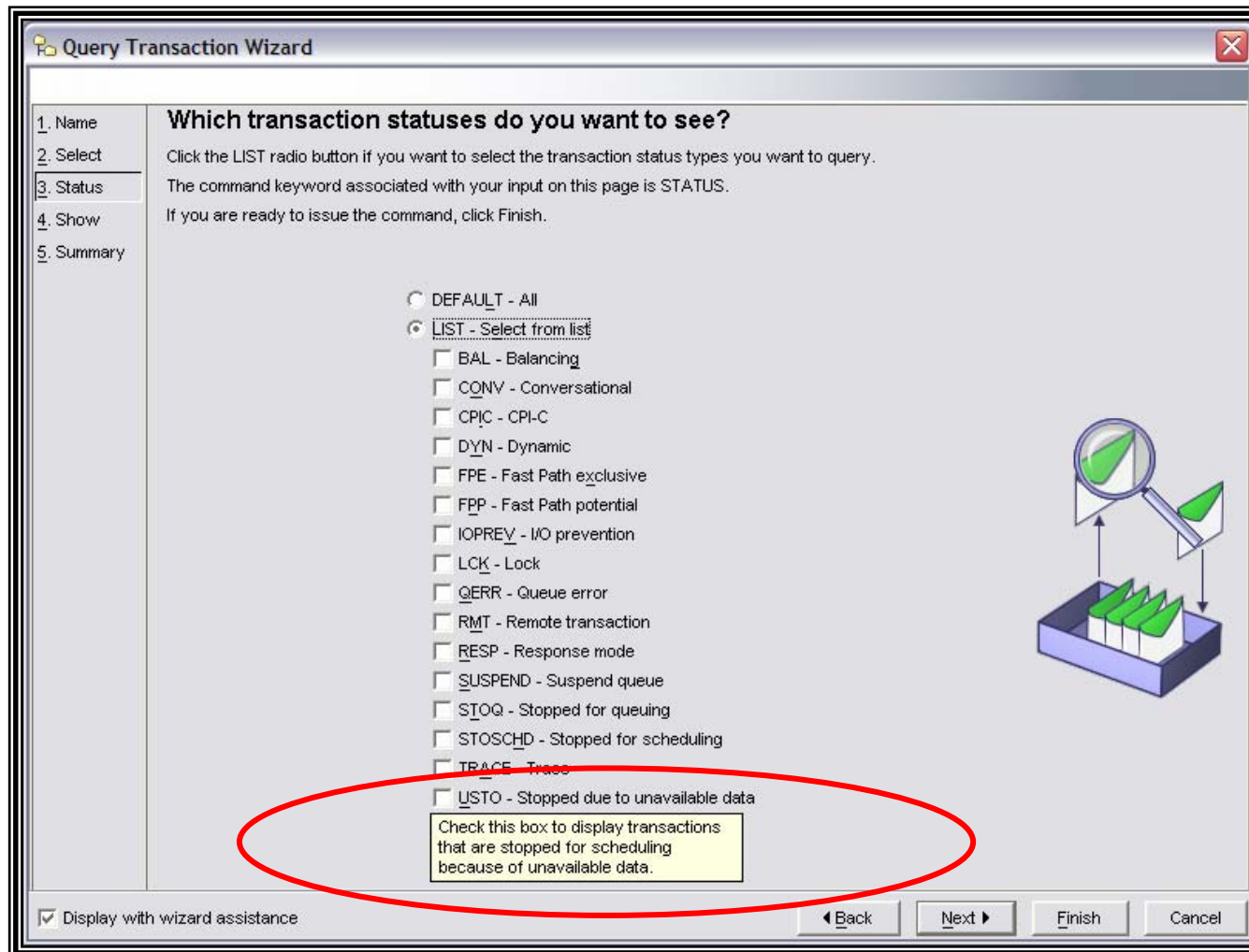
Class

On this page, you specify the classes of the transactions that you want to query to return transactions that possess at least one of the specified

Wizard Help for Command Options

- Select command options from lists
- Help pop-ups for each option
- Option keywords listed for learning commands

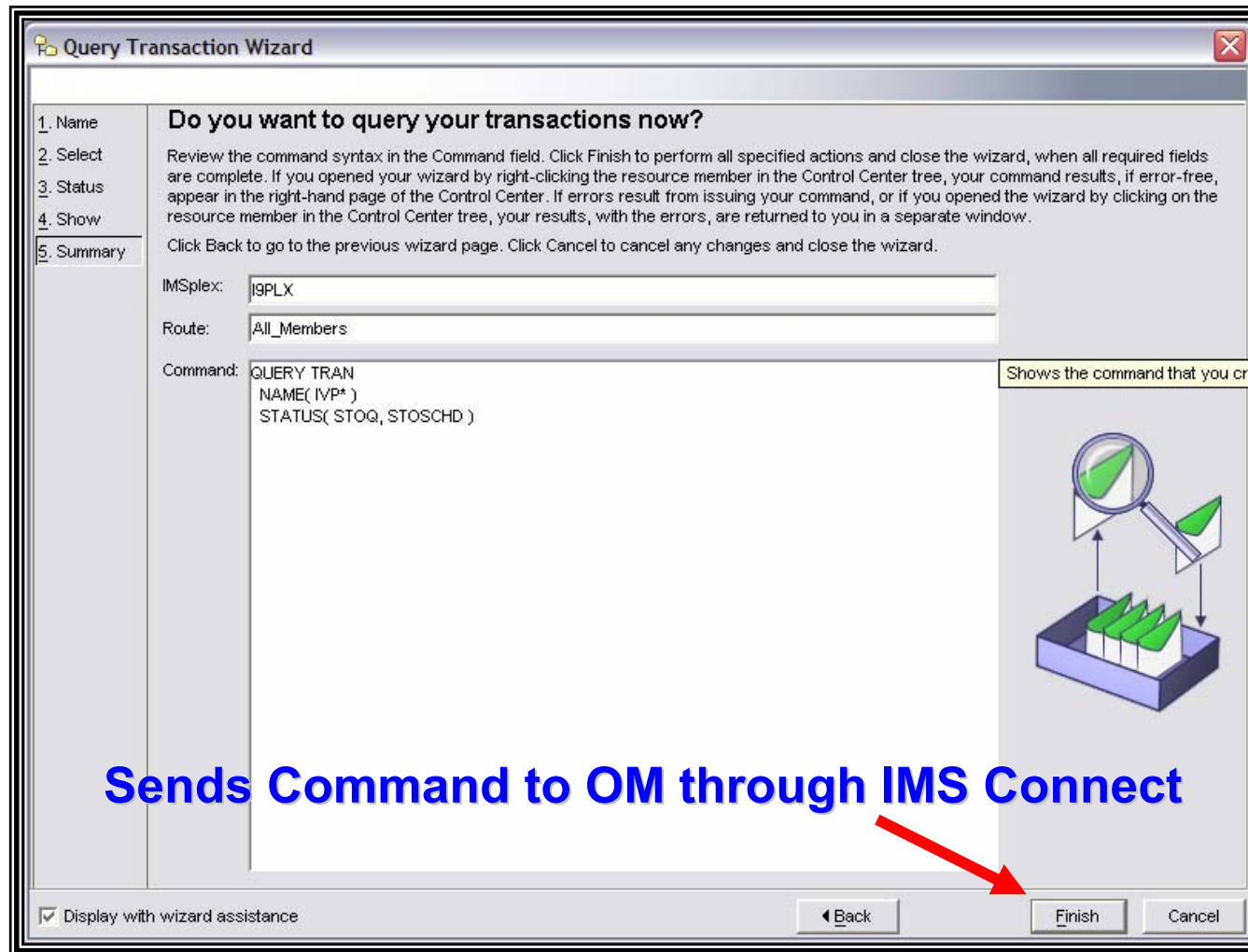
Wizards – Help Selecting Options



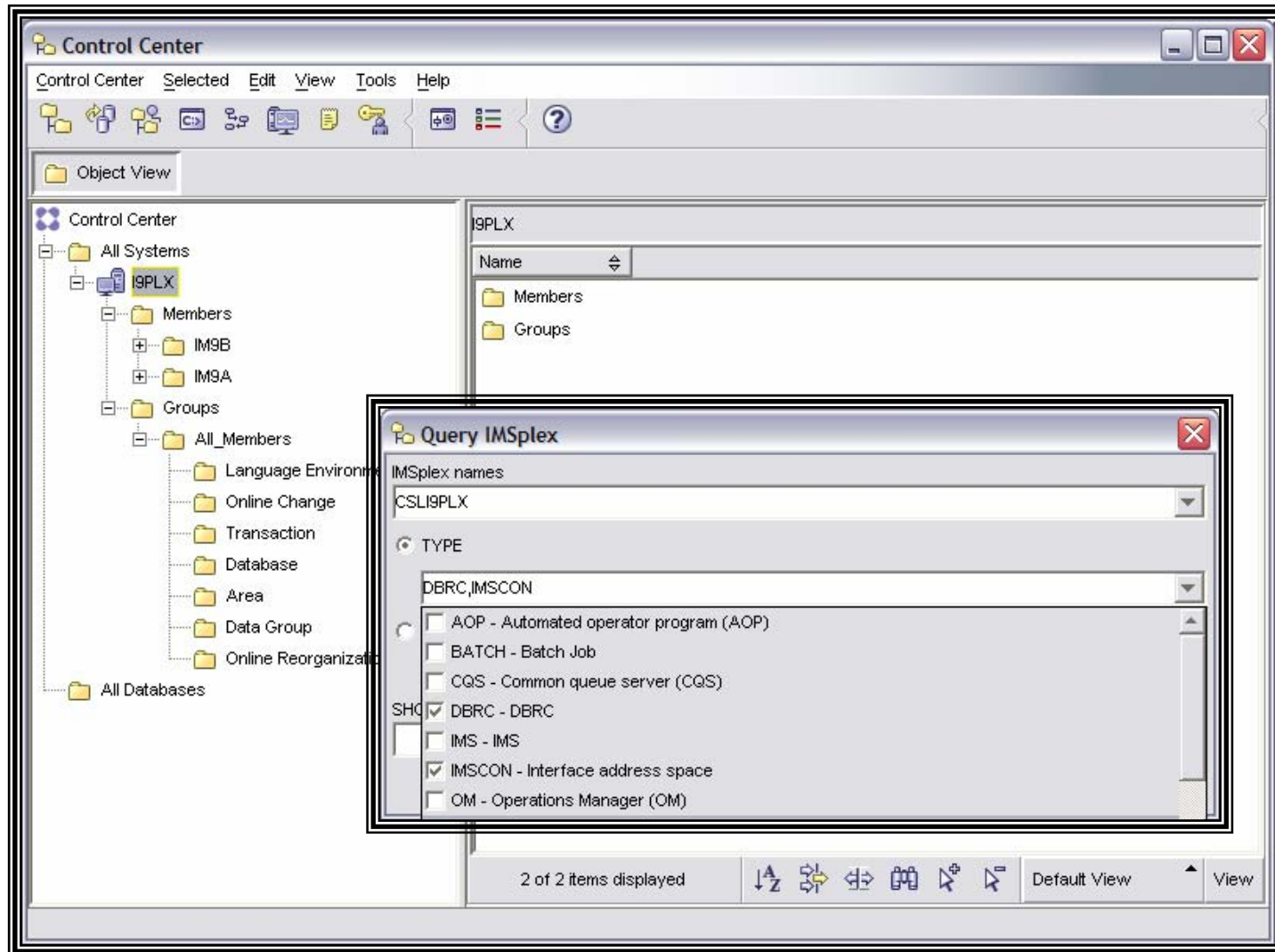
Wizard Generated Command

- Command generated by user selections is displayed on the **Summary page**
- IMSplex and Route are also displayed
- **Finish** button sends command to OM through IMS Connect

Wizards – Generated Command



Command Window



Displayed Resources in Control Center

- Resources displayed as the contents of the resource type folder
- Resources displayed in a tabular format
- Resources ordered by member as they were returned by OM
- Columns can be reordered by drag and drop or using the customize columns dialog
- “Find” enables search for specific values



Control Center – Displayed Transactions

The screenshot shows the IBM Control Center interface. On the left is an 'Object View' tree showing a hierarchy of folders: Database, Area, Data Group, Online Reorganization, IM9A, Language Environment (LE), Online Change, Transaction, Database, Area, Data Group, Online Reorganization, Groups, All_Members, Language Environment (LE), Online Change, Transaction, Database, Area, Data Group, and Online Reorganization. The 'Transaction' folder under 'All_Members' is selected.

