Tivoli® IBM Tivoli NetView for z/OS

IBM

Version 5 Release 3

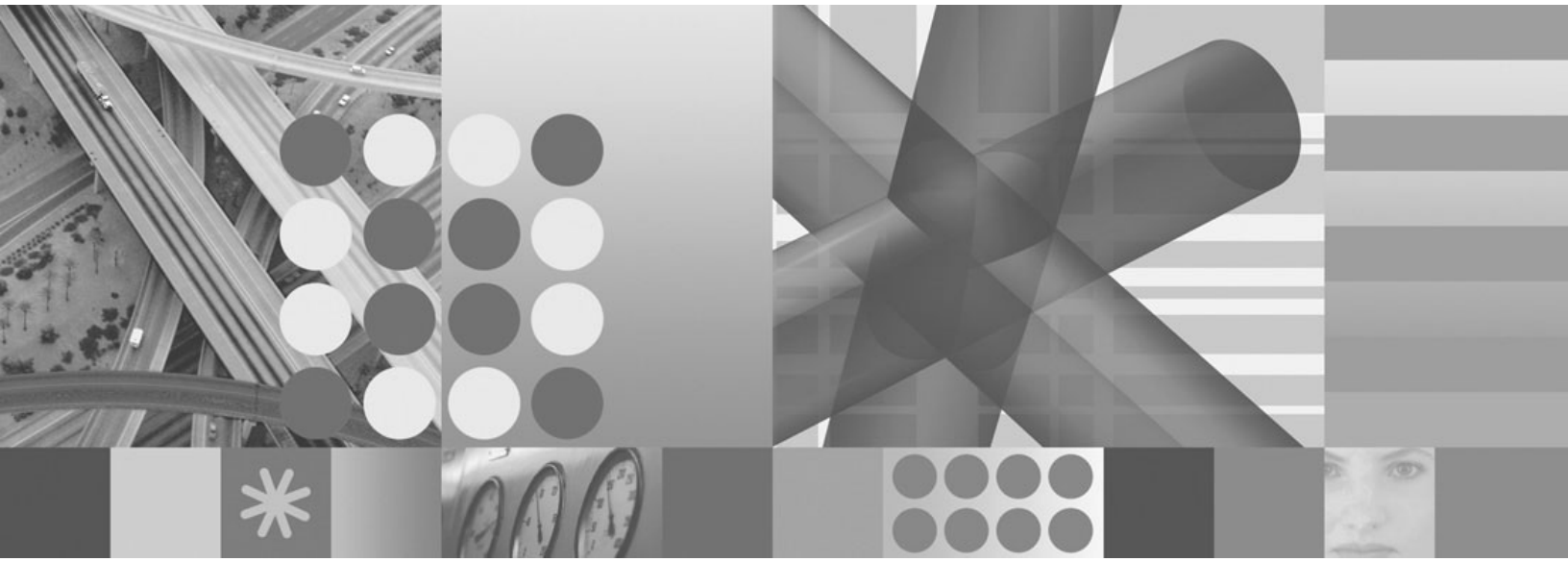
Automated Operations Network User's Guide

GC31-8851-04

Tivoli® IBM Tivoli NetView for z/OS

IBM

Version 5 Release 3



Automated Operations Network User's Guide

GC31-8851-04

Note
Before using this information and the product it supports, read the information in "Notices" on page 209.

This edition applies to version 5, release 3 of IBM Tivoli NetView for z/OS (product number 5697-ENV) and to all subsequent versions, releases, and modifications until otherwise indicated in new editions.

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About this publication

The IBM® Tivoli® NetView® for z/OS® product provides advanced capabilities that you can use to maintain the highest degree of availability of your complex, multi-platform, multi-vendor networks and systems from a single point of control. This publication, the *IBM Tivoli NetView for z/OS Automated Operations Network User's Guide*, describes how to use the NetView automation functions to improve system and network efficiency. NetView automation also eliminates or simplifies much of the routine work that operators perform.

Intended audience

This publication is for those who use Automated Operations Network (AON) to perform network automation. The publication is intended for those who are new to automation and for network operators who need to control and to manage the NetView network automation policy and functions.

Publications

This section lists publications in the IBM Tivoli NetView for z/OS library and related documents. It also describes how to access Tivoli publications online and how to order Tivoli publications.

IBM Tivoli NetView for z/OS library

The following documents are available in the Tivoli NetView for z/OS library:

- *Administration Reference*, SC31-8854, describes the NetView program definition statements required for system administration.
- *Application Programmer's Guide*, SC31-8855, describes the NetView program-to-program interface (PPI) and how to use the NetView application programming interfaces (APIs).
- *Automated Operations Network Customization Guide*, SC31-8871, describes how to tailor and extend the automated operations capabilities of the NetView Automated Operations Network (AON) component, which provides event-driven network automation.
- *Automated Operations Network User's Guide*, GC31-8851, describes how to use the Automated Operations Network component to improve system and network efficiency.
- *Automation Guide*, SC31-8853, describes how to use automated operations to improve system and network efficiency and operator productivity.
- *Command Reference Volume 1*, SC31-8857, and *Command Reference Volume 2*, SC31-8858, describe the NetView commands, which can be used for network and system operation and in command lists and command procedures.
- *Customization Guide*, SC31-8859, describes how to customize the NetView product and points to sources of related information.
- *Data Model Reference*, SC31-8864, provides information about the Graphic Monitor Facility host subsystem (GMFHS), SNA topology manager, and MultiSystem Manager data models.
- *Installation: Configuring Additional Components*, SC31-8874, describes how to configure NetView functions beyond the base functions.

- *Installation: Configuring Graphical Components*, SC31-8875, describes how to install and configure the NetView graphics components.
- *Installation: Getting Started*, SC31-8872, describes how to install and configure the NetView base functions.
- *Installation: Migration Guide*, SC31-8873, describes the new functions provided by the current release of the NetView product and the migration of the base functions from a previous release.
- *Installation: Configuring the Tivoli NetView for z/OS Enterprise Agents*, SC31-6969, describes how to install and configure the Tivoli NetView for z/OS enterprise agents.
- *Messages and Codes Volume 1 (AAU-DSI)*, SC31-6965, and *Messages and Codes Volume 2 (DUI-IHS)*, SC31-6966, describe the messages for the NetView product, the NetView abend codes, the sense codes that are shown in NetView messages, and generic alert code points.
- *MultiSystem Manager User's Guide*, GC31-8850, describes how the NetView MultiSystem Manager component can be used in managing networks.
- *NetView Management Console User's Guide*, GC31-8852, provides information about the NetView management console interface of the NetView product.
- *Programming: Assembler*, SC31-8860, describes how to write exit routines, command processors, and subtasks for the NetView product using assembler language.
- *Programming: Pipes*, SC31-8863, describes how to use the NetView pipelines to customize a NetView installation.
- *Programming: PL/I and C*, SC31-8861, describes how to write command processors and installation exit routines for the NetView product using PL/I or C.
- *Programming: REXX and the NetView Command List Language*, SC31-8862, describes how to write command lists for the NetView product using the Restructured Extended Executor language (REXX™) or the NetView command list language.
- *Resource Object Data Manager and GMFHS Programmer's Guide*, SC31-8865, describes the NetView Resource Object Data Manager (RODM), including how to define your non-SNA network to RODM and use RODM for network automation and for application programming.
- *Security Reference*, SC31-8870, describes how to implement authorization checking for the NetView environment.
- *SNA Topology Manager Implementation Guide*, SC31-8868, describes planning for and implementing the NetView SNA topology manager, which can be used to manage subarea, Advanced Peer-to-Peer Networking®, and TN3270 resources.
- *Troubleshooting Guide*, LY43-0093, provides information about documenting, diagnosing, and solving problems that might occur in using the NetView product.
- *Tuning Guide*, SC31-8869, provides tuning information to help achieve certain performance goals for the NetView product and the network environment.
- *User's Guide*, GC31-8849, describes how to use the NetView product to manage complex, multivendor networks and systems from a single point.
- *Web Application User's Guide*, SC32-9381, describes how to use the NetView Web application to manage complex, multivendor networks and systems from a single point.
- *Licensed Program Specifications*, GC31-8848, provides the license information for the NetView product.

Prerequisite publications

To read about the new functions offered in this release, see the *IBM Tivoli NetView for z/OS Installation: Migration Guide*.

For information about how the NetView for z/OS product interacts with the IBM Tivoli Monitoring product, see the following IBM Tivoli Monitoring publications:

- *Introducing IBM Tivoli Monitoring*, GI11-4071, introduces the components, concepts, and function of IBM Tivoli Monitoring.
- *IBM Tivoli Monitoring: Upgrading from Tivoli Distributed Monitoring*, GC32-9462, provides information on how to upgrade from IBM Tivoli Distributed Monitoring.
- *IBM Tivoli Monitoring: Installation and Setup Guide*, GC32-9407, provides information about installing and setting up IBM Tivoli Monitoring.
- *IBM Tivoli Monitoring User's Guide*, SC32-9409, which complements the IBM Tivoli Enterprise Portal online help, provides hands-on lessons and detailed instructions for all Tivoli Enterprise Portal functions.
- *IBM Tivoli Monitoring Administrator's Guide*, SC32-9408, describes the support tasks and functions required for the IBM Tivoli Enterprise Portal Server and clients.
- *Configuring IBM Tivoli Enterprise Monitoring Server on z/OS*, SC32-9463, describes how to configure and customize the IBM Tivoli Enterprise Monitoring Server running on a z/OS system.
- *IBM Tivoli Monitoring Problem Determination Guide*, GC32-9458, provides information and messages to use in troubleshooting problems with the software.
- *Exploring IBM Tivoli Monitoring*, SC32-1803, provides a series of exercises for exploring IBM Tivoli Monitoring.
- *IBM Tivoli Universal Agent User's Guide*, SC32-9459, introduces the IBM Tivoli Universal Agent.
- *IBM Tivoli Universal Agent API and Command Programming Reference Guide*, SC32-9461, explains how to implement the IBM Tivoli Universal Agent APIs and describes the API calls and command-line interface commands.

Related publications

For information about the NetView Bridge function, see *Tivoli NetView for OS/390 Bridge Implementation*, SC31-8238-03 (available only in the V1R4 library).

You can find additional product information on the NetView for z/OS Web site:

http://www.ibm.com/software/tivoli/products/netview-zos/

Accessing terminology online

The *Tivoli Software Glossary* includes definitions for many of the technical terms related to Tivoli software. The *Tivoli Software Glossary* is available at the following Tivoli software library Web site:

http://publib.boulder.ibm.com/tividd/glossary/tivoliglossarymst.htm

The IBM Terminology Web site consolidates the terminology from IBM product libraries in one convenient location. You can access the Terminology Web site at the following Web address:

http://www.ibm.com/software/globalization/terminology/

For a list of NetView for z/OS terms and definitions, refer to the IBM Terminology Web site. The following terms are used in this library:

NetView
For the following products:
- Tivoli NetView for z/OS version 5 release 3
- Tivoli NetView for z/OS version 5 release 2
- Tivoli NetView for z/OS version 5 release 1
- Tivoli NetView for OS/390® version 1 release 4

MVS™ For z/OS operating systems

MVS element
For the BCP element of the z/OS operating system

CNMCMD
For CNMCMD and its included members

CNMSTYLE
For CNMSTYLE and its included members

PARMLIB
For SYS1.PARMLIB and other data sets in the concatenation sequence

The following IBM names replace the specified Candle® names:

IBM Tivoli Monitoring Services
For OMEGAMON® platform

IBM Tivoli Enterprise Monitoring Agent
For Intelligent Remote Agent

IBM Tivoli Enterprise Monitoring Server
For Candle Management Server

IBM Tivoli Enterprise Portal
For CandleNet Portal

IBM Tivoli Enterprise Portal Server
For CandleNet Portal Server

Unless otherwise indicated, references to programs indicate the latest version and release of the programs. If only a version is indicated, the reference is to all releases within that version.

When a reference is made about using a personal computer or workstation, any programmable workstation can be used.

Using NetView for z/OS online help

NetView for z/OS mainframe online help is available for the following areas, depending on your installation and configuration:
- General help and component information
- Command help
- Message help
- Sense code information
- Recommended actions

Using LookAt to look up message explanations

LookAt is an online facility that you can use to look up explanations for most of the IBM messages you encounter, as well as for some system abends (an abnormal

end of a task) and codes. Using LookAt to find information is faster than a conventional search because in most cases LookAt goes directly to the message explanation.

You can use LookAt from the following locations to find IBM message explanations for z/OS elements and features, z/VM®, VSE/ESA™, and Clusters for AIX® and Linux®:

- The Internet. You can access IBM message explanations directly from the LookAt Web site at http://www.ibm.com/eserver/zseries/zos/bkserv/lookat/.
- Your z/OS TSO/E host system. You can install code on your z/OS or z/OS.e systems to access IBM message explanations, using LookAt from a TSO/E command line (for example, TSO/E prompt, ISPF, or z/OS UNIX® System Services running OMVS).
- Your Microsoft® Windows® workstation. You can install code to access IBM message explanations on the *z/OS Collection* (SK3T-4269), using LookAt from a Microsoft Windows DOS command line.
- Your wireless handheld device. You can use the LookAt Mobile Edition with a handheld device that has wireless access and an Internet browser (for example, Internet Explorer for Pocket PCs, Blazer, or Eudora for Palm OS, or Opera for Linux handheld devices). Link to the LookAt Mobile Edition from the LookAt Web site.

You can obtain code to install LookAt on your host system or Microsoft Windows workstation from a disk on your *z/OS Collection* (SK3T-4269), or from the LookAt Web site (click **Download**, and select the platform, release, collection, and location that suit your needs). More information is available in the LOOKAT.ME files available during the download process.

Accessing publications online

The documentation CD contains the publications that are in the product library. The publications are available in Portable Document Format (PDF), HTML, and BookManager® formats. Refer to the readme file on the CD for instructions on how to access the documentation.

An index is provided on the documentation CD for searching the Tivoli NetView for z/OS library. If you have Adobe Acrobat on your system, you can use the Search command to locate specific text in the library. For more information about using the index to search the library, see the online help for Acrobat.

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli Information Center Web site at http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp.

In the Tivoli Information Center window, click **Tivoli product manuals**. Click the letter that matches the first letter of your product name to access your product library. For example, click **N** to access the Tivoli NetView for z/OS library.

Note: If you print PDF documents on other than letter-sized paper, set the option in the **File → Print** window that enables Adobe Reader to print letter-sized pages on your local paper.

Ordering publications

You can order many Tivoli publications online at the following Web address:

http://www.elink.ibmlink.ibm.com/publications/servlet/pbi.wss

You can also order by telephone by calling one of these numbers:
- In the United States: 800-879-2755
- In Canada: 800-426-4968

In other countries, contact your software account representative to order Tivoli publications. To locate the telephone number of your local representative, perform the following steps:

1. Go to the following Web address:

   http://www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi
2. Select your country from the list and click **Go**. The Welcome to the IBM Publications Center window is displayed.
3. On the left side of the window, click **About this site** to see an information page that includes the telephone number of your local representative.

Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. Standard shortcut and accelerator keys are used by the product and are documented by the operating system. Refer to the documentation provided by your operating system for more information.

For additional information, see the Accessibility appendix in the *User's Guide*.

Tivoli technical training

For Tivoli technical training information, refer to the following IBM Tivoli Education Web site at http://www.ibm.com/software/tivoli/education.

Support information

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides the following ways for you to obtain the support you need:

Online
Go to the IBM Software Support site at http://www.ibm.com/software/support/probsub.html and follow the instructions.

IBM Support Assistant
The IBM Support Assistant (ISA) is a free local software serviceability workbench that helps resolve questions and problems with IBM software products. The ISA provides quick access to support-related information and serviceability tools for problem determination. To install the ISA software, go to http://www.ibm.com/software/support/isa.

Problem determination guide
For more information about resolving problems, see the *IBM Tivoli NetView for z/OS Troubleshooting Guide*.

Downloads

Clients and agents, demonstrations of the NetView product, and several free NetView applications that you can download are available at the NetView for z/OS Web site:

http://www.ibm.com/software/tivoli/products/netview-zos/

These applications can help with the following tasks:

- Migrating customization parameters from earlier releases to the current style sheet
- Getting statistics for your automation table and merging the statistics with a listing of the automation table
- Displaying the status of a job entry subsystem (JES) job or canceling a specified JES job
- Sending alerts to the NetView program using the program-to-program interface (PPI)
- Sending and receiving MVS commands using the PPI
- Sending Time Sharing Option (TSO) commands and receiving responses

Conventions used in this publication

This publication uses several conventions for special terms and actions, operating system-dependent commands and paths, and command syntax.

Typeface conventions

This publication uses the following typeface conventions:

Bold

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:**, and **Operating system considerations**:)
- Keywords and parameters in text

Italic

- Citations (examples: titles of publications, diskettes, and CDs
- Words defined in text (example: a nonswitched line is called a *point-to-point line*)
- Emphasis of words and letters (words as words example: "Use the word *that* to introduce a restrictive clause."; letters as letters example: "The LUN address must start with the letter *L*.")
- New terms in text (except in a definition list): a *view* is a frame in a workspace that contains data.
- Variables and values you must provide: ... where *myname* represents...

`Monospace`

- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user

- Text that the user must type
- Values for arguments or command options

Operating system-dependent variables and paths

For workstation components, this publication uses the UNIX convention for specifying environment variables and for directory notation.

When using the Windows command line, replace **$***variable* with **%***variable***%** for environment variables and replace each forward slash (/) with a backslash (\) in directory paths. The names of environment variables are not always the same in the Windows and UNIX environments. For example, %TEMP% in Windows environments is equivalent to $TMPDIR in UNIX environments.

Note: If you are using the bash shell on a Windows system, you can use the UNIX conventions.

Syntax Diagrams

Syntax diagrams start with double arrowheads on the left (►►) and continue along the main syntax line until they end with two arrowheads facing each other (►◄). When more than one line is needed for a syntax diagram, the continued lines end with a single arrowhead (►).

Position and Appearance of Syntax Elements

Syntax diagrams do not rely on highlighting, brackets, or braces. In syntax diagrams, the position of the elements relative to the main syntax line indicates the required, optional, and default values for keywords, variables, and operands as shown in the following table.

Table 1. Position of Syntax Elements

Element Position	Meaning
On the main syntax line	Required
Above the main syntax line	Default
Below the main syntax line	Optional

Keywords and operands are shown in uppercase letters. Variables are shown in lowercase letters and are either italicized or, for NetView help and BookManager online publications, shown in a differentiating color. The appearance of syntax elements indicates the type of element as shown in the following table.

Table 2. Appearance of Syntax Elements

Element	Appearance
Keyword	CCPLOADF
Variable	*resname*
Operand	MEMBER=*membername*
Default	*today* or INCL

Required Syntax Elements

The command name and the required keywords, variables, and operands are shown on the main syntax line. Figure 1 on page xix shows that the *resname* variable must be used for the CCPLOADF command.

CCPLOADF

Figure 1. Required Syntax Elements

Optional Syntax Elements

Optional keywords, variables, and operands are shown below the main syntax line. Figure 2 shows that the ID operand can be used for the DISPREG command but is not required.

DISPREG

Figure 2. Optional Syntax Elements

Default Keywords and Values

Default keywords and values are shown above the main syntax line.

If the default is a keyword, it is shown only above the main line. You can specify this keyword or allow it to default. Figure 3 shows the default keyword STEP above the main line and the rest of the optional keywords below the main line.

If an operand has a default value, the operand is shown both above and below the main line. A value below the main line indicates that if you specify the operand, you must also specify either the default value or another value shown. If you do not specify the operand, the default value above the main line is used. Figure 3 shows the default values for operands `MODNAME=*` and `OPTION=*` above and below the main line.

RID

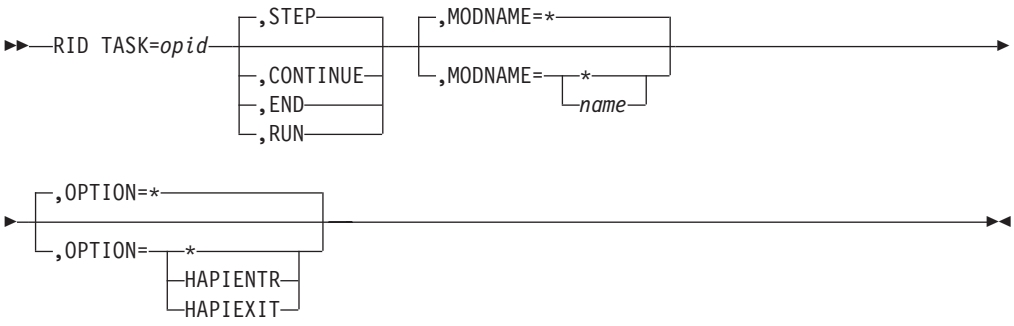


Figure 3. Default Keywords and Values

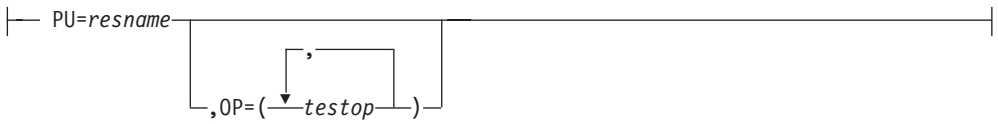
Syntax Fragments

Commands that contain lengthy sections of syntax or a section that is used more than once in a command are shown as separate fragments following the main diagram. The fragment name is shown in mixed case. Figure 4 on page xx shows a

syntax diagram with the fragments `Pu`, `PurgeAll`, and `PurgeBefore`.

CSCF

Pu



PurgeAll

PurgeBefore

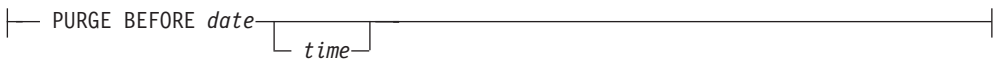


Figure 4. Syntax Fragments

Commas and Parentheses

Required commas and parentheses are shown in the syntax diagram.

When an operand can have more than one value, the values are typically enclosed in parentheses and separated by commas. For example, in Figure 4, the OP operand contains commas to indicate that you can specify multiple values for the *testop* variable.

If a command requires positional commas to separate keywords and variables, the commas are shown before the keyword or variable, as in Figure 3 on page xix.

Commas are also used to indicate the absence of a positional operand. In the following example of the BOSESS command, the second comma indicates that an optional operand is not being used:

```
NCCF BOSESS applid,,sessid
```

You do not need to specify the trailing positional commas. Trailing positional and non-positional commas either are ignored or cause a command to be rejected. Restrictions for each command state whether trailing commas cause the command to be rejected.

Abbreviations

Command and keyword abbreviations are listed in synonym tables after each command description.

Part 1. Introducing Automated Operations Network

Chapter 1. Introducing Automated Operation Network (AON)

This chapter describes how to use the Automated Operations Network (AON) component of NetView by showing you how to display and use its panels. Many of the AON functions can be accessed without displaying a panel if you provide all the parameters with the command and function. For a list of these commands, refer to the *IBM Tivoli NetView for z/OS Command Reference Volume 2*.

The AON operator interface enables you to use operator functions to view color-coded status displays, change automation settings, receive messages, issue commands, and perform many other functions that control automation and resources.

To use the operator interface, log on to NetView. If you log on as a NetView-NetView task (NNT), the operator interface is bypassed; however, you can use AON by issuing commands from the command line.

Displaying the AON: Operator Commands Main Menu

You can display the operator interface from any command line within NetView. The main panel of the AON operator interface is the AON: Operator Commands Main Menu panel.

To display the AON: Operator Commands Main Menu panel:

1. Type **AON** on the command line.
2. Press Enter.

   The AON: Operator Commands Main Menu panel shown in Figure 5 is displayed.

```
EZLK0000             AON: Operator Commands Main Menu            CNM01


Select an option

          _ 0.   Tutorial
            1.   AON Base Functions
            2.   SNA Automation
            3.   TCP/IP Automation









Command ===>
F1=Help      F2=End         F3=Return                              F6=Roll
                                                                 F12=Cancel
```

Figure 5. AON: Operator Commands Main Menu Panel

If an automation component is not enabled, the menu option for that component is displayed in a different, dimmer color from that of the installed options.

If you use the AON functions to disable all or part of AON automation, the option on the main menu panel for the disabled component is displayed in the dimmer color. The main menu panel enables you to access base AON, SNA, and TCP/IP automation functions.

Displaying the AON Base Functions Panel

To access AON functions, use the AON Base Functions panel:

1. Display the **AON: Operator Commands Main Menu** panel.

   Note: To display the AON: Operator Commands Main Menu panel, see "Displaying the AON: Operator Commands Main Menu" on page 3.
2. On the AON: Operator Commands Main Menu panel, type **1** in the entry field.
3. Press Enter.

   The AON: Base Functions panel shown in Figure 6 is displayed.

   Note: You can also display the AON: Base Functions panel by typing **AON 1** on any command line. The following chapters explain how to use several of the options on this panel.

```
EZLK0100            AON: Base Functions                          CNM01


Select an option

          _ 0. Tutorial
            1. Help Desk
            2. AutoView
            3. DDF
            4. Automation Settings
            5. Cross Domain Functions
            6. Timer
            7. Task and Log Maintenance
            8. Support Functions
            9. Display the Inform Log









Command ===>
F1=Help      F2=Main Menu   F3=Return                                  F6=Roll
                                                                      F12=Cancel
```

Figure 6. AON: Base Functions Panel

Understanding How a Panel Is Organized

This section describes using the AON operator interface panels. The panels have a similar structure. Each panel has a heading at the top that displays basic information about the panel. Under the heading, many panels display lists or rows of data, as well as interactive entry fields, such as menus and data entry fields.

Some panels display pop-up command windows, providing additional entry fields for issuing commands. Some panels support selection lists from which you can select previously defined entries. Some panels support the use of wildcard characters.

Finally, each panel has an area near the bottom where messages are displayed in response to actions you issue on the panel. At the bottom of each panel, a set of function keys is available for navigating through the interface.

Each of these panel parts is described in detail in the following subsections.

Headings

The heading is located at the top of a panel, as shown in Figure 7, and provides information about the panel.

Figure 7. Example of a Panel Heading

1 The panel ID.

2 The name of the panel.

3 The domain name. (The name is not displayed on all panels.)

4 If there is more information for this panel, you can display the information by scrolling the panel. (This field is not displayed on all panels.)

Note: When applicable, the time of day is also displayed on panels.

Entry Fields

Most panels have menu choices or data entry fields, as shown in Figure 8 on page 6, in which you can type data to be processed. Menu choices and data entry fields differ from panel to panel.

```
EZLK7200             Display Status Data                        CNM01

Select an Option

                              1
       _ 1. Id    ____________________________

         2. From  ________________
            To    ________________

Select a Component

      2 1. AON Base
        2. AON SNA Automation - SNBU Option









Command ===>
F1=Help      F2=End         F3=Return                          F6=Roll
                                                               F12=Cancel
```

Figure 8. Example of a Panel with Entry Fields and Menu Options

1 An example of a data entry field

2 An example of a menu choice entry field

Data Panels

Some panels display data arranged in columns or rows for informational purposes. The Domain, Status, Operator, Type, Init, and Description columns shown in Figure 9 are examples. The data that is displayed on a particular panel differs from panel to panel.

```
EZLK5000               AON: Cross Domain Logon                  CNM01


                     Origin  Operator  OPER1
 1  1=Start    2=Stop    3=Send
       Domain  Status    Operator  Type    Init   Description
 2  _  CNM01   Inactive            NNT
    _  CNM02   Inactive            NNT
    _  CNM10   Inactive            NNT
```

Figure 9. Example of Information Displays

1 Action codes

2 Entry fields

Pop-up Command Windows

On some panels, the F4 key is activated. When you press the **F4** key, a pop-up window is displayed that lists commands that you can issue against a resource. The commands that are displayed in the pop-up window depend on the type of resource that has been selected. Figure 10 on page 7 shows an example of a pop-up command window.

```
EZLK5100              AON: Cross Domain Logon                  CNM01


                    Origin  Operator  OPER1
    1=Start    2=Stop    3=Send          ..................................
    Domain  Status    Operator  Type     :  Select an Action               :
_   AON01   Inactive            NNT      :                                 :
_   AON02   Inactive            NNT      :  To act on a single session:    :
_   AOC10   Inactive            NNT      :    1. Start CNM01  Session      :
_   CNM10   Inactive            NNT      :    2. Stop CNM01  Session       :
_   AOF10   Inactive            NNT      :    3. Send to CNM01             :
_   AOC06   Inactive            NNT      :    4. Start New RMTCMD Session  :
_   CNM06   Inactive            NNT      :    5. View Start Error Message  :
_   AOC05   Inactive            NNT      :  To act on all defined sessions: :
_   CNM05   Inactive            NNT      :    6. Start All Sessions        :
_   CNM01   Inactive            RMTCMD   :    7. Stop All Sessions         :
                                          :                                 :
                                          :                                 :
                                          : F1=Help               F12=Cancel:
                                          ..................................
To issue commands, tab to the Domain and press F4.

Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                             F12=Cancel
```

Figure 10. Pop-up Command Window

From this pop-up command window, you can choose any of the seven actions.

Message Display Area

AON frequently displays messages on the panels of the operator interface in response to actions. These messages are displayed in the lower portion of a panel, where the message EZL910I ENTER A SELECTION is displayed in Figure 11.

```
EZL910I ENTER A SELECTION
Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 11. Message Displayed in Message Area

These messages can be of various types. Some tell you whether a function completed successfully, and others tell you what further actions you need to take, why a function failed, and other useful information.

Note: Some functions use the NetView command facility to display messages. For example, if you are defined as a notification operator for a resource, AON optionally sends messages to you when there are problems with that resource. Those messages are displayed on your NetView command facility and stay there until you clear them. You can use the DM command to clear them.

Online help for AON messages is available. To view message help:

1. Type **HELP** *messagenumber*.
2. Press Enter.

For more information about AON messages, see *IBM Tivoli NetView for z/OS Messages and Codes Volume 2 (DUI-IHS)*.

Function Keys (F Keys)

The function keys are displayed at the bottom of each panel (except tutorials), as shown in Figure 12. Use the function keys to perform functions on the interface.

```
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
F7=Forward   F8=Backward                 F10=Left      F11=Right    F12=Cancel
```

Figure 12. Function Keys

The keys used on each panel vary according to the functions required. The following keys usually have these functions:

F1 Displays contextual help. Detailed help for the entire AON product, the AON base, or the specialized automation components is included in the tutorials. The Help key shows you only the instructions you need for using the panel currently displayed.

F2 Displays the AON: Operator Commands Main Menu panel.

F3 Displays the previous panel.

F4 Displays a pop-up command window.

F5 Updates the information on the panel.

F6 Rolls the display among the various active functions.

F7 Moves the interface backward one panel if MORE is indicated.

F8 Moves the interface forward one panel if MORE is indicated.

F10 Scrolls the panel to the left.

F11 Scrolls the panel to the right.

F12 Cancels the current function.

Selection Lists

Some of the panels of the AON interface display the following prompt beside an entry field:

```
(Type ? for a selection list)
```

Use selection lists to see a complete list of the available responses.

Using the Wildcard Function

Some of the fields of the AON interface require that you fill in information and specify search parameters. When you want to locate all instances of a certain resource you can define your search parameters with a *wildcard* character. AON enables you to use two different wildcard characters:

* Multiple character wildcard

% Single character wildcard

For example, both PU0* and PU%% are matches for PU01. ENTRY=ENVI* searches for all entries starting with ENVI.

Navigating through AON Panels

You can navigate through the panels of the AON operator interface by using several methods:

- Selecting menu choices
- Using fast path commands
- Using AON command synonyms

Selecting menu choices enables new AON operator interface users to navigate through the panels. Users experienced with the arrangement of the panels throughout the interface can use the fast path method or command synonyms to navigate through the panels more quickly. Each of these methods of navigation is described in the following subsections.

Selecting Menu Options

One way to navigate the AON operator interface is by selecting menu choices. The following example shows how you use menu choices to display the comprehensive AON tutorial:

1. Display the AON: Operator Commands Main Menu panel shown in Figure 5 on page 3.

   Note: To display the AON: Operator Commands Main Menu panel, see "Displaying the AON: Operator Commands Main Menu" on page 3.

2. Type 0 for Tutorial in the Select an option entry field.
3. Press Enter.

   The AON tutorial shown in Figure 13 is displayed:

```
EZLTAA01              General Automation                    Page 1 of 7
                  INTRODUCING AUTOMATED OPERATIONS

  The following tutorial defines automated operations and
  how they are implemented on a Tivoli system using the NetView product.

  Before discussing automated operations, it is helpful to know what
  is meant by :



           o     Availability

           o     System operations

           o     Network operations

           o     The operator



Command ===>
             F2=End         F3=Return    F4=Top        F5=Bottom     F6=Roll
             F8=Forward                                F11=Entry Point
```

Figure 13. AON Tutorial

Using Fast Path Commands

Fast path commands enable you to display a panel directly from a panel that is not adjacent without displaying intervening panels. You can use the fast path from the NetView command facility or from any command line in the AON operator interface.

For example, to use the fast path method to display the tutorial shown in Figure 13 on page 9:
1. Type **AON 0** on any command line.
2. Press Enter.

You can use the fast path method to reach a panel that is up to three levels away from the AON: Operator Commands Main Menu.

For example, the Reinitialize Automation panel is three levels below the AON: Operator Commands Main Menu panel. To display that panel by using the fast path method:
1. Type **AON 1.8.2** on any command line.
2. Press Enter.

   The AON: Reinitialize Automation panel is displayed:

```
EZLK8200                AON: Reinitialize Automation             CNM01



 Select Confirmation Option    . . _ 1. Confirm

                                     2. Cancel


 Reload with Automation Table  . . DSITBL01
 Generate Listing File         . . LISTNAME


 Reload with Control File      . . NVPOLICY


 Trace Setting                 . . OFF



Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 14. AON: Reinitialize Automation Panel

Using AON Command Synonyms

You can also display specific panels by using AON command synonyms. AON command synonyms are commands you type on the command line to display another panel.

Note: If you issue a command from a panel and you select an option or fill in an input field at the same time, the command takes precedence over the panel entries. AON does not process any of the panel entries.

As an example, use the command synonym AONINFO to display the AON tutorial in Figure 13 on page 9.
1. Type **AONINFO** on any NetView or AON command line.
2. Press Enter.

   The AON tutorial shown in Figure 13 on page 9 is displayed.

You can use command synonyms to reach a panel that is up to three levels away from the AON: Operator Commands Main Menu.

For example, the Reinitialize Automation panel is three levels below the AON: Operator Commands Main Menu panel. To display that panel by using the command synonym:

1. Type **AONINIT** on any command line.
2. Press Enter.

   The AON: Reinitialize Automation panel shown in Figure 14 on page 10 is displayed.

Using AON Commands

You can issue AON commands from any NetView command line.

For most AON functions, you can bypass the operator interface completely by using these commands. This enables you to use the automation functions from within your own user-written programs. To issue commands, type the command and its parameters. If you issue the command with all of the required parameters entered correctly, AON processes the command without going through the operator interface. If you enter the command name without any parameters or with the parameters entered incorrectly, AON displays the appropriate operator interface panel.

Note: If you issue a command from a panel and you select an option or fill in an input field at the same time, the command takes precedence over the panel entries. AON does not process any of the panel entries.

Getting Help

To access help for AON, use the extensive online help facilities that come with the program. AON offers online tutorials, which answer basic questions about how AON works, and contextual help, which answers questions about the fields of a particular panel.

Displaying the AON Tutorial

The AON comprehensive tutorial is one of several help facilities that come with the AON program. This tutorial explains how the AON program works by defining automated operations and how they are implemented on a Tivoli system using AON.

To display the main AON tutorial:

1. Display the AON: Operator Commands Main Menu panel.

   Note: To display the AON: Operator Commands Main Menu panel, see "Displaying the AON: Operator Commands Main Menu" on page 3.
2. On the AON: Operator Commands Main Menu panel, type **0** in the entry field.
3. Press Enter. The following panel is displayed:

```
EZLTAA01              General Automation                    Page 1 of 7
                  INTRODUCING AUTOMATED OPERATIONS

  The following tutorial defines automated operations and
  how they are implemented on a Tivoli system using the NetView product.

  Before discussing automated operations, it is helpful to know what
  is meant by :



          o     Availability

          o     System operations

          o     Network operations

          o     The operator



Command ===>
             F2=End         F3=Return    F4=Top        F5=Bottom     F6=Roll
             F8=Forward                               F11=Entry Point
```

Figure 15. AON Tutorial

As you can see in the top right corner of the panel, the first AON tutorial consists of seven panels. Use the function keys at the bottom of the panel to scroll through the panels.

Using Contextual Help

In addition to extensive online tutorials, AON provides contextual help for each of the panels of the operator interface. Press **F1** to display help for a panel and the entry fields on it.

Using Message Help

You can get online help for any of the messages you receive. To see the message help:

1. Type **HELP** *message number*.
2. Press Enter.

   A help panel is displayed that explains the message.

For more information about AON messages, see *IBM Tivoli NetView for z/OS Messages and Codes Volume 2 (DUI-IHS)*.

Using Command Help

You can get online help for most of the AON commands. If the command takes you to a panel, you can display online help for that panel. If the command performs other functions, you can display a help panel that explains what you can do with the command.

To see the online help for a command:

1. Type **HELP** *command name* on the command line of any panel.
2. Press Enter.

   A help panel is displayed for the command.

Chapter 2. Solving Network Problems with Help Desks

You can solve problems on the network by using automated help desks. You use the AON: Help Desk panel to display all of the help desks that are available to you. The help desks for all of the components function similarly, but the displays and options vary according to the needs of the type of network.

Any automation component that has a defined help desk is displayed as an option on the AON: Help Desk panel. You can use help desks to display color-coded pictures of how resources are connected to networks, stop and start resources, perform problem determination, and issue commands to solve network problems.

This chapter describes how to use the AON: Help Desk panel. "Using the SNA Help Desk" on page 15 provides an overview of the SNA Help Desk.

Displaying the AON Help Desk

To display the AON Help Desk panel:

1. Display the Base Functions panel.

   Note: To display the Base Functions panel, see "Displaying the AON Base Functions Panel" on page 4.

2. Type **1** in the entry field.
3. Press **Enter**.

   The AON: Help Desk panel shown in Figure 16 is displayed.

   Note: You can also display the AON: Help Desk panel by entering **AON 1.1** or **AONHD** on any command line.

```
EZLK1000             AON: Help Desk                          CNM01

   Resource Name  ____________________________

   Resource Type  ____________________ (Optional)

   Select an Option - n displays the NetView HelpDesk

      (Optional) _ 0. All
                   1. SNA









TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'   F12=Cancel
```

Figure 16. AON: Help Desk Panel

The AON: Help Desk panel displays the following entry fields and options:

Resource Name
Enables you to specify the resource that is having a problem. The resource name is required.

Resource Type
Enables you to specify the type of resource. For example, resource types in the SNA environment include physical unit (PU), logical unit (LU), Network Control Program (NCP), and application (APPL). The resource type is optional.

Select an Option
Enables you to specify the help desk for the kind of network on which the specified resource is located. You can select one of the following options:

All Searches all of the automation components listed on the panel for the resource and displays the resource on its help desk.

SNA Searches the SNA automation component for the resource.

If you leave this field blank, AON searches all of the automation components for the resource.

The following sections explain how to use each option.

Searching AON Components for a Resource

To search all AON components listed on the AON: Help Desk panel for a resource and display the resource in each of the help desks:

1. Display the AON: Help Desk panel.

   Note: To display the AON: Help Desk panel, see "Displaying the AON Help Desk" on page 13.
2. Type the name of the resource in the Resource Name field on the AON Help Desk panel.
3. Optionally, type the resource type in the Resource Type field.
4. Leave the Select an Option entry field blank.
5. Press **Enter**.

   If the resource is defined to more than one automation component, the AON: Component Selection panel shown in Figure 17 on page 15 lists each occurrence of the resource.

```
EZLKIDNT           AON: Component Selection                      CNM01


 The resource chosen has valid definitions in the following installed
options.  Select the applicable option.

Resource Chosen   test

     Select an Option

                  _ 0. All
                    1. SNA
                    2. SNBU
                    3. TCPIP









 Command ===>
 F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                   F12=Cancel
```

Figure 17. AON: Component Selection Panel

6. Type the number of the option you want in the Select an Option entry field. You can select any of the options displayed on the panel. In the following example, AON found the resource in AON/SNA.
7. Press **Enter**.

   AON displays the Help Desk panel that you selected. See the following sections for more information about the AON/SNA Help Desk.

Using the SNA Help Desk

You can use the SNA Help Desk when a user terminal is experiencing a problem. If the problem is with a SNA resource on a remote NetView domain, you must have a NetView-NetView Task (NNT) or a remote commands session to that domain to use the SNA Help Desk.

To use the SNA Help Desk:

1. Display the AON: Help Desk panel.

   Note: To display the AON: Help Desk panel, see "Displaying the AON Help Desk" on page 13.
2. Type the name of the resource in the Resource Name field on the AON: Help Desk panel. This example uses resource TA1PT209.
3. Type the resource type in the Resource Type field. AON/SNA resource types are generic resource groups such as PU, LU, NCP, and APPL.
4. Type **2** in the Select an Option entry field.
5. Press **Enter**.

   The SNA Automation: Help Desk panel shown in Figure 18 on page 16 is displayed.

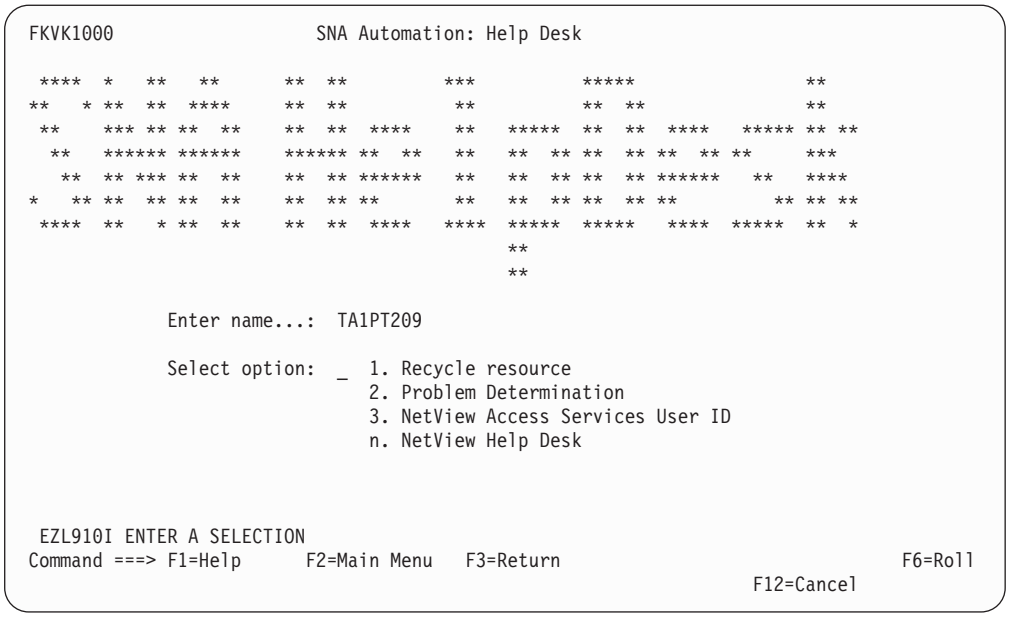


Figure 18. SNA Automation: Help Desk Panel

6. To search for a different resource than is displayed in the Enter Name field, type over the existing resource name.
7. Type the option you want in the Select Option entry field. You can select one of the following options:

   Recycle resource
   Forces the resource inactive then activates it again. If AON/SNA cannot not recycle the resource, it displays additional panels with further options.

   Problem Determination
   Displays the current status of the resource. You can perform additional queries and tests on the resource.

   NetView Access Services User ID
   Works with user IDs that are logged on NetView Access Services and their applications on the same VTAM® where AON/SNA resides.

   NetView Help Desk
   This option takes you to the main NetView Help Desk facility.
8. Press **Enter**.

Chapter 3. Displaying Resource Information with AutoView

The AutoView function works with more than one setting for a single resource. The AutoView function displays all known data for the resource and tries to determine which automation components are interested in the resource.

Displaying the AON: AutoView Panel

To display the AON: AutoView panel:

1. Display the Base Functions panel.
2. Type **2** in the entry field.
3. Press **Enter**.

   The AON: AutoView panel shown in Figure 19 is displayed.

   Note: You can also display the AON: AutoView panel by entering **AON 1.2** or **AUTOVIEW** on any command line.

```
EZLK2000             AON: AutoView                              NTVE1

   Resource Name  ____________________________

   Resource Type  ____________________ (Optional)

   Select an Option

      (Optional) _ 1. TCPIP
                   2. APPN
                   3. SNBU
                   4. SNA




Command ===>
F1=Help      F2=Main Menu   F3=Return                            F6=Roll
                                                                F12=Cancel
```

Figure 19. AON: AutoView Panel

The AON: AutoView panel displays the following entry fields and options:

Resource Name
Enables you to specify a resource for which you want to display current information or change settings.

Resource Type
Enables you to specify the resource type.

Select an Option
Specifies the component to which the resource is defined. Each component has predefined information that it displays about the resource. Each component has commands that you can use to get further information about the resource or set and change automation

settings. The list of options varies, depending on which components have the resource defined. The following components are provided:

APPN Looks for the resource as an Advanced Peer-to-Peer Networking (APPN) network resource.

SNBU Looks for the resource as a switched network backup (SNBU) network resource.

TCPIP Looks for the resource as a Tivoli NetView for AIX or z/OS Communication Server IP resource.

SNA Looks for the resource as a SNA network resource.

Note: These options might be displayed in a different order on your panels, because the panel changes depending on the configuration of your site.

