IBM Software Group

What's New with NetView® for z/OS®?

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October 2, 2009

Tivoli software

ON DEMAND BUSINESS™

What's New?

- NetView for z/OS V5.4
- Generally available October 2, 2009

NetView for z/OS V5.4

- Major Themes
  - Major Functional Enhancements
    - Expanded IP management
    - Broader sysplex & DVIPA management, Enterprise-wide management
    - Enhancements to core functionality
  - Product Portfolio Integration
    - Expanded DLA
  - Enterprise Integration
- Prereqs z/OS 1.9

Major Functional Enhancements

- Expanded IP management
  - OSA Topology
  - Enhanced trace (includes OSA and packet)
- Broader sysplex and DVIPA management, Enterprise-wide management
- Core functionality

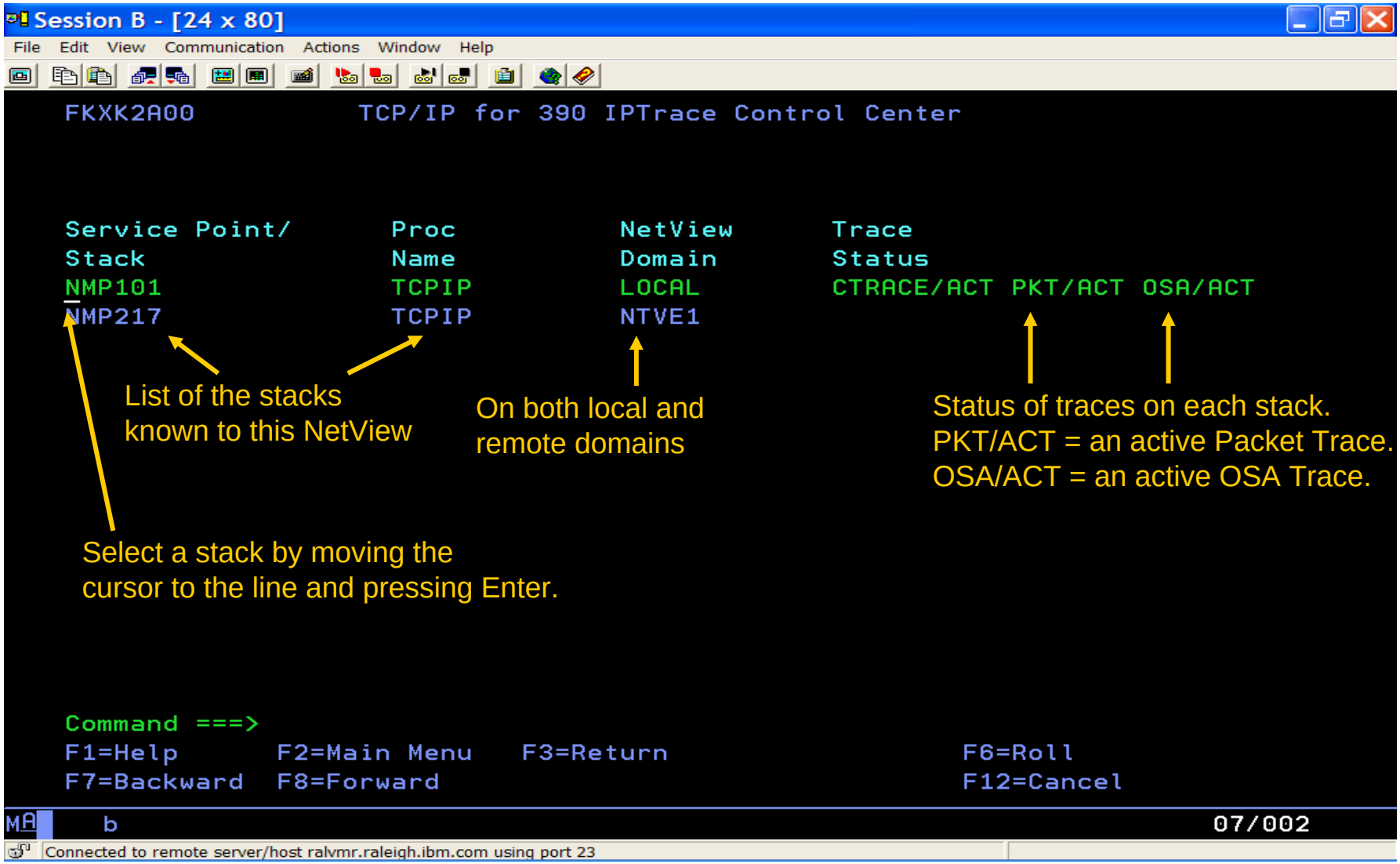
OSA Trace

- Supports tracing of OSA packets with OSA-Express2 Network Traffic Analyzer (OSAENTA)
- Allows for capture of
  - Ethernet data (Ethernet type, source/destination MAC addresses, VLAN tag, LLC fields)
  - IPv4 & IPv6 data
  - ARP packets
  - SNA transmission headers
  - Direction indicators
  - Discard code
  - Interface identification
- Syntax and behavior similar to packet trace function

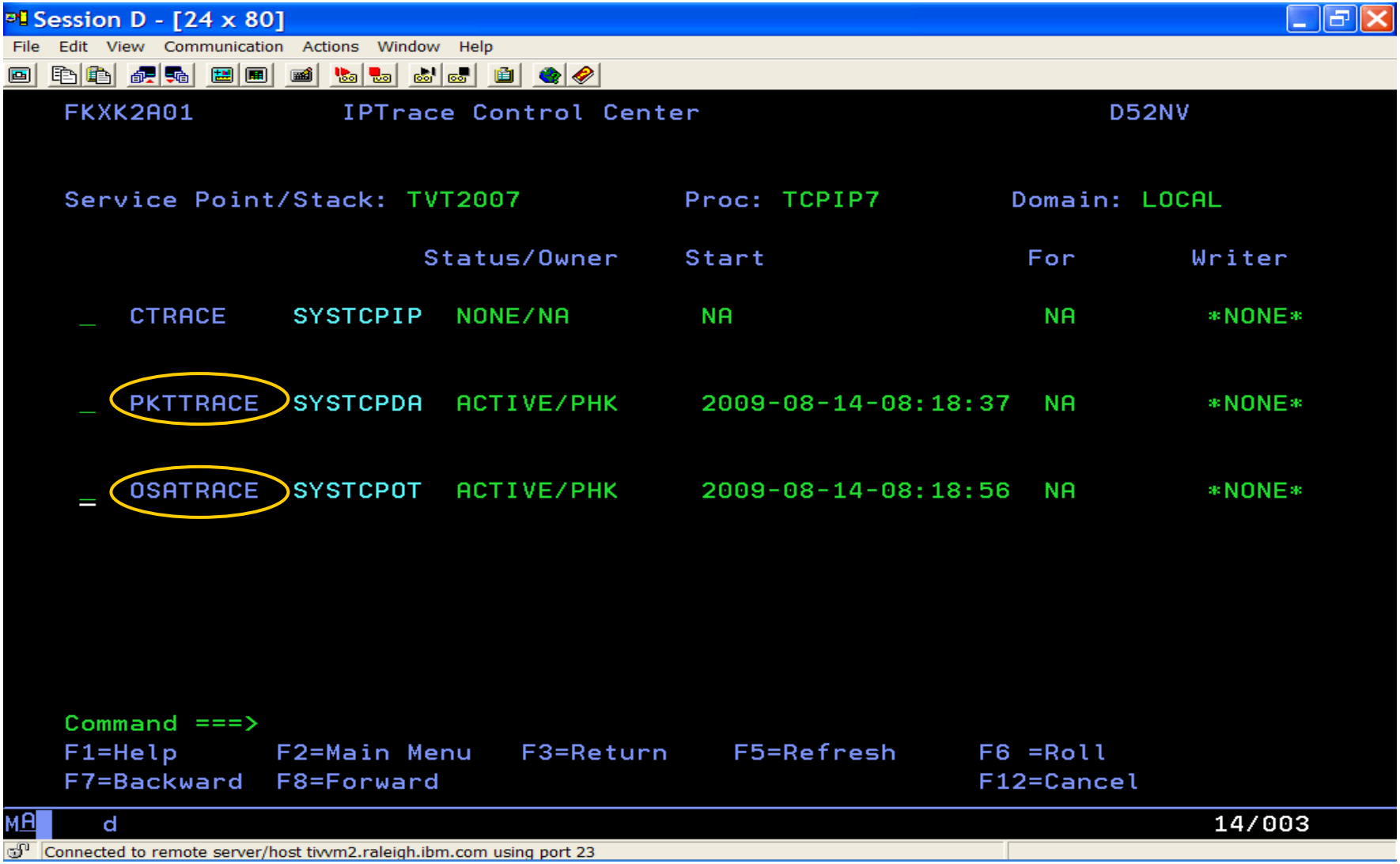
Expanded Packet Trace

- Expand and better integrate packet trace functions
- New command: IPTRACE
  - Manage IP Packet Traces
  - Display Packet Trace data

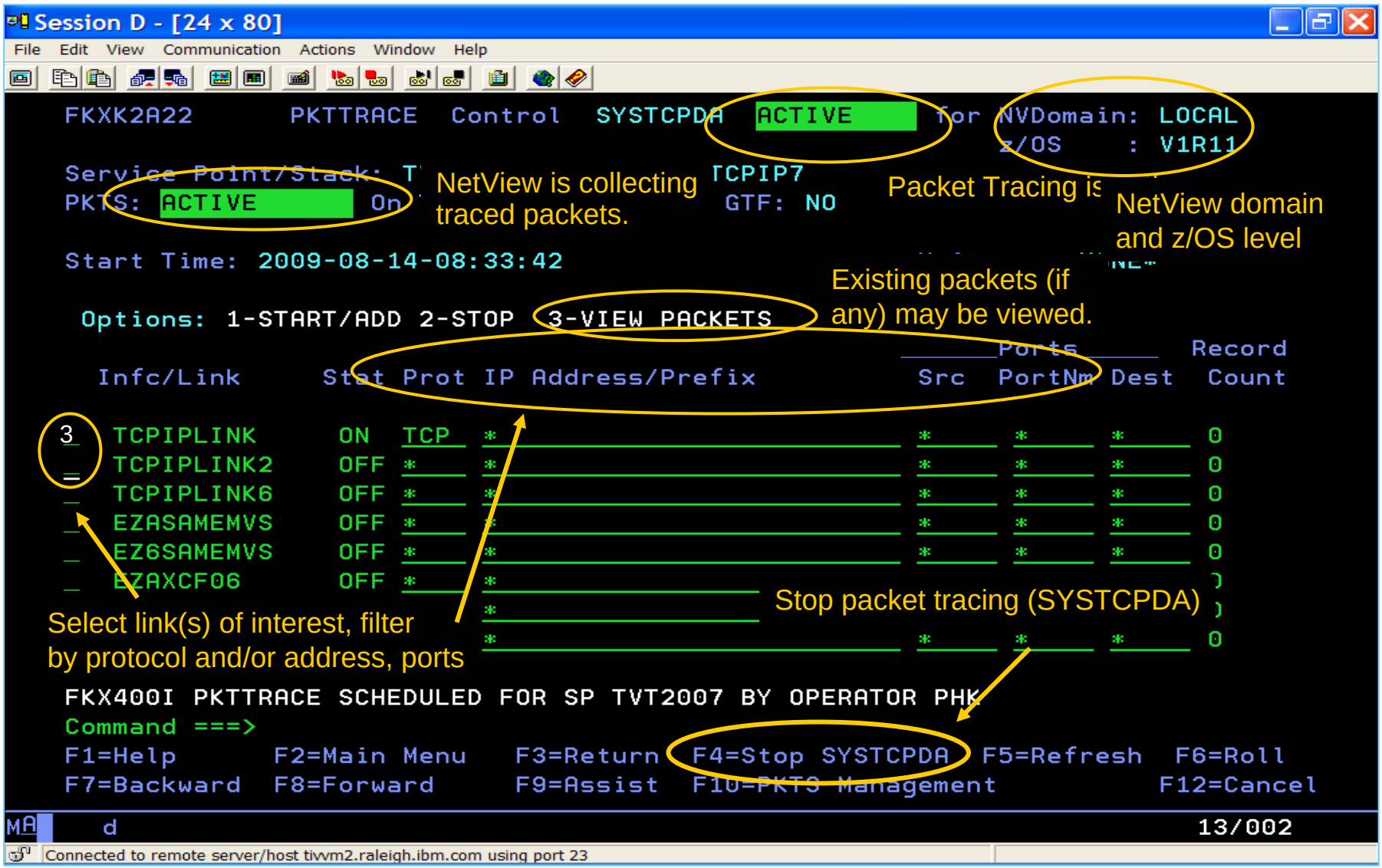
Status of All Traces on All Known Stacks