The main pane displays a table titled '9PLX - Members - All_Members - Transaction'. The table has the following columns: Trancode, MbrName, PSBname, LclStat, LCls, LQCnt, LLCT, LPLCT, and LCPRI. The data is grouped by transaction type (IVTFM, IVTNO, IVTNV, PART).

Trancode	MbrName	PSBname	LclStat	LCls	LQCnt	LLCT	LPLCT	LCPRI
IM9B	DFSIVP4	FPE_RESP		1	0	48788	65535	
IM9A	DFSIVP4	FPE_RESP		1	0	19812	65535	
IVTFM								
IM9B	DFSIVP5	FPE_RESP		1	0	48816	65535	
IM9A	DFSIVP5	FPE_RESP		1	0	19840	65535	
IVTNO								
IM9B	DFSIVP1			1	0	65535	65535	
IM9A	DFSIVP1			1	0	65535	65535	
IVTNV								
IM9B	DFSIVP2	STOQ,S...		1	0	65535	65535	
IM9A	DFSIVP2	STOSCHD		1	0	65535	65535	
PART								

At the bottom of the table, it says '46 of 46 items displayed'. The status bar also shows 'Default View*' and a 'View' button.

Command Results Sorting

- Resources can be sorted on any column by clicking on the column header
- Click again to reverse ascending/descending
- Sort dialog available from view toolbar enables multi-level sorting and grouping



Control Center – Results Sorting

IMS Results Window

Results history
 QUERY TRAN NAME(*) SHOW(ALL)

IMSplex: IM9PLX Command master: IM9B Route: All_Members

Results Errors Time

Trancode	MbrName	CC	PSBname	LCIs	LQCnt	LLCT	LPL
ADDINV							
	IM9A		0 DFSSAM04		1	0	2
	IM9B		0 DFSSAM04		1	0	2
ADDPART							
	IM9A		0 DFSSAM04		1	0	2
	IM9B		0 DFSSAM04		1	0	2
CLOSE							
	IM9A		0 DFSSAM05		1	0	2
	IM9B		0 DFSSAM05		1	0	2
DISBURSE							
	IM9A		0 DFSSAM06		1	0	2
	IM9B		0 DFSSAM06		1	0	2
DLETINV							
	IM9A		0 DFSSAM04		1	0	2

46 of 46 items displayed

Default View* View

Display Results in New Window Update Close Help

Command Results Filtering

- Filter dialog available from view toolbar
- Filter resources on any columns
- All resource information is saved locally, allows applying any number of successive filters to study data



Control Center – Results Filtering

The screenshot shows the 'IMS Results Window' interface. At the top, there is a 'Results history' section with a dropdown menu showing 'QUERY TRAN NAME(*) SHOW(ALL)'. Below this, there are three input fields: 'IMSpplx' (value: I9PLX), 'Command master' (value: IM9B), and 'Route' (value: All_Members). The main area contains a table with columns: Trancode, MbrName, CC, PSBname, LCIs, LQCnt, LLCT, and LPLCT. A red circle highlights the LQCnt, LLCT, and LPLCT columns. The table displays four rows of data:

Trancode	MbrName	CC	PSBname	LCIs	LQCnt	LLCT	LPLCT
IVTFD	IM9A		0 DFSIVP4		1	0	57572
IVTFM	IM9A		0 DFSIVP5		1	0	57600
IVTFD	IM9B		0 DFSIVP4		1	0	22580
IVTFM	IM9B		0 DFSIVP5		1	0	22608

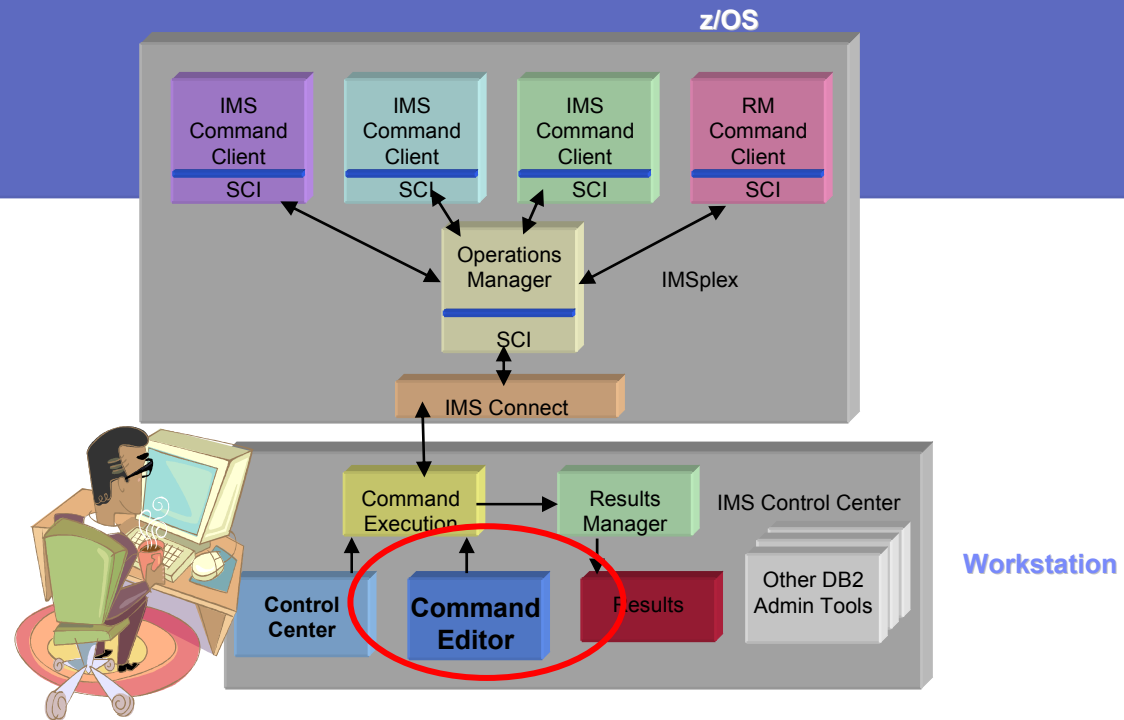
At the bottom of the window, there is a status bar showing '4 of 24 items displayed' and a toolbar with various icons. Below the toolbar are buttons for 'Display Results in New Window', 'Update', 'Close', and 'Help'.

Control Center Summary

- For type-2 commands only
- Commands are generated through windows and wizards
- Various sorting and filtering available

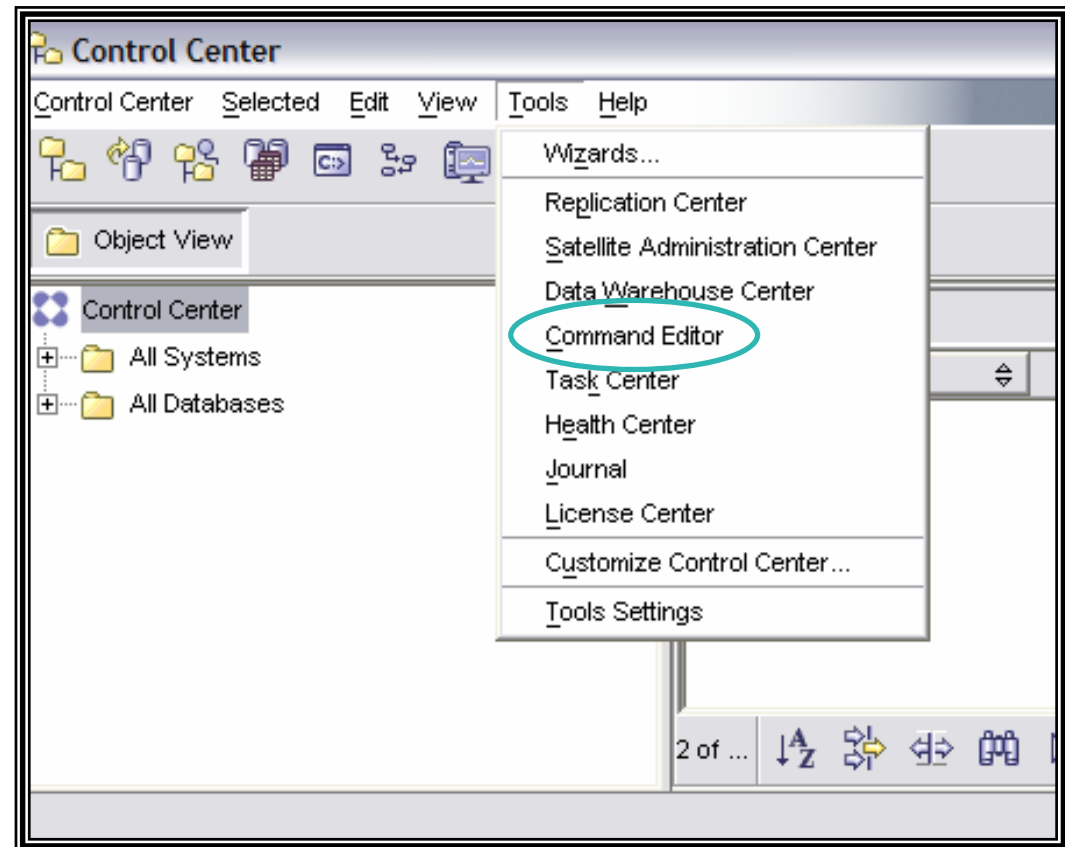


Command Editor



Command Editor

- Command types
 - ▶ SQL statements and DB2 commands
 - ▶ IMS commands
 - type-1 and type-2
- Command and response log

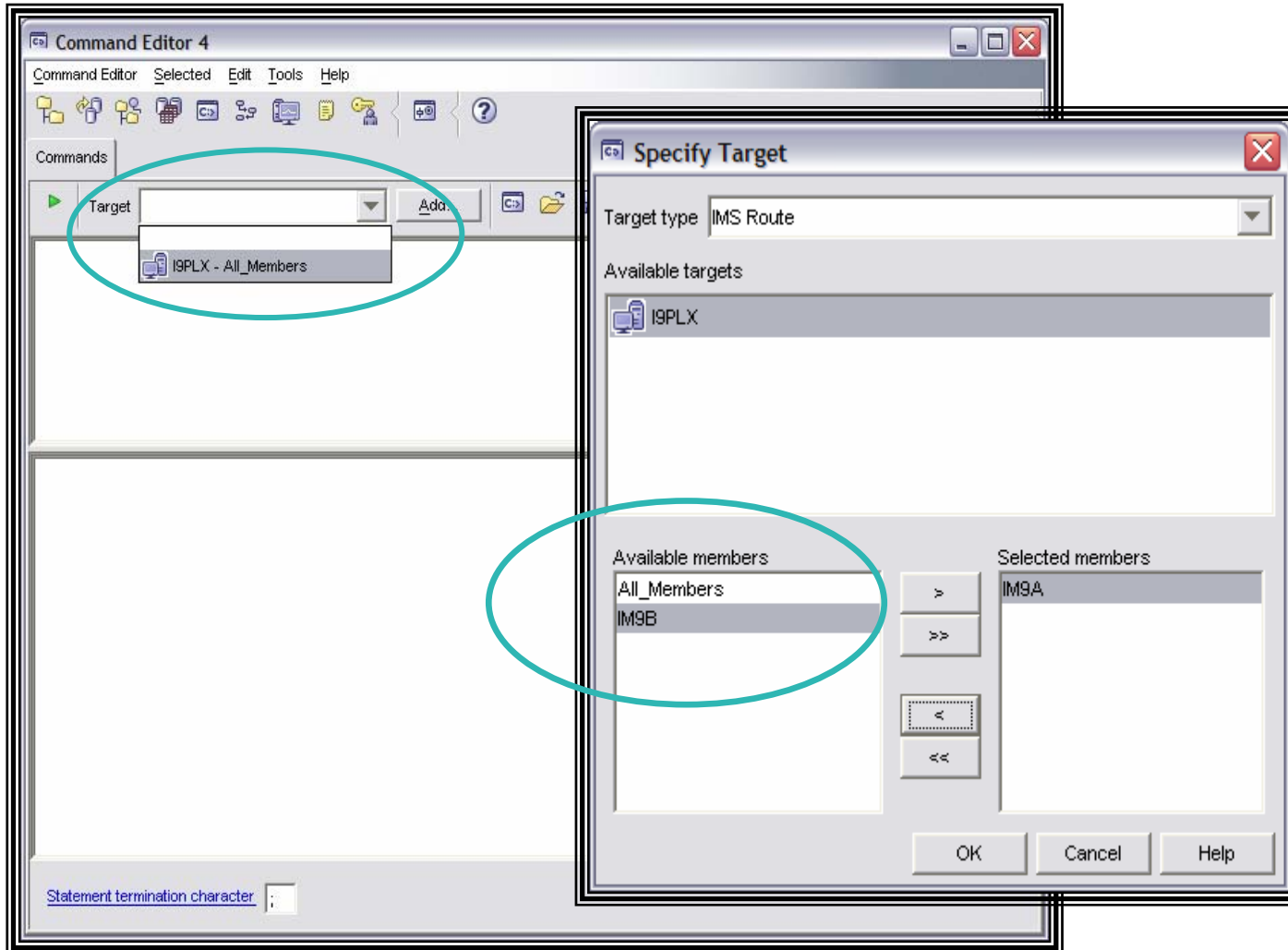


IMS Commands

- Select the IMS commands type
- Select **IMSplex** target
- Select **member route**
- Type command or select from history
- Commands executed asynchronously – you do not need to wait for a response before executing the next command