The following sections provide an example of how AutoView works for a SNA resource.

Usage Notes:

- The AutoView function utilizes UNIX System Services to monitor and display IP resource status through TCP autotasks. These autotasks are defined in the control file and must be authorized to access UNIX System Services.
- The AutoView function queries SNMP MIB variables to determine the status of IP resources. The SNMP Community name defined in CNMPOLICY for each TCP390 stack must match the one configured by the z/OS communication server for each stack. The Community name can be dynamically updated by using the IP Resource Manager function.

For more information about UNIX System Services authorization and the SNMP Community name, refer to the *IBM Tivoli NetView for z/OS Security Reference*. The Community name definition is described in the TCP390 definition in the *IBM Tivoli NetView for z/OS Administration Reference*.

Displaying Resource Information (A SNA Example)

To display information about a SNA resource:

1. Display the AON: AutoView panel.

   Note: To display the AON: AutoView panel, see "Displaying the AON: AutoView Panel" on page 17.

2. Type the name of a SNA resource in the **Resource Name** field. This example uses resource TA1P523A.
3. Optionally, type the resource type in the **Resource Type** field. Resource types are LU, PU, NCP, or APPL.
4. Optionally, to select SNA, type the number for SNA in the **Select an Option** entry field.
5. Press **Enter**.

   If you selected SNA, or left the option blank, and the resource is defined to a SNA network, the panel in Figure 21 on page 19 is displayed. Proceed to Step 6 on page 20.

   If you left the option blank and the resource is defined to more than one type of network, the AON: Component Selection panel shown in Figure 20 on page 19

19 is displayed. Proceed to Step 5a.

```
EZLK2000             AON: AutoView                          CNM01

    Resource Name  ____________________________

    Resource Type  ____________________ (Optional)

   Select an Option

       (Optional) _ 1. TCPIP
                    2. APPN
                    3. SNBU
                    4. SNA




Command ===>
F1=Help      F2=Main Menu   F3=Return                        F6=Roll
                                                            F12=Cancel
```

Figure 20. AON: Component Selection Panel

On the AON: Component Selection panel, follow these steps:

a. Type **1** in the select an option field.

b. Press **Enter**.

   The following panel is displayed:

```
EZLKVIEW                AON: AutoView                CNM01

Resname . . . . . . . . TA1P523A
Restype . . . . . . . . PU
Option  . . . . . . . . SNA
Status  . . . . . . . . PCTD2        1
Automation Status . . . TREACT
Automation Flag . . . . ON
DDF message . . . . . . NONE


                           2                  3

Resource Definitions      _ 1. Automation         (RECOVERY DEFAULTS)
                            2. Thresholds         (THRESHOLDS DEFAULTS)
                            3. Active Monitoring  (ACTMON DEFAULTS)
                            4. Monitor Intervals  (MONIT DEFAULTS)
                            5. Timer              (NONE)
                            6. Display Network LOG Information for TA1P523A



Command ===>
F1=Help      F2=Main Menu   F3=Return                        F6=Roll
                                                            F12=Cancel
```

Figure 21. AON: AutoView Panel

Although the appearance of the AON: AutoView panel differs among automation components, the panel in Figure 21 displays the following information and options:

1 Summarizes information about the resource including the resource

name, resource type, status, automation settings for the resource, DDF message for the resource (if any) and other information, depending on the automation component.

2 Displays a list you can use for the resource. The following actions are supported:

Automation
Sets the RECOVERY flags for the resource. If none are found, DEFAULTS is displayed. For detailed information about Automation settings, see "Displaying the Recovery Settings Panel" on page 25.

Thresholds
Sets the THRESHOLDS processing for errors received on this resource. The default is DEFAULTS if none is defined. For detailed information about setting thresholds, see "Displaying Thresholds" on page 30.

Active Monitoring
Sets the ACTMON entry for this resource. If none are found, the DEFAULTS value is used. For detailed information about setting active monitoring, see "Displaying the Active Monitor Settings Panel" on page 35.

Monitor Intervals
Sets the MONIT intervals for the resource, defaulting to the type of resource if intervals are defined for that type. Otherwise, DEFAULTS are used if no intervals are found. For detailed information about setting monitor intervals, see "Displaying the Monitor Intervals Panel" on page 32.

Timer Sets a timer command for the resource. For detailed information about setting timers, refer to the information on timer commands in the *IBM Tivoli NetView for z/OS User's Guide.*

Display Network LOG Information
Displays only the Netlog information for the resource using the NetView BLOG command.

3 Displays which control file entry is currently defining the settings for the commands listed in the second group. For example, in Figure 21 on page 19, the settings for option 1 (Automation) are defined in the RECOVERY DEFAULTS control file entry.

For commands that do not have a corresponding control file entry, such as option 5 (Timer), the information in parentheses tells you if any settings exist. In Figure 21 on page 19, no timers are set for the resource TA1P523A.

6. To continue with the example, type **6** for Display Network LOG Information in the **Resource Definitions** field.
7. Press **Enter**.

   The NetView Log shown in Figure 22 on page 21 is displayed with the resource you specified.

```
STATMON.BROWSE     ACTP  NETWORK LOG FOR 04/29/07 (07119) COLS 017 096  15:20
HOST: HOST1            *1*   *2*   *3*   *4*                     SCROLL: CSR
 ---2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----
 CNM01 P% 11:49:06   IST259I  INOP RECEIVED FOR TA1P523A CODE = 01
 CNM01 P% 11:49:06   IST619I  ID = TA1P523A FAILED - RECOVERY IN PROGRESS
 CNM01  % 11:49:08   CNM094I STATUS UPDATE FOR RESOURCE = TA1P523A IN NETWORK =
 CNM01  % 11:49:20   CNM094I STATUS UPDATE FOR RESOURCE = TA1P523A IN NETWORK =
 CNM01 P% 11:49:20   IST621I  RECOVERY SUCCESSFUL    FOR NETWORK NODE TA1P523A
 CNM01  % 11:49:20   CNM094I STATUS UPDATE FOR RESOURCE = TA1P523A IN NETWORK =
 CNM01    14:42:25   EZL112I ACTIVE TYPE= TA1P523A









CMD==>
1=HLP 2=END 3=RET 4=TOP 5=BOT 6=ROL 7=BCK 8=FWD 9=RPF 10=LFT 11=RGT 12=ALL
```

Figure 22. NetView Log Panel Displaying One Resource

8. Browse the log as needed.

   Note: This option uses the NetView BLOG sample. If there are no entries in the log for the resource you are using, no action is taken and no message is displayed.

Chapter 4. Specifying Automation Policy Settings

Specify automation policy settings using the AON: Automation Settings panel and the subordinate panels. Use these panels to add, display, change, and delete automation policy settings that control various parts of the network.

When NetView initializes, it loads a copy of the automation policy into storage. When you use the AON: Automation Settings panels to change automation settings, you change the in-storage copy of the policy without altering the original. When the policy is reloaded into storage, the changes you made to the automation settings are reset.

If you need to make permanent changes to the policy, your system programmer can edit and reload it so that the changes are available the next time AON initializes.

Note: The AON: Automation Settings panel lists settings for all network resources. However, to view and change numerous settings for a single resource, use the AutoView panel. The AutoView panel consolidates commands for automation settings onto a single menu. The AutoView function displays settings panels that apply only to a single resource.

Displaying the AON: Automation Settings Panel

To display the AON: Automation Settings panel:

1. Display the Base Functions panel.

   Note: To display the Base Functions panel, see "Displaying the AON Base Functions Panel" on page 4.

2. On the Base Functions panel, type **4** in the entry field.
3. Press **Enter**.

   The AON: Automation Settings panel shown in Figure 23 on page 24 is displayed.

   Note: You can also display the AON: Automation Settings panel by entering **AON 1.4** on any command line.

```
EZLK4000              AON: Automation Settings                 CNM01


Select an option

         _ 1. Automation
           2. Notification Operators
           3. Thresholds
           4. Monitor Intervals
           5. Active Monitoring









Command ===>
F1=Help      F2=Main Menu   F3=Return                          F6=Roll
                                                              F12=Cancel
```

Figure 23. Automation Settings Panel

The AON: Automation Settings panel displays the following options:

Automation
Defines the times when AON automation recovery actions occur on resources. These values are retrieved from the RECOVERY control file entry.

Notification Operators
Specifies which operators receive AON messages when automation events occur. These values are retrieved from the NTFYOP control file entry.

Thresholds
Specifies the number of times an event must occur within a given time span before AON sends notifications to the selected operators. These values are retrieved from the THRESHOLDS control file entry.

Monitor Intervals
Controls reactivation intervals for failing resources. These intervals determine how often AON attempts to recover the failed resources and send messages to the notification operators. These values are retrieved from the MONIT control file entry.

Active Monitoring
Controls active monitoring intervals for resources. AON regularly checks the status of important resources that must be available to the network. The active monitoring intervals determine how often AON monitors those resources. These values are retrieved from the ACTMON control file entry.

The following sections describe how to use these options.

Specifying Recovery Settings

Use the Recovery Settings panel to add, display or change, and delete automation settings. Recovery settings set automation on or off for one resource or group of resources. You can also specify times when automation does not operate.

Note: A RECOVERY DEFAULTS policy definition is required. The DEFAULTS entry is used during recovery processing and a specific resource name or type is not coded. The DEFAULTS entry cannot be deleted.

Displaying the Recovery Settings Panel

To display the Recovery Settings panel:

1. Display the AON: Automation Settings panel.

   Note: To display the AON: Automation Settings panel, see "Displaying the AON: Automation Settings Panel" on page 23.
2. Type **1** in the entry field on the AON: Automation Settings panel.
3. Press **Enter**.

   The Recovery Settings panel shown in Figure 24 is displayed.

   Note: You can also display the Recovery Settings panel by entering **AON 1.4.1**, **SETAUTO**, **DISAUTO**, or **DELAUTO** on any command line.

```
EZLK4100          Recovery Settings                              CNM01

Select one of the following. Then press enter.
1=Add  2=Display/Change  3=Delete

     Type                            Automation       Scheduled Recovery
 _  AOF01*                              OFF
 _  APPL                                OFF
 _  CNM01*                              OFF
 _  DEFAULTS                            ON
 _  LINKSTA                             ON
 _  TAF*                                OFF
 _  TSO*                                OFF









Command ===>
F1=Help      F2=Main Menu   F3=Return             F5=Refresh    F6==Roll
F7=Backward  F8=Forward                                         F12==Cacel
```

Figure 24. Recovery Settings Panel

The Recovery Settings panel displays three columns of data:

Type Lists all the resources that have recovery settings defined.

Automation
Indicates whether automation is set on or off for the resources by looking at the AUTO= parameter in the control file setting.

Scheduled Recovery
Looks at the NOAUTO= parameter. For resources that have intervals scheduled when automation does *not* occur, this field has one of the following values:

ON When the current time is outside the times defined with the NOAUTO= parameter.

OFF When the current time is within one of the times specified with the NOAUTO= parameter.

If you leave the field blank, scheduled recovery is not in place for the resource.

Scheduled recovery intervals are optional. If no such intervals are coded, automation is either on all the time or off all the time depending on the setting in the Automation column. The Scheduled Recovery column is blank if no scheduled intervals are specified for the resource.

Note: Scheduled Recovery settings, if any, and automation must be set to ON for automation to occur on the resource.

Use the Recovery Settings panel to add, display or change, and delete recovery settings. The following sections explain how to perform these actions.

Displaying or Changing Recovery Settings

To display or change an existing recovery setting:

1. Display the Recovery Settings panel.

   Note: To display the Recovery Settings panel, see "Displaying the Recovery Settings Panel" on page 25.

2. Type **2** in the entry field next to the resource, the settings for which you want to change, on the Recovery Settings panel.
3. Press **Enter**.

   The Display/Change Recovery Setting panel shown in Figure 25 is displayed.

```
EZLK4120               Recovery Settings                        NTV70

               Display/Change Automation Recovery Settings
                                        ......... Valid Days ...........
Fill in the fields below,               : 1 = MONday      2 = TUEsday   :
then press PF10 to change.              : 3 = WEDnesday   4 = THUrsday  :
                                        : 5 = FRIday      6 = SATurday  :
 Type : PU                              : 7 = SUNday      8 = WEEKDAY   :
                                        : 9 = WEEKEND     * = everyday  :
 Auto : 1   (1=Y 2=N 3=YA 4=NA)         : 0 = calendar day or date      :
                                        : - = delete a NOAUTO window    :
                                        ................................
 NoAuto   Day :                              Start Time     End Time
                                             Hour Minute   Hour Minute
          *   *____________________          18 :  00      23 :  59
          _   ____________________           00 :  00      00 :  00
          _   ____________________           00 :  00      00 :  00
          _   ____________________           00 :  00      00 :  00
          _   ____________________           00 :  00      00 :  00


Command ===>
F1=Help      F2=Main Menu   F3=Return                F5=Refresh    F6=Roll
F7=Backward  F8=Forward               F10=Update                 F12=Cancel
```

Figure 25. Display/Change Recovery Settings Panel with Valid Days Pop-up Window

4. Type over the values you want to change on the Display/Change Recovery Setting panel. The values are displayed in one color (the default color is green). You cannot change the entry displayed in the **Type** field.
5. Press **Enter**.

To set automation to on or off, type the number for one of the following actions in the **Auto** field:

1=Y Sets recovery on.
2=N Sets recovery off.
3=YA Sets recovery on for the specified resource and its lower nodes.
4=NA Sets recovery off for the specified resource and its lower nodes.

Note: YA and NA are valid only for SNA resources that do not contain wildcard characters (* and %).

You can specify the times when you do not want automation to operate in the **NoAuto** field. The NoAuto setting enables you to define exactly when you want automation to be active for the resource. The following are the values for the NoAuto setting columns.

Day
Specifies the days when recovery is set off, as follows:
0 Any special day defined in DSISCHED, for example, HOLIDAY
1 MONday
2 TUEsday
3 WEDnesday
4 THUrsday
5 FRIday
6 SATurday
7 SUNday
8 WEEKDAY
9 WEEKEND
* everyday
– delete a NOAUTO window

Note: The example in Figure 25 on page 26 shows an asterisk (*) to represent that everyday is selected. You can also specify the valid days by typing the capital letters shown in the Valid Days pop-up window, in the second column text field under Day.

Start Time
Sets automation off starting at this time. Specify the time in the *hh:mm* format, where *hh* is a number in the range of 00–23 and *mm* is a number in the range of 00–59.

End Time
Determines the end of the interval when automation is not active for the resource. Specify the time in the *hh:mm* format, where *hh* is a number in the range of 00–23 and *mm* is a number in the range of 00–59.

Note: The ending time must be later in the day than the starting time *except* when you specify * (every day).

Specifying Notification Operators

Use the Notification Operators panel to:

- add new notification operators
- display or change the settings for existing operators
- delete settings for existing operators

Notification operators are operators who receive messages from AON and its components when automation events occur. These values are retrieved from the NTFYOP control file entry.

Displaying the Notification Operators Panel

To display the Notification Operators panel:

1. Display the AON: Automation Settings panel.

   Note: To display the AON: Automation Settings panel, see "Displaying the AON: Automation Settings Panel" on page 23.

2. Type **2** in the entry field.
3. Press **Enter**.

   The Notification Operators panel is displayed in Figure 26.

   Note: You can also display the Notification Operators panel by entering **AON 1.4.2**, **SETNTFY**, **DISNTFY**, or **DELNTFY** on any command line.

```
EZLK4200          Notification Operators                          CNM01

Select one of the following. Then press Enter.                    More:   +
 1=Add  2=Display/Change  3=Delete
                     Notify      Logged
     Operator         Flag         On         Description
_   OPER1              Y           N         'Operator One'
_   OPER2              Y           N         'Operator Two'
_   OPER3              Y           Y         'Operator Three'
_   OPER4              Y           Y         'Operator Four'
_   OPER5              Y           N         'Operator Five'
_   OPER6              Y           N         'Operator Six'
_   OPER7              Y           N         'Operator Seven'
_   NISTMP1            Y           N         'Test Operator One'
_   NISTMP2            Y           N         'Test Operator Two'
_   NISTMP3            Y           N         'Test Operator Three'
_   NISTMP4            Y           Y         'Test Operator Four'
_   NISTMP5            Y           N         'Test Operator Five'
_   NISTMP6            Y           N         'Test Operator Six'
_   NISTMP7            Y           N         'Test Operator Seven'

Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 26. Notification Operators Panel

The Notification Operators panel lists the following columns of data:

Operator
The operator ID of the notification operator.

Notify Flag
Indicates if messages are sent to the notification operator. Use this flag to temporarily stop the notification messages without removing the operator from the list of valid notification operators. The data is taken from the NOTIFY= parameter in the NTFYOP control file entry.

Logged On
Indicates if this notification operator is currently logged on to the system.

If the operator is logged on and the Notify Flag is set to Yes (Y), then the operator is receiving messages as defined by the notification settings.

Description
Describes the notification operator, usually, the name of the operator (optional).

Adding a Notification Operator

To add an operator ID to the list of valid notification operators:

1. Display the Notification Operators panel.

   Note: To display the Notification Operators panel, see "Displaying the Notification Operators Panel" on page 28.
2. Type **1** in the field next to an existing notification operator.
3. Press **Enter**. A pop-up window shown in Figure 27 is displayed.

```
EZLK4210          Notification Operators                          CNM01

Select one of the following. Then press Enter.                    More:   +
 1=Add  2=Display/Change  3=Delete
                     Notify      Logged
     Operator         Flag         On         Description
 1  OPER1              Y           N         'Operator One'
 _  OPER2        ................................................
 _  OPER3        : Operator      ________                        :
 _  OPER4        : Description   ________________________        :
 _  OPER5        : Classes       ____________________________    :
 _  OPER6        : Messages      _ Information                   :
 _  OPER7        :               _ Warning                       :
 _  NISTMP1      :               _ Error                         :
 _  NISTMP2      :               _ Action                        :
 _  NISTMP3      : Notify        _            (1=Yes  2=No)      :
 _  NISTMP4      :                                               :
 _  NISTMP5      : F1=Help                              F12=Cancel :
 _  NISTMP6      :................................................:
 _  NISTMP7            Y           N         'Test Operator Seven'

Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 27. Notification Operators Panel

4. Type the operator ID in the **Operator** field. This is the only required field.
5. Type a brief description for the operator in the **Description** field.
6. Type the numbers for the message classes in the **Classes** field. The default message class is 10. The data is taken from the CLASS= parameter in the NTFYOP control file entry.

   Note: See *IBM Tivoli NetView for z/OS Messages and Codes Volume 2 (DUI-IHS)* for more information about message classes.
7. In the **Messages** fields, type any character in the field for each message type that is held on the command facility until the notification operator clears it. The data is taken from the HELDMSG= parameter in the NOTFYOP control file entry. The message types are:

   I or INFO
   Informational messages

   W or WARN
   Warning messages

   E or ERROR
   Error messages

   A or ACTION
   Action messages

8. Type **1** to set notifications on for the operator or **2** to suppress the notification messages in the **Notify** field. You can also leave this field blank. By default, the notification operator receives the messages in the message classes assigned.
9. Press **Enter**.

   If the information is entered correctly, AON displays this confirmation message on the panel:

   ```
   EZL919I ALL ACTIONS SUCCESSFULLY COMPLETED
   ```
10. Press **F3** to return to the Notification Operators panel.

    The new notification operator is displayed in the alphabetized list on the updated Notification Operators panel.

Setting Automation Thresholds

To add, change, or delete threshold settings use the Thresholds panel. Threshold settings trigger notifications to operators when the thresholds are reached. An event is defined as an alert generated by the system. Thresholds are set for the resources in the network. These values are retrieved from the THRESHOLDS control file entry.

Define the threshold settings so that each threshold type is unique for the resource being monitored. Define critical thresholds to have the smallest interval or highest occurrence frequency, followed by frequent, then infrequent.

Displaying Thresholds

To display the Thresholds panel:

1. Display the AON: Automation Settings panel.

   Note: To display the AON: Automation Settings panel, see "Displaying the AON: Automation Settings Panel" on page 23.
2. Type **3** in the entry field.
3. Press **Enter**.

   The Thresholds panel shown in Figure 28 on page 31 is displayed.

   Note: You can also display the Thresholds panel by entering **AON 1.4.3**, **SETTHRES**, **DISTHRES**, or **DELTHRES** on any command line.

```
EZLK4300          Thresholds                                        CNM01
 Select one of the following.  Then press Enter.                    More:   +
 1=Add  2=Change  3=Delete

    Type
 _  DEFAULTS
      Infrequent: 05    Errors in    24     Hours    00    Minutes
      Frequent:   04    Errors in    01     Hours    00    Minutes
      Critical:   04    Errors in    00     Hours    12    Minutes   Notify   1

 _  HOST
      Infrequent: 00    Errors in    00     Hours    00    Minutes
      Frequent:   00    Errors in    00     Hours    00    Minutes
      Critical:   10    Errors in    00     Hours    10    Minutes   Notify   1

 _  INFC
      Infrequent: 00    Errors in    00     Hours    00    Minutes
      Frequent:   00    Errors in    00     Hours    00    Minutes
      Critical:   10    Errors in    00     Hours    10    Minutes   Notify   1


Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                            F12=Cancel
```

Figure 28. Thresholds Panel

The threshold types are defined as:

Infrequent
The minimum number of events needed within a defined period of time to trigger notification to an operator. This data is taken from the INFR= keyword of the THRESHOLDS control file entry.

Frequent
The number of events needed to indicate that the resource might be having some trouble. Notification is sent to an operator. This data is taken from the FREQ= keyword of the THRESHOLDS control file entry.

Critical
Specifies the number of events needed to define a situation as critical. Normally, recovery stops when a situation reaches critical state. This data is taken from the CRIT= keyword of the THRESHOLDS control file entry.

Notify If Notify is 1, the notification policy is driven when the critical threshold is exceeded.

Note: A THRESHOLD DEFAULTS policy definition is required. The DEFAULTS entry is used when there is threshold processing and a specific resource name or type is not specified. You cannot delete the DEFAULTS entry.

Each threshold setting follows the same syntax. Two settings are entered to set the threshold:

number
The number of events that cause the threshold to be exceeded. The valid range is 0–10.

interval
The time span, in hours and minutes, in which the number of events must occur for the threshold to be exceeded. The valid range is 00:00–99:59.

You can use the Thresholds panel to add, change, and delete threshold settings. The following sections explain how to perform these actions in detail.

Adding a Threshold

To add a threshold:

1. Display the **Thresholds** panel.

   Note: To display the Thresholds panel, see "Displaying Thresholds" on page 30.

2. Type **1** in entry field on the Thresholds panel.
3. Press **Enter**.

   A pop-up window shown in Figure 29 is displayed.

```
EZLK4310          Thresholds                                      CNM01

Select one of the following.  Then press Enter.                   More:   +
 1=Add  2=Change  3=Delete

    Type
 _  DEFAULTS
      Infrequent: 05    Errors in    24     Hours    00    Minutes
      Fr ..........................................    Minutes
      Cr :                                        :    Minutes
         : Type: ____________________________     :
 1  HOST :                                        :
      In :   Infrequent:  00 Errors in  00 : 00    :    Minutes
      Fr :   Frequent:    00 Errors in  00 : 00    :    Minutes
      Cr :   Critical:    00 Errors in  00 : 00    :    Minutes
         :   Notify:      1                        :
 _  INFC : F1=Help                        F12=Cancel :
      In :.........................................:    Minutes
      Frequent:   00    Errors in    00     Hours    00    Minutes
      Critical:   10    Errors in    00     Hours    10    Minutes



Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 29. Thresholds Panel

4. In the pop-up window, type in the values you want.
5. Press **Enter**.

   When AON adds the thresholds, the following message is displayed in the message area near the bottom of the panel:

   ```
   EZL919I ALL ACTIONS SUCCESSFULLY COMPLETED
   ```

Changing Monitor Intervals

Use the Monitor Intervals panel to add, display and change, and delete monitor intervals. Monitor intervals determine how often AON tries to reactivate failed resources and if AON sends messages to the notification operators during these attempts. These values are retrieved from the MONIT control file entry.

Note: A DEFAULTS entry in the control file is required. The DEFAULTS entry is used when the parameters do not exist on the specific resource definition.

Displaying the Monitor Intervals Panel

To display the Monitor Intervals panel:

1. Display the **AON: Automation Settings** panel.

Note: To display the AON: Automation Settings panel, see "Displaying the AON: Automation Settings Panel" on page 23.

2. Type **4** in the entry field on the AON: Automation Settings panel.
3. Press **Enter**.

   The Monitor Intervals panel shown in Figure 30 is displayed.

   Note: You can also display the Monitor Intervals panel by entering **AON 1.4.4**, **SETMONIT**, or **DELMONIT** on any command line.

```
EZLK4400          Monitor Intervals                              CNM01

Select one of the following. Then press enter.
 1=Add  2=Display/Change  3=Delete

     Type
 _   CDRM
 _   CP
 _   CPCPSESS
 _   DEFAULTS
 _   HOST
 _   INFC
 _   IPHOST
 _   IPINFC
 _   IPNAMESERV
 _   IPPORT
 _   IPTELNET
 _   NAMESERV
 _   NCP
 _   SP

Command ===>
F1=Help      F2=Main Menu   F3=Return                F5=Refresh    F6==Roll
F7=Backward  F8=Forward                                          F12==Cancel
```

Figure 30. Monitor Intervals Panel

The types of monitor intervals are displayed in the Type column. You can use the Monitor Intervals panel to add, display, change, or delete monitor intervals. The following sections explain how to perform these actions.

Displaying or Changing a Current Monitor Interval

To display or change recovery monitoring intervals:

1. Display the **Monitor Intervals** panel.

   Note: To display the Monitor Intervals panel, see "Displaying the Monitor Intervals Panel" on page 32.

2. Type **2** in the entry field next to the resource type whose monitor interval you want to display or change.
3. Press **Enter**.

   A pop-up window shown in Figure 31 on page 34 is displayed.

```
EZLK4410          Monitor Intervals                              CNM01

Select one of the  ....................................
 1=Add  2=Display/ : Type:  _________________________________ :
                   :              Hour Minute                 :
    Type           :     Interval: 00 :  00  Notify: __       :
 1  CDRM           :     Interval: 00 :  00  Notify: __       :
 _  CP             :     Interval: 00 :  00  Notify: __       :
 _  CPCPSESS       :     Interval: 00 :  00  Notify: __       :
 _  DEFAULTS       :     Interval: 00 :  00  Notify: __       :
 _  HOST           :     Interval: 00 :  00  Notify: __       :
 _  INFC           :     Interval: 00 :  00  Notify: __       :
 _  IPHOST         :     Interval: 00 :  00  Notify: __       :
 _  IPINFC         :     Interval: 00 :  00  Notify: __       :
 _  IPNAMESERV     :     Interval: 00 :  00  Notify: __       :
 _  IPPORT         :     Interval: 00 :  00  Notify: __       :
 _  IPTELNET       :     Interval: 00 :  00  Notify: __       :
 _  NAMESERV       :                                          :
 _  NCP            : F1=Help                    F12=Cancel    :
 _  SP             :....................................:

Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6==Roll
F7=Backward  F8=Forward                                           F12==Cancel
```

Figure 31. Monitor Intervals Panel

4. To change a monitoring interval, type over the settings you want to change. The variables on this setting are:

   hh:mm
   The length of the interval between reactivation attempts expressed as hours (*hh*) and minutes (*mm*). The range is 00:00–24:00.

   Notify
   The setting that determines whether messages are sent to the notification operators when AON attempts to reactivate the resource. The settings can be:

   Y Consult the notification policy to determine which notifications to issue.

   N Do not send notifications.

   YF Consult the notification policy to determine which notifications to issue. Repeat recovery monitoring at the last interval specified.

   NF
   Do not send notifications. Repeat recovery monitoring at the last interval specified.

5. Press **Enter**.

   If the settings are entered correctly, AON displays this message:

   ```
   EZL919I ALL ACTIONS SUCCESSFULLY COMPLETED
   ```

Changing Active Monitor Settings

Use the Active Monitor Setting panel to set intervals for active monitoring and to verify that resources are active. If the resource is not active, recovery monitoring starts for the resource and a timer is set to check the resource again for the next interval. These values are retrieved from the ACTMON control file entry.

Active monitoring expects specific entries only. Wildcard entries are not allowed. Example SNA entries and types are:
- Specific resource name (PU01, LINE23)
- General resource type (NCP, LU, PU)

Note: A DEFAULTS entry in the control file is required. The DEFAULTS entry is used when the parameters do not exist on the specific resource definition.

Displaying the Active Monitor Settings Panel

To display the Active Monitor Settings panel:

1. Display the **AON: Automation Settings** panel.

   Note: To display the AON: Automation Settings panel, see "Displaying the AON: Automation Settings Panel" on page 23.

2. Type **5** in the entry field on the AON: Automation Settings panel.
3. Press **Enter**.

   The Active Monitor Settings panel is displayed, as shown in Figure 32.

   Note: You can also display the Active Monitor Settings panel by entering **AON 1.4.5** or **ACTMON** on any command line.

```
EZLK4500          Active Monitor Settings                          CNM01

Select one of the following. Then press Enter.                     More: - +
 1=Add  2=Display/Change  3=Delete

    Name               Resource Type           Interval       Timer ID
_   SULU               CPCPSESS                               FKV00011
_   TA1L5023           LINE                    13             FKV00009
_   TA1N500            NCP                     00:10          FKV00010
_   TA1T1046           LU                      30
_   TA1T1047           LU                      01:00
_   TA1T1048           LU                      90
_   TEST1              SESSION                 15
_   TEST2              SESSION
_   TEST3              SESSION
_   USIBMTA.TA1CPBAD   CP                      01:00
_   USIBMTA.TA1CP207   CP                      01:00          FKV00012
_   USIBMTA.TA1CP208   CP                      01:00
_   9.67.6.2           HOST                    00:25
_   9.67.6.3           HOST


Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 32. Active Monitor Settings Panel

The Active Monitor Settings panel displays these columns of data:

Name The name of a resource.

Resource Type
The type of resource. This data is taken from the RESTYPE= keyword of the ACTMON control file entry.

Interval
The interval setting. The interval can be in minutes or in both hours and minutes. This data is taken from the INTVL= keyword of the ACTMON control file entry.

Timer ID
The ID of the timer. The timer issues the ACTMON routine for this resource to see if the resource is active.

Use the Active Monitoring Settings panel to add, display or change, and delete active monitoring settings. The following sections explain how to perform these actions.

Displaying or Changing Active Monitor Settings

To display or change active monitoring settings:

1. Display the **Active Monitor Settings** panel.

   Note: To display the Active Monitor Settings panel, see "Displaying the Active Monitor Settings Panel" on page 35.

2. Move the cursor to the field next to the resource you want to display or change and type **2**.
3. Press **Enter**.

   A pop-up window shown in Figure 33 is displayed.

```
EZLK4520          Active Monitor Settings                        CNM01

Select one of the following. Then press Enter.                   More: - +
 1=Add  2=Display/Change  3=Delete

    Name               Resource Type           Interval       Timer ID
_   SULU                CPCPSESS                              FKV00011
2   TA1L5023  ..........................................      FKV00009
_   TA1N500   :                                         :     FKV00010
_   TA1T1046  : Name: TA1L5023___________               :
_   TA1T1047  :                                         :
_   TA1T1048  : Type: LINE_______________________       :
_   TEST1     :                                         :
_   TEST2     : Interval: 00 : 13                       :
_   TEST3     :                                         :
_   USIBMTA.T : Timer Id:        FKV00009               :
_   USIBMTA.T : Timer Date/Time: 04/15/07 13:15:59      :  FKV00012
_   USIBMTA.T :                                         :
_   9.67.6.2  : F1=Help                       F12=Cancel :
_   9.67.6.3  :.........................................:


Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 33. Active Monitoring Settings Panel

4. Type the resource type in the **Type** field.
5. Type the interval values you want in the **Interval** field.

   An interval is defined by *hh:mm* with valid values that are in the range of 00:00–24:00. The intervals specified are cumulative time delays from the previous activation setting. You cannot change any other fields on this panel.
6. Press **Enter**.

If the data is entered correctly, the following message is displayed:

```
EZL919I ALL ACTIONS SUCCESSFULLY COMPLETED
```

Chapter 5. Using Cross-Domain Functions

This chapter documents general-use programming interface and associated guidance information.

To establish communication with NetView and other applications use the AON: Cross Domain Functions panel and its subordinate panels. You can use these panels to manage cross-domain sessions for your operators, for AON Gateway operators, and for terminal access facility (TAF) full-screen sessions.

Displaying the Cross Domain Functions Panel

To display the Cross Domain Functions panel:

1. Display the Base Functions panel.

   Note: To display the **Base Functions** panel, see "Displaying the AON Base Functions Panel" on page 4.
2. Type **5** in the entry field.
3. Press **Enter**.

   The AON: Cross Domain Functions panel shown in Figure 34 is displayed.

   Note: You can also display the AON: Cross Domain Functions panel by entering **AON 1.5** on any command line.

```
EZLK500A              AON: Cross Domain Functions              CNM01


 Select an option

          _ 1. Manage Cross Domain Operator Sessions
            2. Manage Cross Domain Gateway Sessions
            3. Manage Full Screen (TAF) Sessions

 Command ===>
 F1=Help      F2=Main Menu   F3=Return                          F6=Roll
                                                              F12=Cancel
```

Figure 34. AON: Cross Domain Functions Panel

The AON: Cross Domain Functions panel displays the following options:

Manage Cross Domain Operator Sessions
Enables you to establish sessions with other NetView domains using your NetView-NetView Task (NNT) sessions or through remote command

(RMTCMD) sessions. After you log on to the sessions, you can send commands across those sessions. These values are retrieved from the CDLOG control file entry.

Manage Cross Domain Gateway Sessions
Enables you to start and stop the AON gateway sessions to other NetView domains and send commands across the gateway sessions. When you use the gateways, an automation operator logs on to the other domains and handles communications, so you do not need to establish your own sessions with the domains with which you want to communicate. These values are retrieved from the GATEWAY control file entry.

Manage Full-Screen (TAF) Sessions
Enables you to establish a full-screen session with another application using the NetView Terminal Access Facility (TAF). After you log on to another application using TAF, the display on your domain looks like the full-screen display for the application that has the established session. These values are retrieved from the FULLSESS control file entry.

The following sections explain how to use the options.

Managing Cross Domain Operator Sessions

Use the AON: Cross Domain Functions panel to communicate with other NetView domains by establishing personal operator sessions with those domains. These values are retrieved from the CDLOG control file entry.

You can use the AON: Cross Domain Logon panel to:
- Start an operator session to another domain
- Stop an active session
- Send a command to an active session

You can establish NNT or RMTCMD sessions.

Note: To use the help desk to recover SNA resources on other NetView domains, you must have NNT sessions established to those domains to reactivate the failed SNA resources. Use the Manage Cross Domain Operator Sessions option to establish those sessions.

Displaying the AON: Cross Domain Logon Panel

To display the AON: Cross Domain Logon panel:

1. Display the AON: Cross Domain Functions panel.

   Note: To display the AON: Cross Domain Functions panel, see "Displaying the Cross Domain Functions Panel" on page 37.
2. Type **1** in the entry field on the **AON: Cross Domain Functions** panel.
3. Press **Enter**.

   The AON: Cross Domain Logon panel, shown in Figure 35 on page 39, is displayed.

   Note: You can also display the AON: Cross Domain Logon panel by entering **AON 1.5.1** or **CDLOG** on any command line.

```
EZLK5000              AON: Cross Domain Logon                  CNM01


                    Origin  Operator  OPER2
   1=Start    2=Stop    3=Send
   Domain  Status    Operator  Type    Init   Description
_  CNM01   Inactive            RMTCMD
_  CNM01   Inactive            NNT
_  CNM02   Inactive            NNT
_  AOC10   Inactive            NNT
_  CNM10   Inactive            NNT
_  AOF10   Inactive            NNT
_  AOC06   Inactive            NNT
_  CNM06   Inactive            NNT
_  AOC05   Inactive            NNT
_  CNM05   Inactive            NNT



To issue commands, tab to the Domain and press F4.

Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                            F12=Cancel
```

Figure 35. AON: Cross Domain Logon Panel

The AON: Cross Domain Logon panel displays the following data:

Domain
Target NetView domain.

Status Status of the operator session, which is either active or inactive.

Operator
Target operator ID for session.

Type Type of operator session, either NetView-NetView Task (NNT) or remote command (RMTCMD). This data is taken from the SESSTYPE= keyword of the CDLOG control file entry.

Init Specifies whether this operator session should start automatically when you log on to your home NetView domain. This data is taken from the INIT= keyword of the CDLOG control file entry.

Description
A brief description for the session.

You can use the AON: Cross Domain Logon panel to start and stop cross-domain operator sessions and to send a command from your NetView domain to another domain, using an active NNT or remote command session. The following sections explain how to perform these actions.

Starting a Cross Domain Operator Session

To start a cross-domain operator session:

1. Display the **AON: Cross Domain Logon** panel.

   Note: To display the AON: Cross Domain Logon panel, see "Displaying the AON: Cross Domain Logon Panel" on page 38.
2. Type **1** in the field next to the domain name in which you want to start a session on the Cross Domain Logon panel.
3. Press **Enter**.

When all the information needed to start the session is available from the control file, the session starts immediately. However, usually, you must provide further information to start the session. If further information is needed, AON displays the pop-up window shown in Figure 36.

```
EZLK5101              AON: Cross Domain Logon                  CNM01


                    Origin  Operator  OPER2
   1=Start    2=Stop    3=Send          ....................................
   Domain  Status    Operator  Type     :  Select an Action:                :
_  CNM01   Inactive            RMTCMD  ..................................  :
_  CNM01   Inactive            NNT     :  Domain: CNM05   Session:NNT      : :
_  CNM02   Inactive            NNT     :   Enter Operator Id, Password,    : :
_  AOC10   Inactive            NNT     :     and Initial Command/Clist.    : :
_  CNM10   Inactive            NNT     :                                   : :
_  AOF10   Inactive            NNT     : Operator ..........  OPER2        : :
_  AOC06   Inactive            NNT     : Password ..........                : :
_  CNM06   Inactive            NNT     : Run NNT Clist .....  NO            : :
_  AOC05   Inactive            NNT     : RMTCMD Command ....                : :
1  CNM05   Inactive            NNT     :                                   : :
                                        :                                   : :
                                        : F1=Help               F12=Cancel  : .
                                        ....................................
To issue commands, tab to the Domain and press F4.
EZL935I PLEASE ENTER PASSWORD
Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                              F12=Cancel
```

Figure 36. AON: Cross Domain Logon Panel with Pop-up Window

4. Type the operator ID you want to use to establish an NNT or remote commands session with the remote NetView domain in the **Operator** field.
5. Type the password for the operator ID at the remote NetView domain in the **Password** field.
6. Type **yes** or **no** in the **Run NNT Clist** field to specify whether the NNT routine runs initially.
7. Type **yes** or **no** in the **RMTCMD Command** field to determine whether the RMTCMD routine runs initially. This field applies only to remote command sessions.
8. Press **Enter**.

   The status of the domain changes to active, if this session starts. Otherwise, an error message is displayed. Notice that the operator ID you entered in the pop-up window also is displayed in the operator column.

   Note: You can use the F4 key to display a pop-up command window for issuing session commands. For more information about using these commands, see "Pop-up Command Windows" on page 6.

Stopping an Active Operator Session

To stop an active operator session to another domain:

1. Display the **AON: Cross Domain Logon** panel.

   Note: To display the AON: Cross Domain Functions panel, see "Displaying the AON: Cross Domain Logon Panel" on page 38.
2. Type **2** in the entry field beside the name of the domain you want to stop.
3. Press **Enter**.

AON displays a pop-up window shown in Figure 37 for confirmation.

```
EZLK5102              AON: Cross Domain Logon                  CNM01


                    Origin  Operator  OPER2
   1=Start    2=Stop    3=Send          ....................................
   Domain  Status    Operator  Type     :  Select an Action:                :
_  CNM01   Inactive              ..........................................:
_  CNM01   Inactive              :                                         : :
_  CNM02   Inactive              :        Stop Session Confirmation        : :
_  AOC10   Inactive              :        Domain=CNM05  Oper= OPER2        : :
_  CNM10   Inactive              :                                         : :
_  AOF10   Inactive              :                                         : :
_  AOC06   Inactive              :     Select an Action:                   : :
_  CNM06   Inactive              :                                         : :
_  AOC05   Inactive              :        ENTER to continue                : :
2  CNM05   Active    OPER2       :                                         : :
                                 :        F12 to cancel                    : :
                                 :                                         : .
                                 : F1=Help                      F12=Cancel :
To issue commands, tab to the Dom ....................................

Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                              F12=Cancel
```

Figure 37. AON: Cross Domain Logon Panel with Stop Session Confirmation Pop-up Window

4. Press **Enter** to confirm that you want to stop the session or press **F12** to cancel the session.

   When the session ends, the status of your domain is shown as inactive, and the following message is displayed in the panel:

   ```
   EZL930I SESSION(S) ENDED
   ```

Sending a Command to Another Domain

To send a command from your NetView domain to another domain using an active NNT or remote command session:

1. Display the **AON: Cross Domain Logon** panel.

   Note: To display the Cross Domain Logon panel, see "Displaying the AON: Cross Domain Logon Panel" on page 38.

2. On the Cross Domain Logon panel, type **3** in the field beside the name of the domain to which you want to send the command.
3. Press **Enter**.

   If you try to send a command across an inactive session, you see the following message:

   ```
   EZL881I NNT SESSION TO CNM02 IS NOT ACTIVE
   ```

   If the operator session is active, the pop-up window shown in Figure 38 on page 42 is displayed.

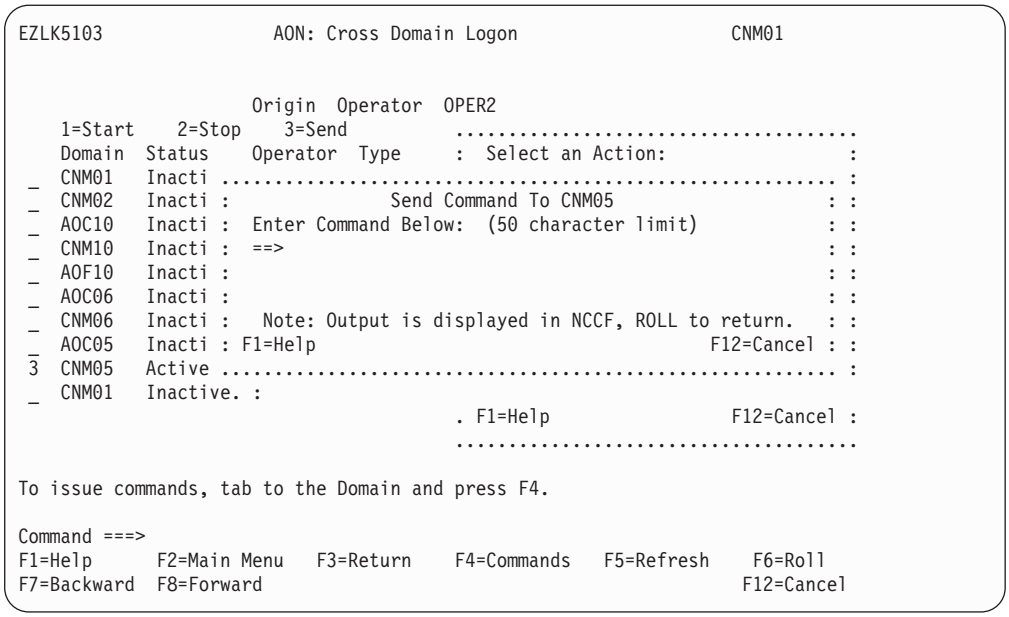


Figure 38. AON: Cross Domain Logon Panel with Send Command to Remote Domain Pop-up Window

4. Type the command you want to enter in the **Enter Command Below** field.
5. Press **Enter**.

   AON displays the command facility (NCCF). AON displays the results from issuing the command on the command facility, along with the following message:

   ```
   EZL938I ISSUING COMMAND = "command".  PRESS PF6 TO ROLL BACK
   TO CDLOG
   ```

6. To return to the operator interface, press the Roll key, **F6**.

   To display a pop-up command window from which you can issue session commands, press the Commands key, **F4**. For more information about using these commands, see "Pop-up Command Windows" on page 6.

Managing Cross-domain Gateway Sessions

Use the AON: Cross Domain Gateway Display panel to display the active and inactive sessions available for your domain. The list that is displayed is generated from the configuration file entries for your domain. You can use the AON: Cross Domain Gateway Display panel to start and stop a cross-domain gateway session and to send a command to a cross-domain gateway session. To send a command to a cross-domain gateway session, the session selected must be active. These values are retrieved from the GATEWAY control file entry.

Note: Gateway sessions must be NNT sessions. For more information, see the *IBM Tivoli NetView for z/OS Administration Reference*.

Displaying the AON: Cross Domain Gateway Panel

To display the AON: Cross Domain Gateway Display panel:

1. Display the **AON: Cross Domain Functions** panel.

   Note: To display the AON: Cross Domain Functions panel, see "Displaying the Cross Domain Functions Panel" on page 37.

2. Type **2** in the entry field on the AON: Cross Domain Functions panel.

3. Press **Enter**.

   The first half of the AON: Cross Domain Gateway Display panel shown in Figure 39 is displayed.

   Note: You can also display the AON: Cross Domain Gateway Display panel by entering **AON 1.5.2** or **AONGW** on any command line.

