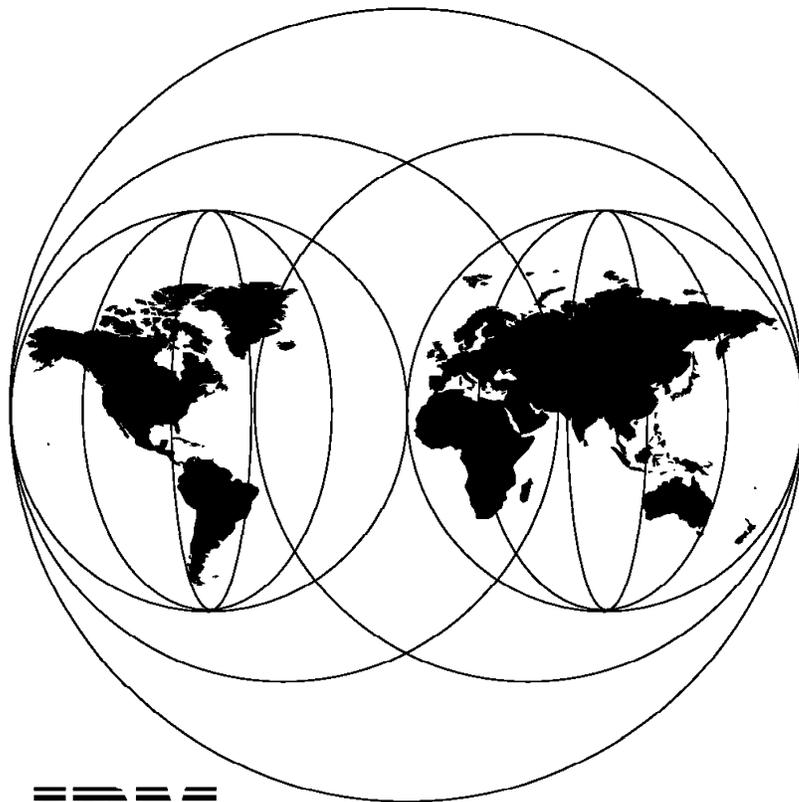International Technical Support Organization

Examples Using AIX NetView Service Point

December 1995

IBM

International Technical Support Organization
Raleigh Center

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SG24-4657-00

Examples Using AIX NetView Service Point

December 1995

> **Take Note!**
>
> Before using this information and the product it supports, be sure to read the general information under "Special Notices" on page xv.

Abstract

This document is intended to provide the network and systems management professional with an overview and examples of using AIX NetView Service Point and complementary applications, including especially AIX NetView for AIX V4.1.

This document contains examples of using user-written and NetView for AIX applications together with AIX NetView Service Point and AIX SNA Server to address network and system management challenges.

This document is intended to supplement development division documentation regarding NetView for AIX and its related family of products. Although this document does not specifically discuss SystemView, it is intended that this document contribute to the list of growing examples of how NetView for AIX participates in a SystemView strategy.

This document is intended for personnel who need information related to the marketing and acceptance of network and system management products in SystemView environments which include AIX. A general knowledge of NetView for AIX plus IBM and customer computing systems and C language programming is assumed.

(215 pages)

Contents

Figures

Tables

Special Notices

This publication is intended to help network and systems management professionals to use AIX NetView Service Point Version 2 Release 2. The information in this publication is not intended as the specification of any programming interfaces that are provided by AIX NetView Service Point. See the PUBLICATIONS section of the IBM Programming Announcement for AIX NetView Service Point for more information about what publications are considered to be product documentation.

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How This Document is Organized

The document is organized as follows:

- Chapter 1, "Introduction"

  This chapter provides overall information regarding the project involved in creating this document.

- Chapter 2, "AIX NetView Service Point Environments"

  This chapter summarizes the environment used during this project.

- The following chapters give examples of using particular enhancements and further discusses AIX NetView Service Point:
  Chapter 4, "Using AIX NetView Service Point in an APPN Network"
  Chapter 6, "Using AIX NetView Service Point Connection to S/390 NetView in Different Hosts"
  Chapter 5, "Using AIX NetView Service Point in a Non-APPN (Subarea) Network"
  Chapter 7, "Using AIX NetView Service Point Applications in a Distributed Environment"
  Chapter 8, "NetView for AIX Event/Alert Configuration"
  Chapter 9, "AIX NetView Service Point Problem Determination"

- The appendix includes:
  Appendix A, "SNA Profiles for SSCP-PU and MDS Connection with AIX NetView Service Point"
  Appendix D, "Configuration Options"
  Appendix E, "Performance Considerations for AIX NetView Service Point"
  Appendix F, "Sample Applications"
  Appendix G, "Additional Connection Examples"

Related Publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this document.

- *AIX NetView Service Point Installation, Operation, and Programming Guide Version 1 Release 2*, SC31-6120

- The current README in the installation library: /usr/lpp/nvix

International Technical Support Organization Publications

- *Examples of Using NetView for AIX V4*, SG24-4515

- *Examples of Selected Configuration and Customization Matters Involved With NetView for AIX and Its Family*, GG24-2521

- *Examples of Using NetView for AIX (V3)*, GG24-4327

- *IBM Systems Monitor Anatomy of a Smart Agent*, GG24-4398

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```
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```

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```
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```

Acknowledgments

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Chapter 1. Introduction

This chapter provides overall information regarding AIX NetView Service Point.

1.1 AIX NetView Service Point Functions

AIX NetView Service Point, like NetView/PC, is an application-enabling product for network management applications. It supplies a number of Application Programming Interfaces (APIs) to permit a variety of network management applications that can interface with network architectures supported by SNA.

1.1.1 Asynchronous Communications Manager (ACM)

Since the control functions of many systems are supported by ASCII devices using simple start-stop, often line-by-line, communications, AIX NetView Service Point provides a convenient program interface to simulate the presence of such a control device to the system being controlled.

ACM is not used by NetView for AIX.

1.1.2 Common Operations Services (COS)

An alternative name for COS is Service Point Command Facility (SPCF).

Common Operations Services provides a means to communicate with S/390 NetView so that the S/390 NetView operator, possibly an automation operator, can enter commands and receive responses.

There are three commands, LINKPD, LINKDATA and LINKTEST, which are oriented specifically to performing problem determination procedures on communications links. These commands are *not* used by NetView for AIX.

There is another command, RUNCMD, which has the purpose of transporting a command to be executed in the command environment of AIX/6000. This command is used by NetView for AIX and enables a command that can be entered in the AIX ″shell″ environment to be executed with the output returned to the S/390 NetView. The RUNCMD needs to communicate with an application on the AIX side. NetView for AIX provides the *spappld*, one possible daemon which supports COS RUNCMD. Another RUNCMD catcher is available in /usr/lpp/nvix/bin and is called *cmdappl*. The source of this catcher is also available in /usr/lpp/nvix/example_programs. This project also used a user-written version of cmdappl for its testing, called: nvcmd. The source of ITSO applications are available on request from the ITSO-Raleigh.

In all cases, responses are returned to S/390 NetView.

COS may also support unsolicited messages, but this feature is *not* used by NetView for AIX. Sample unsolicited message-to-operator type applications are available in /usr/lpp/nvix/example_programs and this project also used a user-written version of these for its testing, called: nvsendmsg.

The major vectors used by COS are *Execute Command* and *Reply to Execute Command*. When the SSCP-PU session is used to transport the major vectors, they are encapsulated in NMVT requests. When the LU-LU session is used to transport the major vectors, they are encapsulated in MDS-MU (Multiple-Domain

Support Message Unit) and GDS (Generalized Data Stream) variables in LU 6.2 request units.

1.1.3 Alert Processing

Any event, typically presented as an SNMP trap from an IP host or router, that defines a status change in the supported system can be converted by NetView for AIX into a network management major vector, the *alert major vector*, and can be sent to the S/390 NetView hardware monitor component.

This API is used by the NetView for AIX tralertd daemon in order to pass a NetView for AIX event to S/390 NetView hardware monitor and possible S/390 automation.

Sample alert applications are available in /usr/lpp/nvix/example_programs and this project also used a user-written version of these for its testing, called: nvcreateoa.

Chapter 2. AIX NetView Service Point Environments

This chapter summarizes the environment where AIX NetView Service Point is used and the environments used in this project.

In the next chapters we show different connection and configuration examples which can be used by AIX NetView Service Point. For each configuration example we used token-ring as the physical layer. The AIX release ran on is AIX 3.2.5; SNA is AIX SNA Server/6000 V2.1 with PTF U437491 applied.

2.1 Software Requirements for S/390

S/390 NetView V1R3 or later is required when using SSCP-PU transport from the AIX NetView Service Point.

S/390 NetView V2R3 or later is required when using MDS transport from the AIX NetView Service Point.

2.2 Software Requirements for AIX V3

AIX Release V3.2.3 or V3.2.4 or V3.2.5 at the latest level of maintenance is required.

AIX SNA Server/6000 V2.1.1 or later at the latest level of maintenance is required. SNA Server/6000 PTF U437491 is required and is a prerequisite for the installation of AIX NetView Service Point.

AIX NetView Service Point V1.2.2, with AIX NetView Service Point PTF U439055, is recommended for correct function of the MDS Support.

2.3 Software Requirements for AIX V4.1

For AIX V4.1, the following are required:

- AIX Release V4.1 or later release at the latest level of maintenance including the lpp bos.compat.links 4.1.0.0

- AIX 3.2 to 4.1 Compatibility Links (this lpp contains files /etc/inurest and /etc/inumsg which are used to install Service Point).

- AIX SNA Server/6000 V2.2.0.1 or later at the latest level of maintenance

- AIX NetView Service Point V1.2.2

  AIX NetView Service Point PTF U439055 is recommended for correct function of the MDS Support.

Note: If the default language is not En_US then AIX NetView Service Point will retrieve the words *inoperative, active and starting* from src.cat (bos.msg.$LANG.rte). Also AIX NetView Service Point will retrieve the word *connection* from the SNA language table sna_EN.cat. This may cause problems during startup of the AIX NetView Service Point.

Chapter 3. AIX NetView Service Point Installation and Customization for Use With NetView for AIX

This chapter summarizes installation and customization actions taken during this project. Refer to the README in /usr/lpp/nvix for additional information.

3.1 Checking for Prerequisites

Before you try to install AIX NetView Service Point V1.2.2, verify that SNA Server/6000 and at least PTF U437491 is installed on the system. To do this type the following command:

```
lslpp -ha sna.sna.obj | pg
```

You should get a list like this:

```
 Fix Id  Release          Status     Action     Date       Time     User
 ------  -----------      ---------  ---------  ---------  -------  -----
 Path: /usr/lib/objrepos
   sna.sna.obj
         01.03.0094.0231 COMPLETE    APPLY      08/20/95   18:23:27 root
         01.03.0094.0231 COMPLETE    COMMITTED  08/20/95   18:23:27 root
 U432009 01.03.0094.0231 COMPLETE    APPLY      08/20/95   18:27:33 root
 U437491 01.03.0095.0170 COMPLETE    APPLY      09/19/95   16:00:26 root
 Path: /etc/objrepos
   sna.sna.obj
         01.03.0094.0231 COMPLETE    APPLY      08/20/95   18:23:27 root
         01.03.0094.0231 COMPLETE    COMMITTED  08/20/95   18:23:27 root
 U432009 01.03.0094.0231 COMPLETE    APPLY      08/20/95   18:27:33 root
 U437491 01.03.0095.0170 COMPLETE    APPLY      09/19/95   16:00:26 root
```

Figure 1. Output of lslpp -ha sna.sna.obj Command

3.2 Installing the AIX NetView Service Point

After you have verified that the correct level of SNA Server/6000 is installed, you can use SMIT to install AIX NetView Service Point.

Note: After SMIT finished the AIX NetView Service Point installation, you must run the script */usr/lpp/nvix/scripts/nvix_customize_sp* before you try to start any of the AIX NetView Service Point daemons.

When the installation process is completed, check the README files in /usr/lpp/nvix.

3.3 Portmap Setup

For working with the AIX NetView Service Point, the file /etc/services must be customized. We have to ensure the following lines are in that file:

```
nvixacm          7111/tcp
nvixclb          7112/tcp
nvixcr           7113/tcp
nvixsp           7115/tcp
nvixspc          7116/tcp
```

Note: You may use any socket address as long as they are unique within the /etc/services file. These addresses must be the same on both the AIX NetView Service Point and the distributed systems or the distributed application will not run. If you are not using distributed applications, the addresses should be unique between systems.

3.4 NetView for AIX Host Daemons

The NetView for AIX host daemons also need to be configured. This example shows the SMIT panels we used configure these daemons.

In Figure 2 on page 6, **Communications Applications and Services** is what we want to choose.

```
                              System Management

  Move cursor to desired item and press Enter.

     Software Installation & Maintenance
     Devices
     Physical & Logical Storage
     Security & Users
     Diskless Workstation Management & Installation
     Communications Applications and Services
     Spooler (Print Jobs)
     Problem Determination
     Performance & Resource Scheduling
     System Environments
     Processes & Subsystems
     Applications
     Using SMIT (information only)




     F1=Help            F2=Refresh          F3=Cancel          F8=Image
     F9=Shell           F10=Exit            Enter=Do
```

Figure 2 (Part 1 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

Then choose **NetView for AIX**.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                    Communications Applications and Services                   │
│                                                                               │
│  Move cursor to desired item and press Enter.                                 │
│                                                                               │
│    TCP/IP                                                                     │
│    NFS                                                                        │
│    SNA Server/6000                                                            │
│    NetView Service Point                                                      │
│    RMONitor                                                                   │
│    3270 Host Connection Program (HCON)                                        │
│    AIX IHMP/6000                                                              │
│    NetView for AIX                                                            │
│    SNA Manager/6000                                                           │
│    Systems Monitor/6000                                                       │
│    DCE (Distributed Computing Environment)                                    │
│    Topology Integration Manager                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│    F1=Help            F2=Refresh          F3=Cancel          F8=Image         │
│    F9=Shell           F10=Exit            Enter=Do                            │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 2 (Part 2 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

Select **Configure** to go to the configuration part.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                                                               │
│                              NetView for AIX                                  │
│                                                                               │
│  Move cursor to desired item and press Enter.                                 │
│                                                                               │
│    Configure                                                                  │
│    Control                                                                    │
│    Diagnose                                                                   │
│    Maintain                                                                   │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│    F1=Help            F2=Refresh          F3=Cancel          F8=Image         │
│    F9=Shell           F10=Exit            Enter=Do                            │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 2 (Part 3 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

Choose **Set options for daemons**.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│                              Configure                                    │
│                                                                           │
│   Move cursor to desired item and press Enter.                            │
│                                                                           │
│     Set options for daemons                                               │
│     Configure object identification registration files                    │
│     Configure XMP configuration file                                      │
│     Set node name or IP address of AIX NetView Service Point              │
│     Change Map(s) owner/group/mode                                         │
│     Install/configure subagent (trapgend) on remote RISC System/6000      │
│     Delete daemon from ovsuf startup file                                  │
│     List/Configure relational database                                    │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│     F1=Help            F2=Refresh          F3=Cancel         F8=Image      │
│     F9=Shell           F10=Exit            Enter=Do                        │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 2 (Part 4 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

Choose **Set options for host connection daemons**.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│                       Set options for daemons                             │
│                                                                           │
│   Move cursor to desired item and press Enter.                            │
│                                                                           │
│     Set options for topology, discovery, and database daemons             │
│     Set options for event and trap processing daemons                     │
│     Set options for host connection daemons                               │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│     F1=Help            F2=Refresh          F3=Cancel         F8=Image      │
│     F9=Shell           F10=Exit            Enter=Do                        │
└─────────────────────────────────────────────────────────────────────────┘
```
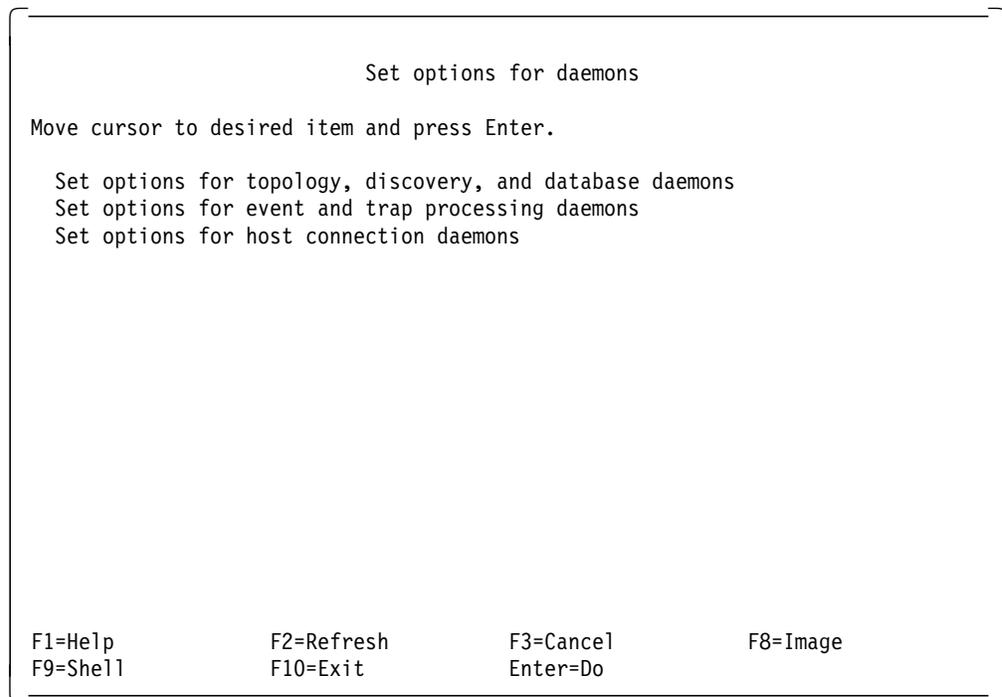
Figure 2 (Part 5 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

tralertd is for inbound (to S/390) alerts.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│                   Set options for host connection daemons                 │
│                                                                           │
│   Move cursor to desired item and press Enter.                            │
│                                                                           │
│     Set options for tralertd daemon                                       │
│     Set options for spappld daemon                                        │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│     F1=Help             F2=Refresh        F3=Cancel           F8=Image    │
│     F9=Shell            F10=Exit          Enter=Do                        │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 2 (Part 6 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

We used a naming convention of hostname appended with "T" for tralertd.

We recommend filling in the Service point host name and not leaving it blank. Our AIX NetView Service Point host is RS60010 as shown.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│                      Set Options for tralertd daemon                      │
│                                                                           │
│   Type or select values in entry fields.                                  │
│   Press Enter AFTER making all desired changes.                           │
│                                                                           │
│                                                          [Entry Fields]   │
│     Tracing mask:                                     [0]              #   │
│     Full path name of trace file:                     [/usr/OV/log/tralertd.t>  /  │
│   * Service point application name:                   [RS60010T]           │
│     Service point host name:                          [rs60010]           │
│   * Are you using NetCenter?                           no              +   │
│       If yes:                                                              │
│     Domain name:                                      [SNMP]               │
│       Standalone timeout:                             [90]             #   │
│                                                                           │
│                                                                           │
│                                                                           │
│   F1=Help             F2=Refresh        F3=Cancel           F4=List        │
│   F5=Reset            F6=Command        F7=Edit            F8=Image        │
│   F9=Shell            F10=Exit          Enter=Do                          │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 2 (Part 7 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

spappld is for outbound (from S/390) RUNCMDs and for sending RUNCMD responses back to the S/390.

We used a naming convention of hostname appended with ″S″ for spappld.

We recommend filling in the Service point host name and not leaving it blank. Our AIX NetView Service Point host is RS60010 as shown.

```
                          Set Options for spappld daemon

  Type or select values in entry fields.
  Press Enter AFTER making all desired changes.

                                                 [Entry Fields]
    Service point host name:                   [rs60010]
  * Service point application name:            [RS60010S]
    Execute shell state:                        bsh(Bourne)            +
    Execute shell path:                        [/bin:/usr/bin:/usr/OV/>
    Log service point transactions?             yes                    +
    Full path name of log file:                [/usr/OV/log/NV390.log]   /
    Tracing mask:                              [0]                       #
    Full path name of trace file:              [/usr/OV/log/NV390.trac>  /
    Are you using NetCenter:                    no                     +




    F1=Help              F2=Refresh       F3=Cancel          F4=List
    F5=Reset             F6=Command       F7=Edit            F8=Image
    F9=Shell             F10=Exit         Enter=Do
```

Figure 2 (Part 8 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

You can check the host name specified for AIX NetView Service Point. It has been filled in as a result of your previously using this field in configuring the host daemons.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                                                             │
│                Set node name or IP address of AIX NetView Service Point     │
│                                                                             │
│                                                                             │
│   Type or select values in entry fields.                                    │
│   Press Enter AFTER making all desired changes.                             │
│                                                                             │
│                                                      [Entry Fields]         │
│     Node name or IP address:                        [rs60010]               │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│     F1=Help           F2=Refresh         F3=Cancel          F4=List         │
│     F5=Reset          F6=Command         F7=Edit            F8=Image        │
│     F9=Shell          F10=Exit           Enter=Do                           │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 2 (Part 9 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

3.5 Starting AIX NetView Service Point

There are different methods to start the AIX NetView Service Point. You can either start the AIX NetView Service Point via SMIT or you can run the script */usr/lpp/nvix/example_programs/startsp* to start the AIX NetView Service Point. When using the startsp script, AIX SNA Server/6000 is automatically started if it is not running.

The most important thing to remember is that the AIX NetView Service Point daemons must be activated before the NetView for AIX host daemons (spappld and tralertd) are started. There are different ways to do this. In our example, we will show two of them.

3.5.1 Using the NetView for AIX Startup Script

When the RS/6000 workstation is booted, normally the NetView for AIX daemons are started with the shell script /etc/netnmrc called in /etc/rc.tcpip.

With NetView for AIX V3.1 and PTF U439027 or higher or with NetView for AIX V4.1.1 (PTF U438904 or higher) there is a additional startup script available, called /usr/OV/bin/netnmrc.aux. This script is used to start additional processes at the same time all NetView for AIX daemons are started.

Note: The user is responsible for matters involving this script; it is, just, called by NetView for AIX. If this file does not exist, you may create it.

To add the AIX NetView Service Point startup script to /usr/OV/bin/netnmrc.aux, do the following:

- cp /usr/lpp/nvix/example_programs/startsp /usr/etc/nvix/startsp

- chmod 755 /usr/etc/nvix/startsp

- Edit /usr/OV/bin/netnmrc.aux with your favorite editor and insert the AIX NetView Service Point startup script as shown in Figure 3 on page 12.

```
# Starting NetView Service Point
# This is a user-supplied script documented by Service Point.
# The user is responsible for correct operation if this file exists.
if [ -x /usr/etc/nvix/startsp ]; then
        /usr/etc/nvix/startsp
fi

# Start the NetView for AIX Host daemons again, after Service Point
# is running.
/usr/OV/bin/ovstart spappld
/usr/OV/bin/ovstart tralertd
```

Figure 3. Part of /usr/OV/bin/netnmrc.aux Script

Note: Do not use the /etc/netnmrc script for starting any additional user applications. All changes in this file are lost after a new PTF is applied. Always use the /usr/OV/bin/netnmrc.aux script or the /usr/OV/bin/applsetup script.

3.5.2 Starting AIX NetView Service Point from /etc/inittab

When starting AIX NetView Service Point via an entry in /etc/inittab, we are independent from the startup of the NetView for AIX daemons. To create an entry in /etc/inittab do the following:

- copy /usr/lpp/nvix/example_programs/startsp /etc/rc.nvix

- chmod 755 /etc/rc.nvix

- Edit /etc/inittab with your favorite editor and add a new line after the SNA startup line. Figure 4 on page 13 shows the relevant part of /etc/inittab.

```
 ...
 ...
srcmstr:2:respawn:/etc/srcmstr            # System Resource Controller
rcsna:2:wait:/etc/rc.sna > /dev/console 2>&1 # Start SNA daemons
rcnvix:2:wait:/etc/rc.nvix >/dev/console 2>&1 # Start NV Service Point
rctcpip:2:wait:/etc/rc.tcpip > /dev/console 2>&1 # Start TCP/IP daemons
 ...
 ...
```

Figure 4. Part of /etc/inittab

Note: Before making any changes in /etc/inittab we recommend that you copy the original file. You must be aware that any changes in the /etc/inittab script can cause problems during IPL of the RS/6000 system.

If you are using AIX NetView Service Point together with NetView for AIX, we suggest that you start the AIX NetView Service Point daemons as described in Figure 3 on page 12.

If you are using AIX NetView Service Point independent from NetView for AIX, you should use the procedure described in Figure 4 on page 13.

Chapter 4. Using AIX NetView Service Point in an APPN Network

This chapter provides examples and connectivity information when using AIX NetView Service Point in an APPN network.

4.1 Using a SSCP-PU Session By AIX NetView Service Point

Although it is expected that users will move to MDS support with AIX NetView Service Point and AIX SNA Server/6000, the following SSCP-PU example is presented first in this document, since current users of AIX NetView Service Point may be using SSCP-PU at this time. The customization steps that need to be done to use a SSCP-PU session by AIX NetView Service Point are shown in the following section.

4.1.1 AIX SNA Server/6000 V2 Customization

The first product to customize is the software supporting SNA in the AIX environment.

If an SSCP-PU session is used for the transport of major vectors, we need an SNA Type 2.1 node which will support an SSCP to PU session. The SSCP represents the S/390 host node. The PU represents the RS/6000 SNA Type 2.1 node.

We are always using SMIT to modify the SNA profiles we need. The following profiles needs to be configured to establish a SSCP-PU connection:

15

```
                          ┌─────────────────────┐
                          │ NetView Service Point │
                          └─────────────────────┘
                                    │
              ┌─────────────────────┘
              │     ┌──────────────────────────────────────┐
              └────▶│ NetView Service Point Profile Summary  │
                    └──────────────────────────────────────┘


                          ┌────────────┐
                          │ SNA Server  │
                          └────────────┘
              ┌───────┬─────┴──┐
              │       │        │
              │       │        │     ┌──────────────────────┐
              │       │        └────▶│ SNA Defaults Profile   │
              │       │              └──────────────────────┘
              │       │
              │       │              ┌──────────────────────┐
              │       └─────────────▶│ Control Point Profile  │
              │                      └──────────────────────┘
              │
              │                      ┌──────────────────────┐
              └─────────────────────▶│ SNA DLC Profile        │
                                     └──────────────────────┘
                          ┌──────────┘
                          │          ┌──────────────────────┐
                          └─────────▶│ Link Station Profile   │
                                     └──────────────────────┘
```
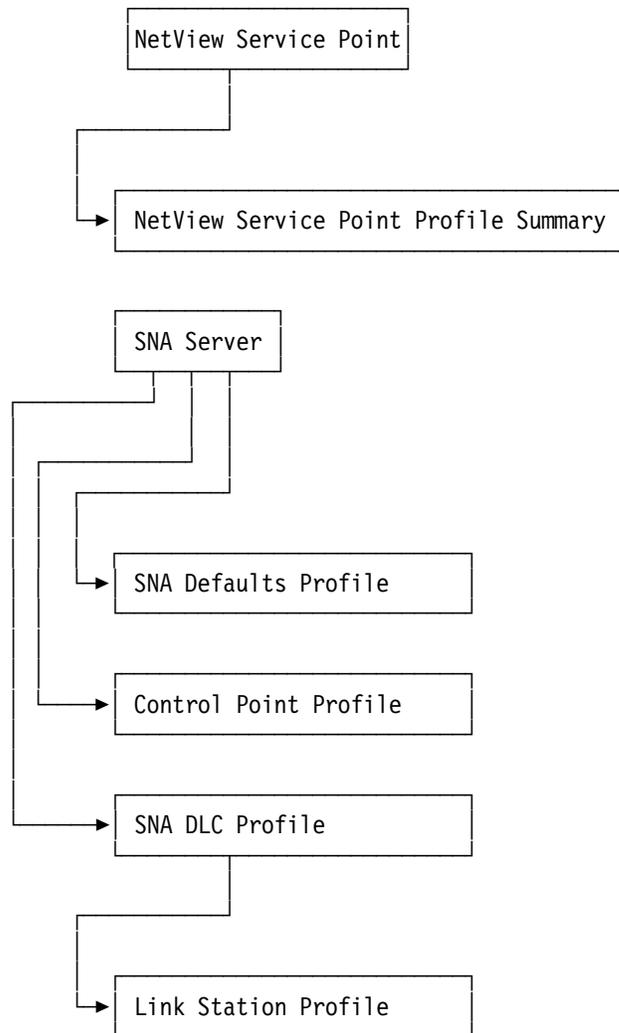
Figure 5. Profiles for SSCP-PU

The SNA profiles used for this example can be found in Appendix A, "SNA Profiles for SSCP-PU and MDS Connection with AIX NetView Service Point" on page 125.

4.1.2 AIX NetView Service Point Customization

The following example is for SSCP-PU use of AIX NetView Service Point.

SMIT leads to: Configure NetView Service Point.

```
                                    NetView Service Point

 Move cursor to desired item and press Enter.

   Configure NetView Service Point
   Control NetView Service Point
   Diagnose NetView Service Point



 F1=Help           F2=Refresh          F3=Cancel           F8=Image
 F9=Shell          F10=Exit            Enter=Do
```
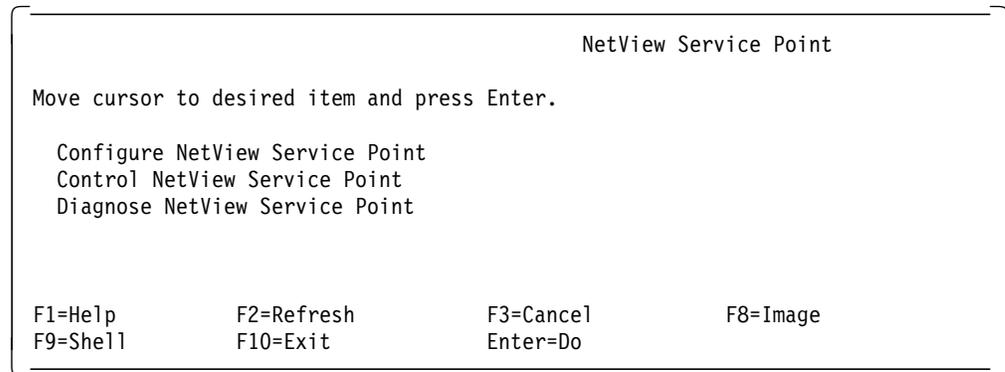
Figure 6. Leading to Configure NetView Service Point

To configure SSCP-PU support, specify *no* for **Use MDS transport?** in the panel
represented in Figure 7 on page 18 and ensuring you have the correct SSCP ID.

The SSCP ID field is quite important here. To get the correct value, requires a
decimal-to-hexadecimal conversion of the corresponding VTAM parameter, the
SSCPID in the VTAM Start Option List.

The SSCP ID is obtained from the S/390 VTAM coordinator. In our case, this
was:

```
   For SA 25  (hex 19)      SSCP ID    [050000000019]
   For SA 18  (hex 12)      SSCP ID    [050000000012]
```

The PUNAME must be specified when configuring for SSCP-PU use by AIX
NetView Service Point. The PUNAME parameter provides a name for the first
resource in the *hierarchy name list* subfield (subfield X'10'), of the
hierarchy/Resource List subvector (subvector X'05') in the SNA Management
Services alert major vector built by AIX NetView Service Point. There is no
necessary correlation with any other definition in AIX or VTAM.

However, if RUNCMD commands are issued as a result of receiving alerts from
AIX NetView Service Point, it will be easiest if the first two names in the
hierarchy, easily extracted in the automation NetView CLIST, are used directly to
build the RUNCMD SP and APPL operands.

The SP operand *must* be the real PU Name when the SSCP-PU Session is used
to support RUNCMD function.

If MDS transport was specified as yes, indicating SSCP-PU was not to be used,
the RISC System/6000 SNA Server-configured CP Name would be the target for
RUNCMDs.

Figure 7 on page 18 shows the values we are using in this project for SSCP-PU
connection.

```
┌──────────────────────────────────────────────────────────────────────────
│                           NetView Service Point Profile Summary
│
│   Type or select values in entry fields.
│   Press Enter AFTER making all desired changes.
│
│                                                          [Entry Fields]
│     Use MDS transport?                                  no        +
│        If no, enter SSCP ID                             [050000000019]
│        If no, enter Polling Period (msec)               [300]      #
│        If no, enter PUNAME                              [RA60010]
│        If yes, enter the COS FP NETID                   []
│        If yes, enter the COS FP NAU                     []
│        If yes, enter the ALERT FP NETID                 []
│        If yes, enter the ALERT FP NAU                   []
│     Service Point Codepage                              [ ]
│
│
│
│   F1=Help         F2=Refresh               F3=Cancel          F4=List
│   F5=Reset        F6=Command               F7=Edit            F8=Image
│   F9=Shell        F10=Exit                 Enter=Do
│
└──────────────────────────────────────────────────────────────────────────
```

Figure 7. Configuring SSCP-PU

If SNA Server was not started previously, SMIT can be used to start SNA and its resources. For the following, SNA is active and we are going to start the link station used for the configured AIX NetView Service Point.

```
┌──────────────────────────────────────────────────────────────────────────
│                           Manage SNA Resources
│
│   Move cursor to desired item and press Enter.
│
│     Start SNA
│     Start an SNA Link Station
│     Start an SNA Session
│
│
│
│   F1=Help                    F2=Refresh               F3=Cancel
│   F8=Image                   F9=Shell                 F10=Exit
│
└──────────────────────────────────────────────────────────────────────────
```

Figure 8. SMIT SNA Server/6000 Manage SNA Resources

The link station resolves to the PU in the S/390 host. In this example, the Link Station Profile name is *RS6KSP*.

```
                                           Start an SNA Link Station

 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.

                                                          [Entry Fields]
 * Link Station Profile name                              [RS6KSP]    +




 F1=Help          F2=Refresh          F3=Cancel          F4=List
 F5=Reset         F6=Command          F7=Edit            F8=Image
 F9=Shell         F10=Exit            Enter=Do
```

Figure 9 (Part 1 of 2). SMIT SNA Server/6000 Starting the Link Station

```
                                                        COMMAND STATUS

 Command: OK              stdout: yes            stderr: yes

 Before command completion, additional instructions may appear below.


 0105-2723 The "RS6KSP" Link Station has been started.



 F1=Help          F2=Refresh          F3=Cancel          F6=Command
 F8=Image         F9=Shell            F10=Exit
```

Figure 9 (Part 2 of 2). SMIT SNA Server/6000 Starting the Link Station

Once the link station has been started, the operator could display the link station
in a short (summary) or long (addition detail) manner.

```
                                        Display Active Link Information

 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.

                                                          [Entry Fields]
   Output format                                          short     +

   Link station name                                      [RS6KSP]   +

   Device name                                            []



 F1=Help          F2=Refresh          F3=Cancel          F4=List
 F5=Reset         F6=Command          F7=Edit            F8=Image
 F9=Shell         F10=Exit            Enter=Do
```

Figure 10 (Part 1 of 2). SNA Server/6000 Short Display Active Link

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                        COMMAND STATUS                     │
│                                                                           │
│  Command: OK              stdout: yes            stderr: no               │
│                                                                           │
│  Before command completion, additional instructions may appear below.     │
│                                                                           │
│      Link            Adjacent      Node   Device                # of local  In  │
│      station         CP name       type   name        State     sessions   use │
│   --------------  -----------------  -----  ---------  ----------  ----------  ----- │
│   RS6KSP          USIBMRA.RAP        NN     tok0       Active              7  Yes │
│                                                                           │
│                                                                           │
│                                                                           │
│  F1=Help           F2=Refresh         F3=Cancel           F6=Command      │
│  F8=Image          F9=Shell           F10=Exit                            │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 10 (Part 2 of 2). SNA Server/6000 Short Display Active Link

Once the link station is activated, the following resources are shown by S/390
NetView display of the PU:

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│   C RAPAN     DISPLAY NET,ID=RA60010,SCOPE=ALL                            │
│     RAPAN     IST097I  DISPLAY  ACCEPTED                                   │
│  ' RAPAN                                                                   │
│  IST075I  NAME = RA60010          , TYPE = PU_T2.1                         │
│  IST486I  STATUS= ACTIV--L--, DESIRED STATE= ACTIV                        │
│  IST1043I  CP NAME = RA6010CP, CP NETID = USIBMRA , DYNAMIC LU = YES       │
│  IST1105I  RESOURCE STATUS TGN CP-CP TG CHARACTERISTICS                    │
│  IST1106I  RA60010  AC/R   21 YES   982D0000000000000000017100808080       │
│  IST136I  SWITCHED SNA MAJOR NODE = RA2RS6KY                               │
│  IST081I  LINE NAME = J0007027, LINE GROUP = EG07L02 , MAJNOD = RA7NCKH    │
│  IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF                              │
│  IST355I  LOGICAL UNITS:                                                   │
│  IST080I  RA600102 PACTL     RA600103 PACTL     RA600104 PACTL             │
│  IST080I  RA600105 PACTL     RA600106 ACTIV     RA600107 ACTIV             │
│  IST080I  RA600108 ACTIV     RA600109 ACTIV     RA60010C ACTIV             │
│  IST080I  RA6010CP ACT/S                                                   │
│  IST314I  END                                                             │
│  ------------------------------------------------------------------------- │
│                                                                           │
│                                                                           │
│                                                                           │
│     ???                                                                    │
│                                                                           │
│                        N E T V I E W    RAPAN WTWKSHA  09/21/95 14:53:32   │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 11. Link Station Is ACTIV in the S/390

Figure 12 on page 21 indicates that AIX NetView Service Point has not been
started as indicated by the inoperative status.

```
                                       COMMAND STATUS

Command: OK              stdout: yes              stderr: no

Before command completion, additional instructions may appear below.

nvix_control status


*** Status of NetView Service Point Processes ***

Subsystem          Group          PID      Status
 evp_nvixSrd                               inoperative

Subsystem          Group          PID      Status
 evp_nvixCrd                               inoperative

Subsystem          Group          PID      Status
 evp_nvixAcmd                              inoperative


*** Status of SNA Server, and SSCP-PU Session: ***

SNA is active

SSCP-PU session is inactive as evp_nvixSrd subsystem is inoperative
On SSCP-PU sessions, use SP=RA60010 in RUNCMDS
and use Applications shown in
*** Applications registered to receive commands from Host: ***
for appl= in RUNCMD

*** Status of Portmapper ***

/usr/etc/portmap is active.

*** Applications registered to receive commands from Host: ***

no information is currently available

For additional status and error information refer to
your system error log.

F1=Help              F2=Refresh          F3=Cancel          F6=Command
F8=Image             F9=Shell            F10=Exit
```

Figure 12. AIX NetView Service Point Is Inactive. AIX NetView Service Point does not care if the link station is active until its own resources have been initiated by the AIX operator or command.

AIX NetView Service Point can be started by command line or by SMIT.

Note: This version of AIX NetView Service Point does not try to initiate the link station. This is an operational difference from prior versions of AIX NetView Service Point.

```
┌──────────────────────────────────────────────────────────────────────────────┐
│                            COMMAND STATUS                                       │
│                                                                                 │
│ Command: OK              stdout: yes              stderr: no                     │
│                                                                                 │
│ Before command completion, additional instructions may appear below.            │
│                                                                                 │
│ nvix_control start                                                              │
│                                                                                 │
│                                                                                 │
│ Checking pre-requisite software. Please wait ...                                │
│                                                                                 │
│                                                                                 │
│ Starting NetView Service Point processes ...                                    │
│                                                                                 │
│  starting Send/Receive Daemon                                                   │
│ 0513-059 The evp_nvixSrd Subsystem has been started. Subsystem PID is 67035.    │
│ starting Command Router Daemon ...                                              │
│ 0513-059 The evp_nvixCrd Subsystem has been started. Subsystem PID is 67572.    │
│  starting ACM Daemon ...                                                        │
│                                                                                 │
│ 0513-059 The evp_nvixAcmd Subsystem has been started. Subsystem PID is 68092.   │
│ For additional status and error information refer to                            │
│ your system error log.                                                          │
│                                                                                 │
│                                                                                 │
│                                                                                 │
│ F1=Help             F2=Refresh          F3=Cancel          F6=Command           │
│ F8=Image            F9=Shell            F10=Exit                                 │
└──────────────────────────────────────────────────────────────────────────────┘
```

Figure 13. Starting AIX NetView Service Point

Figure 14 on page 23 indicates that AIX NetView Service Point has been started.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                              COMMAND STATUS                                   │
│                                                                               │
│  Command: OK              stdout: yes              stderr: no                 │
│                                                                               │
│  Before command completion, additional instructions may appear below.         │
│                                                                               │
│  nvix_control status                                                          │
│                                                                               │
│                                                                               │
│  *** Status of NetView Service Point Processes ***                            │
│                                                                               │
│  Subsystem         Group            PID     Status                            │
│   evp_nvixSrd                        67035   active                           │
│                                                                               │
│  Subsystem         Group            PID     Status                            │
│   evp_nvixCrd                        67572   active                           │
│                                                                               │
│  Subsystem         Group            PID     Status                            │
│   evp_nvixAcmd                       68092   active                           │
│                                                                               │
│                                                                               │
│  *** Status of SNA Server, and SSCP-PU Session: ***                           │
│                                                                               │
│  SNA is active                                                                │
│                                                                               │
│  SSCP-PU session is active                                                    │
│                                                                               │
│  On SSCP-PU sessions, use SP=RA60010 in RUNCMDS                               │
│  and use Applications shown in                                                │
│  *** Applications registered to receive commands from Host: ***               │
│  for appl= in RUNCMD                                                          │
│                                                                               │
│  *** Status of Portmapper ***                                                 │
│                                                                               │
│  /usr/etc/portmap is active.                                                  │
│                                                                               │
│  *** Applications registered to receive commands from Host: ***               │
│                                                                               │
│  no information is currently available                                        │
│                                                                               │
│  For additional status and error information refer to                         │
│  your system error log.                                                       │
│                                                                               │
│                                                                               │
│  F1=Help           F2=Refresh           F3=Cancel           F6=Command        │
│  F8=Image          F9=Shell             F10=Exit                              │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 14. AIX NetView Service Point Is Active but RUNCMD Applications Are Not Registered

The above status of AIX NetView Service Point Subsystems must be active before proceeding.

Prior to using AIX NetView Service Point, it is necessary to start RUNCMD catchers (AIX NetView Service Point applications) at the RISC System/6000.

The following figures show various steps in activating both a user-written RUNCMD catcher, 10nvcmd, and a configured NetView for AIX spappld RUNCMD catcher, RS60010S:

```
[root@rs600010]> 10nvcmd &
[1]     65924
[root@rs600010]/> Session created. Waiting for host command ...
```

Figure 15. Starting 10nvcmd

```
                                          COMMAND STATUS

Command: OK          stdout: yes          stderr: no

Before command completion, additional instructions may appear below.