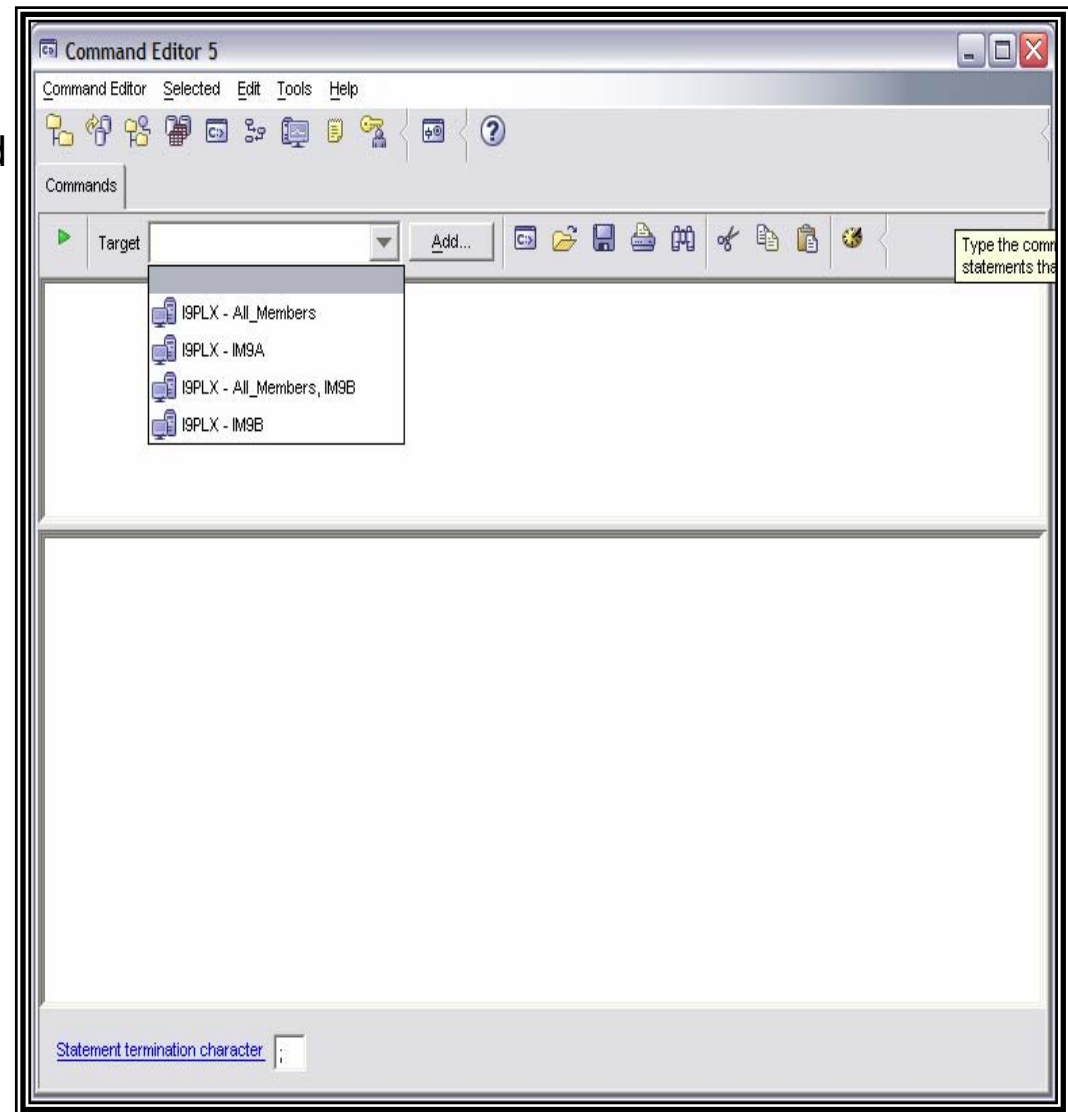


Command Editor – IMS Commands



Member Route

- Route commands to selected members
 - All_members
 - Individual members
 - Defined groups



Command Entry

- Command is entered in input area of panel
 - ▶ Type command directly
 - ▶ Copy command from Command History using “Copy to Editor” button
 - ▶ Type-2 commands
 - Type command using “Syntax Assist” if enabled on Tools/IMS panel

Command Entry

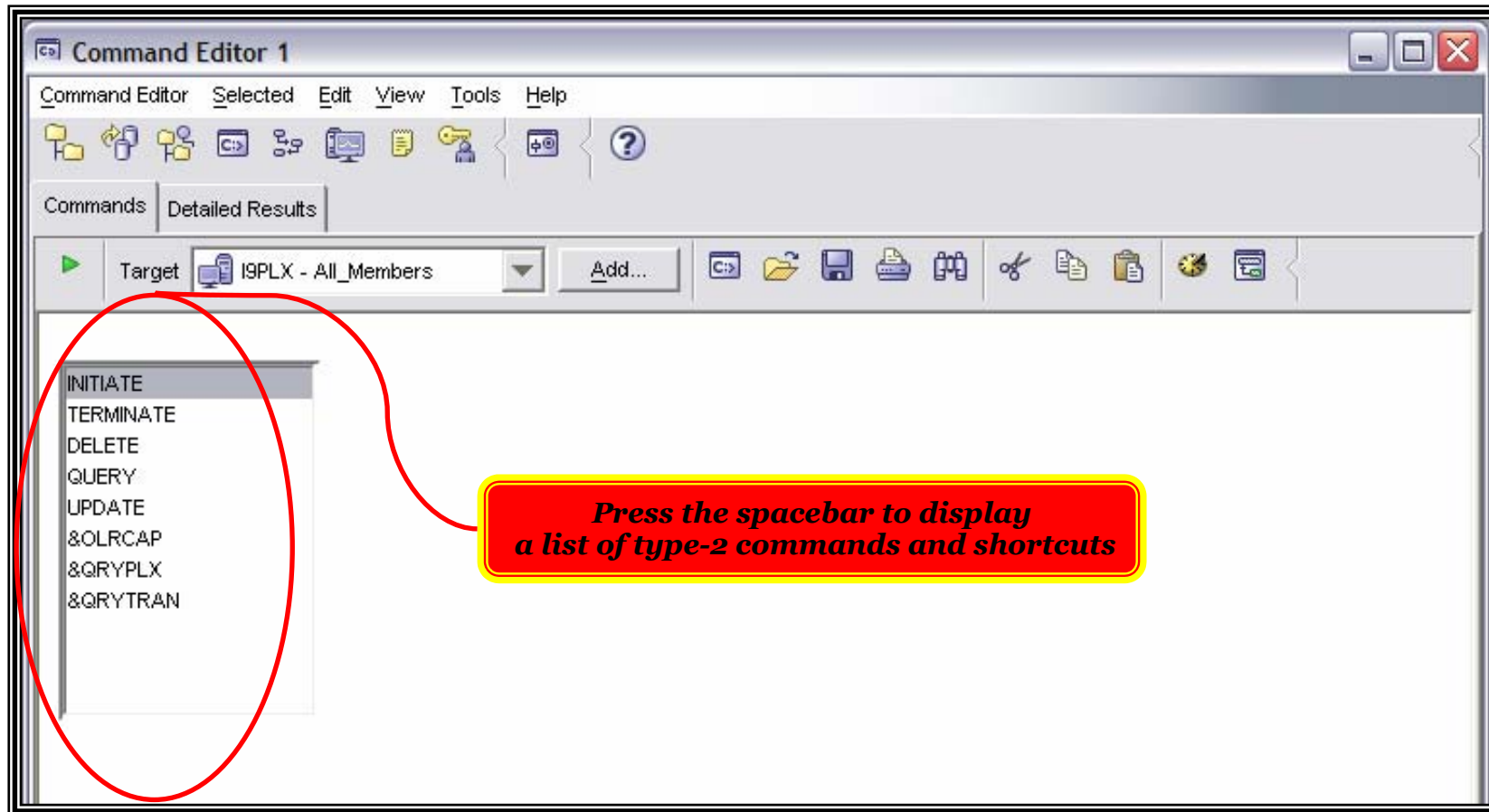
The image consists of three screenshots of the IBM Command Editor interface, illustrating different methods of command entry and execution.

Left Screenshot: Command Editor 1
 Shows the command input panel with the text: `QUERY IMSPLEX NAME(CSLI9PLX) SHOW(ALL)`. Below the input panel, the command execution results are displayed: `QUERY IMSPLEX NAME(I9PLX) SHOW(ALL)` with `RC = 0200000C` and `RSN = 00003008`, and `QUERY IMSPLEX NAME(CSLI9PLX) SHOW(ALL)` with `RC = 00000000` and `RSN = 00000000`. A red callout box points to the input panel with the text: **Type command directly on editor input panel**.