```
EZLK5200               AON: Cross Domain Gateway Display          CNM01
                   FOCAL POINT = CNM01
                   OPERATOR ID = OPER2                        More: >

 Select one of the following options, then press ENTER.
 1=Start    2=Stop    3=Send
         DESCRIPTION                        DOMAIN     STATUS        VIA
         --------------------------------   ------     --------      -----
 _       TO AOC06                           AOC06      INACTIVE      AOC06
 _       TO CNM06                           CNM06      ACTIVE        CNM06
 _       TO CNM10                           CNM10      ACTIVE        CNM10









Command==>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                              F11=Right     F12=Cancel
```

Figure 39. Cross Domain Gateway Display Panel

The Cross Domain Gateway Display panel displays the domains with which you are communicating through gateway operators and gives you information about the gateway operators that are controlling the communications.

The columns on the first half of the panel (Figure 39) provide the following information:

DESCRIPTION
The **Description** field shows a user-written description that describes the gateway to the remote NetView domain. For example, the first description says that this line of the status display states `TO AOC06`.

DOMAIN
The **Domain** field shows the name of the remote NetView domain as it is defined to NetView.

STATUS
The **Status** field indicates if communications between your home NetView domain and this remote NetView domain are ACTIVE or INACTIVE. In Figure 39, communications between the remote NetView domain, CNM06, and NetView domain, CNM01, are active.

VIA The **Via** field shows the NetView domain that is physically between this remote NetView domain and your NetView domain that is used for routing communications between them. In Figure 39, the communications between your NetView domain (CNM01) and CNM06 travel through CNM06, which means that your NetView domain and CNM06 are physically connected.

Note: Only one NetView domain can be physically located between your NetView domain and the remote NetView domain with which you establish gateway sessions.

4. To display the second half of the Cross Domain Gateway Display panel, press **F11**. Figure 40 shows the adjoining gateway display panel for the sample display shown in Figure 39 on page 43.

```
EZLK5201              AON: Cross Domain Gateway Display          CNM01
                    FOCAL POINT = CNM01
                    OPERATOR ID = OPER2                        More: <

 Select one of the following options, then press ENTER.
 1=Start    2=Stop    3=Send
      DIRECT INB/OUTB STAT  SYSNAME   PRODUCT     ADJ DOM   ALT DOM   USER ID
      --------------------  -------   -------     -------   -------   --------
 _    INACTIVE   INV OPID   NA        NA V.R
 _    ACTIVE     ACTIVE     CNM06     TIV-AON 1.4                     GATCNM06
 _    ACTIVE     ACTIVE     CNM10     TIV-AON 1.4                     GATCNM10









Command==>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                   F10=Left                 F12=Cancel
```

Figure 40. Cross Domain Gateway Display Panel—Scrolled-right View

The column headings in Figure 40 provide the following information about gateways between your NetView domain and this remote NetView domain:

DIRECT INB

The **Direct Inbound** field indicates if the remote domain has logged on to your NetView domain. Thus, for direct communications between your NetView domain and a physically adjacent NetView domain, the direct inbound status can be either ACTIVE or INACTIVE. If your NetView domain is not physically adjacent to the remote NetView domain, communications must be routed across an intermediate NetView domain that is physically adjacent to both your NetView domain and the remote NetView domain. The status is NO DIRECT, indicating that there are no direct communication gateways between your NetView domain and the remote NetView domain.

If an error occurred during a logon attempt by a gateway operator, the inbound status displays in yellow.

OUTB STAT

The **Outbound Status** field indicates if the gateway operator handling communications for your NetView domain is successfully logged on to this remote NetView domain and sending communications. A status of ACTIVE means that communications from your NetView domain (outbound) to this remote NetView domain are going to it successfully. If outbound communications are not active, the status displayed indicates the cause of the problem, if it is known.

If an error occurred during a logon attempt by a gateway operator, the inbound status displays in yellow.

SYSNAME

The **System Name** field shows you the name by which the Dynamic Display Facility (DDF) knows this remote NetView domain. This name might be the same name used for the NetView domain under the DOMAIN heading on the scrolled-left view of the gateway panel (see Figure 39 on page 43), but it is not required. If the connection has not been established, the panel displays `NA` to indicate that the name is not available. Your system programmer defines the DDF names for the NetView domains using the SYSNAME parameter on the ENVIRON SETUP control file entry.

PRODUCT

The **Product** field provides the name of the product being run on this target NetView domain, for example, TIV-AON 1.4. If the product is back-level, the entry says `OLD ?.?`, which indicates that communications have been established, but the product name is not supplied to this panel by the back-level product.

If communications with the domain have not been established since the last NetView startup, the name of the product cannot be determined, so you see `NA V.R`, which is an abbreviation for `Not Available Version.Release.`

ADJ DOM

The **Adjacent Domain** field indicates a NetView domain that is a path to the remote domain. The adjacent domain must be physically adjacent. If a NetView domain that is physically adjacent to both domains is defined as an adjacent NetView domain, you can use gateways to communicate with a NetView domain that is not physically adjacent to your own. Your system programmer defines adjacent NetView domains in the control file with the ADJNETV control file entry.

ALT DOM

The **Alternate Domain** field displays the name of the physically adjacent NetView domain that can function as a backup to the adjacent domain. If you are using an adjacent NetView domain as an intermediate routing domain, it is useful to have another pathway in case the preferred adjacent NetView domain goes down. Your system programmer defines backup NetView domains in the control file using the ADJNETV entry.

USER ID

The **User ID** field shows the user ID for the gateway operator logged on to your NetView domain from another NetView domain. The gateway operator is a program, but it logs on to the other NetView domains much like a human operator does. In Figure 40 on page 44, GATCNM06 is the user ID for the gateway operator on NetView domain CNM06 that logs on to your NetView domain. That is, GATCNM06 handles outbound communications for CNM06, but it brings inbound communications to your NetView domain.

Note: Each NetView domain uses one gateway operator for outbound communications. That gateway operator logs on to all the other NetView domains it communicates with. Your NetView domain can have many gateway operators logged on to it.

Sending a Command to a Cross-Domain Gateway Session

To send a command to a cross-domain gateway session, use the following steps. You can also use the SENDCMD command from the NetView command facility. See the NetView online help or the *IBM Tivoli NetView for z/OS Command Reference Volume 2* for more information.

1. Display the Cross Domain Gateway Display panel.

   Note: To display the AON: Cross Domain Display panel, see "Displaying the AON: Cross Domain Gateway Panel" on page 42.

2. Type **3** in the field beside the domain name for which you want to send a command.
3. Press **Enter**.

   The AON: Command Routing panel shown in Figure 41 is displayed.

```
EZLK5300              AON: Command Routing                      CNM01


          RESP        =>    _                     1=Yes, 2=Ack, 3=No

          OPERATOR ID =>    ________    Can be left blank

          To DOMAIN   =>    CNM06

          Command     =>    ____________________________________________




Command==>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                 F12=Cancel
```

Figure 41. AON: Command Routing Panel

4. Type the number of the entry you want in the **RESP** field. The choices are:

   1=Yes Displays the result of the command you issued on the command facility (NCCF).

   2=Ack Displays acknowledgment on the command facility indicating whether the command was issued.

   3=No Displays neither the result of whether the command was issued nor the acknowledgment.

5. Optionally, specify the operator ID where the command is to be issued in the **OPERATOR ID** field. If you do not specify an operator ID, the GATOPER defined in the control file is used as the operator ID.
6. Type the name of the NetView domain to which you are sending the command in the **To DOMAIN** field.
7. Type the command to issue on the other domain in the **Command** field.
8. Press **Enter**.

   The command you specified runs on the remote domain.

Managing Full-screen TAF Sessions

You can log on to selected applications in the system by using the AON: Terminal Access Facility Menu panel. AON enables automated setup of TAF sessions.

The AON: Terminal Access Facility Menu panel displays the status of all TAF full-screen applications that are defined in the control file for operators. You can start and stop TAF full-screen sessions from this panel. When you establish a TAF session, your current domain looks like the full screen for the application with which you are in session. These values are retrieved from the FULLSESS control file entry.

Note: It is not required that you establish sessions with applications using TAF.

Displaying the AON: TAF Menu Panel

To display the AON: Terminal Access Facility Menu panel:

1. Display the **Cross Domain Gateway Display** panel.

   Note: To display the AON: Cross Domain Display panel, see "Displaying the AON: Cross Domain Gateway Panel" on page 42.
2. Type **3** in the entry field on the AON: Cross Domain Display panel.
3. Press **Enter**.

   The AON: Terminal Access Facility Menu panel is displayed in Figure 42 on page 47.

   Note: You can also display the AON: Terminal Access Facility Menu panel by entering **AON 1.5.3** or **AONTAF** on any command line.

```
EZLK5400               AON: Terminal Access Facility Menu         CNM01

         SRCLU = TAFANF00   OPERATOR ID = OPER1

 Select one of the following. Then press Enter.
  1=Start/Return  2=Stop
         Description         Applid        System         Status
         -------------       ------        ------         --------
   _     TSO Application     TSO           CNM01          ACTIVE









 Command ===>
 F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
 F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 42. AON: Terminal Access Facility Menu Panel

The **AON: Terminal Access Facility Menu** panel displays the following data:

Description

A short description that identifies the application to be started.

Applid
The short identifier for the application.

System
The name of the system on which the application runs.

Status Specifies whether the application is active or inactive.

You can use the AON: Terminal Facility Menu panel to start, return to, and stop a TAF full-screen session. The following sections explain how to perform these actions.

Starting an Application Session

To start a TAF session:

1. Display the AON: Terminal Access Facility Menu panel.

   Note: To display the AON: Terminal Access Facility Menu panel, see "Displaying the AON: TAF Menu Panel" on page 47.
2. Type **1** next to the session you want to start.
3. Press **Enter**.

   The application you selected is displayed. The next step you take depends on the application. For example, if the application is Time Sharing Option (TSO), the logon panel for that TSO session is displayed.

Stopping an Application Session

To stop a TAF session:

1. Display the **AON: Terminal Access Facility Menu** panel.

   Note: To display the AON: Terminal Access Facility Menu panel, see "Displaying the AON: TAF Menu Panel" on page 47.
2. Type **2** next to the session you want to stop.
3. Press **Enter**.

   The TAF session deactivates.
4. Press **F5** to refresh the status.

Chapter 6. Performing Task and Log Maintenance

To perform task and log maintenance, use the AON: Task and Log Maintenance panel and the subordinate panels. Use these panels to:

- Display data in the configuration and status files
- Browse the NetView and automation logs
- Start and stop automation components
- Work with automation tasks

Displaying the AON: Task and Log Maintenance Panel

To display the Task and Log Maintenance panel:

1. Display the Base Functions panel.
2. Type **7** in the entry field on the AON: Base Functions panel.
3. Press **Enter**.

   The AON: Task and Log Maintenance panel shown in Figure 43 is displayed.

   Note: You can also display the AON: Task and Log Maintenance panel by typing **AON 1.7** or **AONMAINT** on any command line.

```
EZLK7000                AON: Task and Log Maintenance            CNM01


Select an option

         _ 1. Display Configuration Data
           2. Display Status Data
           3. Browse NetView Log
           4. Browse Automation Log
           5. Perform Data base Maintenance
           6. Start/Stop Automation Components
           7. NetView Tasks/Automation Operators









Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 43. AON: Task and Log Maintenance Panel

The AON: Task and Log Maintenance panel displays the following options:

Display Configuration Data
: Displays current configuration data from the control file for an entry and type. The control file is checked and results displayed. You can add, change, and delete the configuration data.

Display Status Data
: Displays the current status for specific IDs or a range of IDs. Deletions from the status file are enabled.

Browse NetView Log
The command BR NETLOGA enables you to browse the NetView log.

Browse Automation Log
The NLOG command enables you to browse the AON log.

Perform Data Base Maintenance
Enables selective purging of outdated VSAM database records. The databases that can be maintained are the NetView Hardware Monitor database, the NetView Session Monitor database, the AON status file, and other databases as installed by the AON components.

Start/Stop Automation Components
Enables you to start, stop, or reload the automation components. The components are DDF, LOG file, status file, and control file. In addition, you can change which control file member is loaded again or you can load another control file.

Automation Tasks/Operators
Finds all tasks on the domain and displays the information in a list. From this list, you can stop, start, force the task off the system, display detailed information about the task, or show the utilization of the task.

The following sections explain how to use these options.

Displaying Configuration Data

Use the AON: Configuration Data Display panel to display data in the control file.

Displaying the AON: Configuration Data Display Panel

To display the AON: Configuration Data Display panel:

1. Display the **AON: Task Log and Maintenance** panel.

   Note: To display the AON: Task Log and Maintenance panel, see "Displaying the AON: Task and Log Maintenance Panel" on page 49.
2. Type **1** in the entry field.
3. Press **Enter**.

   The AON: Configuration Data Display panel, shown in Figure 44 on page 51, is displayed.

   Note: You can also display the AON: Configuration Data Display panel by entering **AON 1.7.1** or **DSPCFG** on any command line.

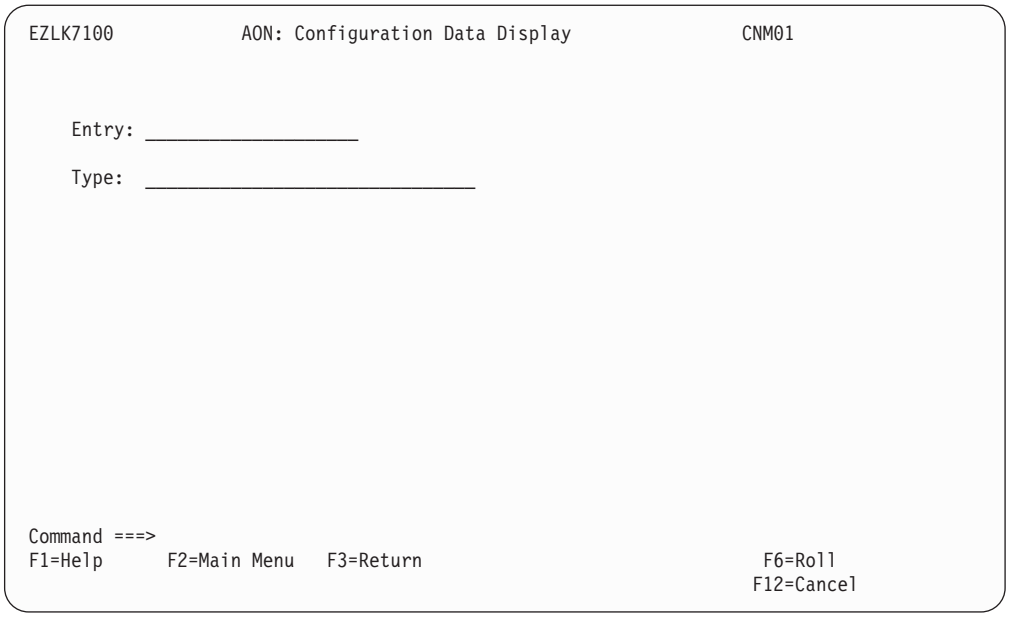


Figure 44. AON: Configuration Data Display Panel

4. Type the name of the entry in the control file that you want to display in the **Entry** field. You can enter from 1 to 15 characters without embedded blanks, commas, or quotation marks.

   Note: The following wildcards are enabled for this field:
   - * Multiple character wildcard
   - % Single character wildcard

   You can display the entire control file by entering an asterisk (*) in the this field.

5. Type any data associated with the entry in the **Type** field. You can enter from 1 to 32 characters without embedded blanks, commas, or quotation marks.

   Note: The following wildcards are enabled for this field:
   - * Multiple character wildcard
   - % Single character wildcard

   You can display the entire control file by entering an asterisk (*) in the this field.

   For example, to display all settings for notification operators, type **NTFYOP** in the entry field.

6. Press **Enter**.

   The AON: Configuration Data Display panel, shown in Figure 45 on page 52, displays the control file entries for notification operators.

```
EZLK7110          Display Configuration Data                        CNM01

Select one of the following.  Then press Enter.                     More:   +
 1=Add  2=Change  3=Delete

_  OPER1                    NTFYOP
_    OPER                   'OPERATOR ONE'
_    CLASS                  (60,65,66)
_    HELDMSG                (I,W,E,A)
_  OPER2                    NTFYOP
_    OPER                   'OPERATOR TWO'
_    CLASS                  (10,20,30,50)
_    HELDMSG                (I,W,E,A)
_  OPER3                    NTFYOP
_    OPER                   'OPERATOR THREE'
_    CLASS                  (10,30)
_  OPER4                    NTFYOP
_    OPER                   'OPERATOR FOUR'
_    CLASS                  10
_  OPER5                    NTFYOP

Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 45. Display Configuration Data Panel

Use the AON: Configuration Data Display panel to add, change, and delete notification operators. The following sections explain how to perform these actions. The changes are made to the in-storage copy of your policy and overwritten the next time the policy is reloaded.

Adding Data to the Control File

To add an entry to the control file:

1. Display the control file through the **AON: Configuration Data Display** panel.

   Note: To display the control file with the AON: Configuration Data Display panel, see "Displaying the AON: Configuration Data Display Panel" on page 50.

2. Type **1** next to an existing control file entry on the AON: Configuration Data Display panel.

   Note: To add only a keyword, type **1** in a field for a keyword.

3. Press **Enter**.

   The Configuration Data Display, shown in Figure 46 on page 53, is displayed with the ADD ENTRY pop-up window.

```
EZLK7111          Configuration Data Display                      CNM01

Select one of the following.  Then press Enter.                   More:   +
 1=Add  2=Change  3=Delete
                          ................................................
 1  OPER1                 :                 ADD ENTRY                    :
 _    OPER                : Entry . . ____________________               :
 _    CLASS               :                                              :
 _    HELDMSG             : Type  . . ___________________________        :
 _  OPER2                 :                                              :
 _    OPER                : F1=Help                            F12=Cancel :
 _    CLASS               :..............................................:
 _    HELDMSG               (I,W,E,A)
 _  OPER3                  NTFYOP
 _    OPER                 'OPERATOR THREE'
 _    CLASS                (10,30)
 _  OPER4                  NTFYOP
 _    OPER                 'OPERATOR FOUR'
 _    CLASS                10
 _  OPER5                  NTFYOP

Command ===>
F1=Help       F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward   F8=Forward                                           F12=Cancel
```

Figure 46. Configuration Data Display Panel with Add Entry Pop-up Window

4. Type the name of the entry you want to add in the **Entry** field in the pop-up window.
5. Type the type of the entry you want to add in the **Type** field in the pop-up window.
6. Press **Enter**.

   The Define Data pop-up window shown in Figure 47 is displayed.

```
EZLK7112          Configuration Data Display                      CNM01

Select one of the following.  Then press Enter.                   More:   +
 1=Add  2=Change  3=Delete
                          ................................................
 1  OPER1                 :                 ADD ENTRY                    :
 _    OPER                : Entry . . ntfyop_____________                :
 _    CLASS               :                                              :
 _    HELDMSG             : Type  . . tstoper____________________        :
 _  OPER2    ..............................................................  :
 _    OPER   :                  DEFINE DATA                            :  :
 _    CLASS  :  KEYWORD . . . . _____________________________          : .:
 _    HELDMSG:                                                         :
 _  OPER3    :  KEYWORD VALUE .  _____________________________          :
 _    OPER   :                   _____________________________          :
 _    CLASS  :                                                         :
 _  OPER4    : F1=Help                                      F12=Cancel :
 _    OPER   :                                             F10=Save   :
 _    CLASS  :.............................................................:
 _  OPER5                  NTFYOP

Command ===>
F1=Help       F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward   F8=Forward                                           F12=Cancel
```

Figure 47. DEFINE DATA Pop-up Window

7. Type a keyword in the keyword field of the **DEFINE DATA** pop-up window. The keyword can be any name from 1 to 31 characters in length. You cannot use embedded blanks, commas, or quotation marks.

8. Type a value in the **KEYWORD VALUE** field. This is the value for the keyword entered. You can use as many as 62 characters for the value. You can use embedded blanks and commas only if the keyword value is enclosed in quotation marks.
9. To save the settings press **F10**.

   The following message is displayed:

   `EZL001I REQUEST EZLSCMOD WAS SUCCESSFUL FOR ntfyop.`

Displaying Status Data

Use the Display Status Data panel and the subordinate panels to display data in the status file.

The Display Status Data panel uses a set of command processors to write and update records for the AON status files. These records are written to a VSAM data set. The file contains the following type of information for each resource:

- Automation Status
- The operator ID that last changed the **Automation Status** field
- The last exceeded threshold
- The time stamps for errors that resulted in a lost session
- The operator ID that last changed a record in the Automation Status file.
- Additional information depending on the component.

Displaying the Status Data Panel

To display the Display Status Data panel:

1. Display the **AON: Task Log and Maintenance** panel.

   Note: To display the AON: Task Log and Maintenance panel, see "Displaying the AON: Task and Log Maintenance Panel" on page 49.
2. Type **2** in the entry field.
3. Press **Enter**.

   The Display Status Data panel shown in Figure 48 on page 55 is displayed.

   Note: You can also display the AON: Configuration Data Display panel by typing **AON 1.7.2** or **DSPSTS** on any command line.

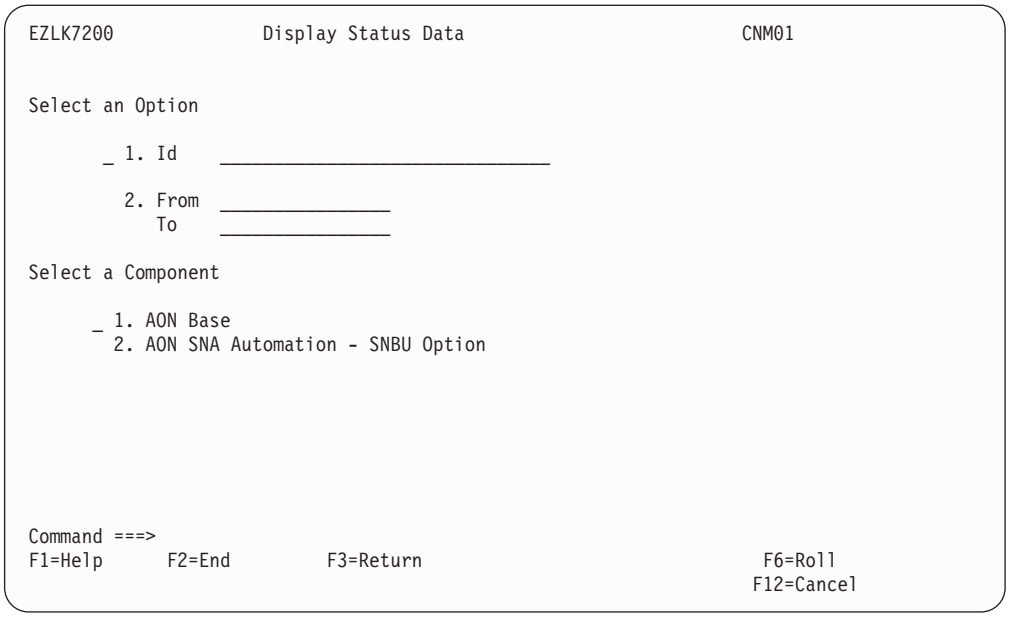


Figure 48. Display Status Data Panel

The Display Status Data panel displays the following options:

Select an Option
Searches the status file by using one of two methods that you specify:

Id Searches for a specific resource by searching on the ID of the resource. The ID is the 16-character resource name for the resource records. To use this option, see the "Example" section.

From/To
Searches an alphabetical range within which the ID of the resource you want to view falls. The **From** and **To** fields are both required for this option. These entries are also 16-character keys to the resource records.

Select a Component
Specifies an AON component associated with the resource. If your component is not listed on the panel, select **1** for AON base.

The following example explains how to display the status of a resource. If you need status file records for SNBU automation, you must select those components. Status data for a resource managed by those components use different record formats and the data is accessible only by selecting that component.

Example

When you know the ID of a resource and want to display status data for that resource, do the following:

1. Type **1** in the **Select an Option** entry field on the Display Status Data panel.
2. Type the name of the resource in the **Id** entry field. This example uses resource **TA1N400**.
3. Type the number corresponding to the component type of the resource in the **Select a Component** entry field. This example uses **1** for AON Base.
4. Press **Enter**.

The Display Status Data panel, shown in Figure 49, is displayed with the data for the resource you specified.

```
EZLK7210          Display Status Data                              CNM01

Select one of the following.  Then press Enter.
 1=Delete

 _  ID= TA1N400          , TYPE= UNKNOWN    , STATUS= ACTIV
      LAST UPDATE BY OPERATOR AUTMSG
      LAST THRESHOLD EXCEEDED -
      OPERATOR NOTIFIED: Y , TIMER SET:
      LAST STATUS CHANGE DATE= 04/18/07 , TIME= 19:27 , OPID= AUTMSG
      LAST MONITORED DATE= 04/18/07 , TIME= 19:27
      NO ERROR DATA AVAILABLE









Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 49. Display Status Data Panel

5. Optionally, type **1** to delete the record from the status file.
6. Press **Enter**.

Maintaining Databases

Use the AON: Database Maintenance panel to maintain databases. The panel is built dynamically, based on the components installed. However, if a component does have a status file, it is defined in the component option definition table using the STSCMD= keyword. Select the database with which you want to work, and specify the Purge Limit and Purge Time.

Note: The DBMAINT command reproduces, without records marked for deletion, the VSAM database that is currently active. When the DBMAINT command finishes, the database that was active when the DBMAINT command started is activated again. The DBMAINT command works for an active primary or secondary VSAM database for the NetView hardware monitor (NPDA) or the NetView session monitor (NLDM). The AON status file (EZLSTS) has only a primary database.

Displaying the AON: Database Maintenance Panel

To display the Database Maintenance panel:

1. Display the **AON: Task Log and Maintenance** panel.

   Note: To display the AON: Task Log and Maintenance panel, see "Displaying the AON: Task and Log Maintenance Panel" on page 49.
2. Type **5** in the entry field.
3. Press **Enter**.

   The AON: Database Maintenance panel, shown in Figure 50 on page 57, is displayed.

Note: You can also display the AON: Database Maintenance panel by typing **AON 1.7.5** or **DBMAINT** on any command line.

```
EZLK7500                AON: Database Maintenance              CNM01


Select one of the following

         _ 1. Session Monitor
           2. Hardware Monitor
           3. AON Base
           4. AON SNA Automation - SNBU Option




Compress    :  1                    (1=Yes   2=No)

Purge Limit :  007 Days

Purge Time  :  045 Minutes


Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6==Roll
F7=Backward  F8=Forward                                          F12==Cancel
```

Figure 50. AON: Database Maintenance Panel

The AON: Database Maintenance panel displays the following fields and options:

Select one of the following
Enables you to purge records and compress the databases for hardware and session monitors and for AON status files.

Compress
Specifies whether to compress a database after deleting records from it.

Purge Limit
Specifies the number of days to leave in the file. If the number is 7, then all records older than 7 days are purged.

Purge Time
Specifies the amount of time to wait for the purge of the records to complete.

Chapter 7. Using Support Functions

This chapter documents general-use programming interface and associated guidance information.

Use the AON Support Functions panel and the subordinate panels to perform the following options:

- Set traces
- Reinitialize AON
- Enable or disable automation
- Set common global variables
- Load or unload the automation table
- Browse or reload the option definition tables

The following subsections explain how to use these options.

Displaying the AON: Support Functions Panel

To display the Support Functions panel:

1. Display the Base Functions panel.

   Note: To display the Base Functions panel, see "Displaying the AON Base Functions Panel" on page 4.

2. Type **8** in the entry field.
3. Press **Enter**.

   The AON: Support Functions panel is shown in Figure 51 on page 60.

   Note: You can also display the AON: Support Functions panel by typing **AON 1.8** on any command line.

```
EZLK8000               AON: Support Functions                    CNM01


Select an option

         _ 1. Trace Control
           2. Reinitialize AON
           3. Enable/Disable Automation
           4. Common Global Editor
           5. Automation Table Control
           6. Loader Tables









Command ===>
F1=Help      F2=Main Menu   F3=Return                            F6=Roll
                                                                F12=Cancel
```

Figure 51. AON: Support Functions Panel

The AON: Support Functions panel displays the following options:

Trace Control
Traces the AON programs. You can use this option to debug problems without editing the AON program.

Reinitialize AON
Restarts AON using the automation table and control file currently being used.

Enable/Disable Automation
Turns off automation for AON and its components, or turns off automation for the components and subcomponents only.

Common Global Editor
Lists all common global variables used in NetView. Use this option to add, change, or delete common global variables.

Automation Table Control
Invokes the AUTOMAN function to assist you in managing your automation tables.

Loader Tables
Lists the tables used to load the common global variables. Use this option to browse and reload tables.

The following sections explain how to use these options.

Setting Traces

To trace all of the programs that AON uses, or to trace a single program, use the AON: Set Trace panel.

Displaying the AON: Set Trace Panel

To display the AON: Set Trace panel:

1. Display the **AON: Support Functions** panel.

Note: To display the AON: Support Functions panel, see "Displaying the AON: Support Functions Panel" on page 59.

2. Type **1** in the entry field on the AON: Support Functions panel.
3. Press **Enter**.

   The AON: Set Trace panel is shown in Figure 52.

   Note: You can also display the AON: Set Trace panel by entering **AON 1.8.1** or **AONTRACE** or **RXTRACE** on any command line.

```
EZLK8100                      AON: Set Trace                      CNM01


Select an option

       _ 1. Entry/Exit tracing
         2. Program tracing
         3. Administrative Functions









Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 52. AON: Set Trace Panel

The AON: Set Trace panel displays the following options:

Entry/Exit tracing
: Traces all the entry and exit parameters of the AON code. This includes command lists, REXX programs, and some AON command processors. You can trace the programs running on an operator ID, a NetView domain, or both.

Program tracing
: Traces the command lists and interpreted REXX programs you specify. Also, specify a trace option that limits the trace. Use the Program tracing option for the operator ID or the domain.

Administrative Functions
: Authorized operators can enable Entry/Exit tracing and Program tracing. By default, tracing is disabled and can only be enabled through this option.

The following sections explain how to use these options.

Setting Entry/Exit Traces

To trace all the programs that AON uses:

1. Display the **AON: Set Trace** panel.

   Note: To display the AON: Set Trace panel, see "Setting Traces" on page 60.
2. Type **1** in the entry field on the AON: Set Trace panel.
3. Press **Enter**.

The AON: Set Entry/Exit Tracing panel is shown in Figure 53.

```
EZLK8110              AON: Set Entry/Exit Tracing               CNM01



Operator id   OPER1 __ (? for list)
Select trace option . . .

           _ 1. ON          Turn on entry and exit tracing for operator
             2. OFF         Suppress entry and exit tracing for operator
             3. DEFAULT     Use trace option for domain (domainwide default)


Domain id     CNM01
Select trace option . . .

           _ 1. ON          Turn on entry and exit tracing for domain
             2. OFF         Suppress entry and exit tracing for domain




Command ===>
F1=Help      F2=Main Menu   F3=Return                                F6=Roll
                                                                    F12=Cancel
```

Figure 53. AON: Set Entry/Exit Tracing Panel

4. Select Entry/Exit tracing for an operator ID, a domain, or both on the **AON: Set Entry/Exit Tracing** panel. Domain tracing occurs only on the current domain. Current settings are highlighted.

   To select Entry/Exit tracing for a domain only, use the following steps:

   a. Type **1** for ON or **2** for OFF in the **Domain id Select trace option** entry field.

   b. Press **Enter**.

      The following message is displayed:

      ```
      EZL908I SETTINGS REPLACED
      ```

Setting Program Traces

To set a trace for a particular program:

1. Display the **AON: Set Trace** panel.

   Note: To display the AON: Set Trace panel, see "Setting Traces" on page 60.

2. Type **2** in the entry field on the AON: Set Trace panel.
3. Press **Enter**. The AON: Set Program Tracing panel is shown in Figure 54 on page 63.

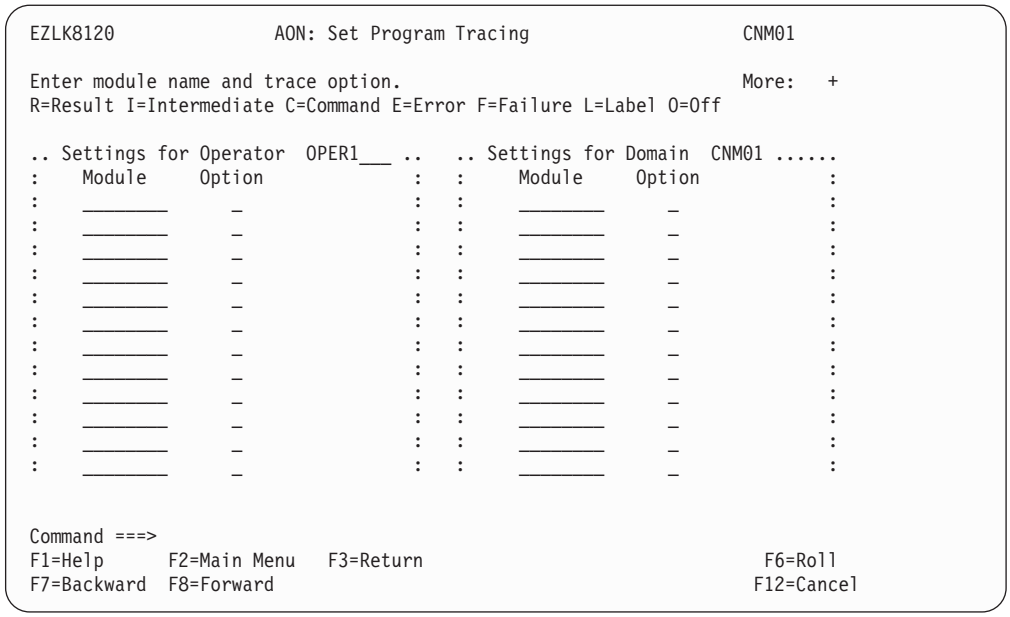


Figure 54. AON: Set Program Tracing Panel

You can trace the programs by operator ID or domain ID. If you trace by domain ID, NetView traces the programs in the domain the operator is logged onto. You can also select a tracing option on this panel that enables you to limit the trace.

4. Type the name of the program or programs you want to trace in the **Module** column for either the operator ID or domain ID.
5. Type the letter for the trace option you want to use in the **Option** column. You can select one of the following trace options:

   R (Result)
   Use this option for general debugging. AON traces all the clauses before running them and traces the final results of evaluating expressions.

   I (Intermediate)
   Use this option to trace all clauses before they are run and trace any intermediate results during expression evaluation and substitution.

   C (Command)
   Use this option to trace all commands before running them and display any error return codes from the commands.

   E (Error)
   Use this option to trace any command that has an error or fails after it is run. This option also displays the return codes.

   F (Failure)
   Use this option to trace any command that fails after it is issued. This option is the same as the Trace Normal command.

   L (Label)
   Use this option to trace all labels passed. Make a note of all subroutine calls and signals when you use this option.

   O (Off)
   Use this option to turn all traces off and reset any previous trace settings.

Note: If the program being traced is a NetView command list, the C, E, and O options are valid and all other selections result in a trace ALL.

6. Press **Enter**.

   The following message is displayed:

   ```
   EZL908I SETTINGS REPLACED
   ```

Administrative Functions

By default, entry/exit and program tracing is disabled for performance purposes. This is defined on your environment setup policy definition statement. To enable tracing:

1. Display the **AON: Set Trace** panel.

   Note: To display the AON: Set Trace panel, see "Setting Traces" on page 60.

2. Type **3** in the entry field on the AON: Set Trace panel.
3. Press **Enter**.

   The AON: Trace Administrative Functions panel is shown in Figure 55.

```
EZLK8130              AON: Trace Administrative Functions        CNM01


  Current Trace Setting is . . .  NONE

  To modify the trace setting select an option:

          Trace Setting      Entry/Exit Trace          Program Trace
           _ 1. ON                 Yes                     Yes
             2. OFF                No                      Yes
             3. NONE             Disabled                Disabled


  Selecting NONE will disable both Entry/Exit and Program tracing.

  You should select NONE for best overall performance and only
  select ON or OFF when you need to debug a possible problem.




Command ===>
             F2=Main Menu   F3=Return                                F6=Roll
                                                                   F12=Cancel
```

Figure 55. AON: Trace Administrative Functions Panel

Figure 55 displays that tracing is currently set to NONE, which means that all tracing is disabled for this domain. To enable tracing, select Options 1 or 2. Option 1 enables both entry/exit and program tracing. Option 2 only enables Program tracing.

When you select options 1 or 2 you can turn on program tracing for any AON program by going back to the Trace Menu panel and selecting the **Program Trace** option.

Reinitializing Automation

Use the AON: Reinitialize Automation panel to reinitialize the AON program. You can use the automation table and control file currently being used. To display the AON: Reinitialize Automation panel:

1. Display the **AON: Support Functions** panel.

   Note: To display the AON: Support Functions panel, see "Displaying the AON: Support Functions Panel" on page 59.
2. Type **2** in the entry field on the AON: Support Functions panel.
3. Press **Enter**.

   The AON: Reinitialize Automation panel is shown in Figure 56.

   Note: You can also display the AON: Reinitialize Automation panel by typing **AON 1.8.2** or **AONINIT** on any command line.

```
EZLK8200                AON: Reinitialize Automation             CNM01



 Select Confirmation Option    . . _ 1. Confirm

                                     2. Cancel


 Reload with Automation Table  . . DSITBL01
 Generate Listing File         . . LISTNAME


 Reload with Control File      . . NVPOLICY


 Trace Setting                 . . OFF



Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 56. AON: Reinitialize Automation Panel

4. Verify that the name of the automation table is correct. The default name for the automation table is DSITBL01. The policy file is defined in CNMSTYLE and its included members. The policy file name is fixed and cannot be changed.
5. Type **1** in the first entry field to confirm that you want to reinitialize AON or type **2** to cancel the reinitialization. For information on how AON loads the automation table, refer to the *IBM Tivoli NetView for z/OS Installation: Getting Started*.
6. Press **Enter**.

   AON confirms or cancels your request.

Enabling and Disabling Automation

You can use the AON: Enable/Disable Automation panel to turn off message processing for components. The panel supports multiple selections. If you enable or disable message processing for the AON base, you also enable or disable automation for all of the components. Therefore, select AON with caution.

When you select options 1–4 on the listing panel, special confirmation panels enable you to confirm your action on the Enable/Disable panel. When you select a component that has subcomponents, the confirmation panel that is displayed lists all the subcomponents that the selection affects.

Note: Using this panel to enable or disable automation does not permanently change the settings. When you recycle AON or select the default option, AON resets the settings.

Displaying the AON: Enable/Disable Automation Panel

To display the AON: Enable/Disable automation panel:

1. Display the **AON: Support Functions** panel.

   To display the AON: Support Functions panel, see "Displaying the AON: Support Functions Panel" on page 59.
2. Type **3** in the entry field on the AON: Support Functions panel.
3. Press **Enter**.

   The AON: Enable/Disable Automation panel is shown in Figure 57.

   Note: You can also display the AON: Enable/Disable Automation panel by entering **AON 1.8.3** or **AONENABL** on any command line.

```
EZLK8300              AON: Enable/Disable Automation             CNM01

Select one of the following.  Then press enter.
 1=Enable  2=Disable  3=Default  4=Initialize  5=Product Information

   Component Name                                 Initialized  Enabled
  _ AON Base                                      Y             Y
  _ AON SNA Automation                            Y             Y
  _ AON SNA Automation - SNBU Option              Y             Y
  _ AON SNA Automation - X25 Option               N             N
  _ AON SNA Automation - APPN Option              Y             N
  _ AON SNA Automation - SubArea Option           Y             Y
  _ AON TCP/IP Automation                         Y             Y
  _ AON TCP/IP Automation - NV4AIX Option         N             N
  _ AON TCP/IP Automation - TCP/IP 390 Option     Y             Y









Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6==Roll
F7=Backward  F8=Forward                                           F12==Cancel
```

Figure 57. AON: Enable/Disable Automation Panel

The AON: Enable/Disable panel displays the following information:

Component name
Lists the components.

Initialized
States whether the component has been initialized when AON initialized or when you specified for it to be initialized.

Enabled
States the current ENABLE/DISABLE setting of the component. A component can be listed as initialized but not enabled, but when a component is not initialized, it cannot be enabled.

You can use the AON: Enable/Disable Automation panel to enable and disable automation, to specify default automation for a component, to initialize a component, and to display information about a product. The following sections explain how to perform these actions.

Using the Common Global Editor

You can use the Common Global Editor panel to view all of the current common global variables being used in AON. You can use the Common Global Editor panel to add, change, or delete common global variables (CGLOBALs).

Use this editor with caution because any changes you make can affect AON processing. Each common global variable is restricted to 255 characters. Mixed case is supported for common global variable values and is set exactly as you type.

Any changes that you make by using the editor are for the current AON session only. When AON recycles, the common global variables are reset to values at initialization time.

Displaying the AON: Common Global Editor Panel

To display the AON: Common Global Editor panel:

1. Display the **AON: Support Functions** panel.

   Note: To display the AON: Support Functions panel, see "Displaying the AON: Support Functions Panel" on page 59.
2. Type **4** in the entry field on the AON: Support Functions panel.
3. Press **Enter**.

   The AON: Common Global Editor panel is shown in Figure 58.

   Note: You can also display the AON: Common Global Editor panel by typing **AON 1.8.4** or **CGED** on any command line.

```
EZLK8400                  AON: Common Global Editor              CNM01


Select an option

         _ 1. EZLRT
           2. EZLOPT
           3. Generic


Search Criteria

         ____________________









Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 58. AON: Common Global Editor Panel

The AON: Common Global Editor panel displays the following options:

Select an option.
Specifies a common global. The options are:

EZLRT
Shows the resource type common global variables set from the option definition tables at AON startup. Do not delete these common global variables.

EZLOPT
Shows the option definitions set from the option definition tables at AON startup. Do not delete these common global variables.

Generic
Shows the common global variables specified by the operator. If you select this option and do not fill in the **Search Criteria** field, AON displays all of the common global variables. If you type a value in the **Search Criteria** field, AON appends an asterisk (*) to the global name. You can also use a wildcard.

Search Criteria
Specifies the search criteria that you want to use.

The following sections explain how to use these options.

Changing Common Global Variables

To change a common global variable:

1. Display the AON: Common Global Editor panel.

   Note: To display the AON: Common Global Editor panel, see "Displaying the AON: Common Global Editor Panel" on page 67.

2. Select an option and the search criteria you want on the AON: Common Global Editor panel. For example, type **1** for EZLRT common global variables.

   Note: If you select EZLRT or EZLOPT, the editor checks for an entry in the **Search Criteria** field. The entry in this field is then appended to EZLRT or EZLOPT. The search criteria must not exceed 31 characters.

   For example, if you type **1** in the **Select Option** field and specify **AON** in the **Search Criteria** field, the editor searches for all common global variables that are EZLRT.AON.*

   Or, if you type **2** in the **Select Option** entry field and enter **APPN.ACT*** in the **Search Criteria** field, the editor looks for all common global variables that are EZLOPT.APPN.ACT*

3. Press **Enter**.

   The CGLOBAL EDITOR panel is shown in Figure 59 on page 69.

```
EZLK8410          Operator Command:  CGLOBAL Editor               CNM01

Select one of the following.  Then press Enter.                   More:   +
 1=Add  2=Change  3=Delete

    Name                            0.........1.........2.........3.........4.
_   EZLRT.APPL.IST400I               (FKV552,)
_   EZLRT.APPL.IST804I               (EZL550,"FKVEAIDC "RESNAME JOBNAME OUTMSG
_   EZLRT.APPL.IST805I               (,"FKVEAIDD "RESNAME)
_   EZLRT.APPL.MSGCLASS              26
_   EZLRT.APPL.OPTION                SA
_   EZLRT.CDRM.CRITCACT              FKVEAIDB()
_   EZLRT.CDRM.IST7270B              (FKV520,)
_   EZLRT.CDRM.IST7270C              (FKV522,)
_   EZLRT.CDRM.IST7270D              (FKV525,)
_   EZLRT.CDRM.IST7270E              (FKV511,)
_   EZLRT.CDRM.IST7270F              (FKV517,)
_   EZLRT.CDRM.IST72707              (FKV521,)
_   EZLRT.CDRM.IST72710              (FKV519,)
_   EZLRT.CDRM.IST72711              (FKV531,)

Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                             F11=Right     F12=Cancel
```

Figure 59. Operator Command: CGLOBAL Editor Panel

4. Type **2** in the entry field next to the CGLOBAL you want to change.
5. Type over the existing value of the CGLOBAL to the right of the entry field with the new value.
6. Press **Enter**.

   The following message is displayed:

   `EZL919I ALL ACTIONS SUCCESSFULLY COMPLETED`

   AON changes the CGLOBAL.

Chapter 8. Managing Multiple Automation Tables

This chapter documents general-use programming interface and associated guidance information.

The AUTOTBL command enables you to load multiple automation tables. An automation table, typically, is made up of many included members. The automation table management (AUTOMAN) command enables you to make changes to selected tables or changes that have an affect on all automation tables. To help you work with automation tables, AUTOMAN provides a full-screen panel interface.

AUTOMAN and the full-screen panel interface enable you to do the following:

- View and manage single or multiple automation tables
- Enable or disable individual automation tables or statements
- View existing tables and their status

Getting Started

AUTOMAN provides individual table commands and global commands. The individual table commands apply to one or more selected tables, and global commands apply to all automation tables. See the following features and options of each type of command:

- With individual table commands, you can enable or disable automation tables. You can also enable or disable automation table statements, based on the following:
  - Sequence number
  - Label
  - Endlabel
  - Block
  - Group
  - Include

  With individual table commands, you can also issue requests for the following:
  - Display disabled statements
  - Display labels, blocks, and groups
  - Load or unload tables
  - Test tables
  - Display the %INCLUDE structure
  - Display synonyms
- With global commands, you can enable, disable, or unload automation tables. You can enable disabled statements or enable and disable blocks, groups, and labels. Global commands affect all automation tables.