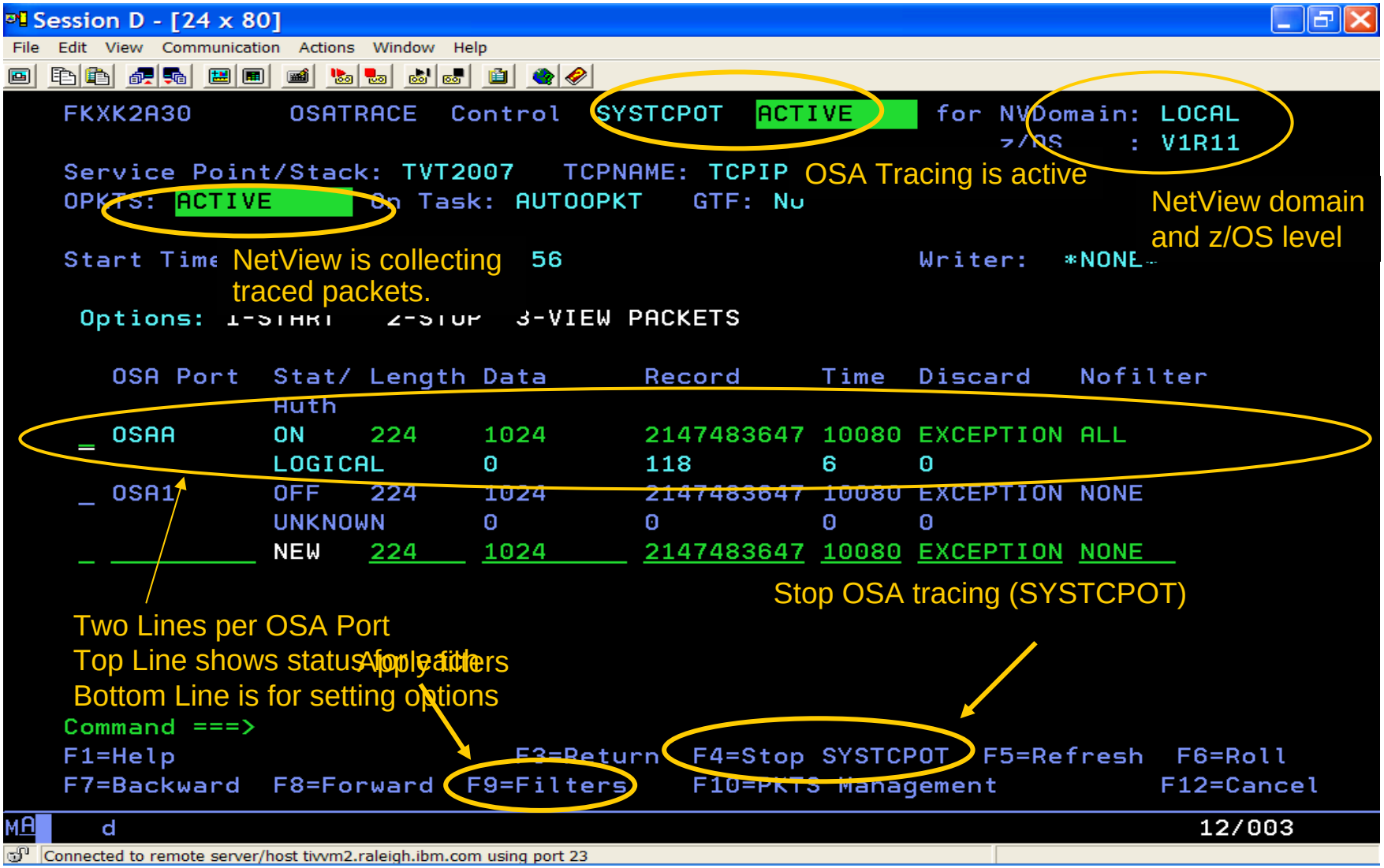
Status of All Traces on Selected Stack



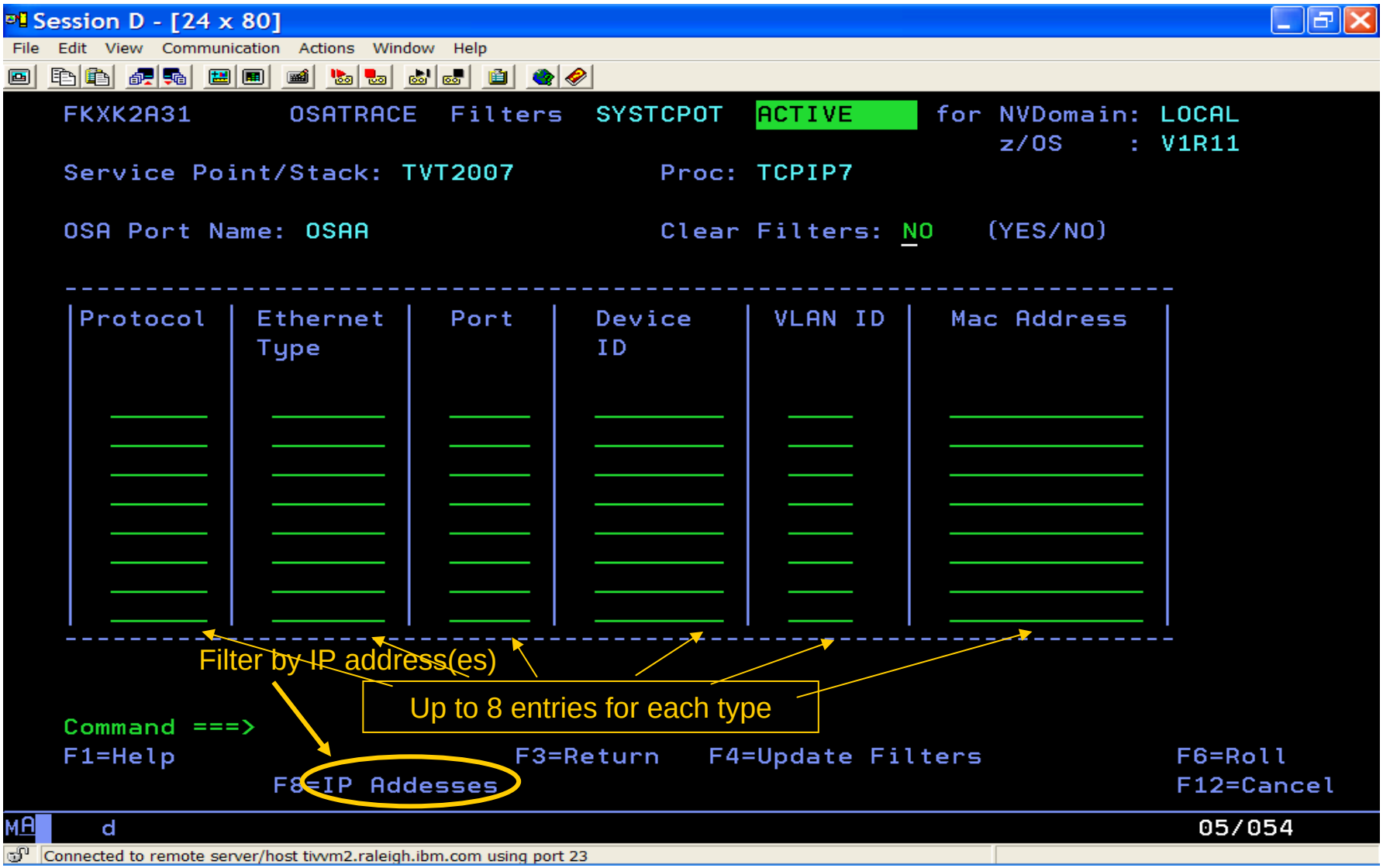
Packet Trace Control



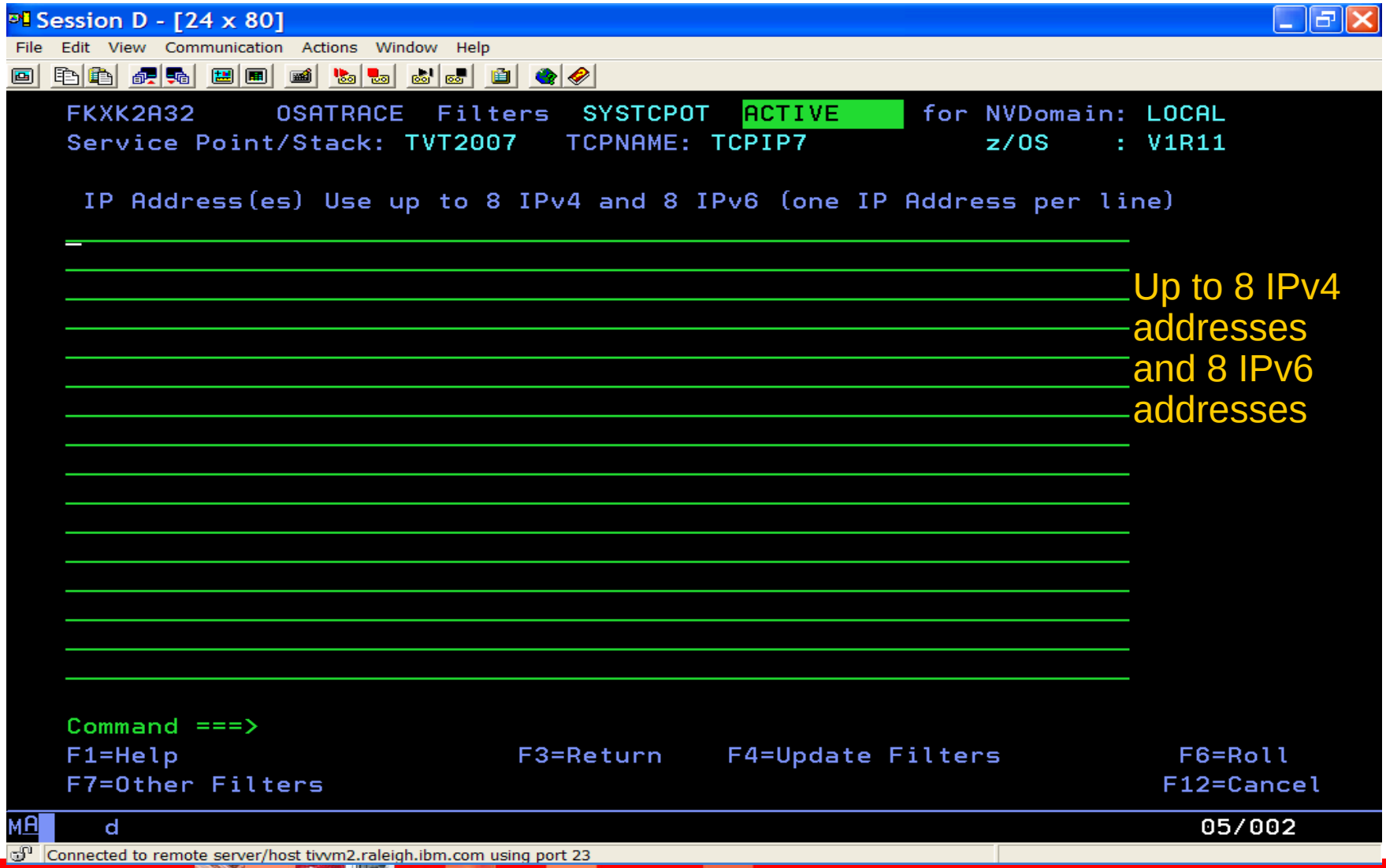
OSA Trace Control



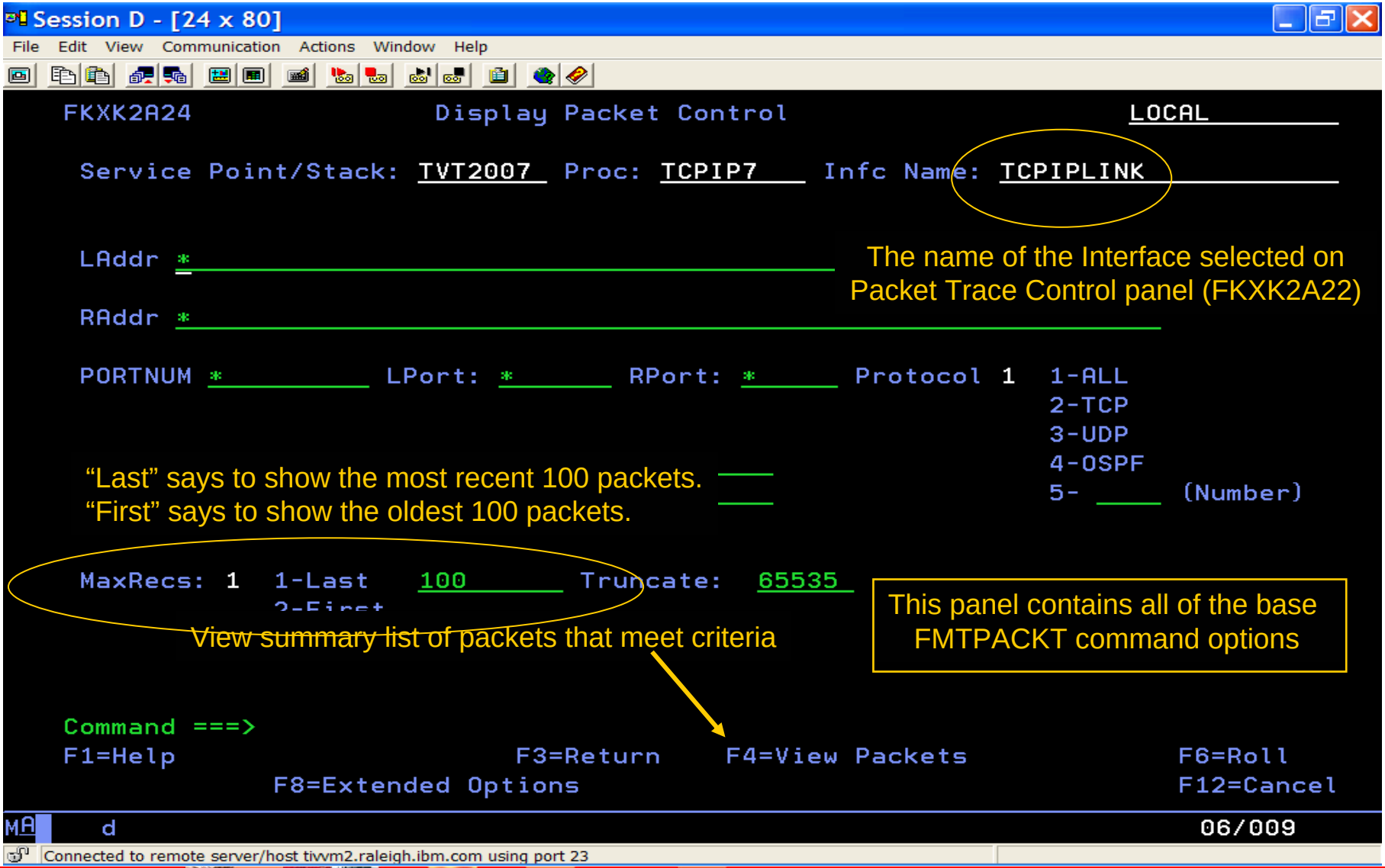
OSA Trace Filters



OSA Trace Filters: IP Addresses



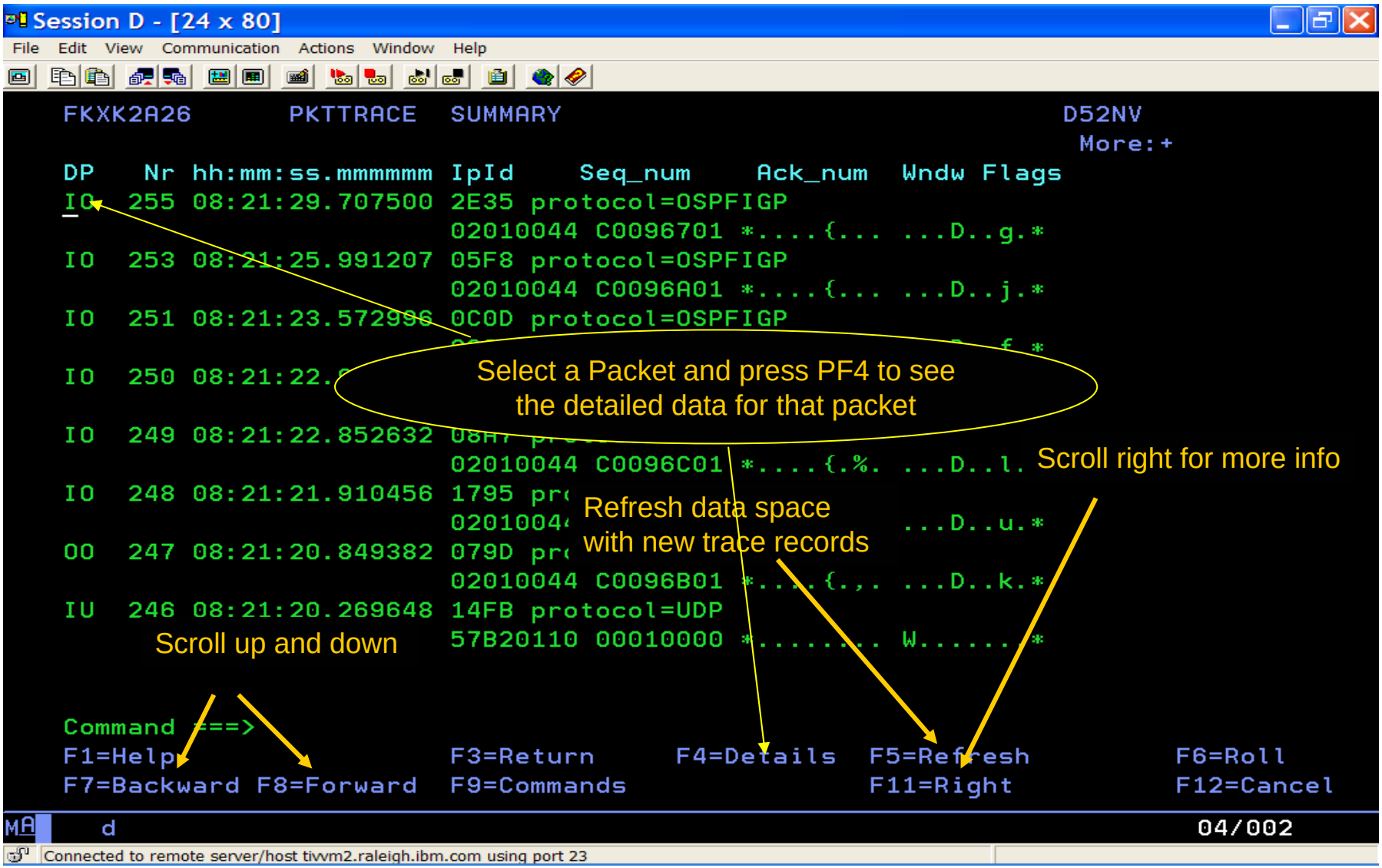
Packet Display Options



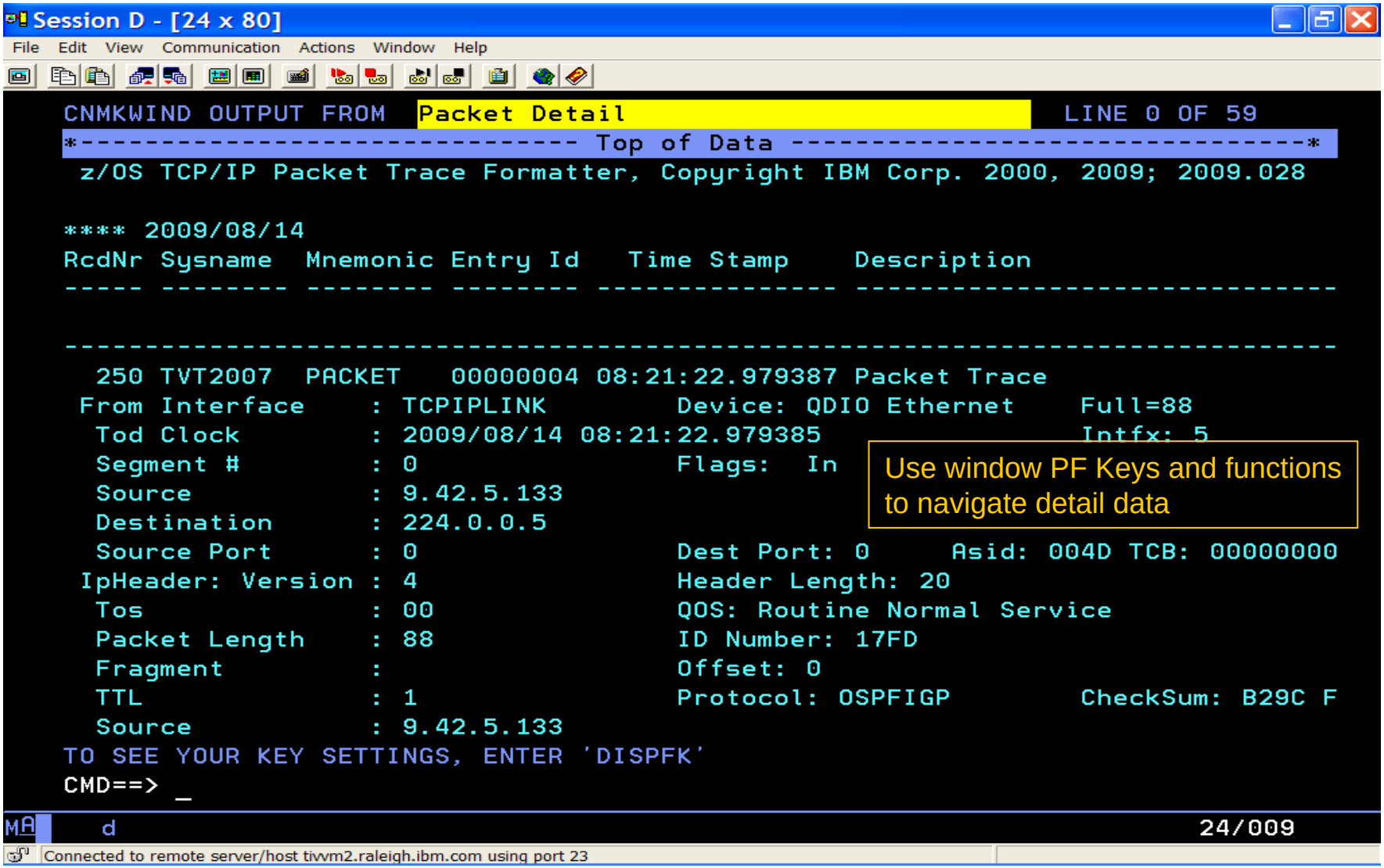
The name of the Interface selected on Packet Trace Control panel (FKXK2A22)

This panel contains all of the base FMTPACKT command options

Summary View of Packets



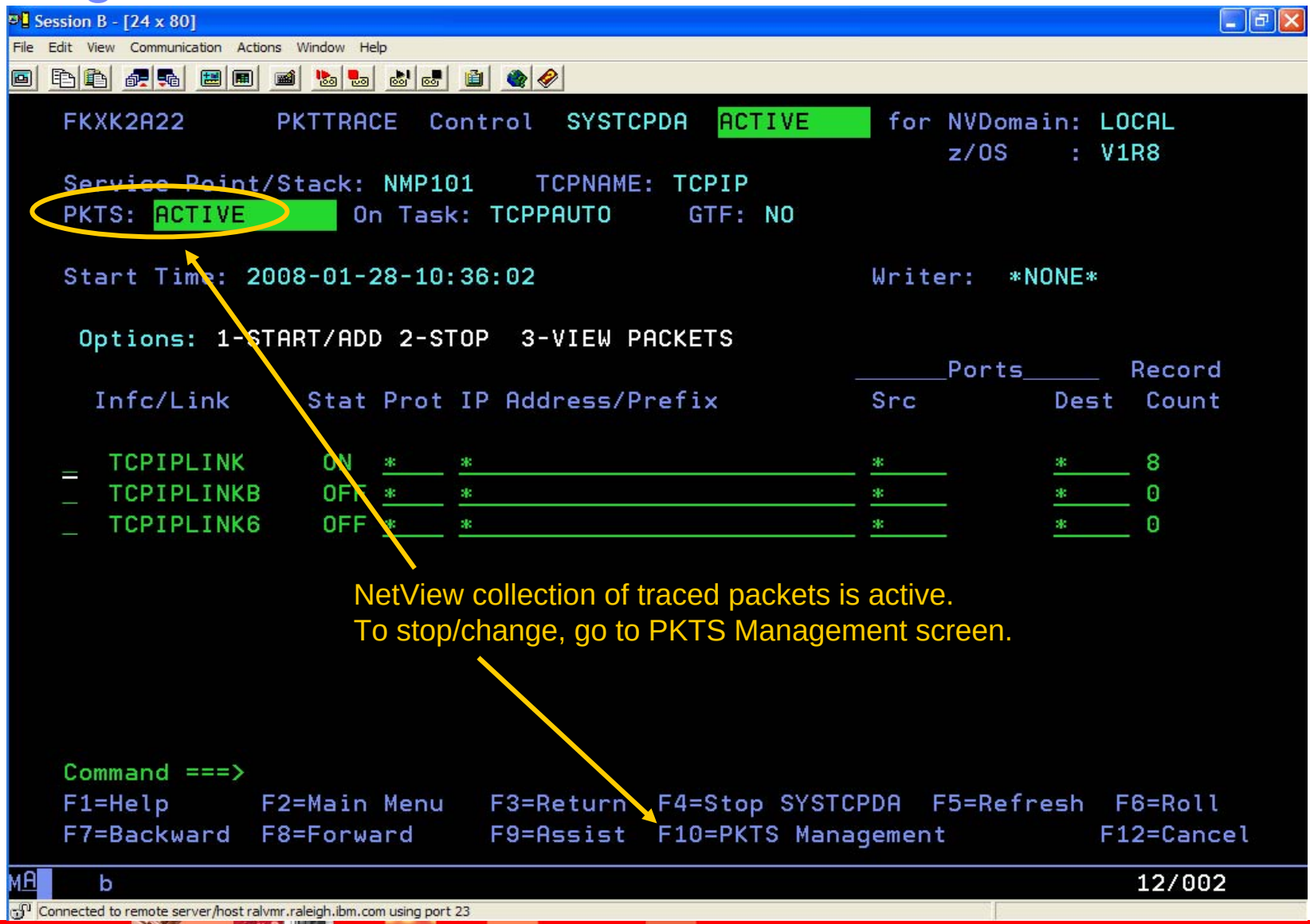
Windowed Packet Detail



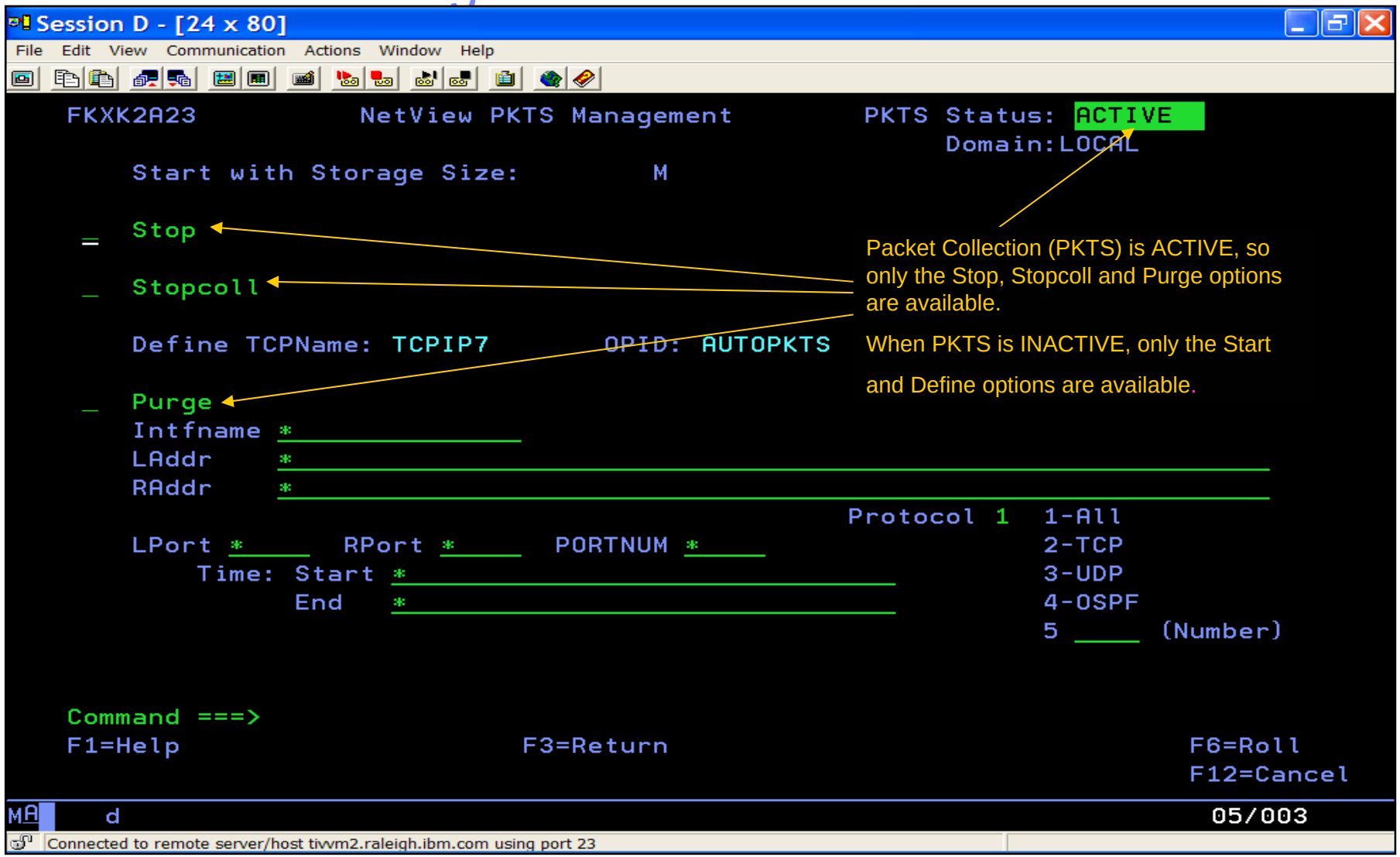
Additional Functions

- Managing packet collection (PKTS) settings
- Commands from PKTS Summary
- Extended Options
- Modifying TCPIP PKT Trace

Manage PKTS



Use : Manage the PKTTRACE function



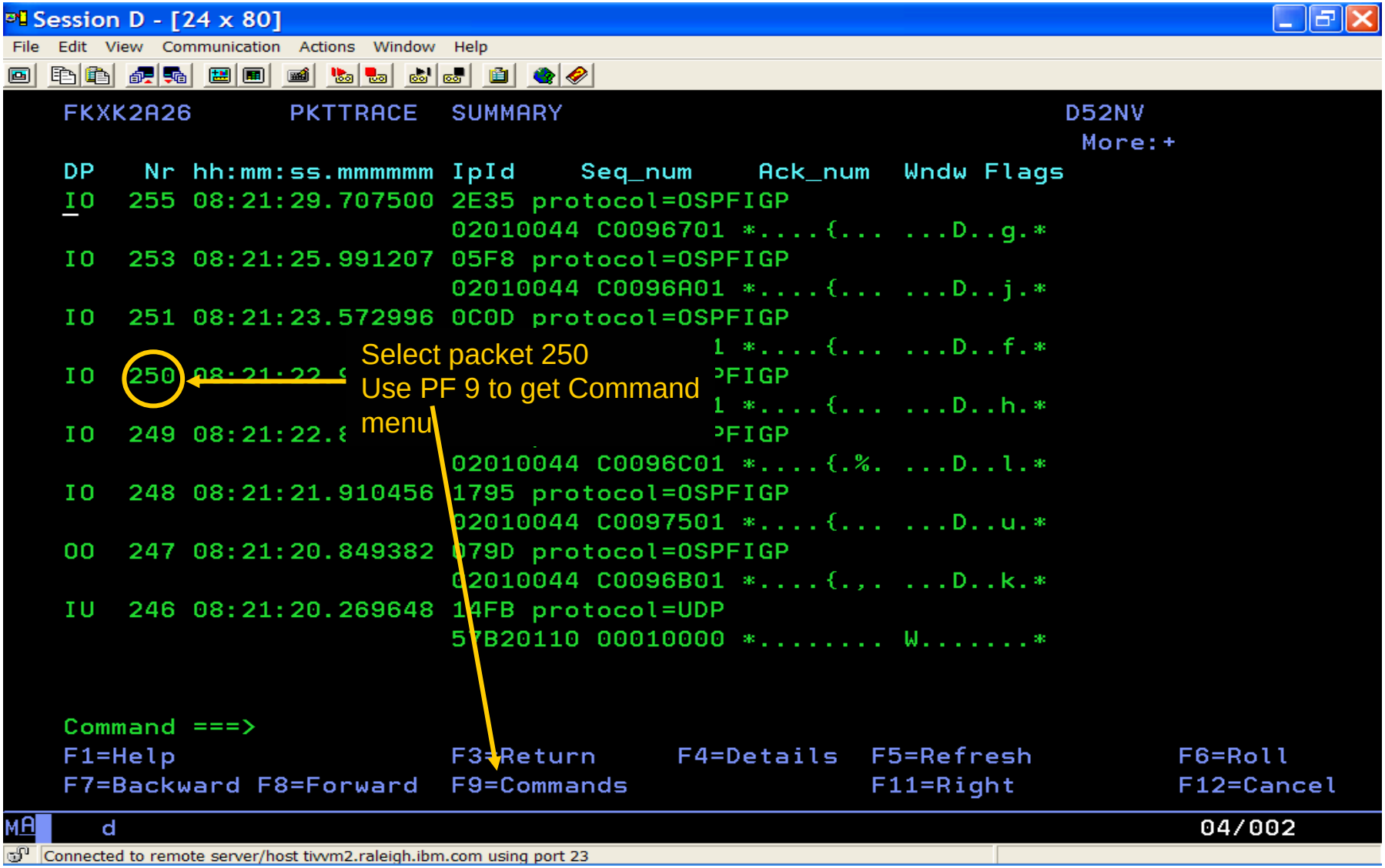
Packet Collection (PKTS) is ACTIVE, so only the Stop, Stopcoll and Purge options are available.