[MORE...72]
 PID:                9898
 exit status:        -

 object manager name: snmpCollect
 behavior:           OVs_WELL_BEHAVED
 state:              RUNNING
 PID:                13845
 last message:       Initialization complete.
 exit status:        -

 object manager name: ovactiond
 behavior:           OVs_WELL_BEHAVED
 state:              RUNNING
 PID:                11195
 last message:       Initialization complete.
 exit status:        -


         *** Status of host connection Daemons ***

 object manager name: tralertd
 behavior:           OVs_NON_WELL_BEHAVED
 state:              RUNNING
 PID:                68901
 exit status:        -

 object manager name: spappld
 behavior:           OVs_NON_WELL_BEHAVED
 state:              RUNNING
 PID:                67643
 exit status:        -


[BOTTOM]

F1=Help          F2=Refresh          F3=Cancel          F6=Command
F8=Image         F9=Shell            F10=Exit
```

Figure 16 (Part 1 of 2). Ensuring NetView for AIX Host Daemons Are Configured and Active

```
[root@rs600010]/> ps -ef|grep tral
    root 68259 46725   2 14:51:07  pts/8  0:00 grep tral
    root 68901  9383   0 14:50:07       -  0:02 tralertd -pRS600010T
                                                          -hrs600010


[root@rs600010]/> ps -ef|grep spappl
    root 67643  9383   0 14:50:12       -  0:00 spappld -hrs600010
                                    -pRS600010S -b/bin$/usr/bin$/usr/OV/bin


    root 68317 46725   1 14:51:16  pts/8  0:00 grep spappl
[root@rs600010]/>
```

Figure 16 (Part 2 of 2). Ensuring NetView for AIX Host Daemons Are Configured and Active

The following figure shows successful status for this SSCP-PU set of actions:

```
                                        COMMAND STATUS

Command: OK            stdout: yes            stderr: no

Before command completion, additional instructions may appear below.

[TOP]
nvix_control status


*** Status of NetView Service Point Processes ***

Subsystem          Group          PID      Status
 evp_nvixSrd                       67035    active

Subsystem          Group          PID      Status
 evp_nvixCrd                       67572    active

Subsystem          Group          PID      Status
 evp_nvixAcmd                      68092    active


*** Status of SNA Server, and SSCP-PU Session: ***

SNA is active

SSCP-PU session is active

On SSCP-PU sessions, use SP=RA600010 in RUNCMDS

*** Status of Portmapper ***

/usr/etc/portmap is active.

*** Applications registered to receive commands from Host: ***

1ONVCMD
RS600010S

For additional status and error information refer to
[MORE...3]

F1=Help            F2=Refresh          F3=Cancel          F6=Command
F8=Image           F9=Shell            F10=Exit
```

Figure 17. AIX NetView Service Point Is Active and RUNCMD Applications Are Registered

4.1.3 S/390 View of SSCP-PU Support

The status of AIX NetView Service Point and the RUNCMD applications must be active before proceeding.

The following four figures show S/390 NetView hardware monitor and other information resulting from the use of SSCP-PU AIX NetView Service Point support with different applications sending alerts to S/390 NetView.

4.1.3.1 Using a User Application to Send Alerts to S/390 NetView

This example shows the S/390 hardware monitor when an alert arrives in S/390 NetView generated by a user application called *nvcreatoa* and a message is sent to the S/390 NetView operator using, also, a user application called *nvsendmsg*.

```
[root@rs600010]/> nvsendmsg wtwksha "Testing SSCP-PU msg_to_op"

Sending Message to Operator WTWKSHA
Message Sent to Service Point. Waiting for Status.
Message Received by Service Point


[root@rs600010]/> nvcreateoa "Testing SSCP-PU"
Alert Sent to Service Point. Waiting for Status.
Alert Received by Service Point.
```

Figure 18. AIX Command-Line Entries Used in this Example

```
  NPDA-30A                       * ALERTS-DYNAMIC *

     DOMAIN RESNAME  TYPE TIME  ALERT DESCRIPTION: PROBABLE CAUSE
      RAPAN RS60010  DEV  09:58 OPERATOR NOTIFICATION: NETWORK OPERATOR
      RAPAN RS60010  DEV  09:58 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:57 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:57 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:57 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:56 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:56 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:56 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:56 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:55 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:55 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:55 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:54 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:54 SNMP RESOURCE PROBLEM: UNDETERMINED
      RAPAN RS60010  DEV  09:54 SNMP RESOURCE PROBLEM: UNDETERMINED

 DEPRESS ENTER KEY TO VIEW ALERTS-STATIC

  ???
 CMD==>
  N E T V I E W          SESSION DOMAIN: RAPAN    WTWKSHA   09/22/95 09:58:55
```

Figure 19. A User Application (nvcreateoa) Alert Arrives at S/390 NetView. The alert was generated by a user-written AIX NetView Service Point application, via an AIX command line entry of: nvcreateoa "Testing SSCP-PU".

The S/390 NetView operator can select the arrived-alert and see additional information as shown in Figure 20 on page 28 and Figure 21 on page 29.

The information presented by DOMAIN, COMC, and so on, is known as the hierarchy for this alert. The hierarchy in the user-written application, as shown in these figures, differs from the hierarchy which will be noted when an alert arrives from the NetView for AIX tralertd daemon. In each case, however, note that the PU name, RA60010, is indicated in the hierarchy when SSCP-PU is used.

Later, when MDS is used instead of SSCP-PU the hierarchy will indicate the
CPNAME. This information is of interest to the S/390 NetView operator or CLIST
who issues RUNCMD.

For SSCP-PU, the RUNCMD-targeted resource is PU name.

For MDS, the RUNCMD-targeted resource is CP name.

```
 NPDA-45A            * RECOMMENDED ACTION FOR SELECTED EVENT *     PAGE  1 OF  1
 RAPAN       * RA7NCKH      RA60010      _NV/AI       NV/AIX       RS60010
             +--------+   +--------+   +--------+   +--------+   +--------+
 DOMAIN      |  COMC  |---|  CTRL  |---|  COMC  |---|   SP   |---|   DEV  |
             +--------+   +--------+   +--------+   +--------+   +--------+

        ACTIONS - TEXT FOR EF00 NOT FOUND IN 81 TABLE
                  TEXT FOR EF01 NOT FOUND IN 81 TABLE




 ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)
 BNJ1538I * = POTENTIAL MISSING RESOURCE LEVELS DUE TO A COMPLEX LINK
 ???
CMD==>
 N E T V I E W           SESSION DOMAIN: RAPAN     WTWKSHA   09/22/95 09:59:02
```

Figure 20. nvcreateoa Recommended Action and Hierarchy Information

```
  NPDA-43S                        * EVENT DETAIL *                   PAGE  1 OF  1

   RAPAN    * RA7NCKH      RA60010       _NV/AI        NV/AIX        RS60010
            +--------+   +--------+   +--------+    +--------+    +--------+
   DOMAIN   |  COMC  |---|  CTRL  |---|  COMC  |----|   SP   |----|   DEV  |
            +--------+   +--------+   +--------+    +--------+    +--------+

  EVENT TYPE: UNKNOWN

  DESCRIPTION: OPERATOR NOTIFICATION

  PROBABLE CAUSE:
    NETWORK OPERATOR

   USER ENTERED TEXT:
     nvcreateoa @ Fri Sep 22 09:58:08 1995 >> Testing SSCP-PU

   FLAGS:
    OPERATOR INITIATED




   UNIQUE ALERT IDENTIFIER: PRODUCT ID - 7013      ALERT ID - 37C07EDB

   ENTER A (ACTION) OR DM (DETAIL MENU)
   BNJ1538I * = POTENTIAL MISSING RESOURCE LEVELS DUE TO A COMPLEX LINK
   ???
  CMD==>
   N E T V I E W           SESSION DOMAIN: RAPAN    WTWKSHA   09/22/95 10:04:15
```

Figure 21. nvcreateoa Event Detail Information

4.1.3.2 Using NetView for AIX tralertd to Send Alerts to S/390 NetView

```
[root@rs600010]/> event -d "Testing SSCP-PU"
 Sent event Testing SSCP-PU
```

Figure 22. AIX Command-line Entries Used in this Example

```
 NPDA-30A                        * ALERTS-DYNAMIC *

    DOMAIN RESNAME  TYPE TIME   ALERT DESCRIPTION: PROBABLE CAUSE
    RAPAN  RS60010  DEV  10:04  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:04  PROBLEM RESOLVED: REMOTE NODE
    RAPAN  RS60010  DEV  10:04  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  NV2MGR1_ SNMP 10:04  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:04  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:03  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:03  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:03  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:03  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:03  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:03  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:03  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:02  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:02  SNMP RESOURCE PROBLEM: UNDETERMINED
    RAPAN  RS60010  DEV  10:02  SNMP RESOURCE PROBLEM: UNDETERMINED

 DEPRESS ENTER KEY TO VIEW ALERTS-STATIC

 ???
CMD==>
 N E T V I E W          SESSION DOMAIN: RAPAN    WTWKSHA   09/22/96 10:04:28
```

Figure 23. A NetView for AIX ALERT Arrives at S/390 NetView. The alert was generated by the NetView for AIX command: event -d "Testing SSCP-PU" The sent event had been configured (using NetView for AIX Event Configuration support) to include the "comment" as information passed to S/390 NetView as a qualifier. Refer to NetView for AIX event configuration documentation for details.

When an alert arrives from the NetView for AIX tralertd daemon, the name, specified for the PUNAME prompt in the *NetView Service Point Profile Summary* SMIT panel (refer to Figure 7 on page 18), appears in the Hierarchy/Resource List subvector as the AIX NetView Service Point SP-name. This name is shown over the box representing the AIX NetView Service Point in the hierarchy representation of the S/390 NetView hardware monitor DISPLAY (NPDA) panel. For the purpose of hierarchy display, any name is valid. However, it is very convenient to be able to use this name as the SP operand in a CLIST-driven RUNCMD command, using the automation table when an alert arrives.

When the AIX NetView Service Point connection is established using a SSCP-PU session, the SP operand of the RUNCMD command *must* be the name of the PU statement specified in the VTAM definitions. Later, when MDS is used instead of SSCP-PU the hierarchy will indicate the CPNAME. This information is of interest to the S/390 NetView operator or CLIST who issues RUNCMD.

For SSCP-PU, the RUNCMD-targeted resource is PU name.

For MDS, the RUNCMD-targeted resource is CP name.

```
 NPDA-45A           * RECOMMENDED ACTION FOR SELECTED EVENT *      PAGE  1 OF  1
  RAPAN        RA60010       RS60010T     RS60010       RS60010
              +--------+    +--------+    +--------+    +--------+
  DOMAIN      |   SP   |---|    TP   |---|   DEV  |---|   DEV  |
              +--------+    +--------+    +--------+    +--------+

 USER    CAUSED - NONE

 INSTALL CAUSED - NONE

 FAILURE CAUSED - REMOTE NODE
       ACTIONS - I144 - IF PROBLEM REOCCURS THEN DO THE FOLLOWING
                 I142 - REPORT THE FOLLOWING:
                        LOCATION Dave Shogren, Room BB110, ITSO-Raleigh.  Pho
                        DEVICE ADDRESS <none>




 ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)

 ???
CMD==>
 N E T V I E W         SESSION DOMAIN: RAPAN     WTWKSHA    09/22/95 10:05:12
```

Figure 24. NetView for AIX Recommended Action and Hierarchy Information

```
┌─────────────────────────────────────────────────────────────────────────────

  NPDA-43S                        * EVENT DETAIL *                PAGE  1 OF  2

   RAPAN        RA60010       RS60010T      RS60010       RS60010
               +--------+   +--------+   +--------+   +--------+
   DOMAIN      |  SP    |---|   TP   |---|  DEV   |---|  DEV   |
               +--------+   +--------+   +--------+   +--------+

  SEL# TYPE AND NAME OF OTHER RESOURCES ASSOCIATED WITH THIS EVENT:
  ( 1) DEV     RS60010.ITSO.RAL.IBM.COM

  DATE/TIME: RECORDED - 09/22 10:04    CREATED - 09/22/95 10:03:43

  EVENT TYPE: PERMANENT

  DESCRIPTION: PROBLEM RESOLVED

  PROBABLE CAUSES:
     REMOTE NODE

  ENTER A (ACTION), SEL# (CORRELATED EVENTS), OR DM (DETAIL MENU)

  ???
 CMD==>
  N E T V I E W          SESSION DOMAIN: RAPAN    WTWKSHA   09/22/95 10:05:16

└─────────────────────────────────────────────────────────────────────────────
```

Figure 25. NetView for AIX Event Detail Information (Page 1)

```
┌─────────────────────────────────────────────────────────────────────────────

  NPDA-43S                        * EVENT DETAIL *                PAGE  2 OF  2

   RAPAN        RA60010       RS60010T      RS60010       RS60010
               +--------+   +--------+   +--------+   +--------+
   DOMAIN      |  SP    |---|   TP   |---|  DEV   |---|  DEV   |
               +--------+   +--------+   +--------+   +--------+

  QUALIFIERS:
     1)  DEVICE ADDRESS <none>
     2)  EVENT CODE Testing SSCP-PU




  UNIQUE ALERT IDENTIFIER: PRODUCT ID - 5696-7310  ALERT ID - AB85355A

  ENTER A (ACTION) OR DM (DETAIL MENU)

  ???
 CMD==>
  NCCF                           N E T V I E W   RAPAN WTWKSHA  09/22/95 10:07:24

└─────────────────────────────────────────────────────────────────────────────
```

Figure 26. NetView for AIX Event Detail Information (Page 2)

A RUNCMD, from the S/390 to the RISC System/6000, is targeted to the PU name
in the case of SSCP-PU. Later on, in the MDS example, it will be targeted to the
CP name.

The AIX NetView Service Point application does not know if SSCP-PU or MDS is being used. This is managed by AIX NetView Service Point and AIX SNA Server/6000.

Figure 27 on page 33 shows using a user-written AIX NetView Service Point RUNCMD application and Figure 28 on page 34 shows using the NetView for AIX spappld RUNCMD daemon.

```
 * RAPAN     RUNCMD SP=RA60010,APPL=1ONVCMD ANSWER WTWKSHA DF
 -          Command { answer wtwksha df } received.
 -          >>>>> SENDING IN LINE MODE
 -          >>>>> STARTING @ Fri Sep 22 11:56:17 1995
 -          Filesystem    Total KB    free %used    iused %iused Mounted on*
 -          /dev/hd4        28672    14296   50%     1235    15% /*
 -          /dev/hd9var     40960     6076   85%     1622    15% /var*
 -          /dev/hd2       958464    15768   98%    25710    10% /usr*
 -          /dev/hd3       131072    57196   56%       87     0% /tmp*
 -          /dev/hd1       450560   435900    3%       40     0% /home*
 -          /dev/lv00      151552     9956   93%     6450    16% /usr/local*
 -          /dev/lv02       12288     2556   79%       78     1%
            /usr/lpp/netviewdm*
 -          DFS           9000000 9000000    0%        0     0% /...*
 -          <<<<< STOPPING @ Fri Sep 22 11:56:17 1995
 -          <<<<< 9 LINES SENT
 --------------------------------------------------------------------------------




 ???

 NCCF                      N E T V I E W    RAPAN WTWKSHA  09/22/95 11:57:34
```

Figure 27. 1Onvcmd User-Written AIX NetView Service Point RUNCMD Application. The RUNCMD is targeted to the PU when SSCP-PU is being used; to the CP name if MDS is being used.

```
* RAPAN     RUNCMD SP=RA60010,APPL=RS60010S  DF
-           Executing RUNCMD " DF" *
-           Filesystem    Total KB    free %used   iused %iused Mounted on*
-           /dev/hd4        28672    14296   50%    1234    15% /*
-           /dev/hd9var     40960     5804   85%    1621    15% /var*
-           /dev/hd2       958464    15760   98%   25710    10% /usr*
-           /dev/hd3       131072    57196   56%      86     0% /tmp*
-           /dev/hd1       450560   435900    3%      40     0% /home*
-           /dev/lv00      151552     9956   93%    6450    16% /usr/local*
-           /dev/lv02       12288     2556   79%      78     1%
            /usr/lpp/netviewdm*
-           DFS           9000000  9000000    0%       0     0% /...*
--------------------------------------------------------------------------------




???

N E T V I E W           SESSION DOMAIN: RAPAN    WTWKSHA   09/22/95 11:58:39
```

Figure 28. RS60010S NetView for AIX RUNCMD Application.   The RUNCMD APPL name RS60010S was configured in NetView for AIX configure host daemon, spappld.

Note that in the following figure, as mentioned previously, the SEND and RECV counts for the CPNAME resource have not been affected during the above actions, since AIX NetView Service Point was configured for SSCP-PU.

```
 C RAPAN    DISPLAY NET,ID=RA6010CP,SCOPE=ALL
   RAPAN    IST097I  DISPLAY  ACCEPTED
' RAPAN
IST075I  NAME = USIBMRA.RA6010CP , TYPE = ADJACENT CP
IST486I  STATUS= ACT/S    , DESIRED STATE= ACTIV
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST1333I  ADJLIST = ***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 = RS6KSP
IST1184I  CPNAME = USIBMRA.RA6010CP  - NETSRVR = ***NA***
IST1044I  ALSLIST = RA60010  ISTAPNPU
IST1131I  DEVICE = ILU/CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST1081I  ADJACENT LINK STATION = RA60010
IST634I  NAME     STATUS       SID        SEND RECV VR TP NETID
IST635I  RAP      ACTIV/CP-S E0B77813839F789D 0002 0001  0  0 USIBMRA
IST635I  RAP      ACTIV/CP-P F88F01647993E587 0001 0001  0  0 USIBMRA
IST075I  NAME = USIBMRA.RA6003CP , TYPE = ADJACENT CP
IST924I  -------------------------------------------------------------
IST075I  NAME = USIBMRA.RA6010CP , TYPE = DIRECTORY ENTRY
IST1186I  DIRECTORY ENTRY = REGISTERED EN
IST1184I  CPNAME = USIBMRA.RA6010CP  - NETSRVR = USIBMRA.RAP
IST314I  END

???

 NCCF                       N E T V I E W    RAPAN WTWKSHA  09/22/95 11:07:27
```

Figure 29. Display of CP Name Resource Shows No Affect of SSCP-PU Actions. When MDS is used, the above counts will indicate activity resulting from MDS support.

4.2 Using MDS Support By AIX NetView Service Point

```
┌────────────────────┐
│ NetView Service Point│
└────────────────────┘
         │
         │
         └──────▶ ┌──────────────────────────────────┐
                  │ NetView Service Point Profile Summary│
                  └──────────────────────────────────┘


         ┌────────────┐
         │ SNA Server │
         └────────────┘
            │ │ │
            │ │ │
            │ │ └──────▶ ┌────────────────────┐
            │ │          │ SNA Defaults Profile│
            │ │          └────────────────────┘
            │ │
            │ └────────▶ ┌────────────────────┐
            │            │ Control Point Profile│
            │            └────────────────────┘
            │
            └──────────▶ ┌────────────────────┐
                         │ SNA DLC Profile     │
                         └────────────────────┘
                            │
                            │
                            └──────▶ ┌────────────────────┐
                                     │ Link Station Profile│
                                     └────────────────────┘
```
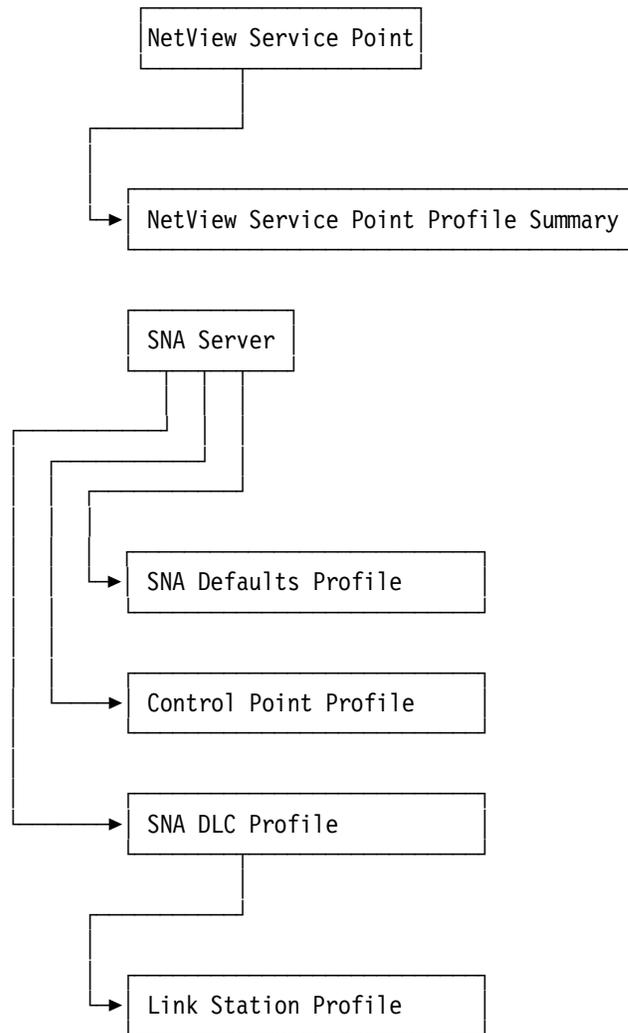
Figure 30. Profiles For MDU Support by AIX NetView Service Point

This is the complete diagram of the AIX SNA Server/6000 profiles we need for a
LU-LU Session used by AIX NetView Service Point. All the SNA Server/6000
profiles are the same as used in the previous SSCP-PU example. Only the
Service Point Profile Summary profile needs to be changed.

SMIT leads to Configure NetView Service Point.

```
┌──────────────────────────────────────────────────────────────────────────────┐
│                                                                                │
│                                    NetView Service Point                       │
│                                                                                │
│   Move cursor to desired item and press Enter.                                 │
│                                                                                │
│                                                                                │
│     Configure NetView Service Point                                            │
│     Control NetView Service Point                                              │
│     Diagnose NetView Service Point                                             │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│     F1=Help          F2=Refresh          F3=Cancel          F8=Image           │
│     F9=Shell         F10=Exit            Enter=Do                              │
│                                                                                │
└──────────────────────────────────────────────────────────────────────────────┘
```
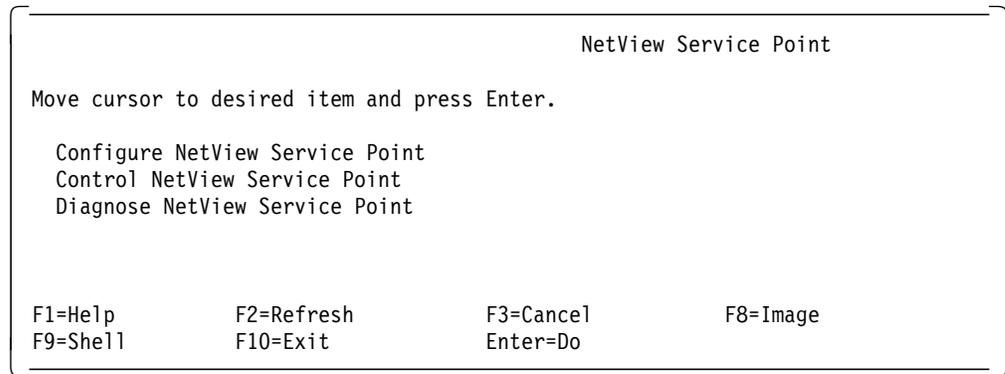
Figure 31. Leading to Configure NetView Service Point

To configure MDS support, specify yes for **Use MDS transport** in the panel
represented by Figure 32 on page 37.

The SSCP ID, Polling Period and PUNAME fields are ignored if MDS transport is
yes. When MDS transport is used, the Control Point CP Name parameter (refer
to Figure 108 on page 128), is available to Service Point applications for use in
building their hierarchy included in MDS-MU subvectors passed onto S/390
NetView. The CPNAME, in the case of MDS transport, is the target for RUNCMDs
issued by S/390 NetView operators.

If MDS transport was specified as no, indicating SSCP-PU was to be used, the
S/390 PUNAME would be the target for RUNCMDs.

The following values were used in this project for MDS transport.

```
┌──────────────────────────────────────────────────────────────────────────────┐
│                                                                                │
│                          NetView Service Point Profile Summary                 │
│                                                                                │
│   Type or select values in entry fields.                                       │
│   Press Enter AFTER making all desired changes.                                │
│                                                                                │
│                                                              [Entry Fields]     │
│     Use MDS transport?                                    yes         +        │
│        If no, enter SSCP ID                               [05000000ffff]        │
│        If no, enter Polling Period (msec)                 [3000]     #          │
│        If no, enter PUNAME                                [ ]                    │
│        If yes, enter the COS FP NETID                     [USIBMRA]              │
│        If yes, enter the COS FP NAU                       [RAPAN]                │
│        If yes, enter the ALERT FP NETID                   [USIBMRA]              │
│        If yes, enter the ALERT FP NAU                     [RAPAN]                │
│     Service Point Codepage                                [ ]                    │
│                                                                                │
│                                                                                │
│                                                                                │
│     F1=Help          F2=Refresh              F3=Cancel          F4=List         │
│     F5=Reset         F6=Command              F7=Edit           F8=Image         │
│     F9=Shell         F10=Exit                Enter=Do                          │
│                                                                                │
└──────────────────────────────────────────────────────────────────────────────┘
```

Figure 32. Configuring MDS Transport

 The names to be entered in the ALERT FP NETID and ALERT FP NAU fields
depend on the configuration of the S/390 NetView.

If the VTAMCP statement in the DSIDMN member has been specified with the USE=YES operand, the identification of the name of the VTAM SSCP, which serves also as the CP name, is entered into the ALERT FP NETID field.

If the VTAMCP statement in the DSIDMN member has been specified with the USE=NO operand, the identification of the name of the S/390 NetView VTAM APPL statement, which has the same name as the NCCFID statement DOMAINID operand in the DSIDMN member, is entered into the ALERT FP NETID field.

The ALERT FP NAU (network accessible unit) field in this case refers to a LU or CP name.

After successful completion of the configuration step, the operator could choose **Show NetView Service Point Status**.

```
                                        Control NetView Service Point

  Move cursor to desired item and press Enter.

    Show NetView Service Point Status
    Start NetView Service Point
    Stop NetView Service Point



  F1=Help          F2=Refresh          F3=Cancel          F8=Image
  F9=Shell         F10=Exit            Enter=Do
```
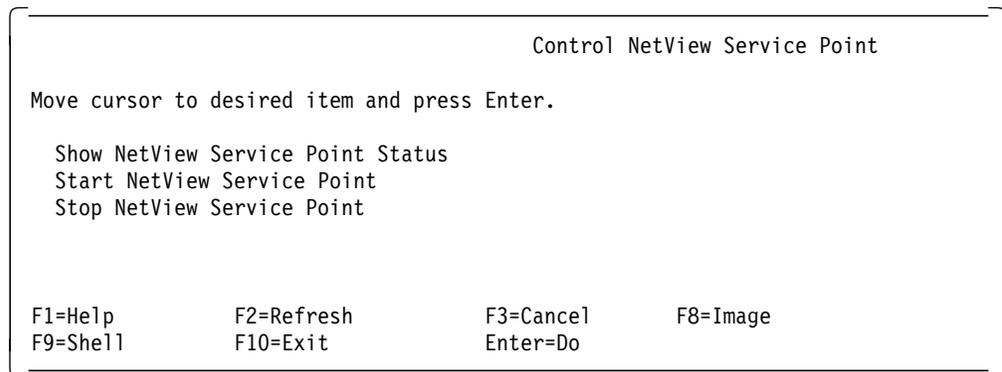
Figure 33. Heading Towards Show NetView Service Point Status

Figure 34 on page 39 is a display of status when AIX NetView Service Point has been started, AIX SNA Server/6000 is active, the link station is active, and MDS transport use has been configured. The AIX SNA Server/6000 and NetView for AIX operator functions discussed in 4.1, "Using a SSCP-PU Session By AIX NetView Service Point" on page 15 are the same for MDS transport as for SSCP-PU. Configuring, for example, NetView for AIX host daemons, is not related to which transport support the AIX NetView Service Point is configured.

```
                                          COMMAND STATUS

Command: OK            stdout: yes           stderr: no

Before command completion, additional instructions may appear below.

[TOP]
nvix_control status


*** Status of NetView Service Point Processes ***

Subsystem         Group          PID     Status
 evp_nvixSrd                     70555   active

Subsystem         Group          PID     Status
 evp_nvixCrd                     70306   active

Subsystem         Group          PID     Status
 evp_nvixAcmd                    67236   active


*** Status of SNA Server, and MDS Session: ***


SNA is active

MDS session is active at NetView for AIX
Status of host and links unknown
Using CP NAME: RA6010CP
On MDS sessions, use SP=RA6010CP in RUNCMDS
and use Applications shown in
*** Applications registered to receive commands from Host: ***
for appl= in RUNCMD

*** Focal Point Status Information: ***
COS FP: USIBMRA.RAPAN
ALERT FP: USIBMRA.RAPAN

*** Status of Portmapper ***

/usr/etc/portmap is active.

*** Applications registered to receive commands from Host: ***

1ONVCMD
RS60010S



For additional status and error information refer to
your system error log.


[BOTTOM]

F1=Help          F2=Refresh      F3=Cancel       F6=Command
F8=Image         F9=Shell        F10=Exit
```

Figure 34. AIX NetView Service Point Active and Show Status with MDS Transport Configured

The AIX SNA Server/6000 configuration profiles used in the example are shown in Appendix A, "SNA Profiles for SSCP-PU and MDS Connection with AIX NetView Service Point" on page 125.

As mentioned previously, in the following example AIX SNA Server/6000 and the link station are active.

The RISC System/6000 operator could display the link station in a short (summary) or long (additional detail) manner.

```
                                      Display Active Link Information

 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.

                                                    [Entry Fields]
   Output format                                    short    +

   Link station name                                [RS6KSP]  +

   Device name                                      []




 F1=Help           F2=Refresh          F3=Cancel           F4=List
 F5=Reset          F6=Command          F7=Edit             F8=Image
 F9=Shell          F10=Exit            Enter=Do
```

Figure 35 (Part 1 of 2). SNA Server/6000 Short Display Active Link When MDS Transport is Used

```
                                      COMMAND STATUS

 Command: OK            stdout: yes           stderr: no

 Before command completion, additional instructions may appear below.

      Link           Adjacent      Node   Device                  # of local  In
      station        CP name       type   name        State       sessions    use
 -------------- ----------------- ----- --------- ---------- ---------- -----
 RS6KSP         USIBMRA.RAP       NN    tok0      Active                   8 Yes



 F1=Help           F2=Refresh          F3=Cancel           F6=Command
 F8=Image          F9=Shell            F10=Exit
```

Figure 35 (Part 2 of 2). SNA Server/6000 Short Display Active Link When MDS Transport is Used

Beginning with Figure 36 on page 41, the figures show the activated LU 6.2 sessions when MDS transport is used by AIX NetView Service Point and the implicit support from this version of AIX SNA Server/6000 has been taken care of. Alerts, RUNCMDs and msg_to_op functions have been executed when the following display was issued.

```
                                              Display SNA Resources

 Move cursor to desired item and press Enter.

   Display the Status of SNA
   Display SNA Global Information
   Display Session Information
   Display Active Link Information
   Display APPN Topology Database
   Display APPN Directory Database




 F1=Help          F2=Refresh          F3=Cancel          F8=Image
 F9=Shell         F10=Exit            Enter=Do
```

Figure 36 (Part 1 of 7). AIX SNA Server/6000 Display LU6.2 Session Information When MDS Used by AIX NetView Service Point

```
                                              Display Session Information

 Move cursor to desired item and press Enter.

   Display LU 1, LU 2, and LU 3 Session Information
   Display LU 6.2 Session Information
   Display Independent LU 6.2 Session Limits Information
   Display APPN Intermediate Session Information



 F1=Help          F2=Refresh          F3=Cancel          F8=Image
 F9=Shell         F10=Exit            Enter=Do
```

Figure 36 (Part 2 of 7). AIX SNA Server/6000 Display LU6.2 Session Information When MDS Used by AIX NetView Service Point

```
                                        Display LU 6.2 Session Information

 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.

                                                        [Entry Fields]
  Output format                                         short

  Local LU name                                         []
  Local LU alias                                        []

  Partner LU name                                       []
  Partner LU alias                                      []

  Mode name                                             []

  Link station name                                     []

  Conversation group ID                                 []
  Session ID                                            []


 F1=Help           F2=Refresh          F3=Cancel           F4=List
 F5=Reset          F6=Command          F7=Edit             F8=Image
 F9=Shell          F10=Exit            Enter=Do
```

Figure 36 (Part 3 of 7). AIX SNA Server/6000 Display LU6.2 Session Information When MDS Used by AIX NetView Service Point

```
 Command: OK              stdout: yes            stderr: no

 Before command completion, additional instructions may appear below.

             Local            Partner         Mode       Link
  CGID       LU name          LU name         name       station      State
 ------      -----------------  -----------------  --------  -----------  ----------
 8          USIBMRA.RA6010CP  USIBMRA.RAPAN   SNASVCMG  RS6KSP       Available
 7          USIBMRA.RA6010CP  USIBMRA.RAP     CPSVCMG   RS6KSP       Available
 6          USIBMRA.RA6010CP  USIBMRA.RAP     CPSVCMG   RS6KSP       Available



 F1=Help           F2=Refresh          F3=Cancel           F4=List
 F5=Reset          F6=Command          F7=Edit             F8=Image
 F9=Shell          F10=Exit            Enter=Do
```

Figure 36 (Part 4 of 7). AIX SNA Server/6000 Display LU6.2 Session Information When MDS Used by AIX NetView Service Point

```
                            Display LU 6.2 Session Information

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                [Entry Fields]
  Output format                                 long

  Local LU name                                 []
  Local LU alias                                []

  Partner LU name                               []
  Partner LU alias                              []

  Mode name                                     []

  Link station name                             []

  Conversation group ID                         []
  Session ID                                    []


F1=Help          F2=Refresh       F3=Cancel        F4=List
F5=Reset         F6=Command       F7=Edit          F8=Image
F9=Shell         F10=Exit         Enter=Do
```

Figure 36 (Part 5 of 7). AIX SNA Server/6000 Display LU6.2 Session Information When MDS Used by AIX NetView Service Point

```
     LU 6.2 Session Information

Number of sessions                      3

1>Session ID                            X′F08f016482370CBE′
  Conversation group ID                 8
  Session status                        Available
  Link station profile name             RS6KSP
  LU type                               6.2
  Session type                          Independent LU-LU session
  LU alias                              RA6010CP
  LU name                               USIBMRA.RA6010CP
  Partner LU alias
  Partner LU name                       USIBMRA.RAPAN
  Mode name                             SNASVCMG
  Symbolic destination name             DYNAMIC[3]
  Send maximum RU size                  256
  Receive maximum RU size               256
  Pacing type                           Adaptive
  Send pacing window                    4096
  Receive pacing window                 1
  Local Form Session ID (LFSID)         X′00102′
  Outbound destination address (DAF)    X′02′
  Outbound origin address (OAF)         X′01′
  OAF-DAF assignor indicator (ODAI)     B′0′
  Procedure correlator ID (PCID)        X′F88F016482370CBE′
  PCID generator CP name                USIBMRA.RAP
  Host SSCP ID                          (not applicable)
  Primary LU                            Local LU
  Contention winner?                    Yes
  Session security supported?           No

2>Session ID                            X′F08F016482370CB0′
  Conversation group ID                 7
  Session status                        Available
  Link station profile name             RA60010
  LU type                               6.2
  Session type                          Independent LU-LU session
  LU alias                              RA6010CP
  LU name                               USIBMRA.RA6010CP
  Partner LU alias
  Partner LU name                       USIBMRA.RAP
  Mode name                             CPSVCMG
  Symbolic destination name             DYNAMIC[2]
  Send maximum RU size                  512
  Receive maximum RU size               512
  Pacing type                           Adaptive
  Send pacing window                    2
  Receive pacing window                 1
  Local Form Session ID (LFSID)         X′00002′
  Outbound destination address (DAF)    X′02′
  Outbound origin address (OAF)         X′00′
  OAF-DAF assignor indicator (ODAI)     B′0′
  Procedure correlator ID (PCID)        X′F88F016482370CB0′
  PCID generator CP name                USIBMRA.RAP
  Host SSCP ID                          (not applicable)
  Primary LU                            Partner LU
  Contention winner?                    No
  Session security supported?           No
```

Figure 36 (Part 6 of 7). AIX SNA Server/6000 Display LU6.2 Session Information When MDS Used by AIX NetView Service Point

```
  3>Session ID                           X'E0B7781383E85DD5'
    Conversation group ID                6
    Session status                       Available
    Link station profile name            RS6KSP
    LU type                              6.2
    Session type                         Independent LU-LU session
    LU alias                             RA6010CP
    LU name                              USIBMRA.RA6010CP
    Partner LU alias
    Partner LU name                      USIBMRA.RAP
    Mode name                            CPSVCMG
    Symbolic destination name            DYNAMIC[1]
    Send maximum RU size                 512
    Receive maximum RU size              512
    Pacing type                          Adaptive
    Send pacing window                   15
    Receive pacing window                1
    Local Form Session ID (LFSID)        X'10200'
    Outbound destination address (DAF)   X'00'
    Outbound origin address (OAF)        X'02'
    OAF-DAF assignor indicator (ODAI)    B'1'
    Procedure correlator ID (PCID)       X'E0B7781383E85DD5'
    PCID generator CP name               USIBMRA.RA6010CP
    Host SSCP ID                         (not applicable)
    Primary LU                           Partner LU
    Contention winner?                   YES
    Session security supported?          No
```

Figure 36 (Part 7 of 7). AIX SNA Server/6000 Display LU6.2 Session Information When MDS Used by AIX NetView Service Point

At the S/390 VTAM end of the connection, the CPNAME involved is RA6010CP and PU is RA60010 (refer to Figure 109 on page 131 and Figure 108 on page 128).

The following figures are from S/390 NetView when the link station and CDRSC was being activated:

```
  C RAPAN    DISPLAY NET,ID=RA60010,SCOPE=ALL
    RAPAN    IST097I  DISPLAY  ACCEPTED
  ' RAPAN
 IST075I  NAME = RA60010          , TYPE = PU_T2
 IST486I  STATUS= CONCT     , DESIRED STATE= CONCT
 IST1043I  CP NAME = RA6010CP, CP NETID = USIBMRA , DYNAMIC LU = YES
 IST136I  SWITCHED SNA MAJOR NODE = RA2RS6KY
 IST654I  I/O TRACE = OFF, BUFFER TRACE = ON - AMOUNT = FULL
 IST355I  LOGICAL UNITS:
 IST080I  RA600102 CONCT      RA600103 CONCT      RA600104 CONCT
 IST080I  RA600105 CONCT      RA600106 CONCT      RA600107 CONCT
 IST080I  RA600108 CONCT      RA600109 CONCT      RA60010C CONCT
 IST314I  END
 -------------------------------------------------------------------------------


    ???

    NCCF                       N E T V I E W    RAPAN WTWKSHA  09/22/95 11:46:39
```

Figure 37. Display PU When the Link Station Has not Yet Been Activated

The resource used in the MDS support is a CDRSC. This resource can be separated from the switched major node definition as shown in Figure 110 on page 132. Instead, the definition could have been dynamically created at link station activation time, with the name that is created being the CPNAME. If this option is chosen, the CDRSC shown in the referenced figure would not be ACTIV in the S/390 until the link station is activated. In the following case and throughout the remainder of the examples in this document, the defined CDRSC is ACTIV and dynamic allocation of this resource was not used.