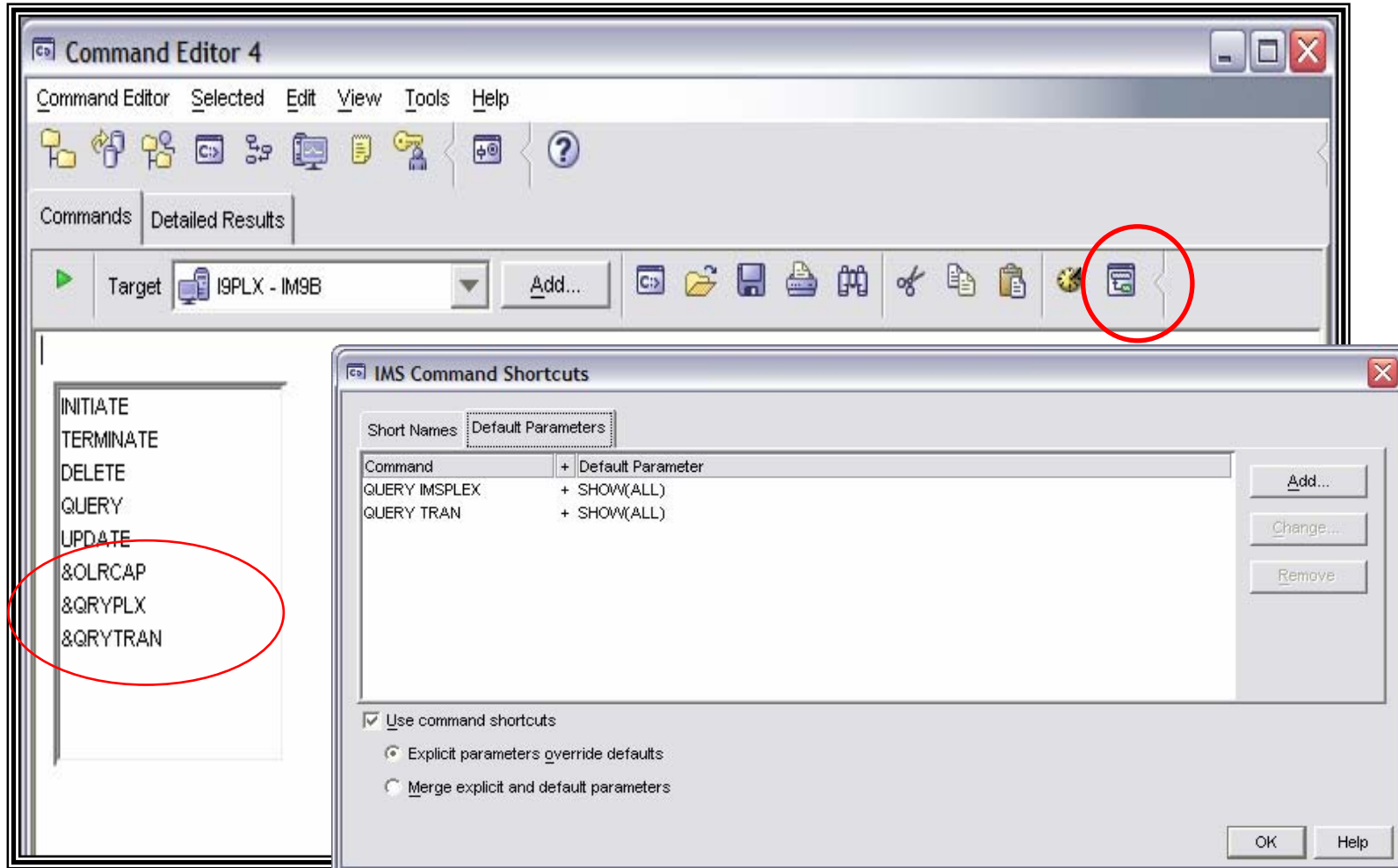
Middle Screenshot: IMS Command History
 Shows a table of commands and their return codes. The second row is highlighted: `TERMINATE OLREORG NAME(GPPDB21) OPTION(FOR...` with `0200000C`. A red callout box points to this row with the text: **Copy command from IMS Command History panel to editor input panel**. At the bottom, a red callout box points to the `Copy to Editor` button with the text: **Use "Syntax Assist" for type-2 and short-cut commands**.

Right Screenshot: Command Editor 1
 Shows the command editor with a syntax assist popup menu. The popup menu lists options: `IMSPLEX`, `LE`, `MEMBER`, `OLC`, `STRUCTURE`, `TRAN`, `DB`, `AREA`, and `OLREORG`. The `OLREORG` option is selected. A red callout box points to the popup menu with the text: **Use "Syntax Assist" for type-2 and short-cut commands**. Below the popup menu, the command execution results are displayed: `TERMINATE OLREORG OPTION(FORCE)` with `RC = 02000008` and `RSN = 00002038`.

Syntax Assist



Command Shortcuts



IMS Command Results

- Results tab in the Command Editor
- By default, appears automatically when results are available
- Shows **IMSplex**, **Command Master**, and **Route**
- Same sorting, grouping, filtering, and column customizing as in the Control Center



Command Editor – Results Tab

The screenshot shows the 'Command Editor 5' window with the 'Results' tab selected. The 'Results history' dropdown contains the command 'QUERY TRAN NAME(*) SHOW(ALL)'. Below this, the 'IMSpIex' is 'I9PLX', 'Command master' is 'IM9B', and 'Route' is 'All_Members'. The 'Results' tab is circled in red. The main area displays a table with the following data:

Trancode	MbrName	CC	PSBname	LCIs	LQCrt	LLCT
IVTFD	IM9B		0 DFSIVP4		1	0 225E
IVTFD	IM9A		0 DFSIVP4		1	0 5757
IVTFM	IM9B		0 DFSIVP5		1	0 226C
IVTFM	IM9A		0 DFSIVP5		1	0 576C

At the bottom of the window, it indicates '4 of 24 items displayed' and includes an 'Update' button.

Command Results

The screenshot shows the 'Command Editor 1' window with the following details:

- Command Editor 1** (Title Bar)
- Menu: Command Editor Selected Edit Tools Help
- Commands: Detailed Results
- Results history: QUERY TRAN NAME(*) SHOW(ALL)
- IMSpIex: I9PLX, Command master: IM9B, Route: All_Members
- Results Errors Time (Tabs)
- Table with columns: Trancode, MbrName, CC, PSBname, LCIs, LQCnt, LLCT
- Context menu options: Query..., Update..., Start, Stop
- Status: 46 of 46 items displayed
- Buttons: Display Results in New Window, Update

Trancode	MbrName	CC	PSBname	LCIs	LQCnt	LLCT
IM9B			0 DFSSAM04		1	0
IM9A			0 DFSSAM04		1	0
IM9B			0 DFSSAM05		1	0
IM9A			0 DFSSAM05		1	0
IM9B			0 DFSSAM06		1	0
IM9A			0 DFSSAM06		1	0
IM9B			0 DFSSAM04		1	0

Type-1 Command Results

The screenshot shows the 'Command Editor 1' window with the 'Detailed Results' tab selected. The command 'DISPLAY TRAN ALL' is entered in the 'Results history' field. The 'IMSpex' is 'J9PLX', 'Command master' is 'IM9B', and 'Route' is 'All_Members'. The results are displayed in a scrollable text box with a vertical scrollbar on the right side, circled in red. The results are organized into two sections: one for IM9B and one for IM9A.

IMSpex	Command	CL	ENQCT	QCT	LCT	PLCT	CP	NP	LP	SEGSZ	SEGNO	PARLM	RC
IM9B	DLETINV	1	0	0	2	65535	7	7	10	0	0	NONE	0
IM9B	PSBNAME: DFSSAM04												
IM9B	IVTCP	1	0	0	65535	65535	1	1	1	0	0	NONE	0
IM9B	PSBNAME: DFSIVP31												
IM9B	IVTCV	1	0	0	65535	65535	1	1	1	0	0	NONE	0
IM9B	PSBNAME: DFSIVP3												
IM9B	DSPALLI	1	0	0	2	65535	7	7	10	0	0	NONE	0
IM9B	PSBNAME: DFSSAM07												
IM9B	*05068/174209*												
IM9A	TRAN	CLS	ENQCT	QCT	LCT	PLCT	CP	NP	LP	SEGSZ	SEGNO	PARLM	RC
IM9A	IVTINV	1	0	0	65535	65535	1	1	1	0	0	NONE	0
IM9A	PSBNAME: DFSIVP2												
IM9A	DISBURSE	1	0	0	2	65535	7	7	10	0	0	NONE	0
IM9A	PSBNAME: DFSSAM06												
IM9A	IVTCX	1	0	0	65535	65535	1	1	1	0	0	NONE	0
IM9A	PSBNAME: DFSIVP35												
IM9A	PART	1	0	0	2	65535	7	7	10	0	0	NONE	0
IM9A	PSBNAME: DFSSAM02												
IM9A	IVTCB	1	0	0	65535	65535	1	1	1	0	0	NONE	0

Scrollable text box showing the same command response as a terminal

Results Grouping

- Results can be grouped on any column using the Group checkbox in the Sort dialog
- Combines all rows with the same column value into an expandable roll-up row
- Can be grouped on multiple levels



Results Window – Grouping Results

The screenshot shows the 'Command Editor 1' window with the 'Detailed Results' tab selected. The 'Results history' dropdown contains the command 'QUERY TRAN NAME(*) SHOW(ALL)'. The 'IMSpIex' is 'IGPLX', 'Command master' is 'IM9B', and 'Route' is 'All_Members'. The 'Results' tab is active, displaying a table with columns: Trancode, MbrName, CC, PSBname, LCIs, LQCrt, and LLCT. The results are grouped by transaction type: ADDINV, ADDPART, CLOSE, and DISBURSE. Each group contains two rows for members IM9A and IM9B. A status bar at the bottom indicates '46 of 46 items displayed'. A 'Display Results in New Window' button is visible at the bottom left of the window.

Trancode	MbrName	CC	PSBname	LCIs	LQCrt	LLCT
ADDINV						
	IM9A		0 DFSSAM04		1	0
	IM9B		0 DFSSAM04		1	0
ADDPART						
	IM9A		0 DFSSAM04		1	0
	IM9B		0 DFSSAM04		1	0
CLOSE						
	IM9A		0 DFSSAM05		1	0
	IM9B		0 DFSSAM05		1	0
DISBURSE						
	IM9A		0 DFSSAM06		1	0
	IM9B		0 DFSSAM06		1	0

Highlighting Result Differences

- **Toolbar buttons**
 - ▶ Highlight all column differences
 - ▶ Highlight selected column differences
 - ▶ Clear all highlights
- Groups results by resource name and compares column values across members
- If one cell value is different from the others, that cell is highlighted
- If more than one value differs, all cells in that column for that resource are highlighted



Results Window – Highlighting Differences

IMS Results Window

Results history
 QUERY TRAN NAME(SKS*) SHOW(ALL)

IMS sysplex: IMSPLEXB Command master: IMS2 Route: ALL

Results | Errors | Time

Trancode	MbrName	CC	PSBname	LCIs	LQCnt	LLCT
SKS1						
	IMS2	1	STLDDLT1	1	0	65535
	SYS3	0	STLXDLT1	1	0	65535
	IMS3	0	STLDDLT1	1	0	65535
SKS2						
	IMS2	0	STLDDLT2	2	0	65535
	SYS3	0	STLDDLT2	2	0	65535
	IMS3	0	STLDDLT2	7	0	65535
SKS3						
	IMS2	0	STLDDLT3	3	0	65535
	SYS3	3	STLDDLT3	3	0	65535
	IMS3	12	STLDDLT3	3	0	65535
SKS4						

27 of 27 items displayed

Default View* View

Display Results in New Window Close Help

Compare Results

Command Editor 1

Command Editor Selected Edit Tools Help

Commands Detailed Results

Results history

QUERY IMSPLEX NAME(CSLI9PLX) SHOW(ALL)

IMSplex Command master Route

I9PLX All_Members

Results Errors Time

IMSplex	MbrName	Version	Type	CC	Member	JobName
CSLI9PLX	IM9AOMOM	9.1.0	IMS		0 IM9A	IM9ACTRL
CSLI9PLX	IM9AOMOM	9.1.0	IMS		0 IM9B	IM9BCTRL
CSLI9PLX	IM9AOMOM	9.1.0	IMSCON		0 IMSPLEX1	HWS00
CSLI9PLX	IM9AOMOM	1.2.0	OM		0 IM9AOMOM	IM9AOM
CSLI9PLX	IM9AOMOM	1.2.0	SCI		0 IM9BSC	IM9BSCI
CSLI9PLX	IM9AOMOM	1.2.0	SCI		0 IM9ASC	IM9ASCI

6 of 6 items displayed

Default View*

Display Results in New Window Update

Compare Results

IMS Compare Results

First results set
 March 15, 2005 12:35:56.836 - QUERY TRAN NAME(IVTNV) SHOW(ALL)

Second results set
 March 15, 2005 12:44:02.364 - QUERY TRAN NAME(IVTNV) SHOW(ALL)

Comparison results

Trancode	MbrName	CC	PSBname	LclStat	LQCs	LQCnt
IVTNV						
	IM9A	0	DFSIVP2	STOSCHD		1
	IM9B	0	DFSIVP2	STOSCHD		1
	IM9B	0	DFSIVP2	STOQ,STOSCHD		1
	IM9A	0	DFSIVP2			1

Show only differences

Close Help

Results Window – Saved Views

- Sort, filter, grouping, and column settings can be saved as a ‘view’
- Views can be applied to any results
- User names a view using the View menu
- View pop-up list enables quick switching



Results Window – Saved Views

The screenshot shows the Command Editor 4 interface. The 'Results history' section contains the command 'QUERY TRAN NAME(*) SHOW(ALL)'. The 'IMSpIex' is 'J9PLX', 'Command master' is 'IM9B', and 'Route' is 'All_Members'. The 'Results' tab is active, displaying a table with columns: Trancode, MbrName, PSBname, and LclStat. The table is grouped by transaction codes: DSPALLI, DSPINV, FPSAMP1, and FPSAMP2. Each group contains two rows for members IM9A and IM9B. The FPSAMP1 and FPSAMP2 rows show 'FPE_RESP' in the LclStat column. The toolbar at the bottom right has a red circle around the 'Transaction Status' button. Below the toolbar are buttons for 'Display Results in New Window' and 'Update'.