  Automation statements can be enabled or disabled across all tables based on the following:
  - Label
  - Block
  - Group

With global commands, you can also issue requests for the following:

- Locate disabled statements
- Display labels, blocks, and groups
- Display the %INCLUDE structure

Using Automation Table Management

From the command line, enter **AUTOMAN**. The panel in Figure 60 is displayed. This panel enables you to see your automation table structure and take action, as necessary.

```
EZLK8500                 Automation Table Management

AUTOMATION TABLE           Enter any character in the selection fields
SEL     POS     NAME         STATUS     MARKERS     TASK     DATE     TIME
 _       1      DISTABLE     ENABLED                NETOP2   03/18/07 13:15:24
 _       2      DSITBL01     ENABLED    (AON)       NETOP2   03/18/07 13:11:09









Command ===>
F1=Help      F2=Main Menu  F3=Return     F4=Commands  F5=Refresh  F6=Roll
F7=Backward  F8=Forward    F9=Responses  F10=Global Commands      F12=Cancel
```

Figure 60. Automation Table Structure

Using Commands for Selected Tables

The Commands pop-up in Figure 61 on page 73 provides options to help you work with one or more selected automation tables. In the following figure, options 1–7 apply to one or more selected tables, in contrast to global commands in *IBM Tivoli NetView for z/OS Automation Guide*, which apply to all tables. Options 8–9 apply to only one table.

In Figure 60, pressing **F4**, for `Commands`, displays Figure 61 on page 73 where `DSITBL01` is selected to be disabled.

Selecting option 2 causes a pop-up to be displayed to confirm that you want to disable the selected table. When DSITBL01 is disabled, a message will indicate whether the command was successful or whether failures were detected. Press **F9** in Figure 60 to view the results of your command.

```
EZLKATBC             AUTOMATION TABLE MANAGEMENT

AUTOMATION TABLE       Enter any character in the selection fields
SEL  POS  NAME    ................................................
/     1   DISTABL : COMMANDS (Choose a highlighted command option)    :
_     2   DSITBL0 :                                                   :
                  :  _     1 -ENABLE the selected tables             :
                  :        2 -DISABLE the selected tables            :
                  :        3 -RELOAD the selected tables             :
                  :        4 -RELOAD and REINSTATE disabled elements :
                  :        5 -TEST the selected tables               :
                  :        6 -ENABLE/DISABLE parts of the selected   :
                  :           tables                                 :
                  :        7 -UNLOAD selected tables                 :
                  :        8 -INSERT a table                         :
                  :        9 -DISPLAY options                        :
                  :                                                  :
                  : Enter=Execute Command         F3 or F12=Cancel   :
                  :................................................:

Command ===>
F1=Help      F2=Main Menu                                        F6=Roll
```

Figure 61. Automation Table Management Commands Pop-up Window

Chapter 9. Using the Inform Log Utility

This chapter documents general-use programming interface and associated guidance information.

Operators can use the inform log utility to display inform log entries. The entries are records of the automated notification actions that have taken place, such as a pager call or e-mail. An operator can view the log, acknowledge receipt of an inform notification, reinform a specific contact, or delete an entry. All automated actions are logged, by default, when inform logging is enabled. The logging of operator calls with INFORM/EZLECALL can be enabled in the inform policy. Refer to the SETUP policy member in the *IBM Tivoli NetView for z/OS Administration Reference* for more details.

Note: It is not the purpose of the inform log utility to keep a log that tracks all inform actions. Rather, for tracking purposes, messages are generated and can be found in the NetView log. The purpose of the ILOG data set is to help you dynamically track, respond to, and delete inform log entries. Because of the I/O required and data set constraints, the ILOG function might not be practical in all environments.

To invoke the inform log utility, you can enter one of the following commands:

```
ILOG
AON 1.9
```

If you enter **ILOG**, the following full-screen panel containing the contents of your inform log is displayed:

```
EZLKINFL                 INFORM LOG UTILITY

Enter  1 -ACKNOWLEDGE   2 -REINFORM   3 -REINFORM/NEW MESSAGE   4 -DELETE

_   CONTACT ENTRY NUMBER   1 OUT OF    3 CURRENT CONTACT STATUS ACKNOWLEDGED
AON DEVELOPMENT TEAM                     EMAIL      AT 23:00:00 ON 01/26/07
A PU NAMED PU00005 FAILED DUE TO INNOP
_   CONTACT ENTRY NUMBER   2 OUT OF    3 CURRENT CONTACT STATUS ACKNOWLEDGED
AON DEVELOPMENT TEAM                     EMAIL      AT 13:37:50 ON 01/27/07
A CDRM NAMED NTB7MUS FAILED DUE TO PACDRM
_   CONTACT ENTRY NUMBER   3 OUT OF    3 CURRENT CONTACT STATUS ISSUED
AON DEVELOPMENT TEAM                     EMAIL      AT 13:39:48 ON 01/27/07
A PU NAMED PU00001 FAILED DUE TO INNOP




Command ===>
F1=Help      F2=Main Menu   F3=Return             F5=Refresh        F6=Roll
F7=Backward  F8=Forward     F9=Search                              F12=Cancel
```

Figure 62. Inform Log Utility Panel

You can choose any of the following functions, which are shown in Figure 62, for a single inform log entry:

1 -ACKNOWLEDGE
Changes the displayed status to ACKNOWLEDGED.

2 -REINFORM
Reissues the message against the active inform policy member using the original policy name.

3 -REINFORM/NEW MESSAGE
Reissues the message against the active inform policy member using the original policy name and provides a pop-up window with the original message text. The message text can be edited or replaced prior to confirming the REINFORM.

4 -DELETE
Removes the entry from the inform log.

The following function keys, located at the bottom of the panel, provide functions that are independent of an individual log entry:

F5 Refreshes and displays a current version of the inform log.

F9 Searches for specified log entries. From a pop-up window, you can search for a name, partial name, message text, and date and time. The default is to search through all log entries from the oldest to the most current. For more information, see "Searching Log Entries" on page 78.

The lines of a log entry in Figure 62 on page 75 displays the following options:

First line

Contains the current entry number, the total number of entries, and the status of the entry.

```
CONTACT ENTRY NUMBER  1 OUT OF  3 CURRENT CONTACT STATUS ISSUED
```

Second line

Contains the contact name field, the connection type used, and the time and date of the notification.

```
AON DEVELOPMENT TEAM           EMAIL    AT 23:00:00 ON 01/26/07
```

Third line

Contains the message issued by the notification.

```
A PU NAMED PU00005 FAILED DUE TO INNOP
```

You can also access the inform log utility by entering the **AON 1.9** command synonym. When the AON Base Functions panel, shown in Figure 63 on page 77, is displayed select option **9**:

```
EZLK0100         AON: Base Functions                                NTVGD


Select an option

         _  0.   Tutorial
            1.   Help Desk
            2.   AutoView
            3.   DDF
            4.   Automation Settings
            5.   Cross Domain Functions
            6.   Timer
            7.   Task and Log Maintenance
            8.   Support Functions
            9.   Display the Inform Log









Command ===>
F1=Help      F2=Main Menu   F3=Return                            F6=Roll
                                                                F12=Cancel
```

Figure 63. AON Base Functions Panel

Checking Notification Status

The status conditions, which are located at the end of the first line in each log entry, are described in the following list. See Figure 62 on page 75 where the status is ISSUED.

ISSUED
An inform request was sent to a service point.

ACKNOWLEDGED
An operator acknowledged the notification.

DELETED
The request was deleted from the inform log database.

ROUTED
The request was routed to another NetView domain that owns the service point.

REINFORMED
The request was reissued after the current inform policy was applied.

REINFORMED/NEW
The request was reissued after the current inform policy was applied and a new message has been sent.

FAILED
The request failed. The probable cause is a communication error with the service point.

NOTROUTED
The request could not be routed to the target NetView domain.

UNKNOWN ENTRY
The inform log contains a corruption error.

Reissuing Notifications

To display the following pop-up window where you can reissue notifications, enter **3 -REINFORM/NEW MESSAGE** on the panel shown in Figure 62 on page 75:

```
EZLKINFR                 INFORM LOG UTILITY

Enter  1 -ACKNOWLEDGE   2 -REINFORM   3 -REINFORM/NEW MESSAGE   4 -DELETE

    CONTACT ENTRY NUMBER   1 OUT OF    3 CURRENT CONTACT STATUS ISSUED
AON  ..............................................................
A P  :  REISSUE an INFORM action via policy PAUL                    :
3    :                                                              :
AON  :   Update or Replace original message (60 character limit)    :
A C  :  => A CDRM NAMED NTB7MVS FAILED DUE TO PACDRM                 :
     :                                                              :
AON  :  Note: Numeric message is required for Numeric Pagers        :
A P  : F1=Help       Press ENTER to REINFORM       F12=Cancel       :
     ..............................................................




Command ===>
F1=Help      F2=Main Menu   F3=Return              F5=Refresh        F6=Roll
F7=Backward  F8=Forward     F9=Search                               F12=Cancel
```

Figure 64. Inform Log Utility with Reissue Request Pop-up Panel

Depending on how your policy is defined, the REISSUE request might change. For example, at 16:00, the policy might indicate a notification is to be sent as an e-mail, but at 19:00 the same policy might have no active contacts or might issue a notification through a pager.

Usage Notes:

- An active inform policy member is required to view the inform log. Only automated notifications generated by EZLENFRM (the notification policy) are logged in the inform log by default. For more information about the notification policy, refer to the *IBM Tivoli NetView for z/OS Administration Reference*
- Inform entries are logged in the DSILIST DD data set.
- The ILOG command uses the INFORM command to perform REINFORM actions. For information about the ILOG, INFORM, and INFORMTB commands, refer to the *IBM Tivoli NetView for z/OS Command Reference Volume 1*.

Searching Log Entries

The inform log search panel, shown in Figure 65 on page 79, enables you to search the inform log entries.

```
EZLKINFS                 INFORM LOG UTILITY

Enter   1 -ACKNOWLEDGE   2 -REINFORM   3 -REINFORM/NEW MESSAGE   4 -DELETE

_   CONTACT ENTRY NUMBER    1 OUT OF    3 CURRENT CONTACT STATUS ISSUED
AON  ..............................................................
A P  : ENTER THE SEARCH CRITERIA                                   :
_    :                           specify Name of Message field search  :
AON  : Name Field:     *                                           :
A C  : Message Field:  *                                           :
_    :                                                             :
AON  : Start Date:  01/26/07    23:00:00  -Oldest Log Entry Date/Time  :
A P  : Stop Date:   02/02/07    09:20:05  -Current Date/Time           :
     :                                                             :
     : F1=Help         Press ENTER to REFRESH            F12=Cancel    :
     :                  with Search Criteria                         :
     ..............................................................



Command ===>
F1=Help      F2=Main Menu   F3=Return              F5=Refresh        F6=Roll
F7=Backward  F8=Forward     F9=Search                               F12=Cancel
```

Figure 65. Inform Log Utility Search Panel

By default, the search proceeds through all entries beginning with the oldest date and time and ending with the current date and time. You can limit your search by any, a combination of, or all of, the following ways:

- The name or message fields
- Start and stop date and time

In a partial search, you can specify part of a name followed by and asterisk in the name field and the inform log utility finds every occurrence of the partial name. For example, you can search for XYZ or XYZ* and the inform log utility finds all entries containing XYZ. The asterisk (*) is optional. If you narrow the search still further using specific start and stop dates and times, the search is limited to the specified criteria beginning and ending on the specified dates and times.

If search criteria is not updated, press **F5**. An error message is displayed.

Part 2. Using AON/SNA

Chapter 10. Getting Started with AON/SNA

This chapter explains navigation through the AON/SNA *operator interface*. The AON/SNA operator interface is a series of full-screen, menu-driven panels that enable you to use all of the operator functions available in AON/SNA.

You can identify an AON/SNA panel by the prefix of FKV in the panel name, located in the top left of the panel. Use the operator interface to look at color-coded displays of your network, resolve network problems, receive messages, issue commands, and perform many other functions that control automation and resource availability.

To perform a task in AON/SNA, use the operator interface or *panels*. For each task, there is a primary panel, which might have one or more subordinate panels.

In addition to AON/SNA panels, some AON/SNA tasks use AON panels, identified by an EZL prefix in the top left corner of the panel, and some AON/SNA tasks use NetView panels.

Accessing the Operator Interface

You can access the AON/SNA operator interface from anywhere within NetView or the AON panels. You can also reach the AON/SNA panels from the other AON component (AON/TCP) if this component is installed and initialized by your organization.

To access the AON: Operator Commands Main Menu panel:

1. Type **AON** from the NetView command line.
2. Press **Enter**.

   NetView displays the AON: Operator Commands Main Menu panel shown in Figure 66 on page 84. This panel displays all of the available components of AON. If a component (like AON/SNA) is not available, the name of the component on the panel is not available.

```
 EZLK0000             AON: Operator Commands Main Menu            CNM01


Select an option

         _ 0.   Tutorial
           1.   AON Base Functions
           2.   SNA Automation
           3.   TCP/IP Automation









Command ===>
F1=Help      F2=End         F3=Return                              F6=Roll
                                                                   F12=Cancel
```

Figure 66. AON: Operator Commands Main Menu Panel

3. Type **2** in the entry field, which is located to the left of the first option.
4. Press Enter.

   AON displays the SNA Automation: Menu panel shown in Figure 67 on page 84. Use this panel to access all the functions of AON/SNA.

   Note: You can also display the AON/SNA operator interface by entering **AONSNA** on any command line within NetView, AON, or from the other AON components, provided these components are installed and initialized on your system.

```
FKVK0000         SNA Automation: Menu                              CNM01


Select an option

         _ 0.   Tutorial
           1.   Help Desk
           2.   SNAMAP
           3.   VTAM Options Management
           4.   NetStat
           5.   VTAM Commands
           6.   APPN menu
           7.   Switched Network Backup menu
           8.   X.25 menu
           9.   NCP Recovery Definitions (NCP name=________)









Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                   F12=Cancel
```

Figure 67. SNA Automation: Menu Panel

Using the SNA Help Desk

The SNA Help Desk is an application program that enables NetView operators to solve network problems and to support end-users. The SNA Help Desk systematically finds the cause of the network problems and helps you perform recovery actions through a series of panels. The SNA Help Desk resolves network problems for AON/SNA by primarily attending to SNA resources with support for remote systems and NetView Access Services IDs (NVAS).

The SNA Help Desk enables you to select a resource and recycle it. The SNA Help Desk also enables you to use the problem determination panels to solve problems with that resource. Because AON/SNA performs problem determination through the operator interface panels, you receive immediate feedback on the status of a resource with any possible problems highlighted.

The SNA Help Desk enables you to view a resource and its higher connected nodes. This contrasts with SNAMAP that enables you to zoom to lower connected nodes.

The SNA Help Desk enables inexperienced help desk operators to solve network problems. The resource name is the only required field, so all you need to know is the terminal ID of the user. After you enter the terminal ID into the system, the SNA Help Desk displays a pictorial representation of how the user's terminal is attached to the system.

If your enterprise installed NetView Access Services (NVAS), you can select the NetView Access Services IDs (NVAS) option. This option determines the location of network problems using the caller's user ID, thus eliminating the need to know even the terminal ID.

To increase your productivity, the SNA Help Desk:

- Reduces the amount of input you enter
- Automates problem determination
- Enables you to be productive immediately, even if you do not know the network configuration
- Teaches you problem determination skills while you resolve network failures

To recover resources in another NetView domain, AON/SNA needs an active NNT or remote command (RMTCMD) NetView session with domains other than the one on which AON/SNA is located. This connection is necessary for the SNA Help Desk to find resources that are not on the operator's domain. If you need to establish these sessions, use the AON CDLOG command to go directly to the panel for establishing those sessions.

Accessing the SNA Help Desk

To display the SNA Help Desk, select the Help Desk option on the SNA Automation: Menu panel, or use the fast path command or a panel synonym.

```
FKVK0000         SNA Automation: Menu                              CNM01


Select an option

         1 0.   Tutorial
           1.   Help Desk
           2.   SNAMAP
           3.   VTAM Options Management
           4.   NetStat
           5.   VTAM Commands
           6.   APPN menu
           7.   Switched Network Backup menu
           8.   X.25 menu
           9.   NCP Recovery Definitions (NCP name=________)









Command ===>
F1=Help      F2=Main Menu   F3=Return                               F6=Roll
                                                                   F12=Cancel
```

Figure 68. Selecting the SNA Automation Help Desk

To display the SNA Help Desk from the SNA Automation: Menu panel:

1. Type **1** in the entry field.
2. Press **Enter**.

   AON/SNA displays the SNA Automation: Help Desk panel shown in Figure 69.

   Note: You can also display the SNA Automation: Help Desk panel by typing **AON 2.1** or **SNAHD** on any command line and pressing **Enter**.

```
FKVK1000                  SNA Automation: Help Desk

 ****  *   **   **      **  **         ***          *****               **
**   * **  **  ****     **  **          **          **  **              **
 **    *** ** **  **    **  **  ****    **   *****  **  **  ****   ***** ** **
  **   ****** ******    ****** **  **   **   **  ** **  ** ** **  ** **     ***
   **  ** *** **  **    **  ** ******   **   **  ** **  ** ****** **   **** ****
*   ** **  ** **  **    **  ** **       **   **  ** **  ** **         ** ** **
 ****  **   * **  **    **  **  ****   ****  *****  *****   ****  *****  **  **
                                              **
                                              **

             Enter name...:  ________

             Select option:  _  1. Recycle resource
                                2. Problem Determination
                                3. NetView Access Services User ID
                                n. NetView Help Desk



Command ===>
F1=Help      F2=Main Menu   F3=Return                               F6=Roll
                                                                   F12=Cancel
```

Figure 69. SNA Automation: Help Desk Panel

3. Type the terminal ID of the user in the **Enter name** field.

4. Type the number of the option you want in the **Select option** entry field. You can select one of the following options:

   Recycle resource
   Attempts to activate the resource and its hierarchy.

   Problem Determination
   Displays the status of the resource and its higher node to help determine the problem.

   NetView Access Services User ID
   Enables you to use a NetView Access Services user ID to start problem determination.

   NetView Help Desk
   This option takes you to the main NetView Help Desk facility.

5. Press **Enter**.

   AON/SNA displays the panel for the option you selected. See the following sections for more information about those options.

Recycling Resources

When you recycle a resource, AON/SNA attempts to deactivate and then activate the resource. Before attempting to activate the resource you select, AON/SNA checks all of the higher nodes to determine the highest inactive node and tries to recycle those nodes first.

For example, to recycle a resource from the SNA Automation: Help Desk panel shown in Figure 70 on page 87 do the following:

1. Type the terminal ID in the **Enter name** field, as shown in Figure 70. This example uses the TA1PT209 terminal ID.
2. Type **1** in the entry field.
3. Press **Enter**.

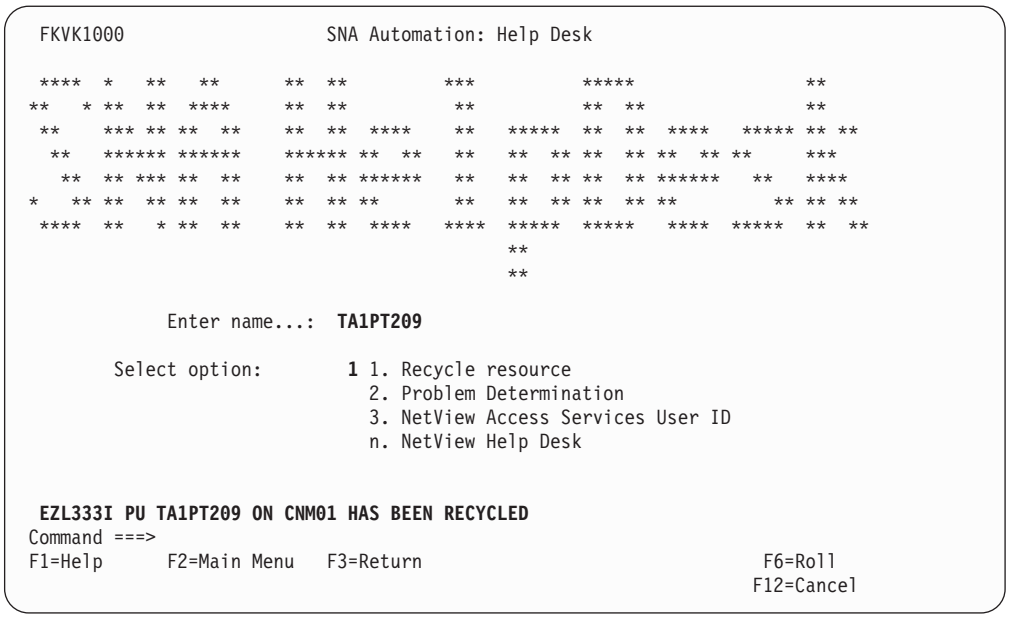


Figure 70. Message Indicating Recycled Resources — SNA Automation: Help Desk

If AON/SNA cannot activate the resource, it displays a panel that displays a message, explaining the current status of the resource. Figure 70 on page 87 shows a message that indicates AON/SNA successfully recycled the resource.

When AON/SNA cannot recycle the resource, it displays an Operator Command Interface: SNA Help Desk panel shown in Figure 71.

```
FKVK1RC1          Operator Command Interface: SNA Help Desk        CNM01


  Current Status of  PU  : TA1P519A is NEVAC
  Resource Domain is: CNM01

  Select one of the following or Press F12 to Cancel:

   _ 1. View Status Information for  NEVAC
     2. Force activate resource
     3. View Hardware Monitor for LINE : TA1L5019
     4. View terminal Error Code explanation
     5. View X.25 Error Code explanation
     6. View Sense Code Information for   08220000







 EZL910I ENTER A SELECTION
Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                 F12=Cancel
```

Figure 71. Operator Command Interface: SNA Help Desk Panel

Figure 71 shows the domain you are on and the status of the resource. To use this panel, do the following:

1. Type the number of the command you want to process in the entry field. You can select one of the following options:

   View Status information
   Displays the status of the resource. Provides an explanation of the status as supplied by the NetView STATUS command.

   Force activate resource
   Tries to force the resource active.

   View Hardware Monitor
   Displays the most recent events for the highest inactive node of the resource.

   View terminal Error Code
   Displays a pop-up window, prompting you for a three-letter error code that you get from the person who called. You see an explanation of the terminal error code.

   View X.25 Error Code explanation
   Provides an explanation of the five-character error code provided by the person who called.

   View Sense Code Information
   Displays any sense code data and provides an explanation of it. This field might show sense code data when a VARY active occurs. You can look at this information using the NetView SENSE command. If there is no sense data, AON/SNA sets the sense field to 00000000.

2. Press **Enter**.

   AON/SNA processes the command you selected.

Determining Problem Cause

AON/SNA displays a panel that shows the pictorial representation of your network and displays a message that explains the status of the resource. For example, if the resource is active, AON/SNA displays a message similar to the following:

```
EZL043I  TA1PT209 IS ACTIVE
```

You can use the SNA Help Desk to determine the cause of network problems. For example, suppose a user, whose terminal ID is RL523A1, detects problems. The user calls the help desk operator, who enters the terminal ID on the AON Help Desk panel. The AON/SNA Help Desk determines that the terminal is a SNA resource, so it displays the SNA Automation: Help Desk panel shown in Figure 72.

```
FKVK1000                  SNA Automation: Help Desk

 ****  *   **   **      **  **         ***          *****               **
**   * **  **  ****     **  **          **          **  **              **
 **    *** ** **  **    **  **  ****    **   *****  **  **  ****   ***** ** **
  **   ****** ******    ****** **  **   **   **  ** **  ** **  ** **     ***
   **  ** *** **  **    **  ** ******   **   **  ** **  ** ******   **   ****
*   ** **  ** ** **     **  ** **       **   **  ** **  ** **         ** ** **
 ****  **   * **  **    **  **  ****   ****  *****  *****   ****  *****  **  **
                                              **
                                              **

             Enter name...:  RL523A1

             Select option:  2  1. Recycle resource
                                2. Problem Determination
                                3. NetView Access Services User ID
                                n. NetView Help Desk



Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 72. SNA Automation: Help Desk Panel – Selecting Problem Determination

To use the Problem Determination option on the SNA Automation: Help Desk panel:

1. Type the terminal ID in the **Enter name** field. This example uses the RL523A1 terminal ID.
2. Type **2** in the entry field.
3. Press **Enter**.

   AON/SNA displays the Operator Command Interface: SNA Help Desk panel shown in Figure 73 on page 90.

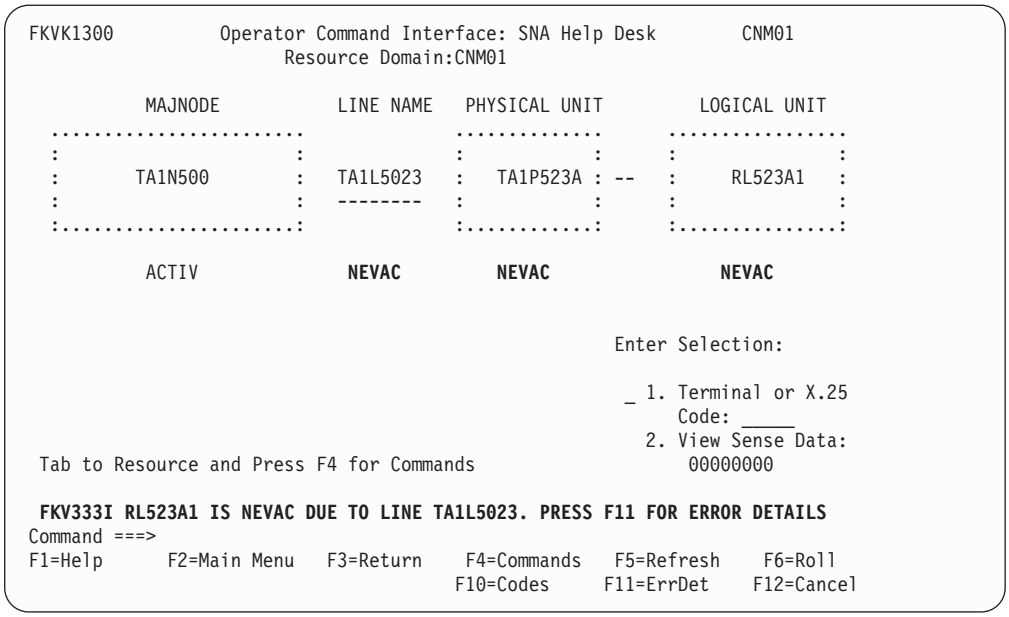


Figure 73. Color-Coded Resource Hierarchy

Figure 73 shows the resource hierarchy. This panel is color-coded to indicate the status of the resources. Because the line is not active, the line, the PU, and the LU all display in red on the panel. The red is represented in boldface in Figure 73. The line, the PU, and the LU each have a status of NEVAC (never active).

The selection menu in the lower right corner of the panel shows any sense codes or error codes associated with the problem. If you know the sense code data or the X.25 code, you can select these options for further information. Press F10 to move to the **Enter Selection** entry field or press the Tab key to move the cursor to the resource. On the Operator Command Interface: SNA Help Desk panel the cursor is positioned at the failing resource.

If the resource is not active, AON/SNA enables the F11 key. In this scenario, the message on the Operator Command Interface: SNA Help Desk panel instructs you to press F11 for error details and to continue with problem determination. Although the LU that you are investigating is RL523A1, the message displayed at the bottom of the panel in Figure 73 reveals that the line is the source of the problem.

4. Press **F11**.

   AON/SNA displays the SNA Help Desk Problem Determination panel shown in Figure 74 on page 91.

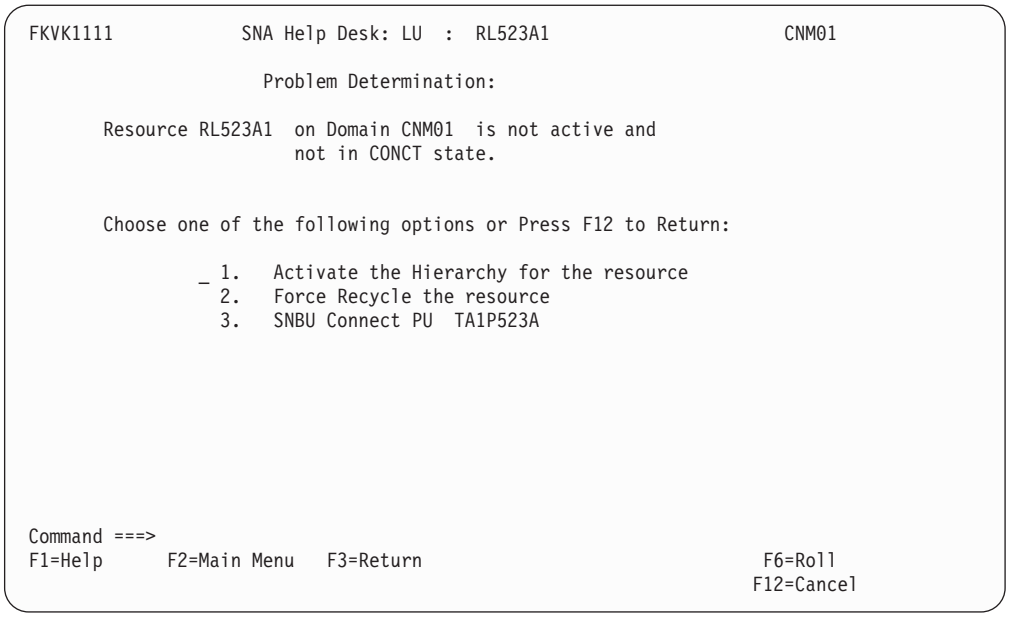


Figure 74. SNA Help Desk Problem Determination Panel

Figure 74 shows the error message at the top of the panel. The panel lists actions to take to attempt to solve the problem. The Problem Determination panel provides the following actions:

Activate the Hierarchy for the resource
Attempts to activate the hierarchy of the resource starting from the highest inactive resource to the resource you entered.

Force Recycle the resource
Attempts to deactivate, then activate the resource you entered.

SNBU Connect PU
Takes you to SNBU so you can initiate the dial backup connection.

See the following sections for more information about these options.

Activating the Hierarchy

To use the Problem Determination panel to attempt to activate the LU and the other resources in its hierarchy (the PU and the line):

1. Type **1** in the entry field shown in Figure 75 on page 92.
2. Press **Enter**.

   AON/SNA attempts to activate all of the resources in the hierarchy, starting from the highest inactive resource continuing down to the resource you entered on the panel.

```
FKVK1111            SNA Help Desk: LU  :  RL523A1                      CNM01

                      Problem Determination:

       Resource RL523A1  on Domain CNM01  is not active and
                         not in CONCT state.


       Choose one of the following options or Press F12 to Return:

                 1 1.   Activate the Hierarchy for the resource
                   2.   Force Recycle the resource
                   3.   SNBU Connect PU









Command ===>
F1=Help      F2=Main Menu   F3=Return                                F6=Roll
                                                                   F12=Cancel
```

Figure 75. Activating the Hierarchy for the Resource

Forcing a Recycle of a Resource

Although choosing option 1 to activate the hierarchy of the resource often resolves the problem, AON/SNA cannot always resolve the problem by activating the hierarchy for the resource. Figure 76 shows a message indicating that AON/SNA did not activate the hierarchy for RL523A1.

```
FKVK1111            SNA Help Desk: LU  :  RL523A1                      CNM01

                      Problem Determination:

       Resource RL523A1  on Domain CNM01  is not active and
                         not in CONCT state.


       Choose one of the following options or Press F12 to Return:

                 _ 1.   Activate the Hierarchy for the resource
                   2.   Force Recycle the resource
                   3.   SNBU Connect PU









FKV339I UNABLE TO ACTIVATE THE HIERARCHY FOR RL523A1. SENSECODE=08220000
Command ===>
F1=Help      F2=Main Menu   F3=Return                                F6=Roll
                                                                   F12=Cancel
```

Figure 76. Unable to Activate Message on the Problem Determination Panel

If AON/SNA cannot activate the resource, try the **Force Recycle the resource** option (option 2) on the Problem Determination panel.

To force the recycle of a resource on the Problem Determination panel as shown in the panel in Figure 75:

1. Type **2** in the entry field.
2. Press **Enter**.

   If AON/SNA successfully activates the resource, it returns a message similar to the one that is shown in boldface in Figure 70 on page 87. If AON/SNA cannot recycle the resource, it displays a message similar to the following:

   ```
   EZL334I  UNABLE TO VARY restype resname ON domain ACTIVE
   ```

Selecting the SNBU Connect Option

If AON/SNA cannot activate the resource using the first two options on the Problem Determination panel, you can use the SNBU Connect option. This option enables you to switch the SNBU connection of the line from the inactive-leased line to a dialed backup line. Figure 76 on page 92 shows the Problem Determination panel. To select the SNBU Connect option:

1. Type **3** in the entry field.
2. Press **Enter**.

   AON/SNA displays the Change Speed or Initiate/Terminate SNBU Operation panel with a verification message shown in Figure 77 on page 93.

```
FKVKCGBE          CHANGE SPEED OR INITIATE/TERMINATE SNBU OPERATION

 Enter the following:

      Resource name ..................  TA1P523A

 Use any character to select type of operation:

      DISCONNECT SNBU ...............
      CONNECT SNBU ..................  /
      Note:  Operation controlled by Automation Control File.

      RESTORE to Full Speed .........
      SWITCH  to Backup Speed .......
        Local|Remote|Both Modem .....        1 = Local | 2 = Remote | 3 = Both
      Note:  Modem will switch back if next statistics are good.

      DELETE erroneous status .......
      Note:  Use only after servicing port or manual restore

           FKV989I VERIFY SELECTION AND PRESS ENTER TO CONTINUE
Command ==>
F1=Help      F2=Main Menu   F3=Return                                  F6=Roll
                                                                     F12=Cancel
```

Figure 77. Issuing a SNBU Connect

3. Verify that you want to select SNBU.

   The resource name filled in on the panel is the name of the PU in the resource hierarchy. Although the initial resource investigated is an LU, and the source of the problem is a line, the resource on this panel is a PU. Because modems are not addressable units (NAU), AON/SNA issues the SNBU connect command to the PU associated with the modem. In this example, TA1P523A is the PU for the modem that performs the switched network backup for the inactive line.

4. Press **Enter**.

   AON/SNA displays the Operator Command Interface: SNA Help Desk panel shown in Figure 78 on page 94. In this example, the SNBU Connect command works, as seen by the informational message on the panel. AON/SNA activates all of the resources in the hierarchy and displays them in green.

```
FKVK1300          Operator Command Interface: SNA Help Desk        CNM01


          MAJNODE           LINE NAME   PHYSICAL UNIT         LOGICAL UNIT
  ......................              ..............      ..................
  :                    :              :            :      :                :
  :       TA1N500      :   TA1L5024   :   TA1P523A : --   :     RL523A1    :
  :                    :   --------   :            :      :                :
  :....................:              :............:      :................:

          ACTIV              ACTIV         ACTIV                 ACTIV


                                                        Enter Selection:

                                                         _ 1. Terminal or X.25
                                                              Code: _____
                                                           2. View Sense Data:
 Tab to Resource and Press F4 for Commands                      08220000

 FKV821I   TA1P523A HAS BEEN MOVED TO SWITCHED NETWORK BACKUP
Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
                                        F10=Codes     F11=ErrDet    F12=Cancel
```

Figure 78. SNBU Connect Reactivating the Resource Hierarchy

The line name changes from TA1L5023 to TA1L5024. In this example, the modem that performed the SNBU connection dialed a different line for the backup. Figure 78 shows that the name of the line has changed. Depending on the capabilities of the modem used, AON might use the same line for backup.

Using Problem Determination Commands

The Operator Command Interface: SNA Help Desk panel enables you to issue commands for a resource. To issue commands, press the F4 function key. AON/SNA displays a pop-up command window that lists the commands you can issue for the resource you select. To issue a command for a resource:

1. Press the **Tab** key to move the cursor to the resource you want.
2. Press **F4**.

   AON/SNA displays a pop-up command window with the commands you can issue for that resource. Figure 79 on page 95 shows the command window for the TA1PT209 resource.

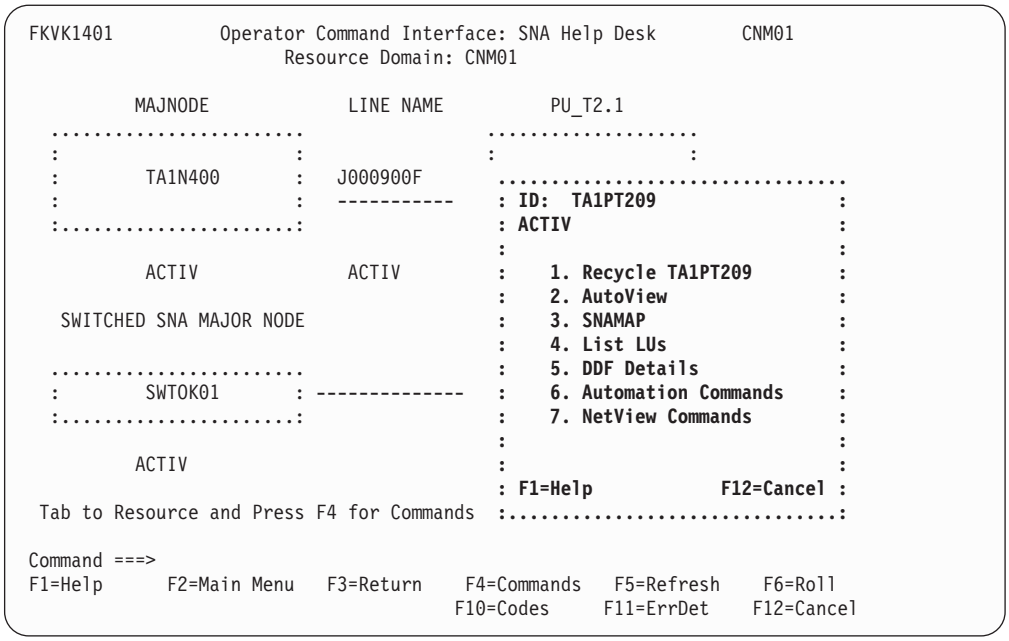


Figure 79. Operator Command Interface: SNA Help Desk Panel with Pop-up Command Window

3. Type the number for the command that you want to issue in the entry field of the pop-up window. You can select one of the following commands:

   Recycle *resname*
   Forces the resource inactive, then activates the resource. See "Recycling Resources" on page 87 for more information about recycling resources.

   AutoView
   Displays the current automation setting for a resource. These settings include the current status of a resource, and the recovery, threshold, and monitoring settings. You can change the settings.

   SNAMAP
   Displays a map of the resource. You can zoom in on the resource to see the connecting lower nodes. You can also enter commands from the panel that is displayed.

   DDF Details
   Takes you to the Dynamic Display Facility (DDF) panel that shows the details for the resource. This panel also displays a message.

   Automation commands
   Displays the Automation Commands panel. See "Using the Automation Commands" for more details about the commands available on this panel.

   NetView commands
   Displays the NetView Commands panel. See "Issuing NetView Commands" on page 97 for more details about the commands available on this panel.

4. Press **Enter**.
   AON/SNA issues the command that you selected.

Using the Automation Commands: You can use the Automation Commands panel to issue commands that control automation. You can access this panel by

selecting Automation Commands from a pop-up command window shown in Figure 79 on page 95. To issue automation commands:

1. Type **6** in the entry field on the pop-up command window.
2. Press **Enter**.

   AON/SNA displays the SNA Help Desk Automation Commands panel shown in Figure 80.

```
FKVK1ACM             SNA Help Desk                                CNM01
                   Automation Commands

 Current Resource Name: TA1PT209

 Select a command:

         _ 1. Automation Flag
           2. Thresholds
           3. Monitor Intervals
           4. Active Monitoring
           5. SNBU Connect
           6. Change SNBU Speed
           7. Automation Definition
           8. Status History
           9. LUDRPOOL




Command ===>
F1=Help      F2=Main Menu   F3=Return                          F6=Roll
                                                              F12=Cancel
```

Figure 80. Using the SNA Help Desk Automation Commands Panel

3. Type the number of the command you want in the entry field. You can select one of the following commands:

   Automation Flag
   Enables you to set, change, or delete the automation recovery settings in the control file.

   Thresholds
   Enables you to set, change, or delete the threshold settings in the control file.

   Monitor Intervals
   Enables you to set or change the monitoring intervals.

   Active Monitoring
   Enables you to set or change active monitoring.

   SNBU Connect
   Enables you to change the SNBU connection, if SNBU is one of your resources.

   Change SNBU Speed
   Enables you to change the modem speed, if SNBU is one of your resources.

   Automation Definition
   Displays the configuration data for this resource.

   Status History
   Displays all the status information for this resource.

LUDRPOOL
Displays X.25 results from the LUDRPOOL command.

4. Press **Enter**.

   AON/SNA issues the command that you selected.

Issuing NetView Commands: You can issue six different NetView commands from the NetView Commands panel. You can access this panel by selecting NetView Commands from a pop-up command window shown in Figure 79 on page 95. To issue NetView commands:

1. Type **7** in the entry field on the pop-up commands window.
2. Press **Enter**.

   AON/SNA displays the SNA Help Desk NetView Commands panel shown in Figure 81.

```
FKVK1NCM              SNA Help Desk                              CNM01
                     NetView Commands

 Current Resource Name: TA1PT209
 Resource Domain      : CNM01

 Select a command:

         _ 1. Hardware Monitor
           2. Session Monitor
           3. Timer
           4. Activate
           5. Inactivate
           6. Help Status  ACTIV--L--









Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 81. Using the SNA Help Desk NetView Commands Panel

3. Type the number of the command you want in the entry field. You can select one of the following commands:

   Hardware Monitor
   Displays the most recent events for the resource.

   Session Monitor
   Displays the summary information for the latest response time.

   Timer Enables you to set or change the timers for the resource.

   Activate
   Attempts to activate the resource.

   Inactivate
   Attempts to deactivate the resource.

   Help Status
   Shows the current status of the resource that is displayed in the **Current Resource Name** field on the NetView Commands panel.

4. Press **Enter**.

   AON/SNA issues the command that you selected.

Using NetView Access Services (NVAS)

NetView Access Services (NVAS) provides simultaneous access to one or several applications from a single terminal, using one user ID and password. The applications include any of the following:

- System (for example, CICS®)
- Subsystem (for example, TSO/E)
- Application
- Transaction within a system

AON/SNA supports only the relay mode sessions for NetView Access Services (NVAS).

To select NetView Access Services from the SNA Automation: Help Desk panel shown in Figure 82:

1. Type your NVAS user ID in the **Enter name** field.
2. Type **3** in the entry field.
3. Press **Enter**.

```
FKVK1000                 SNA Automation: Help Desk

 ****  *   **   **      **  **         ***          *****               **
**   * **  **  ****     **  **          **          **  **              **
 **    *** ** **  **    **  **  ****    **   *****  **  **  ****   ***** ** **
  **   ****** ******    ****** **  **   **   **  ** **  ** **  ** **     ***
   **  ** *** **  **    **  ** ******   **   **  ** **  ** ******   **   ****
*   ** **  ** **  **    **  ** **       **   **  ** **  ** **         ** ** **
 ****  **   * **  **    **  **  ****   ****  *****  *****   ****  *****  **  **
                                              **
                                              **

             Enter name...: OPER1__

             Select option:   3 1. Recycle resource
                                2. Problem Determination
                                3. NetView Access Services User ID
                                n. NetView Help Desk



Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 82. Selecting the Option for NetView Access Services (NVAS) Problems

AON/SNA displays the SNA Help Desk panel for NetView Access Services shown in Figure 83 on page 99.

```
FKVKCHP1          Operator Command Interface: SNA Help Desk        CNM01
                    NetView Access Services: EMS01

              USERID= OPER1                GROUP= PROD
Enter a Non-blank character next to selection to Cancel.  Then press enter.

   Terminal Address                    Relay LUs    Application LUs  ACB Type
 _ TA1TT170                          _ EMS01F01     AON01026           I
                                     _ EMS01F03     AON06012           U
                                     _ EMS01F01     AON05012           I
                                     _ EMS01F02     AON04008           U

Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 83. SNA Help Desk Panel for NetView Access Services

The SNA Help Desk panel for NetView Access Services lists all available applications that are active for your user ID. The SNA Help Desk panel for NetView Access Services can display up to 99 applications for a single NetView Access Services user ID. You can use the F7 and F8 function keys to look at all of the applications.

The SNA Help Desk panel for NetView Access Services displays information about the ID and what LUs the ID is logged onto. From here, you can cancel the NetView Access Services user ID. This action cancels one or more of the applications under the NetView Access Services user ID.

The SNA Help Desk panel for NetView Access Services provides the following information for the user ID:

Terminal Address
The address on which the NetView Access Services user ID is logged on. If the address shows as DISCONNECTED, the ID is disconnected. However, AON/SNA might still run applications that you originally logged onto by the user ID.

Relay LU
The pseudo terminal name given when an application is selected by the NetView Access Services user ID. If the name shows as NO SESSIONS, the NetView Access Services user ID is logged on and is currently on the selection list.

Application LU
The primary logical unit for the application. The naming conventions are important to help identify the application.

ACB Type
Explains the type of session the ID is logged on to. The settings are:
U Unique
I Individual
S Shared

A shared session is a special case because it uses the same relay LU as the other NetView Access Services user ID. To cancel a relay LU that is shared, AON/SNA cancels the terminal address instead. If AON/SNA cancels a shared user ID, the user of that ID can log onto NetView Access Services with that ID and issue the LF command against the application that is stopped.

Canceling a NetView Access Services User ID

To cancel a NetView Access Services user ID and all NetView Access Services applications:

1. Type a non-blank character in the entry field next to the terminal address.
2. Press **Enter**.

   AON/SNA cancels the NetView Access Services user ID and all the NetView Access Services applications.

To cancel one or more applications running under the NetView Access Services user ID:

1. Press the **Tab** key to move the cursor to the **Relay LUs** column.
2. Type a non-blank character in the entry field next to the relay LUs and applications you want to cancel.
3. Press **Enter**.