When PKTS is INACTIVE, only the Start and Define options are available.

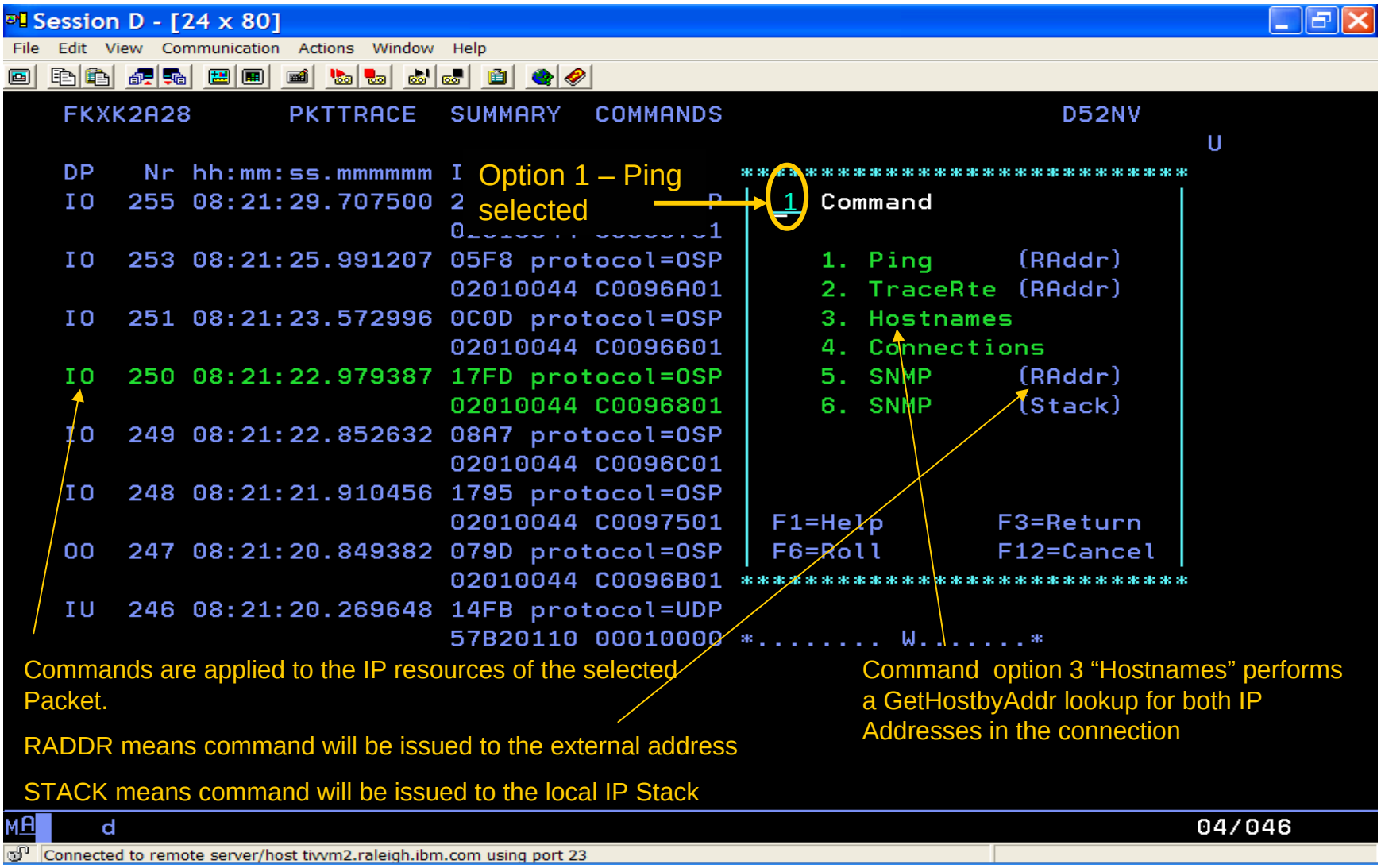
Additional Functions

- Managing PKTS settings
- Commands from PKTS Summary
- Extended Options
- Modifying TCPIP PKT Trace

Summary View of Packets



Commands from Packets Summary



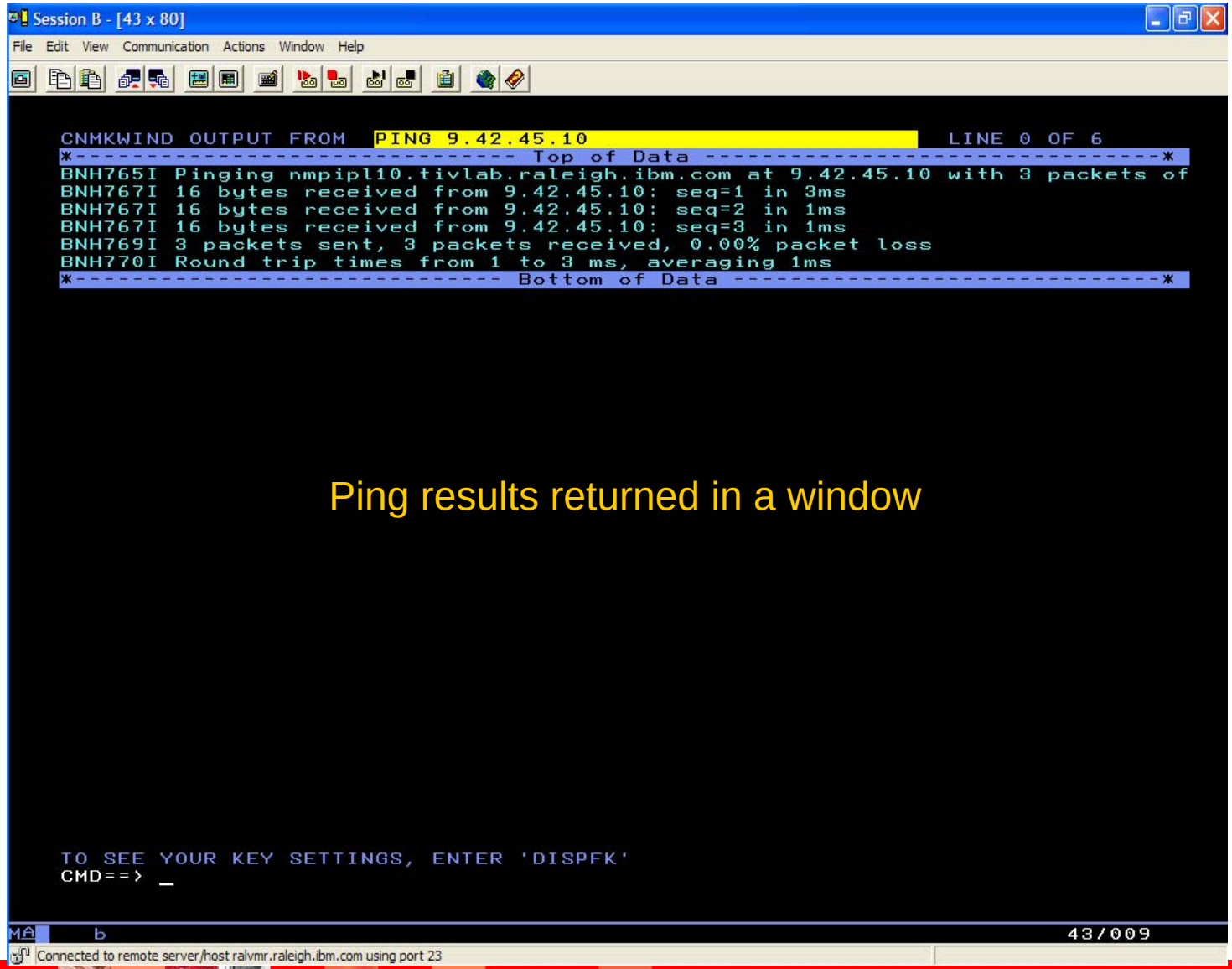
Commands are applied to the IP resources of the selected Packet.

RADDR means command will be issued to the external address

STACK means command will be issued to the local IP Stack

Command option 3 “Hostnames” performs a GetHostbyAddr lookup for both IP Addresses in the connection

Ping Results

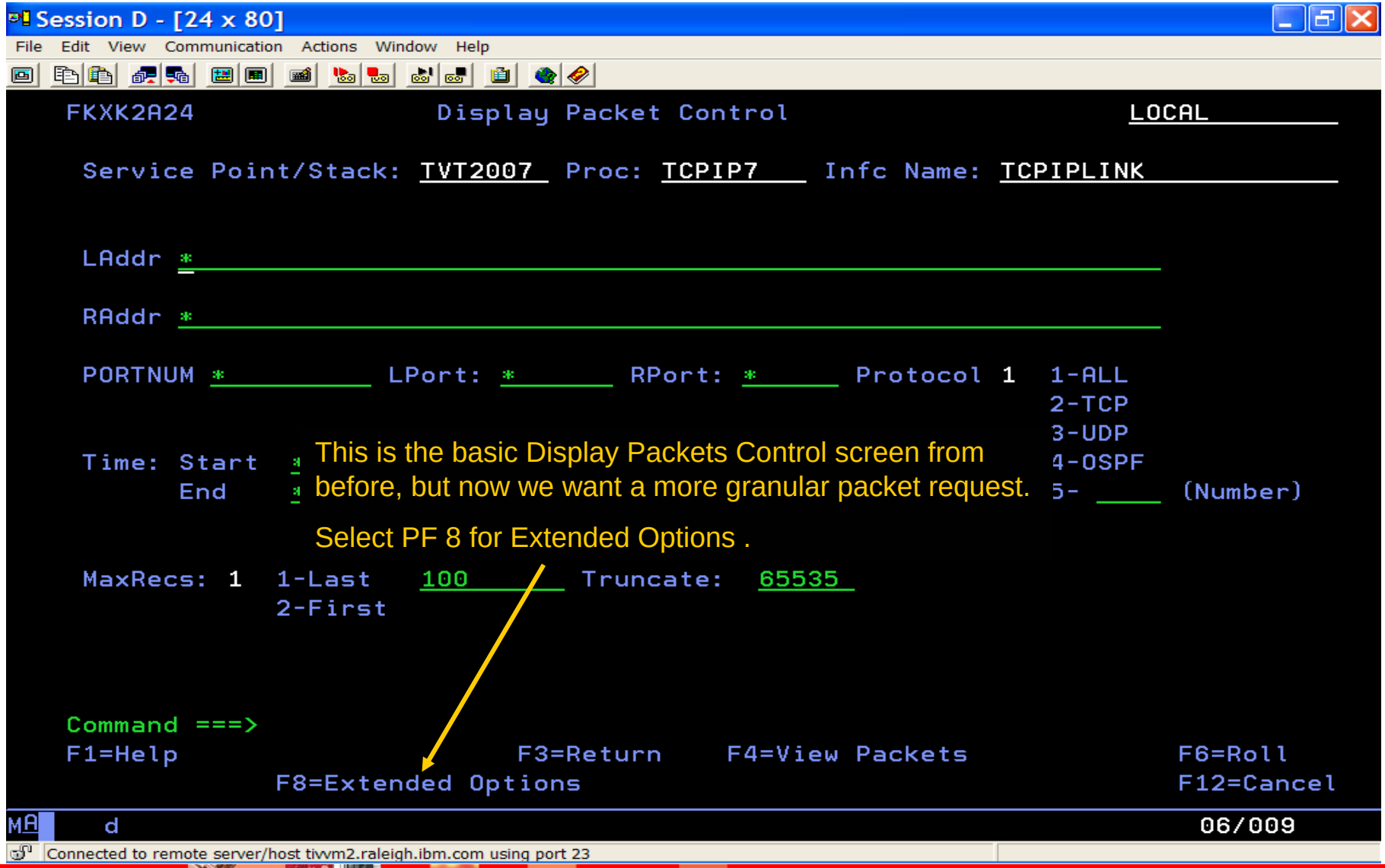


Ping results returned in a window

Additional Functions

- Managing PKTS settings
- Commands from PKTS Summary
- Extended Options
- Modifying TCPIP PKT Trace

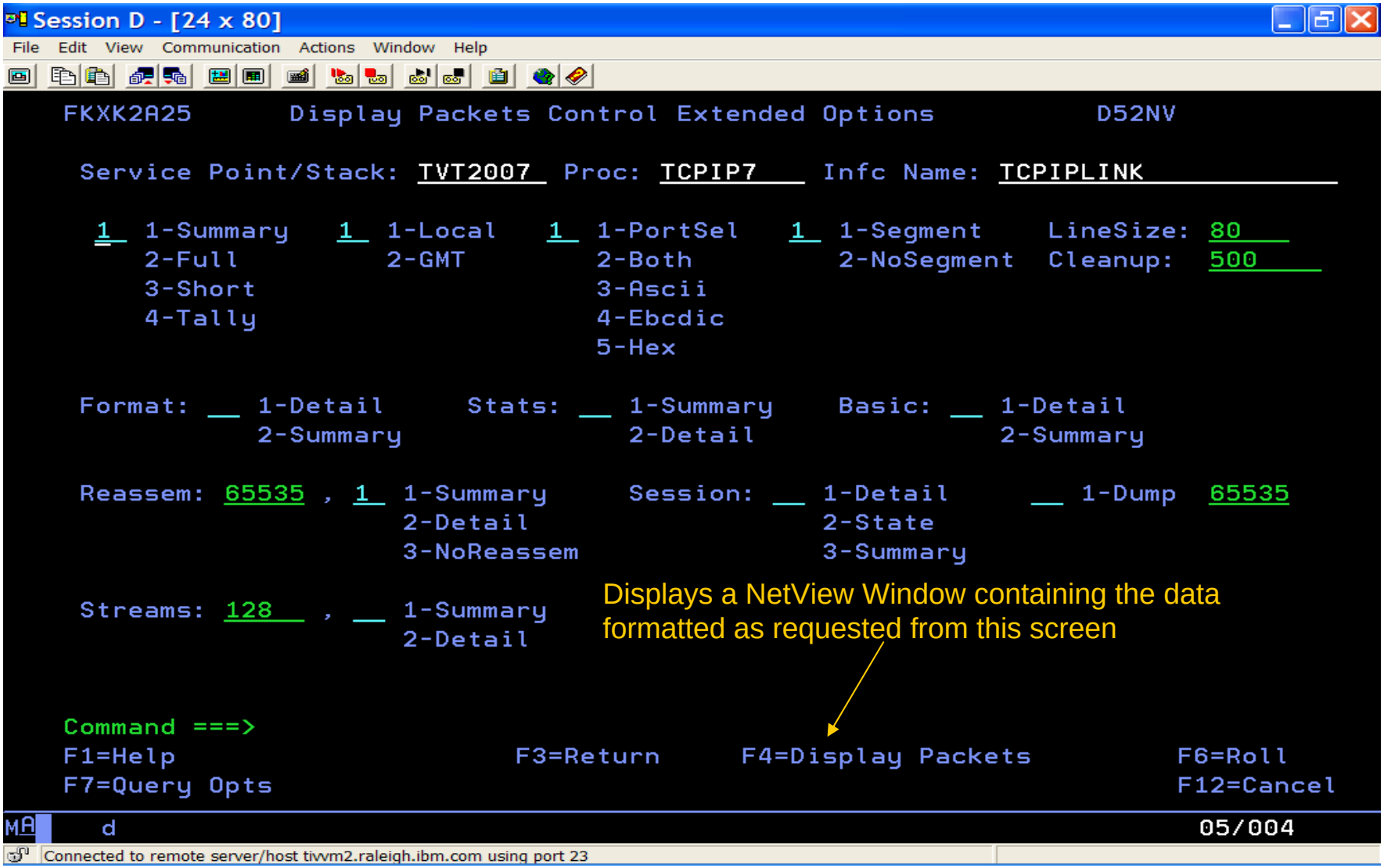
Extended Options



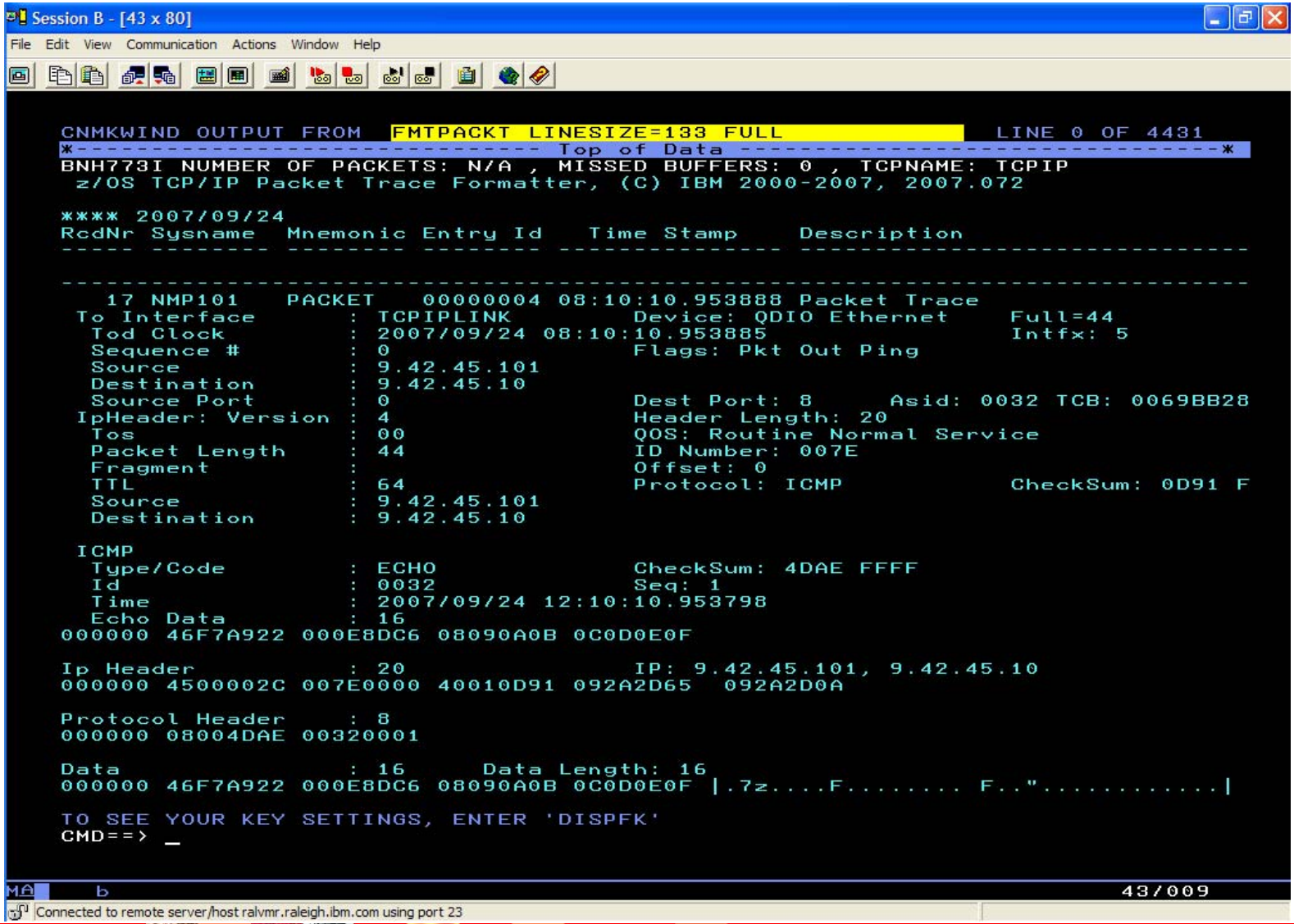
This is the basic Display Packets Control screen from before, but now we want a more granular packet request.

Select PF 8 for Extended Options .