Trancode	MbrName	PSBname	LclStat
▼ DSPALLI	IM9A	DFSSAM07	
	IM9B	DFSSAM07	
▼ DSPINV	IM9A	DFSSAM03	
	IM9B	DFSSAM03	
▼ FPSAMP1	IM9A	DBFSAMP3	FPE_RESP
	IM9B	DBFSAMP3	FPE_RESP
▼ FPSAMP2	IM9A	DBFSAMP4	
	IM9B	DBFSAMP4	

Results View Menu

- Enables the naming and saving of views
- Alternative access to the Sort, Filter, Customize Columns dialogs
- Enables print of data as a report
- Enables export to a delimited ASCII file



Results Window – View Menu

IMS Results Window

Results history
 QUERY TRAN NAME(SKS*) SHOW(ALL)

IMS sysplex: IMSPLEXB Command master: IMS2 Route: ALL

Results | Errors | Time

Trancode	MbrName	CC	PSBname	LCIs	LQCnt	LLCT
SKS9	IMS2	0	STLDDLT9	9	0	65535
SKS7	IMS2	0	STLDDLT7	7	0	65535
SKS5	IMS2	0	STLDDLT5	5	0	65535
SKS3	IMS2	0	STLDDLT3	3	0	65535
SKS1	IMS2	1	STLDDLT1	1	0	65535
SKS8	IMS2	0	STLDDLT8	8	0	65535
SKS6	IMS2	0	STLDDLT6	6	0	65535
SKS4	IMS2	0	STLDDLT4	4	0	65535
SKS2	IMS2	0	STLDDLT2	2	0	65535
SKS3	SYS3	3	STLDDLT3	3	0	65535
SKS6	SYS3	0	STLDDLT6	6	0	65535
SKS4	SYS3	0	STLDDLT4	4	0	65535
SKS7	SYS3	0	STLDDLT7	7	0	65535

27 of 27 items displayed

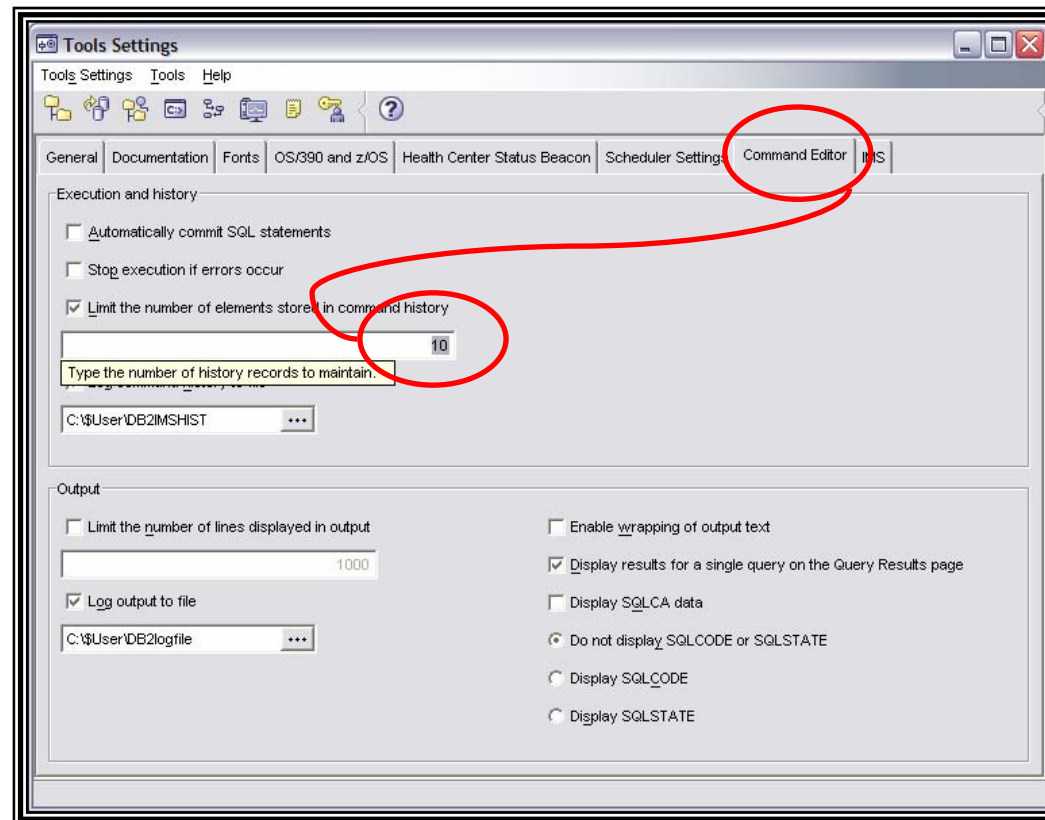
Display Results in New Window Close Help

View Menu:

- New...
- Save As...
- Saved Views
- Filter...
- Sort...
- Customize Columns...
- Page Setup...
- Print...
- Export...

Command History

- Recent commands saved and selectable from the Command history drop-down list
- User can specify the number of commands saved in the Command Editor options



Command Editor – IMS Command History

The screenshot shows a window titled "IMS Command History" with a table of commands and their return codes. The table has two columns: "Commands" and "Return Code". The following table represents the data shown in the window:

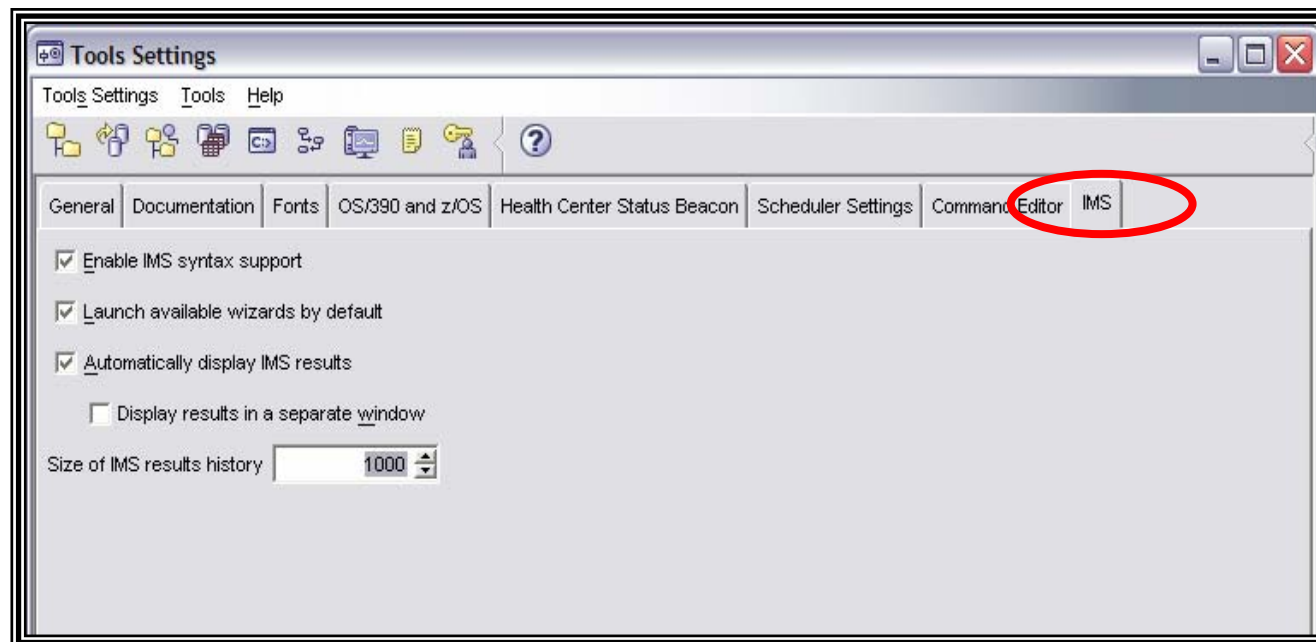
Commands	Return Code
QUERY IMSPLEX NAME(CSLI9PLX) STATUS(ACTIVE) ...	00000000
QUERY IMSPLEX NAME(CSLI9PLX) STATUS(ACTIVE) ...	00000000
QUERY TRAN NAME(*) SHOW(ALL)	00000000
DIS TRAN IVTNV	00000000
DIS QRY TRAN NAME(IV*)	00000000
DIS DIS OLDS	00000000
QUERY IMSPLEX NAME(CSLI9PLX) SHOW(ALL)	00000000
QUERY IMSPLEX NAME(CSLI9PLX) TYPE(IMSCON) SH...	02000008
QUERY IMSPLEX NAME(CSLI9PLX) TYPE(IMSCON) SH...	02000008
QUERY MEMBER(IMSCON) SHOW(ALL)	02000008
DIS OLDS	00000000
QUERY IMSPLEX SHOW(ALL)	00000000
GRY QUERY IMSPLEX SHOW(ALL)	00000000
DIS QUERYIMSPLEXSHOW(ALL)	02000008
DIS QUERY LE	02000008
QUERY IMSPLEX NAME(CSLI9PLX) STATUS(ACTIVE) ...	00000000
QUERY IMSPLEX SHOW(ALL)	00000000
LIPD QRY TRAN ALL	02000008
DIS ACT	00000000
LIPD DIS A	02000008
QUERY TRAN	00000000
...	...
...	...

At the bottom right of the window, there are three buttons: "Copy to Editor", "Close", and "Help". A tooltip is displayed over the "Copy to Editor" button with the following text:

Click this button to copy the command you have selected to the Command Editor. You can then modify the command and rerun it.

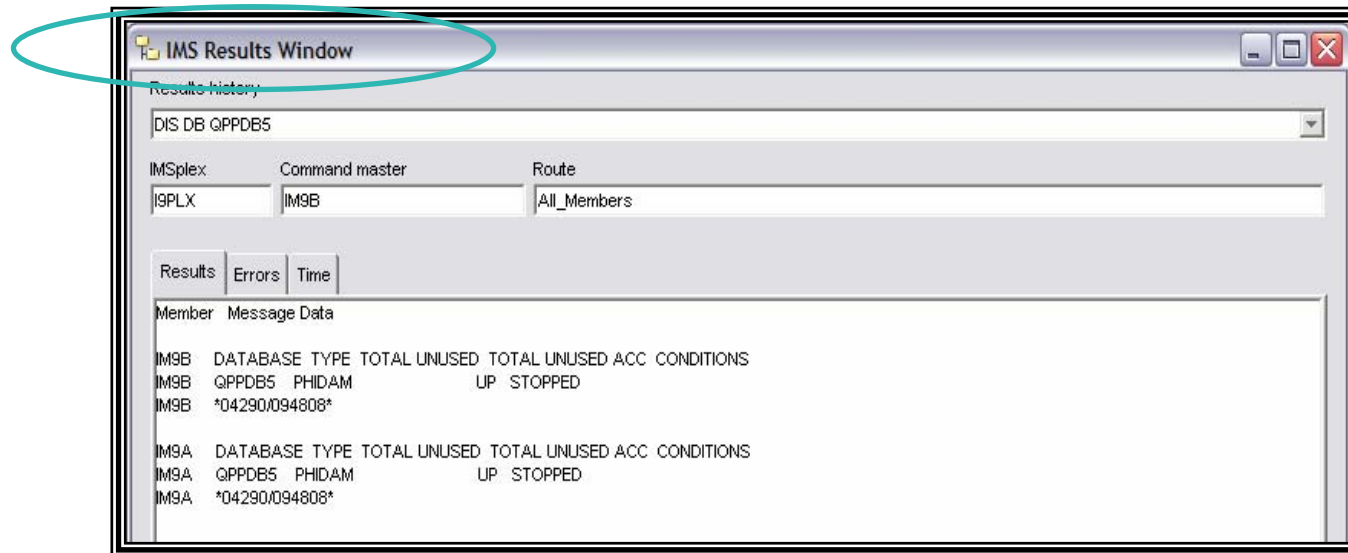
Command Editor Result Options

- Automatically display results
- Display results in a separate results window
- Specify the number of command responses to be saved in the results history