```
 C RAPAN    DISPLAY NET,ID=RA6010CP,SCOPE=ALL
   RAPAN    IST097I  DISPLAY  ACCEPTED
 ′ RAPAN
 IST075I  NAME = USIBMRA.RA6010CP , TYPE = ADJACENT CP
 IST486I  STATUS= ACTIV     , DESIRED STATE= ACTIV
 IST977I  MDLTAB=***NA*** ASLTAB=***NA***
 IST1333I  ADJLIST = ***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 = RS6KSP
 IST1184I  CPNAME = USIBMRA.RA6010CP  - NETSRVR = ***NA***
 IST1044I  ALSLIST = RA60010  ISTAPNPU
 IST1131I  DEVICE = ILU/CDRSC
 IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
 IST171I  ACTIVE SESSIONS = 0000000000, SESSION REQUESTS = 0000000000
 IST314I  END
 -------------------------------------------------------------------------------



 ???
```

Figure 38. Optional CDRSC Is ACTIV Although not in Session

Once the link station is activated, the resources indicated in Figure 39 on page 47 are shown by a S/390 NetView display of the PU.

Note that the resource RA6010CP shows as an active resource in the display of the PU. This session will be used by AIX NetView Service Point in this example, since we are using MDS transport. If this session is not shown and the session remains to appear not in session as in Figure 38 on page 46, issuing the S/390 FOCALPT CHANGE command may be necessary. An example of these commands are:

```
 FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6010CP,FPCAT=ALERT
 FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6010CP,FPCAT=OPS_MGMT
 FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6010CP,FPCAT=SPCS
 FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6010CP,FPCAT=STATUS
 FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6010CP,FPCAT=LINKSERV
```

The session *must* be ACTIV and in session with the S/390 VTAM (RAP, in this example) and/or NetView (RAPAN) as indicated by Figure 40 on page 48 to proceed. Issue the FOCALPT CHANGE command if necessary to have this relationship established.

```
C RAPAN    DISPLAY NET,ID=RA60010,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
' RAPAN
IST075I  NAME = RA60010          , TYPE = PU_T2.1
IST486I  STATUS= ACTIV--L--, DESIRED STATE= ACTIV
IST1043I  CP NAME = RA6010CP, CP NETID = USIBMRA , DYNAMIC LU = YES
IST1105I  RESOURCE STATUS TGN CP-CP TG CHARACTERISTICS
IST1106I  RA60010  AC/R    21 YES    982D0000000000000000017100808080
IST136I  SWITCHED SNA MAJOR NODE = RA2RS6KY
IST081I  LINE NAME = J0007027, LINE GROUP = EG07L02 , MAJNOD = RA7NCKH
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  RA600102 PACTL      RA600103 PACTL      RA600104 PACTL
IST080I  RA600105 PACTL      RA600106 ACTIV      RA600107 ACTIV
IST080I  RA600108 ACTIV      RA600109 ACTIV      RA60010C ACTIV
IST080I  RA6010CP ACT/S
IST314I  END
--------------------------------------------------------------------------------



???

NCCF                     N E T V I E W    RAPAN WTWKSHA  09/22/95 12:53:32
```

Figure 39. Link Station and CP NAME Resource Is ACTIV in the S/390. The above occurs as result of the RISC System/6000 configured and VTAM definition values shown in the Appendix.

Figure 40 on page 48 is the CDRSC resource used for the MDS transport support in this example. The effective display is the same if the CPNAME resource was in an optional CDRSC (as in this case) or dynamically allocated at the time VTAM and AIX SNA Server interacted at link station initiation time.

Compare Figure 40 on page 48 with Figure 38 on page 46 and note the additional session reported in Figure 40 on page 48.

In the shown example, alerts, RUNCMDs and message-to-operator NMVTs had all taken place prior to capturing the display.

```
C RAPAN    DISPLAY NET,ID=RA6010CP,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
' RAPAN
IST075I  NAME = USIBMRA.RA6010CP , TYPE = ADJACENT CP
IST486I  STATUS= ACT/S    , DESIRED STATE= ACTIV
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST1333I  ADJLIST = ***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 = RS6KSP
IST1184I  CPNAME = USIBMRA.RA6010CP  - NETSRVR = ***NA***
IST1044I  ALSLIST = RA60010  ISTAPNPU
IST1131I  DEVICE = ILU/CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000004, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST1081I  ADJACENT LINK STATION = RA60010
IST634I  NAME       STATUS          SID          SEND RECV VR TP NETID
IST635I  RAP        ACTIV/CP-S E0B7781383E85DD5 0004 0001  0  0 USIBMRA
IST635I  RAPAN      ACTIV-P    F88F016482370CBE 000A 000C  0  0 USIBMRA
IST635I  RAP        ACTIV/CP-P F88F016482370CB0 0001 0003  0  0 USIBMRA
IST924I  -----------------------------------------------------------
IST075I  NAME = USIBMRA.RA6010CP , TYPE = DIRECTORY ENTRY
IST1186I  DIRECTORY ENTRY = REGISTERED EN
IST1184I  CPNAME = USIBMRA.RA6010CP  - NETSRVR = USIBMRA.RAP
IST314I  END
```

Figure 40. The Dynamic CDRSC Is Shown as ACTIV and in Session When MDS Will Be Used. The above SEND and RECV counts will be affected during the actions included in this example, since AIX NetView Service Point was configured for MDS transport.

4.2.1 S/390-View of MDS Transport Support

Refer to 4.1.3, "S/390 View of SSCP-PU Support" on page 26 for operational matters related to the following example. The operations are the same for MDS transport as for SSCP-PU, with the exception of the RUNCMD being aimed at CPNAME in the case of MDS transport.

The following figures show the results of MDS transport being used from/to RISC System/6000 AIX SNA Server/6000 and can be compared with 4.1.3, "S/390 View of SSCP-PU Support" on page 26 for additional comments.

```
 NPDA-30A                      * ALERTS-DYNAMIC *

    DOMAIN RESNAME  TYPE TIME  ALERT DESCRIPTION: PROBABLE CAUSE
     RAPAN RS60010  DEV  16:05 OPERATOR NOTIFICATION: NETWORK OPERATOR
     RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
     RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
     RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
     RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
     RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
     RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
     RAPAN RA6010CP*DEV  16:03 SNMP RESOURCE PROBLEM: UNDETERMINED
     RAPAN RA6010CP*DEV  16:03 SNMP RESOURCE PROBLEM: UNDETERMINED
     RAPAN RA6010CP*DEV  16:03 PROBLEM RESOLVED: REMOTE NODE
     RAPAN RA6010CP*DEV  16:03 PROBLEM RESOLVED: COMMUNICATIONS INTERFACE
     RAPAN RA6010CP*DEV  16:03 SNMP RESOURCE PROBLEM: UNDETERMINED

 DEPRESS ENTER KEY TO VIEW ALERTS-STATIC

 ???
CMD==>
 N E T V I E W         SESSION DOMAIN: RAPAN   WTWKSHA  09/22/95 16:05:40
```

Figure 41. A User Application (nvcreateoa) Alert Arrives at S/390 NetView. The alert was generated by a user-written AIX NetView Service Point application, via an AIX command line entry of: nvcreateoa "Testing MDS".

The S/390 NetView operator can select the arrived-alert and see additional information as shown in the two figures beginning with Figure 42 on page 50.

The information presented by DOMAIN, COMC and so on is known as the hierarchy for this alert. The hierarchy in the user-written application as, shown in the following figures, differs from the hierarchy which will be noted when an alert arrives from the NetView for AIX tralertd daemon. The hierarchy indicates CPNAME in both cases. This information is of interest to the S/390 NetView operator or CLIST that issues RUNCMD.

For MDS, the RUNCMD-targeted resource is CP name.

For SSCP-PU, the RUNCMD-targeted resource is PU name.

```
NPDA-45A            * RECOMMENDED ACTION FOR SELECTED EVENT *    PAGE  1 OF  1
RAPAN        RA6010CP    NCP_NAME    RA60010A    NV/AIX        RS60010
             +--------+  +--------+  +--------+  +--------+  +--------+
DOMAIN       |  CP    |--|  COMC  |--|  CTRL  |--|  SP    |--|  DEV   |
             +--------+  +--------+  +--------+  +--------+  +--------+

        ACTIONS - TEXT FOR EF00 NOT FOUND IN 81 TABLE
                  TEXT FOR EF01 NOT FOUND IN 81 TABLE






ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)

???
CMD==>
 N E T V I E W          SESSION DOMAIN: RAPAN    WTWKSHA   09/22/95 16:05:46
```

Figure 42. nvcreateoa Recommended Action and Hierarchy Information

```
NPDA-43S                    * EVENT DETAIL *                 PAGE  2 OF  2

 RAPAN        RA6010CP    NCP_NAME    RA60010A    NV/AIX        RS60010
             +--------+  +--------+  +--------+  +--------+  +--------+
 DOMAIN      |  CP    |--|  COMC  |--|  CTRL  |--|  SP    |--|  DEV   |
             +--------+  +--------+  +--------+  +--------+  +--------+
USER ENTERED TEXT:
   nvcreateoa @ Fri Sep 22 16:04:33 1995 >> Testing MDS

FLAGS:
   OPERATOR INITIATED




UNIQUE ALERT IDENTIFIER: PRODUCT ID - 7013     ALERT ID - 37C07EDB

ENTER A (ACTION) OR DM (DETAIL MENU)

???
CMD==>
 N E T V I E W          SESSION DOMAIN: RAPAN    WTWKSHA   09/22/95 16:06:01
```

Figure 43. nvcreateoa Event Detail Information

```
NPDA-30A                      * ALERTS-DYNAMIC *

  DOMAIN RESNAME   TYPE TIME  ALERT DESCRIPTION: PROBABLE CAUSE
   RAPAN RA6010CP*DEV  16:05 SNMP RESOURCE PROBLEM: UNDETERMINED
   RAPAN RA6010CP*DEV  16:05 PROBLEM RESOLVED: REMOTE NODE
   RAPAN RA6010CP*DEV  16:05 SNMP RESOURCE PROBLEM: UNDETERMINED
   RAPAN RS60010   DEV  16:05 OPERATOR NOTIFICATION: NETWORK OPERATOR
   RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
   RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
   RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
   RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
   RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
   RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
   RAPAN RA6010CP*DEV  16:03 SNMP RESOURCE PROBLEM: UNDETERMINED
   RAPAN RA6010CP*DEV  16:03 SNMP RESOURCE PROBLEM: UNDETERMINED
   RAPAN RA6010CP*DEV  16:03 PROBLEM RESOLVED: REMOTE NODE
   RAPAN RA6010CP*DEV  16:03 PROBLEM RESOLVED: COMMUNICATIONS INTERFACE
   RAPAN RA6010CP*DEV  16:03 SNMP RESOURCE PROBLEM: UNDETERMINED

 DEPRESS ENTER KEY TO VIEW ALERTS-STATIC

 ???
CMD==>
 N E T V I E W          SESSION DOMAIN: RAPAN    WTWKSHA  09/22/95 16:05:40
```

*Figure 44. A NetView for AIX Alert Arrives at S/390 NetView. The alert was generated
by the NetView for AIX AIX command: event -d "some comment". The sent event had
been configured (using NetView for AIX Event Configuration support) to include the "some
comment" as information passed to S/390 NetView as a qualifier. Refer to NetView for
AIX event configuration documentation for details.*

When an alert arrives from the NetView for AIX tralertd daemon, the name
specified for the CP appears in the Hierarchy/Resource List subvector as the AIX
NetView Service Point SP name, and is shown over the box representing the
service point in the hierarchy representation in S/390 NetView hardware monitor
display panels. This is very convenient, since this name is used as the SP
operand in a CLIST-driven RUNCMD command, using the automation table when
the alert arrives. When the AIX NetView Service Point connection is established
using MDS support, the SP operand of the RUNCMD command *must* be the
name of the CP in the RS/6000 running AIX NetView Service Point.

For MDS, the RUNCMD-targeted resource is CP name.

For SSCP-PU, the RUNCMD-targeted resource is PU name.

```
NPDA-45A           * RECOMMENDED ACTION FOR SELECTED EVENT *     PAGE  1 OF  1
 RAPAN      RA6010CP     RS60010T      RS60010      RS60010
            +--------+   +--------+   +--------+   +--------+
 DOMAIN     |  SP    |---|  TP    |---|  DEV   |---|  DEV   |
            +--------+   +--------+   +--------+   +--------+

USER     CAUSED - NONE

INSTALL CAUSED - NONE

FAILURE CAUSED - REMOTE NODE
        ACTIONS - I144 - IF PROBLEM REOCCURS THEN DO THE FOLLOWING
                  I142 - REPORT THE FOLLOWING:
                         LOCATION Dave Shogren, Room BB110, ITSO-Raleigh.  Pho
                         DEVICE ADDRESS <none>




ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)

???
CMD==>
 N E T V I E W           SESSION DOMAIN: RAPAN     WTWKSHA   09/22/95 16:06:07
```

Figure 45. NetView for AIX Recommended Action and Hierarchy Information

```
NPDA-43S                     * EVENT DETAIL *               PAGE  1 OF  2

 RAPAN      RA6010CP     RS60010T      RS60010      RS60010
            +--------+   +--------+   +--------+   +--------+
 DOMAIN     |  SP    |---|  TP    |---|  DEV   |---|  DEV   |
            +--------+   +--------+   +--------+   +--------+

SEL# TYPE AND NAME OF OTHER RESOURCES ASSOCIATED WITH THIS EVENT:
( 1) DEV    RS60010.ITSO.RAL.IBM.COM

DATE/TIME: RECORDED - 09/22 16:05    CREATED - 09/22/95 16:04:58

EVENT TYPE: PERMANENT

DESCRIPTION: PROBLEM RESOLVED

PROBABLE CAUSES:
   REMOTE NODE

ENTER A (ACTION), SEL# (CORRELATED EVENTS), OR DM (DETAIL MENU)

???
CMD==>
 N E T V I E W           SESSION DOMAIN: RAPAN     WTWKSHA   09/22/95 16:06:10
```

Figure 46. NetView for AIX Event Detail Information (Page 1)

```
  NPDA-43S                      * EVENT DETAIL *                  PAGE  2 OF  2

   RAPAN        RA6010CP     RS60010T      RS60010       RS60010
              +--------+   +--------+   +--------+   +--------+
   DOMAIN     |  SP    |---|  TP    |---|  DEV   |---|  DEV   |
              +--------+   +--------+   +--------+   +--------+

  QUALIFIERS:
     1)   DEVICE ADDRESS <none>
     2)   EVENT CODE Testing MDS




  UNIQUE ALERT IDENTIFIER: PRODUCT ID - 5696-7310   ALERT ID - AB85355A

  ENTER A (ACTION) OR DM (DETAIL MENU)

  ???
 CMD==>
  NCCF                         N E T V I E W    RAPAN WTWKSHA  09/22/95 16:06:57
```

Figure 47. NetView for AIX Event Detail Information (Page 2)

A RUNCMD, from the S/390 to the RISC System/6000, is targeted to the CP name in the case of MDS transport. Earlier, in the SSCP-PU example, it was targeted at the PU name.

The AIX NetView Service Point application does not know if SSCP-PU or MDS is being used; this is managed by AIX NetView Service Point and AIX SNA Server/6000.

The following example is for the NetView for AIX spappld RUNCMD daemon.

```
* RAPAN     RUNCMD SP=RA6010CP,APPL=RS60010S  DF
-           Executing RUNCMD " DF" *
-           Filesystem    Total KB     free %used    iused %iused Mounted on*
-           /dev/hd4        28672    14296   50%     1234    15% /*
-           /dev/hd9var     40960     5804   85%     1621    15% /var*
-           /dev/hd2       958464    15760   98%    25710    10% /usr*
-           /dev/hd3       131072    57196   56%       86     0% /tmp*
-           /dev/hd1       450560   435900    3%       40     0% /home*
-           /dev/lv00      151552     9956   93%     6450    16% /usr/local*
-           /dev/lv02       12288     2556   79%       78     1%
            /usr/lpp/netviewdm*
-           DFS           9000000  9000000    0%        0     0% /...*
-------------------------------------------------------------------------------




???

N E T V I E W          SESSION DOMAIN: RAPAN    WTWKSHA   09/22/95 14:58:39
```

Figure 48. RS60010S NetView for AIX RUNCMD Application.   The RUNCMD APPL name RS60010S was configured in NetView for AIX configure host daemon, spappld.

Chapter 5. Using AIX NetView Service Point in a Non-APPN (Subarea) Network

This is the complete diagram for using an AIX NetView Service Point LU-LU connection without APPN connectivity.

```
        ┌──────────────────────┐
        │ NetView Service Point│
        └──────────────────────┘
                    │
          ┌─────────┘
          │
          ▼
    ┌──────────────────────────────────┐
    │ NetView Service Point Profile Summary│
    └──────────────────────────────────┘


        ┌──────────────┐
        │  SNA Server  │
        └──────────────┘
          │ │ │ │
          │ │ │ └──────┐
          │ │ │        ▼
          │ │ │   ┌──────────────────────┐
          │ │ │   │ SNA Defaults Profile │
          │ │ │   └──────────────────────┘
          │ │ │
          │ │ └──▶┌──────────────────────┐
          │ │     │ Control Point Profile│
          │ │     └──────────────────────┘
          │ │
          │ └────▶┌──────────────────────┐
          │       │   SNA DLC Profile    │
          │       └──────────────────────┘
          │              │
          │              └──▶┌──────────────────────┐
          │                  │ Link Station Profile │
          │                  └──────────────────────┘
          │
          └─────────────▶┌──────────────────────────────┐
                         │ Partner LU 6.2 Location Profile│
                         └──────────────────────────────┘
```
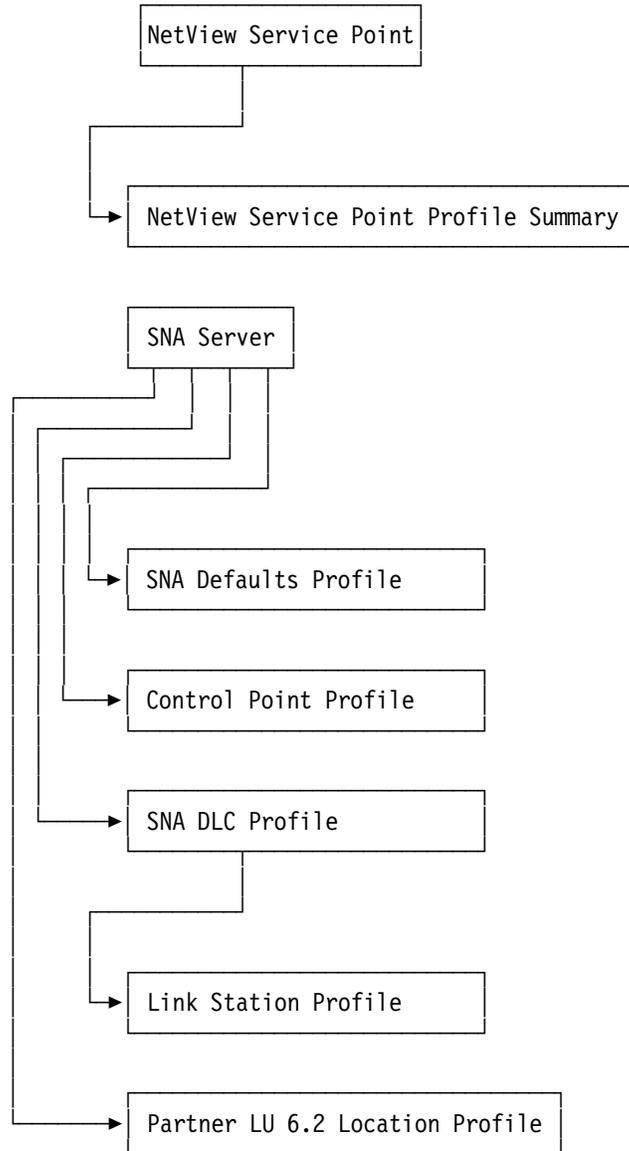
Figure 49. Profiles for Non-APPN (Subarea) Connection with AIX NetView Service Point

55

The SNA profiles used in this example can be found in Appendix C, "Selected AIX SNA Server/6000 Profiles for Non-APPN (Subarea) Connection" on page 133. As you can see, one additional AIX SNA Server/6000 profile is needed in this non-APPN (subarea) environment to set up the LU-LU session since the APPN directory mechanisms are not available. This additional profile is the Partner LU Location Profile, shown in Figure 113 on page 134.

When AIX NetView Service Point requires to initiate a session to pass an alert to S/390 NetView, the focal point in SNA network management architecture, the AIX SNA Server/6000 needs to know where to route the BIND for this session. With APPN, directory mechanisms exist to find the partner LU for this session. Without APPN directory mechanisms, the Partner LU6.2 Location Profile is required to find the partner LU. Figure 113 on page 134 explains the values for the Partner LU6.2

In several connections we found that even with the Partner LU Location Profile it was not possible to establish the LU 6.2 connection between AIX and the S/390 host. In these cases we had to do a focalpt change as described in the examples in Appendix G, "Additional Connection Examples" on page 153. The focalpt change command we used can be found in Figure 132 on page 168.

Once the LU 6.2 session is established, there is no difference between a non-APPN and an APPN environment when handling the AIX NetView Service Point; the S/390 NetView works and shows the same displays as in the examples before.

Chapter 6. Using AIX NetView Service Point Connection to S/390 NetView in Different Hosts

This chapter provides some examples of using AIX NetView Service Point in an environment where the physical connection between AIX and S/390 is not on the same system where the connected-to S/390 NetView is located.

The first example shows AIX NetView Service Point and S/390 NetView in different subareas but in the same network.

The second example shows AIX NetView Service Point and S/390 NetView in different networks.

6.1 Using AIX NetView Service Point Connection to S/390 NetView in a Different Host Subarea

```
┌─────────────────────────────────────────────────────────────────────────┐
│  ┌──────────────────────────┐      ┌──────────────────────────┐          │
│  │ MVS/ESA      SA25        │      │ MVS/ESA      SA18        │          │
│  │ USIBMRA                  │      │ USIBMRA                  │ ─►Operator│
│  │                          │      │                          │          │
│  │ NetView:  RAPAN          │      │ NetView:  RAIAN          │ ◄─►NetView│
│  │ APPL: MDSRTR             │      │ APPL: MDSRTR             │    Log    │
│  │       ACTIV              │      │       ACTIV    ▲         │          │
│  │                          │ LU6.2│                ▼         │ ─►Hardware│
│  │                          │◄────►│ LU RA6010CP ACTIV        │   Monitor │
│  │  PU RA60010  ACTIV       │ MDS-MU                          │          │
│  │ VTAM 4.2                 │      │ VTAM 4.2                 │          │
│  └──────────────────────────┘      └──────────────────────────┘          │
│           ▲                      │                                        │
│           │                      ▼                                        │
│  Token-Ring                                                               │
│  SSCP-PU and LU6.2 MDS-MU                                                 │
│                                  │                                        │
│                                  ▼                                        │
│           ┌──────────────────────────┐                                   │
│           │ AIX SNA Server/6000      │    Control Point (CP) name        │
│           │                          │    - RA6010CP                     │
│           │ AIX NetView Service Point │                                   │
│           │                          │    Link Station Adj. Node         │
│           │ User Service Point Appls │    - CP name   RAIAN              │
│           │              and         │                                   │
│           │ AIX NetView/6000 Host-Conn│   Service Point                  │
│           │                   appls  │    Profile Summary                │
│           │ AIX V3.2                 │                                   │
│           │ RISC System/6000         │    - MDS "yes"                     │
│           └──────────────────────────┘                                   │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 50. The Cross-Domain Environment

In the above example, SA25 and SA18 were used as indicated. The SSCP-PU and LU-LU functions (such as HCON) were run as normal to SA25. The MDS-MU support in NetView and VTAM made the above cross-domain activity transparent to the AIX NetView Service Point and NetView users and applications.

```
NCCF                     N E T V I E W    RAPAN WTWKSHA  09/25/95 16:20:27
C RAPAN    DISPLAY NET,ID=RA60010,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
′ RAPAN
IST075I  NAME = RA60010        , TYPE = PU_T2.1
IST486I  STATUS= ACTIV     , DESIRED STATE= ACTIV
IST1043I  CP NAME = RA6010CP, CP NETID = USIBMRA , DYNAMIC LU = YES
IST136I  SWITCHED SNA MAJOR NODE = RA2RS6KY
IST081I  LINE NAME = J0007063, LINE GROUP = EG07L01 , MAJNOD = RA7NCS8
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  RA600102 PACTL     RA600103 PACTL      RA600104 PACTL
IST080I  RA600105 PACTL     RA600106 ACTIV      RA600107 ACTIV
IST080I  RA600108 ACTIV     RA600109 NEVAC
IST314I  END
--------------------------------------------------------------------------------




???
```

Figure 51. PU Is Active in SA25

In this remaining example, the SSCP-PU and NetView will be in separate VTAM
subareas. The figure above is for SA25. NetView will be in SA18 and the
relationship will be handled cross-domain; the single-domain case is shown in
the first example.

```
NCCF                     N E T V I E W    RAIAN WTWKSHA  09/25/95 16:26:03
- RAIAN    DSI547I BNJDSERV : SECONDARY VSAM DATA SET IS NOW ACTIVE
C RAIAN    DISPLAY NET,ID=RA60010,SCOPE=ALL
  RAIAN    IST097I  DISPLAY  ACCEPTED
′ RAIAN
IST075I  NAME = RA60010        , TYPE = PU_T2
IST486I  STATUS= CONCT      , DESIRED STATE= CONCT
IST136I  SWITCHED SNA MAJOR NODE = RA2RS6KY
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  RA600102 CONCT     RA600103 CONCT      RA600104 CONCT
IST080I  RA600105 CONCT     RA600106 CONCT      RA600107 CONCT
IST080I  RA600108 CONCT     RA600109 CONCT
IST314I  END
--------------------------------------------------------------------------------





???
```

Figure 52. SSCP-PU Session Is not Active on SA18

In this example, the SSCP-PU session is in place with SA25 and the RISC System/6000. Figure 52 on page 58 is as seen from SA18.

Figure 53 on page 59 shows the status of the CP (in this case RA6010CP) on SA18.

```
NCCF                      N E T V I E W   RAIAN WTWKSHA 09/25/95 16:26:51
 - RAIAN   DSI547I BNJDSERV : SECONDARY VSAM DATA SET IS NOW ACTIVE
C RAIAN    DISPLAY NET,ID=RA6010CP,SCOPE=ALL
   RAIAN   IST097I  DISPLAY  ACCEPTED
' RAIAN
IST075I  NAME = RA6010CP       , TYPE = CDRSC
IST486I  STATUS= ACTIV    , DESIRED STATE= ACTIV
IST599I  REAL NAME = ***NA***
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST861I  MODETAB=MODEVR   USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=M3SDLCQ  USS LANGTAB=***NA***
IST597I  CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I  CDRSC    MAJOR NODE = ISTPDILU
IST1044I  ALSLIST = RA60010
IST082I  DEVTYPE = INDEPENDENT LU / CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000000, SESSION REQUESTS = 0000000000
IST172I  NO SESSIONS      EXIST
IST314I  END
--------------------------------------------------------------------------------


   ???
```

Figure 53. LU6.2 Session Is Active on SA18 but no Sessions are In Place

The LU6.2 session will be in place with NetView when driven by (in this project's case) a connection with the matching CP name: RA6010CP and the Link Station Adjacent Node Identification Parameter (CP Name) of the adjacent node, RAIAN.

```
NCCF                      N E T V I E W    RAPAN WTWKSHA  09/25/95 16:27:52
C RAPAN    DISPLAY NET,ID=RA6010CP,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
' RAPAN
IST075I  NAME = USIBMRA.RA6010CP , TYPE = CDRSC
IST486I  STATUS= ACT/S     , DESIRED STATE= ACTIV
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST861I  MODETAB=MODEVR   USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=M3SDLCQ  USS LANGTAB=***NA***
IST597I  CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I  CDRSC    MAJOR NODE = ISTPDILU
IST1044I  ALSLIST = RA60010
IST1131I  DEVICE = ILU/CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST1081I  ADJACENT LINK STATION = RA60010
IST634I  NAME      STATUS         SID         SEND RECV VR TP NETID
IST635I  RAIAN     ACTIV-S    F88F0164404662B0           1  0 USIBMRA
IST635I  RAIAN     ACTIV-P    F86FE1647763709C           1  0 USIBMRA
IST314I  END
-------------------------------------------------------------------------------
???
```

Figure 54. LU is Active on SA25 and Shows in Session with RAIAN (NetView)

The above is from a display in the VTAM Subarea which contains the SSCP-PU
session. The above LU is cross-domain with RAIAN.

```
NCCF                      N E T V I E W    RAPAN WTWKSHA  09/25/95 16:30:15
C RAPAN    DISPLAY NET,ID=RA6010CP,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
' RAPAN
IST075I  NAME = USIBMRA.RA6010CP , TYPE = CDRSC
IST486I  STATUS= ACT/S     , DESIRED STATE= ACTIV
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST861I  MODETAB=MODEVR   USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=M3SDLCQ  USS LANGTAB=***NA***
IST597I  CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I  CDRSC    MAJOR NODE = ISTPDILU
IST1044I  ALSLIST = RA60010
IST1131I  DEVICE = ILU/CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST1081I  ADJACENT LINK STATION = RA60003
IST634I  NAME      STATUS         SID         SEND RECV VR TP NETID
IST635I  RAIAN     ACTIV-S    F88F0164404662B0           1  0 USIBMRA
IST635I  RAIAN     ACTIV-P    F86FE1647763709C           1  0 USIBMRA
IST314I  END
-------------------------------------------------------------------------------
???
```

Figure 55. LU Is Active on SA25 and Shows in Session with NetView (Cont.)

Note that the above display time (16:30:15) is later than the time of 16:27:52
shown in Figure 54 on page 60. The two figures do not indicate any SEND or
RECV activity. This is normal for the NetView display when done in the VTAM
subarea which owns the SSCP-PU. Figure 56 on page 61 shows the SEND RECV

values when done from a NetView which is the end point of the LU6.2
relationship with AIX NetView Service Point on the RISC System/6000.

```
NCCF                        N E T V I E W    RAIAN WTWKSHA 09/25/95 16:28:10
 - RAIAN    DSI547I BNJDSERV : SECONDARY VSAM DATA SET IS NOW ACTIVE
C RAIAN    DISPLAY NET,ID=RA6010CP,SCOPE=ALL
  RAIAN    IST097I  DISPLAY  ACCEPTED
' RAIAN
IST075I  NAME = RA6010CP          , TYPE = CDRSC
IST486I  STATUS= ACT/S      , DESIRED STATE= ACTIV
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST861I  MODETAB=MODEVR   USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=M3SDLCQ  USS LANGTAB=***NA***
IST597I  CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I  CDRSC    MAJOR NODE = ISTPDILU
IST1044I  ALSLIST = RA60010
IST082I  DEVTYPE = INDEPENDENT LU / CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST634I  NAME      STATUS       SID          SEND RECV VR TP NETID
IST635I  RAIAN     ACTIV-S    F88F0164404662B0 0004 0005  1   0 USIBMRA
IST635I  RAIAN     ACTIV-P    F86FE1647763709C 0000 0001  1   0 USIBMRA
IST314I  END
 -------------------------------------------------------------------------------
???
```

Figure 56. LU6.2 Session Is Active on SA18 and Sessions Are in Place

The LU6.2 session is in place with NetView, driven by (in this project's case) the
AIX NetView Service Point-configured LU 6.2 connection which requests
connection with SA18's NetView: RAIAN. This relationship is VTAM
cross-domain in this example. The cross-domain relationship is transparent to
the user as well as to AIX NetView Service Point.

```
NCCF                        N E T V I E W    RAIAN WTWKSHA 09/25/95 16:29:40
 - RAIAN    DSI547I BNJDSERV : SECONDARY VSAM DATA SET IS NOW ACTIVE
 - RAIAN    Tue Sep  7 15:32:42 1993 > Message, via msg-to-op NMVT from RS6K,
            Using CrossDomain to RAIAN
 -------------------------------------------------------------------------------




???
```

Figure 57. Example of Cross-Domain Msg-to-Operator

The end user is not aware that the above was cross-domain. The in-place
sessions were:

```
RS6K <---SSCP-PU---> SA25 <--Cross-Domain--> SA18 <--> NetView
```

The above relationship is transparent for all user functions, including alerts, RUNCMD, and so on.

6.2 Using AIX NetView Service Point Connection to S/390 NetView in a Different Network

In this example we want to show the possibility that AIX NetView Service Point and the S/390 NetView are on different networks in different locations.

For this case we are using RS60010, physically in Raleigh, connected with AIX SNA Server/6000 to MVS/ESA SA25, Network USIBMRA, and S/390 NetView RAPAN.

AIX NetView Service Point is configured to send alerts and receive RUNCMD commands from S/390 NetView IVSN1 located on a MVS/ESA Network DEIBMIV, physically in Germany.

Figure 58 on page 63 shows this environment.

```
 ┌──────────────────────────────────────────────────────────────────────────┐
 │      IBM RALEIGH/USA            ..          IBM MAINZ/GERMANY              │
 │                                  .                                        │
 │   ┌─────────────────────┐        .      ┌─────────────────────┐           │
 │   │ MVS/ESA      SA25    │        .      │ MVS/ESA      IVS     │          │
 │   │ USIBMRA             │        .      │ DEIBMIV             │→Operator   │
 │   │                     │        .      │                     │           │
 │   │ NetView: RAPAN      │        .      │ NetView:   IVSN1    │↔→NetView   │
 │   │ APPL: MDSRTR        │        .      │ APPL: MDSRTR  ↑     │   Log      │
 │   │       ACTIV         │        .      │       ACTIV         │           │
 │   │                     │    LU6.2 .    │               ↓     │→Hardware   │
 │   │                     │        .      │ LU RA6010CP ACTIV   │  Monitor   │
 │   │  PU RA60010  ACTIV  │←─────────·──→ │                     │           │
 │   │ VTAM 4.2            │   MDS-MU .    │ VTAM 4.2            │           │
 │   └─────────────────────┘        .      └─────────────────────┘           │
 │          ↑                       .                                        │
 │          │                       .                                        │
 │          │                       ..                                       │
 │   Token Ring                                                              │
 │   SSCP-PU and LU6.2 MDS-MU                                                │
 │          │                    │                                           │
 │          └──────────────┐     ↓                                          │
 │   ┌─────────────────────┐                                                 │
 │   │ AIX SNA Server/6000 │   Control Point (CP) name                       │
 │   │                     │   - RA6010CP                                    │
 │   │ AIX NetView Service Point                                             │
 │   │                     │   Link Station Adj. Node                        │
 │   │ User Service Point Appls   - CP name  RAPAN                          │
 │   │          and        │      NETID USIBMRA                             │
 │   │ AIX NetView/6000 Host-Conn  Service Point Profile Summary             │
 │   │                appls│   - MDS "yes"                                  │
 │   │ AIX V3.2            │   - COS FP = DEIBMIV.IVSN1                      │
 │   │ RISC System/6000    │     ALERT FP = DEIBMIV.IVSN1                   │
 │   └─────────────────────┘                                                 │
 └──────────────────────────────────────────────────────────────────────────┘
```

Figure 58. The Cross Network Environment

In the above example, the RS6000 with AIX NetView Service Point installed is physically connected to SA25. The SSCP-PU and LU-LU functions (such as HCON) were run as normal to SA25. The MDS-MU support in NetView and VTAM made the above cross-network activity transparent to the AIX NetView Service Point, NetView users, and applications, and connects AIX NetView

Service Point applications to S/390 NetView IVSN1 in network DEIBMIV, which is physically in Germany.

6.2.1 AIX NetView Service Point Setup

As shown in Figure 59 on page 64 AIX NetView Service Point COS FP and ALERT FP are configured to DEIBMIV.IVSN1.

```
                              NetView Service Point Profile Summary

 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.

                                                        [Entry Fields]
   Use MDS transport?                                  yes       +
      If no, enter SSCP ID                             [05000000ffff]
      If no, enter Polling Period (msec)               [3000]    #
      If no, enter PUNAME                              [ ]
      If yes, enter the COS FP NETID                   [DEIBMIV]
      If yes, enter the COS FP NAU                     [IVSN1]
      If yes, enter the ALERT FP NETID                 [DEIBMIV]
      If yes, enter the ALERT FP NAU                   [IVSN1]
   Service Point Codepage                              [ ]



 F1=Help         F2=Refresh              F3=Cancel           F4=List
 F5=Reset        F6=Command              F7=Edit             F8=Image
 F9=Shell        F10=Exit                Enter=Do
```

Figure 59. Configuring Cross-Domain Transport

Figure 60 on page 65 shows the status of AIX NetView Service Point after activation.

```
                                       COMMAND STATUS

Command: OK              stdout: yes             stderr: no

Before command completion, additional instructions may appear below.

[TOP]
nvix_control status


*** Status of NetView Service Point Processes ***

Subsystem          Group           PID     Status
 evp_nvixSrd                       70555   active

Subsystem          Group           PID     Status
 evp_nvixCrd                       70306   active

Subsystem          Group           PID     Status
 evp_nvixAcmd                      67236   active


*** Status of SNA Server, and MDS Session: ***


SNA is active

MDS session is active at NetView for AIX
Status of host and links unknown
Using CP NAME: RA6010CP
On MDS sessions, use SP=RA6010CP in RUNCMDS
and use Applications shown in
*** Applications registered to receive commands from Host: ***
for appl= in RUNCMD

*** Focal Point Status Information: ***
COS FP: DEIBMIV.IVSN1
ALERT FP: DEIBMIV.IVSN1

*** Status of Portmapper ***

/usr/etc/portmap is active.

*** Applications registered to receive commands from Host: ***

3NVCMD
RS60010S


For additional status and error information refer to
your system error log.


[BOTTOM]

F1=Help          F2=Refresh       F3=Cancel       F6=Command
F8=Image         F9=Shell         F10=Exit
```

Figure 60. AIX NetView Service Point Active, Show Status with Cross-Domain Support Configured

6.2.2 Status of AIX SNA Server/6000

The AIX SNA Server/6000 configuration profiles used in the example are shown in Appendix A, "SNA Profiles for SSCP-PU and MDS Connection with AIX NetView Service Point" on page 125.

As mentioned previously, AIX SNA Server/6000 and the link station are active in the following example.

The RISC System/6000 operator could display the link station in a short (summary) or long (additional details) manner.

```
                                    Display Active Link Information

 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.

                                                    [Entry Fields]
   Output format                                   short    +

   Link station name                               [RS6KSP]   +

   Device name                                     []



 F1=Help           F2=Refresh           F3=Cancel           F4=List
 F5=Reset          F6=Command           F7=Edit             F8=Image
 F9=Shell          F10=Exit             Enter=Do
```

Figure 61 (Part 1 of 2). SNA Server/6000 Short Display Active Link When MDS Transport Used

```
                                          COMMAND STATUS

 Command: OK            stdout: yes           stderr: no

 Before command completion, additional instructions may appear below.

     Link           Adjacent        Node    Device                  # of local  In
     station        CP name         type    name       State        sessions    use
 --------------  ----------------  -----  ---------  ----------  ----------  -----
 RS6KSP          USIBMRA.RAP       NN     tok0       Active               3 Yes



 F1=Help           F2=Refresh           F3=Cancel           F6=Command
 F8=Image          F9=Shell             F10=Exit
```

Figure 61 (Part 2 of 2). SNA Server/6000 Short Display Active Link When MDS Transport Used

Beginning with Figure 62 on page 67, the figures show the activated LU 6.2 sessions when MDS transport was used by AIX NetView Service Point and the implicit support from this version of AIX SNA Server/6000 has been taken care of. Alerts, RUNCMDs and msg_to_op functions have been executed when the following display was issued.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                          Display SNA Resources                │
│                                                                               │
│  Move cursor to desired item and press Enter.                                 │
│                                                                               │
│    Display the Status of SNA                                                  │
│    Display SNA Global Information                                             │
│    Display Session Information                                                │
│    Display Active Link Information                                            │
│    Display APPN Topology Database                                            │
│    Display APPN Directory Database                                            │
│                                                                               │
│                                                                               │
│                                                                               │
│  F1=Help           F2=Refresh            F3=Cancel            F8=Image         │
│  F9=Shell          F10=Exit              Enter=Do                             │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 62 (Part 1 of 8). SNA Server/6000 Display LU 6.2 Session Information When MDS Used by AIX NetView Service Point

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                          Display Session Information          │
│                                                                               │
│  Move cursor to desired item and press Enter.                                 │
│                                                                               │
│    Display LU 1, LU 2, and LU 3 Session Information                           │
│    Display LU 6.2 Session Information                                         │
│    Display Independent LU 6.2 Session Limits Information                      │
│    Display APPN Intermediate Session Information                              │
│                                                                               │
│                                                                               │
│                                                                               │
│  F1=Help           F2=Refresh            F3=Cancel            F8=Image         │
│  F9=Shell          F10=Exit              Enter=Do                             │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 62 (Part 2 of 8). SNA Server/6000 Display LU 6.2 Session Information When MDS Used by AIX NetView Service Point

```
                                    Display LU 6.2 Session Information

 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.

                                                     [Entry Fields]
   Output format                                     short

   Local LU name                                     []
   Local LU alias                                    []

   Partner LU name                                   []
   Partner LU alias                                  []

   Mode name                                         []

   Link station name                                 []

   Conversation group ID                             []
   Session ID                                        []


 F1=Help          F2=Refresh        F3=Cancel          F4=List
 F5=Reset         F6=Command        F7=Edit            F8=Image
 F9=Shell         F10=Exit          Enter=Do
```

Figure 62 (Part 3 of 8). SNA Server/6000 Display LU 6.2 Session Information When MDS Used by AIX NetView Service Point

```
 Command: OK            stdout: yes           stderr: no

 Before command completion, additional instructions may appear below.

            Local             Partner          Mode      Link
   CGID     LU name           LU name          name      station      State
   ------   ----------------  ----------------  --------  -----------  ----------
   46       USIBMRA.RA6010CP  USIBMRA.RAP       SNASVCMG  RS6KSP       Available
   45       USIBMRA.RA6010CP  DEIBMIV.IVS       SNASVCMG  tok0.408     Available
   44       USIBMRA.RA6010CP  DEIBMIV.IVS       SNASVCMG  tok0.408     Available
   43       USIBMRA.RA6010CP  USIBMRA.RAP       CPSVCMG   RS6KSP       Available
   42       USIBMRA.RA6010CP  USIBMRA.RAP       CPSVCMG   RS6KSP       Available



 F1=Help          F2=Refresh        F3=Cancel          F4=List
 F5=Reset         F6=Command        F7=Edit            F8=Image
 F9=Shell         F10=Exit          Enter=Do
```

This figure shows active session to the DEIBMIV network.