Extended Options



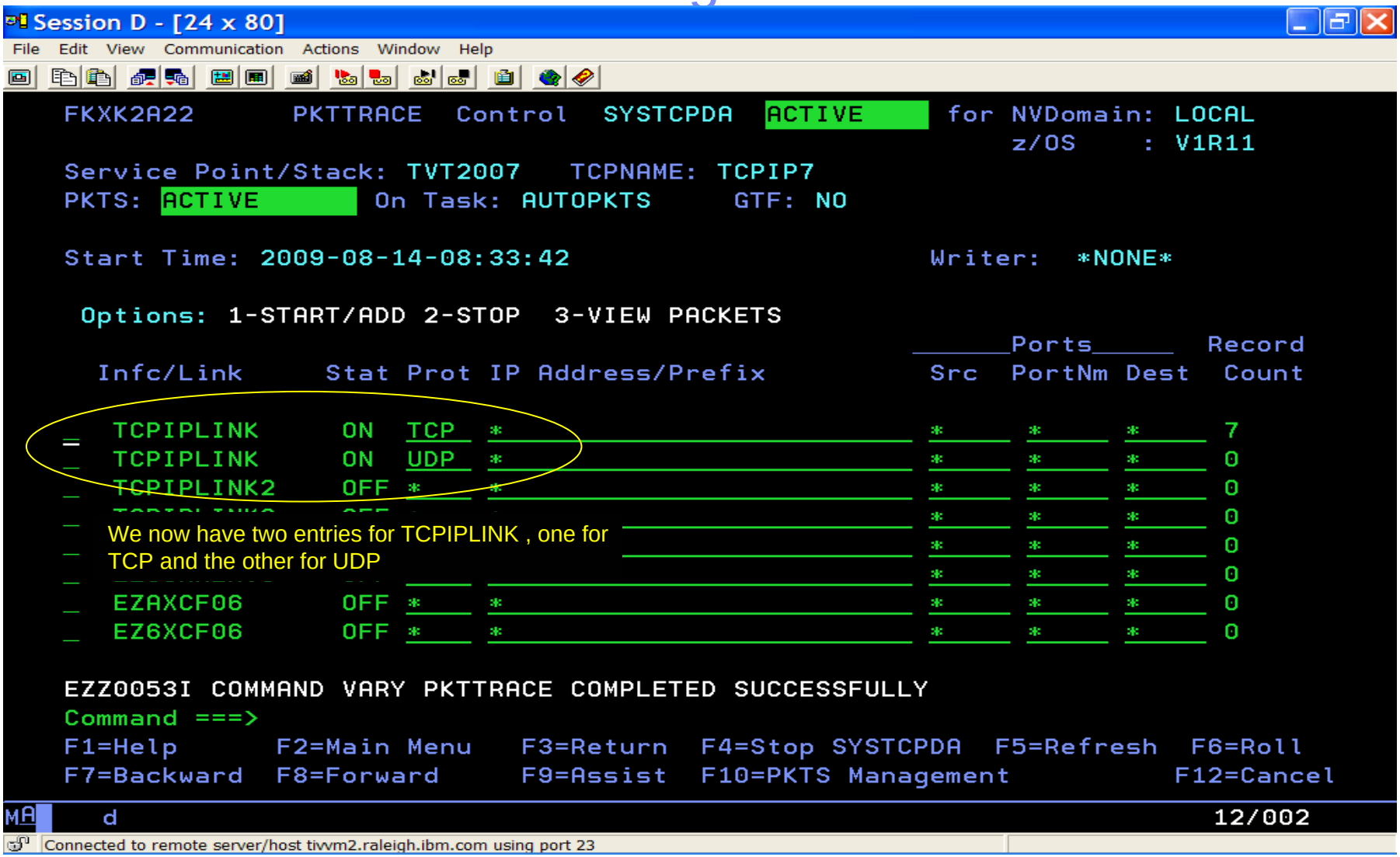
Windowed Data Returned



Additional Functions

- Managing PKTS settings
- Commands from PKTS Summary
- Extended Options
- Modifying TCP/IP PKT Trace

Use : Adding Traces



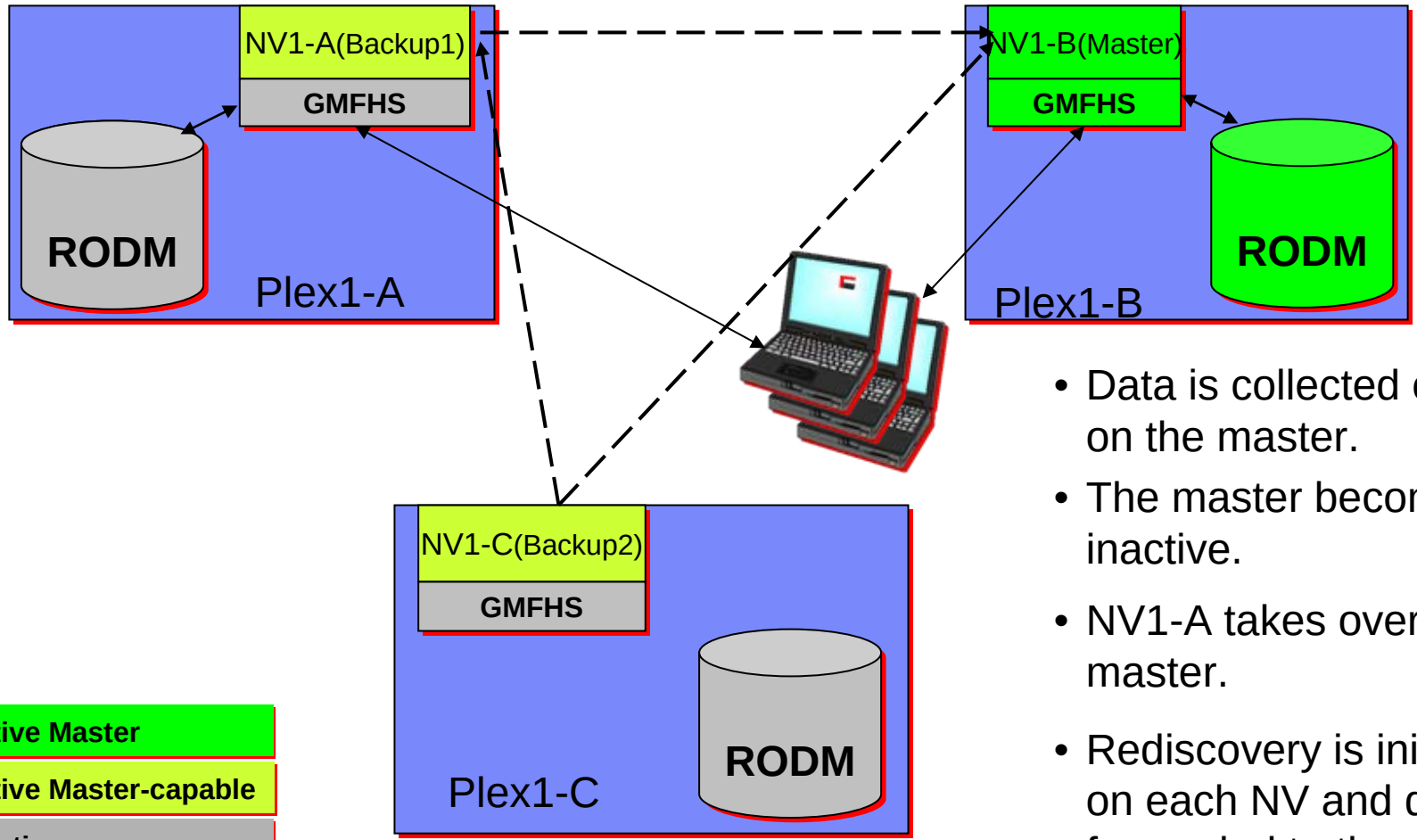
Major Functional Enhancements

- Expanded IP management
- Broader sysplex and DVIPA management, Enterprise-wide management
- Core functionality

Sysplex and DVIPA Management

- Provides consolidated sysplex management including topology and automation.
- Uses z/OS XCF services to create “master" and "backup" NetViews for failover.
- Improves notification of changes in the DVIPA environment, as well as providing better PD capabilities.
- UIs
  - Additional sysplex topology views in NMC
  - TEP
    - New workspaces to depict topology information
    - New cross-product links to
      - OMEGAMON XE for Mainframe Networks
      - OMEGAMON XE on z/OS
  - 3270

Sysplex and DVIPA

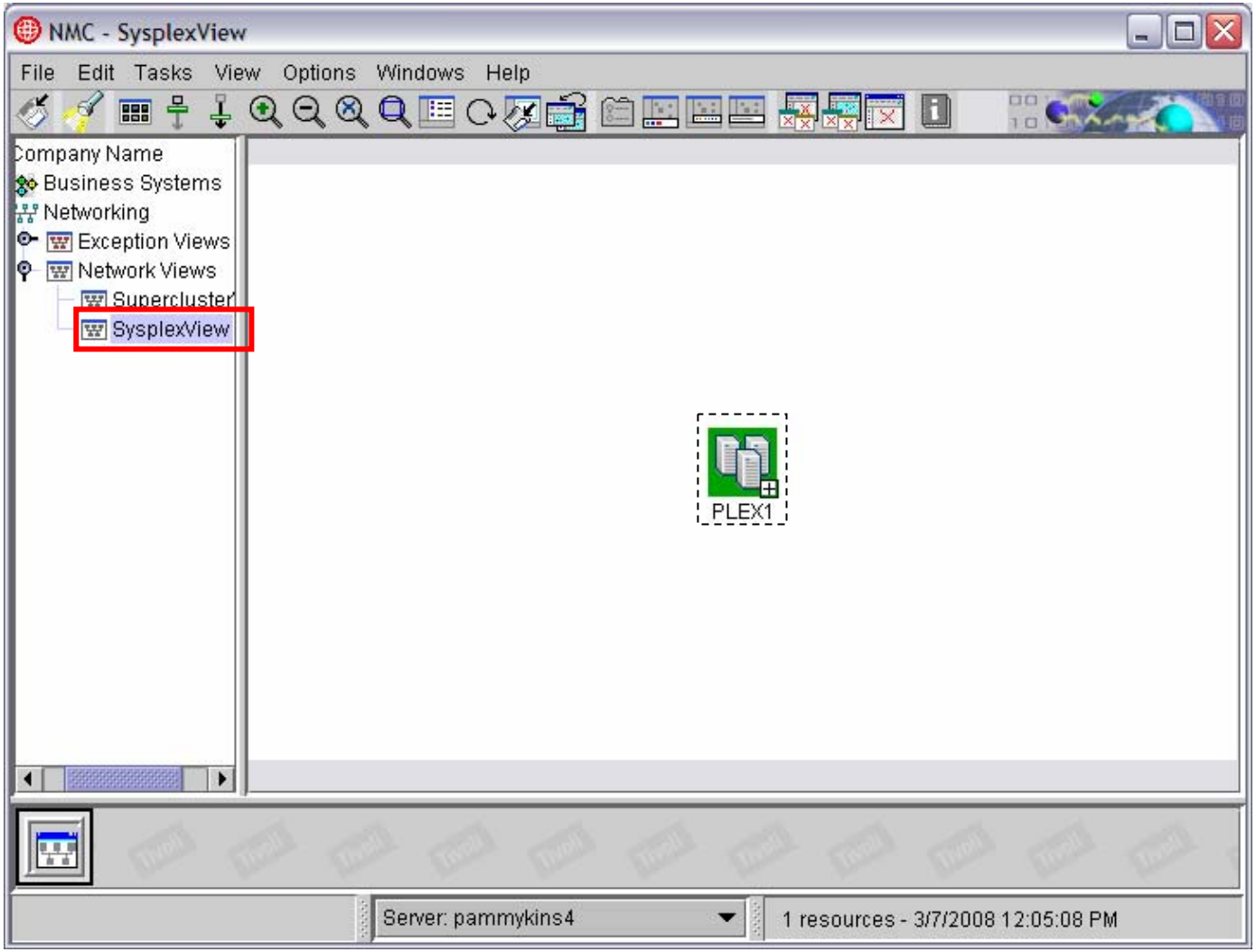


- Data is collected centrally on the master.
- The master becomes inactive.
- NV1-A takes over as master.
- Rediscovery is initiated on each NV and data forwarded to the new master.

Discovery

- Enabled by default
  - Sysplex
  - Coupling Facility
  - System (z/OS image)
  - NetView Application
  - TCP/IP Stack
  - TCP/IP subplex
- Optional
  - TCP/IP Interface
  - Telnet Servers and Ports
  - OSA and HiperSockets (requires RODM; HiperSockets requires z/OS 1.11)
  - DVIPA, Distributed DVIPA (DDVIPA), DVIPA Connections, VIPA Routes, and DDVIPA Connection Routing
    - Determine if you will use DVIPA Events
    - Determine if you will use DDVIPA Statistics
- Each z/OS image would need to enable discovery for the particular function to provide a complete view of the sysplex

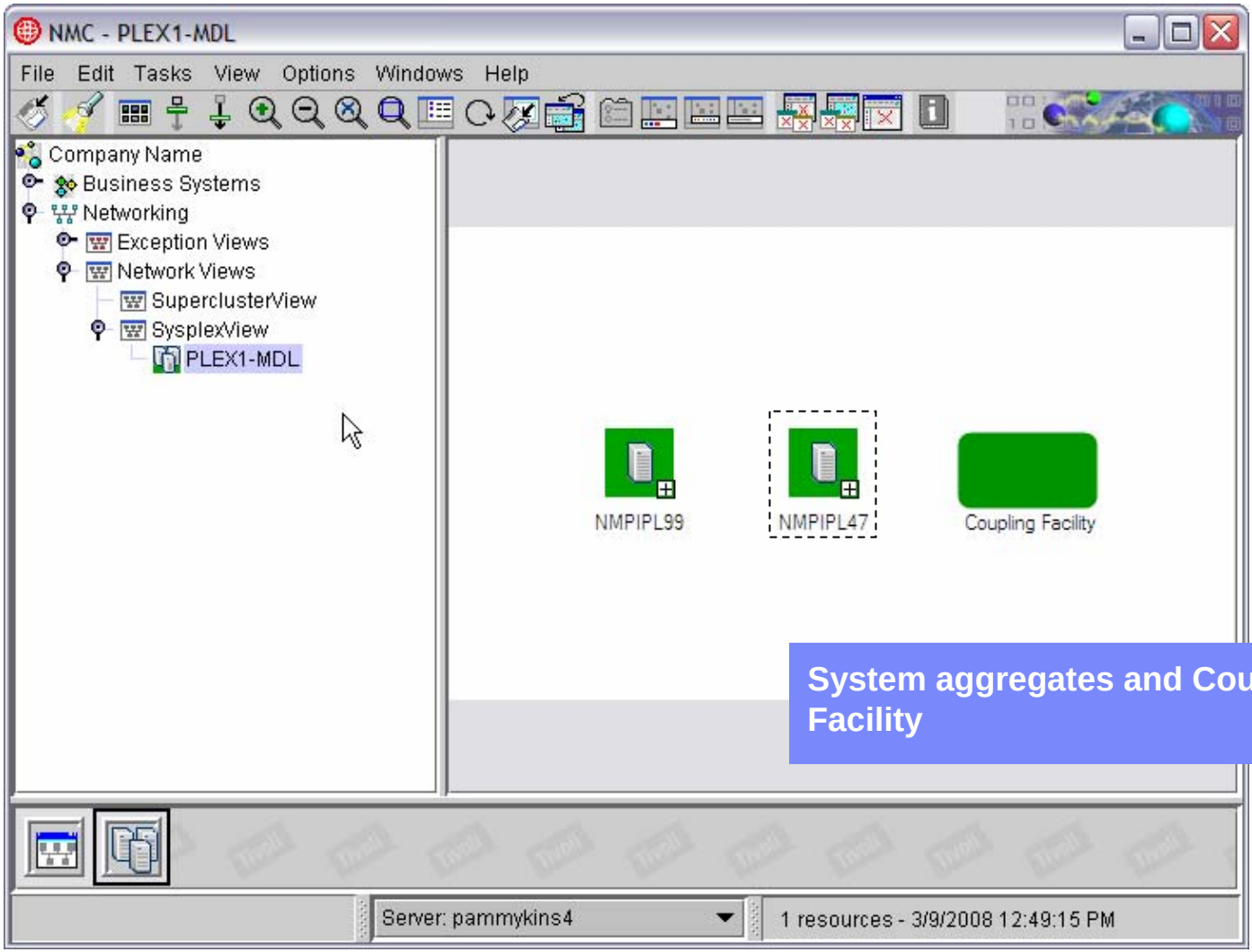
NMC Views: Sysplex Aggregate



Sysplex Aggregate

- Config. type
- Type of signaling
- Max. # systems allowed
- Current max. # systems