   AON/SNA cancels the applications you selected.

To cancel any other type of ACB session:

1. Type a non-blank character in the entry field next to the terminal address.
2. Press **Enter**.

   AON/SNA cancels the ACB session you selected.

Attention: AON/SNA does not display a confirmation panel before canceling the NetView Access Services user ID. Use this function carefully.

Chapter 11. Using SNAMAP

SNAMAP provides a tool to view a list of all the resources on a domain. You create the list by selecting one of the following resource types:

- Major nodes
- Applications
- Cross-domain resource managers
- Cross-domain resources
- Link stations
- Cluster controllers
- Terminals
- User entered resource name

SNAMAP displays lower connected nodes. This contrasts with the SNA Help Desk which provides a view of a resource and its connected higher nodes.

```
FKVK0000         SNA Automation: Menu                              CNM01


Select an option

        2  0.   Tutorial
           1.   Help Desk
           2.   SNAMAP
           3.   VTAM Options Management
           4.   NetStat
           5.   VTAM Commands
           6.   APPN menu
           7.   Switched Network Backup menu
           8.   X.25 menu
           9.   NCP Recovery Definitions (NCP name=________)









Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 84. Selecting SNAMAP on the SNA Automation: Menu Panel

To use SNAMAP:

1. Type **2** in the entry field on the **SNA Automation: Menu** panel shown in Figure 84.
2. Press **Enter**.

   AON/SNA displays the SNA Automation: SNAMAP panel shown in Figure 85 on page 102.

   Note: You can also get to the SNA Automation: SNAMAP panel by typing **AON 2.2** or **SNAMAP** on any command line and pressing **Enter**.

```
FKVK2000                SNA Automation: SNAMAP                   CNM01


Select an option

       1 1. Major Nodes
         2. Applications
         3. Cross Domain Resource Managers
         4. Cross Domain Resources
         5. Link Stations
         6. Cluster Controllers
         7. Terminals
         8. ____________________




Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 85. SNA Automation: SNAMAP Panel

3. Type the number of the option you want in the entry field. This example selects option 1 (Major Nodes) shown in Figure 85.
4. Press **Enter**.

   AON/SNA displays the Operator Command Interface: SNAMAP panel shown in Figure 86.

```
FKVK2100          Operator Command Interface: SNAMAP              CNM01

Type an action code.  Then press Enter.                           More   +
 1=Activate  2=Inactivate
                          Type                Status
 _  VTAMSEG               APPL SEGMENT        ACTIV
 _  A01MPU                PU T4/5 MAJ NODE    ACTIV
 _  ISTPDILU              CDRSC SEGMENT       ACTIV
 _  ISTADJCP              ADJCP MAJOR NODE    ACTIV
 _  ISTCDRDY              CDRSC SEGMENT       ACTIV
 _  ISTDSWMN              SW SNA MAJ NODE     ACTIV
 _  TA1N100               PU T4/5 MAJ NODE    ACTIV
 _  AON1APPC              APPL SEGMENT        ACTIV
 _  AN22E01               APPL SEGMENT        ACTIV
 _  AN23E02               APPL SEGMENT        ACTIV
 _  AO23E01               APPL SEGMENT        ACTIV
 _  AN23E1A               APPL SEGMENT        ACTIV
 _  AN23EVP               APPL SEGMENT        ACTIV
 _  A01EMS                APPL SEGMENT        ACTIV
 _  A01TCPIP              APPL SEGMENT        ACTIV

Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
F7=Backward  F8=Forward                              F11=Zoom      F12=Cancel
```

Figure 86. Operator Command Interface: SNAMAP Panel

The Operator Command Interface: SNAMAP panel lists the available resources and shows the type and status of each resource. Press the F7 and F8 function keys to scroll through the list of resources if they are displayed on more than one panel.

You can use one of the following action codes on a specified resource:

1=Activate
Activates the resource you specify
2=Inactivate
Deactivates the resource you specify

See the following sections for more information about activating and deactivating a resource.

Activating Resources

You can activate a specific resource from the Operator Command Interface: SNAMAP panel. For example, to activate the AN23E02 resource:

1. Press the **Tab** key to move the cursor to the AN23E02 resource, as shown on the Operator Command Interface: SNAMAP panel in Figure 86 on page 102.
2. Type **1** in the entry field beside the AN23E02 resource.
3. Press **Enter**.

   AON/SNA displays a message indicating that the resource is now active, as shown in Figure 87.

```
FKVK2100          Operator Command Interface: SNAMAP              CNM01

Type an action code.  Then press Enter.                           More:   +
 1=Activate  2=Inactivate
                        Type                 Status
 _  VTAMSEG             APPL SEGMENT         ACTIV
 _  A01MPU              PU T4/5 MAJ NODE     ACTIV
 _  ISTPDILU            CDRSC SEGMENT        ACTIV
 _  ISTADJCP            ADJCP MAJOR NODE     ACTIV
 _  ISTCDRDY            CDRSC SEGMENT        ACTIV
 _  TA1N100             PU T4/5 MAJ NODE     ACTIV
 _  AON1APPC            APPL SEGMENT         ACTIV
 _  AN22E01             APPL SEGMENT         ACTIV
 *  AN23E02             APPL SEGMENT         ACTIV
 _  AO23E01             APPL SEGMENT         ACTIV
 _  AN23E1A             APPL SEGMENT         ACTIV
 _  A01EMS              APPL SEGMENT         ACTIV
 _  A01TCPIP            APPL SEGMENT         ACTIV
 _  A01TSO              APPL SEGMENT         ACTIV
 _  CDRM01              CDRM SEGMENT         ACTIV
 IST1132I AN23E02          IS ACTIVE, TYPE = APPL SEGMENT
Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
F7=Backward  F8=Forward                               F11=Zoom     F12=Cancel
```

Figure 87. Activate Message

Deactivating Resources

You can deactivate a specific resource from the Operator Command Interface: SNAMAP panel. For example, to deactivate the AON1APPC resource:

1. Press the **Tab** key to move the cursor to the AON1APPC resource, as shown on the Operator Command Interface: SNAMAP panel in Figure 86 on page 102.
2. Type **2** in the entry field beside the AON1APPC resource.
3. Press **Enter**.

   AON/SNA displays a message indicating that the resource is now inactive, as shown in Figure 88 on page 104.

```
FKVK2100          Operator Command Interface: SNAMAP              CNM01

Type an action code.  Then press Enter.                           More:   +
 1=Activate  2=Inactivate
                         Type                 Status
 _  VTAMSEG              APPL SEGMENT         ACTIV
 _  A01MPU               PU T4/5 MAJ NODE     ACTIV
 _  ISTPDILU             CDRSC SEGMENT        ACTIV
 _  ISTADJCP             ADJCP MAJOR NODE     ACTIV
 _  ISTCDRDY             CDRSC SEGMENT        ACTIV
 _  ISTDSWMN             SW SNA MAJ NODE      ACTIV
 _  TA1N100              PU T4/5 MAJ NODE     ACTIV
 *  AON1APPC             APPL SEGMENT         ACTIV
 _  AN22E01              APPL SEGMENT         ACTIV
 _  AN23E02              APPL SEGMENT         ACTIV
 _  AO23E01              APPL SEGMENT         ACTIV
 _  AN23E1A              APPL SEGMENT         ACTIV
 _  A01EMS               APPL SEGMENT         ACTIV
 _  A01TCPIP             APPL SEGMENT         ACTIV
 _  A01TSO               APPL SEGMENT         ACTIV
 IST1133I AON1APPC          IS NOW INACTIVE, TYPE = APPL SEGMENT
Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
F7=Backward  F8=Forward                               F11=Zoom     F12=Cancel
```

Figure 88. Deactivate Message

4. Press **F5** to refresh the panel.

You can also press the **F4** function key to display the pop-up command window, or the **F11** function key to display the next level of information for a resource. Both of these function keys are cursor sensitive and display the information for the resource at the position of the cursor. The following sections describe the use of these keys.

Viewing Lower Connected Nodes

You can use the F11 function key to view the connected lower nodes for a specific resource. AON/SNA labels this function key as a zoom key. To see the connected lower nodes:

1. On the **Operator Command Interface: SNAMAP** panel, press the **Tab** key to move the cursor to the resource you want. This example shows the TA1N100 resource.
2. Press **F11**.

   AON/SNA displays the lower connected nodes for the TA1N100 resource in a pop-up window on the right side of the panel shown in Figure 89 on page 105.

```
 FKVK2110         Operator Command Interface: SNAMAP             CNM01

Type an action code.  Then press Enter.                         More   +
 1=Activate  2=Inactivate
                 ..........................................................
 _  VTAMSEG      : Type an action code. Then press Enter.      More:   +    :
 _  A01MPU       :  1=Activate  2=Inactivate                                :
 _  ISTPDILU     :                       Type                 Status        :
 _  ISTADJCP     : _ TA07LNPA            LINES                ACTIV----T    :
 _  ISTCDRDY     : _ TA07L000            LINES                NEVAC         :
 _  ISTDSWMN     : _ TA07L004            LINES                NEVAC         :
 _  TA1N100      : _ L07CA000            LINES                NEVAC         :
 _  AON1APPC     : _ L07CA001            LINES                NEVAC         :
 _  AN22E01      : _ L07CA002            LINES                NEVAC         :
 _  AN23E02      : _ L07CA003            LINES                NEVAC         :
 _  AO23E01      : _ L07CA004            LINES                NEVAC         :
 _  AN23E1A      :                                                          :
 _  AN23EVP      : F1=Help     F3=Return  F4=Commands F5=Refresh  F6=Roll   :
 _  A01EMS       : F7=Backward F8=Forward            F11=Zoom    F12=Cancel :
 _  A01TCPIP     :..........................................................:

Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                F11=Zoom      F12=Cancel
```

Figure 89. Viewing Lower Connected Nodes

You can activate or deactivate the resources listed in the pop-up window. For more information about activating and deactivating the resources, see "Activating Resources" on page 103 and "Deactivating Resources" on page 103.

Using SNAMAP Pop-up Commands

You can use the F4 function key to display a list of pop-up commands that you can issue for a specified resource. For example, you might want to display the status history of a resource before you activate it.

To display the command list and issue a command:

1. On the **Operator Command Interface: SNAMAP** panel, press the **Tab** key to move the cursor to the resource you want. This example shows the TA07LNPA resource.
2. Press **F4**.

   AON/SNA displays the commands you can use in a pop-up window on the right side of the panel shown in Figure 90 on page 106.

```
FKVK2111         Operator Command Interface: SNAMAP             CNM01

Type an action code.  Then press Enter.                         More   +
 1=Activate  2=Inactivate                       ..........................
                 ............................. : ID: TA07LNPA           : .
 _  VTAMSEG      : Type an action code. Then pre :             More: +    : :
 _  A01MPU       :  1=Activate  2=Inactivate     :                        : :
 _  ISTPDILU     :                        Type   :  5  1. Activate        : :
 _  ISTADJCP     : _ TA07LNPA             LINES  :     2. AutoView        : :
 _  ISTCDRDY     : _ TA07L000             LINES  :     3. Display         : :
 _  ISTDSWMN     : _ TA07L004             LINES  :     4. Display Config  : :
 _  TA1N100      : _ L07CA000             LINES  :     5. Display History : :
 _  AON1APPC     : _ L07CA001             LINES  :     6. Help Desk       : :
 _  AN22E01      : _ L07CA002             LINES  :     7. Inactivate      : :
 _  AN23E02      : _ L07CA003             LINES  :                        : :
 _  AO23E01      : _ L07CA004             LINES  : F1=Help     F12=Cancel : :
 _  AN23E1A      :                               :........................: :
 _  AN23EVP      : F1=Help     F3=Return  F4=Commands F5=Refresh  F6=Roll   :
 _  A01EMS       : F7=Backward F8=Forward             F11=Zoom   F12=Cancel :
 _  A01TCPIP     :..........................................................:

Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands   F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                F11=Zoom     F12=Cancel
```

Figure 90. Displaying the Command List Pop-up Window

3. Type the number of the command you want to issue in the entry field in the pop-up command window. In this example, you can issue one of the following commands:

   Activate
   Activates the resource.

   AutoView
   Shows all the automation settings for the resource and enables you to change the settings.

   Display
   Displays the details about this resource.

   Display Config
   Displays the control file for the resource.

   Display History
   Displays the status file history for the resource.

   Help Desk
   Displays the problem determination information from the SNA Help Desk.

   Inactivate
   Deactivates the resource.

   Monitor
   Displays the monitoring intervals for the resource.

   Recovery
   Displays the recovery settings for the resource.

   Thresholds
   Displays the error threshold settings for the resource.

   Timer Displays the timer settings for the resource.

   Press the **F7** and **F8** function keys to scroll through the list of commands.

4. Press **Enter**.

AON/SNA processes the command you selected.

Chapter 12. Displaying Network Status

To display the status of specified resource groups, use the NetStat option. To check the status of your network, specify the type of resource and which resources of that type to display.

```
FKVK0000         SNA Automation: Menu                              CNM01


Select an option

          4 0.   Tutorial
            1.   Help Desk
            2.   SNAMAP
            3.   VTAM Options Management
            4.   NetStat
            5.   VTAM Commands
            6.   APPN menu
            7.   Switched Network Backup menu
            8.   X.25 menu
            9.   NCP Recovery Definitions (NCP name=________)









Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 91. SNA Automation: Menu Panel – Selecting the NetStat Option

To check the status of your network from the **SNA Automation: Menu** panel:

1. Type **4** in the entry field.
2. Press **Enter**.

   AON/SNA displays the SNA Automation: NetStat panel shown in Figure 92 on page 110.

   Note: You can also display the NetStat panel by typing **AON 2.4** or **NETSTAT** on any command line and pressing **Enter**.

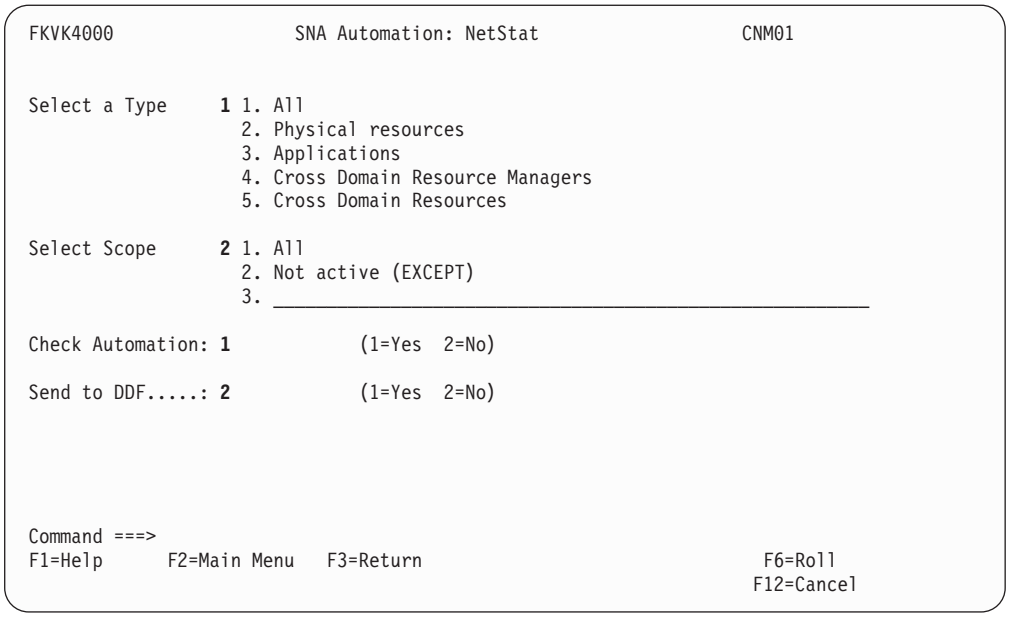


Figure 92. SNA Automation: NetStat Panel

3. Type the number of the resource type you want in the **Select a Type** entry field. You can select one of the following options:

   All Displays all known resources. The default is All.

   Physical resources
   Displays only the physical resources. For example, this option displays NCPs, lines, PUs, and LUs.

   Applications
   Displays all of the applications.

   Cross Domain Resource Managers
   Displays all of the cross-domain resource managers.

   Cross Domain Resources
   Displays all the cross-domain resources.

4. Type the number of the scope you want in the **Select Scope** entry field. You can select one of the following options:

   All Displays all resources regardless of their status.

   Not active (EXCEPT)
   Displays all resources currently not in an active state. The default is `EXCEPT`.

   User-defined field
   Displays the scope of resources you specify. If you do not want to display resources with a certain status, type an ¬ before the status.

5. Specify whether you want to check automation. You can specify one of the following values:

   1=Yes Checks the recovery setting for the resource before it displays the resource. If you specify `Yes` and recovery is turned off, the resource is not displayed. This is the default.

   2=No Does not check automation.

6. Specify if you want to send the resource to DDF. You can specify one of the following values:

1=Yes Updates DDF with the status of the resource you display. Specify `Yes` if you need to reset the status of the resource or reload DDF.

2=No Does not update DDF with the status of the resource. The default is `No`.

7. Press **Enter**.

   AON/SNA displays the status of the resources you specified on the Operator Command Interface: NetStat panel shown in Figure 93.

```
FKVK4100          Operator Command Interface: NetStat             CNM01

                                                                  More:  +
   Name                Type                Status
   TA27                CDRM                NEVAC
   --------            -----               -----
   TA07LNPA            LINE                NEVAC
   TA07L000            LINE                NEVAC
   TA07L004            LINE                NEVAC
   L07CA000            LINE                NEVAC
   L07CA001            LINE                NEVAC
   L07CA002            LINE                NEVAC
   L07CA003            LINE                NEVAC
   L07CA004            LINE                NEVAC
   L07CA005            LINE                NEVAC
   L07CA006            LINE                NEVAC
   L07CA007            LINE                NEVAC
   L07CA009            LINE                NEVAC
   L07CA010            LINE                NEVAC


Command ===>
F1=Help      F2=Main Menu   F3=Return                          F6=Roll
F7=Backward  F8=Forward                                       F12=Cancel
```

Figure 93. Operator Command Interface: NetStat Panel

Note: For information about the programmatic interface to the AON NETSTAT function, see the SNA resource automation information (FKVESYNC) in the *IBM Tivoli NetView for z/OS Automated Operations Network Customization Guide*.

Chapter 13. Issuing VTAM Commands

To issue VTAM commands and see the results of the commands on a panel, use the VTAM commands option on the SNA Automation: Menu panel or the VTAMCMD command. The VTAM commands option saves commands across user task sessions. If any command is left on the panel when you exit the panel, it is displayed in the same place when you return to the panel. This is helpful if you have a small set of frequently used commands, and you do not want to look up the syntax of a command each time you use it.

The VTAM command option is cursor sensitive. If you have several commands on the panel, AON/SNA issues the command at the position of the cursor. You can issue a command by typing a new command and pressing **Enter**, or use the **Tab** key to move the cursor to the command you want to select and press **Enter**.

```
FKVK0000         SNA Automation: Menu                              CNM01


Select an option

         5 0.   Tutorial
           1.   Help Desk
           2.   SNAMAP
           3.   VTAM Options Management
           4.   NetStat
           5.   VTAM Commands
           6.   APPN menu
           7.   Switched Network Backup menu
           8.   X.25 menu
           9.   NCP Recovery Definitions (NCP name=________)









Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 94. Selecting the VTAM Commands Option

To issue VTAM commands from the SNA Automation: Menu panel:

1. Type **5** in the entry field.
2. Press **Enter**.

   AON/SNA displays the SNA Automation: VTAM Commands panel shown in Figure 95 on page 114.

   Note: You can also get to the VTAM Commands panel by typing **AON 2.5** or **VTAMCMD** on any command line and pressing **Enter**.

```
FKVK5000               SNA Automation: VTAM Commands            CNM01


 Type in a VTAM Command or Tab to a Command.  Then press Enter.

  F NET,CHKPT,TYPE=ALL_____________________________________________
  ID=TA1PT209______________________________________________________
  TOPO_____________________________________________________________
  _________________________________________________________________
  D NET,TOPO,LIST=SUMMARY__________________________________________
  D NET,DIRECTRY,ID=USIBMTA.TA01___________________________________
  D NET,TOPO,LIST=ICN______________________________________________
  D NET,ADJCP,ID=*_________________________________________________
  ID=TA1T1048,E____________________________________________________
  ID=CICS01A,E_____________________________________________________


 NOTE: If the word NET does not occur in the command,
       D NET is assumed.


Command ===>
F1=Help      F2=Main Menu   F3=Return                          F6=Roll
                                                             F12=Cancel
```

Figure 95. SNA Automation: VTAM Commands Panel

When you select this panel for the first time, the command input fields are blank. However, because AON/SNA saves the commands across user sessions, including NetView sessions, the panel fills up with the commands you use. This saves time if you use a few commands frequently.

You can shorten the commands on this panel. For example, you can enter the `D NET,TOPO,LIST=ICN` command as `TOPO,LIST=ICN` because AON/SNA assumes you want to use D NET if you do not specify the word NET.

To change a command, use the Tab key to move the cursor to the command and type over it.

To add a VTAM command to this panel and issue it:

1. Type the command in the entry field. You can only type one command on each line.
2. Press **Enter**.

   AON/SNA issues the command and displays the Operator Command Interface: VTAM Commands panel shown in Figure 96 on page 115. In this example, the `DISPLAY NET,ID=TA1T1048` command response is displayed.

```
FKVK5100          Operator Command Interface: VTAM Commands         CNM01

Output of: D NET,ID=TA1T1048,E                                      More:   +

IST097I    DISPLAY  ACCEPTED
IST075I    NAME = USIBMTA.TA1T1048 , TYPE = CDRSC
IST486I    STATUS= ACT/S----Y, DESIRED STATE= ACTIV
IST977I    MDLTAB=***NA*** ASLTAB=***NA***
IST861I    MODETAB=***NA*** USSTAB=***NA*** LOGTAB=***NA***
IST934I    DLOGMOD=***NA*** USS LANGTAB=***NA***
IST597I    CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I    CDRSC    MAJOR NODE = ISTCDRDY
IST479I    CDRM NAME = TA06    , VERIFY OWNER = NO
IST1131I   DEVICE = CDRSC
IST654I    I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I    ACTIVE SESSIONS = 0000000001, SESSION REQUESTS = 0000000000
IST206I    SESSIONS:
IST634I    NAME     STATUS          SID          SEND RECV VR TP NETID
IST635I    CNM01024 ACTIV-P    F9DB431A7D93BAD8 000D 0024  0  1 USIBMTA


Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
F7=Backward  F8=Forward                                         F12=Cancel
```

Figure 96. Operator Command Interface: VTAM Commands Panel

The output from the command is displayed on this panel. If the output is more than one panel long, you can scroll through the panels to see all of the information.

To issue previously saved commands:

1. Press the **Tab** key to move the cursor to the command you want to issue.
2. Press **Enter**.

   AON/SNA issues the command and displays the output on the Operator Command Interface: VTAM Commands panel.

Chapter 14. Using Advanced Peer-to-Peer Networking (APPN)

AON/SNA Advanced Peer-to-Peer Networking (APPN) is a powerful, flexible, easy-to-use networking solution for client-server and distributed applications supported by VTAM 4.1 or later.

In an AON/SNA APPN environment, AON provides menu-driven commands to simplify VTAM topology and directory database management. This environment accepts operator commands for common AON/SNA APPN VTAM functions. It also provides active monitoring of control points and control point sessions.

You can use the AON/SNA: APPN Command Menu panel to perform the following APPN functions:

- Issue checkpoint commands
- Display control points
- Display directory
- Display transmission group profiles

```
FKVK0000         SNA Automation: Menu                              CNM01


Select an option

          6 0.   Tutorial
            1.   Help Desk
            2.   SNAMAP
            3.   VTAM Options Management
            4.   NetStat
            5.   VTAM Commands
            6.   APPN menu
            7.   Switched Network Backup menu
            8.   X.25 menu
            9.   NCP Recovery Definitions (NCP name=________)









Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 97. SNA Automation: Menu Panel – Selecting the APPN Menu Option

To use the APPN functions from the **SNA Automation: Menu** panel:

1. Type **6** in the entry field.
2. Press **Enter**.

   AON/SNA displays the SNA Automation: APPN Commands Menu panel shown in Figure 98 on page 118.

   Note: You can also get to the APPN Commands Menu panel by typing **AON 2.6** or **APPN** on any command line and pressing **Enter**.

```
FKVKA000         SNA Automation: APPN Commands Menu              CNM01


Select an option

          _ 0. Tutorial
            1. Issue Checkpoint Commands
            2. Display Control Points
            3. Display Directory
            4. Display Transmission Group Profiles









Command ===>
F1=Help      F2=Main Menu   F3=Return                             F6=Roll
                                                                 F12=Cancel
```

Figure 98. SNA Automation: APPN Commands Menu Panel

Displaying Control Points

You can select the display control points command from the SNA Automation: APPN Commands Menu panel. After you make this selection, you can select from the following actions for the resource:

- Details
- Delete topology
- Delete directory
- Active monitoring
- Timers
- AutoView

You can use the SNA Automation: APPN Control Points Display panel to identify control points to specify in your statements in the CPCPSESS control file entry.

You can use the Display Control Points option on the SNA Automation: APPN Commands Menu panel to work with the control points on your APPN network. To do this:

1. Type **2** in the entry field on the **SNA Automation: APPN Commands Menu** panel. Figure 98 shows this panel.
2. Press **Enter**.

   AON/SNA displays the APPN CP Display panel shown in Figure 99 on page 119.

   Note: You can also display the SNA Automation: APPN CP Display panel, type **AON 2.6.2** on any command line and pressing **Enter**.

```
FKVKA200         SNA Automation: APPN CP Display                  CNM01

Type an action code.  Then press Enter.                          More:  +
 1=Details  2=Delete Topology  3=Delete Directory  4=Active Monitoring
 5=Timers   6=AutoView
    Control Point        Node Type
 1  ISTADJCP             ADJCP MAJOR NODE
 _  USIBMTA.TA1PT106     EN
 _  TA1CP213             *NA*
 _  TA1CP214             *NA*
 _  USIBMTA1.OPER1       EN
 _  USIBMTA.NTC0PUN6     *NA*
 _  USIBMTA.TA1CP210     EN
 _  APPN.TA1PT209        EN
 _  USIBMXXX.YYY00000    EN
 _  USIBMTA.TA1PT107     EN
 _  USIBMTA.TA1PT220     EN
 _  USIBMTA.TA1CP207     NN
 _  USIBMTA.TA1PT203     EN
 _  TA1CP208             *NA*

Command ===>
F1=Help      F2=Main Menu   F3=Return                F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                          F12=Cancel
```

Figure 99. SNA Automation: APPN CP Display Panel

3. Type an action code in the entry field next to the resource you want. This example shows the Details action code next to the ISTADJCP control point. You can select one of the following actions:

   1=Details
   Displays detailed VTAM information for the control point on the Operator Command Interface: APPN CP Detail panel. This is obtained from the combined output of the VTAM `D NET,E` commands and its link station. The output includes both session and LU information, which is helpful in solving problems. The status of the link station is often a clue to physical network problems, while the control point status information shows configuration or application program problems.

   2=Delete topology
   Deletes the control point from the topology database. Displays the messages about the deletion on the Operator Command Interface: VTAM commands panel.

   3=Delete directory
   Deletes the control point from the directory database. Displays the messages about the deletion on the Operator Command Interface: VTAM commands panel.

   4=Active monitoring
   Starts or stops active monitoring of the control point. AON/SNA displays the Active Monitoring Settings panel and enables you to change the settings.

   5=Timers
   Displays the AON Automation: Timer Set panel where you can add, display, change, and delete the timers for the control point you select.

   6=AutoView
   Displays automation information for the control point. Displays the AON: AutoView panel.

4. Press **Enter**.

AON/SNA displays the Operator Command Interface: APPN CP Detail panel shown in Figure 100.

```
FKVKA210          Operator Command Interface: APPN CP Detail       CNM01

                 Control Point ISTADJCP                            More:   +

IST097I    DISPLAY  ACCEPTED
IST075I    NAME = ISTADJCP         , TYPE = ADJCP MAJOR NODE
IST486I    STATUS= ACTIV     , DESIRED STATE= ACTIV
IST1100I   ADJACENT CONTROL POINTS FROM MAJOR NODE ISTADJCP
IST1102I   NODENAME          NODETYPE CONNECTIONS CP CONNECTIONS
IST1103I   USIBMTA.TA1PT106   EN        1           1
IST1103I   TA1CP213          *NA*       0           0
IST1103I   TA1CP214          *NA*       0           0
IST1103I   USIBMTA1.DOWNING   EN        1           1
IST1103I   USIBMTA.NTC0PUN6  *NA*       0           0
IST1103I   USIBMTA.TA1CP210   EN        1           1
IST1103I   APPN.TA1PT209      EN        1           1
IST1103I   USIBMXXX.YYY00000  EN        1           1
IST1103I   USIBMTA.TA1PT107   EN        1           1
IST1103I   USIBMTA.TA1PT220   EN        1           1
IST1103I   USIBMTA.TA1CP207   NN        1           1

Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
F7=Backward  F8=Forward                                         F12=Cancel
```

Figure 100. Operator Command Interface: APPN CP Detail Panel

Chapter 15. Using Switched Network Backup

AON/SNA switched network backup (SNBU) automation enables NetView programs to automate modem speed selection or to bypass outages on a leased line. Automatic speed selection is based on information available from link problem determination aid (LPDA-2) modems. When temporary errors exceed a predetermined threshold, SNBU automation automatically switches the line to a slower speed. SNBU automation switches the line back to normal speed when LPDA-2 indicates that the line quality has improved beyond the specified threshold.

SNBU automation bypasses leased-line outages by initiating a dial backup through an alternate communications path. You can choose one of the following conditions that cause SNBU automation to initiate a dial backup:

- A NetView hardware monitor alert indicates no response from a remote modem
- A physical unit (PU) is unavailable for a specific interval of time
- A PU is unavailable multiple times, and AON/SNA stops automated recovery attempts

```
FKVK0000         SNA Automation: Menu                              CNM01


Select an option

         7 0.   Tutorial
           1.   Help Desk
           2.   SNAMAP
           3.   VTAM Options Management
           4.   NetStat
           5.   VTAM Commands
           6.   APPN menu
           7.   Switched Network Backup menu
           8.   X.25 menu
           9.   NCP Recovery Definitions (NCP name=________)









Command ===>
F1=Help      F2=Main Menu   F3=Return                             F6=Roll
                                                                 F12=Cancel
```

Figure 101. Selecting the Switched Network Backup Menu

To use the SNBU automation functions from the SNA Automation: Menu panel:

1. Type **7** in the entry field.
2. Press **Enter**.

   AON/SNA displays the SNBU Automation Command Menu panel shown in Figure 102 on page 122.

   Note: You can also display the SNBU Automation Command Menu panel by typing **AON 2.7** or **SNBU** on any command line.

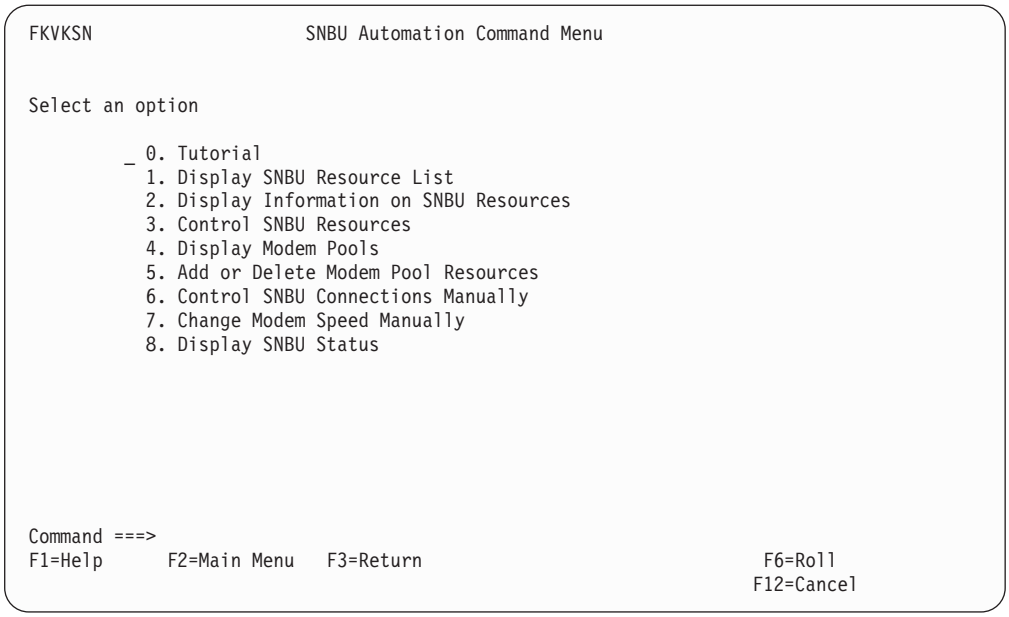


Figure 102. SNBU Automation Command Menu Panel

The following sections describe more about the options.

Displaying the SNBU Resource List

You can use the Display SNBU Resource List option on the SNBU Automation Command Menu panel to display a list of the SNBU PU and modem pool entries that are defined in the AON/SNA control file. You can also see the status of each resource.

To display the SNBU Resource List from the SNBU Automation Command Menu panel:

1. Type **1** in the entry field on the **SNBU Automation Command Menu** panel. An example of this panel is shown in Figure 102.
2. Press **Enter**.

   AON/SNA displays the AON SNBU Resource List panel shown in Figure 103 on page 123.

   Note: You can also display the SNBU Resource List panel by typing **AON 2.7.1** or **LISTSNBU** from the command line of any panel and pressing **Enter**.

```
FKVKSNB1                AON SNBU Resource List              CNM01

                                                          More   :    +
      PU Name       Status     Pool            PU Name      Status       Pool
      DEFAULTS                                 SNBU013      SNBU         PL3
      PU                                       SNBU014      LOCAL        PL3
      FOTESTPU      SNBU       PU2             SNBU015                   PL3
      SNBU001       ISNBU      PL1             SNBU016      INIT         PL3
      SNBU002       ISNBU      PL1             SNBU017      SNBU         PL3
      SNBU003                  PL1             SNBU018                   PL3
      SNBU004                  PL1             SNBU019      BOTH         PL3
      SNBU005       SNBU       PL1             SNBU021      SNBU         PL4
      SNBU006                  PL2             SNBU022                   PL4
      SNBU007       SNBU       PL2             SNBU023      SNBU         PL4
      SNBU008                  PL2             SNBU024      BOTH         PL4
      SNBU009       INIT       PL2             SNBU025                   PL4
      SNBU010                  PL3             SNBU026      ISNBU        PL4
      SNBU011       SNBU       PL3             SNBU027      SNBU         PL4
      SNBU012       RVC        PL3             SNBU028      ISNBU        PL4


Command ===>
F1=Help      F2=Main Menu   F3=Return    F4=Commands                F6=Roll
F7=Backward  F8=Forward                             F11=EntryPoint F12=Cancel
```

Figure 103. SNBU Resource List Panel

Connecting or Disconnecting a Resource and Changing Modem Speed

You can use the Control SNBU Connections Manually option or the Change Modem Speed Manually option to:

- Disconnect a resource from SNBU automation
- Connect a resource to SNBU automation
- Restore a resource to full speed
- Switch a resource to backup speed
- Delete an erroneous status file entry

To perform one of these functions:

1. Type **6** or **7** in the entry field on the **SNBU Automation Command Menu** panel. An example of this panel is shown in Figure 102 on page 122.
2. Press **Enter**.

   The Change Speed or Initiate/Terminate SNBU Operation panel shown in Figure 104 on page 124 is displayed.

   Note: You can also display the Change Speed or Initiate/Terminate SNBU Operation by typing **AON 2.7.6**, **AON 2.7.7**, **CHGSNBU**, or **CHGSPEED** from the command line of any panel and pressing **Enter**.

```
FKVKCGBE   Change Speed or Initiate/Terminate SNBU Operation    CNM01

 Enter the following:

      Resource name ..................

 Use any character to select type of operation:

      DISCONNECT SNBU ................
      CONNECT SNBU ...................
      Note:  Operation controlled by Automation Control File.

      RESTORE to Full Speed .........
      SWITCH  to Backup Speed .......
        Local|Remote|Both Modem .....        1 = Local | 2 = Remote | 3 = Both
      Note:  Modem will switch back if next statistics are good.

      DELETE erroneous status .......
      Note:  Use only after servicing port or manual restore


Command ==>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                 F12=Cancel
```

Figure 104. Change Speed or Initiate/Terminate SNBU Operation Panel

3. Type a resource name in the **Resource name** field. The resource name is the PU name or alternate port name. Because a modem is not a network addressable unit (NAU), the modem is addressed using the network name and the address of the remote PU to which it is attached. When the PU name is used as an operand, relevant information for that PU is automatically filled in on the resulting panel.
4. Type any non-blank character in the remaining fields to perform the action you want. You can select the following fields:

   DISCONNECT SNBU
   Disconnects a SNBU dial backup condition.

   CONNECT SNBU
   Initiates a SNBU dial backup.

   RESTORE to Full Speed
   Restores the selected modem to full speed.

   SWITCH to Backup Speed
   Changes the selected modem to a backup speed.

   Local | Remote | Both Modem
   Selects a modem type (1=Local, 2=Remote, 3=Both).

   DELETE erroneous status
   Deletes old or erroneous status records. Failure to delete old or erroneous Busy and Down status records can result in an attempt at alternate port selection that does not succeed because the SNBU automation cannot use a port that is already marked busy or down. An FKV850I message that no ports are available might be issued, when in fact there is nothing to prevent the dial from occurring. An erroneous status file record keeps those ports from being selected.

   Note: Use the delete option only after servicing the port or manually restoring the modem. SNBU selects alternate ports that are not marked busy or down for pooling use.
5. Press **Enter**.

If you completed the information correctly, AON/SNA performs the function you specified on the panel and displays the SNBU Automation Command Menu panel.

Displaying SNBU Status

You can use the Display SNBU Status option to display the status of all SNBU resources (including those in backup speed) as recorded in the AON status file. To display the status of SNBU resources:

1. Type **8** in the entry field on the **SNBU Automation Command Menu** panel. An example of this panel is shown in Figure 102 on page 122.
2. Press **Enter**.

   The SNBU PU Status Display panel shown in Figure 105 is displayed.

   Note: You can also display the SNBU PU Status Display panel by typing **AON 2.7.8** or **QRYSNBU** on any command line and pressing **Enter**.

```
FKVKCGBF              SNBU PU Status Display
                                                              More:    +
     PU NAME     STATUS                     PU NAME     STATUS
----------------------------------- | -------------------------------------
 1.  FOTESTPU    SNBU                |  16.  SNBU015
 2.  SNBU001     ISNBU               |  17.  SNBU016     INIT
 3.  SNBU002     ISNBU               |  18.  SNBU017     SNBU
 4.  SNBU003                         |  19.  SNBU018
 5.  SNBU004                         |  20.  SNBU019     BOTH
 6.  SNBU005     SNBU                |  21.  SNBU021     SNBU
 7.  SNBU006                         |  22.  SNBU022
 8.  SNBU007     SNBU                |  23.  SNBU023     SNBU
 9.  SNBU008                         |  24.  SNBU024     BOTH
10.  SNBU009     INIT                |  25.  SNBU025     SNBU
11.  SNBU010                         |  26.  SNBU026     ISNBU
12.  SNBU011     SNBU                |  27.  SNBU028     SNBU
13.  SNBU012     RVC                 |  28.  SNBU029     ISNBU
14.  SNBU013     SNBU                |  29.  SNBU030     SNBU
15.  SNBU014     LOCAL               |  30.  SNBU040     SNBU
 Status may be altered using CHGSNBU or CHGSPEED commands

Command ===>
F1=Help      F2=Main Menu   F3=Return                            F6=Roll
F7=Backward  F8=Forward                          F11=EntryPoint F12=Cancel
```

Figure 105. SNBU PU Status Display Panel

Chapter 16. NCP Recovery Definitions

To display the NCPRECOV Control File definitions for a particular NCP, or for all NCPs you have defined, use the NCP Recovery Definitions menu option.

To display all defined NCPs choose option 9. To display a particular NCP, choose option 9 and enter the name of the NCP in the **NCP name=** field on the panel.

Selecting the NCP Recovery Definition menu option causes the DSPCFG command to be issued based upon your NCP selection.

Figure 106 displays the SNA Automation: Menu panel.

```
FKVK0000         SNA Automation: Menu                              CNM01


Select an option

          9 0.   Tutorial
            1.   Help Desk
            2.   SNAMAP
            3.   VTAM Options Management
            4.   NetStat
            5.   VTAM Commands
            6.   APPN menu
            7.   Switched Network Backup menu
            8.   X.25 menu
            9.   NCP Recovery Definitions (NCP name= ________ )



Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 106. Selecting NCP Recovery Definitions

To access NCP Recovery Definitions from the SNA Automation: Menu panel:

1. Type **9** in the entry field.
2. Press **Enter**.

AON/SNA issues the DSPCFG command for all of your defined NCPs, which is shown in Figure 107 on page 128.

```
EZLK7110          Display Configuration Data                      CNM01

Select one of the following.  Then press Enter.
 1=Add  2=Change  3=Delete

 _  NCP01                    NCPRECOV
 _    HOST                   CNM01
 _    DUMP                   (Y,N)
 _    RELOAD                 (Y,N)
 _    LINKSTA                001-S
 _    DUMPSTA                001-S
 _    LOADTIME               00:05
 _    DUMPTIME               00:10
 _    EXIT01                 FKVEX01
 _    EXIT02                 FKVEX02
 _    EXIT03                 FKVEX03
 _    EXIT04                 FKVEX04
 _    LOADMOD                NCP01A



Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 107. Selecting NCP Recovery Definitions

This is the DSPCFG panel for the NCP01 NCPRECOV Control File statement. In this example, this is the only NCP being automated on this system.

Chapter 17. Displaying SNA Resource Information with AutoView

The AutoView function displays a summary of information for a single resource and provides a list of commands you can issue for more information about the resource and changing its automation settings. To use the AutoView panel, you must know the name of the resource with which you want to work.

To display the AutoView selection panel:

1. Type **SNAVIEW** on the command line of any panel.
2. Press **Enter**. A panel similar to the one shown in Figure 108 is displayed. This panel is dynamically ordered according to your installation, so the order of the options on your panel might be different.

```
EZLK2000             AON: AutoView                              NTVE1


    Resource Name  _____________________________

    Resource Type  ____________________ (Optional)

    Select an Option

       (Optional) _ 1. NVAIX
                    2. APPN
                    3. SNBU
                    4. IP390
                    5. TCPIP
                    6. SNA



Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 108. AON: AutoView Panel

3. Type the resource name in the **Resource Name** field.
4. Optionally, tab to the **Resource Type** field and type the resource type (such as LU, PU, NCP, or APPL).
5. Type **5** for SNA in the entry field. If you do not select an option, AON searches all of the automation components to find the resource.
6. Press **Enter**.

For example, to use AutoView for the TA1P523A resource, type **TA1P523A** in the **Resource Name** field, which is shown in Figure 109 on page 130.

```
EZLK2000           AON: AutoView                                CNM01


    Resource Name  TA1P523A___________

    Resource Type  PU_________________ (Optional)

    Select an Option

       (Optional) _ 1. TCPIP
                    2. APPN
                    3. SNBU
                    4. SNA




Command ===>
F1=Help      F2=Main Menu   F3=Return                             F6=Roll
                                                                 F12=Cancel
```

Figure 109. AON: AutoView Panel Sample Entry

Finding Defined Resources

Each automation component displays a different set of predefined information and a different list of commands. Because no particular automation component is selected in the example shown in Figure 109, AON searches all the automation components for the resource, TA1P523A. When the resource is defined to more than one automation component, AON lists all the places the resource is defined.

In Figure 110, AON found the resource, TA1P523A, defined as both a SNA and a SNBU resource.

```
EZLKIDNT           AON: Component Selection                     CNM01


The resource chosen has valid definitions in the following installed
options.  Select the applicable option.

Resource Chosen   TA1P523A

    Select an Option

                  1 0. All
                    1. SNA
                    2. SNBU









Command ===>
F1=Help      F2=Main Menu   F3=Return                             F6=Roll
                                                                 F12=Cancel
```

Figure 110. AON: Component Selection Panel

To select the SNA AutoView display:

1. Type **1** in the entry field of the **AON: Component Selection** panel.
2. Press **Enter**.

   Figure 111 shows the SNA AutoView display for the resource, TA1P523A.

```
EZLKVIEW                AON: AutoView                  CNM01

Resname . . . . . . . . TA1P523A
Restype . . . . . . . . PU
Option  . . . . . . . . SNA
Status  . . . . . . . . PCTD2        1
Automation Status . . . TREACT
Automation Flag . . . . ON
DDF message . . . . . . NONE


                              2                  3

Resource Definitions      _ 1. Automation         (RECOVERY DEFAULTS)
                            2. Thresholds         (THRESHOLDS DEFAULTS)
                            3. Active Monitoring  (ACTMON DEFAULTS)
                            4. Monitor Intervals  (MONIT DEFAULTS)
                            5. Timer              (NONE)
                            6. Display Network LOG Information for TA1P523A



 Command ===>
 F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                   F12=Cancel
```

Figure 111. AON: AutoView Panel

Viewing Resource Information

The following resource information is available:

1 The first group of information provides a summary of information about the resource including the resource name, resource type, status, automation settings for the resource, DDF message for the resource, if any, and other information depending on the automation component used.

2 The second group is a list of commands you can issue for the resource to display more information, change automation settings, or perform other functions depending on the automation component used.

3 The third group of information (shown in parentheses) tells you which control file entry is currently defining the settings for the commands shown in the second group. For example, in Figure 111, the settings for option 1 (Automation) are defined by the RECOVERY DEFAULTS control file entry.