Figure 62 (Part 4 of 8). SNA Server/6000 Display LU 6.2 Session Information When MDS Used by AIX NetView Service Point

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                              Display LU 6.2 Session Information                │
│                                                                               │
│  Type or select values in entry fields.                                       │
│  Press Enter AFTER making all desired changes.                                │
│                                                                               │
│                                                          [Entry Fields]        │
│    Output format                                         long                  │
│                                                                               │
│    Local LU name                                         []                    │
│    Local LU alias                                        []                    │
│                                                                               │
│    Partner LU name                                       []                    │
│    Partner LU alias                                      []                    │
│                                                                               │
│    Mode name                                             []                    │
│                                                                               │
│    Link station name                                     []                    │
│                                                                               │
│    Conversation group ID                                 []                    │
│    Session ID                                            []                    │
│                                                                               │
│                                                                               │
│  F1=Help          F2=Refresh        F3=Cancel            F4=List              │
│  F5=Reset         F6=Command        F7=Edit              F8=Image             │
│  F9=Shell         F10=Exit          Enter=Do                                  │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 62 (Part 5 of 8). SNA Server/6000 Display LU 6.2 Session Information When MDS Used by AIX NetView Service Point

```
     LU 6.2 Session Information

Number of sessions                      5

1>Session ID                            X'F08F0164B70563B2'
  Conversation group ID                 46
  Session status                        Available
  Link station profile name             RS6KSP
  LU type                               6.2
  Session type                          Independent LU-LU session
  LU alias                              RA6010CP
  LU name                               USIBMRA.RA6010CP
  Partner LU alias
  Partner LU name                       USIBMRA.RAPAN
  Mode name                             SNASVCMG
  Symbolic destination name             DYNAMIC[44]
  Send maximum RU size                  256
  Receive maximum RU size               256
  Pacing type                           Adaptive
  Send pacing window                    4096
  Receive pacing window                 1
  Local Form Session ID (LFSID)         X'00102'
  Outbound destination address (DAF)    X'02'
  Outbound origin address (OAF)         X'01'
  OAF-DAF assignor indicator (ODAI)     B'0'
  Procedure correlator ID (PCID)        X'F88F0164B70563B2'
  PCID generator CP name                USIBMRA.RAP
  Host SSCP ID                          (not applicable)
  Primary LU                            Partner LU
  Contention winner?                    No
  Session security supported?           No

2>Session ID                            X'E0E32483AE8D7647'
  Conversation group ID                 45
  Session status                        Available
  Link station profile name             tok0.408  (dynamic)
  LU type                               6.2
  Session type                          Independent LU-LU session
  LU alias                              RA6010CP
  LU name                               USIBMRA.RA6010CP
  Partner LU alias
  Partner LU name                       DEIBMIV.IVS
  Mode name                             SNASVCMG
  Symbolic destination name             DYNAMIC[43]
  Send maximum RU size                  512
  Receive maximum RU size               512
  Pacing type                           Adaptive
  Send pacing window                    1
  Receive pacing window                 1
  Local Form Session ID (LFSID)         X'00202'
  Outbound destination address (DAF)    X'02'
  Outbound origin address (OAF)         X'02'
  OAF-DAF assignor indicator (ODAI)     B'0'
  Procedure correlator ID (PCID)        X'E0E32483AE8D7647'
  PCID generator CP name                USIBMRA.RA6010CP
  Host SSCP ID                          (not applicable)
  Primary LU                            Local LU
  Contention winner?                    No
  Session security supported?           No
```

Figure 62 (Part 6 of 8). SNA Server/6000 Display LU 6.2 Session Information When MDS Used by AIX NetView Service Point

```
3>Session ID                               X′E0E32483AE8D7646′
  Conversation group ID                    44
  Session status                           Available
  Link station profile name                tok0.408  (dynamic)
  LU type                                  6.2
  Session type                             Independent LU-LU session
  LU alias                                 RA6010CP
  LU name                                  USIBMRA.RA6010CP
  Partner LU alias
  Partner LU name                          DEIBMIV.IVS
  Mode name                                SNASVCMG
  Symbolic destination name                DYNAMIC[42]
  Send maximum RU size                     512
  Receive maximum RU size                  512
  Pacing type                              Adaptive
  Send pacing window                       1
  Receive pacing window                    1
  Local Form Session ID (LFSID)            X′00201′
  Outbound destination address (DAF)       X′01′
  Outbound origin address (OAF)            X′02′
  OAF-DAF assignor indicator (ODAI)        B′0′
  Procedure correlator ID (PCID)           X′E0E32483AE8D7646′
  PCID generator CP name                   USIBMRA.RA6010CP
  Host SSCP ID                             (not applicable)
  Primary LU                               Partner LU
  Contention winner?                       YES
  Session security supported?              No

4>Session ID                               X′F08F0164B7056384′
  Conversation group ID                    42
  Session status                           Available
  Link station profile name                RS6KSP
  LU type                                  6.2
  Session type                             Independent LU-LU session
  LU alias                                 RA6010CP
  LU name                                  USIBMRA.RA6010CP
  Partner LU alias
  Partner LU name                          USIBMRA.RAPAN
  Mode name                                CPSVCMG
  Symbolic destination name                DYNAMIC[41]
  Send maximum RU size                     256
  Receive maximum RU size                  256
  Pacing type                              Adaptive
  Send pacing window                       4096
  Receive pacing window                    1
  Local Form Session ID (LFSID)            X′00102′
  Outbound destination address (DAF)       X′02′
  Outbound origin address (OAF)            X′01′
  OAF-DAF assignor indicator (ODAI)        B′0′
  Procedure correlator ID (PCID)           X′F88F0164B70563B2′
  PCID generator CP name                   USIBMRA.RAP
  Host SSCP ID                             (not applicable)
  Primary LU                               Partner LU
  Contention winner?                       No
  Session security supported?              No
```
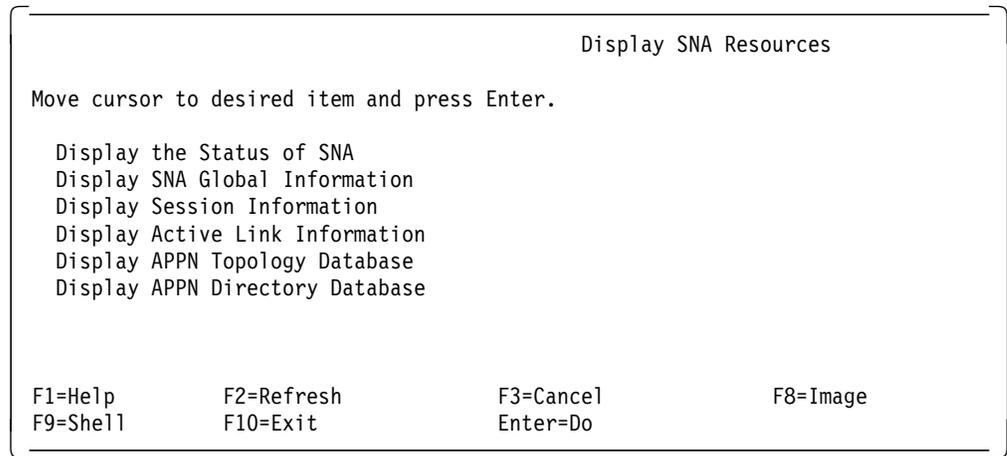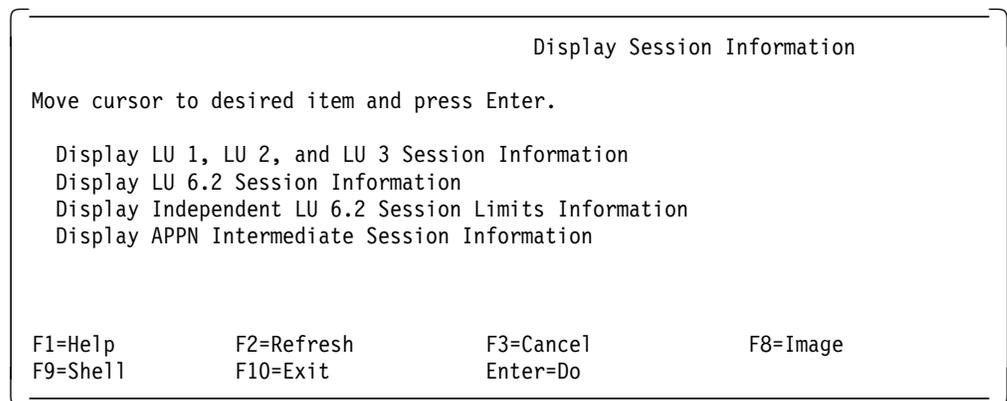
Figure 62 (Part 7 of 8). SNA Server/6000 Display LU 6.2 Session Information When MDS Used by AIX NetView Service Point

```
5>Session ID                              X'E0E32483AE8D7643'
  Conversation group ID                   43
  Session status                          Available
  Link station profile name               RS6KSP
  LU type                                 6.2
  Session type                            Independent LU-LU session
  LU alias                                RA6010CP
  LU name                                 USIBMRA.RA6010CP
  Partner LU alias
  Partner LU name                         DEIBMIV.IVS
  Mode name                               CPSVCMG
  Symbolic destination name               DYNAMIC[40]
  Send maximum RU size                    512
  Receive maximum RU size                 512
  Pacing type                             Adaptive
  Send pacing window                      61
  Receive pacing window                   1
  Local Form Session ID (LFSID)           X'10200'
  Outbound destination address (DAF)      X'00'
  Outbound origin address (OAF)           X'02'
  OAF-DAF assignor indicator (ODAI)       B'1'
  Procedure correlator ID (PCID)          X'E0E32483AE8D7643'
  PCID generator CP name                  USIBMRA.RA6010CP
  Host SSCP ID                            (not applicable)
  Primary LU                              Local LU
  Contention winner?                      YES
  Session security supported?             No
```

Figure 62 (Part 8 of 8). SNA Server/6000 Display LU 6.2 Session Information When MDS Used by AIX NetView Service Point

6.2.3 Status in S/390 NetView

First we are looking for the status of the PU RA60010. Figure 63 on page 73 shows the status of PU RA60010 in S/390 NetView RAPAN.

```
 C RAPAN    DISPLAY NET,ID=RA60010,SCOPE=ALL
   RAPAN    IST097I  DISPLAY  ACCEPTED
 ′ RAPAN
IST075I  NAME = RA60010          , TYPE = PU_T2.1
IST486I  STATUS= ACTIV--L--, DESIRED STATE= ACTIV
IST1043I  CP NAME = RA6010CP, CP NETID = USIBMRA , DYNAMIC LU = YES
IST1105I  RESOURCE STATUS TGN CP-CP TG CHARACTERISTICS
IST1106I  RA60010 AC/R    21 YES   982D0000000000000000017100808080
IST1482I  HPR = YES - OVERRIDE = N/A - CONNECTION = NO
IST136I   SWITCHED SNA MAJOR NODE = RS60010
IST081I   LINE NAME = J0007029, LINE GROUP = EG07L02 , MAJNOD = RA7NCPW
IST654I   I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST355I   LOGICAL UNITS:
IST080I  RA600102 PACTL      RA600103 PACTL      RA600104 PACTL
IST080I  RA600105 PACTL      RA600106 CONCT      RA600107 CONCT
IST080I  RA600108 CONCT      RA600109 CONCT      RA60010C CONCT
IST080I  RA60010Q CONCT
IST080I  RA6010CP ACT/S----Y
IST314I  END
--------------------------------------------------------------------------


 ???

 NCCF                    N E T V I E W    RAPAN WTWKSHA  09/28/95 12:53:32
```

Figure 63. Link Station and CP NAME Resource Is Shown as ACTIV in the S/390

The above occurs as result of the RISC System/6000 configured and VTAM definition values shown in the Appendix.

Figure 64 on page 74 shows the status of the CP RA6010CP on S/390 NetView RAPAN.

```
C RAPAN    DISPLAY NET,ID=RA6010CP,SCOPE=ALL
  RAPAN    IST097I DISPLAY  ACCEPTED
' RAPAN
IST075I  NAME = USIBMRA.RA6010CP , TYPE = ADJACENT CP
IST486I  STATUS= ACT/S----Y, DESIRED STATE= ACTIV
IST1447I  REGISTRATION TYPE = NO
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST1333I  ADJLIST = ***NA***
IST861I  MODETAB=***NA*** USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=CPSVCMG  USS LANGTAB=***NA***
IST597I  CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I  CDRSC    MAJOR NODE = ISTCDRDY
IST1184I  CPNAME = USIBMRA.RA6010CP  - NETSRVR = ***NA***
IST1044I  ALSLIST = ISTAPNPU
IST1131I  DEVICE = ILU/CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000003, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST1081I  ADJACENT LINK STATION = RA60010
IST634I  NAME      STATUS        SID        SEND RECV VR TP NETID
IST075I  NAME = USIBMRA.RA6010CP , TYPE = ADJACENT CP
IST635I  RAP     ACTIV/CP-S E0E32483AE8D7643 089C 0001  0  0 USIBMRA
IST635I  RAP     ACTIV-P    F88F0164B70563B2 0009 0004  0  0 USIBMRA
IST635I  RAP     ACTIV/CP-P F88F0164B7056384 0001 089D  0  0 USIBMRA
IST924I  -------------------------------------------------------------
IST075I  NAME = USIBMRA.RA6010CP , TYPE = DIRECTORY ENTRY
IST1186I  DIRECTORY ENTRY = DYNAMIC    NN
IST1184I  CPNAME = USIBMRA.RA6010CP  - NETSRVR = ***NA***
IST314I  END
```

Figure 64. Status of RA6010CP on S/390 NetView RAPAN

```
NCCF                    N E T V I E W   IVSN1 ERZI    95/09/28 20:24
C IVSN1    ERZI    DISPLAY NET,ID=RA6010CP,SCOPE=ALL
  IVSN1    ERZI    IST097I DISPLAY  ACCEPTED
' IVSN1    ERZI
IST075I  NAME = USIBMRA.RA6010CP , TYPE = CDRSC
IST486I  STATUS= ACT/S----Y, DESIRED STATE= ACTIV
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST1333I  ADJLIST = ***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 = RAK     , VERIFY OWNER = NO
IST082I  DEVTYPE =           CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST634I  NAME      STATUS        SID        SEND RECV VR TP NETID
IST635I  IVS     ACTIV-S    E0E32483AE8D7647 00C5 0006  0  1 DEIBMIV
IST635I  IVS     ACTIV-S    E0E32483AE8D7646 0008 0000  0  1 DEIBMIV
IST314I  END
```

Figure 65. Status of RA6010CP on German S/390 NetView IVSN1

You can see that the CP RA6010CP is known on both S/390 NetViews, even if
they are in different networks (RAPAN - USIBMRA / IVSN1 - DEIBMIV).

The connection between the two networks is done via MDS-MU Support in
NetView and VTAM.

To activate the CP on the remote S/390 NetView (IVSN1) the DSI6SCF list is
updated and the command FOCALPT REFRESH is initiated on IVSN1. Figure 66 on
page 75 shows the DSI6SCF list on IVSN1.

```
  NETVIEW.BRWS ------ BROWSE DSI6SCF  (DSIPARM ) ---
  ********************************************************************
  * THIS FILE DEFINES TO THE SPHERE OF CONTROL MANAGER WHICH ENTRY    *
  * POINTS TO ACQUIRE INTO A FOCAL POINT'S SPHERE OF CONTROL          *
  *                                                                   *
  * THE LIST OF EXPLICIT ENTRY POINTS ARE ORGANIZED AS FOLLOWS:       *
  *                                                                   *
  * - THE FIRST COLUMN CONTAINS THE NAME OF THE ENTRY POINT(NETID.NAU)*
  * - THE SECOND COLUMN CONTAINS THE NAME OF THE PRIMARY FOCAL POINT  *
  *   CATEGORY.                                                       *
  * - THE THIRD COLUMN CONTAIN NAME OF THE PRIMARY FOCAL POINT        *
  *   (NETID.NAU)                                                     *
  * - THE FOURTH COLUMN CONTAINS THE NAME OF THE BACKUP FOCAL POINT   *
  *   (THIS IS OPTIONAL)                                              *
  *                                                                   *
  *   DURING INITIALIZATION OR REFRESH, THE SOC-MGR WILL SCAN DOWN    *
  *   THE LIST.  IF THE PRIMARY FOCAL POINT NAME IS THE SAME AS THE   *
  *   NAME OF THE NODE THE SOC-MGR IS RUNNING IN, THEN THE SOC-MGR    *
  *   WILL ATTEMPT TO EXPLICITLY OBTAIN THE EP INTO THE SPHERE OF     *
  *   CONTROL FOR THE CATEGORY SPECIFIED UNDER THE FPCAT COLUMN,      *
  *   PROVIDED THAT THE CATEGORY IS ACTIVE.                           *
  *
  *  EPNAME            FPCAT        PRIMARY FP        BACKUP FP
  *-------------      --------     -------------     ---------------
    DEIBMIV.ERNSTSNA   OPS_MGMT     DEIBMIV.IVSN1     DEIBMIV.IVRN1
    DEIBMIV.ERNSTSNA   ALERT        DEIBMIV.IVSN1     DEIBMIV.IVRN1
    DEIBMIV.IVLTE3C8   OPS_MGMT     DEIBMIV.IVSN1     DEIBMIV.IVRN1
    DEIBMIV.IVLTE3C8   ALERT        DEIBMIV.IVSN1     DEIBMIV.IVRN1
    USIBMRA.RA6010CP   OPS_MGMT     DEIBMIV.IVSN1     DEIBMIV.IVRN1
    USIBMRA.RA6010CP   ALERT        DEIBMIV.IVSN1     DEIBMIV.IVRN1
  *
  ****************************** BOTTOM OF DATA ********************
```

Figure 66. DSI6SCF List On IVNSN1

6.2.4 Showing Alerts From AIX NetView Service Point on RS60010

Remember, the flow of alerts and RUNCMD commands is transparent to the end users on both sides, the S/390 NetView side and also the AIX side. In this case the flow is like this:

RS6K <-->SSCP-PU--> USIBMRA <--Cross Network--> DEIBMIV <--> NetView

```
 N E T V I E W          SESSION DOMAIN: IVSN1    ERZI      09/28/95 21:22
  NPDA-30A                       * ALERTS-DYNAMIC *

     DOMAIN RESNAME  TYPE TIME  ALERT DESCRIPTION: PROBABLE CAUSE
      IVSN1 RS60010  DEV  21:19 OPERATOR NOTIFICATION: NETWORK OPERATOR
      IVSN1 GRAY     DEV  21:15 SNMP RESOURCE PROBLEM: UNDETERMINED
      IVSN1 RS60010  DEV  21:15 PROBLEM RESOLVED: REMOTE NODE
      IVSN1 RSERNST  DEV  21:14 SNMP RESOURCE PROBLEM: UNDETERMINED
      IVSN1 RSERNST  DEV  21:14 SNMP RESOURCE PROBLEM: UNDETERMINED
      IVSN1 WTRPRT02 DEV  21:14 SNMP RESOURCE PROBLEM: UNDETERMINED
      IVSN1 WTRPRT02 DEV  21:13 SNMP RESOURCE PROBLEM: UNDETERMINED

 DEPRESS ENTER KEY TO VIEW ALERTS-STATIC

  ???
 CMD==>
```

Figure 67. A NetView for AIX Alert from RS60010 Arrives at S/390 NetView IVSN1

The alert was generated by the NetView for AIX command: event -d ″Hello from IBM Raleigh″. The sent event had been configured (using NetView for AIX Event Configuration support) to include the ″Hello from..″ as information passed to S/390 NetView as a qualifier. Refer to NetView for AIX event configuration documentation for details.

```
 N E T V I E W          SESSION DOMAIN: IVSN1    ERZI      09/28/95 21:30
  NPDA-45A          * RECOMMENDED ACTION FOR SELECTED EVENT *     PAGE  1 OF  1
  IVSN1      RA6010CP    NCP_NAME    RA6003CP    3NVCMD      RS60010
            +--------+ +--------+ +--------+ +--------+ +--------+
 DOMAIN     | CP     |--| COMC   |--| CTRL   |--| SP     |--| DEV    |
            +--------+ +--------+ +--------+ +--------+ +--------+

 USER    CAUSED - NONE

 INSTALL CAUSED - NONE

 FAILURE CAUSED - REMOTE NODE
        ACTIONS - I144 - IF PROBLEM REOCCURS THEN DO THE FOLLOWING
                  I142 - REPORT THE FOLLOWING:



 ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)

  ???
 CMD==>
```

Figure 68. NetView for AIX Recommended Action and Hierarchy Information

```
N E T V I E W          SESSION DOMAIN: IVSN1    ERZI      09/28/95 21:34
NPDA-43S                        * EVENT DETAIL *                PAGE  1 OF  1

 IVSN1      RA6010CP    NCP_NAME    RA6003CP     3NVCMD        RS60010
           +--------+ +--------+ +--------+ +--------+ +--------+
 DOMAIN    |  CP    |--|  COMC  |--|  CTRL  |--|  SP    |--|  DEV   |
           +--------+ +--------+ +--------+ +--------+ +--------+

 SEL# TYPE AND NAME OF OTHER RESOURCES ASSOCIATED WITH THIS EVENT:
 ( 1) DEV    RS60010.ITSO.RAL.IBM.COM

 DATE/TIME: RECORDED - 09/28 21:19    CREATED - 09/28/95 21:18:58

 EVENT TYPE: UNKNOWN

 DESCRIPTION: OPERATOR NOTIFICATION

 PROBABLE CAUSES:
    REMOTE NODE

 QUALIFIERS:
    1)  DEVICE ADDRESS <none>
    2)  EVENT CODE Hello from IBM Raleigh




 UNIQUE ALERT IDENTIFIER: PRODUCT ID - 5696-7310  ALERT ID - AB85355A

 ENTER A (ACTION) OR DM (DETAIL MENU)

 ???
CMD==>
```

Figure 69. NetView for AIX Event Detail Information (Page 1)

6.2.5 Receiving RUNCMD Commands on RS60002 from S/390 NetView IVSN1

As already shown in Figure 60 on page 65, RS60010S is a registered application to receive RUNCMD commands from S/390 NetView. RS60010S belongs to spappld running on RS60010.

Figure 70 on page 78 shows a RUNCMD command, sent to the spappld application RS60010S which is running remote on RS60010.

On S/390 NetView we used the command: RUNCMD SP=RA6010CP,NETID=USIBMRA,APPL=RS60010S hostname

We are using the AIX command hostname to show that the command is executed on the AIX systems RS60010 which is located in Raleigh/USA.

```
NCCF                          N E T V I E W    IVSN1 ERZI     95/09/28 21:54
T ORIGIN    OPER/JOB
 * IVSN1    ERZI    RUNCMD SP=RA6010CP,NETID=USIBMRA,APPL=RS60010S HOSTNAME
 -          DSIGDS   Executing RUNCMD "HOSTNAME" *
 -          DSIGDS   rs600010*
 -------------------------------------------------------------------------------




 ???
```

Figure 70. RS60010S NetView for AIX RUNCMD Application

The RUNCMD APPL name RS60010S was configured in NetView for AIX configure host daemon, spappld on RS60010.

Note: When sending RUNCMD command over a cross network the destination NETID must be specified in the RUNCMD.

Chapter 7. Using AIX NetView Service Point Applications in a Distributed Environment

This chapter provides an example of using AIX NetView Service Point applications in a distributed environment.

7.1 General Overview
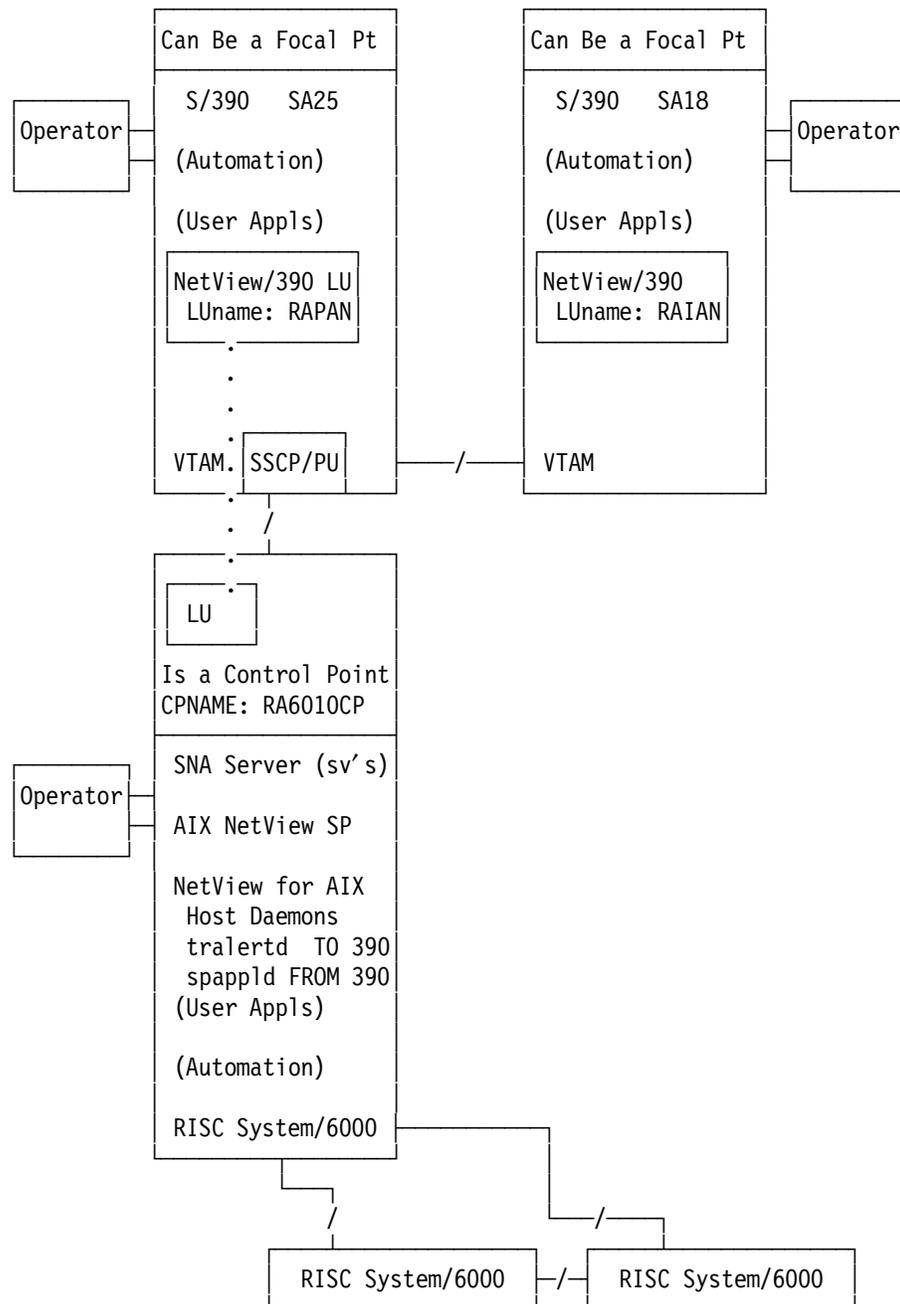
Figure 71. Example of Distributed AIX NetView Service Point

An AIX NetView Service Point application is a program that accesses the Service Point. It is usually designed to accompany communications hardware, with problem determination features to monitor the hardware and its connection to the network. AIX NetView Service Point applications can be either local (as shown in the previous examples) or distributed (remote). A local application is one that resides on the AIX NetView Service Point workstation. A distributed application is one that resides on a machine that accesses the AIX NetView Service Point via a transport network.

A typical AIX NetView Service Point application may perform the following problem determination tasks for a user network:

- Monitor the network

- Send alerts to S/390 NetView via AIX NetView Service Point

- Send replies and unsolicited messages using the COS Services

- Report results of tests requested by the S/390 host applications or the host operator

Figure 72 on page 81 shows AIX NetView Service Point in network management.
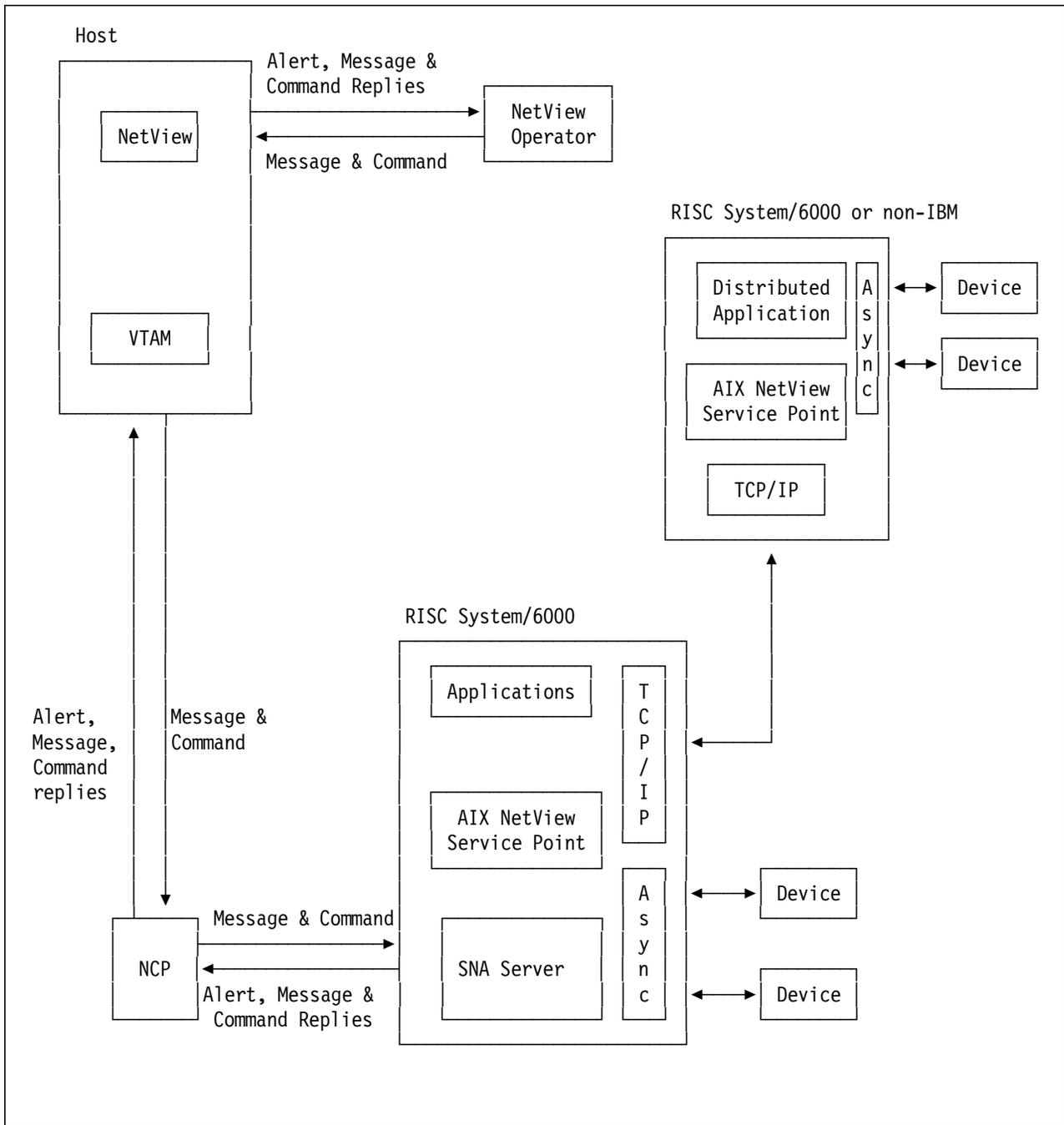
Figure 72. AIX NetView Service Point in Network Management

7.2 Installing Distributed Applications

When installing a distributed (remote) application, you must also install the *AIX NetView Service Point Application Interface Library (AIL)* on the distributed system.

AIX NetView Service Point supports a maximum of ten applications.

The AIX NetView Service Point AIL is contained in the files in the directories /usr/lpp/nvix/include/nvix and /usr/lpp/nvix/lib. It is recommended that the directories on the distributed systems have the same PATH name as on the AIX NetView Service Point system. Figure 73 on page 82 shows how to copy the AIL to the remote system.

```
RS60002:> mkdir /usr/lpp/nvix/include/nvix
RS60002:> mkdir /usr/lpp/nvix/lib
RS60002:> ftp rs60010
user root
password xyz
ftp> cd /usr/lpp/nvix/include/nvix
ftp> lcd /usr/lpp/nvix/include/nvix
ftp> mget *
ftp> cd /usr/lpp/nvix/lib
ftp> lcd /usr/lpp/nvix/lib
ftp> mget *
ftp> bye
RS60002:> cd /usr/lpp/nvix/include/nvix
RS60002:> chmod 555 evp_nvix*
RS60002:> chown root.system evp_nvix*
RS60002:> cd /usr/lpp/nvix/lib
RS60002:> chmod 444 lib*
RS60002:> chown root.system lib*
```

Figure 73. Installation of AIX NetView Service Point AIL on the Remote RS/6000

Figure 74 on page 83 shows AIX NetView Service Point and its relationship to applications.
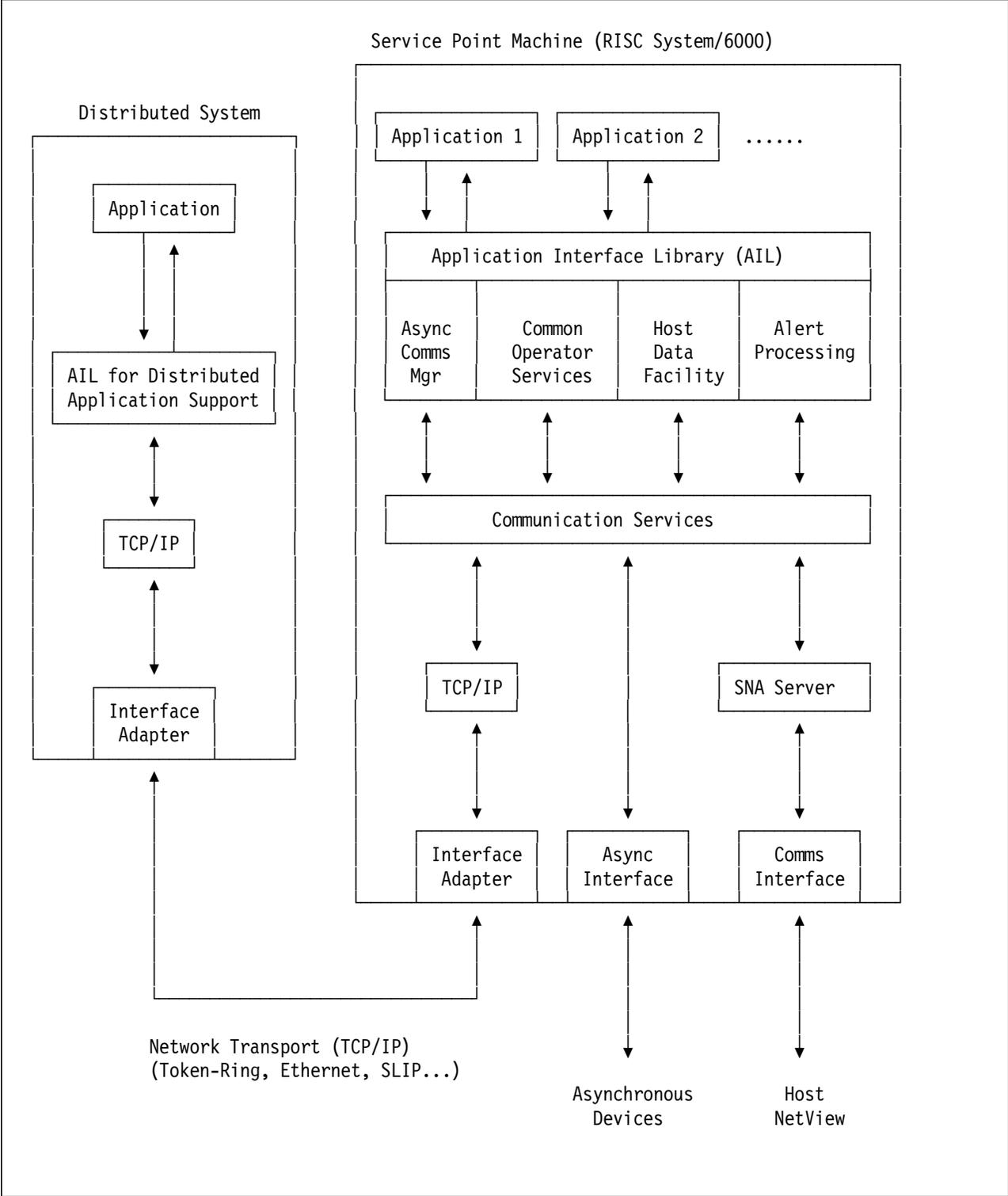
Figure 74. AIX NetView Service Point and Its Relationship to Applications

7.3 Example of Using Distributed AIX NetView Service Point

Figure 75 on page 84 shows an example of distributed AIX NetView Service Point. In our case, NetView for AIX with spappld and tralertd is installed on RS60002; AIX NetView Service Point is installed on RS60010. RS60010 is connected via AIX SNA Server/6000 to S/390 NetView. Figure 75 on page 84 shows this environment.

```
        ┌──────────┐  ┌────────────────────────┐
        │          ├──┤  S/390    SA25         │
        │ Operator │  │                        │
        │          ├──┤  (Automation)          │
        └──────────┘  │                        │
                      │  (User Appls)          │
                      │  ┌──────────────────┐  │
                      │  │ NetView/390 LU   │  │
                      │  │ LUname: RAPAN    │  │
                      │  └──────────────────┘  │
                      │         .              │
                      │         . ┌──────────┐ │
                      │  VTAM.    │ SSCP/PU  │ │
                      └───────────┴──────────┴─┘
                            .       │
                            .  /
                      ┌─────.──────────────────┐
                      │  ┌──.───────┐           │
                      │  │ LU       │           │
                      │  └──────────┘           │
                      │  Is a Control Point     │
                      │  CPNAME: RA6010CP       │
        ┌──────────┐  │                         │
        │          ├──┤  SNA Server            │
        │ Operator │  │                         │
        │          ├──┤  AIX NetView SP        │
        └──────────┘  │  (User Appls)          │
                      │                         │
                      │  (Automation)          │
                      │                         │
                      │  RISC System/6000      │
                      │  RS60010               │
                      └──────────────┬──────────┘
                                     │  Token-ring
                                     └──/──┐
                                          │
                                 ┌────────────────────┐
                                 │  RISC System/6000  │
                                 │  RS60002           │
                                 ├────────────────────┤
                                 │  TCP/IP            │
                                 │                    │
                                 │  NetView for AIX   │
                                 │    Hostdaemons     │
                                 │    tralertd        │
                                 │    spappld         │
                                 │  (User Appls.)     │
                                 └────────────────────┘
```
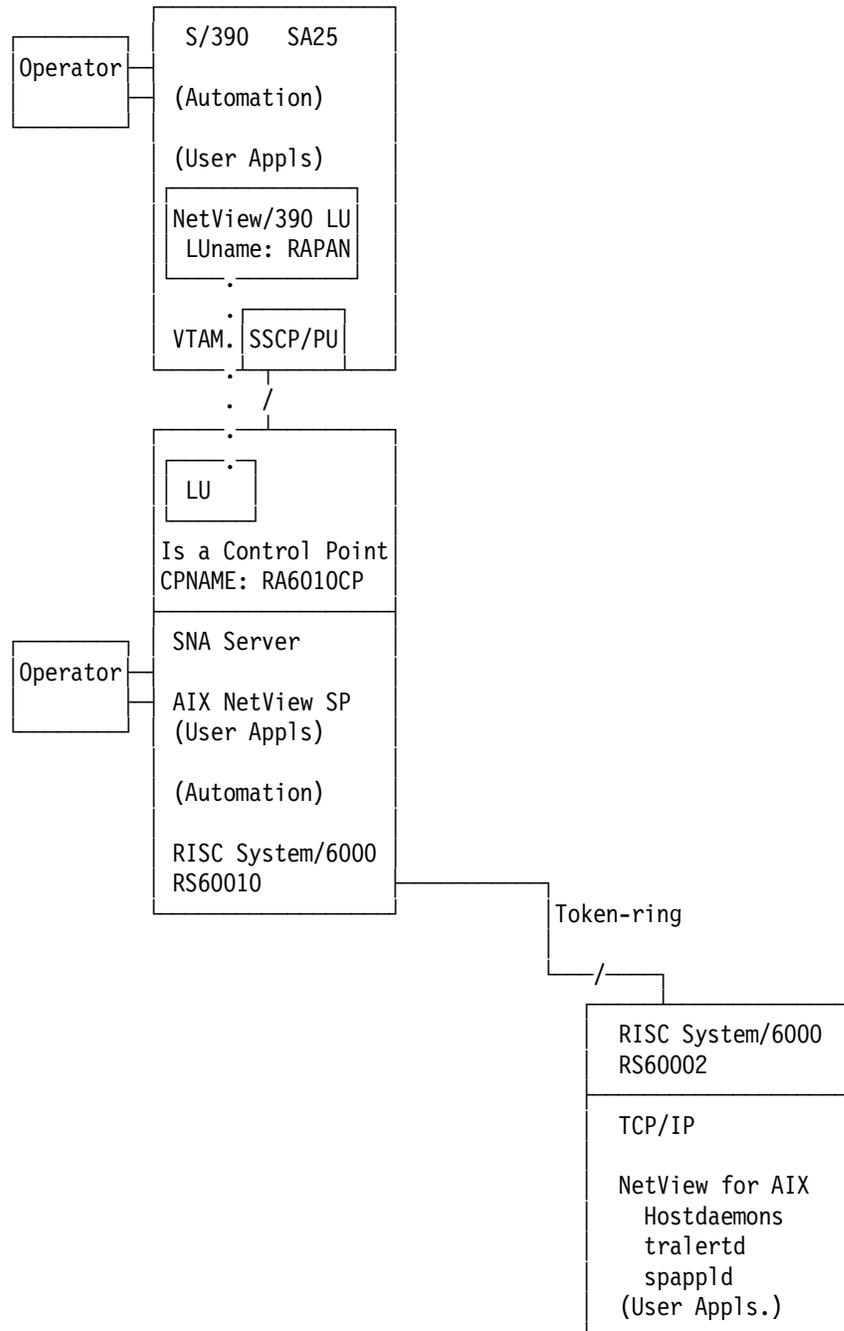
Figure 75. Example of Distributed AIX NetView Service Point

7.3.1 Configuring the NetView for AIX Host Daemons

Figure 76 on page 85 shows the SMIT panels that are used to configure the NetView for AIX host daemons. In our example, the system is RS60002.