NMC Views: Sysplex More Detail Logical



System aggregates and Coupling Facility

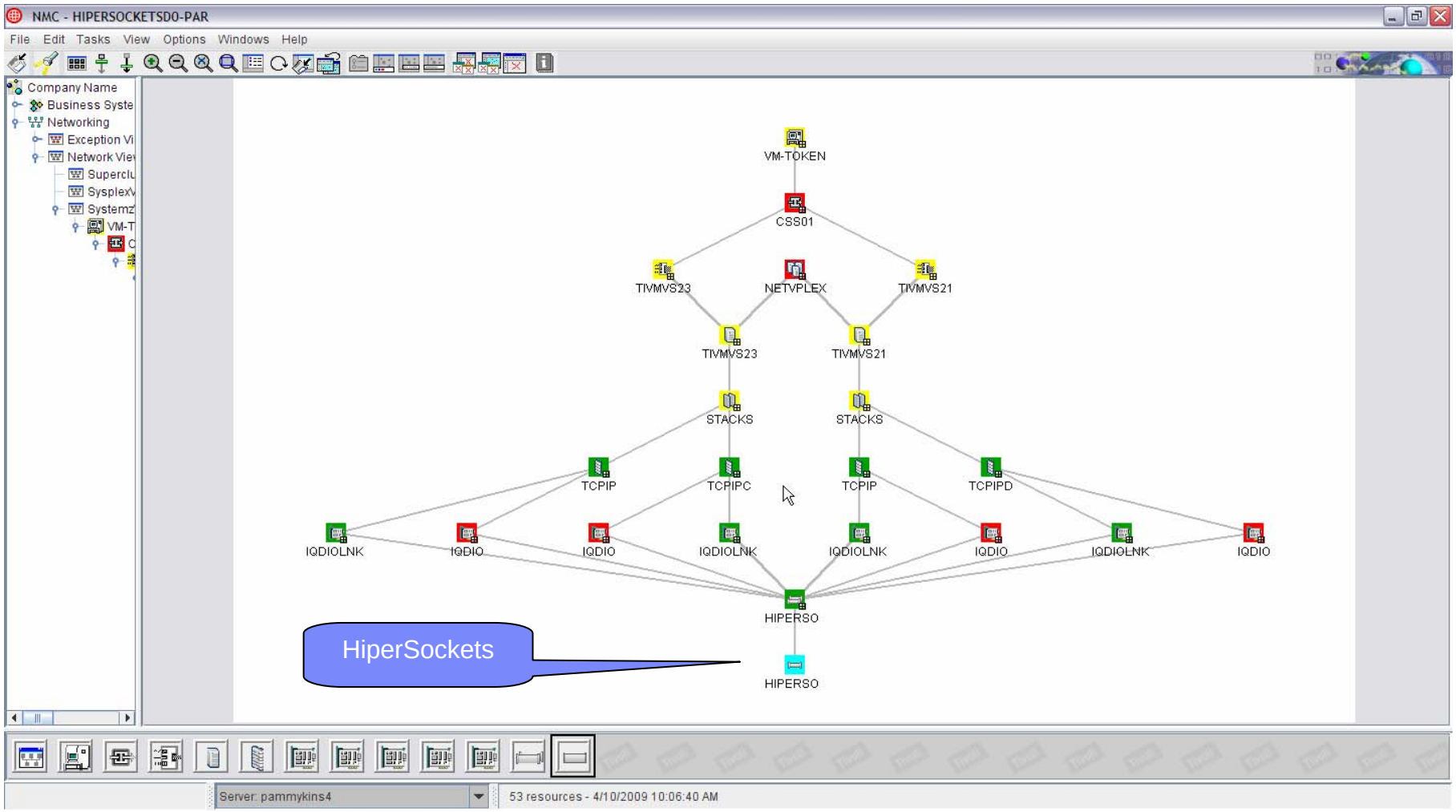
System Aggregates

- Domain
- NetID

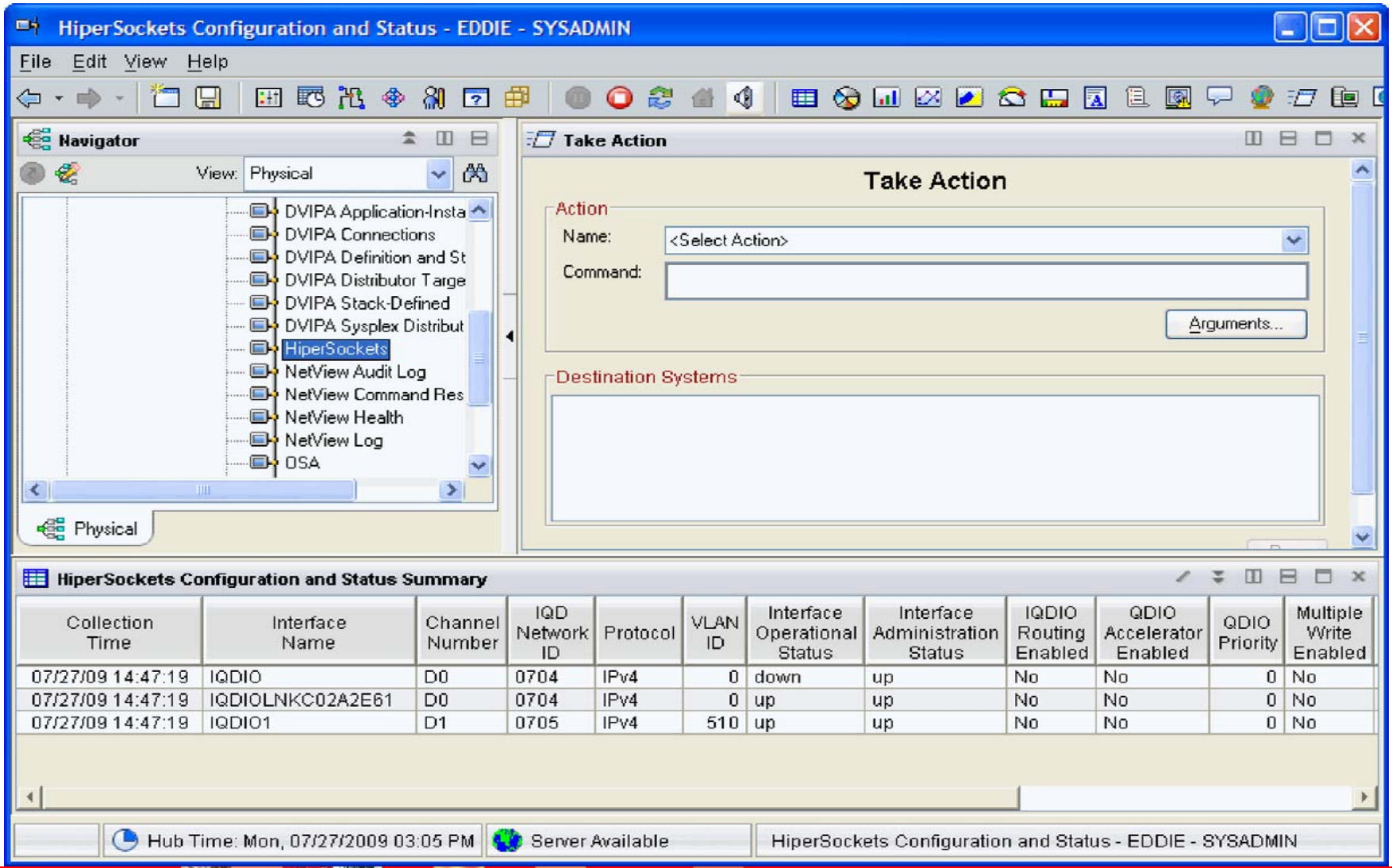
Coupling Facility

- CEC ID
- Node type
- Model #
- LPAR Partition #
- Mode
- CFLEVEL

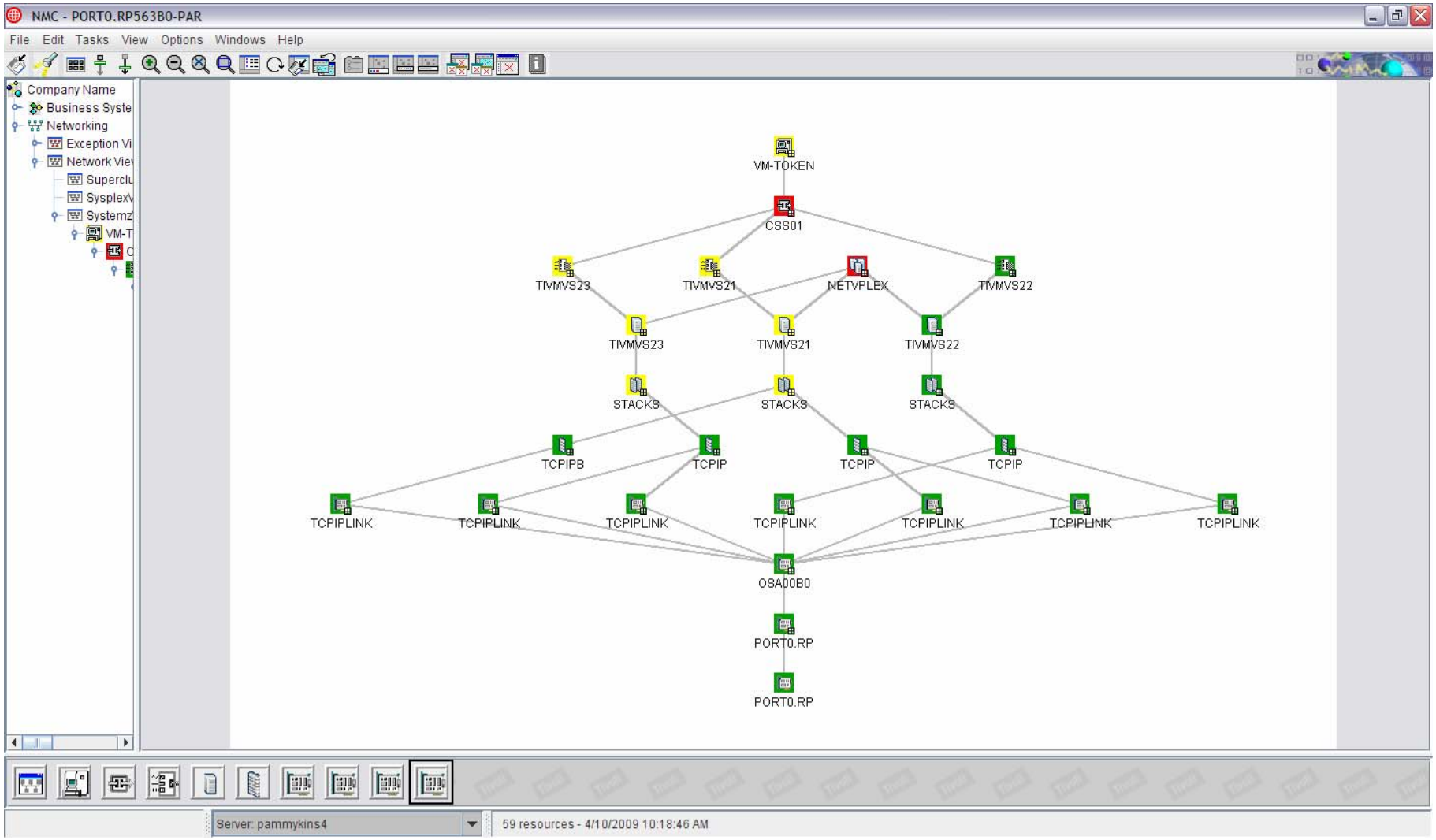
NMC Views: Hipersockets Interfaces Parent View



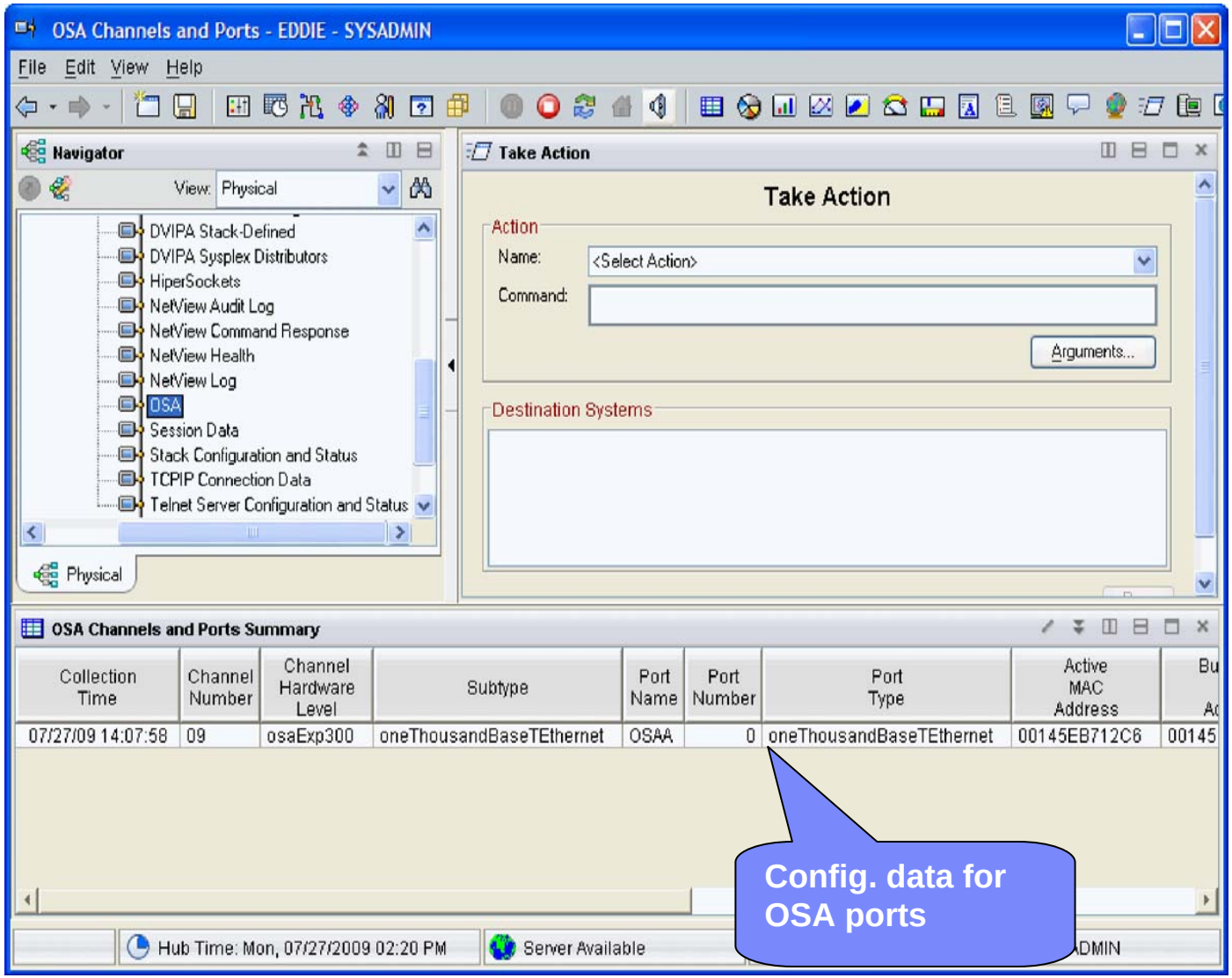
Hipersockets Configuration and Status (TEP)



NMC Views: OSA Port Parent View



OSA Channels and Ports Workspace (TEP)



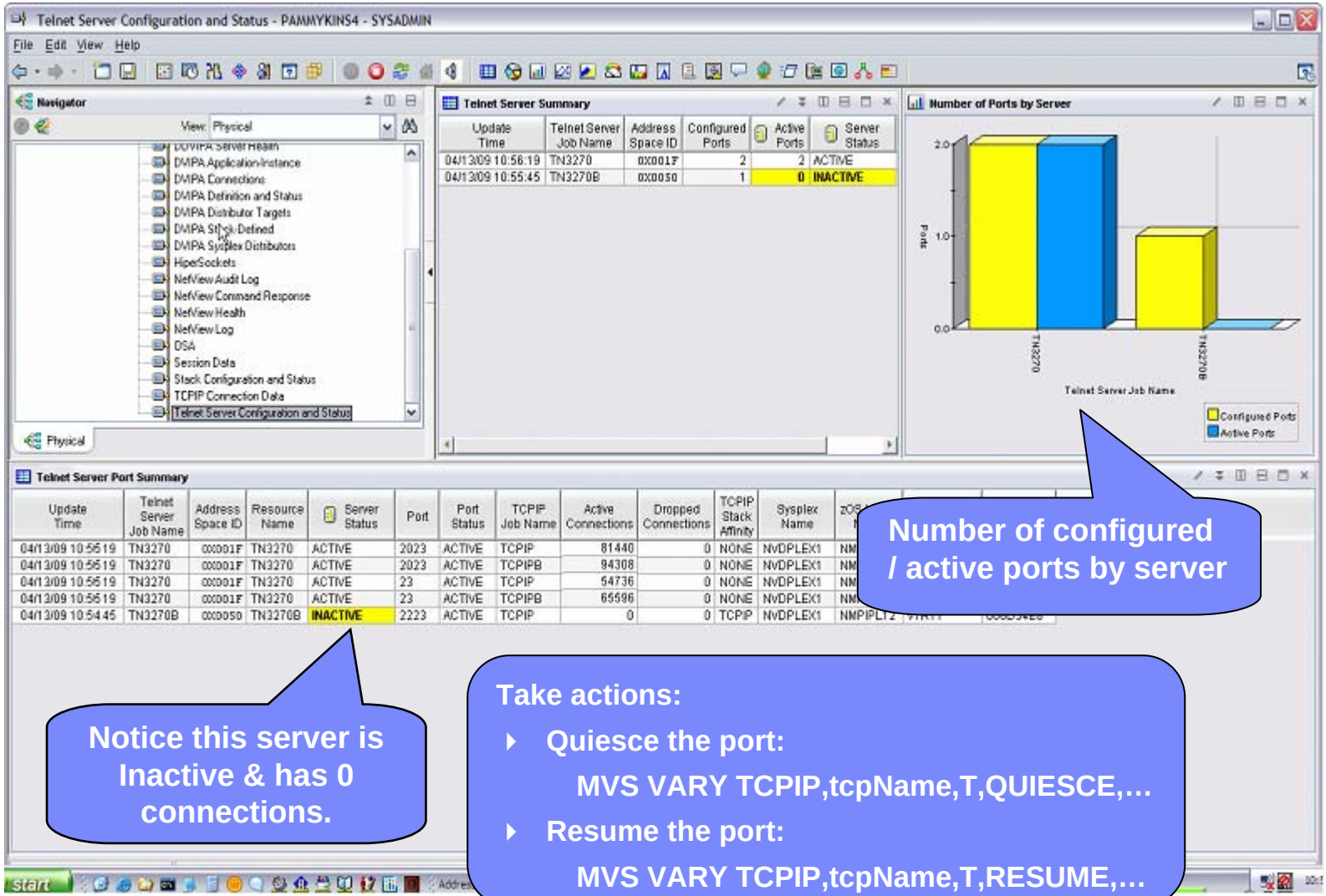
OSA Ports

- Collection Time
- Channel Number
- Channel Hardware Level
- Channel Subsystem ID
- Subtype
- Port Name
- Port Number
- Port Type
- Active MAC Addr.
- Burned-in MAC Addr.
- LAN Traffic State
- Service Mode
- Disabled Status
- Config. Speed Mode
- Active Speed Mode
- Sysplex Name
- System ID

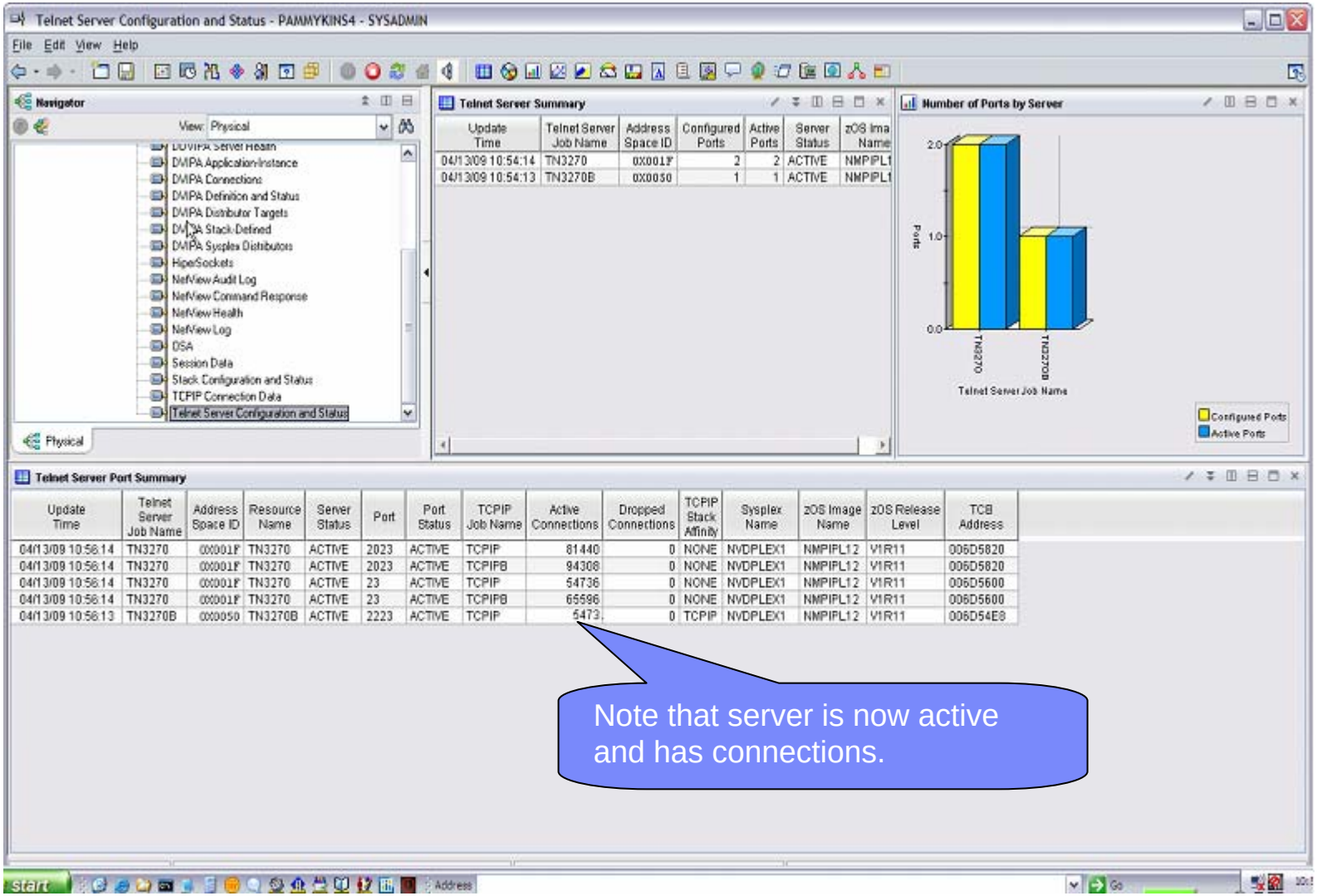
OSA and RODM

- RODM required for
  - NMC topology views
  - OSA workspaces in TEP
- Not required for OSA trace

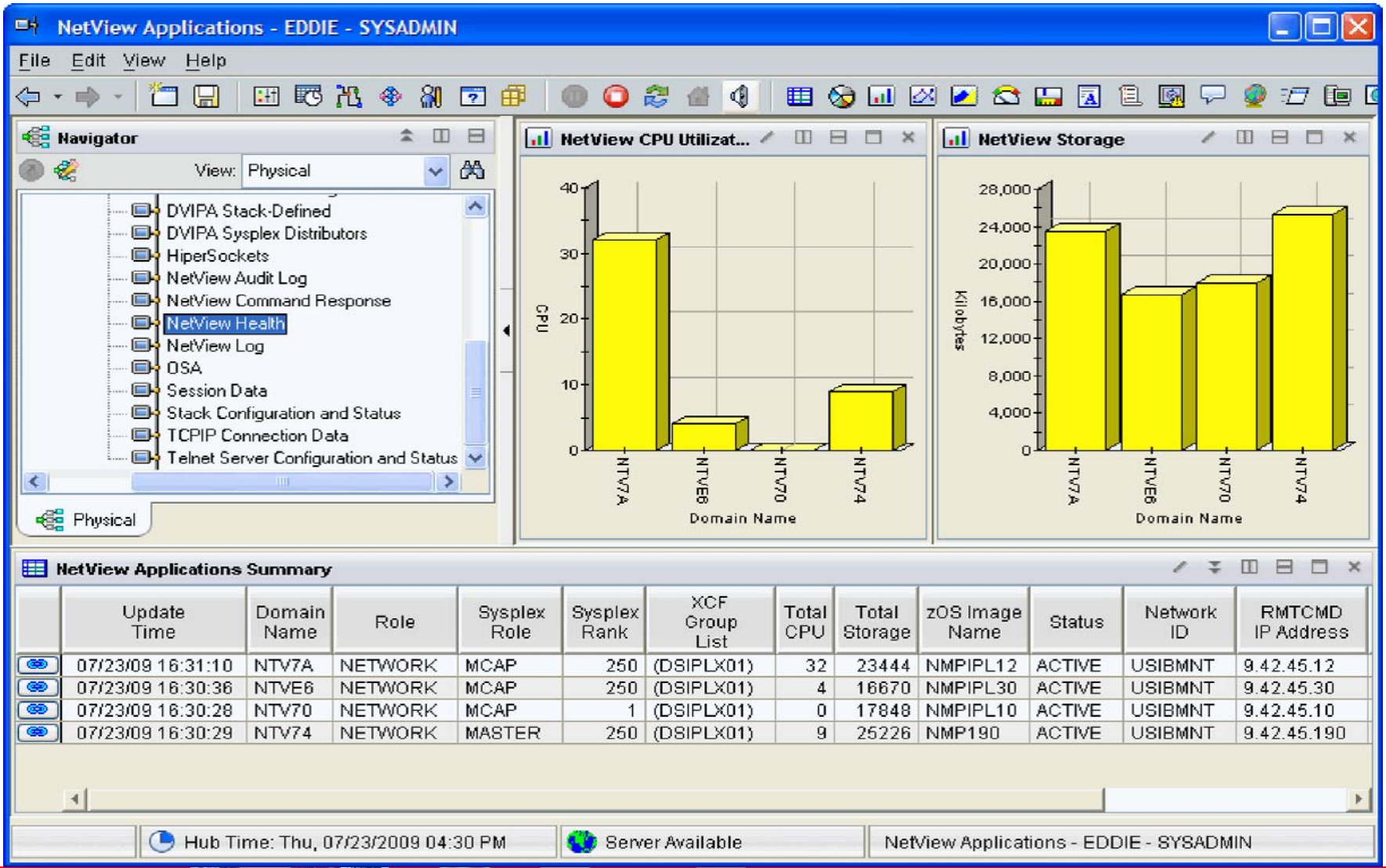
Telnet Server Configuration & Status (TEP)



Telnet Server Configuration & Status (TEP) (cont.)