For commands that do not have a corresponding control file entry, such as option 5 (Timer) the information in the parentheses indicates whether a setting exists. In Figure 111, there are no timers set for TA1P523A.

You can select one of the following resource definitions:

Automation
Turns automation on and off.

Thresholds
Adds, changes, or deletes the threshold settings. The settings are infrequent, frequent, and critical threshold.

Active Monitoring
Indicates if the resource is active.

Monitor Intervals
Sets the intervals for trying to reactivate a resource.

Timer Adds, changes, or deletes a timer.

Display Network LOG Information
Displays only the Netlog information for the resource.

Part 3. Using AON with TCP/IP

Chapter 18. Using the AON/TCP Operator Interface

This chapter explains how to navigate through the full-screen, menu-driven panels that make up the *operator interface* for AON/TCP. As an operator, you can do most of your work from within the operator interface.

Automated Operations Network (AON) provides a rich operator interface for managing TCP/IP resources through an AIX service point (NV4AIX option) or a z/OS (IP390 option) system. The functions provided by each option are dependent on functions provided by the AIX of MVS platforms; therefore, not all functions are available for both options.

The AIX option enables you to manage TCP/IP resources through RUNCMDs to one, or more, AIX service points. For example, you can PING TCP/IP hosts through the AIX service point. The AIX option also enables you to define thresholds for CPU utilization, disk utilization, resource failures, and security authorization failures.

The IP390 option enables you to manage TCP/IP resources through z/OS Communication Server IP. For example, you can use z/OS Communication Server IP to issue PING and TRACERTE commands. Also, you can manage telnet and FTP sessions connecting into your MVS system. The AON/TCP session management aids you in identifying session endpoints (correlating SNA and IP data), determining if a session is stopped, and taking corrective actions. You can use the IP390 option to issue SNMP requests (for example, GET and SET), enable TCP/IP tracing (PKTTRACE and CTRACE), monitor resources for specific performance thresholds, and automate and monitor critical sockets.

Accessing the Operator Interface

You can perform any of the operator functions from the operator interface. The operator interface enables you look at color-coded status displays of the resources on your network, change automation settings, receive messages, issue commands, and perform many other functions that control automation and resource availability. New AON/TCP users might find the panels an easier way to reach the different functions.

You can access the AON/TCP operator interface from anywhere within NetView or from the AON panels. To access AON/TCP from NetView perform the following steps:

1. Type **AON** on the command line.
2. Press **Enter**.

   NetView displays the AON: Operators Commands Main Menu panel shown in Figure 112 on page 136:

```
EZLK0000             AON: Operator Commands Main Menu            CNM01


Select an option

         _ 0.   Tutorial
           1.   AON Base Functions
           2.   SNA Automation
           3.   TCP/IP Automation









Command ===>
F1=Help      F2=End         F3=Return                              F6=Roll
                                                                 F12=Cancel
```

Figure 112. AON: Operator Commands Main Menu Panel

The AON: Operator Commands Main Menu panel is the main panel for AON. This panel displays all available components. AON checks the control file entry for each AON component to determine if the component is installed and initialized. If the component is not available, the name of the component on the panel is not available.

To select the TCP/IP Menu option from the AON: Commands Main Menu panel:

3. Type **3** in the entry field.
4. Press **Enter**.

   AON displays the TCP/IP Automation: Commands Menu panel, shown in Figure 113. You can use this panel to get to all the functions of AON/TCP.

```
FKXK0000         TCP/IP Automation: Commands Menu             CNM01


Select an option

         _ 1. NetView for AIX Menu
           2. MVS TCP/IP Menu









Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                 F12=Cancel
```

Figure 113. TCP/IP Automation: Commands Menu

Note: You can also reach the AON/TCP interface by typing **AONTCP** on any NetView command line and pressing **Enter**.

Tivoli NetView (for UNIX) Menu

This topic describes how to use the AON/TCP AIX commands. Selecting option **1** from Figure 113 on page 136 displays the following panel:

```
FKXK1000      NetView for AIX TCP/IP Automation: Commands Menu     CNM01


Select an option

          _ 1. Issue Ping
            2. General Commands
            3. Issue Remote Ping
            4. Performance Thresholds Management
            5. Display Resource List









Command ===>
F1=Help      F2=Main Menu   F3=Return                                F6=Roll
                                                                    F12=Cancel
```

Figure 114. TCP/IP Automation: Commands Menu Panel for NetView for UNIX

To select an option from the TCP/IP Automation: Commands Menu panel:

1. Type the number of the option you want to use in the entry field.
2. Press **Enter**.

The number you select determines the AON/TCP option that is displayed. See the following list for a summary of the AON/TCP menu options:

Option 1
Sends a RUNCMD to the AIX service point to PING a TCP/IP resource.

Option 2
Sends the user specified command (through a RUNCMD) to the AIX service point.

Option 3
Sends a RUNCMD to the AIX service point to issue a remote PING of a TCP/IP resource.

Option 4
Manages AON/TCP thresholds for disk and CPU utilization, resource failures, and security authorization.

Option 5
Displays TCP/IP critical resource list, which are resources that have been defined using a TCP/IP policy definition statement.

Pinging a TCP/IP Node through a Service Point

Pinging a service point can be a useful diagnostic tool if you are having trouble transmitting data. The response returned by the ping command tells you if the service point and node are up and functioning.

To send a ping command to a service point:

1. Type **1** in the entry field on the TCP/IP Automation: Commands Menu panel.
2. Press **Enter**.

   AON/TCP displays the TCP/IP Automation: Ping a Service Point panel shown in Figure 115.

   Note: For fast access to the TCP/IP Automation: Ping a Service Point panel, enter **AON 3.1.1** or **NV6KPING** on the command line.

```
FKXK1100         TCP/IP Automation: Ping a Service Point          CNM01

 Node Name           ____________________________________
                     ____________________________________

 Service Point Name  ________              (? for Selection list)


 Select Ping Flags to use, then press Enter.  (All Flags are optional)

  _  (-c) Ping Count   3__
  _  (-i) Ping Time    5__
  _  (-d) Socket-level debugging
  _  (-n) Numeric Output only
  _  (-q) Summary only
  _  (-r) Ping directly to Host
  _  (-R) Record route option
  _  (-v) Lists ICMP packets
  _  (-s) Number of send data bytes   56_


Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 115. TCP/IP Automation: Ping a Service Point Panel

3. Type the name of the node associated with the host you want to ping in the **Node Name** field.
4. Optionally, you can type the name of the service point to which you want to send the ping in the **Service Point Name** field. If you want to see a list of possible service points, type **?**. This field is optional, but accelerates the response because all service points do not have to be checked for the node.
5. Optionally, you can type a non-blank character in the entry field next to any of the following ping flags:

   (-c) Ping Count
   Specifies the number of echo requests that you want to send and receive. AON/TCP retrieves the default value from the control file.

   (-i) Ping Time
   Specifies the number of seconds to wait between sending each ping request. AON/TCP retrieves the default value from the control file.

   (-d) Socket-level debugging
   Indicates that you want to get information about a host and start socket-level debugging.

   (-n) Numeric Output only
   Indicates that you do not want AON/TCP to look up symbolic names for host addresses.

(-q) Summary only
Specifies quiet output. If you specify this option, AON/TCP displays only the summary lines at startup and finish time.

(-r) Ping directly to Host
Indicates that you want to bypass the routing tables and send the ping directly to a host on an attached network. You can use this option to ping a local host through an interface that no longer has a route through it.

(-R) Record route option
Indicates that you want to include the RECORD_ROUTE option in the ECHO_REQUEST packet and display the route buffer on returned packets.

(-v) Lists ICMP packets
Indicates that you want to request verbose output, which lists ICMP packets that are received in addition to echo requests.

(-s) Number of send data bytes
Specifies the number of data bytes to send. The default is 56. Add 8 bytes for the ICMP header data to determine the actual number of bytes to send per data packet.

6. Press **Enter**.

   If you entered a question mark in the **Service Point Name** field, AON/TCP displays the Operator Command Interface: SELECTION panel shown in Figure 116, which enables you to select the service point.

```
EZLKSLCT          Operator Command Interface: SELECTION            NTV70

Select one of the following.  Then press Enter.

                                                                   SP
 _  NV6HKHOST                                    NV6000          NV6KPU
 _  NTC0PUN6                                     NV6000          NTC0PUN6









Command ===>
F1=Help      F2=Main Menu   F3=Return                 F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                           F12=Cancel
```

Figure 116. Operator Command Interface: SELECTION Panel

7. Type **s** (or any other non-blank character) beside the desired service point.
8. Press **Enter**.

   AON/TCP displays the TCP/IP Automation: Ping a Service Point panel with the service point name field filled in and a message as shown in Figure 117 on page 140.

```
FKXK1100         TCP/IP Automation: Ping a Service Point          CNM01

Node Name           TESTER1_____________________________
                    _____________________________________

Service Point Name  NTC0PUN6              (? for Selection list)
  (Optional)

Select Ping Flags to use, then press Enter.  (All Flags are optional)

 _  (-c) Ping Count   3__
 _  (-i) Ping Time    5__
 _  (-d) Socket-level debugging
 _  (-n) Numeric Output only
 _  (-q) Summary only
 _  (-r) Ping directly to Host
 _  (-R) Record route option
 _  (-v) Lists ICMP packets
 _  (-s) Number of send data bytes   56_

FKX910I SERVICE POINT NAME SET. PRESS ENTER TO CONTINUE
Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 117. TCP/IP Automation: Ping a Service Point Panel with Message

9. Press **Enter**.

   After performing a successful ping command, AON/TCP displays a panel like the one shown in Figure 118.

```
FKXKLWN2  OUTPUT FROM  REMOTE CMDS                                  1 of 11
 FKX504I NETVIEW FOR AIX SERVICE POINT NTC0PUN6 RESPONSE FOR COMMAND
 Executing RUNCMD "asis ping -c 3 -i 5 tester1"
 PING tester1.anycity.xyz.com (1.23.45.67): 56 data bytes
 64 bytes from 1.23.45.67: icmp_seq=0 ttl=60 time=84 ms
 64 bytes from 1.23.45.67: icmp_seq=1 ttl=60 time=15 ms
 64 bytes from 1.23.45.67: icmp_seq=2 ttl=60 time=15 ms

 --- tester1.anycity.xyz.com ping statistics ---
 3 packets transmitted, 3 packets received, 0% packet loss
 round-trip min/avg/max = 15/38/84 ms
 DSI268I RUNCMD COMPLETE




Command==>
PF3=Ret   PF4=Fndprev   PF5=Rptfnd   PF6=Roll   PF7=Back   PF8=Forw  PF12=Cancel
```

Figure 118. Ping Results Panel

   This panel shows information such as how many packets were transmitted, how many packets were received, and how long the ping round trip took.

Issuing a Command to a Service Point

The General Commands option on the TCP/IP Automation: Commands Menu panel enables you to issue a command to a service point.

To issue any valid AIX line output command to a service point:

1. Type **2** in the entry field on the TCP/IP Automation: Commands Menu panel.

2. Press **Enter**.

   AON/TCP displays the TCP/IP Automation: Issue Command to Service Point panel shown in Figure 119. Because data is saved across sessions, Figure 119 shows data in some of the fields.

   Note: You can also access the TCP/IP Automation: Issue Command to Service Point panel by entering **AON 3.1.2** or **NV6KCMD** on any command line.

```
FKXK1200      TCP/IP Automation: Issue Command to Service Point    CNM01

 Service Point Name NVIXTA01_              (? for Selection list)

 Type in the remote command below.  Then press Enter.

0.........1.........2.........3.........4.........5.........6.........7......
 who_____________________________________________________________________________
 _____________________________________________________________________________
 _____________________________________________________________________________
 _____________________________________________________________________________
 _____________________________________________________________________________
 _____________________________________________________________________________
 _____________________________________________________________________________
 _____________________________________________________________________________
 _____________________________________________________________________________
 _____________________________________________________________________________


Command ===>
F1=Help      F2=Main Menu   F3=Return                                  F6=Roll
                                                  F11=Right     F12=Cancel
```

Figure 119. TCP/IP Automation: Issue Command to Service Point Panel

3. Type the name of the service point, to which you want to send the command, in the **Service Point Name** field. If you want to see a list of possible service points, type **?**.

   Note: If you entered a question mark in the **Service Point Name** field on the TCP/IP Automation: Issue Command to Service Point panel, AON/TCP displays an Operator Command Interface: SELECTION panel like the one shown in Figure 116 on page 139, which enables you to select the service point by typing **s** next to the desired service point. After pressing Enter, AON/TCP displays the TCP/IP Automation: Issue Command to Service Point panel with the **Service Point Name** field filled in.

4. Type the UNIX command on any of the available lines. Remember that the service point is case sensitive, so you must type the command exactly as the command is expected to be on the panel. You can send any AIX command to the NetView for UNIX service point as long as the results are line mode and not interactive in nature.

   The length of the command to be issued cannot exceed 150 characters because of a limitation on passing information between programs.

   If you need more space than what is provided on one panel, you can press **F11** to page to the right. To help you keep track of your position, the last 2 characters on the first panel become the first 2 characters on the second panel when you page to the right.

   AON/TCP supports AIX pipe characters, but you must use the pipe character that translates to EBCDIC X'6A'.

This panel is cursor sensitive and saves entries across sessions. So, to issue a needed command, place the cursor on the command. To change an existing command, type over any command not needed.

5. Press **Enter**.

   Note: If your command is longer than one panel, you can press Enter to issue the command whether or not you scrolled the panel to the right.

   AON/TCP displays a scrollable panel similar to Figure 120.

```
FKXKLWN2  OUTPUT FROM  REMOTE CMDS                          Line   1 of 8
 FKX504I NV6000 SERVICE POINT NTC0PUN6 RESPONSE FOR COMMAND -
 Executing RUNCMD "asis who"
 root        hft/0       Mar 02 13:59
 root        pts/2       Apr 06 14:54
 root        pts/0       Apr 06 14:47
 root        pts/3       Apr 06 15:05
 root        pts/4       Apr 06 15:11
 DSI268I RUNCMD COMPLETE
```

Figure 120. Results of Issuing a Command to a Service Point

Displaying the Critical Resource List

The Display Resource List option displays a list of the critical TCP/IP resources you defined with TCPIP entries in the control file. After seeing the available resources, you can do one of the following steps:

- ping a resource
- issue AutoView for a resource
- issue a remote ping to an AIX resource

To display a list of the TCP/IP resources that you defined for your network:

1. Type **5** in the entry field (on the NetView for Unix TCP/IP Automation: Commands Menu panel shown in Figure 114 on page 137).
2. Press **Enter**.

   AON/TCP displays the TCP/IP Automation: Resource List panel shown in Figure 121 on page 143.

   Note: You can also go to the TCP/IP Automation: Resource List panel by entering **AON 3.1.5** on any command line.

```
FKXK1500          TCP/IP Automation: Resource List                CNM01

Select one of the following. Then press Enter.                   More:>
 1=Ping   2=Autoview   3=Remote Ping

     Alias           Serv Pt.  Type     IP Address      Host Name
_  BLDSERVER        NV6KHOST  NAMESERV 1.23.4.567      server.plant.floor.c
_  COSERVER         NV6KHOST  NAMESERV 1.23.4.56       coserver.plant.floor.c
_  DUMMYSRV         NMPIPL10  HOST     1.23.45.678     DUMMYSRV
_  OPSWS            NV6KHOST  HOST     9.87.6.54       opsws.plant.floor.c









Command ===>
F1=Help      F2=Main Menu   F3=Return   F4=Commands    F5=Refresh    F6=Roll
F7=Backward  F8=Forward                              F11=Right     F12=Cancel
```

Figure 121. TCP/IP Automation: Resource List Panel

The fields on the Resource List panel are:

Alias The alias, or nickname, of the host you are monitoring.

Serv Pt.
The service point responsible for the resource.

Type One of the following resource types:
- Host
- Nameserver
- INFC
- LINK

IP Address
The IP address of the host you are monitoring.

Host Name
The fully qualified name of the host you are monitoring.

3. Type the number of the action you want to perform in the entry field next to the desired alias name. The action codes are:

   1 Sends a ping command, which causes the same results as described in "Pinging a TCP/IP Node through a Service Point" on page 137. The advantage of performing the ping this way is that the **Node Name** and **Service Point Name** fields are already filled in for you.

   2 Displays an AutoView for the alias name. This panel shows all currently known information about the resource from the control file and the service point. From this panel, you can manage all the automation definitions for the resource.

   3 Sends a remote ping command, which causes the same results as in "Pinging a TCP/IP Node through a Service Point" on page 137. The advantage of performing the remote ping this way is that the **Source Node Name** and **Service Point Name** fields are already filled in for you.

4. Press **Enter**.

AON/TCP displays the appropriate panel. If you entered **1** for Ping, AON/TCP displays the panel in Figure 115 on page 138. Follow the steps in "Pinging a TCP/IP Node through a Service Point" on page 137 to complete the proper fields and issue a ping.

The Resource List panel displays AIX resources. If you press **F4** on Figure 121 on page 143, the panel in Figure 122 is displayed containing a pop-up window where you can select options for the appropriate resource:

```
FKXK1501          TCP/IP Automation: Resource List                CNM01

Select one of the following. Then press Enter.                   More:>
 1=Ping   2=Autoview   ........................................
                       :  Select an Option for BLDGSERVER         :
     Alias             :                                          :
_  BLDSERVER           :  __ 1. Ping server.plant.floor.co        :
_  COSERVER             :     2. Remote Ping server.plant.floor.co :
_  DUMMYSRV             :     3. Send command to NV6KHOST          :
_  OPSWS                :     4. Active Monitoring                 :
                       :     5. Automation                        :
                       :     6. Failure Thresholds                :
                       :     7. Performance Thresholds            :
                       :     8. Monitor Intervals                 :
                       :     9. Timer                             :
                       :    10. Display Configuration Data        :
                       :    11. Display Network LOG Information   :
                       :                                          :
                       : F1=Help                    F12=Cancel    :
                       ........................................



Command ===>
F1=Help      F2=Main Menu   F3=Return   F4=Commands    F5=Refresh    F6=Roll
F7=Backward  F8=Forward                              F11=Right     F12=Cancel
```

Figure 122. TCP/IP Automation: Resource List Panel

From this panel, you can:

- Issue a ping of a resource.
- Issue a remote ping to a resource.
- Send a command to a resource.
- Display an AON ACTMON entry for a resource.
- Display the AON RECOVERY policy for a resource.
- Display an AON MONIT entry for a resource.
- Display timers that are set for a resource.
- Display TCP/IP control file definitions for a resource.
- Issue the BLOG command.

MVS TCP/IP

This section explains the function in AON/TCP that utilizes z/OS CommServer IP.

Selecting option **2** on the panel in Figure 113 on page 136 (TCP/IP Automation: Commands Menu) displays the MVS TCP/IP menu, as shown in Figure 123 on page 145.

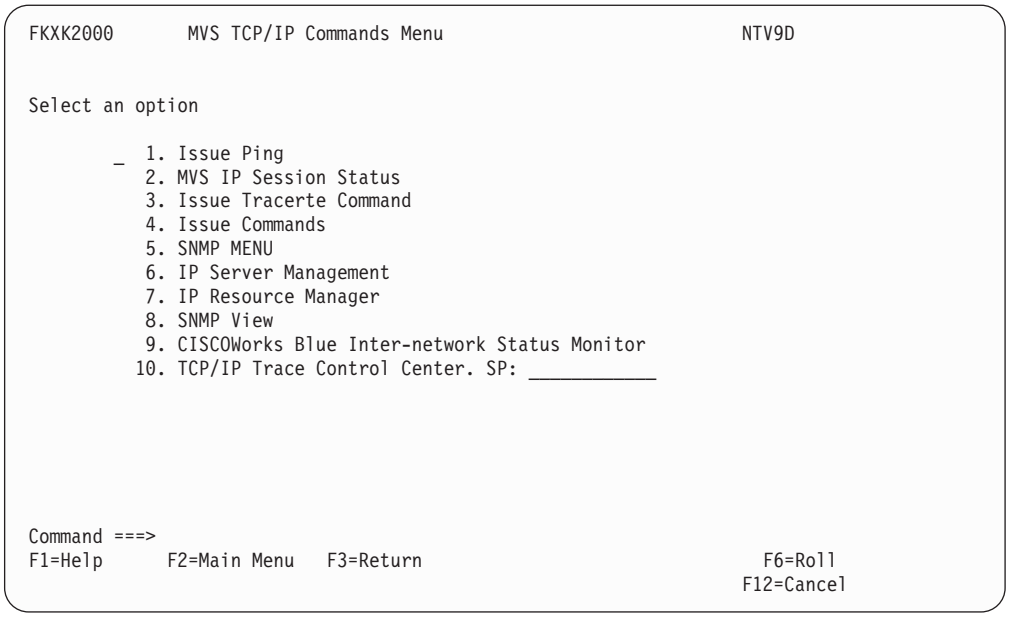


Figure 123. MVS TCP/IP Automation: Commands Menu

The options on this panel provide the following functions:

Option 1
Ping a resource through z/OS Communication Server IP.

Option 2
Solve problems and manage IP connections for your MVS system, such as TN3270 and FTP sessions.

Option 3
Issue a TCP/IP TraceRte command against a resource.

Option 4
View a full-screen panel that contains TSO or UNIX line mode commands. Responses are correlated and displayed in a full-screen panel.

Option 5
Link to the SNMP menu where you can issue SNMP commands.

Option 6
Monitor and control TSO and UNIX command servers.

Option 7
Provides management functions for TCP/IP resources, such as managing policy definitions and proactive monitoring.

Option 8
Provides generic interface resource views through SNMPView.

Option 9
Provides Cisco router management functions through Cisco Works Blue.

Note: AON/TCP provides a link to Cisco Works Blue from this panel, but before attempting to select this option, perform all of the installation or customization steps required to run Cisco Works Blue, for example, authorizing all NetView operators to use Cisco Works Blue.

Option 10
Perform diagnostic traces to resolve TCP/IP problems.

Usage Notes: For options 2, 4, 5, 7, 8 and 10, the resources must support SNMP requests.

MVS TCP/IP Ping

Pinging a resource can be a useful tool. To ping a resource, select option **1** from the panel in Figure 123 on page 145. The panel shown in Figure 124 is displayed.

```
FKXK2100        MVS TCP/IP Automation: Ping from a Service Point    CNM01

Host Name or IP Address
_____________________________________________________________________

Service Point Name __________   (? for Selection list)


Ping Count        4__
Ping Timeout      3___
Ping Length       16___









Command ===>
F1=Help      F2=Main Menu   F3=Return                                F6=Roll
                                                                    F12=Cancel
```

Figure 124. MVS TCP/IP Automation: Ping from a Service Point

The MVS TCP/IP Automation: Ping from a Service Point panel can also be accessed by using the **MVSPING** and **AON 3.2.1** commands.

In Figure 124, the resource name can be an IP host name or an IP address. If no service point name is specified, AON searches the TCP/IP policy definitions for the SP associated with the resource.

Optionally, you can choose to change the following fields for a PING:

Ping count
Specifies the number of PING requests to issue.

Ping timeout
Specifies the interval (in seconds) to wait for each PING response.

Ping length
Specifies the length of data to be sent for a PING request.

Note: You can also use the **MVSPING** command from any NCCF command line to ping a resource and have the results correlated and displayed on your workstation, instead of on these panels.

Session Status

Users who connect to your z/OS can encounter various problems. The session status option of the AON/TCP function enables you to determine the session endpoints, whether the session is stopped, and to, optionally, drop the session. You can access the session status panel by selecting option 2 shown in Figure 123 on page 145. This enables you to display and correlate SNA and IP connectivity and status information. This option enables you to:

- Identify the type of session (such as, TN3270, FTP, or SMTP).
- Identify if that session is stopped.
- Break the session.
- Correlate SNA VTAM data with TCP/IP data.
- Run TCP/IP problem determination commands, such as PING and TraceRte, to determine the cause of session problems.
- Access the SNA help desk for LU and application problem determination.
- Query sessions on multiple MVS hosts and multiple TCP/IP stacks.
- Access the SNMP main menu.
- Display detailed information about specified Telnet connections.
- Cause specified ports to not accept any new Telnet connections.
- Cause previously quiesced ports to begin accepting Telnet connections.

The Session Status panel can also be accessed by entering the **IPSTAT** or **AON 3.2.2** commands.

Note: The Session Status panel issues SNMP requests to collect data. The Community name used for those requests is defined on the TCP390 definition for the associated stack where the request is being issued. For more information, refer to the TCP390 definition statement in the *IBM Tivoli NetView for z/OS Administration Reference*.

Note: The following IPSTAT panels reflect an FKXIPSTAT value of DETAIL. See *IBM Tivoli NetView for z/OS Administration Reference* for detail about the FKXIPSTAT common variable that can be defined in CNMSTYLE and for more detail about the IPSTAT keyword, an optional keyword on the TCP390 statement.

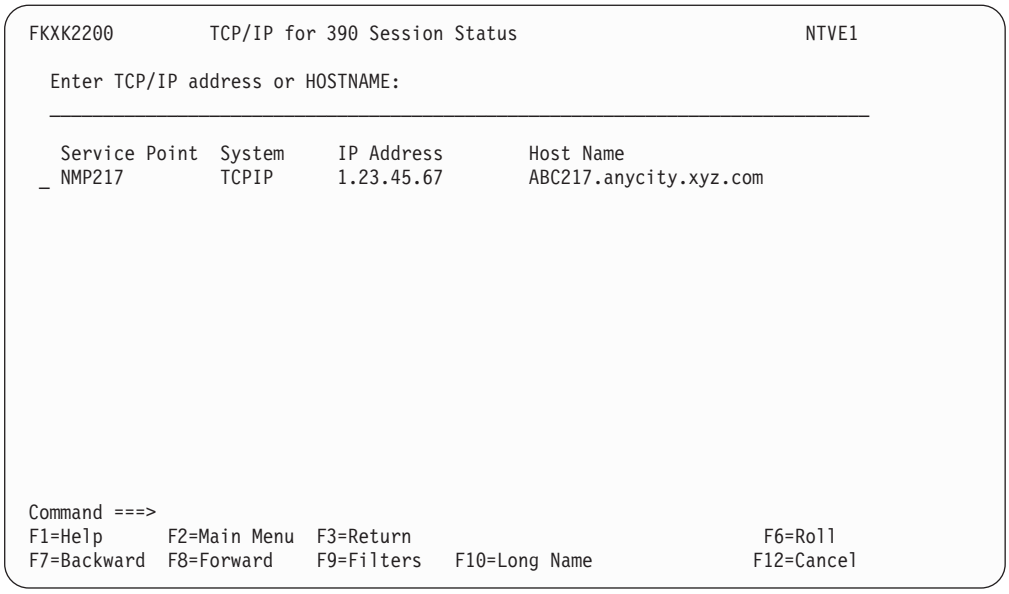


Figure 125. TCP/IP for 390 Session Status Panel

To use the Session Status panel:

- Enter a TCP/IP address (or wildcard, for example 9.*) or Host Name.
- Select one, or more, MVS TCP/IP stacks by placing any non-blank character next to it.
- Press **Enter**.

The panel in Figure 126 on page 149 displays the selected MVS TCP/IP stacks and the number of sessions connected to each.

Depending on how you have customized your IPPORT policy definitions, this panel might not show all active sessions. For additional information, refer to IPPORT in *IBM Tivoli NetView for z/OS Administration Reference*.

Note: The IBM and Cisco TN3270 Servers do not support the use of a wildcard (*) in any part of the **IP Address** field. Message FKX962I is displayed if you try to use a wildcard with a TN3270 Server.

You can also set up session filters by pressing **F9**. For additional information refer to "Session Status Filters" on page 151.

```
FKXK2210          TCP/IP for 390 Session Status                      NTVE1

   CLIENT

   146.*.*.*


   Service    Active    IP
   Point      Sessions  Address         HostName
   NMP217     1         1.23.45.67      ABC217.anycity.xyz.com









Command ===>
F1=Help      F2=Main Menu  F3=Return    F4=Commands    F5=Refresh    F6=Roll
F7=Backward  F8=Forward    F9=Filters                 F11=Zoom      F12=Cancel
```

Figure 126. TCP/IP for 390 Session Status Panel

Press **F11** (Zoom) to display information for all sessions as shown in Figure 127.

```
FKXK2220          TCP/IP for 390 Session Status                 NTVE1
                  SERVICE
   CLIENT - - - -> POINT
                  ABC217                      Active Sessions  1
   146.*.*.*      1.23.45.67                Filtered Sessions  1
                  TCP/IP STACK
Client                 Local                                 Logical  Appl.
Port   Client Address   Port               Send     Rec       Unit SLU (PLU)
1445   123.45.678.90   23                 174      57        NTCPE101 NTE1TSO2









Command ===>
F1=Help      F2=Main Menu   F3=Return   F4=Commands   F5=Refresh     F6=Roll
F7=Backward  F8=Forward     F9=Filters                               F12=Cancel
```

Figure 127. TCP/IP for 390 Session Status Panel Showing the Status of the Specified Resource

In this example, the user, 123.45.678.90, has one active TN3270 session into port 23 and application NTE1TS02.

The session management functions have correlated the user's IP address with the Logical Unit and application for the session.

You can issue commands against the session, logical unit, or application by tabbing to that field on the screen and pressing **F4** (commands).

```
FKXK2221         TCP/IP for 390 Session Status                    NTVE1
                   SERVICE
   CLIENT - - - -> POINT - - - - > SESSION
                   NMP217          1445
   123.45.678.90   1.23.45.67      23
                   ................................................
Client Local       : Conn ID 00000002CB          Commands          :
Port   Port        : Addr    123.45.678.90     _  1. Ping           :
1445   23          : Port    1445                 2. Tracerte       :
                   : LU      NTCPE101             3. Autoview       :
                   : APPL    NTE1TSO2             4. Drop           :
                   :                              5. ARP Cache      :
                   : Send    174                  6. SNMP Commands  :
                   : Rec     57                   7. Display Conn   :
                   :                              8. Quiesce Port   :
                   :                              9. Resume Port    :
                   :                             10. SNMP View      :
                   : F1=Help                     11. Conn Details   :
                   : F12=Cancel                  12. Session Status :
                   :.............................................:

Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
F7=Backward  F8=Forward     F9=Filters
```

Figure 128. TCP/IP for 390 Session Status Panel Showing Session Commands

Note: For options 3, 4, 6, 10, 11, and 12, the resources must support SNMP requests.

If you issue the PING command, which is shown as option 1 in Figure 128, a panel similar to that shown in Figure 129 is displayed.

```
CNMKWIND OUTPUT FROM  COMMAND: PING 1.23.45.67 ISSUED TO SP   LINE 0 OF 6
*------------------------------ Top of Data -------------------------------*
BNH765I Pinging nmpipl10.tivlab.raleigh.ibm.com at 1.23.45.67 with 3 packets o
BNH767I 16 bytes received from 1.23.45.67: seq=1 in 46ms
BNH767I 16 bytes received from 1.23.45.67: seq=2 in 8ms
BNH767I 16 bytes received from 1.23.45.67: seq=3 in 5ms
BNH769I 3 packets sent, 3 packets received, 0.00% packet loss
BNH770I Round trip times from 5 to 46 ms, averaging 19ms
*------------------------------ Bottom of Data ----------------------------*









TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>
```

Figure 129. Output from TCP/IP Panel with Ping Command Result

Determining If a Session Is Stopped

To determine if a session is stopped, use **F5** to refresh the panel and monitor the send and receive columns shown in Figure 127 on page 149. If, after the refresh, there is no change, the session might be stopped. Press **F4** in the panel shown in Figure 128 to drop the session. AON/TCP performs the following steps:

- Issues a DROP connection command for the session.

Notes:

1. This function uses the VARY TCPIP DROP function.
2. In order for the DROP option to work properly, the operator issuing the DROP must be authorized to issue the VARY TCPIP DROP command.
3. The SNMP Community name defined in the control file for each TCP390 stack must match the one configured by the communication server for each stack. The Community name can be dynamically updated by using the IP Resource Manager function. Refer to the *IBM Tivoli NetView for z/OS Security Reference* for more information about the SNMP Community name and UNIX System Services authorization. The Community name definition can be found in the TCP390 definition in the *IBM Tivoli NetView for z/OS Administration Reference*.

- Returns to the Session Status panel.
- Refreshes the session list.
- Displays the following confirmation message:

```
FKX611I SESSION 1006 WAS SUCCESSFULLY DROPPED
```

Session Status Filters

The NetView program provides the ability to display TCP/IP session status information for selected stacks. Displaying the session status information can result in a very large volume of information for you to review to find a particular resource or set of resources. The session status filters enable you to display only resources of particular interest. These filters are set on a task basis. You can invoke the Session Status Filters panel using the PF key on selected TCP/IP panels. You can also set the Session Status Filters using the command-line interface.

Figure 130 shows the Session Status Filters panel. The default values are completed.

```
FKXKSSF0         TCP/IP for 390 Session Status Filters            NTVE1

The current filter and sort settings are shown.

Type the data to be displayed in one or more fields.
Client IP                                  Logical
Address                 Type      Status   Unit     Appl.
*                       *         *        *        *
Type an action code to define the logical operator for the search:
  2 1 OR
    2 AND

Type numbers from  1    to  5    to define the column order for sorting.
Client IP                                  Logical
Address                 Type      Status   Unit     Appl.
1                       5         4        3        2
Type an action code to define the sort order.
  1 1 Ascending order
    2 Descending order


Command ===>
F1=Help                    F3=Return                          F6=Roll
                           F9=Defaults                       F12=Cancel
```

Figure 130. TCP/IP for 390 Session Status Filters Panel

The following discussion describes the sections of the TCP/IP for 390 Session Status Filters panel. To change a setting, tab to any entry that is to be changed and type the new information. Press **Enter** to process the changes.

The first section shows the data to be displayed on the Session Status panel. A blank or an asterisk (*) in an input field indicates that data is not to be filtered for that field. If, for example, you enter **TSO** in the **Appl** field, any session that contains the string **TSO** in the application field is displayed.

The second section shows the logical operator to be used for the filtering criteria that was set, when multiple input fields are specified, in the first section. The **OR** operator causes sessions that match ANY of the specified criteria to be displayed. The **AND** operator causes sessions that match ALL of the specified criteria to be displayed.

The third section shows the sort order to be used when the session status is displayed. These fields accept only the numbers 1 through 4, and blank as input. At least one field must be specified. The input must be sequential, starting with 1. If an operator enters **1** in the **Appl** field and **2** in the **IP Address** field, the Session Status display is sorted by the **Appl** field first. If there are identical Appl entries, they can then sorted by the **IP Address** field.

The fourth section shows the order to be used for the sort. When **1** is entered the fields are sorted in ascending order and when **2** is entered the fields are sorted and displayed in descending order.

Note: The **F3**, **F6**, and **F12** keys *do not* save any data typed on the panel. Use the **F9** key to restore the defaults that are shipped with NetView. The Session Status panel automatically reflects the most recent settings of the session status filters.

Figure 131 shows the Session Status detail panel displaying the active sessions on a stack using the default filter settings. Note that 11 TCP/IP sessions are active and all are displayed.

Note: Depending on the setting in the IPSTAT keyword on the TCP390 statement, this screen may appear differently than what is depicted here.

```
FKXK2220          TCP/IP for 390 Session Status                  NTVE1
                  SERVICE
   CLIENT - - - -> POINT
                  NMP217                      Active Sessions  11
   123.45.678.90  1.23.45.67                Filtered Sessions  11
                  TCP/IP STACK
Client                Local                                  Logical  Appl.
Port   Client Address   Port              Send     Rec       Unit SLU (PLU)
1006   1.23.45.678       23               274       4
1005   1.23.45.678       23             21402    1250       NTCP7406 NT74IS03
1012   1.23.45.678       23               253      41
1013   1.23.45.678       23               253      41
1009   1.23.45.678       23               439      57       NTCP7403 NTV74EC0
1010   1.23.45.678       23               841      78       NTCP7404 NTV74EC0
1008   1.23.45.678       23              1320      57       NTCP7402 NTV74045
1007   1.23.45.678       23               301      57       NTCP7401 NT741802
1011   1.23.45.678       23               301      57       NTCP7408 NT741804
1000   9.87.65.43        23               480      80       NTCP7405 NTV74EC0
1014   9.87.66.43        23             10499     379       NTCP7407 NTV74046

Command ===>
F1=Help      F2=Main Menu  F3=Return   F4=Commands  F5=Refresh   F6=Roll
F7=Backward  F8=Forward    F9=Filters                           F12=Cancel
```

Figure 131. TCP/IP for 390 Session Status Panel

To see only the IP addresses containing 138 and the applications that contain the string NT74, you can press **PF9** and the Session Status Filters panel is displayed. Complete the data in the **IP Address** and **Appl** fields as shown, then press **Enter**.

```
FKXKSSF0        TCP/IP for 390 Session Status Filters            NTVE1

The current filter and sort settings are shown.

Type the data to be displayed in one or more fields.
Client IP                                  Logical
Address                Type      Status   Unit     Appl.
138*                   *         *        *        NTVE1
Type an action code to define the logical operator for the search:
  2 1 OR
    2 AND

Type numbers from  1    to  5    to define the column order for sorting.
Client IP                                  Logical
Address                Type      Status   Unit     Appl.
1                      5         4        3        2
Type an action code to define the sort order.
  1 1 Ascending order
    2 Descending order


Command ===>
F1=Help                    F3=Return                          F6=Roll
                           F9=Defaults                       F12=Cancel
```

Figure 132. TCP/IP for 390 Session Status Filters Panel

There are still 11 active sessions, but only 2 sessions displayed meet the filter criteria.

The message EZL919I is issued to indicate that the filters have been saved. Press **F3** to return to the detail panel shown in Figure 133.

Note: Depending on the setting in the IPSTAT keyword on the TCP390 statement, this screen may appear differently than what is depicted here.

```
FKXK2220          TCP/IP for 390 Session Status                NTVE1
                  SERVICE
   CLIENT - - - -> POINT
                  NMP217                      Active Sessions  11
   123.45.678.90  1.23.45.67                 Filtered Sessions  2
                  TCP/IP STACK
Client                 Local                                Logical  Appl.
Port   Client Address  Port              Send     Rec      Unit SLU (PLU)
1007   1.23.45.678       23              301      57       NTCP7401 NT741802
1011   1.23.45.678       23              301      57       NTCP7408 NT741804









Command ===>
F1=Help      F2=Main Menu  F3=Return  F4=Commands  F5=Refresh  F6=Roll
F7=Backward  F8=Forward    F9=Filters                       F12=Cancel
```

Figure 133. TCP/IP for 390 Session Status Panel

Line Mode Invocation

The session status filters panel can also be invoked from the command line, or a command list, with parameters. Line mode invocation passes parameters to the routine and sets the filters without invoking the view panel. This provides the ability to set filters in a user's initial CLIST. Refer to the NetView online help for more information about this command.

The line mode command used to set filters is FKXESSF. An example follows:

```
FKXESSF DISIP=138 DISAPPL=NT74
```

Setting Up IP Session Status Filters

The Line Mode Invocation panel enables the operator to set the filters from the command line.

Note: All of the sort keywords must be specified when invoked from the command line or from another list.

The return codes for the line mode invocation are as follows:

0 The task completed successfully.

4 The task completed successfully, but duplicate keywords were found. The last instance was used.

7 A variable has no value.

8 The syntax is not valid.

12 The keyword is not valid or has no value.

The panel in Figure 134 is an example of the syntax values that can be entered from the command line for line mode invocation.

```
NCCF       Tivoli NetView NTV74 KENNIE1 09/14/06 11:38:21 A









FKXESSF distype=ftp disip=9 disoper=2 sorttype=0 sortlu=0 sortappl=2
sortip=1 sortord=2
```

Figure 134. Tivoli NetView Line Mode Invocation Panel

The filter settings on the Session Status Filters panel after line mode invocation is shown.

```
FKXKSSF0        TCP/IP for 390 Session Status Filters            NTV74

The current filter and sort settings are shown.

Type the data to be displayed in one or more fields.
Client IP                                                       Logical
Port   Address          Type              Send      Rec      Unit     Appl.
n/a    *                *                 n/a       n/a      *        *
Type an action code to define the logical operator for the search:
  2 1 OR
    2 AND

Type numbers from  1    to  4    to define the column order for sorting.
Client IP                                                       Logical
Port   Address          Type              Send      Rec      Unit     Appl.
n/a    1                4                 n/a       n/a      3        2
Type an action code to define the sort order.
  1 1 Ascending order
    2 Descending order


Command ===>
F1=Help                    F3=Return                             F6=Roll
                           F9=Defaults                          F12=Cancel
```

Figure 135. TCP/IP for 390 Session Status Filters Panel

The TCP/IP Session Status panel is shown, after the line mode invocation.

Note: Depending on the setting in the IPSTAT keyword on the TCP390 statement, this screen may appear differently than what is depicted here.

```
FKXK2220          TCP/IP for 390 Session Status                 NTVE1
                  SERVICE
   CLIENT - - - -> POINT
                  NMP217                      Active Sessions  1
   146.*.*.*      1.23.45.67                Filtered Sessions  1
                  TCP/IP STACK
Client                 Local                                   Logical  Appl.
Port   Client Address   Port               Send     Rec         Unit SLU (PLU)
1445   123.45.678.90    23                 207      90          NTCPE101 NTE1TSO2









Command ===>
F1=Help      F2=Main Menu   F3=Return   F4=Commands   F5=Refresh     F6=Roll
F7=Backward  F8=Forward     F9=Filters                             F12=Cancel
```

Figure 136. TCP/IP for 390 Session Status Panel

MVS TCP/IP TraceRte

The TCP/IP TraceRte command is useful in problem determination, for example, determining lost packets. You can access AON/TCP TraceRte functions by selecting option 3 from the MVS TCP/IP Commands Menu (see Figure 114 on page 137).

Figure 137 on page 156 is displayed when you select option 3 in Figure 123 on page 145:

```
FKXK2300  MVS TCP/IP Automation: Trace Route from a service point  CNM01

  Host Name or IP Address:
  ________________________________________________________________________

  Service Point Name  ________              (? for Selection list)

     Max       30

     Try       3

     Port      33434

     Wait      5

     Debug     2                ( 1=Y , 2=N )

     Skip DNS  1                ( 1=Y , 2=N )
     lookup


 Command ===>
 F3=Ret  F4=Fndprev  F5=Rptfnd  F6=Roll  F7=Back  F8=Forward    F12=Cancel
```

Figure 137. MVS TCP/IP Automation: Trace Route Panel

The panel shown in Figure 137 can also be accessed by issuing the **AON 3.2.3** command.

The resource name can be an IP host name or an IP address. If a stack name is not specified, AON searches the configuration file for the stack defined IP address or host name. The following list describes the parameters and their defaults:

MAX
TRACERTE maximum time to live (TTL). The default is 30 milliseconds.

TRY
Number of attempts. The default is 3.

PORT
The starting port number. The default is 33434.

WAIT
How long to wait for a response. The default is 5.

DEBUG
Show any additional messages. The default is 2.

SKIP DNS LOOKUP
Specifies whether DNS lookup processing is skipped. The default is 1 (Yes).

The example in Figure 138 on page 157 shows output from a TCP/IP trace route command for a workstation with an IP address of `9.37.36.228`:

```
FKXKLWN2    OUTPUT FROM TCP/IP 390 TRACE ROUTE             Line  1 of 6

 Trace route to 1.23.45.678 (1.23.45.678)
    1 (1.23.45.6)     2 ms 0 ms 0 ms
    2 (1.23.45.66)    3 ms 3 ms 3 ms
    3 (1.23.45.67)    8 ms 9 ms 11 ms
    4 (1.23.45.678)  13 ms 11 ms 10 ms









  Command ===>
F3=Ret  F4=Fndprev  F5=Rptfnd  F6=Roll  F7=Back  F8=Forward    F12=Cancel
```

Figure 138. MVS TCP/IP Automation: Trace Route Panel

Issuing Commands

You can issue line mode TSO or UNIX commands from NetView without logging onto TSO. Using the panel in Figure 123 on page 145, select option **4** to display the panel shown in Figure 139.

```
FKXK2400     TCP/IP Automation: Issue Command to Service Point     CNM01

 Service Point Name nmpipl10         (? for Selection list)

 Command Interface: 1                ( 1 = UNIX   2 = TSO )

 Type in the remote command below and press Enter.

0.........1.........2.........3.........4.........5.........6.........7
 netstat conn ____________________________________________________________
 netstat home ____________________________________________________________
 netstat _________________________________________________________________
 tracerte pquigley _______________________________________________________
 time ____________________________________________________________________
 netstat ? _______________________________________________________________
 netstat sock ____________________________________________________________
 netstat up ______________________________________________________________
 netstat tcp tcp32 _______________________________________________________
 netstat byte ____________________________________________________________

  Command ===>
F1=Help  F2=Main Menu  F3=Return             F6=Roll
                                                    F11=Right    F12=Cancel
```

Figure 139. TCP/IP Automation: Issue Command to Service Point Panel

The panel in Figure 139 can also be accessed by issuing the **AON 3.2.4** command. You can easily issue a command; for example, move to the first command line (netstat conn) and press **Enter**. A panel similar to Figure 129 on page 150 is displayed.

```
FKXKLWN2     OUTPUT FROM COMMAND                          Line 1 of 15
 COMMAND:netstat conn  WAS ISSUED TO SERVICE POINT: nmpipl10
   MVS TCP/IP Netstat V3R2

Active Transmission Blocks
User ID   Conn   Local Socket        Foreign Socket          State
-------   ----   ------------        --------------          -----
INTCLIEN  1000   *..TELNET           *..*                    Listen
INTCLIEN  1006   1.23.45.67..TELNET  1.23.45.678..1234       Established
OMVS      1004   *..10007            *..*                    Listen
SNMPD32   UDP    *..161              *..*                    UDP
SNMPD32   1001   *..1024             *..*                    Listen
SNMPQ32   UDP    *..162              *..*                    UDP
SNMPQ32   UDP    *..1024             *..*                    UDP
SNMPQ32   1002   *..1025             *..*                    Listen
NSSERV    1003   *..6000             *..*                    Listen




 Command ===>
F3=Ret  F4=Fndprev  F5=RPTfnd  F6=Roll  F7=Back  F8=Forward    F12=Cancel
```

Figure 140. Output from Command Issued to Service Point Panel

SNMP Management

For SNMP management, use a Commands Menu, shown in Figure 113 on page 136, or the command line-interface. For NVSNMP command line and syntax information, refer to the NetView online help.