Select **Communications Applications and Services**.

```
                              System Management

  Move cursor to desired item and press Enter.

    Software Installation & Maintenance
    Devices
    Physical & Logical Storage
    Security & Users
    Diskless Workstation Management & Installation
    Communications Applications and Services
    Spooler (Print Jobs)
    Problem Determination
    Performance & Resource Scheduling
    System Environments
    Processes & Subsystems
    Applications
    Using SMIT (information only)




    F1=Help            F2=Refresh         F3=Cancel          F8=Image
    F9=Shell           F10=Exit           Enter=Do
```

Figure 76 (Part 1 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

Then, choose **NetView for AIX**.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                   Communications Applications and Services                    │
│                                                                               │
│  Move cursor to desired item and press Enter.                                 │
│                                                                               │
│    TCP/IP                                                                     │
│    NFS                                                                        │
│    SNA Server/6000                                                            │
│    NetView Service Point                                                      │
│    RMONster                                                                   │
│    3270 Host Connection Program (HCON)                                        │
│    AIX IHMP/6000                                                              │
│    NetView for AIX                                                            │
│    SNA Manager/6000                                                           │
│    Systems Monitor/6000                                                       │
│    DCE (Distributed Computing Environment)                                    │
│    Topology Integration Manager                                              │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│    F1=Help            F2=Refresh          F3=Cancel          F8=Image         │
│    F9=Shell           F10=Exit            Enter=Do                            │
└─────────────────────────────────────────────────────────────────────────────┘
```
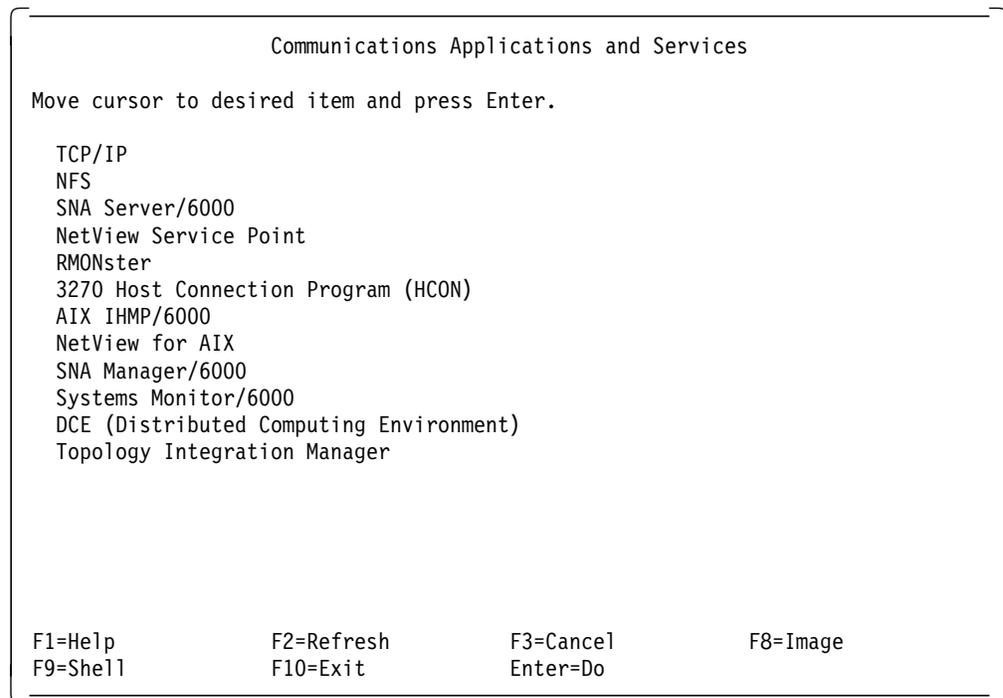
Figure 76 (Part 2 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

Choose **Configure** to go to the necessary options.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                              NetView for AIX                                   │
│                                                                               │
│  Move cursor to desired item and press Enter.                                 │
│                                                                               │
│    Configure                                                                  │
│    Control                                                                    │
│    Diagnose                                                                   │
│    Maintain                                                                   │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│    F1=Help            F2=Refresh          F3=Cancel          F8=Image         │
│    F9=Shell           F10=Exit            Enter=Do                            │
└─────────────────────────────────────────────────────────────────────────────┘
```
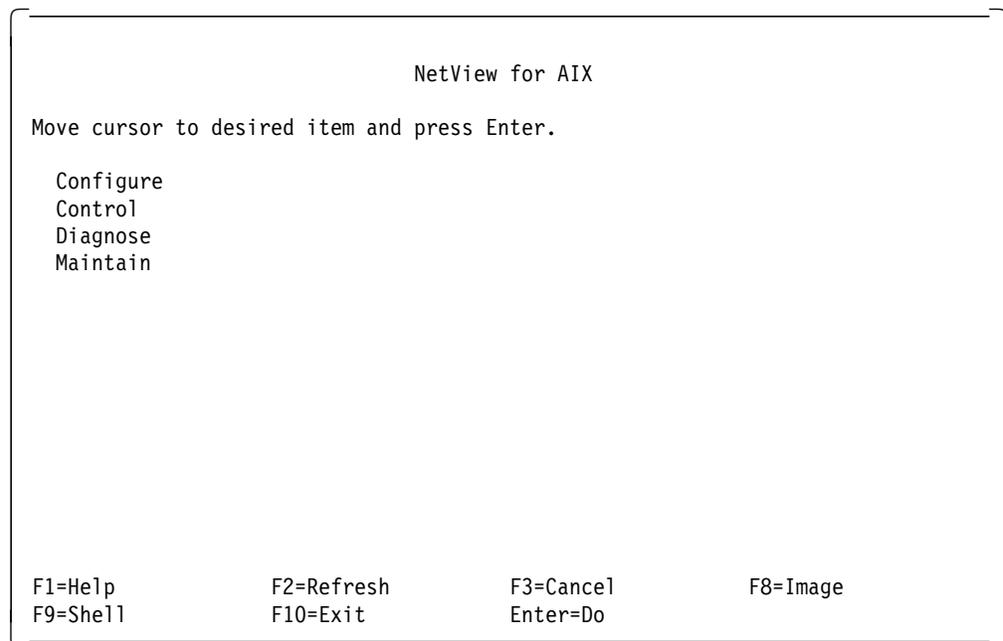
Figure 76 (Part 3 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

First, select **Set options for daemons**.

```
                              Configure

Move cursor to desired item and press Enter.

   Set options for daemons
   Configure object identification registration files
   Configure XMP configuration file
   Set node name or IP address of AIX NetView Service Point
   Change Map(s) owner/group/mode
   Install/configure subagent (trapgend) on remote RISC System/6000
   Delete daemon from ovsuf startup file
   List/Configure relational database







   F1=Help            F2=Refresh         F3=Cancel          F8=Image
   F9=Shell           F10=Exit           Enter=Do
```

Figure 76 (Part 4 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

Then, select the **Set options for host connection daemons**.

```
                         Set options for daemons

Move cursor to desired item and press Enter.

   Set options for topology, discovery, and database daemons
   Set options for event and trap processing daemons
   Set options for host connection daemons













   F1=Help            F2=Refresh         F3=Cancel          F8=Image
   F9=Shell           F10=Exit           Enter=Do
```
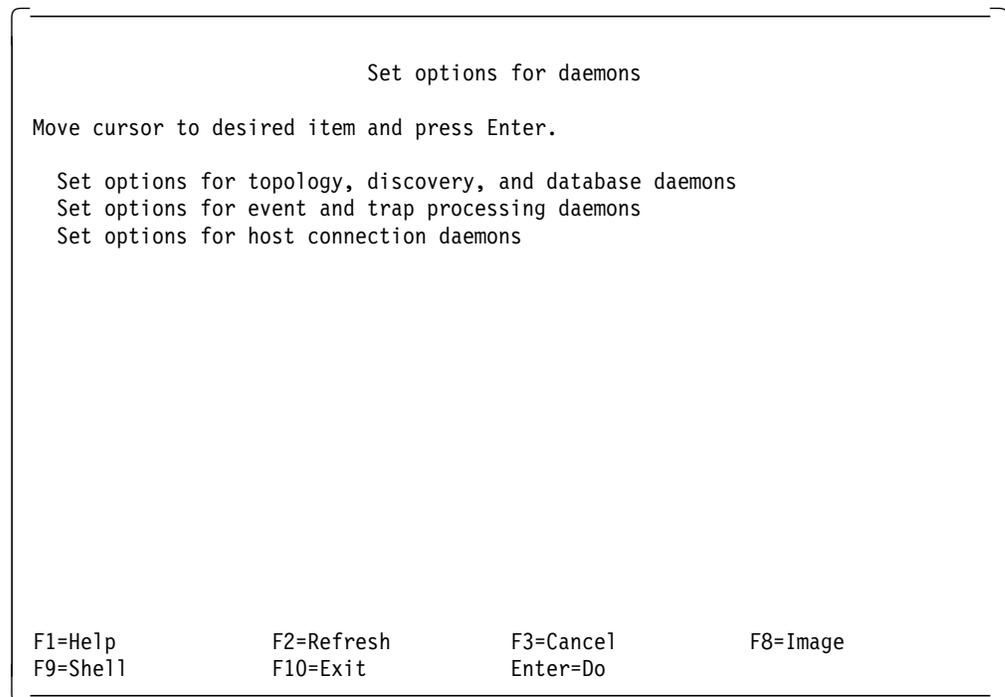
Figure 76 (Part 5 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

tralertd is for inbound (to S/390) alerts.

```
 ╭─────────────────────────────────────────────────────────────────────────────╮
 │                                                                               │
 │                    Set options for host connection daemons                    │
 │                                                                               │
 │  Move cursor to desired item and press Enter.                                 │
 │                                                                               │
 │    Set options for tralertd daemon                                            │
 │    Set options for spappld daemon                                             │
 │                                                                               │
 │                                                                               │
 │                                                                               │
 │                                                                               │
 │                                                                               │
 │                                                                               │
 │                                                                               │
 │                                                                               │
 │                                                                               │
 │                                                                               │
 │                                                                               │
 │                                                                               │
 │    F1=Help              F2=Refresh          F3=Cancel           F8=Image       │
 │    F9=Shell             F10=Exit            Enter=Do                           │
 ╰─────────────────────────────────────────────────────────────────────────────╯
```
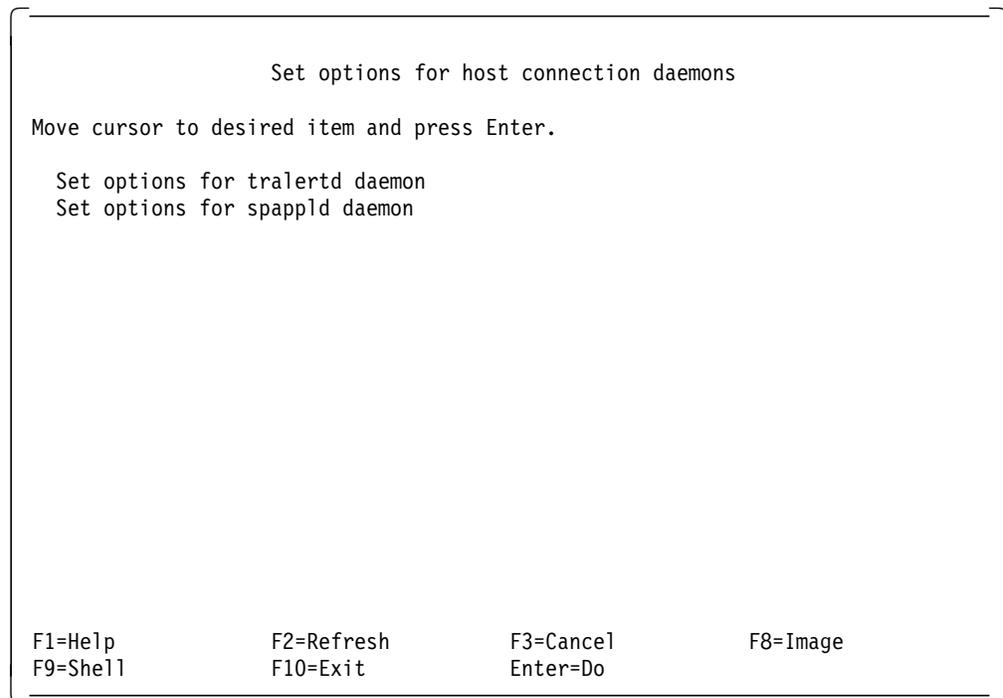
Figure 76 (Part 6 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

We use a naming convention of hostname appended with ″T″ for tralertd.

We recommend filling in the Service Point host name and not leaving it blank. Our host was RS60010 as shown.

```
 ╭─────────────────────────────────────────────────────────────────────────────╮
 │                                                                               │
 │                      Set Options for tralertd daemon                          │
 │                                                                               │
 │  Type or select values in entry fields.                                       │
 │  Press Enter AFTER making all desired changes.                                │
 │                                                                               │
 │                                                           [Entry Fields]      │
 │    Tracing mask:                                   [0]                    #    │
 │    Full path name of trace file:                   [/usr/OV/log/tralertd.t>  /│
 │  * Service point application name:                 [RS60002T]                 │
 │    Service point host name:                        [rs60010]                  │
 │  * Are you using NetCenter?                         no                     +   │
 │       If yes:                                                                  │
 │    Domain name:                                    [SNMP]                      │
 │    Standalone timeout:                             [90]                   #    │
 │                                                                               │
 │                                                                               │
 │  F1=Help              F2=Refresh          F3=Cancel           F4=List          │
 │  F5=Reset             F6=Command          F7=Edit            F8=Image          │
 │  F9=Shell             F10=Exit            Enter=Do                             │
 ╰─────────────────────────────────────────────────────────────────────────────╯
```
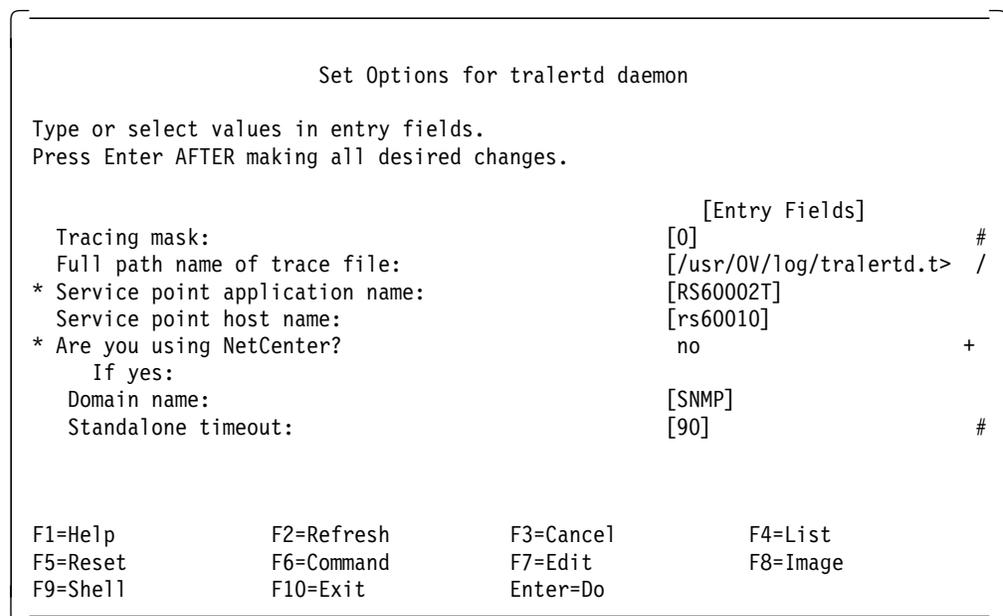
Figure 76 (Part 7 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

spappld is for outbound (from S/390) RUNCMDs and for sending RUNCMD responses back to the S/390.

We use a naming convention of hostname appended with ″S″ for spappld.

We recommend filling in the Service point host name and not leaving it blank. Our host was RS60010 as shown.

```
                          Set Options for spappld daemon

 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.

                                                 [Entry Fields]
   Service point host name:                     [rs60010]
 * Service point application name:              [RS60002S]
   Execute shell state:                          bsh(Bourne)             +
   Execute shell path:                          [/bin:/usr/bin:/usr/OV/>
   Log service point transactions?               yes                    +
   Full path name of log file:                  [/usr/OV/log/NV390.log]   /
   Tracing mask:                                [0]                      #
   Full path name of trace file:                [/usr/OV/log/NV390.trac>  /
   Are you using NetCenter:                      no                     +




 F1=Help              F2=Refresh         F3=Cancel           F4=List
 F5=Reset             F6=Command         F7=Edit             F8=Image
 F9=Shell             F10=Exit           Enter=Do
```

Figure 76 (Part 8 of 9). Configuring NetView for AIX Host Daemons and Setting Node Name for Service Point

You can check the host name specified for Service Point. It has been
filled in as a result of your previously using this field in configuring
the host daemons.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                                                             │
│                                                                             │
│              Set node name or IP address of AIX NetView Service Point       │
│                                                                             │
│                                                                             │
│  Type or select values in entry fields.                                     │
│  Press Enter AFTER making all desired changes.                              │
│                                                                             │
│                                                             [Entry Fields]   │
│    Node name or IP address:                                 [rs60010]       │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│   F1=Help              F2=Refresh         F3=Cancel          F4=List         │
│   F5=Reset             F6=Command         F7=Edit            F8=Image        │
│   F9=Shell             F10=Exit           Enter=Do                           │
│                                                                             │
└─────────────────────────────────────────────────────────────────────────────┘
```

*Figure 76 (Part 9 of 9). Configuring NetView for AIX Host Daemons and Setting Node
Name for Service Point*

7.3.2 Portmap Setup

Since the distributed service point connection between our two RS6000 systems
is done via TCP/IP, the /etc/services file needs to be configured on both systems
as described in 3.3, "Portmap Setup" on page 6.

Note: It is important that portmap is running on both RS/6000 systems and that
the entries in the /etc/services files on both RS6000 systems are identical.

7.3.3 Checking Status of AIX NetView Service Point

After all the configuration steps are done on the remote RS6000, we want to check the status of the AIX NetView Service Point. Figure 77 on page 91 shows the status of AIX NetView Service Point.

```
                                          COMMAND STATUS
Command: OK            stdout: yes            stderr: no

Before command completion, additional instructions may appear below.
[TOP]
nvix_control status

*** Status of NetView Service Point Processes ***

Subsystem          Group          PID     Status
 evp_nvixSrd                      70555   active

Subsystem          Group          PID     Status
 evp_nvixCrd                      70306   active

Subsystem          Group          PID     Status
 evp_nvixAcmd                     67236   active

*** Status of SNA Server, and MDS Session: ***


SNA is active

MDS session is active at NetView for AIX
Status of host and links unknown
Using CP NAME: RA6010CP
On MDS sessions, use SP=RA6010CP in RUNCMDS
and use Applications shown in
*** Applications registered to receive commands from Host: ***
for appl= in RUNCMD

*** Focal Point Status Information: ***
COS FP: USIBMRA.RAPAN
ALERT FP: USIBMRA.RAPAN

*** Status of Portmapper ***

/usr/etc/portmap is active.

*** Applications registered to receive commands from Host: ***

3NVCMD
RS60002S

For additional status and error information refer to
your system error log.
[BOTTOM]
F1=Help          F2=Refresh      F3=Cancel       F6=Command
F8=Image         F9=Shell        F10=Exit
```

Figure 77. AIX NetView Service Point Active and Show Status with Distributed Functions Available

The ″Applications registered to receive commands from Host″ section in Figure 77 on page 91 shows 3NVCMD, a user-written application which is running on RS60010 and, also, RS60002S that is the spappld application registered for running on RS60002.

7.3.4 Working with Distributed AIX NetView Service Point

When the setup mentioned above is done, and all AIX NetView Service Point daemons are up and running we are able to send alerts from RS60002 via tralertd and the AIX NetView Service Point running on RS60010 to the S/390 NetView hardware monitor and to receive RUNCMD commands on the remote RS60002 system.

7.3.4.1 Sending Alerts From Remote RS6000 To S/390 NetView

Figure 78 on page 92, Figure 79 on page 93, and Figure 80 on page 94 show such an alert received from RS60002.

```
   NPDA-30A                    * ALERTS-DYNAMIC *

      DOMAIN RESNAME  TYPE TIME  ALERT DESCRIPTION: PROBABLE CAUSE
       RAPAN RS60002  DEV  16:05 PROBLEM RESOLVED: REMOTE NODE
       RAPAN RA6010CP*DEV  16:05 SNMP RESOURCE PROBLEM: UNDETERMINED
       RAPAN RS60010  DEV  16:05 OPERATOR NOTIFICATION: NETWORK OPERATOR
       RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
       RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
       RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
       RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
       RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
       RAPAN RA6010CP*DEV  16:04 SNMP RESOURCE PROBLEM: UNDETERMINED
       RAPAN RA6010CP*DEV  16:03 SNMP RESOURCE PROBLEM: UNDETERMINED
       RAPAN RA6010CP*DEV  16:03 SNMP RESOURCE PROBLEM: UNDETERMINED
       RAPAN RA6010CP*DEV  16:03 PROBLEM RESOLVED: REMOTE NODE
       RAPAN RA6010CP*DEV  16:03 PROBLEM RESOLVED: COMMUNICATIONS INTERFACE
       RAPAN RA6010CP*DEV  16:03 SNMP RESOURCE PROBLEM: UNDETERMINED


   DEPRESS ENTER KEY TO VIEW ALERTS-STATIC

    ???
   CMD==>
    N E T V I E W          SESSION DOMAIN: RAPAN    WTWKSHA   09/22/95 16:05:40
```

Figure 78. A NetView for AIX Alert from RS60002 Arrives at S/390 NetView

The alert was generated by the NetView for AIX command: event -d ″Testing distributed Service Point″. The sent event had been configured (using NetView for AIX Event Configuration support) to include the ″Testing ....″ as information passed to S/390 NetView as a qualifier. Refer to NetView for AIX event configuration documentation for details.

```
NPDA-45A             * RECOMMENDED ACTION FOR SELECTED EVENT *      PAGE  1 OF  1
 RAPAN      RA6010CP      RS60002T       RS60002        RS60002
            +--------+   +--------+   +--------+   +--------+
 DOMAIN     |  SP    |---|   TP   |---|  DEV   |---|  DEV   |
            +--------+   +--------+   +--------+   +--------+


USER    CAUSED - NONE

INSTALL CAUSED - NONE

FAILURE CAUSED - REMOTE NODE
       ACTIONS - I144 - IF PROBLEM REOCCURS THEN DO THE FOLLOWING
                 I142 - REPORT THE FOLLOWING:
                        LOCATION Dave Shogren, Room BB110, ITSO-Raleigh.  Pho
                        DEVICE ADDRESS <none>




 ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)

 ???
CMD==>
 N E T V I E W          SESSION DOMAIN: RAPAN     WTWKSHA   09/22/95 16:06:07
```

Figure 79. NetView for AIX Recommended Action and Hierarchy Information

In the above figure you can see, that RA6010CP is shown as CP name, and
RS60002T as event source. RS60002T is the application configured in the
NetView for AIX tralertd running on RS60002.

```
  NPDA-43S                       * EVENT DETAIL *                  PAGE  1 OF  1

   RAPAN        RA6010CP      RS60002T      RS60002       RS60002
                +--------+    +--------+    +--------+    +--------+
   DOMAIN       |  SP    |---|   TP    |---|  DEV   |---|  DEV   |
                +--------+    +--------+    +--------+    +--------+

   SEL# TYPE AND NAME OF OTHER RESOURCES ASSOCIATED WITH THIS EVENT:
   ( 1) DEV     RS60002.ITSO.RAL.IBM.COM

   DATE/TIME: RECORDED - 09/22 16:05    CREATED - 09/22/95 16:04:58

   EVENT TYPE: PERMANENT

   DESCRIPTION: PROBLEM RESOLVED

   PROBABLE CAUSES:
      REMOTE NODE

   QUALIFIERS:
      1)  DEVICE ADDRESS <none>
      2)  EVENT CODE testing distributed Service Point




   UNIQUE ALERT IDENTIFIER: PRODUCT ID - 5696-7310  ALERT ID - AB85355A

   ENTER A (ACTION) OR DM (DETAIL MENU)

   ???
 CMD==>
   NCCF                          N E T V I E W    RAPAN WTWKSHA  09/22/95 16:06:57
```

Figure 80. NetView for AIX Event Detail Information (Page 1)

7.3.4.2 Receiving RUNCMD Commands on Remote RS60002 from S/390 NetView

As already shown in Figure 77 on page 91, RS60002S is a registered application to receive RUNCMD commands from S/390 NetView. RS60002S belongs to spappld running on RS60002.

Figure 81 on page 95 shows a RUNCMD sent to the user-written application 3NVCMD which is running locally on RS60010.

Figure 82 on page 95 shows a RUNCMD sent to the spappld application RS60002S which is running remotely on RS60002.

In both cases we are using the AIX command hostname to show that the commands are executed on different AIX systems.

```
* RAPAN     RUNCMD SP=RA6010CP,APPL=3NVCMD ANSWER WTWKSHA HOSTNAME
-           Command { answer wtwksha hostname } received.
-           >>>>> SENDING IN LINE MODE
-           >>>>> STARTING @ Wed Sep 27 11:56:17 1995
-           rs60010
-           <<<<< STOPPING @ Wed Sep 27 11:56:17 1995
-           <<<<< 1 LINES SENT
-------------------------------------------------------------------------------



???

NCCF                          N E T V I E W    RAPAN WTWKSHA  09/22/95 11:57:34
```

Figure 81. 3NVCMD User-Written AIX NetView Service Point RUNCMD Application

```
* RAPAN     RUNCMD SP=RA6010CP,APPL=RS60002S  HOSTNAME
-           Executing RUNCMD "HOSTNAME" *
-           rs60002
-------------------------------------------------------------------------------







???

N E T V I E W            SESSION DOMAIN: RAPAN    WTWKSHA   09/22/95 11:58:39
```

Figure 82. RS60002S NetView for AIX RUNCMD Application. The RUNCMD APPL name RS60002S was configured in NetView for AIX configure host daemon, spappld on RS60002.

Chapter 8. NetView for AIX Event/Alert Configuration

This chapter provides examples of the possible interactions between NetView for AIX and the S/390 NetView.

It shows how to configure alerts in NetView for AIX which are sent to S/390 NetView.

NetView for AIX communicates via the spappld and tralertd daemons with the AIX NetView Service Point.

Chapter 3, "AIX NetView Service Point Installation and Customization for Use With NetView for AIX" on page 5 shows the setup of these daemons.

Messages and commands are sent to and from the S/390 NetView host in a structured format, using SNA Management Services (MS) alert subvectors.

AIX NetView Service Point encapsulates the subvectors in an SNA MS alert major vector and uses AIX SNA Server/6000 to transport the alert major vector to the S/390 host VTAM using SSCP-PU session, or directly to the S/390 NetView using a LU-LU session.

When SSCP-PU is used, VTAM passes the alert major vector to the S/390 NetView product using a standard table for RU routing which indicates that such data are to be processed by S/390 NetView.

In both cases (SSCP-PU or LU-LU) the S/390 NetView hardware monitor component receives the alert major vector.

There is a database associated with the *tralertd* daemon which contains the SNMP data for any trap for which not all the data requested by the trap to alert conversion process could be presented in the alert subvector for space reasons. This database is located in the directory */usr/OV/databases/tralertd*.

Figure 83 on page 98 shows the trap-event-alert flow from the IP node where the trap is generated, via NetView for AIX to S/390 NetView.

```
┌──────┐                                                  ┐
│ Trap │                              │                    │ IP
└──┬───┘                              │                    │ Network
   │                                  ▼                    ┘
   │                      ┌─────────────────┐              ┐
   │                      │ Internal Events │              │
   │                      └────────┬────────┘              │
   │              ┌────────────────┘                       │
   │              │                     ┌──────────────┐   │
   │              │            ┌───────▶│ dynamic      │   │
   ▼              ▼            │        │ Workspace    │   │
┌────────────────────┐        │        └──────────────┘   │ NetView for AIX
│                    │────────┘                            │
│      Events        │    Filter                           │
│                    │────────┐        ┌──────────────┐    │
└─────────┬──────────┘        └───────▶│ static       │    │
          │                            │ Workspace    │    │
   Filter │                            └──────────────┘    │
          ▼                                                │
┌────────────────────┐                                     │
│      Alerts        │                                     │
│                    │                                     ┘
└─────────┬──────────┘                                     ┐
          │                                                │ SNA
          ▼                                                │ Network
┌────────────────────┐                                     ┘
│  Events            │                                     ┐
│  arriving          │                                     │
└─────────┬──────────┘                                     │
          │                                                │
   Filter │                                                │
          ▼                                                │
┌────────────────────┐        ┌──────────────┐            │ S/390
│  Event             │───────▶│              │            │ NetView
│  recorded          │        │              │            │ Hardware
└────────────────────┘        └──────────────┘            │ Monitor
                                                           │
   Filter                                                  │
          ┌──────────────┐  Filter   ┌──────────────┐      │
          │  Alerts      │──────────▶│ dynamic or   │      │
          │              │           │ static       │      │
          └──────────────┘           └──────────────┘      ┘
```
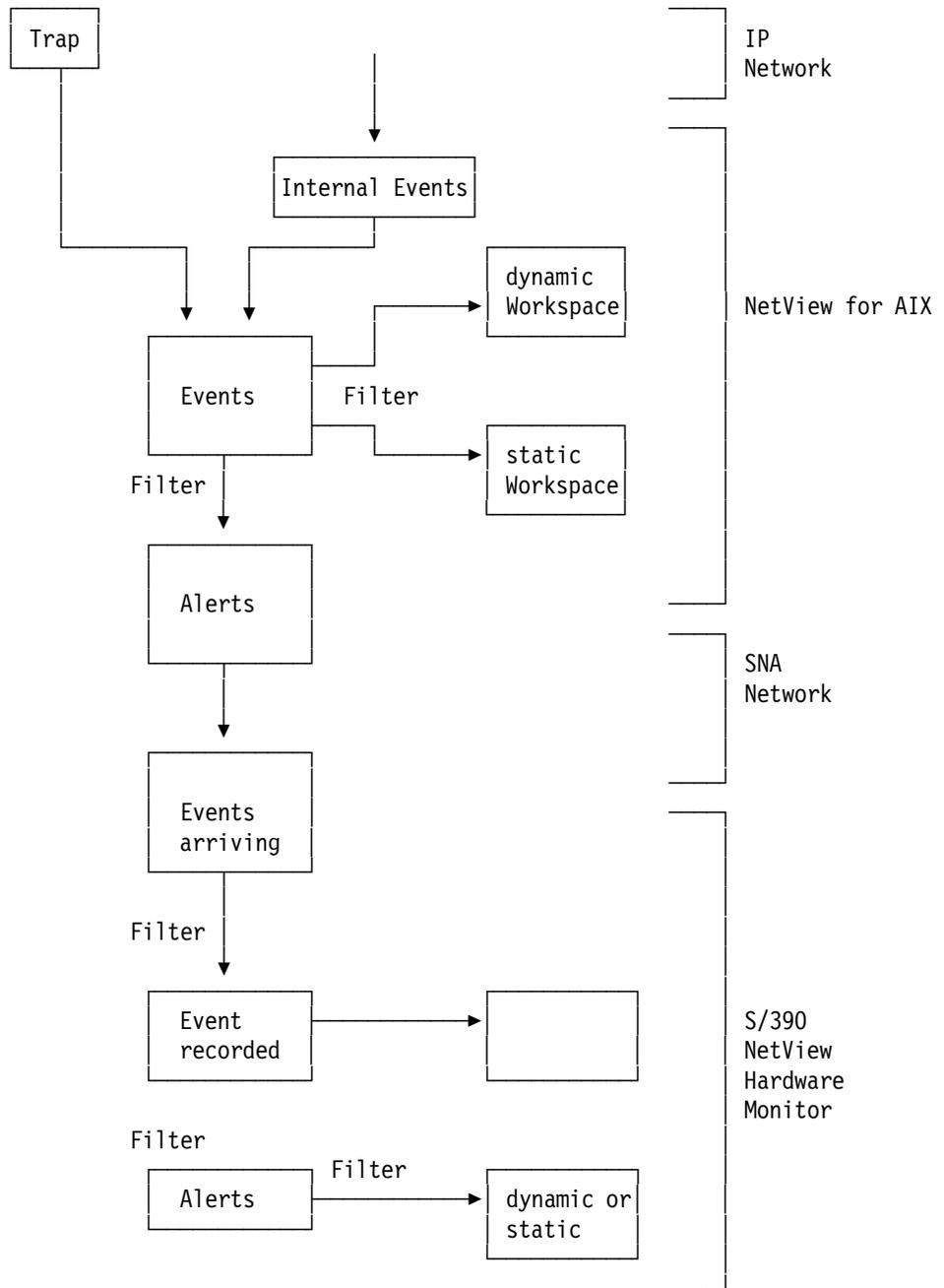
Figure 83. Trap-Event-Alert Flow

8.1 Data Elements of a Trap

Figure 84 on page 99 shows the components of an SNMP trap. The fields from *community name* to *time stamp* are always present.

There can be zero, one or more variables present depending on the values of the *generic trap* or *specific trap* fields.

Field	Type	selection Character
community name	octet string	$C
enterprise	object ID	$e or $E
agent address	IP address	$A
generic trap type	integer	$G
specific trap type	integer	$S
time stamp	time ticks	$T
0 to n variables (bindings)		$#
variable name	object ID	
variable value	(various)	$n

Figure 84. Trap Fields

8.2 Generic Trap Values

Figure 85 on page 100 shows the generic trap values.

Value	Meaning	Variables
0	cold start	-
1	warm start	-
2	link down	interface number
3	link up	interface number
4	authentication failure	-
5	EGP neighbor loss	IP address
6	enterprise-specific	as required

Figure 85. Generic Trap Values

The diagram above shows the values of the generic trap fields as follows.

- *0 cold start* - the specific trap field is 0 and there are no variables

- *1 warm start* - the specific trap field is 0 and there are no variables

- *2 link down* - the specific trap field is 0 and there is at least one variable which identifies the interface by its number.

- *3 link up* - the specific trap field is 0 and there is at least one variable which identifies the interface by its number.

- *4 authentication failure* - the specific trap field is 0 and there are no variables.

- *5 EGP neighbor loss* - the specific trap field is 0 and there is at least one variable which provides the IP address of the EGP neighbor.

- *6 enterprise specific* - the specific trap field can be any value which serves to distinguish the various enterprise specific traps for a particular enterprise. There can be as many variables in the variable list as are needed to define the significance of the trap.

8.3 Sending a NetView for AIX Event to S/390 NetView

For this example we are using the event NVNUP_EV (Node UP) from NetView for AIX. To send this event, we are using the command event -d "some text". When the event command is used without specifying an event number, always the Node_Up event is sent.

Without any event customization on the AIX side, the event is sent to S/390 NetView with default options and looks like Figure 86 on page 101.

```
 N E T V I E W              SESSION DOMAIN: RAPAN    WTWKSHA   10/03/95 10:42:29
 NPDA-43S                           * EVENT DETAIL *                  PAGE  1 OF  2

  RAPAN        RA6010CP     RS60010T     RS60010      RS60010
               +--------+   +--------+   +--------+   +--------+
  DOMAIN       |  SP    |---|  TP    |---|  DEV   |---|  DEV   |
               +--------+   +--------+   +--------+   +--------+

  DATE/TIME: RECORDED - 10/03 10:39    CREATED - 10/03/95 10:38:15

  EVENT TYPE: UNKNOWN

  DESCRIPTION: SNMP RESOURCE PROBLEM

  PROBABLE CAUSES:
     UNDETERMINED

  ENTER A (ACTION) OR DM (DETAIL MENU)

  ???
 CMD==>
```

Figure 86. S/390 NetView View of a Non-Customized SNMP Alert

Figure 87 provides more details.

```
 N E T V I E W    SESSION DOMAIN: RAPAN     WTWKSHA   10/03/95 10:42:33
 NPDA-43S                    * EVENT DETAIL *                PAGE  2 of  2

  RAPAN        RA6010CP     RS60010T     RS60010      RS60010
               +--------+   +--------+   +--------+   +--------+
  DOMAIN       |  SP    |---|  TP    |---|  DEV   |---|  DEV   |
               +--------+   +--------+   +--------+   +--------+

  QUALIFIERS:
     1)  DEVICE ADDRESS <none>
     2)  EVENT CODE unknown

  UNIQUE ALERT IDENTIFIER: PRODUCT ID - 5696-3620  ALERT ID - DDB3159A

  ENTER A (ACTION) OR DM (DETAIL MENU)

  ???
 CMD==>
```

Figure 87. Alert Detail with No Customization

8.4 Customizing NetView for AIX Code Points For S/390 Host Alerts

In this section we are discussing code points. Code points are used within an NMVT to assist S/390 operators and software to understand what information has arrived from a service point. It is important that the service point and S/390 are in agreement with regards to code points and their meaning. See your S/390 programmer for details on this subject.

We will add some useful information to the alert resulting from the event -d command by changing the event to add some NetView for AIX code point definitions.

These code point definitions cover the following types of information.

Table 1. NetView for AIX Code Points		
Description	**SubVector**	**errmsg Set ID**
Detail Data	x′98′	D
Error Description	x′92′	E
Failure Cause	x′96′	F
Install Cause	x′95′	I
Probable Cause	x′93′	P
Recommended Action	x′81′ **1**	R
User Cause	x′94′	U

> **Note**
>
> **1** is a subfield and not a subvector. See *Systems Information Architecture Formats*, GA27-3136, for additional information.

Generally, all code points are designed into the architecture. The AIX Base Operating System, which supplies the errmsg command, has elected to use the SNA Management Services code points for it′s internal error reporting. These code points can be updated and you can add new code points which are transferred then to the S/390 NetView hardware monitor.

The user code point definitions have to be added to the AIX error message catalog before we can use them in NetView for AIX. This catalog is called /usr/adm/ras/codepoint.cat.

You can use the AIX errmsg command to display the currently configured code points. Choose a value from the errmsg Set ID column in Table 1 to display information for a particular group of code points (for example: errmsg -w D).

To add new, user codepoint definitions to the catalog, do the following:

- Create a file called: ITSO_codepoints.
- Enter the details as shown in Figure 88 on page 103.