Separate Results Window

- Separate results window displayed for
 - ▶ Results from wizards
 - ▶ Command Editor when option selected
 - ▶ “Display Results in New Window” button
- Multiple windows can be open simultaneously
- Enables side-by-side comparisons



Separate Results Windows

IMS Results Window

Results history
DIS POOL ALL

IMSplex	Command master	Route
IM9PLX	IM9B	All_Members

Results	Errors	Time
IM9A	OCMD 231	4K 4K 1 0
IM9A	CRSP 231	8K 8K 6 4
IM9A	SPQX 251	4K 4K 1 0
IM9A	QGSN 251	0K 0K 0 0
IM9A	IPST 0	OK OK 0 0
IM9A	FMMC 228	OK OK 0 0
IM9A	USTB 231	OK OK 0 0
IM9A	CBT POOLS	GLBL 1622K LCL 965K
IM9A	MESSAGE QUEUE POOL:	BFRS/SIZE 5/6720
IM9A	ENQ 3 DEQ 0 CAN	56 WAIT 0 I/O 171 ERR 0
IM9A	QBLKS: MAX # RECORDS AVAIL	12500 CUR IN USE 31 = 0 %
IM9A	SMSGQ: MAX # RECORDS AVAIL	35600 CUR IN USE 12 = 0 %
IM9A	LMSGQ: MAX # RECORDS AVAIL	4100 CUR IN USE 4 = 0 %
IM9A	MESSAGE FORMAT POOL: SIZE	49152 SPACE 47696 DIRS 4179
IM9A	REQ1 0 I/O 0 DIR	0
IM9A	WAIT 0 FREE 47696 ERR	0
IM9A	SEQUENTIAL BUFFERING: STATUS	= NOT-STOPPED
IM9A	MAX 8000K FREE 8000K CURR	OK HIGH OK
IM9A	OSAM POOL:ID S/C=01 BSIZE	2K NBUF 5 FX=Y/Y
IM9A	LCTREQ 0 NEWBLK 0 ALTREQ	0
IM9A	PURGRQ 0 FNDIPL 0 BFSRCH	0
IM9A	RDREQ 0 BFSTLW 0 PURGWR	0
IM9A	WBSYID 0 WBSYWR 0 WBSYRD	0
IM9A	WRLSEO 0 WNOBFR 0 ERRORS	00000/00000
IM9A	CFREAD 0 CFEXPC 0 CFWRPR	0
IM9A	CFWRCH 0 STGCLF 0 XVINV	0

Display Results in New Window Update

IMS Results Window

Results history
DIS POOL ALL

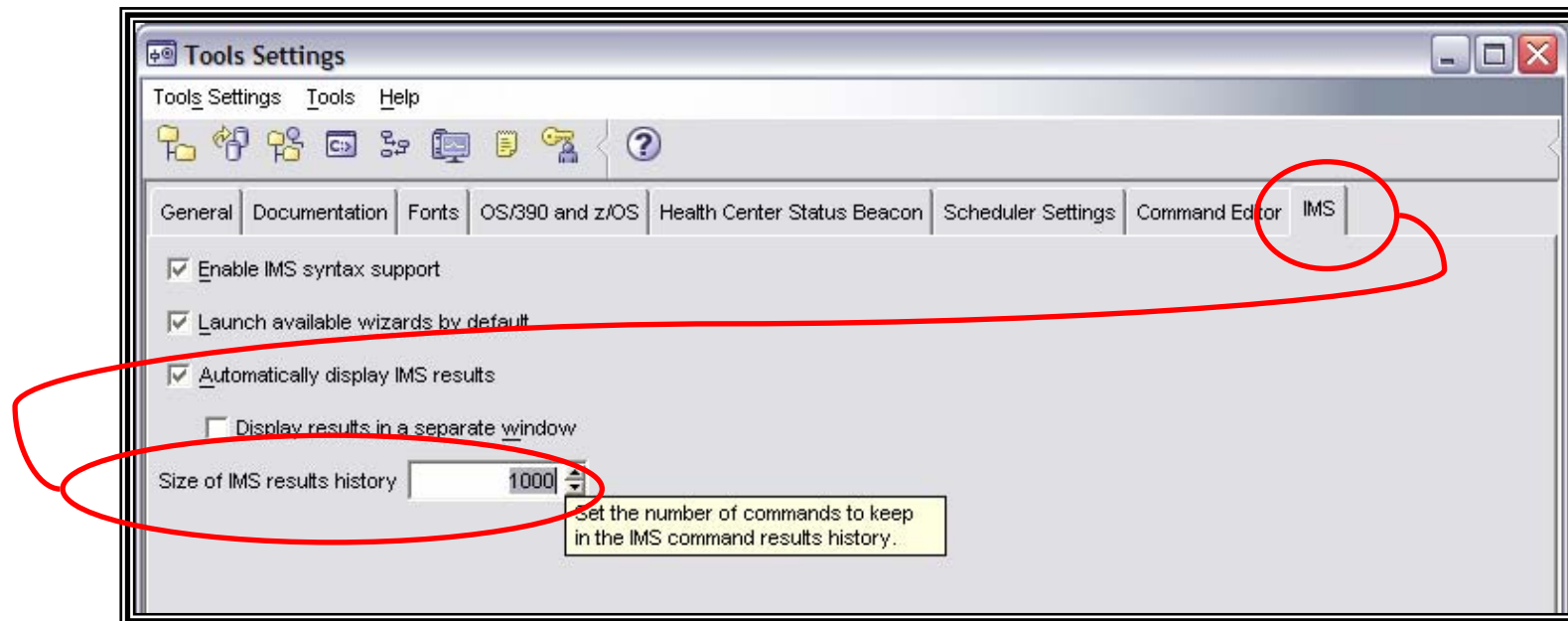
IMSplex	Command master	Route
IM9PLX	IM9B	All_Members

Results	Errors	Time
IM9B	MSEB 0	OK OK 0 0
IM9B	CTBW 0	OK OK 0 0
IM9B	CSWA 231	OK OK 0 0
IM9B	OCMD 231	4K 4K 1 0
IM9B	CRSP 231	8K 8K 5 3
IM9B	SPQX 251	4K 4K 1 0
IM9B	QGSN 251	OK OK 0 0
IM9B	IPST 0	OK OK 0 0
IM9B	FMMC 228	OK OK 0 0
IM9B	USTB 231	OK OK 0 0
IM9B	CBT POOLS	GLBL 1662K LCL 617K
IM9B	MESSAGE QUEUE POOL:	BFRS/SIZE 5/6720
IM9B	ENQ 3 DEQ 0 CAN	66 WAIT 0 I/O 130 ERR 0
IM9B	QBLKS: MAX # RECORDS AVAIL	12500 CUR IN USE 31 = 0 %
IM9B	SMSGQ: MAX # RECORDS AVAIL	3470 CUR IN USE 2 = 0 %
IM9B	LMSGQ: MAX # RECORDS AVAIL	320 CUR IN USE 4 = 1 %
IM9B	MESSAGE FORMAT POOL: SIZE	49152 SPACE 47696 DIRS 4179
IM9B	REQ1 0 I/O 0 DIR	0
IM9B	WAIT 0 FREE 47696 ERR	0
IM9B	SEQUENTIAL BUFFERING: STATUS	= NOT-STOPPED
IM9B	MAX 10K FREE 10K CURR	OK HIGH OK
IM9B	OSAM POOL:ID S/C=01 BSIZE	2K NBUF 5 FX=Y/Y
IM9B	LCTREQ 0 NEWBLK 0 ALTREQ	0
IM9B	PURGRQ 0 FNDIPL 0 BFSRCH	0
IM9B	RDREQ 0 BFSTLW 0 PURGWR	0
IM9B	WBSYID 0 WBSYWR 0 WBSYRD	0

Display Results in New Window Update

Results History

- Lists up to 1000 previous results by command
- Results include all data, errors, time stamps
- Most recent results at the top
- Pop-up shows complete command and workstation start time to aid identification



Command Editor – IMS Results History

Command Editor 5

Command Editor Selected Edit Tools Help

Commands Detailed Results

Results history

DIS ACT

DIS ACTIVE

UPDATE AREA NAME(CUSDB) START(ACCESS) SCOPE(ALL)

QUERY DB NAME(DBFSAMD3)

UPDATE DB NAME(DBFSAMD3) START(ACCESS)

QUERY DB NAME(DBFSAMD3) TYPE(DEDB)

UPDATE DB NAME(DBFSAMD3) START(ACCESS) SCOPE(ALL)

QUERY DB NAME(DBFSAMD3) TYPE(DEDB) SHOW(ALL)

IM9A	JMPRGN	JMP	NONE
IM9A	MSGRGN	TP	NONE
IM9A	JBPRGN	JBP	NONE
IM9A	BATCHREG	BMP	NONE
IM9A	FPRGN	FP	NONE
IM9A	DBTRGN	DBT	NONE
IM9A	IM9ADBRC	DBRC	
IM9A	IM9ADLI	DLS	
IM9A	VTAM ACB OPEN	-LOGONS ENABLED	
IM9A	IMSLU=N/A.N/A	APPC STATUS=DISABLED	TIMEOUT= 0
IM9A	OTMA GROUP=N/A	STATUS=NOTACTIVE	
IM9A	APPC/OTMA SHARED QUEUE STATUS	LOCAL=INACTIVE	GLOBAL=INACTIVE
IM9A	APPC/OTMA RRS MAX TCBS -	40 ATTACHED TCBS -	1 QUEUED RRSWKS- 0
IM9A	APPLID=IMSM2I9B	USERVAR=IVP	
IM9A	LINE ACTIVE-IN -	1 ACTIV-OUT -	0
IM9A	NODE ACTIVE-IN -	0 ACTIV-OUT -	0
IM9A	*04205/211721*	IMSIVP91	ACTIVE

DIS ACT
July 23, 2004 21:17:28:607

Display Results in New Window Update

Results Errors

- Displays return and reason codes for IMSplex and each member
- If no errors, all return and reason codes are 0
- If errors occurred, Error tab displays first
- Displays message ID, text, and help from Messages and Codes book

Results Window – Error Messages

The screenshot shows the 'Command Editor 5' window. The 'Results history' field contains the command 'QUERYTRAN NAME(V*) SHOW'. The 'IMSpIex' field is 'I9PLX', 'Command master' is empty, and 'Route' is 'All_Members'. Below these fields are three tabs: 'Results', 'Errors', and 'Time'. The 'Errors' tab is selected and circled in red. The main display area shows a table with one row of error information:

Message	Message ID	Return Code	Reason Code
The command entered contains an invalid verb or no client registered for the verb.	CSLN046W	02000008	00002000 Explain

Below the table is the 'IMSpIex Help' section, which provides details for the error:

CSLN046W The command entered contains an invalid verb or no client registered for the verb.

Explanation: The command that was just entered is invalid. The command itself might be invalid, or the client for the command might not be registered currently.

System Action: The command was rejected.

User Response: Make sure that the command syntax is correct. Issue a QUERY IMSPLEX command to determine if

At the bottom of the window are two buttons: 'Display Results in New Window' and 'Update'.