NetView Applications (TEP)



Sysplex and DVIPA

- Data stored in RODM, but available in both NMC and TEP
- XCF
  - Signaling capabilities used to discover other NetViews in the sysplex
  - Provides automated capability to switch from a primary NetView to a backup NetView
  - Not used to communicate large volumes of data between NetViews

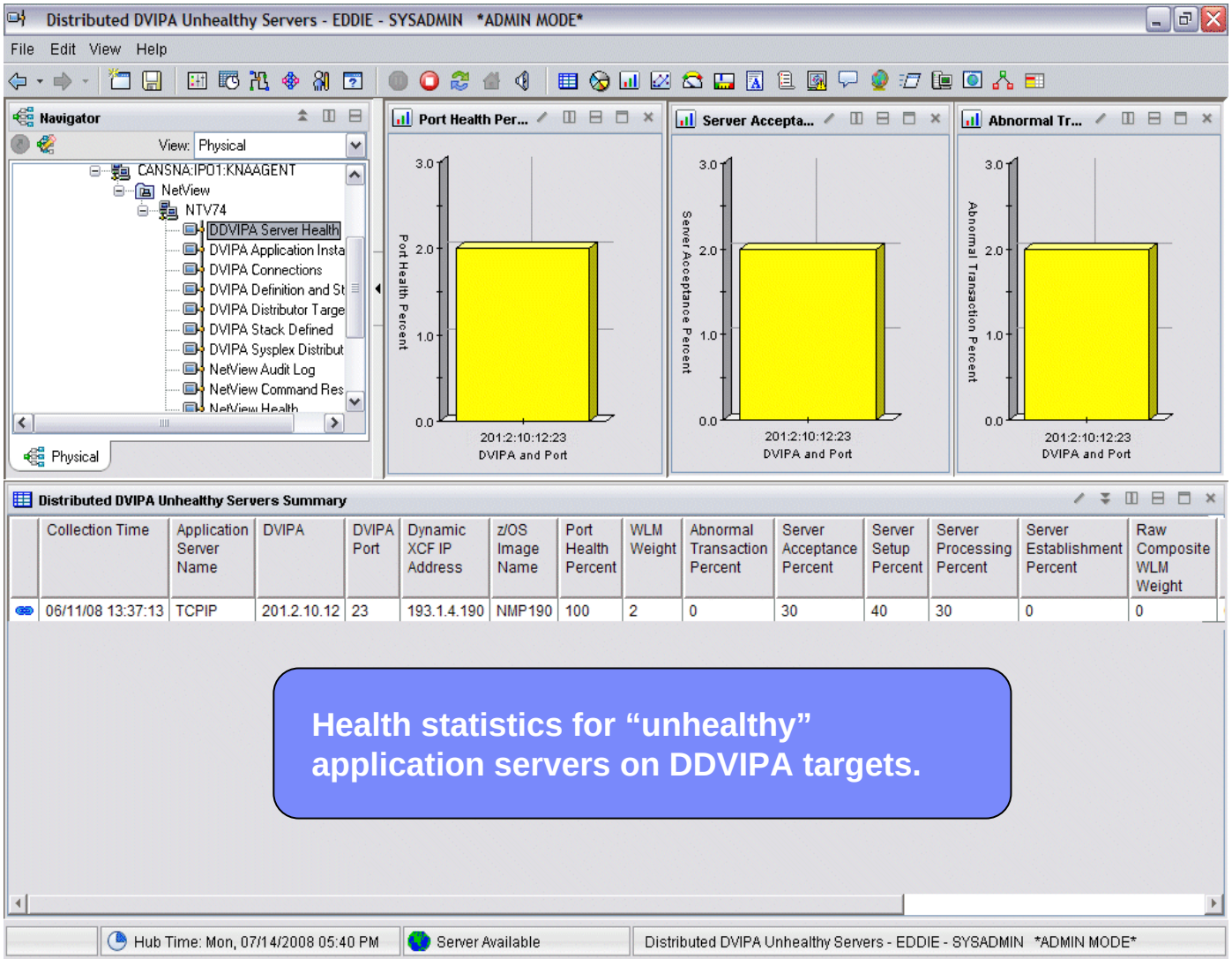
NetView in the TEP

- NetView V5.3 workspaces
  - DVIPA Connections
  - DVIPA Definition and Status
  - DVIPA Distributor Targets
  - DVIPA Sysplex Distributors
  - DVIPA Workload
  - Active TCP/IP Connections
  - Inactive TCP/IP Connections
  - SNA Sessions
  - NetView Audit Log
  - NetView Command Response
  - NetView Log
  - NetView Tasks
  - NetView Task Details
  - Stack Configuration & Status

NetView in the TEP

- Additional NetView V5.4 workspaces
  - Distributed DVIPA Connection Routing
  - Distributed DVIPA Server Health
  - Distributed DVIPA Server Health Details
  - Distributed DVIPA Targets
  - Distributed DVIPA Unhealthy Servers
  - Application-Instance DVIPA
  - Stack-Defined DVIPA
  - DVIPA Stack Summary
  - VIPA Routes
  - Hipersocket Interface Configuration & Status
  - OSA Channels & Ports
  - Telnet Server Configuration & Status
  - NetView Applications

Distributed DVIPA Unhealthy Servers (TEP)

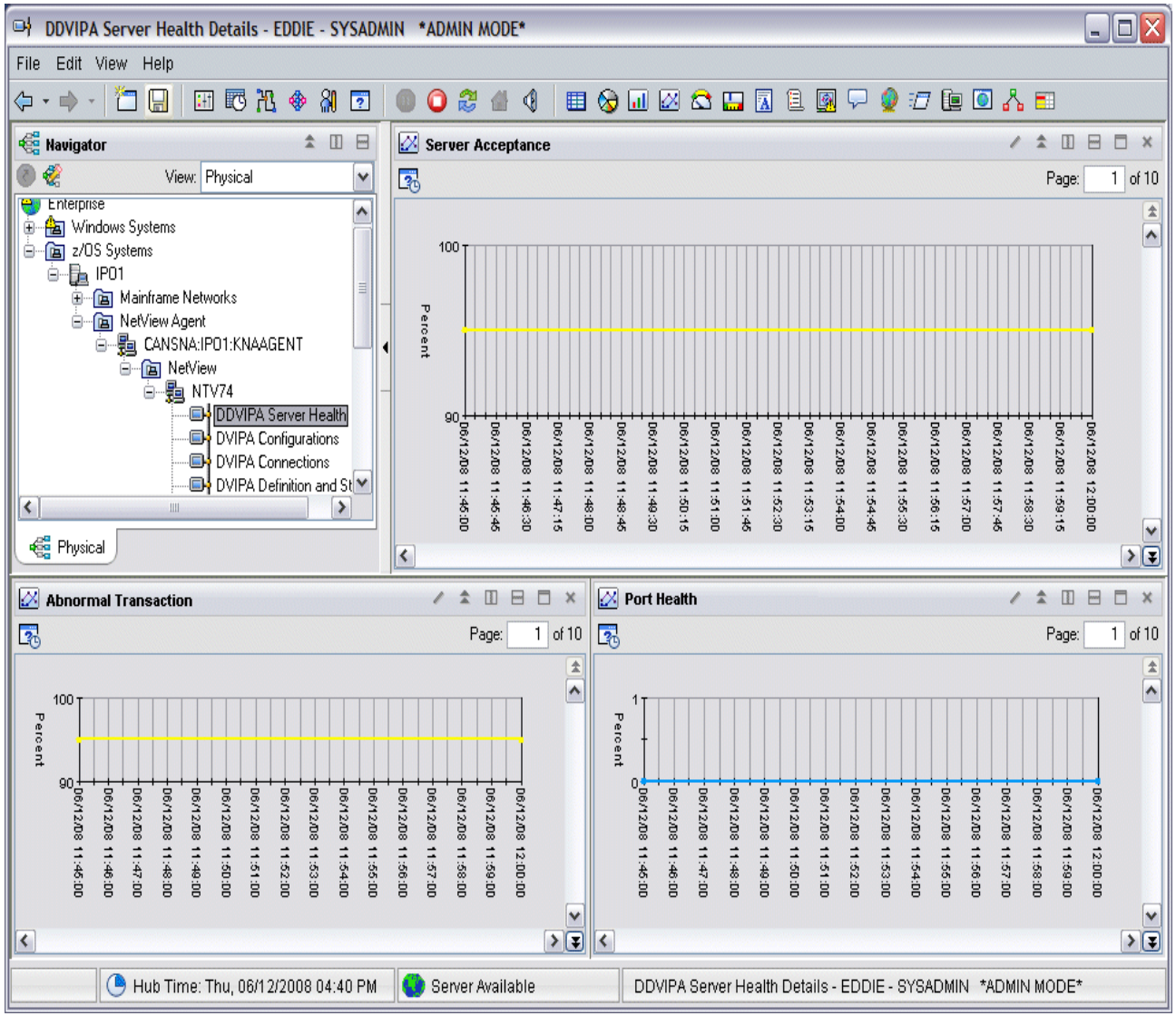


Health statistics for "unhealthy" application servers on DDVIPA targets.

Unhealthy = 1 or more of:

- WLM Weight = 0
- Port Health % < 90
- Server Acceptance % < 80
- Abnormal Transaction % > 25

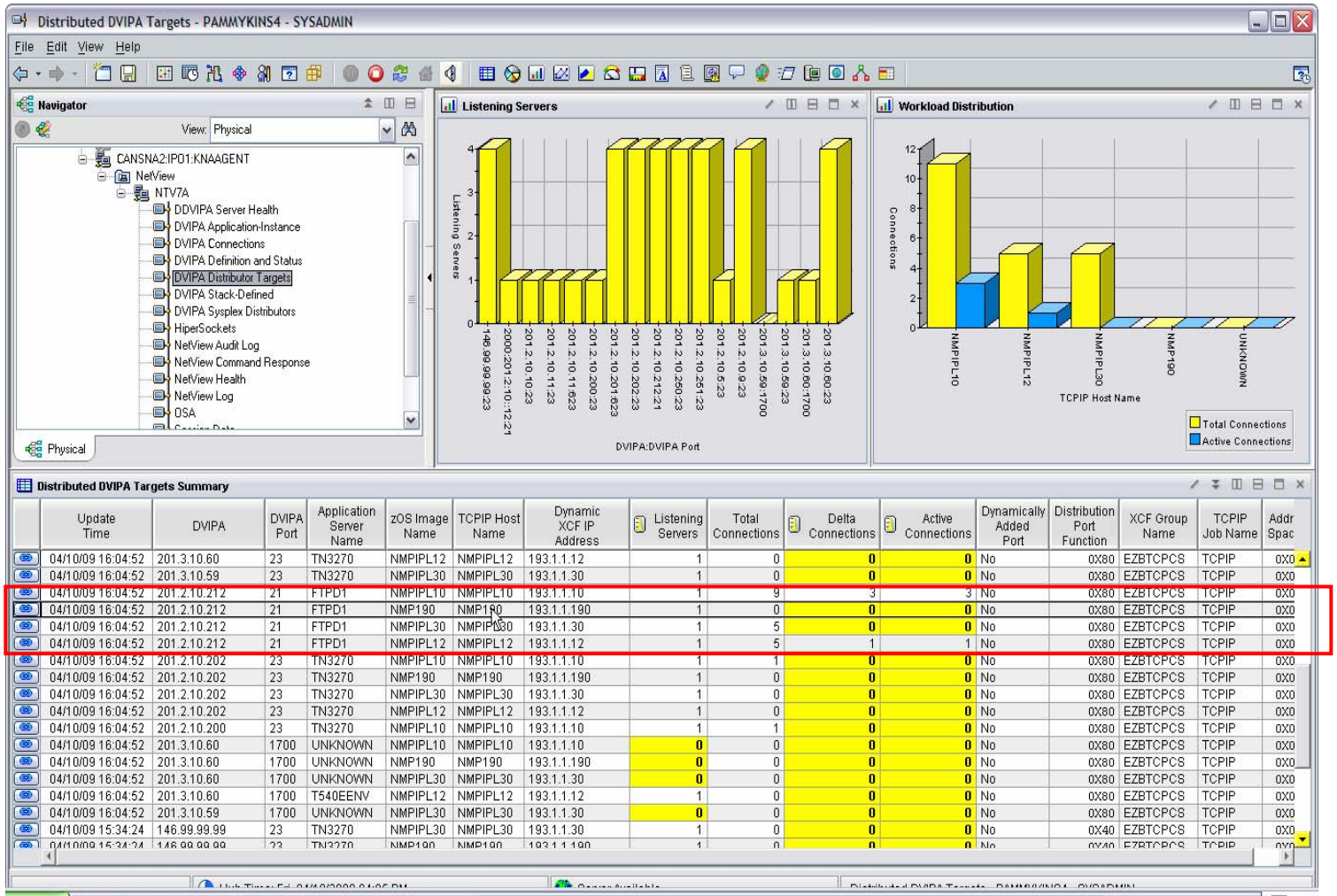
Distributed DVIPA Server Health Details (TEP)



Health statistics for specific application server on a DDVIPA target, over time.

DDVIPA Targets (TEP)

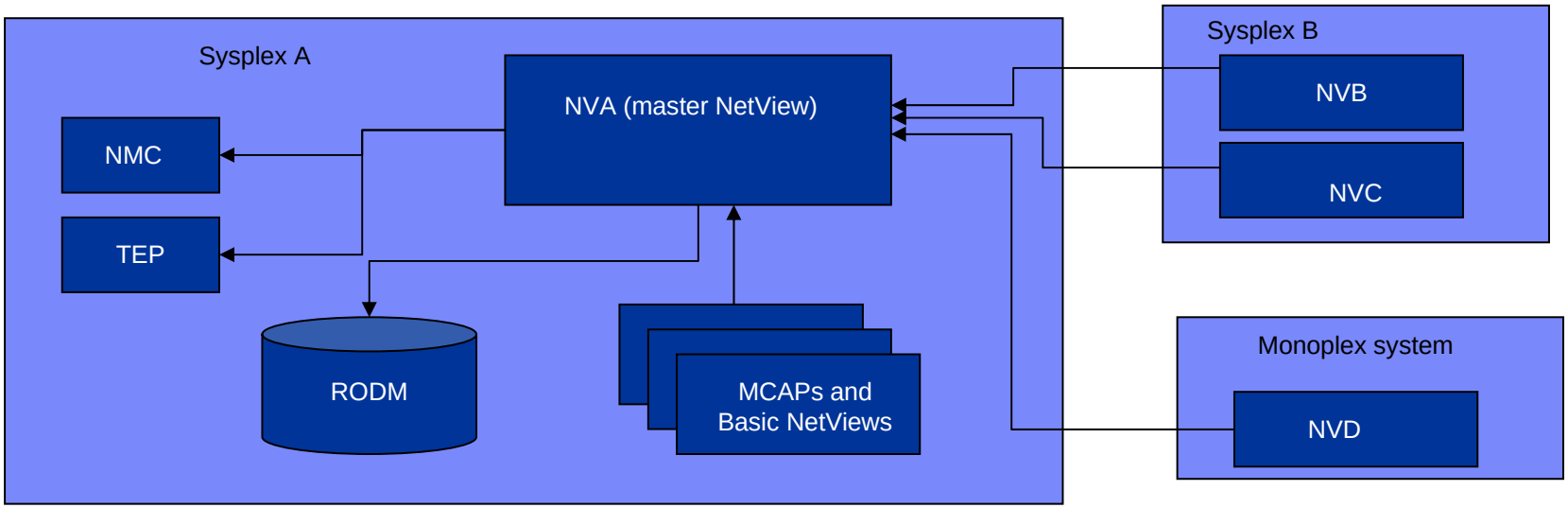
Note the 4 rows for FTPD1.



Update Time	DVIPA	DVIPA Port	Application Server Name	zOS Image Name	TCPIP Host Name	Dynamic XCF IP Address	Listening Servers	Total Connections	Delta Connections	Active Connections	Dynamically Added Port	Distribution Port Function	XCF Group Name	TCPIP Job Name	Addr Spac
04/10/09 16:04:52	201.3.10.60	23	TN3270	NMPIPL12	NMPIPL12	193.1.1.12	1	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.3.10.59	23	TN3270	NMPIPL30	NMPIPL30	193.1.1.30	1	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.2.10.212	21	FTPD1	NMPIPL10	NMPIPL10	193.1.1.10	1	9	3	3	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.2.10.212	21	FTPD1	NMP190	NMP190	193.1.1.190	1	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.2.10.212	21	FTPD1	NMPIPL30	NMPIPL30	193.1.1.30	1	5	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.2.10.212	21	FTPD1	NMPIPL12	NMPIPL12	193.1.1.12	1	5	1	1	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.2.10.202	23	TN3270	NMPIPL10	NMPIPL10	193.1.1.10	1	1	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.2.10.202	23	TN3270	NMP190	NMP190	193.1.1.190	1	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.2.10.202	23	TN3270	NMPIPL30	NMPIPL30	193.1.1.30	1	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.2.10.202	23	TN3270	NMPIPL12	NMPIPL12	193.1.1.12	1	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.2.10.200	23	TN3270	NMPIPL10	NMPIPL10	193.1.1.10	1	1	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.3.10.60	1700	UNKNOWN	NMPIPL10	NMPIPL10	193.1.1.10	0	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.3.10.60	1700	UNKNOWN	NMP190	NMP190	193.1.1.190	0	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.3.10.60	1700	UNKNOWN	NMPIPL30	NMPIPL30	193.1.1.30	0	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.3.10.60	1700	T540EENV	NMPIPL12	NMPIPL12	193.1.1.12	1	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 16:04:52	201.3.10.59	1700	UNKNOWN	NMPIPL30	NMPIPL30	193.1.1.30	0	0	0	0	No	0X80	EZBTCPCS	TCPIP	0X0
04/10/09 15:34:24	146.99.99.99	23	TN3270	NMPIPL30	NMPIPL30	193.1.1.30	1	0	0	0	No	0X40	EZBTCPCS	TCPIP	0X0

Enterprise-wide Management

- Allows data forwarding to a master NetView from NetViews outside its sysplex.
- Applications, stack, telnet and systems data
  - Not DVIPA data
- Supports enterprise-wide view of data in NMC and the NetView EMA
- RODM at the master used as enterprise-wide data cache



Major Functional Enhancements

- Expanded IP management
- Broader sysplex and DVIPA management, Enterprise-wide management
- Core functionality

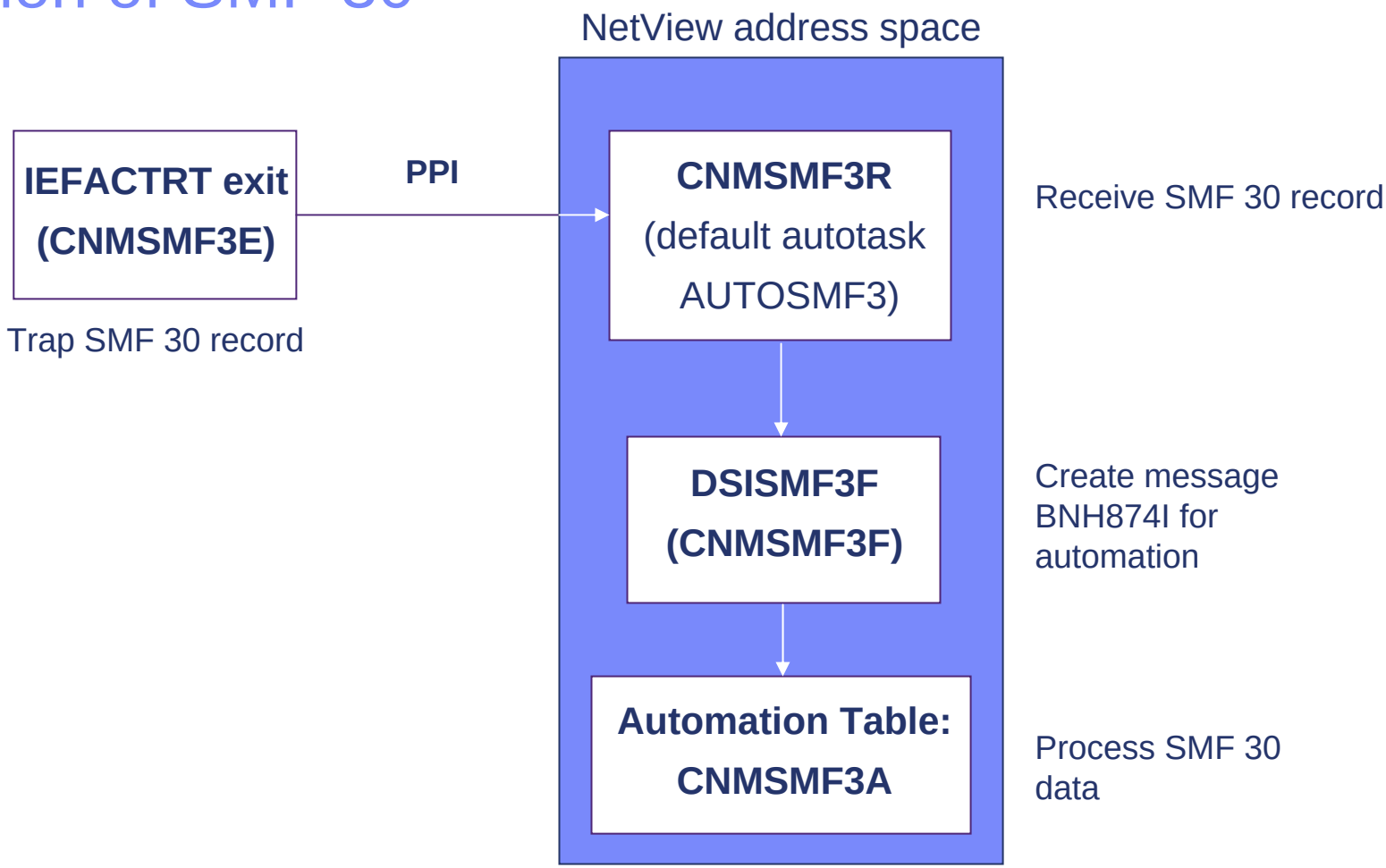
- Core functionality
  - Automation of SMF 30 records
  - Support for long password phrases
  - Command revision
  - NetView Web Services Gateway
  - NLDM PIU trace update

Automation of SMF 30

- Automation enablement for SMF 30 records
- SMF 30 records cut for job & job-step termination (& other reasons)