```
* Sample Configuration File
* Use with the AIX errinstall command
* for Adding New codepoint definitions
*
* SET D - Detailed Data          S/390 subvector: x'98'
*     E - Error Description       S/390 subvector: x'92'
*     F - Failure Cause           S/390 subvector: x'96'
*     I - Install Cause           S/390 subvector: x'95'
*     P - Probable Cause          S/390 subvector: x'93'
*     R - Recommended Action      S/390 subfield:  x'81'
*     U - User Cause              S/390 subvector: x'94'
*
*
* Message ID Must Be 4 characters and in hex format
* The Message TEXT must not exceed 40 characters
*
* Start the additional user defined codepoints from E601 - E999
*
SET D
E610 "ITSO D APPLICATION RESTORED"
SET E
E610 "ITSO E SNA NOW AVAILABLE"
SET F
E610 "ITSO F SOFTWARE HAS RESTARTED"
SET I
E610 "ITSO I MEMORY FREE"
SET P
E610 "ITSO P MEMORY"
SET R
E610 "ITSO R MONITOR APPLICATION"
SET U
E610 "ITSO U APPLICATION UP"
```

Figure 88. ITSO_Codepoints (User Code Points)

- Type errinstall -c ITSO_codepoints to check for syntax errors.

- Type the command errinstall -f ITSO_codepoints to add these new code points.

  The -f option will replace any duplicate entries.

You can now check that these code points are available by typing:
errmsg -w ALL | grep E610

If you find any incorrect descriptions, then you can delete them as follows:

1. Type errmsg

2. Type SET P

3. Type - E610

4. Type <CNTRL>d

Note that there is one code point catalog for each language. The process listed above has updated /usr/adm/ras/codepoint.cat.

Use the command: ln -s /usr/lib/nls/msg/En_US/codepoint.cat /usr/adm/ras/codepoint.cat to link the two files together and ensure that NetView for AIX was looking at the file we updated.

After we have defined the code points, we must associate them with the specific events. To do this select the following from NetView for AIX pull-down menu:

- Select **Options-> Event Configuration-> Trap Customization**

- Select the **netView6000** Enterprise Name

- Select the generic/specific event **NVNUP_EV** (Node UP Event)

- Select **Alert Editor...**

This will give you a screen as shown in Figure 89.
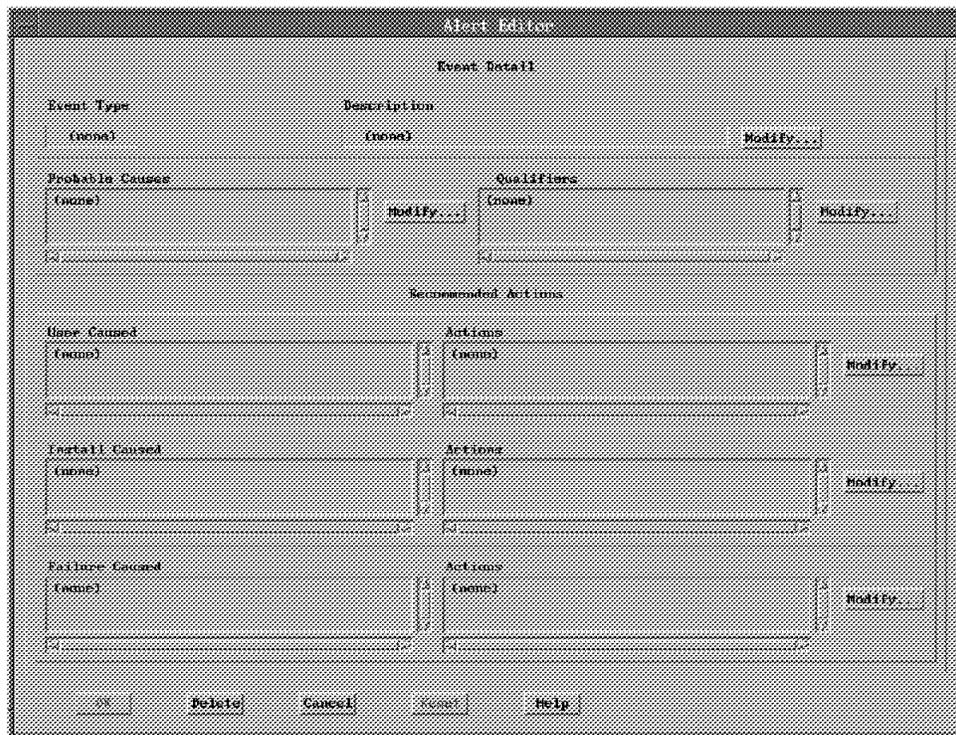
Figure 89. Alert Editor Primary Screen

8.5 Changing the Description Code Point

- Select **Modify** next to the description field.

    Now you will get the generic alert window.

- Select **A000 PROBLEM RESOLVED**.

- Select the **Permanent** radio button

    Now you get a screen as shown in Figure 90 on page 105.
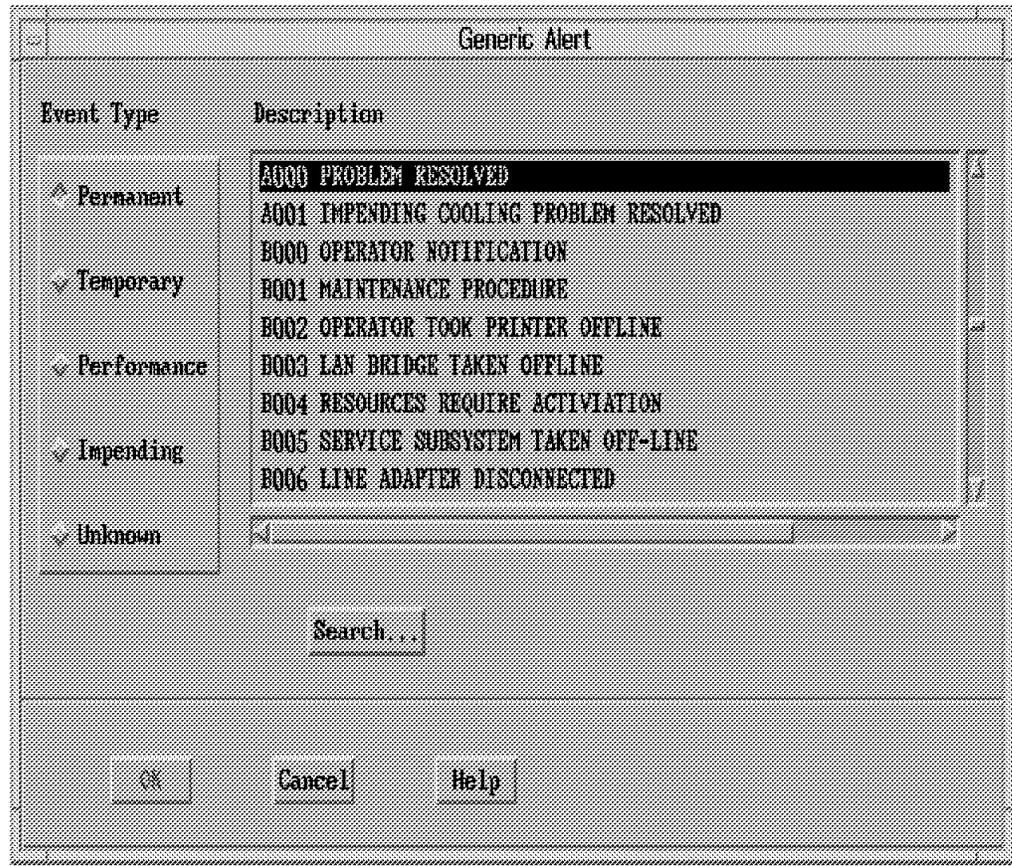
Figure 90. Generic Alert Window

- Select **OK**.

8.6 Changing the Probable Cause Code Point

Do the following from the Alert editor window.

- Select **Modify** next to the Probable Causes window.

- Select **Search** and type **2200**.

- Select **OK** followed by **Cancel**.

- Move the required code point from the Available Probable Causes window to the Selected Probable Causes window, using the arrows (see Figure 91 on page 106).
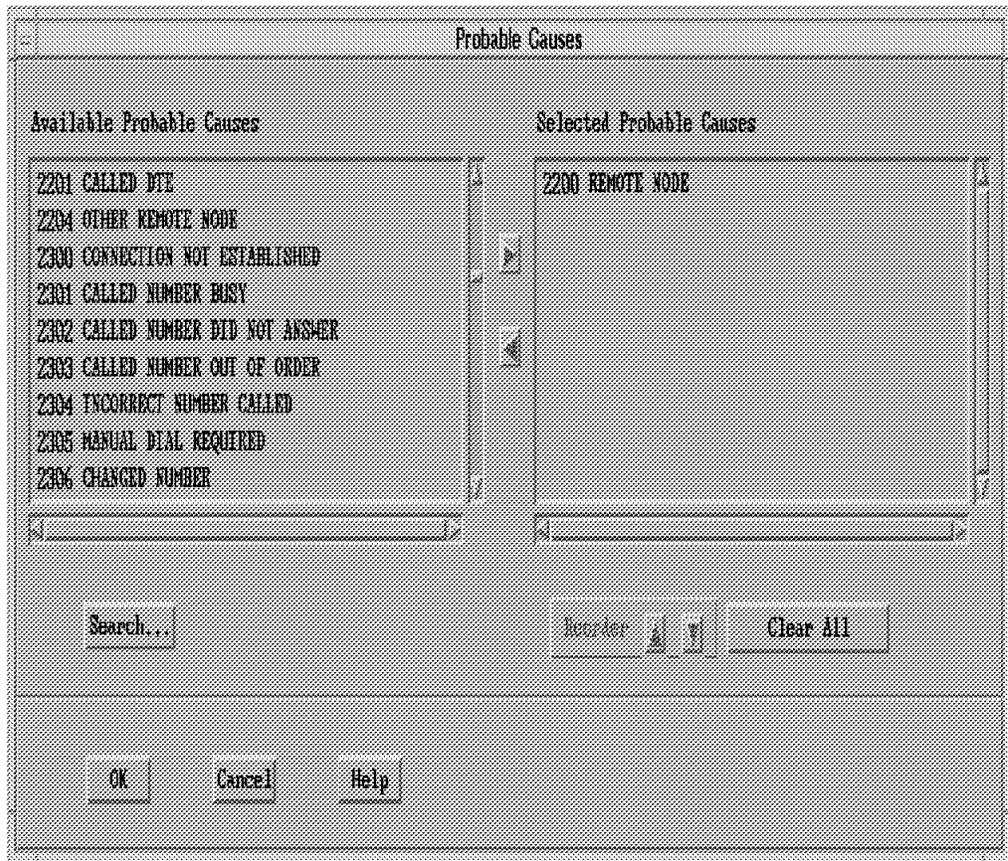
Figure 91. Editing Alert Probable Causes

• Select **OK**.

This process is the same for all other code point options.

8.7 Code Point Qualifiers

It is possible to send variable data in the code point, using the variables available to you during normal NetView for AIX event customization.

To add a code point qualifier:

• Select **Modify** near the Qualifiers window.

• Select **Add**.

• Choose **0051 DEVICE ADDRESS** from the available list (see Figure 92 on page 107).
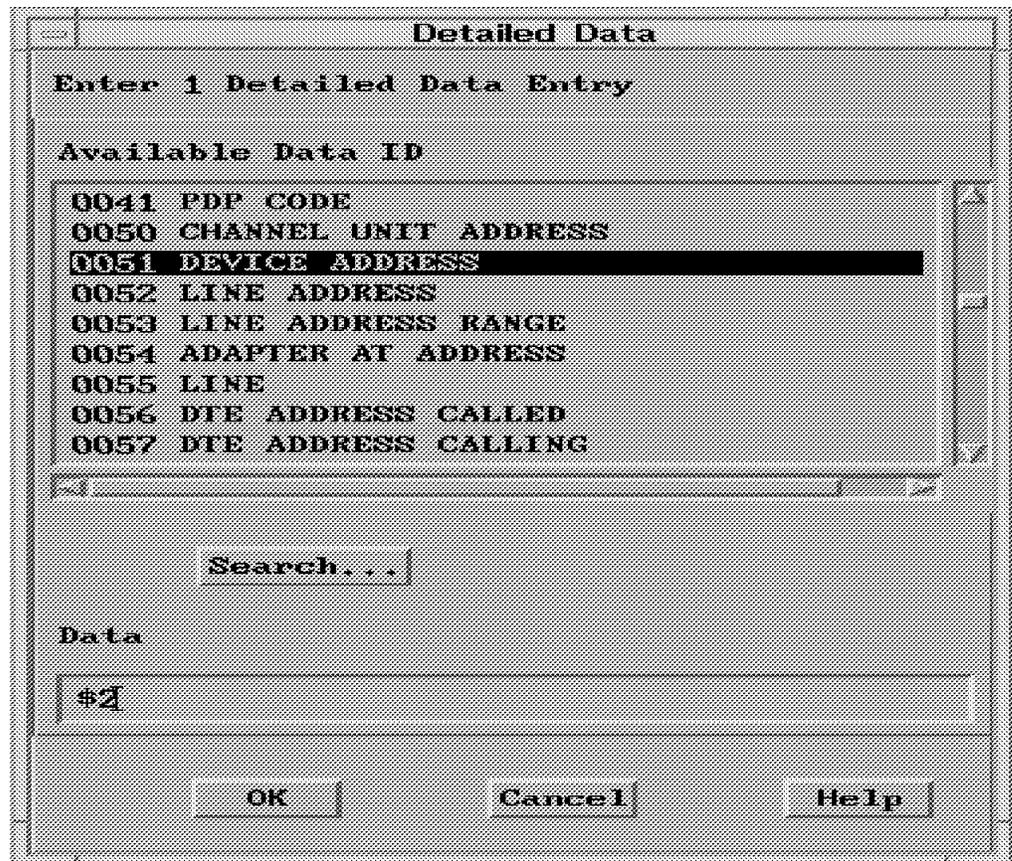
Figure 92. Available Qualifiers List

- Enter $2 in the Data field.
- Select **OK** which returns you to the Qualifiers window as shown in Figure 93 on page 108.
- Select **OK**.

After all code points are edited, the Alert Editor window looks like Figure 94 on page 109. Select **OK** to apply these changes.
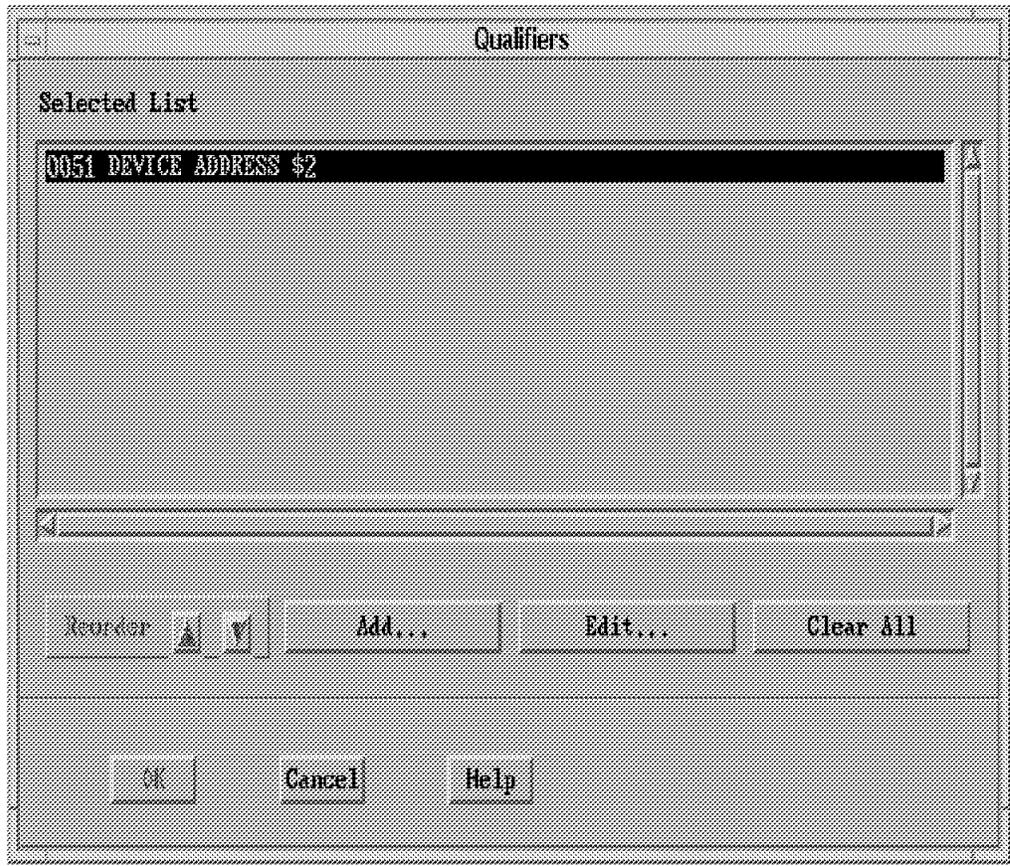
Figure 93. Qualifiers Window

The completed alert editor window is shown in Figure 94 on page 109.
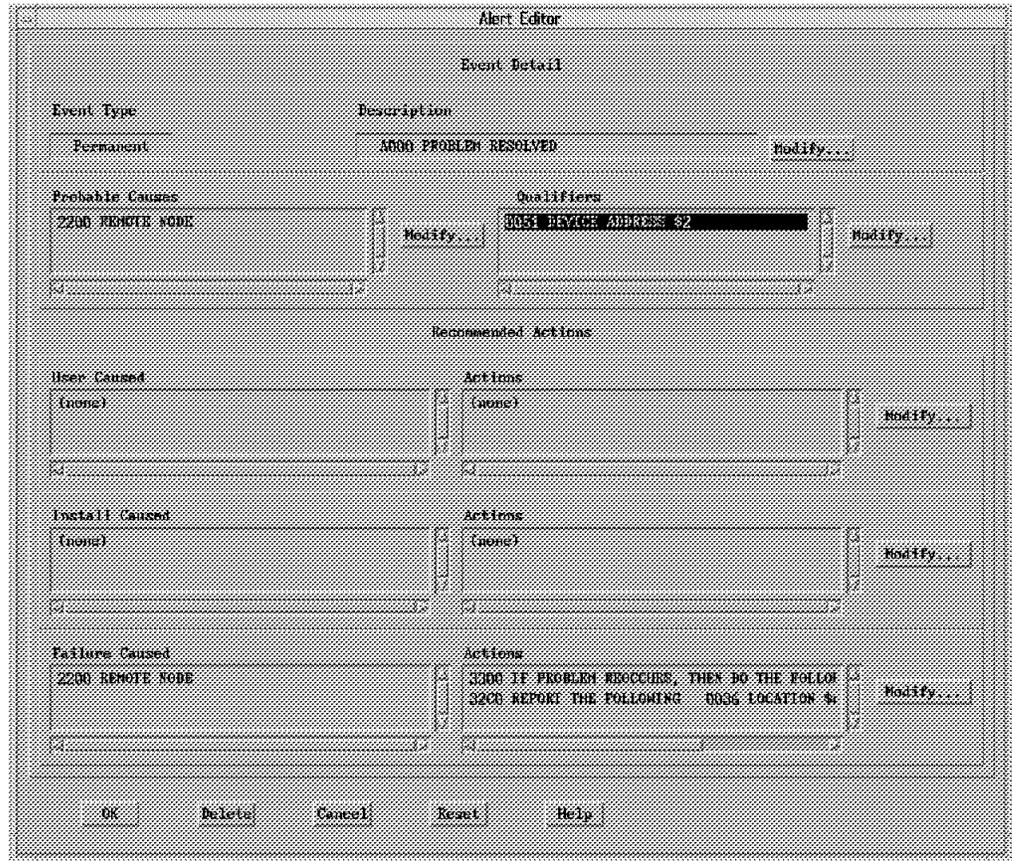
Figure 94. Completed Event Window

Select **Replace** and **Apply** on the Event Configuration window.

8.8 Checking Code Points on S/390 NetView

This document does not intend to summarize all aspects of S/390 NetView and its handling of the configured RISC System/6000 service point generated NMVT (alert). Be sure you are in contact with a person who is familiar with S/390 NetView for details to make sure you are in sync.

Note: It's important that the code points on the AIX side and on the S/390 NetView side are in sync.

It is also important to see if there are S/390 NetView filters active which may filter the event received from the AIX side.

To see the status of some S/390 filters, from an S/390 NetView panel issue:

npda df oper

  or

npda df arec

8.9 Default Trap to Alert Conversions

Some events are converted into alerts by default. Some of these are inactive when NetView for AIX is initially installed.

To see the current status of the events, do the following:

1. View the list of events in the default trap to alert filter.

2. Activate the trap to alert filters.

3. View the default code point definition for the Node Up / Node Down events.

From the NetView for AIX menu:

- Select **Options> Event Configuration**.

- Select **Trap to Alert Filter control**.

- Select the **Trap_to_Alert_Filter** from the list.

- Select **Display/Edit**.

- Select enterprise **NetView6000** from the event ID list.

- Select **Add/Modify**.

Now we can browse the list of predefined generic/specific event pairs from the Generic Specific list. To display more information about any of these traps, use the event -l command.
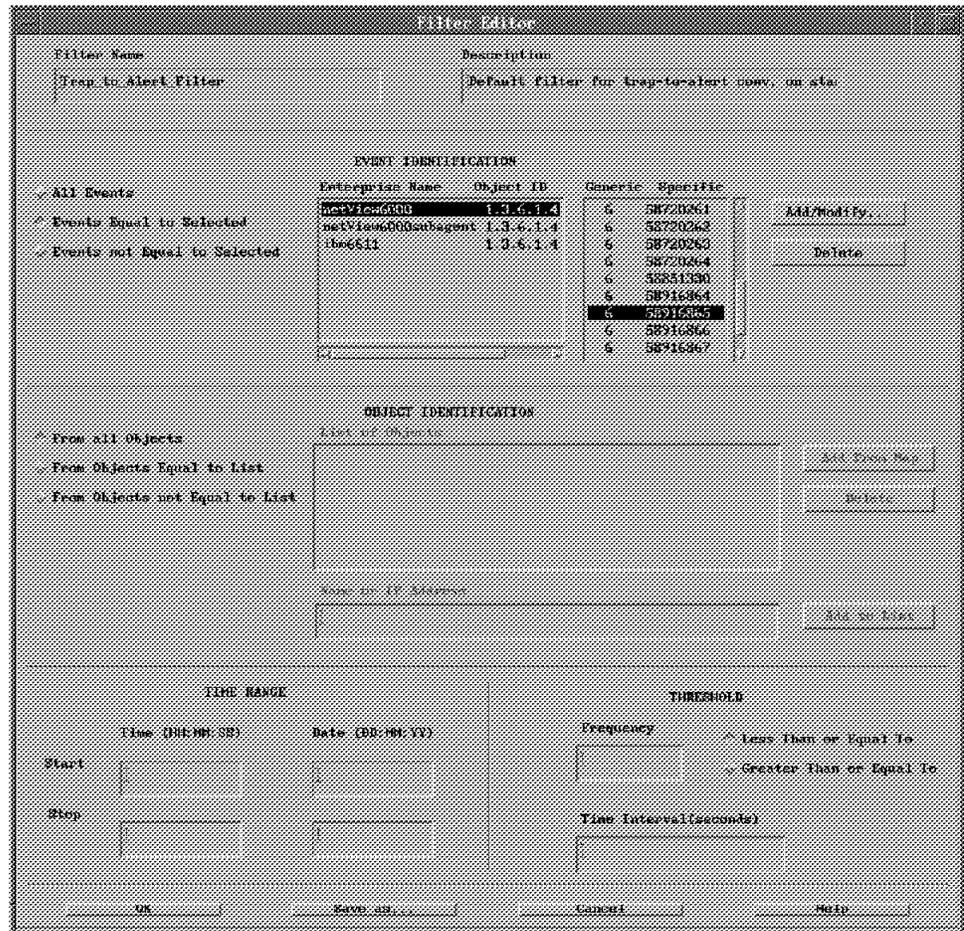
Figure 95. Filter Editor Including Browse of Generic/Specific

After browsing through the predefined filter, select **Cancel** to close the filter editor screen.

Select the **Activate** button to activate this filter.

We already changed the code points for the Node Up event. Figure 96 on page 112 shows the code point definitions for the Node Down event.
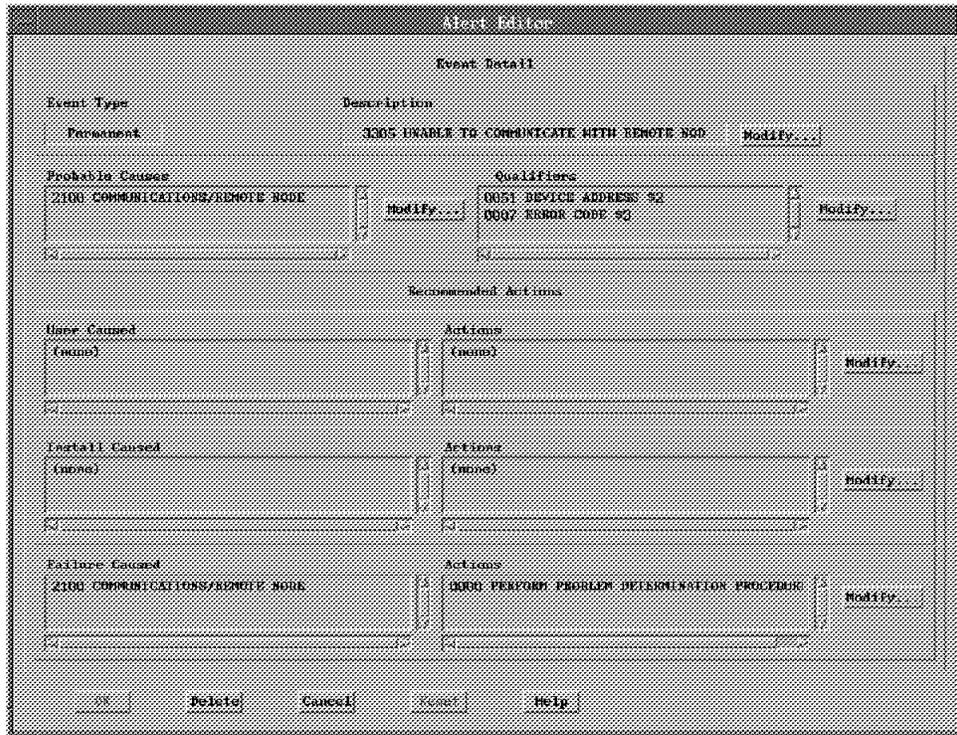
Figure 96. Code Points for Node Down Event

To simulate a node down problem, type event -E 58916865, and you will see an alert in S/390 NetView hardware monitor like the one shown in Figure 97 on page 112 and Figure 98 on page 113. As we are using default S/390 NetView code point entries, we had nothing to change in the S/390 NetView code point tables.

```
N E T V I E W     SESSION DOMAIN: RAPAN     WTWKSH8    10/04/95 14:57:15
NPDA-45A      * RECOMMENDED ACTION FOR SELECTED EVENT *    PAGE  1 OF  1
 RAPAN        RA6010CP     RS60010T     RS60010       RS60010
             +--------+   +--------+   +--------+   +--------+
 DOMAIN      |  SP    |---|   TP   |---|  DEV   |---|  DEV   |
             +--------+   +--------+   +--------+   +--------+

USER    CAUSED - NONE

INSTALL CAUSED - NONE

FAILURE CAUSED - COMMUNICATIONS/REMOTE NODE
        ACTIONS - I000 - PERFORM PROBLEM DETERMINATION PROCEDURES

ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)

???
CMD==>
```

Figure 97. S/390 NetView Node Down Recommended Action

```
 N E T V I E W       SESSION DOMAIN: RAPAN    WTWKSHA   10/04/95 14:58:26
 NPDA-43S                    * EVENT DETAIL *              PAGE  1 OF  2

  RAPAN       RA6010CP     RS60010T     RS60010      RS60010
            +--------+   +--------+   +--------+   +--------+
  DOMAIN    |  SP    |---|   TP   |---|  DEV   |---|  DEV   |
            +--------+   +--------+   +--------+   +--------+

 SEL# TYPE AND NAME OF OTHER RESOURCES ASSOCIATED WITH THIS EVENT:
 ( 1) DEV     RS60010.ITSO.RAL.IBM.COM

 DATE/TIME: RECORDED - 10/04 14:52    CREATED - 10/04/95 14:51:39

 EVENT TYPE: PERMANENT

 DESCRIPTION: UNABLE TO COMMUNICATE WITH REMOTE NODE

 PROBABLE CAUSES:
    COMMUNICATIONS/REMOTE NODE

 ENTER A (ACTION), SEL# (CORRELATED EVENTS), OR DM (DETAIL MENU)

 ???
 CMD==>
```

Figure 98. S/390 NetView Node Down Alert Detail

8.10 S/390 NetView Code Point Customization

In order to have qualified information on the S/390 NetView host, we have to make complementary changes to the S/390 NetView hardware monitor. This example shows the code point configuration for the ITSO application. Here we are adding the code points which are already configured in the AIX Code point catalog (See Figure Figure 88 on page 103.) To make the required changes, do the following from an S/390 NetView panel:

- Locate the BNJxxUTB member in the BNJPNL1 file.

  This can be done from S/390 NetView NCCF. The command and its result are shown in **1** of Figure 99 on page 114. The code point source in our sample is located in NETVIEW.NV24.BNJPNL1.

```
NCCF                     N E T V I E W    RAPAN WTWKSH8  10/04/95 11:30:24 A
              1
* RAPAN    LISTALC BNJPNL1
' RAPAN
CNM299I
DDNAME   DATA SET NAME                                              DISP
--------  --------------------------------------------------------  --------
BNJPNL1  NETVIEW.NV24.BNJPNL1                                        SHR,KEEP
              2
* RAPAN    CPTBL MEMBER=BNJ92TBL,TEST
- RAPAN    CNM736I TEST OF CODE POINT MEMBER BNJ92TBL WAS SUCCESSFUL
              3
* RAPAN    CPTBL MEMBER=BNJ92TBL
- RAPAN    DSI633I CPTBL COMMAND SUCCESSFULLY COMPLETED
- RAPAN    BNJ192I CODE POINT TEXT MAY HAVE BEEN CHANGED - CONSIDER RESTARTING
           YOUR NPDA SESSION IF YOU HAVE NOT DONE SO
-----------------------------------------------------------------------
???
```

Figure 99. From S/390 NetView: Locating the S/390 NetView Code Point Tables

The structure of the member name format is BNJxxUTB where ″xx″ is the number of the subvector. Figure 100 on page 115 shows an update (**1**) to BNJ92UTB via S/390 TSO.

```
EDIT ---- NETVIEW.NV24.BNJPNL1(BNJ92UTB) - 01.04 ------- COLUMNS 001 072
COMMAND ===>                                             SCROLL ===> CSR
****** **************************** TOP OF DATA ************************
************************************************************************
*                                                                      *
* TABLE NAME:  BNJ92UTB                                                 *
*                                                                      *
* DESCRIPTION:  THIS MEMBER IS USED TO GENERATE ALERT DESCRIPTION       *
*               CODE POINTS WHICH SUPPLEMENT THOSE SHIPPED BY IBM.      *
*               IT IS %INCLUDED BY BNJ92TBL.  REFER TO THE              *
*               NETVIEW CUSTOMIZATION GUIDE FOR THE FORMAT OF ENTRIES   *
*               AND MORE INFORMATION.                                   *
* (C) COPYRIGHT IBM CORP. 1988, 1994                                    *
*                                                                      *
************************************************************************
*
*E000 N TEXT FOR E000 GOES HERE - MAX = 40 CHARS;
*E000 N ABOVE > 25 CHARS - ABBREV;
*E001 N TEXT SHORT - NO ABBREV;
**1**
E610 N ITSO E SNA NOW AVAILABLE;
**** ABBREVIATED ENTRY (SECOND ONE FOR THE SAME CODE POINT) IS REQUIRED
**** IF TEXT > 25 CHARS.  OTHERWISE DO NOT ADD ABBREVIATED ENTRY.
*************************** BOTTOM OF DATA ***************************
```

Figure 100. From S/390 TSO: Updating the Source for BNJ92UTB

- Using S/390 TSO, make and then save the changes to the BNJ92UTB.

- Using S/390 NetView, use the commands shown at **2** and **3** in Figure 99 on page 114 to test and then implement the changes.

Do the same operation for all the code point tables that are mentioned in Table 1 on page 102.

When these changes are made, you will need to exit and then re-enter the hardware monitor display. You will then see the changes to the alert displays, as seen in Figure 101 on page 116 and Figure 102 on page 116.

```
 N E T V I E W    SESSION DOMAIN: RAPAN    WTWKSH8   10/04/95 11:04:00
 NPDA-43S                    * EVENT DETAIL *                 PAGE  1 OF  2

  RAPAN       RA6003CP     RS60003T     RS60003      RS60003
             +--------+  +--------+  +--------+  +--------+
  DOMAIN     |  SP    |--|   TP   |--|  DEV   |--|  DEV   |
             +--------+  +--------+  +--------+  +--------+

 SEL# TYPE AND NAME OF OTHER RESOURCES ASSOCIATED WITH THIS EVENT:
 ( 1) DEV     RS60003.ITSO.RAL.IBM.COM

 DATE/TIME: RECORDED - 10/04 10:48    CREATED - 10/04/95 10:47:55

 EVENT TYPE: PERFORMANCE

 DESCRIPTION: ITSO E SNA NOW AVAILABLE

 PROBABLE CAUSES:
    ITSO P MEMORY

 ENTER A (ACTION), SEL# (CORRELATED EVENTS), OR DM (DETAIL MENU)

 ???
CMD==>
```

Figure 101. Alert Detail with Defined S/390 NetView Code Points

```
 N E T V I E W    SESSION DOMAIN: RAPAN    WTWKSH8   10/04/95 11:03:47
 NPDA-45A     * RECOMMENDED ACTION FOR SELECTED EVENT *    PAGE  1 OF  1
  RAPAN       RA6003CP     RS60003T     RS60003      RS60003
             +--------+  +--------+  +--------+  +--------+
  DOMAIN     |  SP    |--|   TP   |--|  DEV   |--|  DEV   |
             +--------+  +--------+  +--------+  +--------+

 USER    CAUSED - ITSO U APPLICATION UP
        ACTIONS - ITSO R MONITOR APPLICATION

 INSTALL CAUSED - ITSO I MEMORY FREE
        ACTIONS - ITSO R MONITOR APPLICATION

 FAILURE CAUSED - ITSO F SOFTWARE HAS RESTARTED
        ACTIONS - ITSO R MONITOR APPLICATION

 ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)

 ???
CMD==>
```

Figure 102. S/390 NetView Alert Recommended Actions

Note that you do not have to send the NetView for AIX alerts again, as this
change is dynamic.

Chapter 9. AIX NetView Service Point Problem Determination

This chapter provides some useful debugging tips for AIX NetView Service Point, tralertd and spappld.

9.1 AIX SNA Server/6000 Verification

The first step to do is the verification of the AIX SNA Server/6000 profiles. This needs to be done after the AIX SNA Server/6000 profiles are created. If the profiles are not verified, the link station can not be started. Verify that the link station is up and running (use SMIT).

9.2 Service Point Verification

Once SNA Server has been properly configured and connections appear to be active on both the S/390 and the RISC System/6000, it then becomes a matter of checking the AIX NetView Service Point.

9.2.1 Check if All AIX NetView Service Point Daemons Are Active

Use the command /usr/lpp/nvix/scripts/nvix_control status to see the status of all daemons. If one or more are not running do the following:

- Use the command /usr/lpp/nvix/scripts/nvix_control stop.

- Issue the following where daemon is the AIX NetView Service Point daemon which is not running. ps -ef | grep "daemon".

- If the daemon is running then kill it. (Use the kill -9 pid command).

- Recycle SNA, SNA link station, and Service Point.

- If the problem still exists, then the problem is most likely in the SNA profiles.

At this point AIX SNA Server/6000, the AIX NetView Service Point daemons and the S/390 NetView should all be active.

9.2.2 Use the AIX NetView Service Point Examples to Check the Alert Flow

Issue the command /usr/lpp/nvix/bin/testa. This should send an alert to the S/390 NetView Alerts-Dynamic Display that reads:

OUT OF COINS COIN DISPENSER

.

If the alert does not appear the problem is most likely in the AIX SNA Server/6000 profiles, VTAM setup, or it may be necessary to issue a FOCALPT CHANGE command from the S/390.

If you are without APPN connectivity, be sure the Partner LU 6.2 Location Profile is defined as described in Chapter 5, "Using AIX NetView Service Point in a Non-APPN (Subarea) Network" on page 55. When this profile is defined, you need to start the session using SMIT.

Note: Start the SNA Session after the SNA link station has been activated.

9.2.3 Check Portmap Setup

Before proceeding, make sure the socket addresses for AIX NetView Service Point are defined in the /etc/services file. If AIX NetView Service Point is used as a distributed application, then the socket addresses in the /etc/services file should be the same on each AIX system.

If AIX NetView Service Point is not to be used as a distributed application then the socket addresses in the /etc/services file should be unique (See Chapter 3.3, "Portmap Setup" on page 6 for details). Do the following if /etc/services needs to be modified:

- Stop AIX NetView Service Point from SMIT or issue the following command line instruction: /usr/lpp/nvix/scripts/nvix_control stop.

- Edit /etc/services using your favorite editor (don't use SMIT).

- Issue the command inetimp if AIX level is less than 4.1.

- Issue the command refresh -s inetd to inform inetd daemon about the changes in the configuration file.

- Start AIX NetView Service Point from SMIT or issue the following command line instruction: /usr/lpp/nvix/scripts/nvix_control start.

9.2.4 Check RUNCMD Commands

Now try issuing the S/390 RUNCMD. On the AIX System issue the command:

/usr/lpp/nvix/bin/cmdappl &

On S/390 NetView issue:

RUNCMD SP=spname,APPL=CMDAPPL,command_string

where SP=spname is your CP Name or the PU Name (depends on SSPU-PU or MDS usage) and command string is the command to be run. The SP is displayed when the command /usr/lpp/nvix/scripts/nvix_control status is executed.

If the RUNCMD fails, the problem is between Service Point and the S/390 NetView. Again the problem is most likely in the SNA profile setup, or in VTAM, or a FOCALPT CHANGE command may be necessary from the S/390.

If you are using SSCP-PU transport then verify that the SNA profile parameter nmvt_action_when_no_nmvt_process is set to *queue*. Refer to the *Service Point Installation, Operation, and Programming Guide*, SC31-6120-02. If a 170 error is displayed the probable cause is nmvt_action_when_no_nmvt_process needs to be changed from reject to queue.

9.2.5 Check the Operator Notification Function

There is another example program called sendopr located in /usr/lpp/nvix/bin. This sample program sends a message to the S/390 NetView operator. Use the command:

/usr/lpp/nvix/bin/sendopr NETOP 'hi there'

where NETOP is the user ID of the S/390 NetView operator.

If sendopr doesn't work, verify that the DSICRTR task is active at S/390 NetView.

9.3 Tralertd And Spappld Verification

At this point the connection from AIX NetView Service Point to S/390 NetView is working.

Before starting tralertd and spappld for the first time it is necessary to configure them using SMIT. See 3.4, "NetView for AIX Host Daemons" on page 6 for details.

Now it is time to start tralertd and spappld on NetView for AIX. Before tralertd and spappld will become active trapd and ovwdb must be active on NetView for AIX and AIX NetView Service Point must be started. Use SMIT to start tralertd and spappld. When both daemons are active, we can see the spappld application registered to AIX NetView Service Point.

When tralertd and spappld are not active do the following:

- Stop tralertd and spappld using SMIT or the ovstop command.
- Issue `ps -ef | grep daemon` where daemon is tralertd or spappld.
- If one of the daemons is running then kill it.
- Use SMIT or the `ovstart` command to restart tralertd and spappld.

If tralertd and spappld still are not active, verify that the following files are all correct:

- /usr/OV/conf/ovsuf
- /usr/OV/lrf/spappld.lrf
- /usr/OV/lrf/tralertd.lrf

For more information on how to determine if the files are correct, reference the man pages for ovsuf, spappld, and tralertd.

If they are not correct then correct the problem. It may be necessary to do the following:

- Exit NetView for AIX
- Issue: `/usr/OV/service/reset_ci`

  If the reset_ci does not appear to work properly then enter the following commands:

  - `ovstop OVORS_M`
  - `rm /usr/OV/conf/ovors`
  - `ovstart OVORS_M`
  - `ovaddobj /usr/OV/lrf/ovesmd.lrf`
  - `ovaddobj /usr/OV/lrf/ovelmd.lrf`
- `/usr/OV/bin/ovstop`
- `/usr/OV/bin/ovdelobj /usr/OV/lrf/spappld.lrf`
- `/usr/OV/bin/ovdelobj /usr/OV/lrf/tralertd.lrf`
- `/usr/OV/bin/ovaddobj /usr/OV/lrf/spappld.lrf`
- `/usr/OV/bin/ovaddobj /usr/OV/lrf/tralertd.lrf`

- /usr/OV/bin/ovstart

If one of the daemons still does not work, check for the error number. Turn on trace mask 31 for either tralertd, spappld or both to see the error messages, by doing the following:

- Enter the command `smit nv6000`
- Select **Configure**
- Select **Set options for daemons**
- Select **Set options for host connection daemons**
- Set tracing mask to 31 for tralertd, spappld or both.

The errors for tralertd are logged in /usr/OV/log/trapd.log.

Other tralertd files of interest are:

- /usr/OV/log/tralertd.trace
- /usr/OV/conf/tralertd.conf
- /usr/OV/conf/trapd.log

The errors for spappld are logged in /usr/OV/log/NV390.log.

If your error is nvix_errno = 4 (session not active) then verify:

- Service Point and SNA are active.
- The Service Point sockets are defined in /etc/services.
- The loopback local host entry is defined in /etc/hosts: 127.0.0.1 loopback localhost
- Verify your host name does not have multiple entries in /etc/hosts and /etc/hosts is correct.
- Check the file /usr/OV/conf/tralertd.filter. Verify that there is no filter rule concerning a host that does not exist. If there is such an entry this will cause a fatal tralertd error.
- Also, tralertd and spappld must be properly configured. You may want to try changing your configuration file from defining the Service Point node name to the defining the Service Point IP address.

Additional nvix_errno return code information is defined in the *AIX NetView Service Point Installation, Operation, and Programming Guide*, SC31-6120-02 in Appendix F, "API/CS Return Codes".

9.4 Using the AIX NetView Service Point Trace Facility

AIX NetView Service Point provides a trace facility for system and application troubleshooting support.

The System Trace facility provides information about the operation of the AIX NetView Service Point and the AIX NetView Service Point Communication interfaces components.

The Application Trace facility helps debug customer applications that use the AIX NetView Service Point API/CS, by logging the dialog between a given application process, AIX NetView Service Point, and S/390 NetView for a given session.

9.4.1 AIX NetView Service Point System Trace in a Running Environment

The System Trace facility contains information concerning AIX NetView Service Point services, such as time stamp, type of session established, and services requested. It also reports information regarding all NetView commands received for application programs registered with AIX NetView Service Point.

The System Trace also provides status on the communication interface between AIX NetView Service Point program and S/390 NetView, such as SSCP-PU session status and LU6.2 session parameter status. The System Trace facility can be accessed using the following command:

`nvix_control traceon`

When the System Trace facility is started, AIX NetView Service Point begins logging all Service Point operations in the appropriate AIX NetView Service Point process error log files as shown in Figure 103 on page 121.

Error Log Files	Process Name
/tmp/evp_nvixAcmd.err /tmp/evp_nvixAcmd.out	Asynchronous Communication Manager ACM (evp_nvixAcmd)
/tmp/evp_nvixCrd.err /tmp/evp_nvixCrd.out	Command Router Process (evp_nvixCrd)
/tmp/evp_nvixSrd.err /tmp/evp_nvixSrd.out	Send/Receive Process (evp_nvixSrd)

Figure 103. AIX NetView Service Point Error Log Files for System Trace Output

The files with the suffix err contain the trace information and are immediately accessible. Files with the suffix out contain the actual data sent and received by AIX NetView Service Point. The AIX NetView Service Point must be brought down to access the out-files.

To stop the System Trace facility, enter the command:

`nvix_control traceoff`

To display the trace results enter the command:

nvix_control traceshow

Note: These traces contain useful information *after* all AIX NetView Service Point daemons are running. The trace can not be started if the daemon is not running. The user is responsible for the trace files. The System Trace facility should only be running when there are problems. The trace logging files may fill up the /tmp filesystem if they are running for a longer period.

9.4.2 System Trace During Startup of the AIX NetView Service Point Daemons

To get useful information on problems during the startup of the AIX NetView Service Point daemons you need to modify the startup script in /usr/etc/nvix. The name of the script is /usr/etc/nvix/nvix_control_start. Use your favorite editor to add -nvix -trace into the startup line for the Command Router daemon and the Send/Receive Daemon. Figure 104 on page 122 shows the edited /usr/etc/nvix/nvix_control_start script.