Note: Wherever you specify a Community name, it is suppressed for security purposes and does not display in the NetView log. The Community name can be defined in the TCP390 definition for the associated stack where the SNMP request is being issued. For more information, refer to the TCP390 definition in the *IBM Tivoli NetView for z/OS Administration Reference*.

If you specify a Community name, AON uses it for the resulting SNMP request. If you do not specify a Community name, AON uses the name defined for the stack, if one is provided. If no Community name is defined for the stack, then the default name defined to z/OS CommServer IP is used.

To manage SNMP, select option **5** from the MVS TCP/IP Automation: Commands Menu shown in Figure 123 on page 145. When you select option 5, the following panel is displayed:

```
FKXK2500     TCP/IP for 390 SNMP Menu                          NTV70

Host Name or IP Address (blank: Use Stack Name)                    _
_____________________________________________________________________
TCP/IP Stack  _____________  (? for Selection list)

   1. Command:

 _ Get  _GetNext  _Set  _Walk

 _ 2. Group Menu

 _ 3. Remote Ping




 Command ===>
F1=Help     F2=Main Menu   F3=Return                          F6=Roll
                                                            F12=Cancel
```

Figure 141. TCP/IP for 390 SNMP Menu Panel

The SNMP Menu has four options.

The Get Command

Option **1** is a selection, with multiple options, that is based on your command. Figure 142 shows the resulting panel if you select the **Get** command in Figure 141.

```
FKXK2510         TCP/IP for SNMP Commands                      NTV70

Resource: LOCAL
Password(Community)                     Command: GET
TCP/IP Stack: LOCAL
MIB Variables:
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________


 Command ===>
F1=Help     F2=Main Menu  F3=Return                           F6=Roll
                          F9=Options                        F12=Cancel
```

Figure 142. TCP/IP for SNMP Commands Panel

The options screen shows the SNMP Options and the system settings. These settings can be defined in the AON policy definitions. Place an **X** beside the options you want to override. If the system definition is different than the SNMP default, the fields are automatically selected.

Note: If **Bulk** is selected, the command is changed to GETBULK or BULKWALK.

The Set Command

Figure 143 on page 160 is the resulting panel if you select the Set command in Figure 141.

```
FKXK251S            TCP/IP for 390 SNMP Commands                CNM01
Resource: LOCAL
Password(Community)
TCP/IP Stack: LOCAL            Command: Set
MIB Variable                                                     Type
 Value
sysName.0_____________________________________________________ ______
 NMPIPL10 Test system ________________________________________________
 _____________________________________________________________ ______
 _____________________________________________________________ ______
 _____________________________________________________________ ______
 _____________________________________________________________ ______
 _____________________________________________________________ ______
 _____________________________________________________________ ______
 _____________________________________________________________ ______

 Command ===>
F1=Help     F2=Main Menu  F3=Return                          F6=Roll
                          F9=Options                        F12=Cancel
```

Figure 143. TCP/IP for 390 SNMP Commands Panel

For the **Set** command, the **Type** and **Value** fields are added to the screen. Type is used to override the MIB definition type. Value is used for the new value of the MIB.

The Walk Command

Figure 144 is the resulting panel if you select the Walk command in Figure 141 on page 159.

```
FKXK2510            TCP/IP for SNMP Commands                    NTV7O

Resource: 1.23.45.678
Password(Community)                        Command: WALK
TCP/IP Stack: LOCAL

 MIB Variables:
  ____________________________________________________________________




Command ===>
F1=Help     F2=Main Menu  F3=Return                          F6=Roll
                          F9=Options                        F12=Cancel
```

Figure 144. TCP/IP for SNMP Commands Panel

For a **Walk** command, only one MIB can be specified, so only one is accepted from the screen.

The Group Command

Figure 145 on page 161 is the resulting panel if you select the Group Menu in Figure 141 on page 159.

```
FKXK2520     TCP/IP for 390 SNMP Groups                          NTV9D

                                                              More:  +
 Resource: LOCAL
Password (Community)
 TCP/IP Stack: LOCAL

Groups:
ExtGroup         LIST+        UDPTable        TABLE     atm             WALK
system           WALK         ip              WALK      3172sys         WALK
sys2             LIST         ipforward       WALK      3172ifTrap      WALK
sysOR            TABLE        ipAddrTable     WALK      3172channel     WALK
snmp             WALK         ipRouteTable    WALK      3172lan         WALK
IFTable          WALK         ipNoTab         LIST      3172blk         WALK
IFXTable         WALK         icmp            WALK      3172dblk        WALK
atTable          WALK         tcp             WALK      3172device      WALK
UDP              WALK         tcpConnTable    WALK      MvsTcpSystem    WALK
UDPnotab         LIST         tcpNoTab        LIST      MvsTcpIf        WALK


COMMAND ===>
ENTER=Get Group Data
F1=Help     F2=Main Menu  F3=Return   F4=Description            F6=Roll
F7=Backward F8=Forward    F9=Options                           F12=Cancel
```

Figure 145. TCP/IP for 390 SNMP Groups Panel

The SNMP Group screen displays the groups that are defined in DSIPARM sample FKXSNMP. To display more information about the group, tab to the group and select **PF4**. To display the SNMP options, select **PF9**. For more information about creating MIB groups, refer to the *IBM Tivoli NetView for z/OS Automated Operations Network Customization Guide*.

Figure 146 displays the description of the group UDPnotab, and has a type of LIST. Note the four MIB variables that display when you use the UDPnotab group.

```
FKXK2524      TCP/IP for 390 SNMP Groups Description          NTV7O

Group: UDPnotab                Type: LIST

Abstract:
 UDP group MIBs without the UDP Table



MIB Variables:
 udplnDatagrams.0
 udpNoPorts.0
 udplnErrors.0
 udpOutDatagrams.0




 Command ===>
F1=Help     F2=Main Menu  F3=Return                              F6=Roll
                          F9=Options  ENTER=Get Group Data       F12=Cancel
```

Figure 146. TCP/IP for 390 SNMP Groups Description Panel

Figure 147 on page 162 displays the description of the group system and has a type of WALK.

```
FKXK2524     TCP/IP for 390 SNMP Groups Description           NTV7O

Group: system                Type: WALK

Abstract:
 System group MIB variables for SNMP v1 or SNMP v2 including OR Table
 The definition of this group can be found in:
 RFC1907 for v2 or RFC1450 for v1.
MIB Variables:         FULL Name:SYSTEM









 Command ===>
F1=Help     F2=Main Menu  F3=Return                              F6=Roll
                         F9=Options  ENTER=Get Group Data    F12=Cancel
```

Figure 147. TCP/IP for 390 SNMP Groups Description Panel

Figure 148 displays the description of the group UDPTable and has a type of TABLE.

```
FKXK2524     TCP/IP for 390 SNMP Groups Description           NTV7O

Group: UDPTable                Type: TABLE

Abstract:
 UDP group MIBs with the UDP Table


MIB Variables:         INDEX MIB: 1.3.6.1.2.1.7.5
udpLocalAddress
udpLocalPorts









 Command ===>
F1=Help     F2=Main Menu  F3=Return   F4=Description            F6=Roll
                         F9=Options  ENTER=Get Group Data    F12=Cancel
```

Figure 148. TCP/IP for 390 SNMP Groups Description Panel

Using Extended SNMP Groups

If you need more flexibility than what is provided with the SNMP Groups, use extended SNMP Groups. These groups are different in that they enable you to code generic MIB objects (using the LIST+ statement) which are to be appended with group variables obtained from a pop-up panel when this group is selected.

For example, select option **2** on the SNMP Menu panel shown in Figure 141 on page 159 to use extended SNMP groups. When option **2** is selected, Figure 145 on page 161 is displayed.

In Figure 145 on page 161 move the cursor to LIST+ Group name (ExtGroup) and press **Enter**.

The panel in Figure 149 on page 163 is displayed.

Note: To use the LIST+ function you must first customize member FKXSNMP in DSIPARM offline. For information on customizing FKXSNMP see Appendix D, "Customizing the SNMP Group Definitions File (FKXSNMP)," on page 207.

```
 FKXK252V      TCP/IP for 390 SNMP Group Extensions          NTV9D


  Resource: LOCAL
 Password (Community)
  TCP/IP Stack: LOCAL


          .................................................................
  Groups  :                                                               :
ExtGroup  :    PLEASE ENTER AN INTERFACE NUMBER                         :
system    :                                                             :
sys2      :     2_____________________________________                  :
sysOR     :                                                             :
snmp      :                                                             :
IFTable   :                                                             :
IFXTable  :                                                             :
          :                                                             :
atTable   :                                                             :
UDP       :                                                             :
UDPnotab  :                                                             :
          :                                                             :
          :.............................................................:
            WALK


COMMAND ===>
F1=Help     F2=Main Menu  F3=Return  F6=Roll                      F12=Cancel
```

Figure 149. TCP/IP for 390 SNMP Group Extensions Panel

On the SNMP Group Extensions panel type **2** to display details for interface 2 and then press **Enter**. Listed MIB variable information for interface adapter number 2 is collected and displayed as shown in Figure 150.

```
 CNMKWIND Output from  SNMP GET to LOCAL                    LINE 0 OF 20
*-------------------------------TOP of DATA ----------------------------------
*
START OF DATA
ifName.2 = LOOPBACK
ifLinkUpDownTrapEnable.2 = 1
::::::::::::::::::::::::
END OF DATA







TO SEE YOUR KEY STTINGS, ENTER 'DISPLAY'
CMD==>
```

Figure 150. CNMKWIND Output from SNMP GET to LOCAL Panel

IP Server Management

To manage TSO server sessions, select option **6** from the MVS TCP/IP Automation: Commands Menu shown in Figure 123 on page 145. When you select option 6, the panel shown in Figure 151 on page 164 is displayed:

```
FKXK2600                  TCP/IP for 390 Servers                     NTVE1
                                                               More :
  Select an option:
     1=Start  2=Stop
                                                 PPI
          Service                       Submit   Receiver    PPI
    Domid  Point     Server  Type     JCL      Ids         Buffer   Status
_   NTVE1  NMP217    UNIX    UNIX     n/a      CNMEUNIX    0        ACTIVE
_   NTVE1  NMP217    NV2TS1  TSO      CNMSJTSO $E100001    0        ACTIVE
_   NTVE1  NMP217    NV2TS2  TSO      CNMSJTSO $E100002    0        ACTIVE
_   NTVE1  NMP217    NV2TS3  TSO      CNMSJTSO $E100003    0        ACTIVE









Command ===>
F1=Help      F2=Main Menu   F3=Return                  F5=Refresh    F6=Roll
F7=Backward  F8=Forward                                             F12=Cancel
```

Figure 151. IP for 390 Servers Panel

In the panel shown in Figure 151, three TSO servers for NMP217 and the UNIX server for NMP217 are displayed. Start or stop a server as follows:

1. Move the cursor to a server.
2. Type **1** to start the server or **2** to stop the server.
3. Press **F5** to refresh the panel.

Note: You can start or stop multiple servers at the same time.

A single CNMEUNIX server is used for each service point that requires UNIX system services. Therefore, starting or stopping any of the service point entries that use the CNMEUNIX server also starts or stops the single CNMEUNIX server. The status of the server is reflected on all service point entries in the service point list. The status of STARTING or STOPPING is displayed only on the service point entry for which a start or stop command is entered.

IP for 390 Resource Management

This section provides information about managing IP resources that are defined in AON. To display the IP for 390 Resource Management main panel, enter the fast path **AON 3.2.7** or you can enter **IPMAN** on the command line.

Note: The TCP/IP for 390 Resource Management panel uses SNMP requests to collect data. The Community name used for those requests is defined on the TCP390 definition for the associated stack where the request is being issued. For more information, refer to the TCP390 definition statement in the *IBM Tivoli NetView for z/OS Administration Reference*.

IP for 390 Resource Management Main Panel

You can control monitoring of IP Resources from the IP for 390 Resource Management main panel. Use the IP for 390 Resource Management Filters panel (see "IP Resource Management Filters Panel" on page 168) to select which resources to display in the IP for 390 Resource Management main panel.

Note: When running OS/390 V2R6 or later with multiple TN3270 ports, any changes to the dynamic policy definitions created by AON are not reset until the next stack monitor interval.

The following monitoring functions can be selected from the IP for 390 Resource Management main panel:

- ADD/START
- DISPLAY/CHANGE
- DELETE
- START
- STOP

```
FKXK2700          TCP/IP for 390 Resource Management

                                                                  REFRESH: 0
  Select an IP Management Active Monitoring command and press ENTER
  1=ADD/START   2=DISPLAY/CHANGE    3=DELETE    4=START    5=STOP
                     Resource    TCP/IP      Actmon
     Resource        Type        Stack       Definition    M Status
     --------------- ----------- ----------- ------------- - -------
_    **NEW**         IPHOST
_    **NEW**         IPPORT
_    LOOP1026        IPPORT      NMP101                    R DOWN
_    NMPIPL10        IPHOST      NMP101                    A NORMAL
_    LOOP1024        IPPORT      NMP101                    A NORMAL
_    TN3270          IPPORT      NMP101                    A NORMAL
_    NMPIPL10        TCP390      NMPIPL10                  A NORMAL
_    NMP101          TCP390      NMP101                    A NORMAL
_    NMP217          TCP390      NMP217                    A NORMAL
_    NMPIPL10V6      TCP390      NMPIPL10V6                R UNKNOWN
_    TELNETAS        IPTELNET                              N NORMAL



Command ===>
F1=Help      F2=Main Menu   F3=Return   F4=Commands    F5=Refresh    F6=Roll
F7=Backward  F8=Forward     F9=Display Opts    F10=Connections      F12=Cancel
```

Figure 152. TCP/IP for 390 Resource Management Main Panel

The following commands can be issued directly from the IP for 390 Resource Management main panel by placing the command choice (1 through 5) in front of the resource name:

1 Calls the Add/Change Panel in add mode. When the resource is added, monitoring is started. For additional information refer to "IP Resource Management Add Panel" on page 166.

2 Calls the Add/Change panel in change mode. For additional information, refer to "IP Resource Management Change Panel" on page 168.

3 Deletes the entry only from the in storage control file and ends all monitoring.

4 Start monitoring for the resource.

5 Stop monitoring for the resource.

Note: For IP Port Monitoring, all ports under a defined stack are always actively monitored at the start of AON. They cannot be stopped or started individually.

Function Keys:

F4 Displays a command pop-up panel (see "IP for 390 Resource Management Command Pop-up Window" on page 169) based on the resource type of the selected resource. To select a resource, place your cursor on a row containing resource data.

F9 Displays the IP Management Filters panel for the current operator task. The filters can be updated as needed.

The remaining functions are the standard AON view panel options.

The following fields are displayed for each IP resource defined in the control file:

Resource
The name of the resource you are monitoring.

Resource Type
> The resource type can be TCP390, IPHOST, IPINFC, IPNAMESRV, IPPORT,
> IPTELNET, or IPTN3270.

TCP/IP Stack
When the name in this field is the same as the resource name, it is a stack. This status indicates whether the TCP/IP stack specified on the TCPNAME parameter of the TCP390 statement is active. It does not indicate whether the IP address as specified on the IPADDR statement or the host name as specified on the HOSTNAME statement match the primary interface address or host name currently in use by the TCP/IP stack.

Actmon Definition
If a reference to an ACTMON definition exists, that name is displayed in this field.

M The monitoring field contains the current active monitoring status. This list shows the monitoring status:

A Active monitoring

R Recovery monitoring

N No monitoring.

Status The status field contains the current status. These are the possible status indicators:

- NORMAL (GREEN)
- DOWN (RED)
- DEGRADED (PINK)
- THRESH (YELLOW)
- UNKNOWN (BLUE)

REFRESH
The IP Resource Manager main panel can be automatically refreshed, by changing the value of this field, from 0 (no refresh) to 59 minutes.

IP Resource Management Add Panel

Select ADD (option 1) on the IP Resource Management main panel to display the following panel:

```
FKXK2760         TCP/IP for 390 Resource Management

 Update the allowable fields, Press F4   CMD Options
 to ADD resource and Start Monitoring    X - Fixed Field   R-Required Field
                                         1 - Change Field
CMD  KEYWORD    VALUE                   2 - Delete Field
---  ---------- ------------------------------------------------------------
R    RESNAME
X    RESTYPE    IPPORT
X    OPTION     IP390
R    SP         NMP217
_    PORT       8008
_    PROTOCOL   TCP
_    TCPNAME    T530EENV
_    FORMAT     PORT
_    ACTMON     IPPORT
_    DESC       "NetView Web Browser Socket"
_    STATUS     NORMAL
_    INTVL      00:10


Command ===>
F1=Help      F2=Main Menu   F3=Return       F4=SUBMIT UPDATE         F6=Roll
F7=Backward  F8=Forward     F9=Add a field                          F12=Cancel
```

Figure 153. TCP/IP Resource Management Add Panel

The Add panel enables resources to be added dynamically into the in store control file. When the resource is added, proactive monitoring is started for the resource. There is a delay before the monitoring field (M column) is updated on the main panel. Use **F5** to refresh the screen until the change is displayed.

The IP Resource Management Add panel contains the following fields:

Command
A fixed field or a field that is updated using one of the following command options:

1 Change Value for keyword.
2 Delete keyword and its value.
R Indicates field is required. This option is set by the program.
X Indicates the field cannot be changed. This option is set by the program.

Keyword
Specifies the keyword name as set in the control file.

Value
Specifies the current value of the keyword under most circumstances. The value is cleared for ADD operations if a new value is required.

Notes:

1. Keywords marked with an X cannot be updated. In cases where multiple field relationships exist, not all required keywords are marked with an R.
2. Values for keywords are not syntax checked. Entering incorrect data can cause unpredictable results.

Changes are validated prior to a page forward or backward attempt. When R required fields are accepted their command is changed to X or fixed field, automatically.

To submit the changes, press **F4**. To add a new keyword-value pair press **F9** to display the Add keyword pop-up window.

IP Resource Management Change Panel

Selecting Option 2 (change) on the IP Resource Management main panel displays the panel shown in Figure 154.

```
FKXK2760         TCP/IP for 390 Resource Management

 Update the allowable fields, Press F4   CMD Options
 to Change the settings                  X - Fixed Field   R-Required Field
                                         1 - Change Field
CMD  KEYWORD    VALUE                   2 - Delete Field
---  ---------- ------------------------------------------------------------
X    RESNAME    NMPIPL10
X    RESTYPE    IPHOST
X    OPTION     IP390
_    SP         NMPIPL10
_    ACTMON     ALLHOSTS
_    IPADDR     1.23.45.67
_    HOSTNAME   NMPIPL10
_    INTVL      00:15
_    STATUS     NORMAL
_    FORMAT     PING



Command ===>
F1=Help      F2=Main Menu   F3=Return       F4=SUBMIT UPDATE         F6=Roll
F7=Backward  F8=Forward     F9=Add a field                          F12=Cancel
```

Figure 154. IP for 390 Resource Management Change Panel

IP Resource Management Filters Panel

The IP Resource Management Filters panel can be displayed by entering `IPMANSSF` with no parameters or by pressing **F9** on the IP for 390 Resource Management main panel.

```
FKXK2710              IP Resource Management Filters             NTVE1

The current filter and sort settings are shown. Change the settings
and press ENTER to activate.

Type the data to be displayed in one or more fields.
 Resource            Resource   TCP/IP        Status
 Name                Type       Stack Name
 *                   *          *             *
Type an action code to define the logical operator for the search:
  1   1 - OR   2 - AND

Type numbers from  1    to  4    to define the column order for sorting.
 Resource    Resource   TCP/IP        Status
 Name        Type       Stack Name
 1           2          3             4
Type an action code to define the sort order.
  1   1 - Ascending order  2 - Descending order



Command ===>
F1=Help                     F3=Return                          F6=Roll
                            F9=Defaults                       F12=Cancel
```

Figure 155. IP Resource Management Filters Panel

Use this panel to select the resources you want to display. The settings selected are saved on a task basis and will apply in future queries. You can specify filter

criteria for exact names or names starting with specific characters, if the criteria is followed by an asterisk (*). The following fields can be filtered:

Resource Name
Specify criteria for the resource name.

Resource Type
Specify criteria for the resource type.

TCP/IP
Specify criteria for the TCP/IP stack name.

Status Specify criteria based on resource status.

For filter options, specify the relationship between these options as 1 - OR as 2 - AND.

For sort options, specify 1–4 in any order. The four fields are then sorted based on the specified sort order. Indicate whether these sorts are to be done in ascending or descending order by entering a 1 or 2 in the last input field.

Pressing **Enter** causes the filter and sort entries to be validated and saved for use by the IP Resource Manager.

Pressing **F9** restores the default filter and sort settings.

Press **F3** to exit or **F12** to cancel.

IP for 390 Resource Management Command Pop-up Window

To display the COMMAND pop-up window press **F4** from the IP for 390 Resource Management main panel or the SNMP Details panel. The information displayed depends on the resource type of the resource that has been selected.

```
FKXK2740             TCP/IP for 390 Resource Management

 Select a command and press Enter
                              .....................................
                    Resource  : COMMANDS (based on Resource Type)   :
    Resource        Type      :                                     :
    --------------- --------- :  _  1- Ping                        :
_   **NEW**         IPHOST    :     2- Tracerte                     :
_   **NEW**         IPPORT    :     3- Connection Management        :
_   LOOP1026        IPPORT    :     4- SNMP                         :
_   NMPIPL10        IPHOST    :     5- Display Timers               :
_   LOOP1024        IPPORT    :     6- SNMP Details Panel           :
_   TN3270          IPPORT    :                                     :
_   NMPIPL10        TCP390    :                                     :
/   NMP101          TCP390    :                                     :
_   NMP217          TCP390    :                                     :
_   NMPIPL10V6      TCP390    :                                     :
_   TELNETAS        IPTELNET  :.....................................:


Command ===>
F1=Help      F2=Main Menu   F3=Return                          F6=Roll
                                                              F12=Cancel
```

Figure 156. TCP/IP for 390 Resource Management Panel with Commands Window

Using SNMPView

In general, the data displayed by SNMPView is retrieved from SNMP MIB variables. Any data field, with the underscore (_) next to it, can be set by performing the following steps:

1. Enter a non-blank character in place of the underscore.
2. Change the MIB data to be displayed.
3. Press **Enter**.

You can use the SNMPView function to display system wide and interface specific MIB data for your TCP/IP stacks and network resources.

To navigate through the panels, and display information about a resource, select option **8** from the MVS TCP/IP Commands Menu shown in Figure 123 on page 145. Type **8** and press **Enter**. The panel shown in Figure 157 is displayed.

```
FKXK2800       TCP/IP for 390 SNMP Resource View                NTVE1

 Host Name or IP Address:  (blank: Use Local Stack Name)
 ____________________________________________________________________

  X MVS Stack       _ IP Resource

 TCP/IP Stack Name :  LOCAL


_  Go Directly to the Interface List

_  Go to the details for Interface  ___  IP Address  ___________________

_  Go to the Connection List for IP Address  _______________


 Community Name :


Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 157. TCP/IP for 390 SNMP Resource View Panel

IP Resource Data

To display IP Resource MIB data for NMPIPL25, fill in the text fields in Figure 157 as follows:

1. In the **Host Name** or **IP Address** field, type **NMPIPL25**.
2. Delete the X from the default MVS Stack selection.
3. Type **X** to select **IP Resource** view.
4. Press **Enter**. A selection list is displayed.
5. Type **/** in front of the selection you want and press **Enter**.

```
FKXK2800       TCP/IP for 390 SNMP Resource View                B63NV

  Host Name or IP Address: NMPIPL25_________________________________
(blank: Use Stack Name)    _________________________________________


   MVS Stack       X IP Resource

TCP/IP Stack Name:  NMPIPL25  (? for Selection list)


_  Go Directly to the Interface List

_  Go to the details for Interface  ___  IP Address  _______________

_  Go to the Connection List for IP Address  _______________


Community Name:


Command ===>
F1=Help      F2=Main Menu   F3=Return                            F6=Roll
                                                                F12=Cancel
```

Figure 158. TCP/IP for 390 SNMP Resource View Sample Panel

When you press **Enter** from the Resource View panel, shown in Figure 158, System MIB data is displayed on the Resource View: System panel, shown in Figure 159.

```
FKXK2810      TCP/IP for 390 SNMP Resource View: System          NTV70

SYSTEM DATA for:
NMPIPL25

_  System Name          =  NMPIPL25 Test System for AON Development w/v2r5

_  Location             =  D214/503

   Object ID            =  1.3.6.1.4.1.2.3.13
   UP Time              =  24270200
_  Contact              =  operator

   Services             =  PHYSICAL  DL/SUBNET INTERNET  E to E     APPL

   Description          =  AON NetView Test System NMPIPL25



Set Community Name:

Command ===>
F1=Help   F2=Main Menu   F3=Return   F4=Commands   F5=Refresh       F6=Roll
                                                  F11=Interfaces  F12=Cancel
```

Figure 159. TCP/IP for 390 SNMP Resource View: System Panel

From the system panel shown in Figure 159, press **F4** to issue commands. The panel shown in Figure 160 on page 172, containing a pop-up window, is displayed.

```
FKXK2814      TCP/IP for 390 SNMP Resource View: System         NTV70

SYSTEM DATA for:
nmpipl25
                          .....................................
 System Name           =  :                                   :
                          :    Commands:                      :
 Location              =  :                  _  1. Ping      :
                          :                     2. Session Status :
 Object ID             =  :                     3. TraceRte   :
 UP Time               =  :                     4. SNMP Commands :
 Contact               =  :               ----  5. IP Data    :
                          :    Host-Wide |      6. TCP and UDP Data:
 Services              =  :       Data    ----  7. ICMP Data  :
 Description           =  :                                   :
                          :                                   :
                          :                                   :
                          :                                   :
                          :...................................:


Command ===>
F1=Help      F2=Main Menu   F3=Return                          F6=Roll
                                                              F12=Cancel
```

Figure 160. TCP/IP for 390 SNMP Resource View: System Panel with Commands Pop-up Window

From Figure 160, type **5** in the Commands pop-up window and press **Enter**. The panel shown in Figure 161 is displayed.

```
 FKXK281P     TCP/IP for 390 SNMP Resource View: System          NTV70

IP DATA for:
NMPIPL25

_ Gateway Forwarding        =  YES(1)     Reassemble Timeout      =  60
_ Default TTL               =  64         Reassemble Requests     =  0
  Total Datagrams Received  =  7617       Reassemble Success      =  0
  IP Header Discards        =  0          Reassemble Fail         =  0
  Invalid Address Discards  =  0          Fragments Success       =  0
  Forwarded Datagrams       =  0          Fragments Fail          =  0
  Unknown Protocol Discards =  0          Fragments Create        =  0
  All Other Discards        =  0          Routing Discards        =  0
  Delivered Datagrams       =  8619
  Output Requests           =  7657
  Output Discards           =  0
  Discard No Route Avail.   =  0


Set Community Name:

Command ===>
F1=Help      F2=Main Menu   F3=Return              F5=Refresh       F6=Roll
                                                                   F12=Cancel
```

Figure 161. TCP/IP for 390 SNMP Resource View: System Panel

Press **F3** to return to the panel shown in Figure 160. Type **6**, and press **Enter**. The panel shown in Figure 162 on page 173 is displayed.

```
FKXK281T     TCP/IP for 390 SNMP Resource View: System         NTV70

TCP DATA                                  UDP DATA
NMPIPL25                                 |
                                         |
Retransmit Algorithm     =  vanj(4)      | Datagrams Recieved        =  5587
Min. Retransmit Timeout  =  500          | No Destination Ports      =  998
Max. Retransmit Timeout  =  120000       | Error Datagrams Received  =  0
Maximum TCP Connections  =  -1           | Datagrams Sent            =  6627
Active Open Connections  =  1            |
Passive Open Connections =  1            |
Falied Connect Attempts  =  0            |
Establish Resets         =  0            |
Current Established Conn =  2            |
Segments Received        =  40           |
Segments Sent            =  41           |
Retransmitted Segments   =  0            |
Bad TCP CHKSUMS          =  0            |
RST Flagged Segments     =  0            |
                                         |

Command ===>
F1=Help      F2=Main Menu   F3=Return               F5=Refresh       F6=Roll
                                                                    F12=Cancel
```

Figure 162. TCP/IP for 390 SNMP Resource View: System Panel

Press **F3** to return to panel shown in Figure 160 on page 172. Choose option **7** and press **Enter**. The Resource View: System Panel with Commands Pop-up panel is displayed, as shown in Figure 163.

```
FKXK281I    TCP/IP for 390 SNMP Resource View: System          NTV70

ICMP DATA for:
NMPIPL25
                              IN                OUT

  Messages                    1003              998
  Errors                      0                 997
  Destination Unreachable     999               997
  Time Exceeded               0                 0
  Parameter Problems          0                 0
  Source Quenches             0                 0
  Redirect                    0                 0
  Echo Requests               1                 0
  Echo Replies                3                 1
  Timestamp Requests          0                 0
  Timestamp Replies           0                 0
  Address Mask Requests       0                 0
  Address Mask Replies        0                 0


Command ===>
F1=Help      F2=Main Menu   F3=Return             F5=Refresh         F6=Roll
                                                                    F12=Cancel
```

Figure 163. TCP/IP for 390 SNMP Resource View: System Panel with Commands Pop-up Panel

Return to the panel shown in Figure 159 on page 171 and press **F11**. The panel shown in Figure 164 on page 174 is displayed.

```
FKXK2820     TCP/IP for 390 SNMP Resource View  : Interfaces     NTV70

 INTERFACES for:
 nmpipl25
        Status
 IF  Desired Actual   IP Address       Description
1   ACTIVE  ACTIVE                    Loopback Device
|_ 2   ACTIVE  ACTIVE   127.0.0.1        Loopback
3   DOWN    DOWN                      Channel to channel Device
|_ 4   DOWN    DOWN     9.67.50.57       Channel to channel (3088)
5   DOWN    DOWN                      Channel to channel Device
|_ 6   DOWN    DOWN                      Channel to channel (3088)









Command ===>
F1=Help      F2=Main Menu F3=Return   F4=Commands   F5=Refresh       F6=Roll
                          F9=Details                F11=Connections F12=Cancel
```

Figure 164. TCP/IP for 390 SNMP Resource View: Interfaces Panel

From the Interfaces panel, press **F4**. The SNMP Resource View: Interfaces panel is displayed with the Commands pop-up window as shown in Figure 165.

```
FKXK2824     TCP/IP for 390 SNMP Resource View  : Interfaces     NTV70

 INTERFACES for:
 nmpipl25
       Status                .....................................
IF  Desired Actual   IP Addr : Interface Name:                     :
1   ACTIVE  ACTIVE           : nmpipl25                            :
|_ 2   ACTIVE  ACTIVE   127. :                                     :
3   DOWN    DOWN             : Commands:                           :
|_ 4   DOWN    DOWN     9.67 :                                     :
5   DOWN    DOWN             :        _   1. Ping                 :
|_ 6   DOWN    DOWN           :            2. Session Stats        :
                              :            3. TraceRte             :
                              :            4. SNMP Commands        :
                              :                                    :
                              :                                    :
                              :                                    :
                              :                                    :
                              .....................................


Command ===>
F1=Help      F2=Main Menu   F3=Return                               F6=Roll
                                                                   F12=Cancel
```

Figure 165. TCP/IP for 390 SNMP Resource View: Interfaces Panel with Pop-up Window

Figure 166 on page 175 is an example of displaying a list of IP interfaces for an IP resource, such as resources.xyz.com.

```
FKXK2820     TCP/IP for 390 SNMP Resource View: Interfaces       NTV9D

 INTERFACES for:
 resources.xyz.com
        Status
 IF  Desired Actual   IP Address       Description
1   ACTIVE  ACTIVE   127.0.0.1        MS TCP Loopback interface
2   ACTIVE  ACTIVE   34.34.130.1      XYZ PCI Token-Ring Family Adapter









Command ===>
F1=Help      F2=Main Menu F3=Return   F4=Commands   F5=Refresh       F6=Roll
                          F9=Details                F11=Connections F12=Cancel
```

Figure 166. TCP/IP for 390 SNMP Resource View: Interfaces Panel

To display interface details, Tab to an interface, and press **F9**. The (IP resource) interface detail panel, shown in Figure 167, is displayed.

```
FKXK282D     TCP/IP for 390 SNMP Resource View:  Interfaces       NTV9D
 INTERFACE DETAILS for:
 resources.xyz.com
IF Name    :  N/A
IP ADDRESS :  34.34.130.1 Physical Address:   '123412341234'h
Description:  XYZ PCI Token-Ring Family Adapter

_ Desired Status:  ACTIVE      Actual Status:  ACTIVE

Interface Type       =  iso88025TokenRing(9)

Max Datagram Size    =  4056             Interface Speed      =  1600000
Last Status Change   =  0                TCP Connections      =  N/A
Network Mask         =  34.34.130.1      Reassemble Max Size  =  65535
IF Specific          =  0.0
Connector Present    =  N/A              Link Traps Enabled   =  N/A
High Speed  =  N/A                       Accept Any Packets   =  N/A


Set Community Name:

Command ===>
F1=Help    F2=Main Menu   F3=Return              F5=Refresh          F6=Roll
           F8=Statistics                         F11=Connections    F12=Cancel
```

Figure 167. TCP/IP for 390 SNMP Resource View: Interfaces Panel

MVS Stack Data

To display MVS Stack data for NMPIPL27, perform the following steps:

1. In the **Host Name** or **IP Address** field, type **NMPIPL27**.
2. If the current default is IP Resource, then delete the X from the **IP Resource** selection.
3. Type **X** to select **MVS Stack** view.
4. In the **TCP/IP Stack Name** field, type **?** and press **Enter**. A selection list is displayed.
5. Type **/** in front of the selection you want and press **Enter**.

The TCP/IP for 390 SNMP Stack View: System panel, shown in Figure 168 is displayed.

```
FKXK28M0       TCP/IP for 390 SNMP Stack View: System           NTV9D

SYSTEM DATA for MVS Stack:
NMPIPL27

 Proc Name =  TCP38    ASID =  60      _ Primary IF Index   =  4
                                         Primary IP ADDRESS = 1.23.45.67
_  System Name   =  SNMPBASE - Unspecified


   UP Time       =  2007-4-17,10:2:28.8

   Services      =    Physical    DL/Subnet    Internet    E to E    Appl

   Description   =  Sysname: OS/390 Nodename: F79MVS Release: 08.00 Vers
                    ion: 02 Machine: 9672



 Set Community Name:

Command ===>
F1=Help      F2=Main Menu  F3=Return  F4=Commands   F5=Refresh       F6=Roll
             F8=Page 2     F9=Page 3                F11=Interfaces  F12=Cancel
```

Figure 168. TCP/IP for 390 SNMP Stack View: System Panel

From the panel shown in Figure 168, press **F11**. The TCP/IP Stack View: Interfaces panel is displayed with the interfaces defined for your TCP/IP stack.

```
FKXK282M     TCP/IP for 390 SNMP Stack View: Interfaces          NTV9D

 INTERFACES for:
 NMPIPL27
             Status
 IF GWY  Desired Actual   IP Address       Description
1   N ACTIVE   ACTIVE                   Loopback Device
|_ 2   N ACTIVE   ACTIVE  127.0.0.1        Loopback
3   N ACTIVE   ACTIVE                   Channel to channel Device
|_ 4   Y ACTIVE   ACTIVE  1.23.45.67       Channel to channel (3088)









Command ===>
F1=Help   F2=Main Menu  F3=Return   F4=Commands    F5=Refresh        F6=Roll
                        F9=Details                 F11=Connections  F12=Cancel
```

Figure 169. TCP/IP for 390 SNMP Stack View: Interfaces Panel

To display interface details, **Tab** to an interface, and press **F9**. The (MVS Stack) interface detail panel, shown in Figure 170 on page 177, is displayed.

```
FKXK28MK     TCP/IP for 390 SNMP Stack View: Interfaces          NTV9D
 INTERFACE DETAILS for:
 NMPIPL27
IF Name    :  TCPLNK9D                   IP ADDRESS:  1.23.45.67
Device Base Number:   270     on IF:   3
Description:  Channel to channel (3088)

_ Desired Status:  ACTIVE      Actual Status:  ACTIVE

Interface Type       =  channel(70)
Link Type            =  ctc(2)
Max Datagram Size    =  32760            Interface Speed      =  450000
Last Status Change   =  2787             TCP Connections      =  N/A
Network Mask         =  255.0.0.0        Reassemble Max Size  =  0
IF Specific          =  0.0
Connector Present    =  NO(2)          _ Link Traps Enabled   =  YES(1)
High Speed  =  3,500,000 - 4,499,999   _ Accept Any Packets   =  NO(2)


Set Community Name:

Command ===>
F1=Help    F2=Main Menu   F3=Return               F5=Refresh        F6=Roll
           F8=Statistics  F9=Gateway              F11=Connections  F12=Cancel
```

Figure 170. TCP/IP for 390 SNMP Stack View: Interfaces (Detail) Panel

TCP/IP for 390 Trace Control Center

You can use IP Trace to perform diagnostic traces to help resolve TCP/IP problems. Two types of traces are available, component trace (CTRACE) and packet trace (PKTTRACE). *Component trace* is used to trace data processing problems between the client and the server. *Packet trace* is used for IP data flow problems, enabling you to copy IP packets as they enter or leave TCP/IP.

If your IP trace diagnostics are not customized, add the following statement to CNMSTYLE %INCLUDE member CNMSTUSR or C*xx*STGEN for the remote domain where you want to trace packets that flow in and out of the remote service point:

```
auxInitCmd.OBEY=FKXERINI rmsp YES UNIX
```

Where *rmsp* is the remote service point to trace. Restart NetView for the change to take effect.

An external writer must be established before using IP Trace. The trace data is written to the writer. Refer to *z/OS MVS Diagnosis: Tools and Service Aids* for more information about creating source JCL for an external writer, or for more details about trace functions.

Accessing IP Trace

There are two ways to access IPTRACE. You can either issue the IPTRACE command from the command line or select option **10** from the panel shown in Figure 123 on page 145.

If you do not specify a service point/stack name, then you are prompted with the panel in Figure 171 on page 178 to select one.

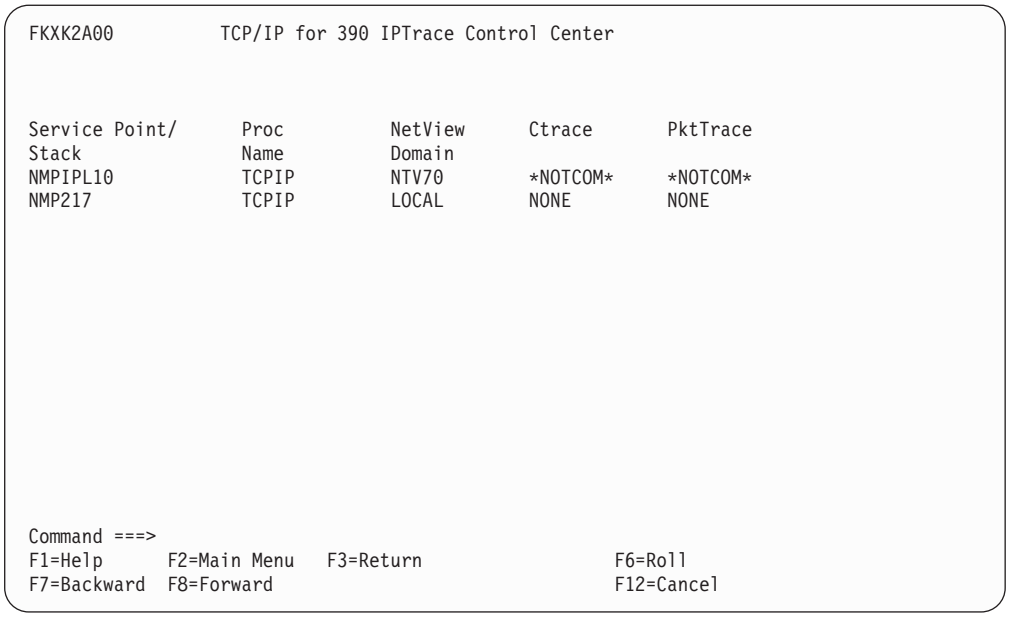


Figure 171. TCP/IP for 390 IPTrace Control Center Panel

Descriptions of the fields on the panel shown in Figure 171 are as follows:

Service Point/Stack
The service points for which TCP/IP services are traced. These are defined in the DSIPARM member CNMPOLCY configuration file TCP390 definition.

Proc Name
The member name of the catalogued procedure used to start the TCP/IP address space. This is defined in CNMPOLCY, TCP390 TCPNAME definition for the stack.

NetView Domain
The NetView domain to which the trace command processing is sent. This is defined in CNMPOLCY, TCP390 DOMAIN definition for the stack.

Ctrace and PktTrace
Displays status of the TCP/IP procedure for the SYSTCPIP (CTRACE) or SYSTCPDA (PKTTRACE) component, as follows:

ACTIVE
The trace is active (ON).

NONE
The trace is either minimum (MIN) or OFF.

NOTCOM
No session is established with the associated remote domain.

NA The time has expired in collecting trace status.

Fields displayed in blue are not active and cannot be selected. Active entries are highlighted in green. To select a service point, tab to it, press **Enter**, and the panel shown in Figure 172 on page 179 is displayed.

```
FKXK2A01        TCP/IP for 390 IPTrace Control Center         NTVE1
                                                               More:+

Service Point/Stack: NMP217          Proc: TCPIP         Domain: LOCAL

                     Status/Owner    Start                For       Writer

 _  CTRACE   SYSTCPIP NONE/NA         NA                   NA        *NONE*

 _  PKTTRACE SYSTCPDA NONE/NA         NA                   NA        *NONE*
     LOOPBACK          OFF
     TCPIPLINK         OFF
     EZASAMEMVS        OFF
     EZAXCF10          OFF
     EZAXCF13          OFF
     EZAXCF90          OFF
     VIPLC9020A3C      OFF
     VIPLC9020A3D      OFF



Command ===>
F1=Help      F2=Main Menu   F3=Return    F5=Refresh     F6 =Roll
F7=Backward  F8=Forward                                 F12=Cancel
```

Figure 172. TCP/IP for 390 IPTrace Control Center: Example of IPTrace Control Center Panel

Descriptions of the fields on the panel shown in Figure 172 are as follows:

Service Point/Stack
The service point or stack to be traced. This is defined in the DSIPARM member CNMPOLCY configuration file, TCP390 definition.

Proc The member name of the catalogued procedure used to start the TCP/IP address space. This is defined in CNMPOLCY, TCP390 DOMAIN definition for the stack.

Domain
The NetView domain where the service point resides, TCP390 TCPNAME definition for the stack.

SYSTCPIP
The trace component associated with the component trace data.

SYSTCPDA
The trace component associated with the packet trace data.

Status/Owner
The trace status associated with the component specified and the owner of the trace. This field is correlated to the **Start** and **For** fields. These are the possible trace status settings:

ACTIVE
The trace is active (ON).

DELAY
A delayed trace has been set for this component.

NONE
The trace is either minimum (MIN) or OFF.

NOTCOM
No session is established with the associated remote domain.

NA The time has expired in collecting trace status.

ON/OFF
The packet trace status associated with the link names.

Start The time the trace started or the time the delayed trace is to start.

For The length of time the trace runs. This is only applicable when the trace is in ACTIVE or DELAY mode. The format is HH.MM.SS.

Writer The source JCL to create the external writer where trace data is to be stored.

For more information on controlling traces, see the "Component Tracing" section or "Packet Tracing" on page 184

Component Tracing

For component tracing, select CTRACE, by using any non-blank character, from the panel shown in Figure 172 on page 179. For a service point with no scheduled tracing, the panel shown in Figure 173 is displayed. For a service point with active or delayed tracing, the panel shown in Figure 177 on page 184 is displayed.

Scheduling a Component Trace

From the panel in Figure 171 on page 178, select the service point for which you want to schedule the trace (for example, NMPIPL27). From the panel in Figure 172 on page 179, select CTRACE. The panel shown in Figure 173 is displayed.