- Note: Also available in NetView V5.3 via APAR OA25962

Automation of SMF 30



Automation of SMF 30

BNH874I SMF RECORD RECEIVED: sdata

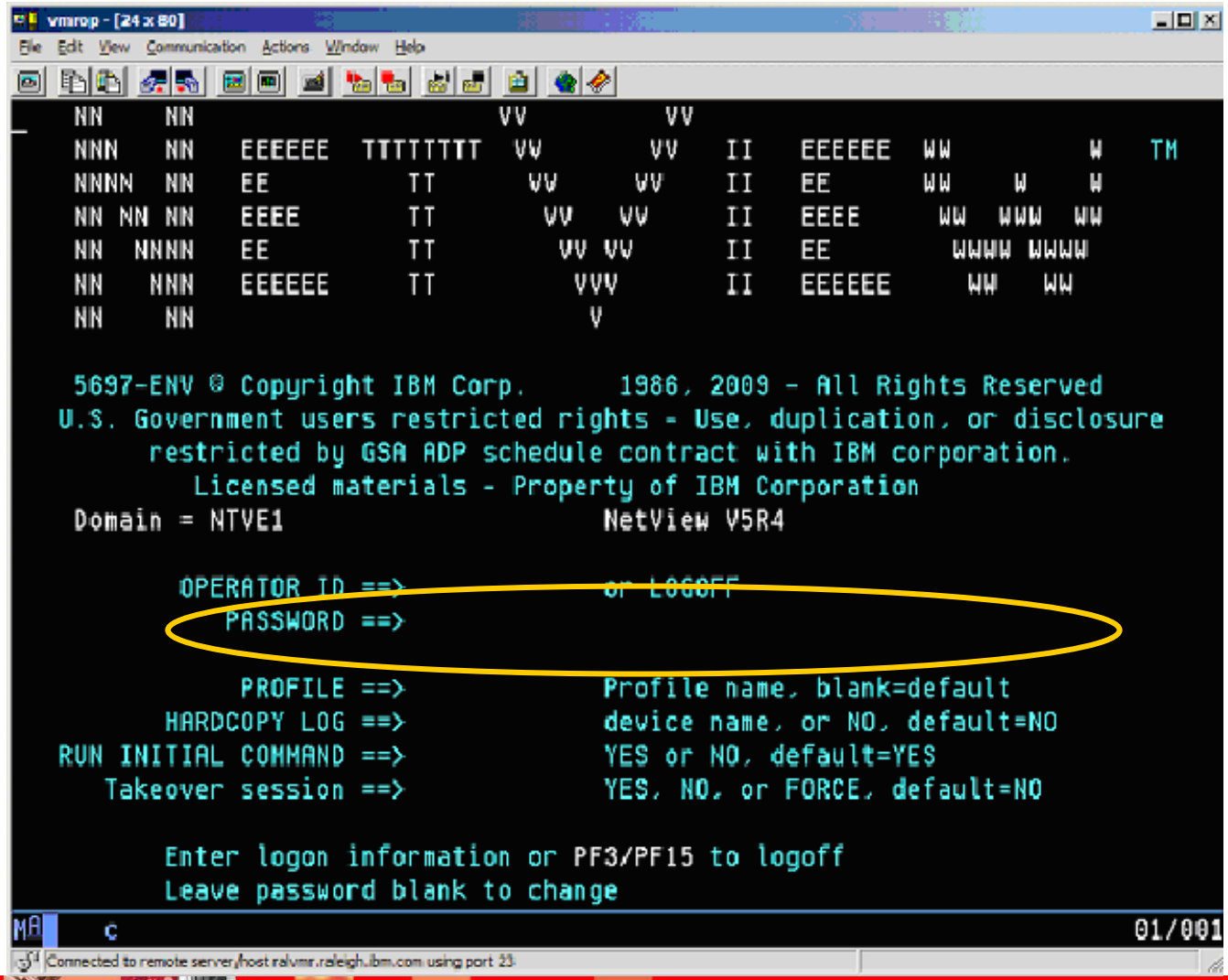
- Two-line message created by CNMSMF3R when an SMF30 record is received.
- Intended for automation
- First line includes
  - Record type
  - Record subtype
  - Work type indicator (e.g., STC, TSO)
  - Date / time when record was moved to SMF buffer
  - Address space ID of source
  - Subtype identification (e.g., step total, job ended)
  - Subsystem or product name
  - System name
  - Program name
  - Step name
  - Step completion code
  - Termination indicator
  - Abend reason code
  - (more)
- Second line
  - SMF 30 record itself
  - Available to automation
  - Not logged or displayed
  - Truncated at 32000 characters

- Core functionality
  - Automation of SMF 30
  - Support for long password phrases
  - Command revision
  - NetView Web Services Gateway
  - NLDM PIU trace update

Long Password Phrases

- Up to 100 characters in password phrases
- In support of RACF changes in z/OS 1.9

Long Password Phrases



- Core functionality
  - Automation of SMF 30
  - Support for long password phrases
  - Command revision
  - NetView Web Services Gateway
  - NLDM PIU trace update

Command Revision

- Identify / shield sensitive or complex commands and/or desired synonyms
- Supersedes existing “MVS Command Management” function
- For all MVS commands: change, reject, or transfer to Net View
- Automatically revise command text in-line before execution
  - Route to NetView’s base address space for further processing,

    - or -
  - Send out on SSI

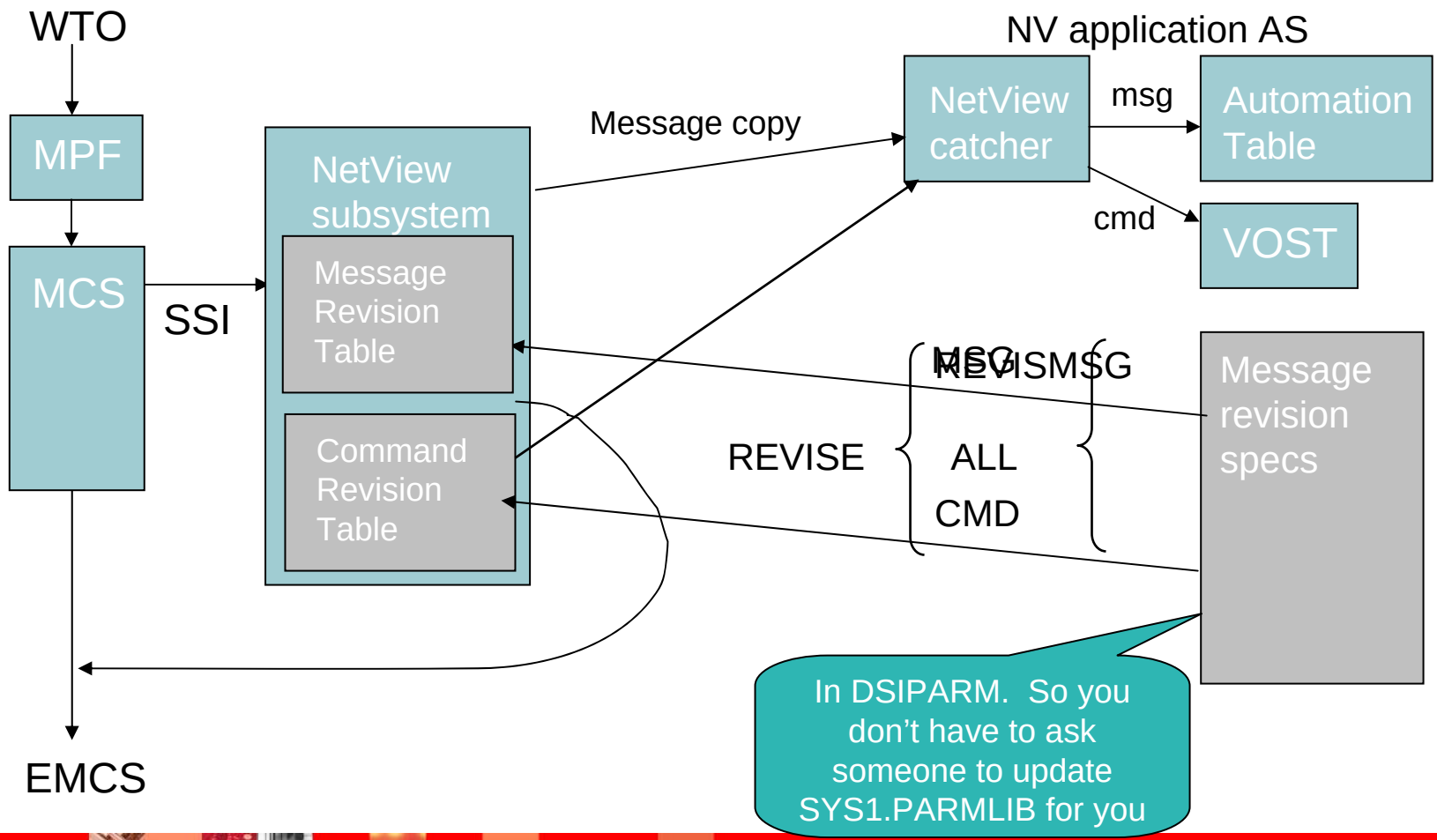
Command Revision

- Example
  - Problem: Operators occasionally shut down a process before it completes creation of a check point.
  - Solution: Use the Command Revision Table to transfer the shutdown command to NetView, where a WTOR is issued to the same console where the command was entered. The operator must verify the check point before the command is allowed to proceed.

Command Revision

- Similar to Message Revision Table
- Runs in NetView SSI
- Issue message when
  - A command is revised, showing original & revised
  - Unauthorized command revision is attempted
- Sample CNMSCRT1

Command Revision



Command Revision

- REVISMSG command is deprecated.
- REVISE will support all the keywords and values of REVISMSG, and their meanings unchanged.
- In addition: REVISE TESTMODE=YES | NO
  - No effect on message revision
  - For Command Revision: issues a message showing changes that would have been made.
- Stylesheet
  - Action of SSI.ReviseTable statement unchanged as long as member referred to is unchanged
  - Can be started automatically through NetView initialization. Commented out by default.
- Special Installation considerations
  - Must establish the provided Revision Command Exit as MPF command user exit
  - Required to allow revision of JES commands before JES SSI sees them
  - Exit remains dormant until CRT is loaded by command from NetView.

Command Revision

- Language similar to Message Revision: UPON, WHEN, OTHERWISE, REVISE
- UPON: Trap a command based on
  - Name of console issuing command
  - Value of first token
  - All other commands
  - All commands
- WHEN: check for
  - ASID
  - JOBNAME
  - Jobtype (how the address space was started)
  - Name of console issuing command
  - Authority of console issuing command
  - Next, left, right, substring, etc.
  - SAF user identity and/or group name
  - More …

Command Revision

- Actions
  - REVISE
    - Similar to MRT REVISE: modify command text (only). Cannot modify other command attributes.
  - WTO
    - Create text for a WTO, which is issued immediately to console that issued command. Cannot set route codes, descriptor codes, or other WTO parms.
  - NETVONLY
    - CRT removes command from MVS command stream
    - Send the command (with any revisions) to NetView for further action (suppress, modify further, reissue)
- Other restrictions
  - Only 1 CRT per LPAR

- Core functionality
  - Automation of SMF 30
  - Support for long password phrases
  - Command revision
  - NetView Web Services Gateway
  - NLDM PIU trace update

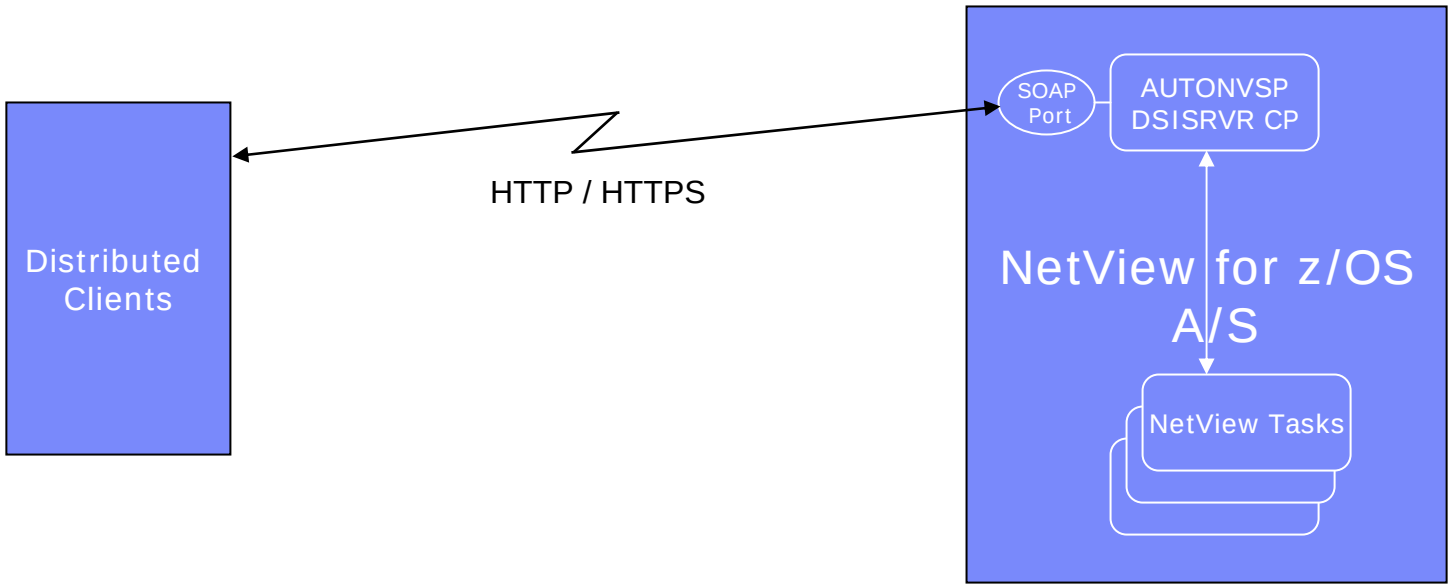
NetView Web Services Gateway

- Provides an industry-standard open interface into the NetView program
- Allows distributed applications (IBM- or customer-written) to interact with NetView.
- Provides services independent of platform, environment, application language, or programming model.
- Implemented as SOAP Server
- Different types of client applications (such as Java, Microsoft .NET, and third-party applications) can submit SOAP requests to NetView to extract data.
- Does not require WebSphere or any other middleware.

What kind of data can be accessed via the Gateway?

- Anything that NetView can access or store, i.e., RODM, TCP/IP, Sysplex, etc.
- All data is text-based

Flows



Security

- **Authentication** - Verify that a user is who he/she claims to be
  - User ID/Password (DSIOPF/SAF/RACF)
  - Certificate Authorization (SSL)
- **Authorization** - Ensure that he/she is permitted access to the requested resource
  - NetView Command Authorization Table, SAF/RACF
- **Transport** - Conduct the entire exchange over a secure network connection
  - SSL

Summary of Server Features

- Can execute all NetView line-mode commands
- Can provide automation for external messages
- Can provide both secure and non-secure communication
- WSDL file provided for generating static or dynamic proxy clients
- Can be customized using CNMSTYLE
- IPv6-enabled
- Debug tools such as Trace, SOAP test client and other help tools are provided
- Multiple instances of server can be started for load balancing, security, or customization
- Can serve as basic HTTP/HTTPS server
- Supports SSL user cache, Cert Auth and different Cipher suites

- Core functionality
  - Automation of SMF 30
  - Support for long password phrases
  - Command revision
  - NetView Web Services Gateway
  - NLDM PIU trace update

NLDM PIU Trace Update

- Customizable format for PIU timestamp display
  - Examples: MM/DD/YYYY, DD/YYYY/HR, HR/MIN/SEC, MIN/SEC/ 1/10 / 1/100, etc.
  - Allows for determining exact timing of trace data being viewed.
- Provides full date of trace entry, along with existing timestamp.
  - Helps when correlating problems (e.g., looking at syslogs, other traces, etc.)

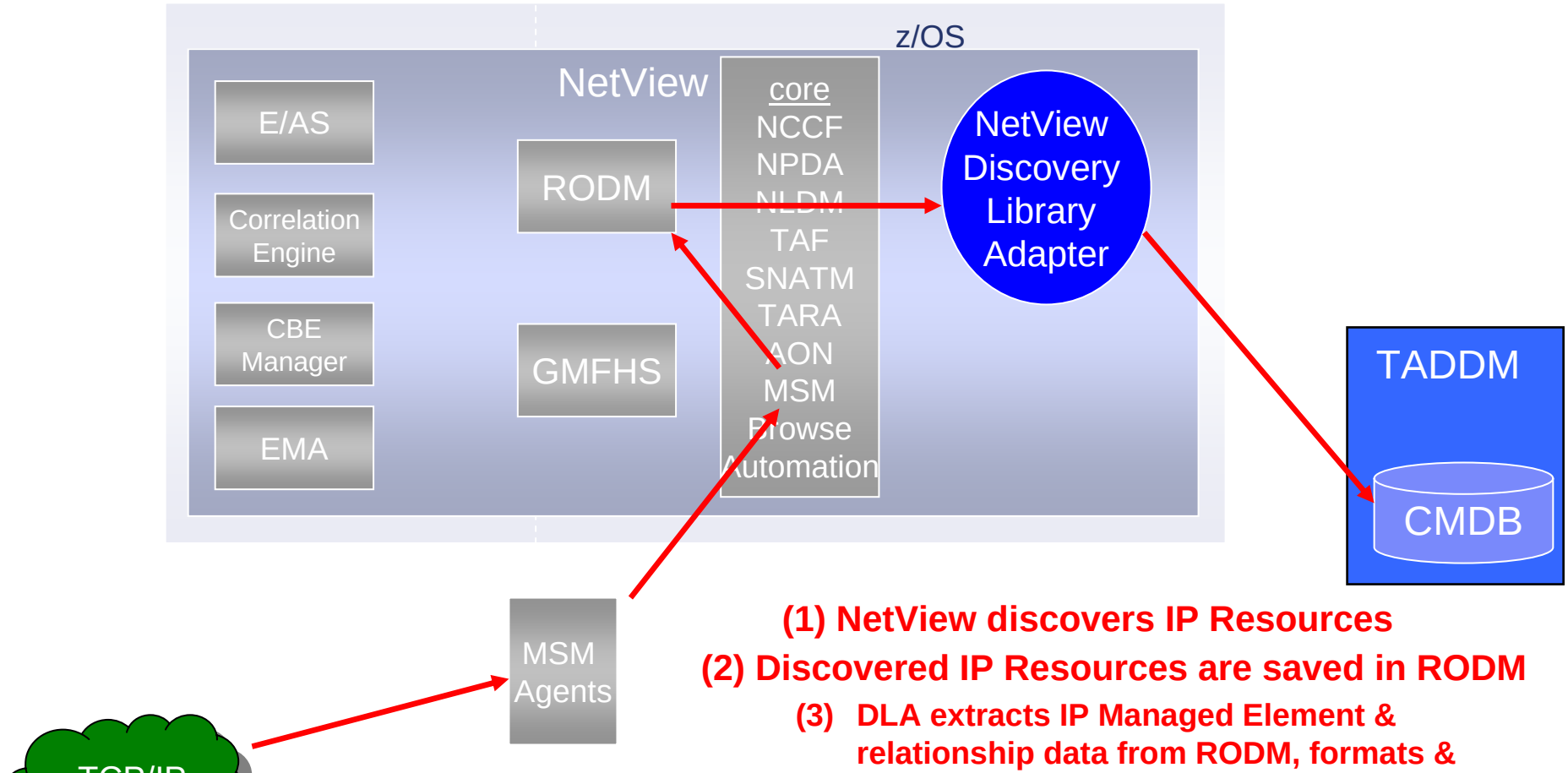
NetView 5.4

- Major Themes
  - Major Functional Enhancements
  - Product Portfolio Integration
  - Enterprise Integration

Product Portfolio Integration

- Expanded Discovery Library Adapter (DLA)

New: Add Sysplex Data



(1) NetView discovers IP Resources

(2) Discovered IP Resources are saved in RODM

(3) DLA extracts IP Managed Element & relationship data from RODM, formats & transports it to CMDB

New: Add Sysplex resources and relationships

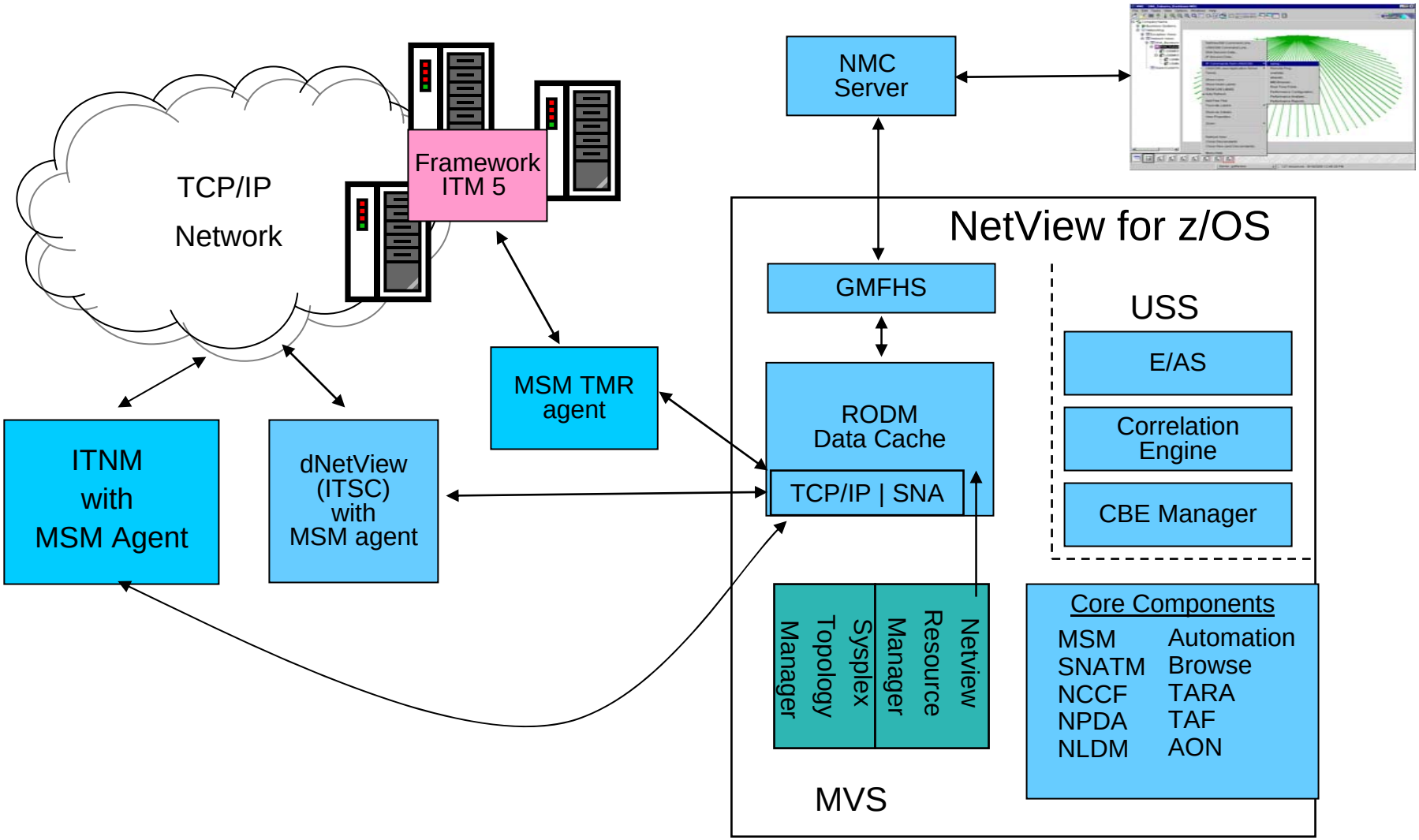
NetView 5.4

- Major Themes
  - Major Functional Enhancements
  - Product Portfolio Integration
  - Enterprise Integration

Enterprise Integration

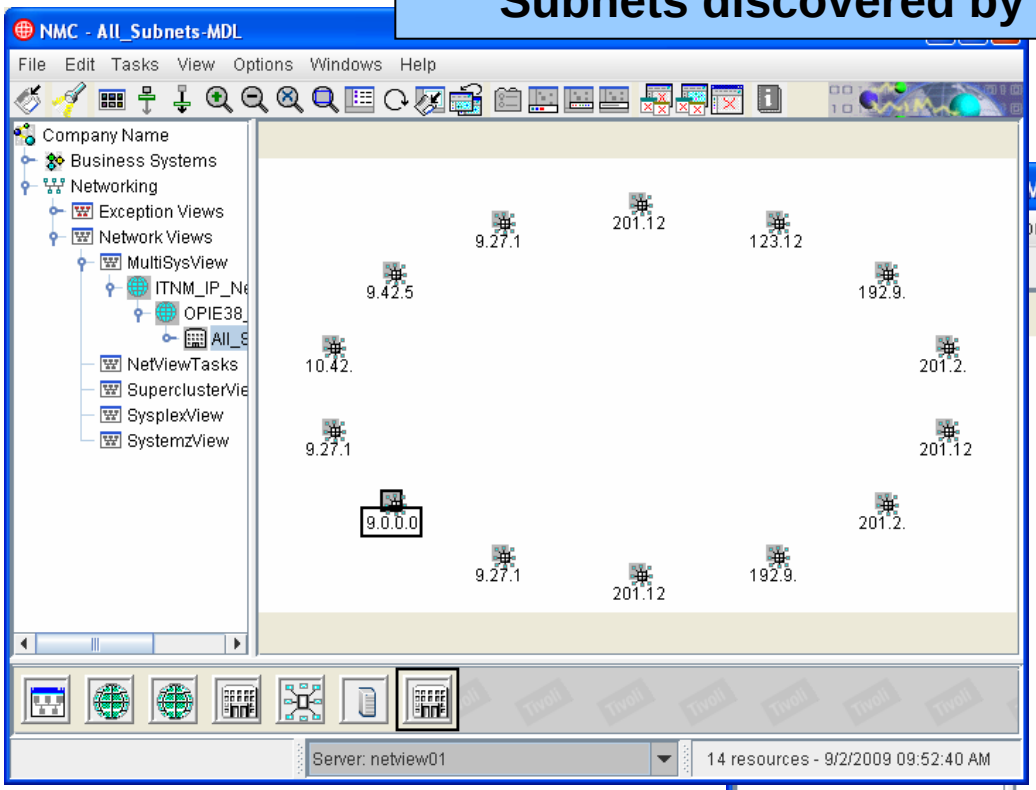
- Integration with Tivoli Network Manager IP Edition (ITNM-IP)
  - Transition from Tivoli NetView (Distributed NetView)
  - All customers of NetView for z/OS V5R4 are entitled to free download of limited-license version of IBM Tivoli Network Manager
  - Provides discovery of
    - Layer 3 IP resources
    - Resources that are “1 hop” away from z/OS
    - Together, provide enterprise-wide IP availability management
  - Data on distributed resources is stored in RODM
    - Maintain updated resource status
    - Topology views in NMC
  - Provides ability to manage the distributed IP network from a central z/OS point
  - Allows customers who have separate mainframe and distributed shops to see beyond the z/OS network.