```
#!/bin/bsh
#
# startup shell script generated by SMIT
# date : Wed Oct 18 14 : 50 : 15 EDT 1995
#
cp_name=sna -d g | awk '/ CP alias/ { print $3; }'
echo " starting Send/Receive Daemon "
#
startsrc -s evp_nvixSrd -a "-cp_name $cp_name -nvix '-codepage'
  -nvix -trace    " &

#
#
sleep 5
#
echo " starting Command Router Daemon ..."
startsrc -s evp_nvixCrd -a "-nvix '-codepage  ' -nvix -trace" &
#
sleep 2
#
echo " starting ACM Daemon ..."
startsrc -s evp_nvixAcmd &
#
sleep 2
#
#
```

Figure 104. /usr/etc/nvix/nvix_control_start Script

After the next stop/start of the AIX NetView Service Point daemons you will get the six trace files already mentioned in Figure 103 on page 121. The difference is, that you now obtain information during startup of the AIX NetView Service Point daemons.

9.4.3 The Application Trace

The Application Trace is provided to help debug applications. The Application Trace logs all AIX NetView Service Point API/CS calls made by the user process, and any traffic received by a specific user application. The Application Trace information is logged into a data file, which is specified by the user when the Application Trace is started.

The Application Trace runs at the same time as the application and is activated via a command line option during the startup of the application. The option is:

```
 -nvix '-trace filename'
```

The argument `filename` specifies the name of the Application Trace file. The file is created during the Application Trace. The user is responsible for managing this trace file.

9.5 Maintain the tralertd Database

The *tralertd* database contains all alerts sent to S/390 NetView. Therefore it is possible that this database gets very large. When you get an error message such as:

```
Could not write tralertd data to database
```

the tralertd database needs to be cleaned. You can do this using SMIT:

```
 SMIT --> Communication Applications and Services  --> NetView for AIX
--> Maintain --> Clear Databases --> Clear tralertd database
```

leads to that function. You can also use the command /usr/OV/bin/nv6000_smit clear_tralertd to clear the tralertd database in a script or crontab entry.

Appendix A. SNA Profiles for SSCP-PU and MDS Connection with AIX NetView Service Point

As already mentioned, the version of AIX NetView Service Point that works with AIX SNA Server/6000 does not require extensive LU 6.2 definitions at the RISC System/6000.

This appendix includes information at the RISC System/6000 for AIX SNA Server/6000.

```
Change/Show Token Ring SNA DLC Profile

[TOP]                                                 [Entry Fields]
  Current profile name                                 tok0
  New profile name                                     []
  Data link device name                                [tok0]
  Force disconnect time-out (1-600 seconds)            [120]
  User-defined maximum I-Field size?                   no
     If yes, Max. I-Field size (265-30729)             [30729]
  Max. num of active link stations (1-255)             [32]
     Number reserved for inbound activation            [0]
     Number reserved for outbound activation           [0]
  Transmit window count (1-127)                        [16]
  Dynamic window increment (1-127)                     [1]
  Retransmit count (1-30)                              [8]
  Receive window count (1-127)                         [8]
  Ring access priority                                 0
  Inactivity time-out (1-120 seconds)                  [120]
  Response time-out (1-40, 500 msec intervals)         [4]
  Acknowledge time-out (1-40, 500 msec intervals)      [1]
  Local link name                                      []
  Local SAP address (02-fa)                            [04]
  Trace base listening link station?                   yes
     If yes, Trace format                              long
  Dynamic link stations supported?                     no

  Link Recovery Parameters
     Retry interval (1-10000 seconds)                  [60]
     Retry limit (0-500 attempts)                      [20]

  Dynamic Link Activation Parameters
     Solicit SSCP sessions?                            yes
     CP-CP sessions supported?                         yes
     Partner required to support CP-CP sessions?       no

  Dynamic Link TG COS Characteristics
     Effective capacity                                [4300800]
     Cost per connect time                             [0]
     Cost per byte                                     [0]
     Security                                          nonsecure
     Propagation delay                                 lan
     User-defined 1                                    [128]
     User-defined 2                                    [128]
     User-defined 3                                    [128]
  Comments                                             []
F1=Help        F2=Refresh        F3=Cancel             F4=List
F5=Reset       F6=Command        F7=Edit               F8=Image
```

Figure 105. Token-Ring SNA DLC Profile

```
┌─                                                                            ─┐
│                             Change/Show SNA Node Profile                      │
│                                                                               │
│   Type or select values in entry fields.                                      │
│   Press Enter AFTER making all desired changes.                               │
│                                                                               │
│                                                        [Entry Fields]         │
│     Profile name                                        sna                   │
│     Maximum number of sessions (1-5000)                [200]                  │
│     Maximum number of conversations (1-5000)           [200]                  │
│     Restart action                                      once                  │
│     Recovery resource manager (RRM) enabled?            no                    │
│     Dynamic inbound partner LU definitions allowed?     yes                   │
│     NMVT action when no NMVT process                    queue                 │
│     Standard output file/device                        [/dev/console]        │
│     Standard error file/device                         [/dev/console]        │
│                                                                               │
│     Comments                                           []                     │
│                                                                               │
└─                                                                            ─┘
```

Figure 106. SNA Node Profile

The only thing that needs to be changed in the SNA System Defaults is the value
for NMVT action when no NMVT process. Change this value from reject to queue.
This is required only for SSCP-PU sessions.

Note: If this change is not made, a trace of the SSCP-PU session will show an
ACTPU, a positive response to the ACTPU, a NMVT and then a negative
response to the NMVT with the sense 080C 0005 (procedure not supported).

```
┌─────────────────────────────────────────────────────────────────────────┐
│                  Change/Show Token Ring Link Station Profile              │
│                                                                           │
│   Type or select values in entry fields.                                  │
│   Press Enter AFTER making all desired changes.                           │
│                                                      [Entry Fields]       │
│     Current profile name                             rs6ksp               │
│     New profile name                                 []                   │
│     Use Control Point's XID node ID?                 yes              +    │
│        If no, XID node ID                            [*]                  │
│   * SNA DLC Profile name                             [tok0]          +    │
│     Stop link station on inactivity?                 no               +    │
│        If yes, Inactivity time-out (0-10 minutes)    [0]                 # │
│     LU address registration?                         yes              +    │
│        If yes, LU Address Registration Profile name  [RA60003]        +    │
│     Trace link?                                      yes              +    │
│        If yes, Trace size                            long             +    │
│                                                                           │
│     Adjacent Node Address Parameters                                      │
│        Access routing                                link_address     +    │
│        If link_name, Remote link name                []                   │
│        If link_address,                                                   │
│           Remote link address                        [400002070000]    X  │
│           Remote SAP address (02-fa)                 [04]              X  │
│                                                                           │
│     Adjacent Node Identification Parameters                               │
│        Verify adjacent node?                         no               +    │
│        Network ID of adjacent node                   [USIBMRA]            │
│        CP name of adjacent node                      [RAPAN]              │
│        XID node ID of adjacent node (LEN node only)  [*]                  │
│                                                                           │
│     Link Activation Parameters                                            │
│        Solicit SSCP sessions?                        yes              +    │
│        Initiate call when link station is activated? yes              +    │
│        Activate link station at SNA start up?        no               +    │
│        Activate on demand?                           no               +    │
│        CP-CP sessions supported?                     yes              +    │
│        If yes,                                                            │
│           Adjacent network node preferred server?    no               +    │
│        Partner required to support CP-CP sessions?   no               +    │
│        Initial TG number (0-20)                      [0]                 # │
│                                                                           │
│     Restart Parameters                                                    │
│        Restart on activation?                        no               +    │
│        Restart on normal deactivation?               yes              +    │
│        Restart on abnormal deactivation?             yes              +    │
│                                                                           │
│     Transmission Group COS Characteristics                                │
│        Effective capacity                            [4300800]          # │
│        Cost per connect time                         [0]                # │
│        Cost per byte                                 [0]                # │
│        Security                                      nonsecure        +    │
│        Propagation delay                             lan              +    │
│        User-defined 1                                [128]             # │
│        User-defined 2                                [128]             # │
│        User-defined 3                                [128]             # │
│     Comments                                         []                   │
│   F1=Help           F2=Refresh        F3=Cancel          F4=List          │
│   F5=Reset          F6=Command        F7=Edit            F8=Image         │
│   F9=Shell          F10=Exit          Enter=Do                            │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 107. Link Station Profile

The Remote link address in the Token Ring Link Station Profile contains the MAC
address of the host token-ring adapter.

The host token-ring adapter can have a 3172, integrated communications, or an NCP gateway to the SNA network.

The connection to the host token-ring adapter is made when the link station is activated.

Alternatively, VTAM can initiate the connection using call-out definitions in the switched major node. The choice should be made according to operational convenience in the installation.

In the case of an NCP gateway the MAC address must correspond to the address given by the LOCADD operand of the LINE statement corresponding to the NCP token-ring adapter, also known as the Token-Ring Interface Coupler (TIC). NCP always uses X′04′ as the SAP address so there is no corresponding operand visible in the NCP definition for this parameter.

When using a SSCP-PU session the Solicit SSCP sessions parameter must be specified as yes. When using MDS support this parameter can be specified as no.

The only other thing that has to be changed in this profile is the Activate link station at SNA startup field. This field should be changed to yes.

```
                     Change/Show Control Point Profile

 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.

                                               [Entry Fields]
 * Profile name                                node_cp
   XID node ID                                 [*]
   Network name                                [USIBMRA]
   Control Point (CP) name                     [RA6010CP]
   Control Point alias                         [RA6010CP]
   Control Point type                          appn_end_node           +
   Maximum number of cached routing trees      [500]                   #
   Maximum number of nodes in the TRS database [500]                   #
   Route addition resistance                   [128]                   #

   Comments                                    []




 F1=Help            F2=Refresh        F3=Cancel          F4=List
 F5=Reset           F6=Command        F7=Edit            F8=Image
 F9=Shell           F10=Exit          Enter=Do
 ---------- end of screen ----------
```

Figure 108. Control Point

The XID node ID is the identification used for the XID frame. In VTAM/NCP definition terms, it corresponds to the IDBLK (the first three hexadecimal half-bytes) and IDNUM (the last five hexadecimal half-bytes) operand of the PU statement in the switched major node. The IDBLK part of the XID node ID represents the type of device, in this case, an RS/6000. The IDNUM part then is used as a sequence number within the type of device. However, recognition in a

switched major node may also be based on the CP Name. This technique is used in our example. Therefore the XID node ID field has been left with the default value, ″*″. When the XID node ID field contains ″*″, the node ID data in the XID type 3 are all zeros.

The Network Name and the Control Point Name are also defined in the Control Point Profile. In this case, we are using SSCP-PU session, the Network Name should correspond to the NETID of of the VTAM SSCP which will own the RS/6000 node PU.

The SNA Server/6000 profile customization is now complete.

In order to put any profile additions, changes or removals into effect the profiles need to be verified. This verification process always checks the profiles for consistency before they are activated and used when SNA starts.

Appendix B. Selected S/390 VTAM Members Used in This Project

The connection for this project was token-ring.

```
*********************************************************************
*                                                                   *
*          VTAM SWITCHED MAJOR NODE FOR NTRI                        *
*     62222 RS/600010 DAVE SHOGREN'S OFFICE                         *
*********************************************************************
RA2RSKY VBUILD MAXGRP=10,              REQUIRED                     * X
               MAXNO=18,               REQUIRED                     * X
               TYPE=SWNET              REQUIRED
**
**
*** RA60010 IS FOR RS600010
*   SEE SHOGREN: CPNAME IS USED ON RS600010 INSTEAD OF IDBLK AND IDNUM
*             IT ALSO IS USED FOR NETVIEW FOCALPT CHANGE COMMAND
*             TO ENABLE NETVIEW<-VTAM-SNA SERVER->SERVICE POINT
*    VIA COMMAND: FOCALPT CHANGE,TARGET=RA6003CP,FPCAT=ALERT
*
*   IDBLK AND IDNUM USED TO BE:
*             IDBLK=05D,             PC 3274 EMULATOR              *
*             IDNUM=62222,           SA 20, 3174 TYPE, FIRST 3174 *
*
RA60010  PU    ADDR=13,              COULD BE ANYTHING (NOT USED) * X
               CPNAME=RA6010CP,      USED FOR AIX NETVIEW SP      * X
               MODETAB=AMODETAB,                                  * X
               MAXPATH=2,                                         * X
               MAXDATA=265,                                       *
               MAXOUT=7,                                          *
               PACING=7,                                          *
               ANS=CONTINUE,                                      *
               PASSLIM=7,                                         *
               PUTYPE=2,                                          *
               DISCNT=(NO),                                       *
               ISTATUS=ACTIVE,                                    *
               VPACING=8
**
RA600100 LU    LOCADDR=0,MODETAB=MODEVR,DLOGMOD=M2SDLCQ
RA60010B LU    LOCADDR=0,MODETAB=AMODEAPP,DLOGMOD=NVDMNORM
RA60010V LU    LOCADDR=0,MODETAB=MODEVR,DLOGMOD=M2SDLCQ
RA60010W LU    LOCADDR=0,MODETAB=MODEVR,DLOGMOD=M2SDLCQ
RA60010X LU    LOCADDR=0,MODETAB=MODEVR,DLOGMOD=M2SDLCQ
RA60010Y LU    LOCADDR=0,MODETAB=MODEVR,DLOGMOD=M2SDLCQ
RA60010Z LU    LOCADDR=0,MODETAB=AMODETAB,DLOGMOD=DSIL6MOD
```

Figure 109 (Part 1 of 2). Switched Major Node Definition Used in This Example

```
RA600102 LU    LOCADDR=2,                                                      *
               MODETAB=AMODESHO,                                               *
               DLOGMOD=AIXLGMD2,                                               *
               ISTATUS=ACTIVE
RA600103 LU    LOCADDR=3,                                                      *
               MODETAB=MODNDM12,                                               *
               DLOGMOD=AIXLGMD1,                                               *
               ISTATUS=ACTIVE
RA600104 LU    LOCADDR=4,                                                      *
               MODETAB=MODNDM12,                                               *
               DLOGMOD=AIXLGMD1,                                               *
               ISTATUS=ACTIVE
RA600105 LU    LOCADDR=5,                                                      *
               MODETAB=MODNDM12,                                               *
               DLOGMOD=AIXLGMD1,                                               *
               ISTATUS=ACTIVE
RA600106 LU    LOCADDR=6,USSTAB=US327X,SSCPFM=USSSCS,MODETAB=AMODETAB, X
               DLOGMOD=M2SDLCQ
RA600107 LU    LOCADDR=7,USSTAB=US327X,SSCPFM=USSSCS,MODETAB=AMODETAB, X
               DLOGMOD=M2SDLCQ
* CHANGED RA600038/9 MODETABLES,ENTRIES FOR HCON - BDN 11/10/92
RA600108 LU    LOCADDR=8,USSTAB=US327X,SSCPFM=USSSCS,MODETAB=AMODHCON, X
               DLOGMOD=LU1HCON
RA600109 LU    LOCADDR=9,USSTAB=US327X,SSCPFM=USSSCS,MODETAB=AMODHCON, X
               DLOGMOD=LU3HCON
RA60010C LU    LOCADDR=12,MODETAB=MODEVR,DLOGMOD=M3SDLCQ
```

Figure 109 (Part 2 of 2). Switched Major Node Definition Used in This Example. The LUs defined above were used by other applications than the Service Point. The AIX SNA Server is keying on the CPNAME for Service Point functions and an LU need not be defined.

```
        VBUILD TYPE=CDRSC
        NETWORK NETID=USIBMRA
*                            SERVICE POINT FOR RS600010
RA6010CP CDRSC    ALSLIST=(RA600010)
*
```

Figure 110. CDRSC Definition Used in This Example

The above resource, for previous versions of AIX NetView Service Point, was a resource in the switched major node PU definition as:

RA6010CP LU LOCADDR=0

When using CPNAME and current level of VTAM is being exploited, it is not necessary to include in the switched major node the LOCADDR=0 resource. This project chose to use the above CDRSC and activated the CDRSC prior to activation of the RISC System/6000 link station. The ″old″ LOCADDR=0 specification was removed from the switched major node definition.

Appendix C. Selected AIX SNA Server/6000 Profiles for Non-APPN (Subarea) Connection

```
Change/Show Token Ring SNA DLC Profile

[TOP]                                                  [Entry Fields]
  Current profile name                                  tok0
  New profile name                                      []
  Data link device name                                 [tok0]
  Force disconnect time-out (1-600 seconds)             [120]
  User-defined maximum I-Field size?                     no
     If yes, Max. I-Field size (265-30729)              [30729]
  Max. num of active link stations (1-255)              [32]
     Number reserved for inbound activation             [0]
     Number reserved for outbound activation            [0]
  Transmit window count (1-127)                         [16]
  Dynamic window increment (1-127)                      [1]
  Retransmit count (1-30)                               [8]
  Receive window count (1-127)                          [8]
  Ring access priority                                   0
  Inactivity time-out (1-120 seconds)                   [120]
  Response time-out (1-40, 500 msec intervals)          [4]
  Acknowledge time-out (1-40, 500 msec intervals)       [1]
  Local link name                                       []
  Local SAP address (02-fa)                             [04]
  Trace base listening link station?                    yes
     If yes, Trace format                               long
  Dynamic link stations supported?                      no

  Link Recovery Parameters
     Retry interval (1-10000 seconds)                   [60]
     Retry limit (0-500 attempts)                       [20]

  Dynamic Link Activation Parameters
     Solicit SSCP sessions?                             yes
     CP-CP sessions supported?                          yes
     Partner required to support CP-CP sessions?        no

  Dynamic Link TG COS Characteristics
     Effective capacity                                 [4300800]
     Cost per connect time                              [0]
     Cost per byte                                      [0]
     Security                                           nonsecure
     Propagation delay                                  lan
     User-defined 1                                     [128]
     User-defined 2                                     [128]
     User-defined 3                                     [128]
  Comments                                              []
F1=Help        F2=Refresh        F3=Cancel         F4=List
F5=Reset       F6=Command        F7=Edit           F8=Image
```

Figure 111. Token-Ring SNA DLC Profile

133

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                    Change/Show SNA Node Profile           │
│                                                                           │
│  Type or select values in entry fields.                                   │
│  Press Enter AFTER making all desired changes.                            │
│                                                                           │
│                                                       [Entry Fields]      │
│    Profile name                                       sna                 │
│    Maximum number of sessions (1-5000)                [200]               │
│    Maximum number of conversations (1-5000)           [200]               │
│    Restart action                                     once                │
│    Recovery resource manager (RRM) enabled?           no                  │
│    Dynamic inbound partner LU definitions allowed?    yes                 │
│    NMVT action when no NMVT process                   queue               │
│    Standard output file/device                        [/dev/console]      │
│    Standard error file/device                         [/dev/console]      │
│                                                                           │
│    Comments                                           []                  │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 112. SNA Node Profile

The only thing that needs to be changed in the SNA System Defaults is the value
for NMVT action when no NMVT process. Change this value from reject to
queue. This is required only for SSCP-PU sessions.

Note: If this change is not made, a trace of the SSCP-PU session will show an
ACTPU, a positive response to the ACTPU, a NMVT and then a negative
response to the NMVT with the sense 080C 0005 (procedure not supported).

```
┌─────────────────────────────────────────────────────────────────────────┐
│  Change/Show Partner LU 6.2 Location Profile                              │
│                                                                           │
│  [TOP]                                                [Entry Fields]      │
│    Current profile name                               SPPLU               │
│    New profile name                                   []                  │
│    Fully qualified partner LU name                    [USIBMRA.RAPAN]     │
│    Partner LU location method                         [owning_cp]         │
│    If owning_cp,                                                          │
│       Fully qualified owning Control Point (CP) name  [USIBMRA.RAP]       │
│       Local node is network server for LEN node?      no                  │
│       Fully qualified network node server name        []                  │
│    If link_station,                                                       │
│       Local LU name                                   []                  │
│       Link Station Profile name                       []                  │
│    Comments                                           []                  │
│  F1=Help        F2=Refresh       F3=Cancel            F4=List             │
│  F5=Reset       F6=Command       F7=Edit              F8=Image            │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 113. Partner LU 6.2 Location Profile

The Partner LU6.2 Profile is used to identify which CP owns the partner LU. This
means, that the BIND request for the session is routed to the node represented
by the CP name. That CP is responsible to locate the partner LU. The identified
CP is known and located in XID type 3 flow when contact was made with an
adjacent node.

The fully qualified names which are already entered in the AIX NetView Service
Point profile summary ALERT FP NETID and ALERT FP NAU fields are entered
here in the field *Fully qualified partner LU name*.

In the Fully qualified owning Control Point (CP) name field, you must enter the fully qualified name of the VTAM SSCP which owns the links and link stations associated with the token-ring adapter which is identified by the MAC and SAP addresses in the Token Ring Link Station profile.

The Local node is network server for LEN node field is per default no. This may be changed if the local node is defined in the Control Point profile as an APPN Network Node. If this is the case, you must enter the network node server name in the Fully qualified network node server name field.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                   Change/Show Token Ring Link Station Profile             │
│                                                                           │
│  Type or select values in entry fields.                                   │
│  Press Enter AFTER making all desired changes.                            │
│                                                         [Entry Fields]    │
│    Current profile name                                 rs6ksp            │
│    New profile name                                     []                │
│    Use Control Point's XID node ID?                     yes            +   │
│       If no, XID node ID                                [*]               │
│  * SNA DLC Profile name                                 [tok0]         +   │
│    Stop link station on inactivity?                     no            +    │
│       If yes, Inactivity time-out (0-10 minutes)        [0]            #   │
│    LU address registration?                             yes           +   │
│       If yes, LU Address Registration Profile name      [RA60003]     +   │
│    Trace link?                                          yes           +   │
│       If yes, Trace size                                long          +    │
│                                                                           │
│    Adjacent Node Address Parameters                                       │
│       Access routing                                    link_address  +   │
│       If link_name, Remote link name                    []                │
│       If link_address,                                                    │
│          Remote link address                            [400002070000] X  │
│          Remote SAP address (02-fa)                     [04]           X  │
│                                                                           │
│    Adjacent Node Identification Parameters                                │
│       Verify adjacent node?                             no            +   │
│       Network ID of adjacent node                       [USIBMRA]         │
│       CP name of adjacent node                          [RAPAN]           │
│       XID node ID of adjacent node (LEN node only)      [*]               │
│                                                                           │
│    Link Activation Parameters                                             │
│       Solicit SSCP sessions?                            yes           +   │
│       Initiate call when link station is activated?     yes           +   │
│       Activate link station at SNA start up?            no            +   │
│       Activate on demand?                               no            +   │
│       CP-CP sessions supported?                         yes           +   │
│       If yes,                                                             │
│          Adjacent network node preferred server?        no            +   │
│       Partner required to support CP-CP sessions?       no            +   │
│       Initial TG number (0-20)                          [0]            #   │
│                                                                           │
│    Restart Parameters                                                     │
│       Restart on activation?                            no            +   │
│       Restart on normal deactivation?                   yes           +   │
│       Restart on abnormal deactivation?                 yes           +   │
│                                                                           │
│    Transmission Group COS Characteristics                                 │
│       Effective capacity                                [4300800]      #   │
│       Cost per connect time                             [0]            #   │
│       Cost per byte                                     [0]            #   │
│       Security                                          nonsecure     +   │
│       Propagation delay                                 lan           +   │
│       User-defined 1                                    [128]          #   │
│       User-defined 2                                    [128]          #   │
│       User-defined 3                                    [128]          #   │
│    Comments                                             []                │
│  F1=Help            F2=Refresh        F3=Cancel            F4=List         │
│  F5=Reset           F6=Command        F7=Edit             F8=Image        │
│  F9=Shell           F10=Exit          Enter=Do                            │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 114. Link Station Profile

The Remote Link Address field in the Token Ring Link Station Profile contains
the MAC address of the host token-ring adapter.

The host token-ring adapter can have a 3172, integrated communications , or an NCP gateway to the SNA network.

The connection to the host token-ring adapter is made when the link station is activated.

Alternatively, VTAM can initiate the connection using call-out definitions in the Switched Major Node. The choice should be made according to operational convenience in the installation.

In the case of an NCP gateway the MAC address must correspond to the address given by the LOCADD operand of the LINE statement corresponding to the NCP token-ring adapter, also known as the Token-Ring Interface Coupler (TIC). NCP always uses X'04' as the SAP address so there is no corresponding operand visible in the NCP definition for this parameter.

The only other thing that has to be changed in this profile is the Activate link station at SNA startup field. This field should be changed to *yes*.

```
                         Change/Show Control Point Profile

 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.


                                                  [Entry Fields]
 * Profile name                                   node_cp
   XID node ID                                    [*]
   Network name                                   [USIBMRA]
   Control Point (CP) name                        [RA6010CP]
   Control Point alias                            [RA6010CP]
   Control Point type                             appn_end_node          +
   Maximum number of cached routing trees         [500]                  #
   Maximum number of nodes in the TRS database    [500]                  #
   Route addition resistance                      [128]                  #

   Comments                                       []




 F1=Help             F2=Refresh        F3=Cancel            F4=List
 F5=Reset            F6=Command        F7=Edit              F8=Image
 F9=Shell            F10=Exit          Enter=Do
 ---------- end of screen ----------
```

Figure 115. Control Point

The XID node ID is the identification used for the XID frame. In VTAM/NCP definition terms, it corresponds to the IDBLK (the first three hexadecimal half-bytes) and IDNUM (the last five hexadecimal half-bytes) operand of the PU statement in the switched major node. The IDBLK part of the XID node ID represents the type of device, in this case, a RS/6000. The IDNUM part then is used as a sequence number within the type of device. However, recognition in a switched major node may also be based on the CP Name. This technique is used in our example. Therefor the XID node ID field has been left with the default value, "*". When the XID node ID field contains "*", the node ID data in the XID type 3 are all zeros.

The Network Name and the Control Point Name are also defined in the Control Point Profile. In this case, we are using SSCP-PU session, the Network Name should correspond to the NETID of of the VTAM SSCP which will own the RS/6000 node PU.

The SNA Server/6000 profile customization is now complete.

In order to put any profile additions, changes or removals into effect the profiles need to be verified. This verification process always checks the profiles for consistency before they are activated and used when SNA starts.

Appendix D. Configuration Options

Here are almost all possible configuration choices we have.

	S/390 NetView VTAMCP USE=	Service Point Alert FP Name	APPN or LEN	Network or End Node	Alerts Mode	RUNCMD Mode	SNA Server init. session
1	no	APPL	LEN	End	SNASVCMG	SNASVCMG	yes
2	no	APPL	LEN	Network	SNASVCMG	SNASVCMG	
3	no	APPL	APPN	End	CPSVCMG	SNASVCMG	yes
4	no	APPL	APPN	Network	SNASVCMG	SNASVCMG	
5	no	SSCP	LEN	End			
6	no	SSCP	LEN	Network		SNASVCMG	
7	no	SSCP	APPN	End		SNASVCMG	
8	no	SSCP	APPN	Network			
9	yes	APPL	LEN	End	SNASVCMG	SNASVCMG	yes
10	yes	APPL	LEN	Network		SNASVCMG	
11	yes	APPL	APPN	End		SNASVCMG	
12	yes	APPL	APPN	Network		SNASVCMG	
13	yes	SSCP	LEN	End	SNASVCMG	SNASVCMG	yes
14	yes	SSCP	LEN	Network	SNASVCMG	SNASVCMG	
15	yes	SSCP	APPN	End	CPSVCMG	CPSVCMG	yes
16	yes	SSCP	LEN	Network	SNASVCMG	SNASVCMG	yes

Figure 116. Configuration Options for AIX NetView Service Point

Explanation of the columns used in the figure above, are as follows:

- Column 1 indicates whether VTAMCP USE in the S/390 NetView was coded yes or no.

- Column 2 indicates whether the name given in the ALERT FP field of the AIX NetView Service Point Profile Summary was the name of the NetView APPL statement or the name of the VTAM SSCP.

- Column 3 indicates whether CP-CP sessions were active between VTAM and AIX SNA Server/6000. If they are, the link has an APPN connection. If they are not, the link has a LEN connection.

- Column 4 indicates whether AIX SNA Server/6000 was configured as an APPN Network node or an APPN End node in the Control Point Profile.

- Column 5 shows the mode name of the session used to send alerts. An empty column indicates that no alerts flowed.

  Note: Whenever AIX SNA Server/6000 initiated the session automatically *and* the mode name is SNASVCMG, the session was established when the first trap was ready to send to S/390 NetView.

  Note: Whenever AIX SNA Server/6000 did not initiate the session automatically, alerts appear in S/390 NetView only after a RUNCMD has been issued to cause the session to be established.

- Column 6 shows the mode name of the session used to send RUNCMD commands. An empty column indicates that no RUNCMD commands can be sent.

- Column 7 indicates whether alerts flowed automatically after the link was established.

D.1 Recommendations

Figure 116 on page 139 shows almost all possible environments for AIX NetView Service Point connection to S/390 NetView. But, as you already can see in the figure, not all examples are working. The working configurations are shown in row 1, row 13, row 15 and row 16. The following list explains the working cases in more detail.

- Case 1 as listed in Figure 116 on page 139

  In this case, the connection is a LEN connection so we need a Partner LU 6.2 location profile to compensate for the lack of APPN directory mechanisms. S/390 NetView DSIDMN has VTAMCP USE=NO, so S/390 NetView will see the Alert MDS-MU only when the target LU, specified in the AIX NetView Service Point profile, is the S/390 NetView Application name.

- Case 13 as listed in Figure 116 on page 139

  This case is almost the same as Case 1, except that S/390 NetView picks up alerts received by the VTAM SSCP. The AIX NetView Service Point profile is configured to send alerts to the VTAM SSCP, acting as an LU. We still have a LEN connection to S/390 NetView. VTAM SSCPs can do this now, because they can behave as APPN CPs. To do this VTAM must be at least on V4, and VTAM must be enabled for APPN.

- Case 15 as listed in Figure 116 on page 139

  The difference between this and the above case 13 is that now we have APPN connection. No partner LU 6.2 location profile is required. AIX SNA Server/6000 now knows to send the alert over CPSVCMG sessions without having to set up SNASVCMG sessions. This is because an APPN end node knows it has to send alerts to his network node server.

- Case 16 as listed in Figure 116 on page 139

  In this case, AIX SNA Server/6000 is a network node. The alerts are sent to S/390 NetView as described above for case 15.

Appendix E. Performance Considerations for AIX NetView Service Point

Using LU-LU session instead of the old type SSCP-PU sessions increases the performance of AIX NetView Service Point applications rapidly.

E.1 Changing the Request Unit Size

This section shows how to increase the Request Unit size to get a better performance on RUNCMD commands. Using RUNCMD commands, the output from these commands can become very large. Therefore, a larger Request Unit size is recommended. The following example shows the pair of mode table entries which are relevant to AIX NetView Service Point communication with AIX SNA Server/6000. The mode table entries are SNASVCMG and CPSVCMG. CPSVCMG will be used if AIX SNA Server/6000 is configured as an APPN End Node and APPN connectivity exists between AIX SNA Server/6000 and VTAM. SNASVCMG will be used in all other cases.

On the AIX SNA Server/6000 side two mode profiles, *SNASVCMG* and *CPSVCMG* need to be changed. We are using SMIT to change these profiles.

We choose **Communications Applications and Services**.

```
                         System Management

Move cursor to desired item and press Enter.

   Software Installation & Maintenance
   Devices
   Physical & Logical Storage
   Security & Users
   Diskless Workstation Management & Installation
   Communications Applications and Services
   Spooler (Print Jobs)
   Problem Determination
   Performance & Resource Scheduling
   System Environments
   Processes & Subsystems
   Applications
   Using SMIT (information only)




F1=Help           F2=Refresh        F3=Cancel         F8=Image
F9=Shell          F10=Exit          Enter=Do
```

Then choose **SNA Server/6000**.

```
               Communications Applications and Services

Move cursor to desired item and press Enter.

   TCP/IP
   NFS
   SNA Server/6000
   NetView Service Point
   RMONitor
   3270 Host Connection Program (HCON)
   AIX IHMP/6000
   NetView for AIX
   SNA Manager/6000
   Systems Monitor/6000
   DCE (Distributed Computing Environment)
   Topology Integration Manager




F1=Help           F2=Refresh        F3=Cancel         F8=Image
F9=Shell          F10=Exit          Enter=Do
```

Now, choose **Configure SNA Profiles**.

```
╭─────────────────────────────────────────────────────────────────────────╮
│                              SNA Server/6000                              │
│                                                                           │
│  Move cursor to desired item and press Enter.                             │
│    Configure SNA Profiles                                                 │
│    Manage SNA Resources                                                   │
│    Problem Determination Aids                                             │
│    Product Information                                                     │
│    Write an LU6.2 Transaction Program (SNAPI)                             │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│  F1=Help              F2=Refresh        F3=Cancel           F8=Image      │
│  F9=Shell             F10=Exit          Enter=Do                          │
╰─────────────────────────────────────────────────────────────────────────╯
```

We need to go to **Advanced Configuration**.

```
╭─────────────────────────────────────────────────────────────────────────╮
│                           Configure SNA Profiles                          │
│                                                                           │
│  Move cursor to desired item and press Enter.                             │
│                                                                           │
│    Initial Node Setup                                                     │
│    Quick Configuration                                                    │
│    Advanced Configuration                                                 │
│                                                                           │
│                                                                           │
│  F1=Help              F2=Refresh        F3=Cancel           F8=Image      │
│  F9=Shell             F10=Exit          Enter=Do                          │
╰─────────────────────────────────────────────────────────────────────────╯
```

Select **Sessions**.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                        Advanced Configuration                           │
│                                                                         │
│  Move cursor to desired item and press Enter.                           │
│                                                                         │
│     Links                                                               │
│     Sessions                                                            │
│     SNA System Defaults                                                 │
│     Control Point                                                       │
│     Security                                                            │
│     Verify Configuration Profiles                                       │
│     Export Configuration Profiles                                       │
│     Import Configuration Profiles                                       │
│     Migrate Configuration Profiles                                      │
│                                                                         │
│                                                                         │
│                                                                         │
│  F1=Help            F2=Refresh           F3=Cancel          F8=Image     │
│  F9=Shell           F10=Exit             Enter=Do                        │
└─────────────────────────────────────────────────────────────────────────┘
```

Next, select **LU6.2**

```
┌─────────────────────────────────────────────────────────────────────────┐
│                              Sessions                                   │
│                                                                         │
│  Move cursor to desired item and press Enter.                           │
│                                                                         │
│     Generic LU Address Registration                                     │
│     LU 0                                                                │
│     LU 1                                                                │
│     LU 2                                                                │
│     LU 3                                                                │
│     LU6.2                                                               │
│                                                                         │
│                                                                         │
│                                                                         │
│  F1=Help            F2=Refresh           F3=Cancel          F8=Image     │
│  F9=Shell           F10=Exit             Enter=Do                        │
└─────────────────────────────────────────────────────────────────────────┘
```

Select **LU 6.2 Mode**.

```
                              LU 6.2

 Move cursor to desired item and press Enter.

   LU 6.2 Local LU
   LU 6.2 Side Information
   LU 6.2 Partner LU
   LU 6.2 Mode
   LU 6.2 Transaction Program Name (TPN)
   LU 6.2 Session Security
   LU 6.2 Conversation Security
   LU 6.2 Session Timeout
   Class of Service (COS)
   Partner LU 6.2 Location




 F1=Help            F2=Refresh         F3=Cancel          F8=Image
 F9=Shell           F10=Exit           Enter=Do
```

Select **Change/Show a Profile** and choose, first, the CPSVCMG profile and, then, the SNASVCMG profile.