```
FKXK2A12      TCP/IP for 390 CTRACE Control  SYSTCPIP          NTVE1


Service Point/Stack: NMP217          Proc: TCPIP            Domain: LOCAL

 Delay Start Until: YYYY-MM-DD-HH.MM.SS              On Task: OPER1___

 Set a Timer for HH.MM.SS                            Writer:  CTTCP__




_  LISTS (IPAddrs, Ports, Job Names, ASIDs )




Command ===>
F1=Help    F2=Main Menu     F3=Return       F4=Start Trace          F6 =Roll
                                            F10=Options             F12=Cancel
```

Figure 173. CTRACE Control SYSTCPIP Panel

Before you begin a trace, select options for the trace. Then press **F10** to display the available options as shown in Figure 174 on page 181.

The **LISTS** field includes IP addresses, IP ports, job names, and address space identifiers (ASIDs) that are traced. To view or change these options, select one and press **Enter**. The panel shown in Figure 175 on page 182 is displayed.

After you select options from panel FKXK2A14, you can start a trace in any of these ways:

- In the **Delay Start Until** field, enter the date or date and time that you want tracing to begin. The time must be entered in a 24 hour format. If the date

portion YYYY-MM-DD is omitted and the input HH.MM.SS is earlier than the current time, the trace starts on the next day at the input time. For example, if the current time on the system clock is 9:33 a.m. and you enter 07.45.00 as the time to begin component tracing, the trace is scheduled to begin the following day at 7:45 a.m.

Note: When you press **F4** to begin or schedule the trace, it can take several minutes because of system processing. The trace might also begin a couple of minutes past the specified time, depending on system processing.

- You can enter a time in the **Set a Timer** field to specify how long the trace is to run. If you leave the **Set a Timer** field blank, the trace runs until it is manually stopped.
- If you do not enter a time, press F4 to begin the trace immediately.

The **On Task** field contains your operator ID. If you want the trace to run on another task, enter any valid operator ID as defined in DSIOPF. On Task is only valid for delayed traces.

Note: If you specify another operator ID, that operator must be logged on at the time the trace runs.

The **Writer** field contains the source JCL to create an external writer where trace data is stored. The writer must be established before the trace runs. Refer to *z/OS MVS Diagnosis: Tools and Service Aids* for more information about creating source JCL for an external writer. The writer name for component tracing can be customized. Copy the following entry from CNMSTYLE to CNMSTUSR or C*xx*STGEN, then change to the desired name. An example is as follows:

```
COMMON.EZLTCPcTRACEwriter = new_CTTCP   // AON TCP component writer name
```

If the NetView program has been started, issue the RESTYLE COMMON command to pick up the change.

```
FKXK2A14      TCP/IP for 390 CTRACE Control  SYSTCPIP          NTVE1


OPTIONS:

_   ALL        _   ALLMIN      _   ACCESS      _   AFP         _   ARP
_   CLAW       _   CONFIG      _   CSOCKET     _   DLC         _   EID
_   ENGINE     _   FIREWALL    _   ICMP        _   IN          _   INIT
_   INTERNET   _   IOCTL       _   IPADDR      _   IPSEC       _   LATCH
_   LCS        _   MESSAGE     _   MINIMUM     _   MISC        _   ND
_   NONE       _   OETCP       _   OEUDP       _   OPCMDS      _   OPMSG
_   PASAPI     _   PFS         _   PFSMIN      _   PING        _   POLICY
_   PORT       _   QUEUE       _   RAW         _   ROUTE       _   RW
_   SERIAL     _   SMTP        _   SNMP        _   SOCKAPI     _   SOCKET
_   STORAGE    _   SYSTEM      _   TC          _   TCP         _   TCPMIN
_   TELNET     _   TELNVTAM    _   TIMER       _   TN          _   UD
_   UDP        _   VTAM        _   VTAMDATA    _   WORKUNIT    _   XCF




Command ===>
F1=Help    F2=Main Menu     F3=Return                          F6 =Roll
                                                               F12=Cancel
```

Figure 174. TCP/IP for 390 CTRACE Control OPTIONS Panel

The **Options** field contains a list of defined options. You can select them individually or select **ALL** to select all of them. At least one option must be selected. The options cannot be changed after the trace is scheduled. After selecting the options that you want to trace, press **F3** to return to Figure 173 on page 180.

Note: If you select the **All** option, all options are selected except Serial, Storage, and Timer. These options degrade performance if you choose all of them simultaneously.

```
FKXK2A11      TCP/IP for 390 CTRACE Control  SYSTCPIP       NTVE1
Service Point/Stack: NMP217     Proc: TCPIP         Domain: LOCAL

IPADDRs/Mask                          Ports       Job Names       ASIDs
111.111.111.111/255.255.255.255       ___23        __*NONE*        NONE
112.112.112.112_________________      ___21        ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____
_____________________________________ _____       ________        ____

Command ===>
F1=Help      F2=Main Menu   F3=Return                              F6=Roll
                                                                  F12=Cancel
```

Figure 175. TCP/IP for 390 CTRACE Control SYSTCPIP Panel

Figure 175 displays the IP addresses, submasks, IP ports, job names and ASIDs (address space identifiers) component trace filters currently set for this stack when the **LISTS** field is selected. When CTRACE status is ACTIVE, all component trace filters currently set are collected and displayed.

When CTRACE status is in DELAY mode, all global variables for component trace filters that are set for a delayed start are retrieved and displayed.

You can edit the information in the **IPADDRs/Mask**, **Ports**, **Job Names**, and **ASIDs** fields when the trace is inactive. This panel can display up to 16 entries for each type. For more information on trace options, refer to the *z/OS Comm Server IP: Diagnosis*

The descriptions of the fields are as follows:

IPADDRs/Mask

A list of up to 16 IP addresses to be filtered. If you are using dotted decimal notation, submasking can be indicated by using a slash (/), followed by a dotted decimal submask. For example,

```
192.48.32/255.255.255.0
```

recognizes addresses from 192.48.32.00 to 192.48.32.255. A trace record with a zero IP address is not subject to IP address filtering.

Ports A list of up to 16 port numbers to be filtered. The port numbers are in the range 0–65535. A trace record with a zero (**0**) port number is not subject to port number filtering.

Job Names
The MVS job names to be traced.

ASIDs
The MVS address space identifiers to be traced, in the form of four hexadecimal numbers.

When you press **F4** to begin or schedule the trace, it can take several minutes because of system processing. When the trace is successfully scheduled, a panel like the one shown in Figure 176, is displayed.

```
FKXK2A01         TCP/IP for 390 IPTrace Control Center         NTVE1
                                                                More:+

Service Point/Stack: NMP217           Proc: TCPIP         Domain: LOCAL

                      Status/Owner    Start                For       Writer

 _  CTRACE   SYSTCPIP ACTIVE/OPER1    2006-10-12-08:56:53  NA        CTTCP

 _  PKTTRACE SYSTCPDA NONE/NA         NA                   NA        *NONE*
     LOOPBACK          OFF
     TCPIPLINK         OFF
     EZASAMEMVS        OFF
     EZAXCF10          OFF
     EZAXCF13          OFF
     EZAXCF90          OFF
     VIPLC9020A3C      OFF
     VIPLC9020A3D      OFF


FKX400I CTRACE SCHEDULED FOR SP NMP217 BY OPERATOR OPER1
Command ===>
F1=Help      F2=Main Menu   F3=Return    F5=Refresh     F6 =Roll
F7=Backward  F8=Forward                                 F12=Cancel
```

Figure 176. TCP/IP for 390 IPTrace Control Center Panel

This example shows the message when an immediate trace was scheduled. Message FKX401I is received for delayed traces.

Displaying a Component Trace

To view the details of an active or scheduled component trace, select the service point from panel FKXK2A01 (Figure 176). For more information on the displayed data, see “Scheduling a Component Trace” on page 180.

Stopping an Active or Cancelling a Delayed Component Trace

From the panel in Figure 171 on page 178, select the service point for which you want to stop or cancel tracing (for example, NMP217). From the panel in Figure 172 on page 179, select CTRACE. Depending on whether the trace is active or delayed, either the panel in Figure 177 on page 184 or the panel shown in Figure 178 on page 184 is displayed.

The panel shown in Figure 177 on page 184 displays an active trace.

```
FKXK2A10      TCP/IP for 390 CTRACE Control  SYSTCPIP       NTVE1
Service Point/Stack: NMP217       Proc: TCPIP        Domain: LOCAL
Start Time:                                          Duration: NA
Timer ID: NONE                                       Writer:   CTTCP

Active Options:
ALL









_  LISTS (IPAddrs, Ports, Job Names, ASIDs )

Command ===>
F1=Help      F2=Main Menu   F3=Return   F4=Stop Trace              F6 =Roll
                                                                   F12=Cancel
```

Figure 177. TCP/IP for 390 CTRACE Control SYSTCPIP Panel

Press **F4** to stop the trace.

When **F4** is pressed, the system can take several minutes to respond, because of system processing. When a delayed trace is successfully stopped, message DSI205I is received. When an active trace is successfully stopped, the IPTrace Control Center panel, as shown in Figure 178 is displayed.

```
FKXK2A01         TCP/IP for 390 IPTrace Control Center         NTVE1
                                                                More:+

Service Point/Stack: NMP217           Proc: TCPIP         Domain: LOCAL

                      Status/Owner    Start                For       Writer

_  CTRACE   SYSTCPIP NONE/NA         NA                   NA        *NONE*

_  PKTTRACE SYSTCPDA NONE/NA         NA                   NA        *NONE*
    LOOPBACK          OFF
    LOOPBACK6         OFF
    TCPIPLINK         OFF
    TCPIPLINK6        OFF
    EZASAMEMVS        OFF
    EZAXCF13          OFF
    EZAXCF90          OFF
    EZAXCF17          OFF


FKX403I CTRACE STOPPED FOR SP NMP217 BY OPERATOR OPER1
Command ===>
F1=Help      F2=Main Menu   F3=Return    F5=Refresh     F6 =Roll
F7=Backward  F8=Forward                                 F12=Cancel
```

Figure 178. IPTrace Control Center Panel

The prompt above the command line, shows that the trace is successfully stopped.

Packet Tracing

For packet tracing, select PKTTrace from the panel shown in Figure 172 on page 179. For a service point with no active tracing, the panel shown in Figure 179 on page 185

page 185 is displayed. For a service point with active or delayed tracing, the panel shown in Figure 184 on page 191 is displayed.

Scheduling a Packet Trace

From the panel shown in Figure 171 on page 178, select the service point for which you want to schedule the trace (for example, NMP217). From the panel shown in Figure 172 on page 179, select PKTTRACE. The panel shown in Figure 179 is displayed.

```
FKXK2A22      TCP/IP for 390 PKTTRACE  Control   SYSTCPDA       NTVE1
                                                                More:+

Service Point/Stack: NMP217     Proc: TCPIP           Domain: LOCAL
Delay Start Until: YYYY-MM-DD-HH.MM.SS                On Task: OPER1___
Set a Timer for HH.MM.SS        Duration: NA          Writer:  PKTCP__
Timer ID: NONE                  Start Time:

                                                        Ports     Record
Link            Len   Prot    IP Address       Subnet      Src   Dest  Count

LOOPBACK        FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
TCPIPLINK       FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
EZASAMEMVS      FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
EZAXCF10        FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
EZAXCF13        FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
EZAXCF90        FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
VIPLC9020A3C    FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
VIPLC9020A3D    FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____


Command ===>
F1=Help      F2=Main Menu   F3=Return   F4=Start Trace F5=Stop Trace F6=Roll
F7=Backward  F8=Forward     F9=Assist   F10=Stop Delay Trace        F12=Cancel
```

Figure 179. TCP/IP for 390 PKTTRACE Control SYSTCPDA Panel

After you select options from panel FKXK2A22, you can start a trace in any of the following ways:

- In the **Delay Start Until** field, enter the date, time, or date and time that you want tracing to begin. The time must be entered in a 24 hour format. If the date portion YYYY-MM-DD is omitted and the input HH.MM.SS is earlier than the current time, the trace starts on the next day at the input time. For example, if the current time on the system clock is 9:33 a.m. and you enter 07.45.00 as the time to begin packet tracing, the trace is scheduled to begin the following day at 7:45 a.m.
- You can enter a time in the **Set a Timer** field to specify how long the trace is to run. If you leave the **Set a Timer** field blank, the trace runs until it is manually stopped.
- If you do not enter a time, press F4 to begin the trace immediately.

Note: When you press **F4** to begin or schedule the trace, it can take several minutes because of system processing. The trace might also begin a couple of minutes past the specified time, depending on system processing.

The **On Task** field contains your operator ID. If you want the trace to run on another task, you can enter any valid operator ID as defined in DSIOPF. On Task is valid only for delayed traces.

Note: If you specify another operator ID, that operator must be logged on at the time the trace is to be run.

The **Writer** field contains the source JCL to create an external writer where trace data is to be stored. The writer must be established before the trace is run. Refer to *z/OS MVS Diagnosis: Tools and Service Aids* for more information about creating source JCL for an external writer. The writer name for packet tracing can be customized. Copy the following entry from member CNMSTYLE to CNMSTUSR or C*xx*STGEN, and then change to the desired name. An example is as follows:

```
COMMON.EZLTCPpTRACEwriter = new_PKTCP  // AON TCP packet trace writer name
```

If the NetView program has been started, you must issue the RESTYLE COMMON command to pick up the change.

The following fields can also be edited and are described as follows:

Link The device on the service point for which to trace. This is a required field. If subsequent link names are entered, they must follow on the next line with no blank lines between them.

Len Specifies that a truncated portion of the IP packet can be traced. You can specify a length in the range of 1–65535. The maximum value is FULL, which captures the entire packet.

Prot The protocol for data collection. Valid values are:
- Asterisk (*), which specifies that packets of any protocol are traced
- ICMP
- RAW
- TCP
- UDP
- *number* (in the range 0–255)

IPAddress
The IP address that is compared with both the source and destination addresses of inbound and outbound packets. If either the source or destination address of a packet matches the specified IP address, the packet is traced. If the IP option is blank or an asterisk (*) is specified, all IP addresses are traced.

Subnet
The subnet mask that applies to the host and network portions of the IP address shown on the corresponding IP parameter.

Src The port number that is compared with the source port of inbound and outbound packets. The port number is an integer in the range 1–65535. If the source port of a packet is the same as the specified port number, the packet is traced. This comparison is only performed for packets using either the TCP or UDP protocol. Packets using other protocols are not traced. If the source port is not specified, there is no checking of the source port of packets. If an asterisk (*) is specified, packets of any protocol and any source port are traced.

Dest The port number that is compared with the destination port of inbound and outbound packets. The port number is an integer in the range 1–65535. If the destination port of a packet is the same as the specified port number, the packet is traced. This comparison is only performed for packets using either the TCP or UDP protocol. Packets using other protocols are not traced. If the destination port is not specified, there is no checking of the destination port of packets. If an asterisk (*) is specified, packets of any protocol and any destination port are traced.

You can enter up to eight entries in each field. If you want additional entries, press **F8** to go to the next panel.

When you press **F4** to begin or schedule the trace, it can take several minutes because of system processing. When the trace is successfully scheduled, you are returned to the IPTrace Control Center panel, as shown in the following example:

The example shows the message when an immediate trace is scheduled. Message FKX401I is received for delayed traces.

```
FKXK2A01         TCP/IP for 390 IPTrace Control Center         NTVE1
                                                                More:+

Service Point/Stack: NMP217           Proc: TCPIP         Domain: LOCAL

                      Status/Owner    Start                For       Writer

 _  CTRACE   SYSTCPIP NONE/NA         NA                   NA        *NONE*

 _  PKTTRACE SYSTCPDA ACTIVE/OPER1    2007-02-15-14:28:31  NA        PKTCP
     LOOPBACK          ON
     TCPIPLINK         ON
     EZASAMEMVS        ON
     EZAXCF13          ON
     EZAXCF10          ON
     EZAXCF90          ON
     VIPLC9020A3C      ON
     VIPLC9020A3D      ON


FKX400I PKTTRACE SCHEDULED FOR SP NMP217 BY OPERATOR OPER1
Command ===>
F1=Help      F2=Main Menu   F3=Return    F5=Refresh     F6 =Roll
```

Figure 180. Packet Trace showing Packet Trace Scheduled message

Displaying a Packet Trace

To view the details of an active trace, select the service point from panel (Figure 171 on page 178), then select PKTTRACE from panel (Figure 172 on page 179). The following panel is displayed:

```
FKXK2A22      TCP/IP for 390 PKTTRACE  Control   SYSTCPDA       NTVE1
                                                                More:+

Service Point/Stack: NMP217     Proc: TCPIP           Domain: LOCAL
Delay Start Until: YYYY-MM-DD-HH.MM.SS                On Task: OPER1___
Set a Timer for HH.MM.SS        Duration: NA          Writer:  PKTCP
Timer ID: NONE                  Start Time: 2006-10-20-10:39:09

                                                          Ports     Record
Link            Len   Prot    IP Address       Subnet      Src   Dest  Count

LOOPBACK        FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
TCPIPLINK       FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000055
EZASAMEMVS      FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
EZAXCF10        FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
EZAXCF13        FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
EZAXCF90        FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
VIPLC9020A3C    FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
VIPLC9020A3D    FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000


Command ===>
F1=Help      F2=Main Menu   F3=Return   F4=Start Trace F5=Stop Trace F6=Roll
F7=Backward  F8=Forward     F9=Assist   F10=Stop Delay Trace        F12=Cancel
```

Figure 181. PKTTRACE Control SYSTCPDA Panel

When trace status is ACTIVE, all defined device link trace options that are currently set are collected and displayed. When trace status is in DELAY mode, all global variables for defined device link trace options that are set for a delayed start are retrieved and displayed.

The descriptions of the fields are as follows:

Start Time
The date and time tracing is to start.

Duration
The length of time the trace runs. This is used for active and delayed traces. If no length is specified, the trace runs until manually stopped.

Timer ID
An AON-supplied ID. This is used for delayed traces.

Writer
The name of the source JCL to create the external writer that is used for this trace. This writer is used for active and delayed traces.

Link
The device on the service point to be traced.

Len
Specifies that a truncated portion of the IP packet can be traced, in the range 1–65535. The maximum value is FULL, which captures the entire packet.

Prot
The protocol for collecting data. Valid values are:
- Asterisk (*), which specifies that packets of any protocol are traced
- ICMP
- RAW
- TCP
- UDP
- *number* (in the range 0–255)

IP Address
The IP address that is compared with both the source and destination addresses of inbound and outbound packets. If either the source or destination address of a packet matches the

| | | specified IP address, the packet is traced. If the IP option is blank or an asterisk (*) is shown, all IP addresses are traced.

Subnet The subnet mask that applies to the host and network portions of the IP address shown on the corresponding IP address.

Src The port number that is compared with the source port of inbound and outbound packets. The port number is an integer in the range 1–65535. If the source port of a packet is the same as the specified port number, the packet is traced. This comparison is only performed for packets using either the TCP or UDP protocol. Packets using other protocols are not traced. If the source port is not shown, there is no checking of the source port of packets. If an asterisk (*) is present, packets of any protocol and any source port is traced.

Dest The port number that is compared with the destination port of inbound and outbound packets. The port number is an integer in the range of 1–65535. If the destination port of a packet is the same as the shown port number, the packet is traced. This comparison is only performed for packets using either the TCP or UDP protocol. Packets using other protocols are not traced. If the destination port is not shown, there is no checking of the destination port of packets. If an asterisk (*) is displayed, packets of any protocol and any destination port are traced.

Record Count The number of data records collected for this trace.

For assistance on options, press **F9**. The panel shown in Figure 182 on page 190 is displayed.

```
FKXK2A29      TCP/IP for 390 PKTTRACE  Control Assistant        NTVE1

Service Point/Stack: NMP217       Proc: TCPIP         Domain: LOCAL

LINK Name:  LOOPBACK


Options:                          Protocol: x ALL(*)
                                            _ TCP
Length: x Full                              _ UDP
        _ Abbrev _____                      _ ICMP
                                            _ Number ___

IP Address: x ALL(*)               Subnet: x 255.255.255.255
            _ ________________             _ ________________

Src. Port:  x ALL(*)           Dest. Port: x All(*)
            _ _____                        _ _____



Command ===>
F1=Help      F2=Main Menu   F3=Return  F4=Start Trace F5=Stop Trace F6 =Roll
                                                                  F12=Cancel
```

Figure 182. PKTTRACE Control Assistant Panel

This panel displays the individual links from previous panels, along with the options, to enable you to view or set various packet trace options for a particular link. Only one check mark can be used for each group.

Note: You cannot edit this panel when the trace is in ACTIVE or DELAY mode.

Stopping an Active or Cancelling a Delayed Packet Trace

From the panel shown in Figure 171 on page 178, select the service point for which you want to stop or cancel tracing (for example, NMPIPL27). From the panel shown in Figure 172 on page 179, select PKTTRACE. Depending on whether the trace is active or delayed, one of the following panels is displayed.

The first panel, as shown in Figure 183 on page 191 displays an active trace.

```
FKXK2A22      TCP/IP for 390 PKTTRACE  Control   SYSTCPDA       NTVE1
                                                                More:+

Service Point/Stack: NMP217     Proc: TCPIP           Domain: LOCAL
Delay Start Until: YYYY-MM-DD-HH.MM.SS                On Task: OPER1___
Set a Timer for HH.MM.SS        Duration: NA          Writer:  PKTCP
Timer ID: NONE                  Start Time: 2006-10-20-10:44:58

                                                        Ports     Record
Link            Len   Prot    IP Address       Subnet      Src   Dest  Count

LOOPBACK        FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
TCPIPLINK       FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000049
EZASAMEMVS      FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
EZAXCF10        FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
EZAXCF13        FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
EZAXCF90        FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
VIPLC9020A3C    FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000
VIPLC9020A3D    FULL_ *___ *_______________ 255.255.255.255 *____ *____ 00000000


Command ===>
F1=Help      F2=Main Menu   F3=Return   F4=Start Trace F5=Stop Trace F6=Roll
F7=Backward  F8=Forward     F9=Assist   F10=Stop Delay Trace        F12=Cancel
```

Figure 183. PKTTRACE Control SYSTCPDA Panel with an Active Trace

Press **F5** to stop the trace.

The panel shown in Figure 184 displays a delayed trace.

```
FKXK2A22      TCP/IP for 390 PKTTRACE  Control   SYSTCPDA       NTVE1
                                                                More:+

Service Point/Stack: NMP217     Proc: TCPIP           Domain: LOCAL
Delay Start Until: 2006-10-20-13.00.00                On Task: OPER1___
Set a Timer for HH.MM.SS        Duration: NA          Writer:  PKTCP__
Timer ID: NONE                  Start Time:

                                                        Ports     Record
Link            Len   Prot    IP Address       Subnet      Src   Dest  Count

LOOPBACK        FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
TCPIPLINK       FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
EZASAMEMVS      FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
EZAXCF10        FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
EZAXCF13        FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
EZAXCF90        FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
VIPLC9020A3C    FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____
VIPLC9020A3D    FULL_ *___ *_______________ 255.255.255.255 *____ *____ _____


Command ===>
F1=Help      F2=Main Menu   F3=Return   F4=Start Trace F5=Stop Trace F6=Roll
F7=Backward  F8=Forward     F9=Assist   F10=Stop Delay Trace        F12=Cancel
```

Figure 184. PKTTRACE Control SYSTCPDA Panel with a Delayed Trace

Press **F5** to cancel the trace. When **F5** is pressed, it can take several minutes to cancel the trace because of system processing. When a delayed trace is successfully cancelled, message DSI205I is received. When an active trace is successfully stopped, the IPTrace Control Center panel, as shown in Figure 185 on page 192 is displayed.

```
FKXK2A01         TCP/IP for 390 IPTrace Control Center         NTVE1
                                                                More:+

Service Point/Stack: NMP217           Proc: TCPIP         Domain: LOCAL

                      Status/Owner    Start                For       Writer

 _  CTRACE   SYSTCPIP NONE/NA         NA                   NA        *NONE*

 _  PKTTRACE SYSTCPDA NONE/NA         NA                   NA        *NONE*
     LOOPBACK          ON
     TCPIPLINK         ON
     EZASAMEMVS        ON
     EZAXCF10          ON
     EZAXCF13          ON
     EZAXCF90          ON
     VIPLC9020A3C      ON
     VIPLC9020A3D      ON


FKX403I PKTTRACE STOPPED FOR SP NMP217 BY OPERATOR OPER1
Command ===>
F1=Help      F2=Main Menu   F3=Return    F5=Refresh     F6 =Roll
F7=Backward  F8=Forward                                 F12=Cancel
```

Figure 185. IPTrace Control Center Panel

The prompt above the command line shows that the trace was successfully stopped.

Part 4. Appendixes

Appendix A. Implementing X.25 Monitoring Support

AON/SNA X.25 enhances problem determination for packet networks connected to your SNA network. AON/SNA X.25 provides support for the X.25 interface between data terminal equipment and packet-switching networks.

AON/SNA X.25 provides an exit to trap hardware alerts from X.25 resources and translate them into meaningful alerts. These alerts give the operator a clear interpretation of the error, including the meaning of the error bytes, and more specific suggested action. The AON/SNA Help Desk provides NPSI diagnostic and cause code translation. AON/SNA X.25 monitors LUDRPOOLs in NCPs for threshold availability. Users can view a full-screen display of AON/SNA X.25 virtual circuits being monitored by AON/SNA X.25. Thresholding can be done in the number of sessions on a switched virtual circuit (SVC). Threshold exceptions and status changes are reflected in DDF and the NetView log.

AON/SNA X.25 also inserts a message in the NetView log. This message correlates the INOP message generated by VTAM and the corresponding NPSI alert. Additionally, the operator can display the available number of LU control blocks. An alert is sent to the hardware monitor each time an incorrect XID problem is encountered.

Users can monitor switched connections through full-screen panels. Each connection or disconnection, related to a monitored line, updates the panel. Switched group lines are defined in the control file.

Understanding the NPSI Hardware Monitor Enhancement

This section describes the FKVXITAN exit routine and the BNJ146 message automation.

Using the FKVXITAN Exit Routine

The FKVXITAN user exit plays a role in the generic alerts generation from NPSI alerts. This user exit traps alerts from NPSI and translates the diagnostic, clear, and cause codes. The AON/SNA X.25 code then issues a GENALERT with the translated information so that operators can more easily understand X.25 NPSI alerts in the NetView hardware monitor.

Understanding the CNM Interface

All unsolicited communication network management (CNM) messages are sent by VTAM to NetView as part of the specialized DELIVER RU (X'810812') through the CNM interface. This includes the alerts coming from X.25 NPSI. The DSICRTR NetView subtask is the CNM Router task which gets those unsolicited CNM messages and later dispatches them to other tasks (for example, the hardware monitor).

Understanding the XITCI Exit Routine for the DSICRTR DST

The XITCI exit routine for the DSICRTR DST receives control for each incoming unsolicited CNM message. The user exit routine must be defined in the DSICRTTD initialization member for the DSICRTR task.

Understanding the FKVXITAN User Exit

A XITCI user exit routine is coded for the DSICRTR subtask, FKVXITAN. The FKVXITAN exit is used for each unsolicited CNM message, including the RECFMS type 00 (alerts) coming from X.25 NCP Packet Switching Interface (NPSI).

Understanding FKVXITAN Logic

The following list explains the flow of the FKVXITAN exit:

1. The DELIVER RU is parsed to recognize the embedded RU and the block ID (identifying the originating product). If it is not a RECFMS coming from NPSI, no processing occurs and the exit returns control to normal NetView processing.
2. If it is an alert record, the rest of the input is parsed and the following fields are extracted:
   - alert type
   - major code
   - minor code
   - action code
   - text (when present),
   - three qualifiers
   - resource hierarchy

   Format conversions take place so you can display these fields in a message.
3. The BNJ146I message is created with exactly the same format as the standard NetView BNJ146I message for RECFMS except that the token 2 and 3 (date and time) are not inserted.
4. The message is sent to the X.25 network management task for further automation.
5. The RECFMS that triggered the FKVXITAN user exit is suppressed by setting the return code to 4. The alert RECFMS coming from NPSI disappears and does not go to the hardware monitor.

Understanding BNJ146 Message Automation

Figure 186 shows a sample entry that automates message BNJ146.

```
IF  MSGID = 'BNJ146I'
  &  TOKEN(2) = 'R'
  &  TEXT =. 'BKID=FEF'.
  &  TEXT =.'TYPE='BKID=FEF'.'ACT='ACT'QUAL='
        QUAL'TEXT='VCN  'HIER='HIER
         'DOMID='.
THEN EXEC (CMD('FKVEOG01 T' TYPE ACT 'Q('QUAL')Q' 'T('VCN')T'
HIER) ROUTE(ONE *)) DISPLAY(N) NETLOG(Y) SYSLOG(N);
*
IF   MSGID = 'BNJ146I'
  &  TOKEN(2) = 'R'
  &   TEXT =. 'BKID=FEF'.
  &   TEXT =.'TYPE='TYPE'BKID=FEF'.'ACT='ACT'QUAL='
         QUAL   'HIER='HIER
          'DOMID='.
THEN EXEC (CMD('FKVEOG01 Q ' TYPE ACT 'Q('QUAL')Q' HIER)
ROUTE(ONE *) DISPLAY(N) NETLOG(Y) SYSLOG(N);
```

Figure 186. Automation Member Entries for BNJ146I

The first entry corresponds to alerts sent by NPSI V2/V3 and the second entry to alerts sent by NPSI V1. The parameters from the BNJ146I message that are needed by the program are extracted from the message and passed as variables to the program.

Understanding Code Point Tables

The following code points are part of these tables:

- BNJ92UTB alert description code points
- BNJ93UTB probable cause code points
- BNJ94UTB user cause code points
- BNJ95UTB install cause code points
- BNJ96UTB failure cause code points
- BNJ81UTB possible action code points

NPSI sends basic alerts (RECFMS type 00). Only a few IBM-supplied codes are provided to cover the range of possible AON/SNA X.25 problems. This package provides user code points to complement IBM supplied code. The code point range reserved for the user is between X'E000' and X'EFFF'. The range of code points used in this package is from X'EE00' to X'EEFF'. Thus, AON/SNA provides more details and more advice on the possible causes and solutions for an alert.

Describing the Correlation between INOP Messages and NPSI Alerts

When alerts are sent against the virtual circuit line resources, the station (PU) is not owned at the time the alert is sent. This makes utilizing the NPSI alerts difficult.

This difficulty affects the outgoing call refused alerts (either refused by NPSI or cleared by the AON/SNA X.25 PSDN or the DTE). AON/SNA X.25 NPSI sends on the SSCP–PU (the NCP PU) session, first an INOP type 1 on the address of the station, then a RECFMS on the address of the VC line. As a result, on the host side, a message is received:

```
IST259I INOP RECEIVED FOR nodename CODE = 01
```

The *nodename* is the name of the switched PU that attempted to call out. This message identifies neither the path nor the link on which the call out failed. An NPSI alert gives the hierarchy down to the virtual circuit and indicates why the outgoing failure occurred, but it does not give the name of the switched PU that attempted to call out and is affected by the failure.

For installations that frequently make outgoing calls on AON/SNA X.25 switched virtual circuits (SVCs), trying to correlate INOP messages and corresponding NPSI alerts is a challenge. AON/SNA X.25 responds to this need, but because of the asynchronous nature of this process, the tool cannot be considered as absolutely reliable.

Message IST259I is automated in the automation table and puts the switched PU name into a task global variable. A queue of 10 such global variables (X25PU0 to X25PU9) is necessary because several IST259I messages can arrive before the corresponding BNJ146I messages arrive and AON/SNA X.25 can pick up the PU names. This occurs when several PATHS statements are active for a switched PU, leading to successive outgoing call failures. If you need to store more than 10 PU names in global variables, you can easily modify the FKVEOI00 and FKVEOG02 routines. Replace the number 10 with the new value. One statement is in FKVEOI00 and two are statements in FKVEOG02.

A sample message automation member statement follows:

```
IF MSGID = 'IST259I' & TEXT =. 'FOR X'.
 & TEXT =. 'FOR' PUN 'CODE = 01'
THEN EXEC (CMD('FKVEOI00 ' PUN) ROUTE(ONE *))
 NETLOG(Y) SYSLOG(N) DISPLAY(Y);
```

AON/SNA X.25 generates the generic alerts from the NPSI alerts on virtual circuits. It retrieves the oldest switched PU name in the queue, if one is present. It inserts the PU name at the end of the hierarchy, behind the line name if no PU name is currently in the hierarchy.

AON/SNA X.25 records the time together with the PU name in a queue. When a PU name has been in the queue for more than three minutes, AON/SNA assumes the correspondence between the INOP messages and the alerts has been lost. It then cleans up the whole queue.

A message is written to the NetView log that shows the diagnostic code, the cause code, and all the hierarchies for the problem.

Figure 187 shows an example of the message written to the NetView log.

```
NCCF        N E T V I E W  L O G     CNM01        02/06/07 14:05:44

C CNM01    CLEARCAUSE BYTE = 05, DIAG BYTE = 00 RECEIVED FOR
    FOLLOWING RESOURCE HIER=RADNCPE,NPSI,MCH01,MCH,000001,VCN,
       XL01002,V.C.,X.25PUT,RDTE
```

Figure 187. NetView Log

Monitoring Switched Virtual Circuit (SVC) Resource Utilization

An AON/SNA X.25 subscription supplies, with one physical link, a number of virtual circuits, both *private virtual circuits* (PVCs) and *switched virtual circuits* (SVCs). These switched virtual circuits (SVCs) are often used for frequent and short duration connections. The number of switched virtual circuits (SVCs) in use increase and decrease with starting and ending calls from programs.

The primary purpose of this monitoring facility is to provide one screen that displays the number of switched virtual circuit (SVC) lines as available or busy. The system automatically updates this information, but the operator manually refreshes the screen to receive the current information.

Other features of this facility include the ability to:

- Apply threshold values for the number of free switched virtual circuits (SVCs) to highlight switched virtual circuit (SVC) shortages
- Add, change, or delete a temporary link definition
- Define individual timers for critical links to refresh status information on a fixed interval
- Link to DDF to enable DDF monitoring of link availability and threshold status

Understanding the X25INIT Command

To start the switched virtual circuit (SVC) monitoring facility, initialize the environment by running the X25INIT command. Call this command from the configuration file at AON startup. The X25INIT command performs the following:

- reads the X25MONIT control file entries in the configuration file
- checks these entries for validity
- sets up timers for links that you request
- obtains status information for the links

If X25INIT detects errors while validating the parameters for a link, AON/SNA issues a message and bypasses that link.

Switched virtual circuit (SVC) monitoring only works with the naming conventions given by NPSI for the group name and the VC line name. The NPSI naming convention follows:

*p***L***xxxlcn*
The name of the VC line.

*p***25S***xxxy*
The name of the switched virtual circuit group name.

where:

p Is the prefix coded in the X25BUILD macro.

xxx Is the address specified in the AddRESS operand of the X25MCH macro.

lcn Is the logical channel number.

y Is the group sequence on the physical link.

Understanding the LUDRPOOL Command

The LUDRPOOL routine is based on the NCP control blocks structure and works with different versions of NCP. The supported versions are NCP V4R2 through V7.

If you specify a time interval, AON/SNA X.25 issues a NetView EVERY command to run the LUDRPOOL check at regular intervals. It sets a threshold as a global variable so that an alert is sent when the pool of available LUs falls under the threshold.

Monitoring LUDRPOOL Utilization

One of the critical resources in switched SNA is the pool of LU control blocks created within the NCP to be used dynamically for dynamic reconfiguration and switched data links.

The pool of LU blocks is defined by the NCP LUDRPOOL macro:

```
DRPOOLPU PUDRPOOL NUMBER=0

DRPOOLLU LUDRPOOL NUMTYP1=10,    RESERVE 10  LUS ON PU.T1 PUS
                  NUMTYP2=90,    RESERVE 90  LUS ON PU.T2 PUS
                  NUMILU=20      RESERVE 20  LUS FOR IND.LU
```

The PUDRPOOL statement is necessary to use the LUDRPOOL utilization counters.

AON/SNA X.25 is more generally used for switched virtual circuits (SVCs). LUDRPOOL is one of the resources that major AON/SNA X.25 NPSI users want to monitor, especially if they have hundreds or thousands of available switched virtual circuits (SVCs), controlled by one NPSI.

PU Type 2 represents the vast majority of devices. In the previous example, the pool of LUs for switched PU 2 (operand NUMTYP2) is a common installation. PU Type 1 is relevant for NPSI (non-SNA connections), but there is always one simulated LU per virtual channel.

Understanding Security Alerts for an Incorrect XID

A frequent cause of failure in switched SNA connections occurs in the XID exchange, when the SNA ID (IDBLK + IDNUM) sent by the device attempting a switched connection is not recognized by the host.

VTAM compares the station ID it receives in the XID with the values coded for the IDBLK and IDNUM parameters of the PU statements in the switched major nodes.

When VTAM does not find a match, the call is refused and a message issued:

```
IST690I CONNECTION REQUEST DENIED - INVALID STATION ID = aaaaxxxyyyyy
```

The message might be an indication of:

- A security violation. Somebody might have tried to break into your network.
- An operations error. A switched major node might not have been activated.
- A system programming error. The good values of IDBLK-IDNUM might not have been specified in a switched major node.

All of these events are likely to happen regularly with AON/SNA X.25 NPSI switched virtual circuits (SVCs), in particular when the number of connections is high.

A specific NPSI difficulty with IDBLK-IDNUM is encountered for non-SNA AON/SNA X.25 connections (PCNE, PAD, GATE, DATE). In this case, the IDBLK and IDNUM do not come from the remote DTE but are generated by NPSI, according to the virtual circuit on which the call is received and according to the order of the virtual circuit definitions in the NCP generation.

Implementing an Alert through GENALERT

In the following example, the IST690I message is automated in the automation table and causes an alert through GENALERT. The security type is (SCUR).

```
IF MSGID = 'IST690I' & TEXT = .'=' STATID
THEN EXEC (CMD('FKVEOSEC ' STATID) ROUTE(ONE *)) DISPLAY(N)
 NETLOG(Y) SYSLOG(N);
```

Appendix B. Using the Browse Facility

AON uses the NetView browse facility, which enables certain commands and functions that you can use to browse log files. When you display any of the AON logs, AON enables certain commands and function keys to help you to browse the logs more efficiently.

In addition to the function keys used throughout NetView and described in "Function Keys (F Keys)" on page 8, the browse facility provides the following additional function keys to help you browse log files:

F4 Top
Moves to the top of the information being browsed.

F5 Bottom
Moves to the bottom of the information being browsed.

Appendix C. AON Command Synonyms

The following tables show how to use fastpaths to reach each AON panel.

Table 3. Fastpath Commands Reference Table

Command	FastPath	Panel
AON	AON	AON: Operator Commands Main Menu panel
AONINFO	AON 0	AON tutorial panel
	AON 1	AON: Base Functions panel
	AON 1.0	AON Base Functions tutorial panel
AONHD	AON 1.1	AON: Help Desk panel
AUTOVIEW	AON 1.2	AON: AutoView panel
DDF	AON 1.3	Data Center Networks panel
	AON 1.4	AON: Automation Settings panel
SETAUTO	AON 1.4.1	Recovery Settings panel
DISAUTO	AON 1.4.1	Recovery Settings panel
DELAUTO	AON 1.4.1	Recovery Settings panel
SETNTFY	AON 1.4.2	Notification Operators panel
DELNTFY	AON 1.4.2	Notification Operators panel
SETTHRES	AON 1.4.3	Thresholds panel
DELTHRES	AON 1.4.3	Thresholds panel
SETMONIT	AON 1.4.4	Monitor Intervals panel
DELMONIT	AON 1.4.4	Monitor Intervals panel
ACTMON	AON 1.4.5	Active Monitor Settings panel
	AON 1.5	AON: Cross Domain Functions panel
CDLOG	AON 1.5.1	AON: Cross Domain Logon panel
AONGW	AON 1.5.2	AON: Cross Domain Gateway Display panel
AONTAF	AON 1.5.3	AON: Terminal Access Facility Menu panel
TIMER	AON 1.6	AON: Timer Management panel
AONMAINT	AON 1.7	AON: Task and Log Maintenance panel
DSPCFG	AON 1.7.1	AON: Configuration Data Display panel
DSPSTS	AON 1.7.2	Display Status Data panel
	AON 1.7.3	NetView log panel
NLOG	AON 1.7.4	Automation log panel
DBMAINT	AON 1.7.5	AON: Database Maintenance panel
STARTEZL	AON 1.7.6	AON: Start Automation Components panel
STOPEZL	AON 1.7.6	AON: Start Automation Components panel
AONTASK	AON 1.7.7	AON: Task/Operator Display panel
	AON 1.8	AON: Support Functions panel
AONTRACE	AON 1.8.1	AON: Set Trace panel
AONINIT	AON 1.8.2	AON: Reinitialize Automation panel

Table 3. Fastpath Commands Reference Table (continued)

Command	FastPath	Panel
AONENABL	AON 1.8.3	AON: Enable/Disable Automation panel
CGED	AON 1.8.4	AON: Common Global Editor panel
	AON 1.8.5	AON: Automation Table panel
LOADTBL	AON 1.8.6	AON: Loader Tables panel
ILOG	AON 1.9	Inform Log Utility panel
MARK		DDF mark
UNMARK		DDF unmark
DM		Clear held message
AONAIP		Set or reset the AIP operator status
AONSNA	AON 2	SNA Automation: Menu panel
	AON 2.0	Tutorial
SNAHD	AON 2.1	SNA Help Desk panel
SNAMAP	AON 2.2	SNAMAP panel
VTAMOPT	AON 2.3	VTAM Options Management panel
NETSTAT	AON 2.4	NetStat panel
VTAMCMD	AON 2.5	VTAM Commands panel
APPN	AON 2.6	APPN Commands Menu panel
	AON 2.6.0	APPN Tutorial panel
	AON 2.6.1	APPN Issue Checkpoint Commands panel
	AON 2.6.2	APPN Display Control Points panel
	AON 2.6.3	APPN Display Directory panel
	AON 2.6.4	APPN Display Transmission Group Profiles panel
SNBU	AON 2.7	Switched Network Backup Menu panel
	AON 2.7.0	SNBU Tutorial
LISTSNBU	AON 2.7.1	Display SNBU Resource List panel
DISSNBU	AON 2.7.2	Display Information on SNBU Resources panel
SETSNBU	AON 2.7.3	Control SNBU Resources panel
DISPOOL	AON 2.7.4	Display Modem Pools panel
SETPOOL	AON 2.7.5	Add or Delete Modem Pool Resources panel
CHGSNBU	AON 2.7.6	Control SNBU Connections Manually panel
CHGSPEED	AON 2.7.7	Change Modem Speed Manually panel
QRYSNBU	AON 2.7.8	Display SNBU Status panel
X25	AON 2.8	X.25 Menu panel
	AON 2.8.0	X.25 Tutorial
X25MONIT	AON 2.8.1	X.25 SVC Monitoring panel
LUDRPOOL	AON 2.8.2	X.25 LUDR Pool Management panel
DSPSNBU		Displays SNBU Status Data from status file
SNAVIEW		Displays the AutoView resources for AON/SNA
X25INIT		Initializes X.25
AONTCP	AON 3	TCP/IP Automation: Commands Menu panel

Table 3. Fastpath Commands Reference Table (continued)

Command	FastPath	Panel
	AON 3.1	TCP/IP Automation: Ping a Service Point panel
NV6KPING	AON 3.1.1	TCP/IP Automation: Ping a resource through an AIX service point
NV6KCMD	AON 3.1.2	TCP/IP Automation: Issue an AIX command to a service point
NV6KRPNG	AON 3.1.3	TCP/IP Automation: Issue a remote ping between 2 AIX nodes
NV6KPERF	AON 3.1.4	TCP/IP Automation: Performance Thresholds panel
NV6KLIST	AON 3.1.5	TCP/IP Automation: Display the TCP/IP Critical Resource List panel
	AON 3.2	TCP/IP Automation: Issue Command to Service Point panel
MVSPING	AON 3.2.1	TCP/IP Automation: Ping a resource through TCP/IP for MVS
IPSTAT	AON 3.2.2	TCP/IP Automation: Manager Telnet and FTP sessions through TCP/IP for MVS
NVSNMP	AON 3.2.5	TCP/IP Automation: Display the SNMP Menu
	AON 3.2.6	TCP/IP Automation: Server Management
IPMAN	AON 3.2.7	TCP/IP Automation: IP Resource Management
TCPLIST	AON 3.2.7	TCP/IP Automation: IP Resource Management
NV6KVIEW		TCP/IP Automation: AutoView panel

Appendix D. Customizing the SNMP Group Definitions File (FKXSNMP)

Rules for creating new entries in the SNMP Group definition file FKXSNMP are:

- The Group name must be from 1-15 characters and must start in column 1.
- The Group name can not be duplicated.
- There must be at least 1 space between the Group Name, the GROUP, the Group type, and the base MIB for Table type Groups.
- There can be up to 3 lines of abstract definition for a Group. The abstract lines can be up to 72 positions and must start with a question mark (?) in column 1.
- The Abstract lines for a Group must follow the GROUP statement for the group.
- Valid Group types are:
  - LIST
  - LIST+
  - TABLE
  - WALK

A **LIST** group type must include the EXACT MIB variable names to be collected.

A **LIST+** group works almost the same as a LIST type Group, but enables the definition of variable data.

The LIST+ group enables you to specify a variable field to be appended to the list of MIB objects in the group. This enables a single group definition to be used for a variety of MIB object groups. For example, a group can contain objects that relate to a specific interface number. If you use traditional LIST type groups, you need multiple groups, one to define each interface. A LIST+ group can be defined to ask prompt for an interface number, when selected, enabling only one group definition to be needed. LIST+ adds keywords that are used to set up the variable data. All of these keywords must start in column 1.

PANELINPUT
Defines this as a LIST+ group

PANELCONST
A user-customizable field that is displayed in the input panel and must be delineated with double quotation marks (″)

PANELVAR
An input field where the data is collected from the screen, example:

PANELCONST ″PLEASE ENTER AN INTERFACE NUMBER: ″PANELVAR ″__″

Displays as:

PLEASE ENTER AN INTERFACE NUMBER:

__

VAR keywords in LIST and LIST+ groups indicate the starting of varbind lists. This helps in parsing in UNIX. VAR must start in column 1.

A **TABLE** group type must have a base variable to start the search. This is the index variable for the table. A Table group type does not need to have variables listed. The table is Walked and all variables in the table are collected. MIB variables listed in this group are for documentation only.

A **WALK** group type must be a well known group name (defined in an existing RFC). A walk command is issued against the name. MIB variables listed in this group are for documentation only. Walk groups, as defined in some RFCs, may be much larger than the 15-character limit. To work with this limit, the Full Name for the Walk Group may be entered on the Group line after the WALK type (for example: groupname GROUP WALK veryLongGroupName).

Comments must have an asterisk (*) in column 1.

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