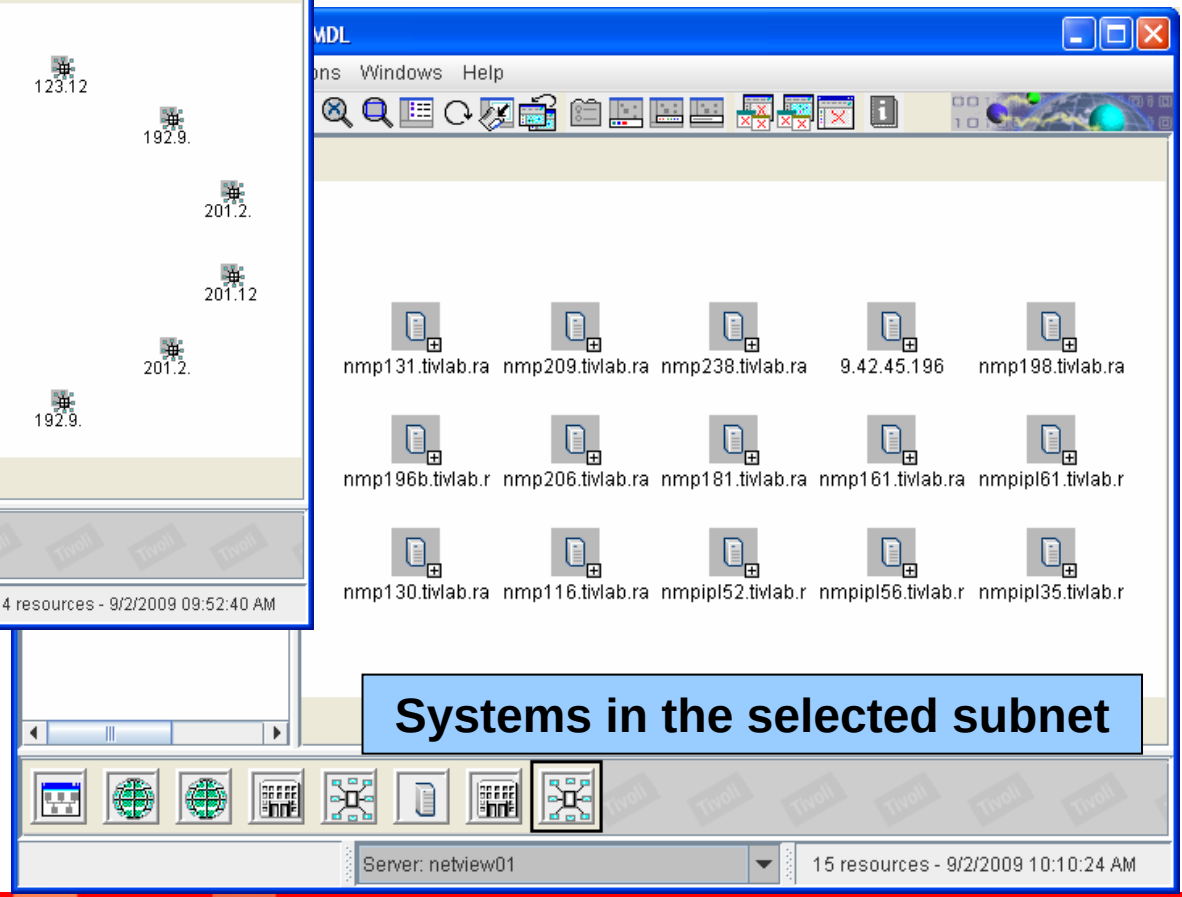
NetView for z/OS environment



Views in NMC

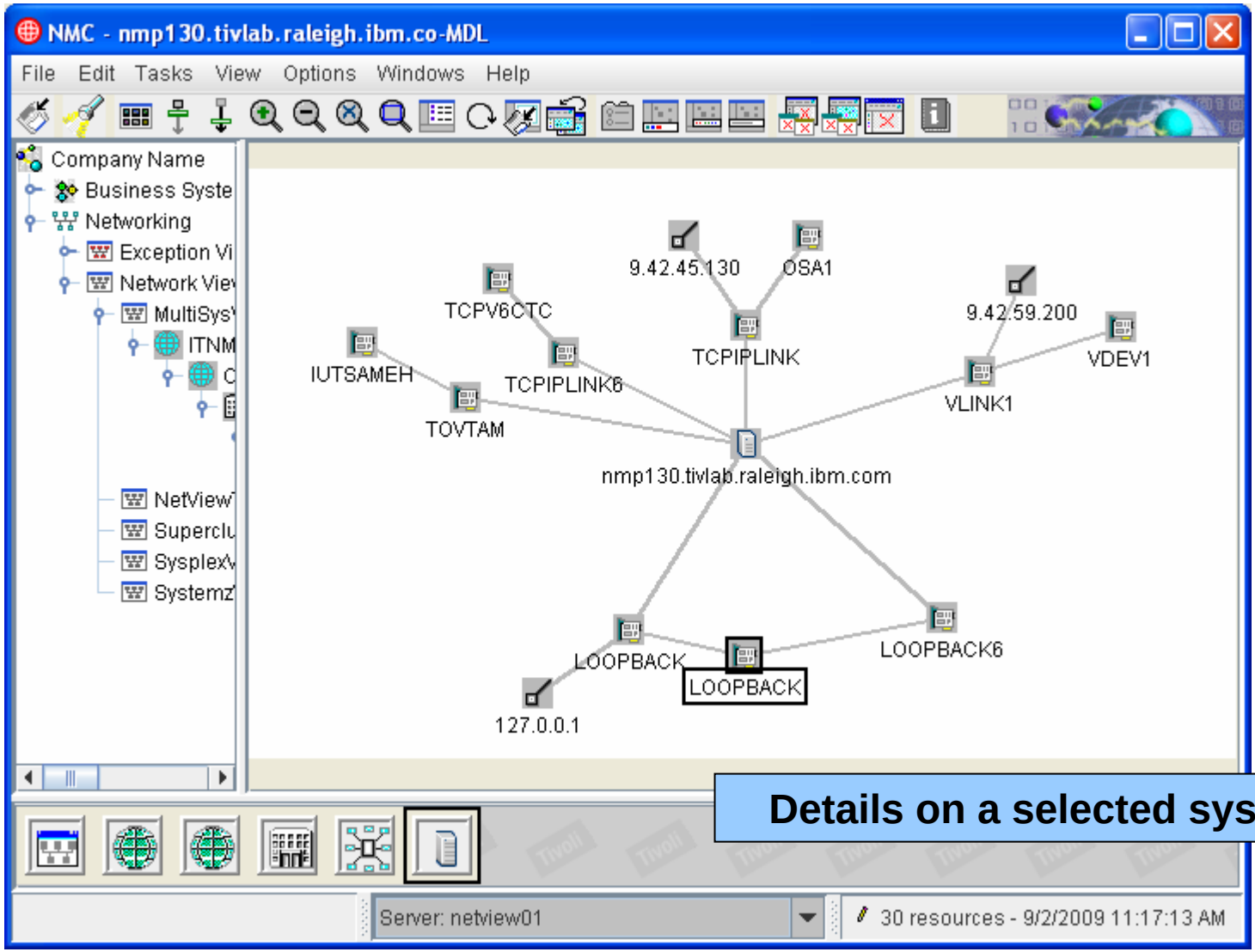
Subnets discovered by ITNM





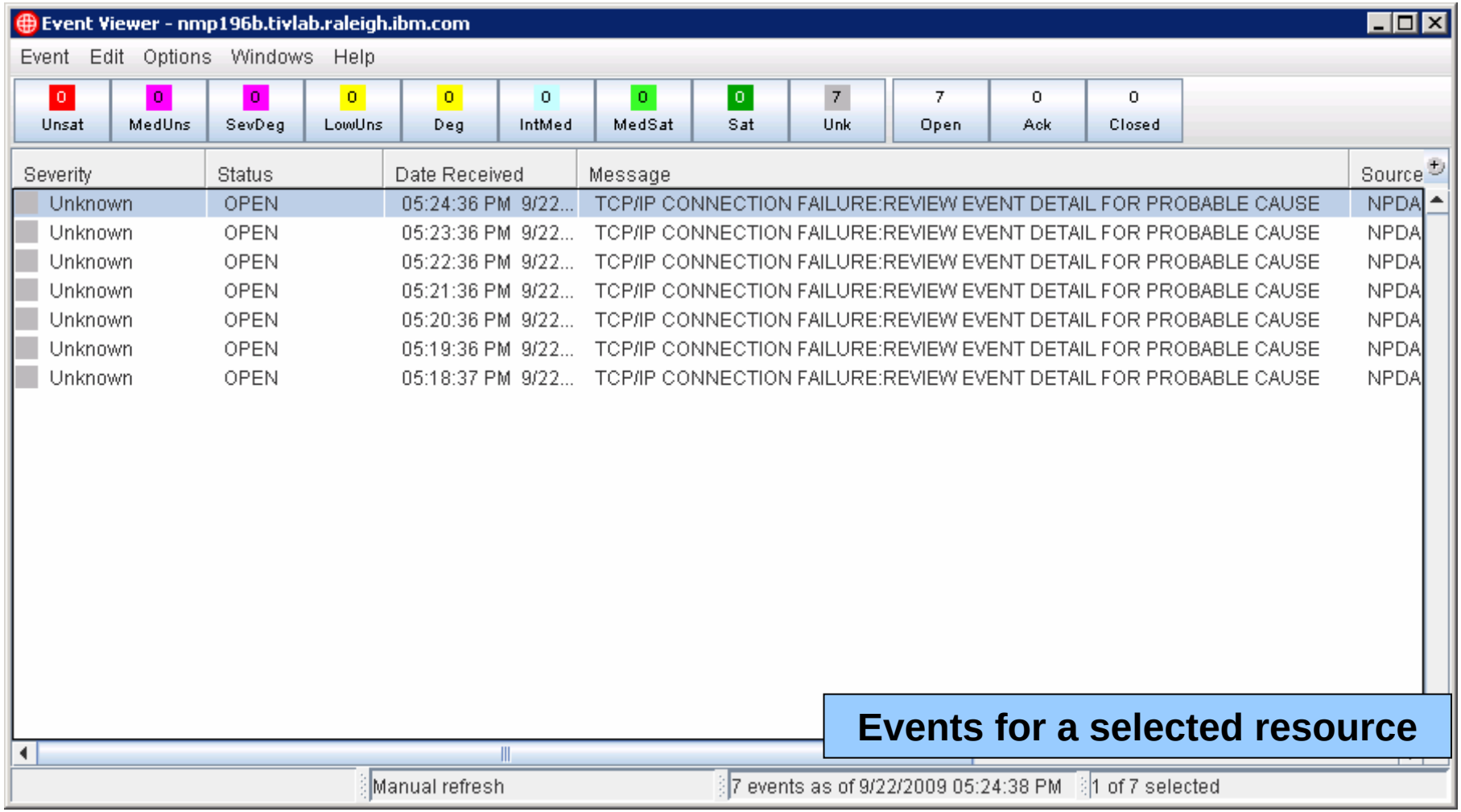
Systems in the selected subnet

Views in NMC

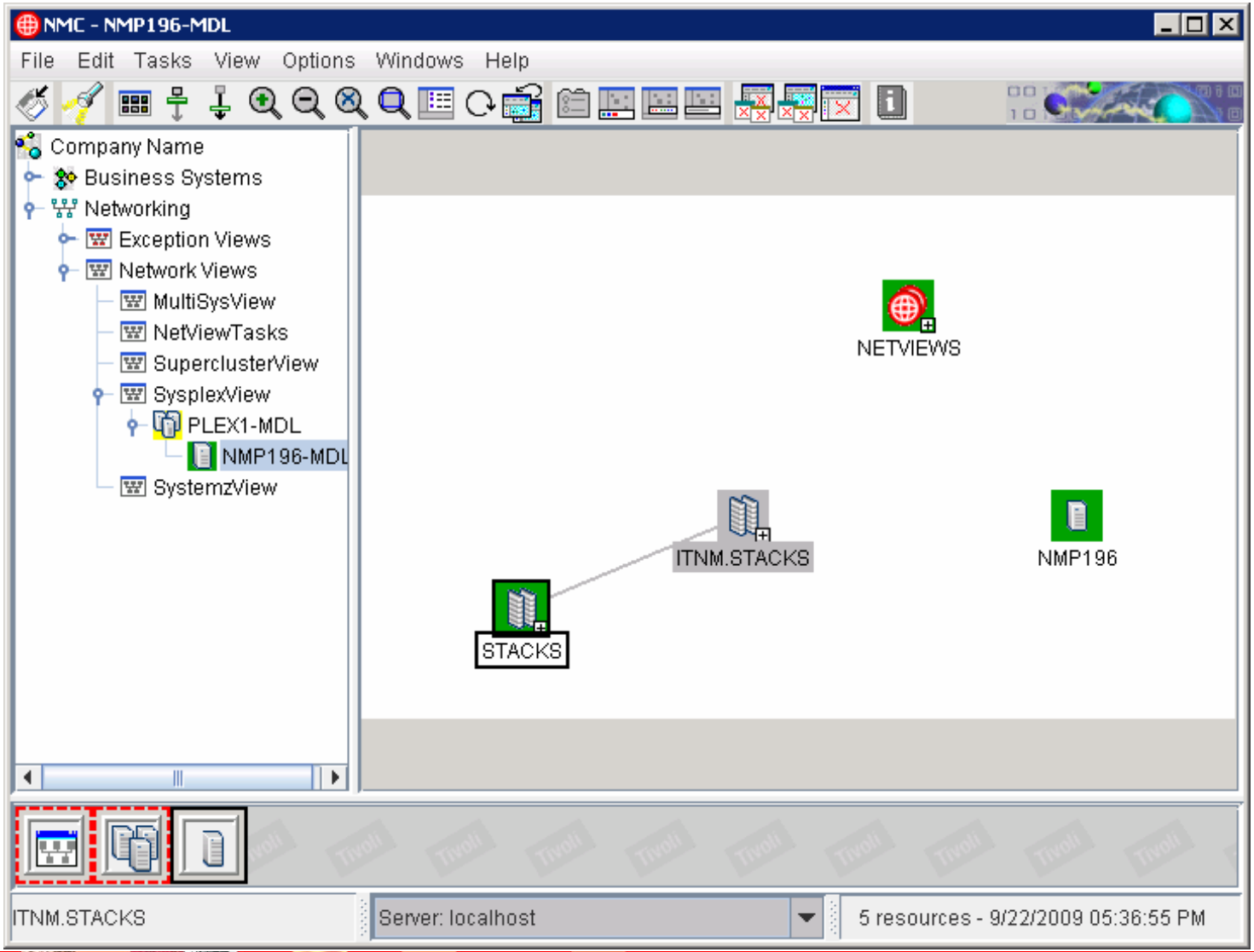


Details on a selected system

Event Viewer



Integration with Sysplex



Questions?

For More Information

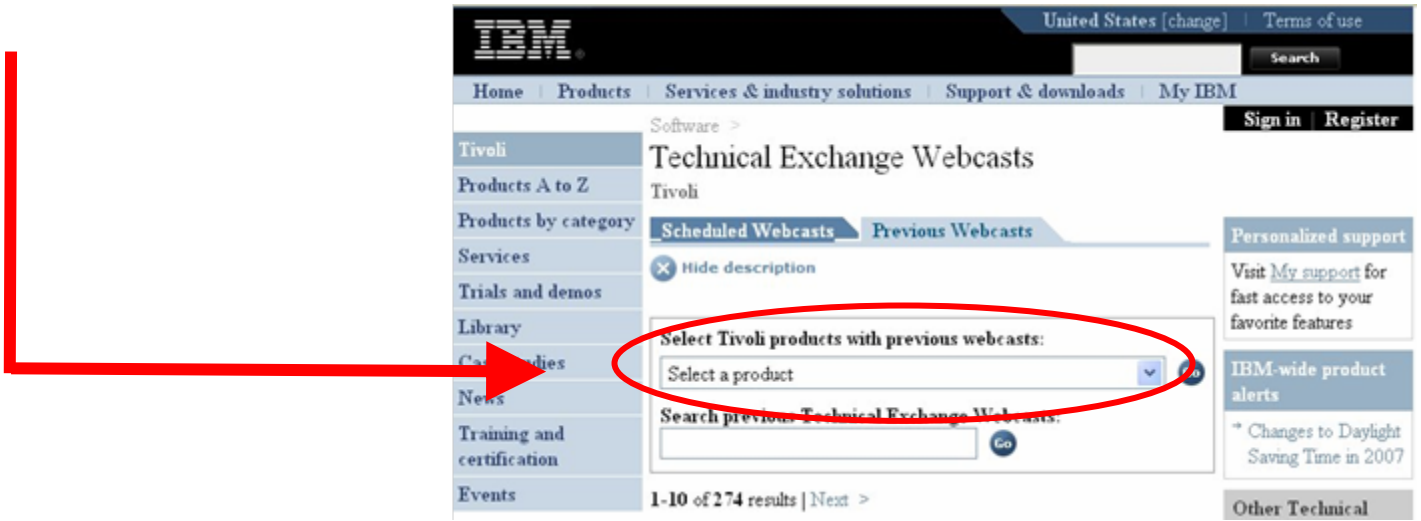
- NetView Home Page http://www.ibm.com/software/tivoli/products/netview-zos/
  - Downloads (NMC, MSM agents, tools)
  - Release comparison
  - Link to Announcement letter
  - Links to other online information sources
  - More
- NetView Documentation
  http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp?toc=/com.ibm.itnetviewforzos.doc/toc.xml
- NetView Customer Forum
  http://groups.yahoo.com/group/NetView/

Classes

- New / updated classes
  - NetView for z/OS 5.3 Technical Update
    - October 27-28, Zurich, Switzerland
    - http://www.ibm.com/services/learning/de/ta-iris.nsf/(ExtCourseNr)/TM78D0DE
  - NetView for z/OS 5.3 Workshop: Fundamentals, Automation, REXX and PIPEs
    - October 13-17, Pittsburgh
    - November 3-7, Dallas
    - November 10-14, Stuttgart, Germany
    - December 1-5, Raleigh
    - http://www.ibm.com/software/tivoli/education/U188790N96197Y71.html
  - NetView for z/OS 5.3 Workshop: Fundamentals
  - NetView for z/OS 5.3 Workshop: Automation Techniques
  - NetView for z/OS 5.3 Workshop: REXX Programming
  - NetView for z/OS 5.3 Workshop: NetView PIPEs

Where to Find Web Seminars

- Recordings of all Web Seminars are available at the STE Web page:
  - http://www.ibm.com/software/sysmgmt/products/support/supp_tech_exch.html
- Search *Previous Webcasts*
  - NetView for z/OS



Webinars

- Descriptions and Recordings
  - http://www.ibm.com/software/tivoli/education/edu_prd.html#N
- Examples
  - NetView for z/OS 5.3 Enterprise Management Agent (EMA)
  - TCP/IP Management – Part 1
  - TCP/IP Management – Part 2
  - Automation
  - Time to Value, Ease of Use, and Migration Considerations

IBM System z Advisor

- A monthly e-newsletter for System z and zSeries IT Service Management, Information on Demand, and Service Oriented Architecture/Enterprise Transformation
- http://www-01.ibm.com/software/tivoli/systemz-advisor/?&ca=spotlights&me=W&met=inli&re=lmiitsm

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