Command Time

**Host
start time,
stop time,
and duration**

The screenshot shows the 'IMS Results Window' with the following details:

- Results history: DIS DB ALL
- IMSplex: ISPLX
- Command master: IM9B
- Route: All_Members
- Tabbed interface: Results, Errors, **Time** (circled in red)
- Host time:
 - Start: October 16, 2004 09:38:14:545:270
 - Stop: October 16, 2004 09:38:14:550:190
 - Duration: 00:00:00.004:920
- Workstation time:
 - Start: October 16, 2004 09:38:31:058
 - Stop: October 16, 2004 09:38:31:619
 - Duration: 00:00:00.561
- Buttons: Display Results in New Window, Update, Close, Help

**Workstation
start time,
stop time,
and duration**

Online Help

- Information Center article outlines IMS CC
- HTML Help for all tasks and dialog fields
- Wizard task overviews
- IMS Messages and Codes



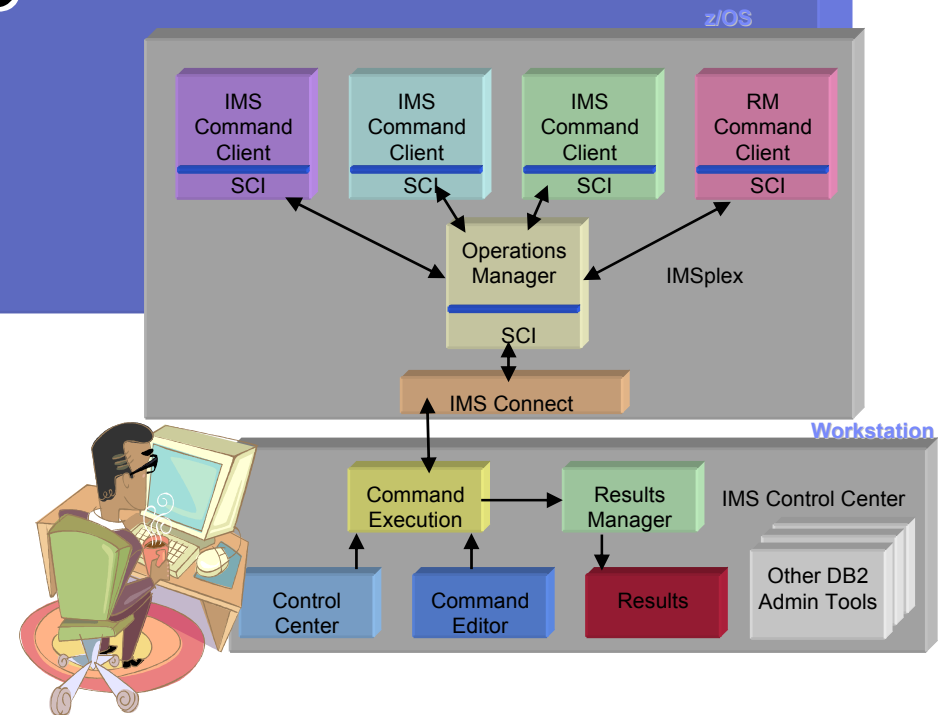
Translation Languages

- IMS Control Center user interface and help translated into the following languages
 - ▶ Brazilian
 - ▶ Portuguese
 - ▶ Norwegian
 - ▶ Danish
 - ▶ Polish
 - ▶ Finnish
 - ▶ Russian
 - ▶ French
 - ▶ Korean
 - ▶ Simplified Chinese
 - ▶ German
 - ▶ Spanish
 - ▶ Italian
 - ▶ Swedish
 - ▶ Japanese
 - ▶ Traditional Chinese

Command Editor Summary

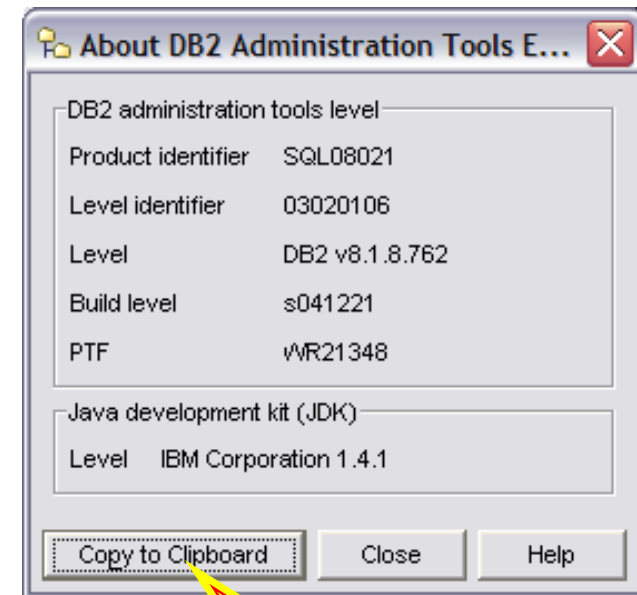
- For type-1 and type-2 commands
- Commands can be user entered or from command history
- Command short-cuts, syntax assist
- Results history
- Various sorting and filtering available

Configuration



IMS Control Center Implementation

- For **IMS Version 8**
 - ▶ CSL Configured plus PQ69527
 - ▶ IMS Connect Version 1.2 (5655-E51) or later
 - Plus PQ62379, PQ67776, PQ70216
- For **IMS Version 9**
 - ▶ CSL Configured (can be Enhanced Command Environment)
 - ▶ Integrated IMS Connect function installed and configured
 - ▶ Plus PQ92398 installed
- Workstation
 - ▶ The IMS Control Center features are part of the **IBM DB2 Universal Database (DB2 UDB) Administration Client, Version 8.2**
 - ▶ Can be downloaded from the web for **free**:
<http://www-306.ibm.com/software/data/db2/udb/support/>



**V810 FixPak 8
for Windows 32-
bit was used for
this presentation**

IMS Control Center Implementation...

- Documentation:
 - ▶ IMS Connect Guide and Reference (SC18-7260) available at:

<http://www-306.ibm.com/software/data/db2imstools/imstools/imsconnect.html>
 - DB2 Information Management Software Information Center for z/OS Solutions

<http://publib.boulder.ibm.com/infocenter/dzichelp/index.jsp>

**IMS V8 & V9
information
is online**

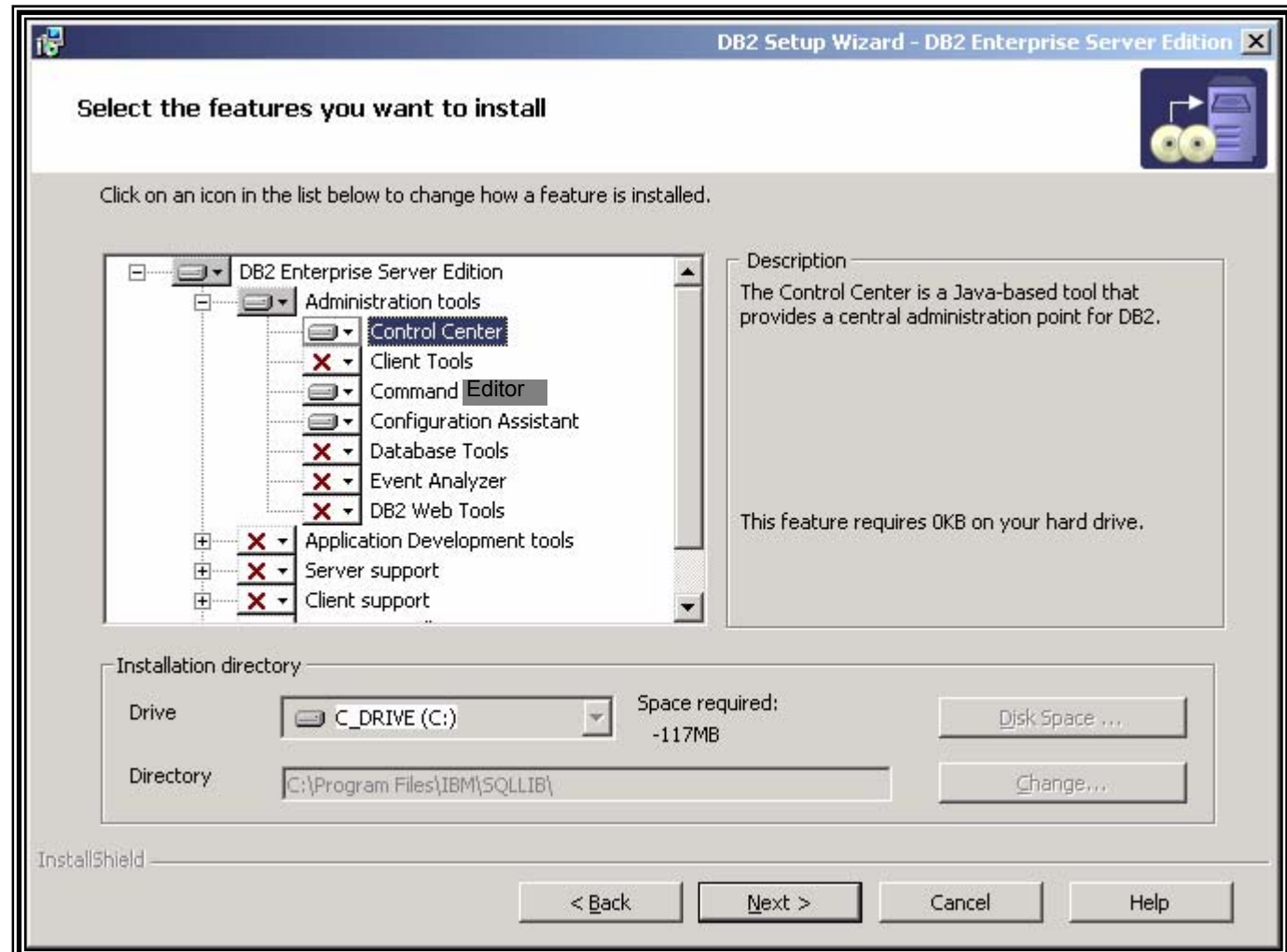
**IMS CC “Up and
Running”
information is
available**

The screenshot shows the 'The IMS Control Center' page in the DB2 Information Management Software Information Center. The page includes a search bar, a navigation menu on the left, and a main content area with a table of systems.

Name	Node name	Operating system	Type	Comment	Protocol	Protocol paramete
MYSYSTEM	MYSYSTEM	Windows	DB2 V8	Local work...	LOCAL	Instance name=DE
PLEX1	PLEX1	OS/390 or z/OS	IMS	TCP/IP	Host nam...	

DB2 Control Center Installation

- The following Admin Tools are required:
 - ▶ **Control Center**
 - ▶ **Command Editor**
 - ▶ **Configuration Assistant**
- Any additional features can optionally be installed
- Mark features you **DON'T** want with an **X**



Control Center – Add IMSplex

Select "IMS"

IMSplex name

Host TCP/IP Address

Host Port No.

Name	Node name	Operating system	Type	Protocol	Protocol parameters	Comment
ACOUGHT...	ACOUGHTR	Windows	DB2 V8	LOCAL	Instance name=DB2D...	Local work...
PISC1	PISC1	OS/390 or z/OS	IMS	TCP/IP	Host name=9.20.101....	

Add System

System Type: DB2 IMS

System name: PISC1

Host name: 9.20.101.28

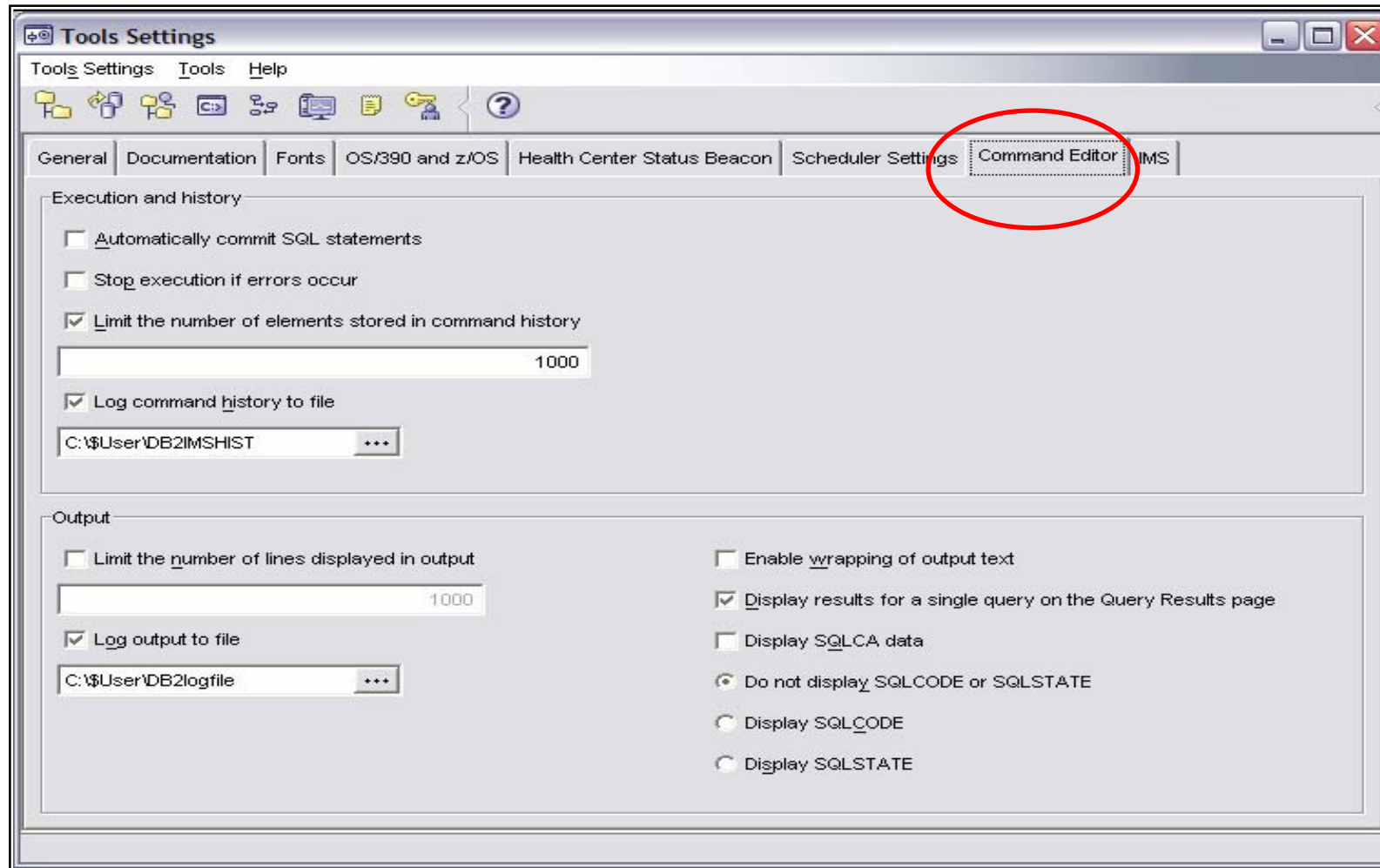
Port Number: 9999

Operating system: OS/390 or z/OS

Comment:

Buttons: OK, Cancel, Apply, Reset, Show Command, Help

Tools Settings – IMS & Command Editor



Operations Manager Configuration

- ❑ In OM initialization parameters member (CSLOIxxx), the IMSplex name ***must be the same*** as specified in IMS member DFSCGxxx **and** in IMS Connect configuration member (HWSCFxxx).
- ❑ In CSLOIxxx **CMDTEXTDSN** must point to the data set containing the **command syntax translatable text** that was placed in the SDFSDATA library when IMS was installed

```

Menu  Utilities  Compilers  Help
BROWSE  IMSDATA.IM9A.PROCLIB(CSLOI000) - 01.13      Line 00000000 Col 001 080
***** Top of Data *****
*-----*
* OM INITIALIZATION PROCLIB MEMBER - CSLOI000      *
*-----*
ARMRST=N,                /* SHOULD ARM RESTART OM ON FAILURE */
CMDLANG=ENU,             /* USE ENGLISH FOR COMMMAND DESC    */
CMDSEC=R,                /* RACF COMMAND SECURITY             */
OMNAME=IM9AOM,           /* OM NAME                           */
IMSPLEX(NAME=I9PLX)      /* IMSPLEX NAME (CSLI9PLX)          */
CMDTEXTDSN=IMS.V91.DBDC.SDFSDATA /* CMD TEXT DATASET*/
*-----*
* END OF MEMBER CSLOI000                          *
*-----*
***** Bottom of Data *****

```

Configure IMS Connect

1. **IMS V8 Reslib** must be added to IMS Connect STEPLIB to enable access to SCI
 - For Integrated IMS Connect function with IMS V9, there will be one reslib, e.g. IMSV9.SDFSRESL
2. In configuration member HWSCFGxx, specify the following:
 - ▶ The user message exits for IMSplex support (HWSCSLO0 and HWSCSLO1) in the EXIT keyword statement
 - These are OCO
 - ▶ Each IMSplex you want to manage in the IMSPLEX keyword statement

```
BROWSE      IMSDATA.IM9A.PROCLIB(HWSCFG00) - 01.23      Line 00000000 Col 001 080
***** Top of Data *****
HWS (ID=HWS)
TCPIP (HOSTNAME=TCPIP,ECB=Y,PORTID=(1080,LOCAL),TIMEOUT=8880,
EXIT=(HWSCSLO0,HWSCSLO1))
IMSPLEX (MEMBER=IMSPLEX1,TMEMBER=I9PLX)
***** Bottom of Data *****
```

IMS Connect Startup

- IMS Connect can be started before the SCI address space
 - ▶ Will keep trying to connect for 30 minutes
 - ▶ After this time, it will require the **OPENIP** command
- If SCI terminates normally or abnormally
 - ▶ IMS Connect will **automatically** reconnect to the SCI when it is restarted



IMS Connect – New Commands

- New IMS Connect Commands introduced by IMSplex support:
 - ▶ **STOPIP**
 - Stops communication between IMS Connect and the IMSplex
 - ▶ **OPENIP**
 - Starts communication between IMS Connect and the IMSplex
 - ▶ **VIEWIP**
 - Displays the current status of the IMSplex and IMS Connect
- The **VIEWHWS** command has been updated to include IMSplex information

```
*96 HWSC0000I *IMS CONNECT READY* HWS
R 96,VIEWHWS
HWSC0001I HWS ID=HWS RACF=N
HWSC0001I MAXSOC=50 TIMEOUT=8880
HWSC0001I RRS=N STATUS=REGISTERED
HWSC0001I VERSION=910 IP-ADDRESS=009.020.101.022
HWSC0001I IMSPLEX=I9PLX STATUS=ACTIVE
HWSC0001I MEMBER=IMSPLEX1 TARGET=I9PLX
HWSC0001I NO ACTIVE DATASTORES
HWSC0001I PORT=1080 STATUS=ACTIVE
HWSC0001I NO ACTIVE CLIENTS
```

IMS Control Center – IMS Connect Security

The screenshot shows the IMS Control Center interface. On the left, a tree view shows the hierarchy: Systems > PLEX1 > Members. A 'Login for PLEX1' dialog box is open in the foreground, prompting for 'User ID' and 'Password'. Below the dialog box, a black box contains a text dump of an error message, and a yellow box contains a recommendation to use 'SETRACF ON'.

```

ICH408I USER(COUGHTA ) GROUP(TSOUSER ) NAME(COUGHTRIE, A (ALISON) 908
LOGON/JOB INITIATION - INVALID PASSWORD
IRR013I VERIFICATION FAILED. INVALID PASSWORD GIVEN.
HWSP1500E security violation; R=8, C=43644736, RACFRC=8, RACFRS=0, M=SDRC
    
```

Use "SETRACF ON" in IMS Connect or RACF=Y execution parameter to verify Userid and Password

IMS Connect – SCI Security ...

- SCI security determines authorization to the IMSplex
 - ▶ Security is checked during SCI registration to control which programs can register with SCI
 - ▶ SCI issues a RACROUTE REQUEST=AUTH call to determine whether the address space is authorized to register with SCI
 - ▶ RACF checks the User ID of the address space (IMS Connect) that issued the request
 - This User ID must have at least **UPDATE** authority to register with SCI
- RACF Definitions
 - ▶ Define profiles in the FACILITY class to control registration with SCI
 - The profile names must be of the form CSL.CSLimsplex_name
 - implex_name is the name of the IMSplex that is being protected

```
RDEFINE FACILITY CSL.CSLI9PLX UACC(NONE)
PERMIT CSL.CSLI9PLX CLASS(FACILITY) ID(IMSCREG) ACCESS(UPDATE)
PERMIT CSL.CSLI9PLX CLASS(FACILITY) ID(COUGHTA) ACCESS(UPDATE)
SETOPTS CLASSACT(FACILITY)
```


Command Security


- **Choice of OM Command Security** (using RACF or equivalent) *or* **IMS Command Security** for type-1 commands
 - ▶ **IBM recommends OM Command Security**
 - Perform authorization within OM - before sending to IMS
 - Reduces processing overhead and network traffic
 - Reduces human error. If IMS Command Security is used, it's up to the user to ensure that all IMS systems use the same security profiles and/or user exits
 - Optional User-written command security exit

For Type-2 commands all security checking is performed by OM Command Security (and/or Exit)

Command Security ...

- OM Command Security is controlled with the **CMDSEC=** parameter
- If RACF or equivalent security checking has been specified (i.e. CMDSEC=R!A) OM command security checking uses the **OPERCMDS** resource class
- The resource name format is **IMS.imsplexname.commandverb.commandkeyword**
 - ▶ verb is the short form of the verb
- For example, the /DISPLAY TRAN command would have the following resource name:

IMS.plxname.DIS.TRAN



See IMS Version 9
Command Reference,
SC18-7814, Appendix I,
Table 215 lists by IMS
command verb and keyword
the resource name and
authorization that are used
for RACF security checking.

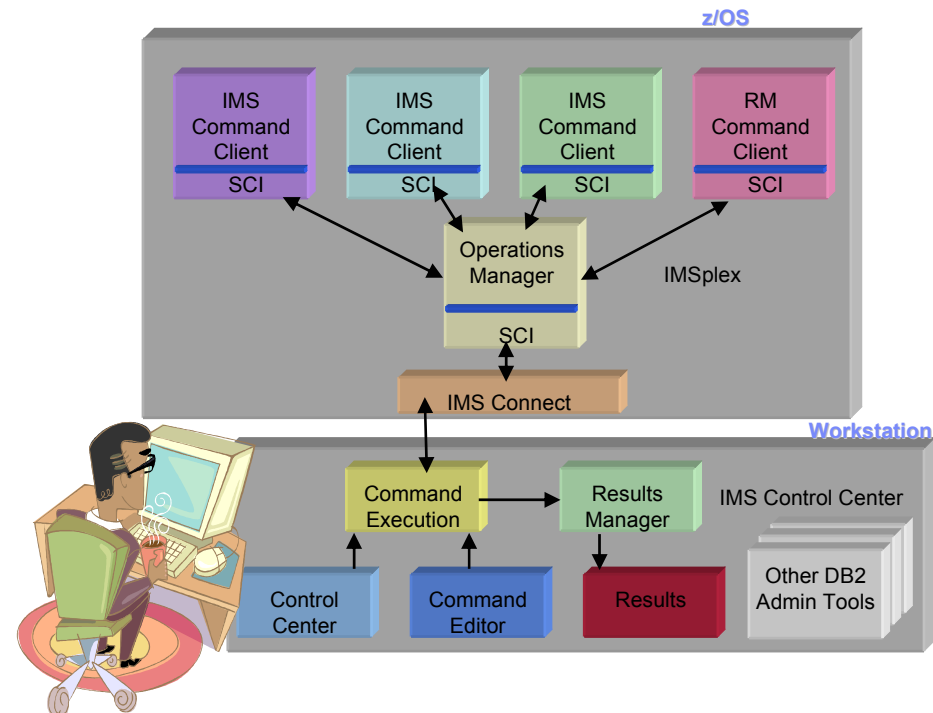
Command Security ...

- RACF definitions
 - ▶ Define type-1 and type-2 commands
 - ▶ Permit users **READ** or **UPDATE** access to commands

```
RDEFINE OPERCMDS IMS.CSLPLX0.UPD.TRAN UACC(NONE)
RDEFINE OPERCMDS IMS.CSLPLX0.STO.DB UACC(NONE)
RDEFINE OPERCMDS IMS.CSLPLX1.UPD.TRAN UACC(NONE)
RDEFINE OPERCMDS IMS.*.QRY.* UACC(NONE)
RDEFINE ....
PERMIT      IMS.CSLPLX0.UPD.TRAN CLASS(OPERCMD)
            ID(LONNIE) ACCESS(UPDATE)
PERMIT      IMS.*.QRY.* CLASS(OPERCMD)
            ID(KENNY) ACCESS(READ)
PERMIT      IMS.*.UPD.* CLASS(OPERCMD)
            ID(ALISON) ACCESS(UPDATE)
PERMIT      IMS.CSLPLX0.STO.DB CLASS(OPERCMD)
            ID(ALAN) ACCESS(UPDATE)
PERMIT      ....
SETROPTS    CLASSACT(OPERCMD)
SETROPTS    RACLIST(OPERCMD) REFRESH
```

In Summary IMS Control Center & Command Editor

- Help to **simplify the management** of IMSplex operations and problem determination
 - No need to remember command syntax
- Provides an **easy to use** GUI with IMS Connect and CSL in IMS
- Provides a **single user interface** from which you can control both **IMS** and **DB2**
- Provides a platform for **modernization** of the IMS systems management user interface



THANK
YOU