The CPSVCMG profile

```
                   Change/Show LU 6.2 Mode Profile
 Type or select values in entry fields.
 Press Enter AFTER making all desired changes.

                                               [Entry Fields]
   Current profile name                         CPSVCMG
   New profile name                            []
   Mode name                                   [CPSVCMG]
   Maximum number of sessions (1-5000)         [2]                  #
   Minimum contention winners (0-5000)         [1]                  #
   Minimum contention losers (0-5000)          [1]                  #
   Auto activate limit (0-500)                 [0]                  #
   Upper bound for adaptive receive pacing window [16]              #
   Receive pacing window (0-63)                [7]                  #
   Maximum RU size (128,...,32768: multiples of 32) [4096]          #
   Minimum RU size (128,...,32768: multiples of 32) [256]           #
   Class of Service (COS) name                 [CPSVCMG]

   Comments                                    []


 F1=Help            F2=Refresh         F3=Cancel          F4=List
 F5=Reset           F6=Command         F7=Edit            F8=Image
 F9=Shell           F10=Exit           Enter=Do
```

The SNASVCMG profile

```
┌─────────────────────────────────────────────────────────────────────┐
│                    Change/Show LU 6.2 Mode Profile                    │
│                                                                       │
│  Type or select values in entry fields.                               │
│  Press Enter AFTER making all desired changes.                        │
│                                                                       │
│                                                    [Entry Fields]     │
│   Current profile name                              SNASVCMG          │
│   New profile name                                 []                 │
│   Mode name                                        [SNASVCMG]         │
│   Maximum number of sessions (1-5000)              [2]            #    │
│   Minimum contention winners (0-5000)              [1]            #    │
│   Minimum contention losers (0-5000)               [1]            #    │
│   Auto activate limit (0-500)                      [0]            #    │
│   Upper bound for adaptive receive pacing window   [16]           #    │
│   Receive pacing window (0-63)                     [7]            #    │
│   Maximum RU size (128,...,32768: multiples of 32) [4096]         #    │
│   Minimum RU size (128,...,32768: multiples of 32) [256]          #    │
│   Class of Service (COS) name                      [SNASVCMG]         │
│                                                                       │
│   Comments                                         []                 │
│                                                                       │
│                                                                       │
│  F1=Help            F2=Refresh         F3=Cancel          F4=List      │
│  F5=Reset           F6=Command         F7=Edit           F8=Image      │
│  F9=Shell           F10=Exit           Enter=Do                        │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```

Figure 117 (Part 8 of 8). Changing Mode Tables using SMIT

The new mode profiles can be used after the SNA profile verification is done.

Appendix F. Sample Applications

In a previous document: *Experiences in Using AIX NetView Service Point*, GG24-3700, source code and examples of using Service Point API macros was shown. The routines were called:

- nvcreateoa (For alerts)

- nvsendmsg (For message to operator)

- nvcmd (For processing inbound-to Service Point) RUNCMDs

This document used these routines and if the reader has need of the source for the above, contact ITSO-Raleigh via the Request for Feedback mentioned in the Acknowledgements of this document.

In addition, this document used the sample applications as distributed by Service Point, located in: /usr/lpp/nvix/example_programs

The following OPAQUE sample supplements these sample applications.

F.1 Sample Alert Processing Application Using OPAQUE Services

The following Sample C-Program sends an test alert to S/390 NetView hardware monitor using the Opaque Major vector (OpaqueMv). Figure 118 on page 148 shows the Source Code.

```
/*--------------------------------------------------------------------
-
-  opaqtest.c -- sends a canned Nmvt up to a NetView Host
-                thru nvix services
-                on an AIX/UNIX machine using the "opaque" services.
-
-------------------------------------------------------------------*/

#include <stdio.h>
#include <ctype.h>
#include <strings.h>
#include <string.h>
#include <stdlib.h>
#include <malloc.h>
#include <time.h>
#include <signal.h>
#include <errno.h>
#include <fcntl.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <netdb.h>
#include <termio.h>
/* nvix include files */
#include <nvix/evp_nvix.h>
#include <nvix/evp_nvixAcm.h>
#include <nvix/evp_nvixAcmData.h>
#include <nvix/evp_nvixAcmSess.h>
#include <nvix/evp_nvixAlert.h>
#include <nvix/evp_nvixAreply.h>
#include <nvix/evp_nvixAttributes.h>
#include <nvix/evp_nvixCause.h>
#include <nvix/evp_nvixCmdSess.h>
#include <nvix/evp_nvixCode.h>
#include <nvix/evp_nvixDetailSf.h>
#include <nvix/evp_nvixDetailSv.h>
#include <nvix/evp_nvixErrno.h>
#include <nvix/evp_nvixFtr.h>
#include <nvix/evp_nvixFtsSess.h>
#include <nvix/evp_nvixGeneric.h>
#include <nvix/evp_nvixIf.h>
#include <nvix/evp_nvixLcsConf.h>
```

Figure 118 (Part 1 of 4). Source of Sample C-Program

```
#include <nvix/evp_nvixLcsData.h>
#include <nvix/evp_nvixLksrc.h>
#include <nvix/evp_nvixLsess.h>
#include <nvix/evp_nvixMgr.h>
#include <nvix/evp_nvixMv.h>
#include <nvix/evp_nvixNameList.h>
#include <nvix/evp_nvixOpaqueMv.h>
#include <nvix/evp_nvixOprMsg.h>
#include <nvix/evp_nvixProductId.h>
#include <nvix/evp_nvixQmsgSv.h>
#include <nvix/evp_nvixRcStat.h>
#include <nvix/evp_nvixRsp.h>
#include <nvix/evp_nvixRu.h>
#include <nvix/evp_nvixSdata.h>
#include <nvix/evp_nvixSdlc.h>
#include <nvix/evp_nvixSenseData.h>
#include <nvix/evp_nvixSess.h>
#include <nvix/evp_nvixSimSess.h>
#include <nvix/evp_nvixSpSess.h>
#include <nvix/evp_nvixSv.h>
#include <nvix/evp_nvixTcd.h>
#include <nvix/evp_nvixTdata.h>
#include <nvix/evp_nvixTextMsg.h>
#include <nvix/evp_nvixTime.h>
#include <nvix/evp_nvixTkIf.h>
#include <nvix/evp_nvixTypes.h>
#include <nvix/evp_nvixXcmd.h>
#include <nvix/evp_nvixXdr.h>
#include <nvix/evp_nvixHierRes.h>
```

Figure 118 (Part 2 of 4). Source of Sample C-Program

```
/* global variables    */
Object          session ;
Object          opaqueMv ;
Object          alert ;
caddr_t         opaqueVector ;
int             opaqueVectorLength ;

u_char          Nmvt[512] =
{
0x00, 0x7B, 0x00, 0x00, 0x0E, 0x01, 0x08, 0x10,
0x5F, 0x09, 0x16, 0x0C, 0x0C, 0x0C, 0x04, 0x14,
0x00, 0x00, 0x1B, 0x05, 0x19, 0x10, 0x00, 0x09,
0xD5, 0xC1, 0xD7, 0xF0, 0xF0, 0xF0, 0xF0, 0xF1,
0x40, 0x81, 0x09, 0xE3, 0xC5, 0xE2, 0xE3, 0xF0,
0xF0, 0xF0, 0xF1, 0x00, 0x00, 0x21, 0x10, 0x00,
0x1E, 0x11, 0x0C, 0x0A, 0x06, 0xD5, 0xC1, 0xD7,
0xF0, 0xF0, 0xF0, 0xF0, 0xF1, 0x08, 0x04, 0xF0,
0xF1, 0xF0, 0xF3, 0xF0, 0xF1, 0x09, 0x08, 0xE4,
0xE2, 0xC5, 0xD9, 0xF0, 0x40, 0x40, 0x0B, 0x92,
0x00, 0x00, 0x12, 0xFE, 0x00, 0x00, 0x00, 0x00,
0x00, 0x04, 0x93, 0x10, 0x01, 0x06, 0x97, 0x04,
0x81, 0x07, 0x00, 0x18, 0x31, 0x06, 0x01, 0x00,
0x00, 0x00, 0x00, 0x07, 0x11, 0x48, 0x03, 0x00,
0x00, 0x14, 0x03, 0x21, 0x11, 0x06, 0x30, 0xE3,
0xC5, 0xE2, 0xE3
} ;

/************************************************************/
/*          M  A  I  N                                      */
/************************************************************/
main (int argc, char *argv[])
    {
    Attribute       a[16] ;
    int             n, rc ;
    unsigned short  *pLength ;

    /* get length out of nmvt */
    pLength = (unsigned short *)Nmvt ;
    opaqueVectorLength = *pLength ;
    printf("Nmvt length=%d\n", opaqueVectorLength) ;

    /* copy NMVT to allocated memory */
    if ((opaqueVector = (caddr_t) malloc(512)) == NULL)
        {
        printf("ERROR: allocating memory\n") ;
        exit(0) ;
        }
    memcpy(opaqueVector, Nmvt, opaqueVectorLength) ;
```

Figure 118 (Part 3 of 4). Source of Sample C-Program

```
/* set up a communications w/nvix          */
nvixInitialize("NAP6000A", &argc, argv, 0) ;
n=0 ;
NvixSetAttr(a[n], NVIXa_objectName, "NAP6000A") ;
n++ ;
if ((session = nvixCreateObject(ClassSpSess,a,n)) == NULL)
    {
    printf("ERROR: ClassSpSess create errno=%x\n", nvix_errno) ;
    exit(0) ;
    }

/* Create an Opaque Major Vector object */
n = 0 ;
NvixSetAttr(a[n], NVIXa_opaqueVector, opaqueVector) ;
n++ ;
NvixSetAttr(a[n], NVIXa_opaqueVectorLength, opaqueVectorLength) ;
n++ ;
opaqueMv = nvixCreateObject(ClassOpaqueMv,a,n) ;
if (opaqueMv == NULL)
    {
    printf("ERROR: nvixCreateObject errno=%x\n", nvix_errno) ;
    exit(0) ;
    }

/* Send the Opaque Alert */
if ((rc = nvixSend(session, opaqueMv)) == False)
    printf("ERROR: nvixSend rc=%x, errno=%x\n", rc, nvix_errno) ;

/* Begin the dispatching fuction */
if ((rc = nvixDispatch(False)) == -1)
printf("Error encountered in dispatcher\n");
if (rc == 0)
printf("No work is pending");
if (rc > 0)
printf("%x events dispatched\n", rc);
nvixExit(1, 2) ;
exit(1) ;
}
```

Figure 118 (Part 4 of 4). Source of Sample C-Program

Appendix G. Additional Connection Examples

This appendix includes examples of additional configurations which were tested during this project.

G.1 Subarea Connectivity

Most testing during this project involved use of APPN S/390 systems. The following examples involve subarea connectivity when full APPN services were not available.

G.1.1 RISC System/6000 to S/390 Subarea Using CPNAME

In this first test, the RISC System/6000 is connected to the S/390 subarea (non-APPN) using CPNAME in a similar manner as in earlier tests.

```
┌─────────────────────────────────────────────────┐
│                                                 │
│          RISC System/6000                       │
│                                                 │
│        Network Name: USIBMRA                    │
│        CPNAME=RA6003CP                           │
│                                                 │
│        XID (IDBLK and IDNUM)                     │
│         Not used                                │
│                                                 │
│        Service Point configured for:            │
│         COS FP NETID = USIBMRA                   │
│         COS FP NAU   = RAP      (VTAM)           │
│                                                 │
│         ALERT FP NETID = USIBMRA                 │
│         ALERT FP NAU   = RAP    (VTAM)           │
│                                                 │
└─────────────────────────────────────────────────┘
           . ........│.............. .
           .                         .
           .     Token-Ring and      .
           .     Physical Connections .
           .                         .
            ......................
                       │
                       ▼
┌─────────────────────────────────────────────────────────────┐
│                                                             │
│      S/390                                                  │
│                                                             │
│       NETID=USIBMRA                                         │
│        RAP     Vtam Version: 4.2 (Subarea Mode)             │
│        RAPAN   NetView Version: 2.4                         │
│                                                             │
│        VTAMLST Entry:                                       │
│                                                             │
│          RA60003  PU  ADDR=13,                              │
│                       CPNAME=RA6003CP,                      │
│                       .....                                 │
│                                                             │
│         RA60003W LU  LOCADDR=0,MODETAB=MQMTAB,DLOGMOD=LU62APPC│
│         RA600032 LU  LOCADDR=2,....                         │
│         RA600036 LU  LOCADDR=6,....                         │
│                                                             │
└─────────────────────────────────────────────────────────────┘
```

Figure 119. Overview of Subarea Connectivity Test 1

The LUs RA600032 and RA600036 are examples of dependent LUs and RA60003W
is an independent LU. There are other LUs in the definition; the above are only
representative samples. These LUs were not used in this service point testing.
An LU representing the CPNAME RA6003CP was used.

The following figures and discussion summarize this first subarea (non-APPN)
example.

```
                        Change/Show Control Point Profile

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                    [Entry Fields]
* Profile name                                      node_cp
  XID node ID                                       [*]
  Network name                                      [USIBMRA]
  Control Point (CP) name                           [RA6003CP]
  Control Point alias                               [RA6003CP]
  Control Point type                                appn_end_node           +
  Maximum number of cached routing trees            [500]                   #
  Maximum number of nodes in the TRS database       [500]                   #
  Route addition resistance                         [128]                   #

  Comments                                          []




F1=Help              F2=Refresh          F3=Cancel            F4=List
F5=Reset             F6=Command          F7=Edit              F8=Image
F9=Shell             F10=Exit            Enter=Do
```

Figure 120 (Part 1 of 3). Resources as Defined at the RISC System/6000

```
                    Change/Show Token Ring Link Station Profile
  [TOP]                                                    [Entry Fields]
    Current profile name                                 RA60003
    New profile name                                     []
    Use Control Point's XID node ID?                     yes                    +
      If no, XID node ID                                 [*]
  * SNA DLC Profile name                                 [RS03ATT1]             +
    Stop link station on inactivity?                     no                     +
      If yes, Inactivity time-out (0-10 minutes)         [0]                      #
    LU address registration?                             yes                    +
      If yes, LU Address Registration Profile name       [RA60003]              +
    Trace link?                                          yes                    +
      If yes, Trace size                                 long                   +
    Adjacent Node Address Parameters
      Access routing                                     link_address           +
      If link_name, Remote link name                     []
      If link_address,
        Remote link address                              [400002070000]         X
        Remote SAP address (02-fa)                       [04]                   X
    Adjacent Node Identification Parameters
      Verify adjacent node?                              no                     +
      Network ID of adjacent node                        [USIBMRA]
      CP name of adjacent node                           [RAP]
      XID node ID of adjacent node (LEN node only)       [*]
      Node type of adjacent node                         learn                  +
    Link Activation Parameters
      Solicit SSCP sessions?                             yes                    +
      Initiate call when link station is activated?      yes                    +
      Activate link station at SNA start up?             no                     +
      Activate on demand?                                no                     +
      CP-CP sessions supported?                          yes                    +
      If yes,
        Adjacent network node preferred server?          no                     +
      Partner required to support CP-CP sessions?        no                     +
      Initial TG number (0-20)                           [0]                      #
    Restart Parameters
      Restart on activation?                             no                     +
      Restart on normal deactivation?                    no                     +
      Restart on abnormal deactivation?                  no                     +
    Transmission Group COS Characteristics
      Effective capacity                                 [4300800]                #
      Cost per connect time                              [0]                      #
      Cost per byte                                      [0]                      #
      Security                                           nonsecure              +
      Propagation delay                                  lan                    +
      User-defined 1                                     [128]                    #
      User-defined 2                                     [128]                    #
      User-defined 3                                     [128]                    #
    Comments                                             []
  [BOTTOM]
```

Figure 120 (Part 2 of 3). Resources as Defined at the RISC System/6000

```
┌─────────────────────────────────────────────────────────────────────────┐
│                  NetView Service Point Profile Summary                    │
│                                                                           │
│  Type or select values in entry fields.                                   │
│  Press Enter AFTER making all desired changes.                            │
│                                                                           │
│                                                            [Entry Fields] │
│  * Use MDS transport?                              yes                  +  │
│  *    If no, enter SSCP ID                         [05000000ffff]       +  │
│       If no, enter Polling Period (msec)           [3000]               #  │
│       If no, enter PUNAME                          []                      │
│       If yes, enter the COS FP NETID               [USIBMRA]               │
│       If yes, enter the COS FP NAU                 [RAP]                   │
│       If yes, enter the ALERT FP NETID             [USIBMRA]               │
│       If yes, enter the ALERT FP NAU               [RAP]                   │
│     Service Point Codepage                         [ ]                     │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│  F1=Help            F2=Refresh          F3=Cancel          F4=List         │
│  F5=Reset           F6=Command          F7=Edit            F8=Image        │
│  F9=Shell           F10=Exit            Enter=Do                           │
│                                                                           │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 120 (Part 3 of 3). Resources as Defined at the RISC System/6000

Other LU definitions (such as Partner LU 6.2 Location) for the RISC System/6000
CPNAME were not used. The following example will show that in this non-APPN
subarea case, it was required that the LU 6.2 session used for Service Point was
initiated from the S/390 via a focalpt change command. In other examples
shown in this document, when APPN was involved, the RISC System/6000 could
initiate the LU 6.2 session for Service Point functions.

The following panels and discussions further discuss this non-APPN subarea
example.

```
NCCF                    N E T V I E W    RAPAN WTWKSH1  10/17/95 14:40:49
C RAPAN    DISPLAY NET,ID=RA60003,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
′ RAPAN
IST075I  NAME = RA60003          , TYPE = PU_T2
IST486I  STATUS= CONCT     , DESIRED STATE= CONCT
IST136I  SWITCHED SNA MAJOR NODE = RS60003
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  RA600032 CONCT      RA600033 CONCT      RA600034 CONCT
IST080I  RA600035 CONCT      RA600036 CONCT      RA600037 CONCT
IST080I  RA600038 CONCT      RA600039 CONCT      RA60003C CONCT
IST314I  END
--------------------------------------------------------------------------------




    ???
```

Figure 121. Resource Not Active in S/390 Yet

```
NCCF                    N E T V I E W    RAPAN WTWKSH1  10/17/95 15:33:56
C RAPAN    DISPLAY NET,ID=RA60003,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
′ RAPAN
IST075I  NAME = RA60003          , TYPE = PU_T2.1
IST486I  STATUS= ACTIV     , DESIRED STATE= ACTIV
IST1043I  CP NAME = RA6003CP, CP NETID = USIBMRA , DYNAMIC LU = YES
IST136I  SWITCHED SNA MAJOR NODE = RS60003
IST081I  LINE NAME = J0007025, LINE GROUP = EG07L02 , MAJNOD = RA7NCPX
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  RA600032 PACTL      RA600033 PACTL      RA600034 PACTL
IST080I  RA600035 PACTL      RA600036 ACTIV      RA600037 ACTIV
IST080I  RA600038 ACTIV      RA600039 ACTIV      RA60003C ACTIV
IST314I  END
--------------------------------------------------------------------------------




    ???
```

*Figure 122. After SNA Server, Link Station and Physical Connection Started.   The
RA6003CP resource is not indicated above. Previously, as in Figure 39 on page 47, the
″CP″ resource did appear and was usable at this time. This was due to APPN support that
was not available in the following subarea example.*

As shown in the following figures, SNA Server and Service Point show active
status as well.

```
[Oct 17 1995, 15:35:27]
    Command_to_Execute follows below:
>> lssrc -s'sna'

    Output from Command_to_Execute follows below:
---- start ----
Subsystem         Group          PID      Status
 sna              sna            34024    active

---- end ----


[Oct 17 1995, 15:35:36]
    Command_to_Execute follows below:
>> sna -d l

    Output from Command_to_Execute follows below:
---- start ----
    Link           Adjacent       Node   Device                  # of local  In
    station        CP name        type   name       State        sessions    use
-------------- ----------------- ----- --------- ---------- ---------- -----
@tok1.4                                  tok1      Starting            0 No
RA60003        USIBMRA.RAP       LEN   tok1      Active              5 Yes

---- end ----
```

Figure 123 (Part 1 of 2). Displaying Status at the RISC System/6000

```
[Oct 17 1995, 15:35:43]
    Command_to_Execute follows below:
>> sna -d l  -o 'long'
    Output from Command_to_Execute follows below:
---- start ----
1.2>Link station profile name       RA60003
    Destination DLC address         X'40000207000004'
    Remote link name                (not applicable)
    Link tracing active?            Yes
    Verify adjacent node?           No
    Adjacent node CP name           USIBMRA.RAP
    Adjacent node type              Low-entry networking end node (LEN)
    Adjacent PU type                Type 4/5
    Adjacent node ID (for XID)      X'FFFFFFFC'
    CP-CP sessions supported?       No
    Solicit SSCP-PU session         Yes
    Host SSCP ID                    25
    Link activated                  Locally
    Link state                      Active
    Local active and activating session 5
    Number of ISR sessions          0
    Link in use by Gateway          No
    Link in use by Generic SNA      No
    Deactivating link               No
    Link station role               Secondary
    Max frame data (BTU) size       2052
    Transmission group number       0
    Effective capacity              4.30 megabits per second
    Cost per connect time           0
    Cost per byte                   0
    Security                        Nonsecure
    Propagation delay               384.00 microseconds (lan)
    User defined parameter 1        128
    User defined parameter 2        128
    User defined parameter 3        128
    Test commands sent              0
    Test command failures           0
    Test commands received          0
    Data frames transmitted         6
    Data frames retransmitted       0
    Max. contiguous frames retrans. 0
    Data frames received            10
    Invalid frames received         0
    Adapter detected receive errors  0
    Adapter detected transmit errors 0
    Received inactivity timeouts    0
    Primary polls sent              0
    Primary repolls sent            0
    Max. primary contiguous repolls 0
---- end ----
```

Figure 123 (Part 2 of 2). Displaying Status at the RISC System/6000

However, as indicated below, there is no LU 6.2 session available for Service Point functions. We will solve this problem by initiating the session via a focalpt change command from S/390 NetView.

During our testing we found (especially in non-APPN subarea configurations) situations such as this, when it was necessary to initiate the session from the S/390 side.

```
[Oct 17 1995, 15:35:56]
    Command_to_Execute follows below:
>> sna -d s

    Output from Command_to_Execute follows below:
---- start ----
            Local             Partner           Mode      Link
 CGID       LU name           LU name           name      station      State
------ ----------------- ----------------- -------- ----------- ----------

---- end ----
```

Figure 124. Status of LU6.2 Sessions at the RISC System/6000

Even though there were no sessions indicated in Figure 124 on page 161, the
Service Point as shown in Figure 125 on page 162, indicates normal status.
When we used the service point prior to initiating the sessions with a
S/390-initiated focalpt change command, the Service Point indicated normal
status to the end user; but, in fact, the data was not transferred to the S/390. For
this transfer to occur, there *must* be a session active which is used for
SNASVCMG services.

We will activate this session using focalpt change from the S/390 and the above
display will change as shown in the figures starting with Figure 134 on page 170.

```
[Oct 17 1995, 15:37:23]
    Command_to_Execute follows below:
>> /usr/lpp/nvix/scripts/nvix_control status
    Output from Command_to_Execute follows below:
---- start ----
nvix_control status
*** Status of NetView Service Point Processes ***


Subsystem          Group          PID     Status
 evp_nvixSrd                       43259   active

Subsystem          Group          PID     Status
 evp_nvixCrd                       44546   active

Subsystem          Group          PID     Status
 evp_nvixAcmd                      44292   active
*** Status of SNA Server and MDS Session: ***
SNA is active
MDS session is active at the Service Point
Status of host and links unknown
Using CP NAME: RA6003CP
On MDS sessions, use SP=RA6003CP in RUNCMDS and use Applications shown in
"*** Applications registered to receive commands from HOST: ***"
for appl= in RUNCMD
*** Focal Point Status Information: ***
COS FP: USIBMRA.RAP
ALERT FP: USIBMRA.RAP

*** Status of Portmapper ***
/usr/etc/portmap is active

*** Applications registered to receive commands from HOST: ***
no information is currently available

For additional status and error information refer to your system
error log.
---- end ----
```

Figure 125. Status of NetView Service Point

```
[root@rs60003]/> nvsendmsg wtwksh1 "Testing before starting RA6003CP"

Sending Message to Operator WTWKSH1
Message Sent to Service Point. Waiting for Status.
Message Received by Service Point

[root@rs60003]/> nvcreateoa "Testing before starting RA6003CP"
Alert Sent to Service Point. Waiting for Status.
Alert Received by Service Point
```

*Figure 126. Exercising Service Point from the RISC System/6000. The above are
user-written Service Point applications. As indicated above, the user application believes
actions are successful. However, nothing appears in the S/390 since the SNASVCMG
session is not active.*

The following would contain information from the previous user-written service point applications. None of the following information is from the service point. After the focalpt change command and successful initiation of the SNASVCMG session the service point-passed information will arrive.

```
 N E T V I E W          SESSION DOMAIN: RAPAN    WTWKSH1   10/17/95 15:41:11
 NPDA-30A                      * ALERTS-DYNAMIC *

    DOMAIN RESNAME  TYPE TIME  ALERT DESCRIPTION:PROBABLE CAUSE
     RAPAN EL071092 LAN  15:41 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:40 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:39 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:38 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:37 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:36 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:35 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:34 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:33 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:32 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN RA7NCPX  COMC 15:31 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT
     RAPAN EL071092 LAN  15:30 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:29 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:28 INCOMING CALL REFUSED:COMM CTRL PROGRAM
     RAPAN EL071092 LAN  15:27 INCOMING CALL REFUSED:COMM CTRL PROGRAM

 DEPRESS ENTER KEY TO VIEW ALERTS-STATIC

  ???
 CMD==>
```

Figure 127 (Part 1 of 2). S/390 Displays Prior to Success of Service Point Action

```
 NCCF                      N E T V I E W    RAPAN WTWKSH1  10/17/95 15:41:18












     ???
```

Figure 127 (Part 2 of 2). S/390 Displays Prior to Success of Service Point Action. No message has appeared as resulting from the previous nvsendmsg command. Sent messages will appear after we have initiated the SNASVCMG session.

To initiate the SNASVCMG session two things had to occur in this example:

1. The RS6003CP resource had to be available. Previously in this document, the resource was available due to the APPN support which was used. We could have (and, we WILL in the following example) define a VTAM CDRSC as below and activate it ourselves instead of asking VTAM to dynamically activate it.

2. A S/390-initiated focalpt change command had to be executed.

These two actions will occur as in the following discussion.

```
 NETVIEW.BRWS ------ BROWSE RS6KSP3  (DSIVTAM ) --- LINE 00000 TO 6 OF 6
                                                          SCROLL ==> CSR
 ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----
 ****************************** TOP OF DATA ******************************
          VBUILD TYPE=CDRSC
          NETWORK NETID=USIBMRA
 *
 *                         SERVICE POINT FOR RS60003
 RA6003CP CDRSC   ALSLIST=(RA60003)
 *
 ****************************** BOTTOM OF DATA ******************************




 CMD==>
 1=HELP  2=END  3=RET              6=ROLL              9=RPTFND 12=RETRIEVE
```

Figure 128. A User-Built CDRSC for use by Service Point

```
NCCF                         N E T V I E W    RAPAN WTWKSH1  10/17/95 15:42:16
* RAPAN    ACT RS6KSP3
C RAPAN    VARY NET,ACT,ID=RS6KSP3
  RAPAN    IST097I  VARY     ACCEPTED
  RAPAN    IST1132I RS6KSP3              IS ACTIVE, TYPE = CDRSC SEGMENT
--------------------------------------------------------------------------------




















  ???
```

Figure 129 (Part 1 of 2). Activating the Service Point Resource in the S/390

```
 NCCF                        N E T V I E W    RAPAN WTWKSH1  10/17/95 15:49:05
 C RAPAN    DISPLAY NET,ID=RA6003CP,SCOPE=ALL
   RAPAN    IST097I  DISPLAY  ACCEPTED
 ' RAPAN
 IST075I  NAME = USIBMRA.RA6003CP , TYPE = CDRSC
 IST486I  STATUS= ACTIV     , DESIRED STATE= ACTIV
 IST1447I  REGISTRATION TYPE = NO
 IST977I  MDLTAB=***NA*** ASLTAB=***NA***
 IST1333I  ADJLIST = ***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 = RS6KSP3
 IST1044I  ALSLIST = RA60003
 IST1131I  DEVICE = ILU/CDRSC
 IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
 IST1500I  STATE TRACE = OFF
 IST171I  ACTIVE SESSIONS = 0000000000, SESSION REQUESTS = 0000000000
 IST172I  NO SESSIONS            EXIST
 IST314I  END
 --------------------------------------------------------------------------------

 ???
```

Figure 129 (Part 2 of 2). Activating the Service Point Resource in the S/390

Although the resource is active, it is not related to the Service Point RISC
System/6000 (it does not appear in the following display).

```
NCCF                        N E T V I E W    RAPAN WTWKSH1  10/17/95 15:48:49
C RAPAN    DISPLAY NET,ID=RA60003,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
' RAPAN
IST075I  NAME = RA60003         , TYPE = PU_T2.1
IST486I  STATUS= ACTIV    , DESIRED STATE= ACTIV
IST1043I  CP NAME = RA6003CP, CP NETID = USIBMRA , DYNAMIC LU = YES
IST136I  SWITCHED SNA MAJOR NODE = RS60003
IST081I  LINE NAME = J0007025, LINE GROUP = EG07L02 , MAJNOD = RA7NCPX
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  RA600032 PACTL       RA600033 PACTL       RA600034 PACTL
IST080I  RA600035 PACTL       RA600036 ACT/S       RA600037 ACTIV
IST080I  RA600038 ACTIV       RA600039 ACTIV       RA60003C ACTIV
IST314I  END
-------------------------------------------------------------------------------




    ???
```

Figure 130. Still, no Sign of RS6003CP. We will cause the relationship to take place via a S/390-initiated focalpt change command.

Prior to initiating the focalpt change, VTAM does not "know" about the SNASVCMG (LU6.2) session for RS6003CP.

```
NCCF                        N E T V I E W    RAPAN WTWKSH1  10/17/95 15:49:29
C RAPAN    DISPLAY NET,ID=RAP,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
' RAPAN
IST075I  NAME = USIBMRA.RAP     , TYPE = CDRM
IST1046I  CP      USIBMRA.RAP       ALSO EXISTS
IST486I  STATUS= ACTIV    , DESIRED STATE= ACTIV
IST815I  AUTOMATIC RECOVERY IS SUPPORTED
IST231I  CDRM     MAJOR NODE = VTAMSEG
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST476I  CDRM TYPE =     HOST GATEWAY CAPABLE
IST637I  SUBAREA=        25 ELEMENT=    1
IST388I  DYNAMIC CDRSC DEFINITION SUPPORT = YES
IST171I  ACTIVE SESSIONS = 0000000003, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST634I  NAME     STATUS         SID           SEND RECV VR TP NETID
IST635I  RA3    ACTIV    F88F0164B9EEB1CE              0  2 USIBMRA
IST635I  RAB    ACTIV    F88F0164B9EEB1CF              0  2 USIBMRA
IST635I  RAK    ACTIV    F88F0164B9EEB1D0              0  2 USIBMRA
IST924I  -------------------------------------------------------------
IST075I  NAME = USIBMRA.RAP     , TYPE = HOST CP
IST1046I  SSCP     USIBMRA.RAP       ALSO EXISTS
IST486I  STATUS= ACTIV     , DESIRED STATE= ACTIV
IST1447I  REGISTRATION TYPE = NO
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  APPL     MAJOR NODE = VTAMSEG
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST271I  JOBNAME = NET25   , STEPNAME = NET25   , DSPNAME = IST12745
IST1050I  MAXIMUM COMPRESSION LEVEL - INPUT = 0   , OUTPUT = 0
IST171I  ACTIVE SESSIONS = 0000000000, SESSION REQUESTS = 0000000000
IST172I  NO SESSIONS          EXIST
IST314I  END
???
```

Figure 131. VTAM Display Prior to focalpt change Command for RA6003CP. The focalpt
change command will cause the above "ACTIVE SESSIONS" to be changed, adding our
example Service Point resource.

The following is the focalpt change command that was issued and the response
indicating acceptance from the RISC System/6000 of the focalpt change request.

```
  NETVIEW.BRWS ------ BROWSE SHOGFOCL (DSICLD ) --- LINE 00000 TO 00008 OF 00008
                                                         SCROLL ==> CSR
   ---+----1----+----2----+----3----+----4----+----5----+----6---+----7----+----
  ****************************** TOP OF DATA *********************************
  *
  * RS60003  PU=RA60003  CPNAME=RA6003CP
  *
  FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=ALERT
  FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=OPS_MGMT
  FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=SPCS
  FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=STATUS
  FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=LINKSERV
   ****************************** BOTTOM OF DATA ****************************




  CMD==>
  1=HELP  2=END  3=RET              6=ROLL               9=RPTFND 12=RETRIEVE
```

Figure 132 (Part 1 of 2). focalpt change Used in this Example

```
  NCCF                      N E T V I E W    RAPAN WTWKSH1  10/17/95 15:50:04
  * RAPAN     SHOGFOCL
  C RAPAN     *
  C RAPAN     * RS60003  PU=RA60003  CPNAME=RA6003CP
  C RAPAN     *
  C RAPAN     FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=ALERT
  - RAPAN     DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO RA6003CP FOR
              ALERT DATA
  C RAPAN     FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=OPS_MGMT
  - RAPAN     DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO RA6003CP FOR
              OPS_MGMT DATA
  C RAPAN     FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=SPCS
  - RAPAN     DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO RA6003CP FOR
              SPCS DATA
  C RAPAN     FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=STATUS
  - RAPAN     DWO431I FOCALPT CHANGE FAILED - THE CNMTAMEL TASK IS INACTIVE
  C RAPAN     FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=LINKSERV
  - RAPAN     DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO RA6003CP FOR
              LINKSERV DATA
  C RAPAN     DSI013I COMMAND LIST SHOGFOCL COMPLETE
  - RAPAN     DSI293I FOCAL POINT AUTHORIZATION FOR ALERT DATA HAS BEEN ACCEPTED
              BY RA6003CP
  - RAPAN     DSI293I FOCAL POINT AUTHORIZATION FOR OPS_MGMT DATA HAS BEEN
              ACCEPTED BY RA6003CP
  - RAPAN     DSI293I FOCAL POINT AUTHORIZATION FOR SPCS DATA HAS BEEN ACCEPTED
              BY RA6003CP
  - RAPAN     DSI293I FOCAL POINT AUTHORIZATION FOR LINKSERV DATA HAS BEEN
              ACCEPTED BY RA6003CP
  ------------------------------------------------------------------------------
  ??? ***
```

Figure 132 (Part 2 of 2). focalpt change Used in this Example

```
NCCF                         N E T V I E W    RAPAN WTWKSH1  10/17/95 15:51:57
C RAPAN    DISPLAY NET,ID=RAP,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
' RAPAN
IST075I  NAME = USIBMRA.RAP      , TYPE = CDRM
IST1046I  CP      USIBMRA.RAP       ALSO EXISTS
IST486I  STATUS= ACTIV    , DESIRED STATE= ACTIV
IST815I  AUTOMATIC RECOVERY IS SUPPORTED
IST231I  CDRM     MAJOR NODE = VTAMSEG
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST476I  CDRM TYPE =     HOST GATEWAY CAPABLE
IST637I  SUBAREA=         25 ELEMENT=     1
IST388I  DYNAMIC CDRSC DEFINITION SUPPORT = YES
IST171I  ACTIVE SESSIONS = 0000000003, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST634I  NAME     STATUS          SID           SEND RECV VR TP NETID
IST635I  RA3      ACTIV      F88F0164B9EEB1CE              0  2 USIBMRA
IST635I  RAB      ACTIV      F88F0164B9EEB1CF              0  2 USIBMRA
IST635I  RAK      ACTIV      F88F0164B9EEB1D0              0  2 USIBMRA
IST924I  -------------------------------------------------------------
IST075I  NAME = USIBMRA.RAP      , TYPE = HOST CP
IST1046I  SSCP    USIBMRA.RAP       ALSO EXISTS
IST486I  STATUS= ACT/S    , DESIRED STATE= ACTIV
IST1447I  REGISTRATION TYPE = NO
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  APPL     MAJOR NODE = VTAMSEG
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST271I  JOBNAME = NET25   , STEPNAME = NET25   , DSPNAME = IST12745
IST1050I  MAXIMUM COMPRESSION LEVEL - INPUT = 0   , OUTPUT = 0
IST171I  ACTIVE SESSIONS = 0000000001, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST634I  NAME     STATUS          SID           SEND RECV VR TP NETID
IST075I  NAME = USIBMRA.RAP      , TYPE = CDRM
IST635I  RA6003CP ACTIV-S    F88F0164B9EEFD5F 0005 0008  0  0 USIBMRA
IST314I  END
--------------------------------------------------------------------------------
??? ***
```

*Figure 133. VTAM Display After focalpt change Command for RA6003CP. Following the
focalpt change, the relationship between RAP (VTAM) and our Service Point is indicated.*

Following is the RISC System/6000 status after the successful focalpt change.
Compare with the figures starting with Figure 124 on page 161.

```
[Oct 17 1995, 15:57:12]
    Command_to_Execute follows below:
>> sna -d l

    Output from Command_to_Execute follows below:
---- start ----
    Link          Adjacent        Node   Device                 # of local  In
    station       CP name         type   name       State       sessions    use
-------------- ----------------- ----- --------- ---------- ---------- -----
@tok1.4                                 tok1      Starting            0 No
RA60003        USIBMRA.RAP       LEN    tok1      Active              7 Yes

---- end ----
```

Figure 134 (Part 1 of 3). Display of RISC System/6000 Status After focalpt change from S/390

```
[Oct 17 1995, 15:57:24]
    Command_to_Execute follows below:
>> sna -d l  -o 'long'
    Output from Command_to_Execute follows below:
---- start ----
1.2>Link station profile name         RA60003
    Destination DLC address          X'40000207000004'
    Remote link name                 (not applicable)
    Link tracing active?             Yes
    Verify adjacent node?            No
    Adjacent node CP name            USIBMRA.RAP
    Adjacent node type               Low-entry networking end node (LEN)
    Adjacent PU type                 Type 4/5
    Adjacent node ID (for XID)       X' FFFFFFFC'
    CP-CP sessions supported?        No
    Solicit SSCP-PU session          Yes
    Host SSCP ID                     25
    Link activated                   Locally
    Link state                       Active
    Local active and activating session 7
    Number of ISR sessions           0
    Link in use by Gateway           No
    Link in use by Generic SNA       No
    Deactivating link                No
    Link station role                Secondary
    Max frame data (BTU) size        2052
    Transmission group number        0
    Effective capacity               4.30 megabits per second
    Cost per connect time            0
    Cost per byte                    0
    Security                         Nonsecure
    Propagation delay                384.00 microseconds (lan)
    User defined parameter 1         128
    User defined parameter 2         128
    User defined parameter 3         128
    Test commands sent               0
    Test command failures            0
    Test commands received           0
    Data frames transmitted          100
    Data frames retransmitted        0
    Max. contiguous frames retrans.  0
    Data frames received             88
    Invalid frames received          0
    Adapter detected receive errors  0
    Adapter detected transmit errors 0
    Received inactivity timeouts     0
    Primary polls sent               0
    Primary repolls sent             0
    Max. primary contiguous repolls  0
---- end ----
```

Figure 134 (Part 2 of 3). Display of RISC System/6000 Status After focalpt change from S/390

```
[Oct 17 1995, 15:57:56]
    Command_to_Execute follows below:
>> sna -d s

    Output from Command_to_Execute follows below:
---- start ----
             Local               Partner            Mode      Link
  CGID       LU name             LU name            name      station      State
------    ----------------    -----------------   --------   -----------  ----------
7         USIBMRA.RA6003CP    USIBMRA.RAP          SNASVCMG  RA60003      Available

---- end ----
```

Figure 134 (Part 3 of 3). Display of RISC System/6000 Status After focalpt change from S/390

Now that success appears in-sight, we can reissue the user-written Service Point application commands as shown in the following figure.

```
[root@rs60003]/> nvsendmsg wtwksh1 "Testing after starting RA6003CP"
Sending Message to Operator WTWKSH1
Message Sent to Service Point. Waiting for Status.
Message Received by Service Point

[root@rs60003]/> nvcreateoa "Testing after starting RA6003CP"
Alert Sent to Service Point. Waiting for Status.
Alert Received by Service Point
```

Success appears in S/390 NetView as indicated in the following figure.

```
┌──────────────────────────────────────────────────────────────────────────────┐
│ NCCF                     N E T V I E W   RAPAN WTWKSH1  10/17/95 15:58:43       │
│ -         WTWS00I Tue Oct 17 15:58:18 1995 > Testing after starting RA6003CP    │
│ -------------------------------------------------------------------------------│
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│     ???                                                                        │
│                                                                                │
└──────────────────────────────────────────────────────────────────────────────┘
```

Figure 135 (Part 1 of 3). S/390 Output of User-Written Service Point Application after focalpt change

```
┌──────────────────────────────────────────────────────────────────────────────┐
│  N E T V I E W         SESSION DOMAIN: RAPAN    WTWKSH1   10/17/95 15:59:06     │
│  NPDA-30A                      * ALERTS-DYNAMIC *                               │
│                                                                                │
│     DOMAIN RESNAME  TYPE TIME  ALERT DESCRIPTION:PROBABLE CAUSE                 │
│     RAPAN RS60003   DEV  15:58 OPERATOR NOTIFICATION:NETWORK OPERATOR           │
│     RAPAN EL071092  LAN  15:58 INCOMING CALL REFUSED:COMM CTRL PROGRAM          │
│     RAPAN JURI      DEV  15:57 NO COMM WITH REMOTE NODE:COMM/REMOTE NODE        │
│     RAPAN JURI      DEV  15:57 NO COMM WITH REMOTE NODE:COMMUNICATIONS INTF     │
│     RAPAN 9_67_46_  DEV  15:57 PROBLEM RESOLVED:LINE/REMOTE NODE                │
│     RAPAN EL071092  LAN  15:57 INCOMING CALL REFUSED:COMM CTRL PROGRAM          │
│     RAPAN EL071092  LAN  15:56 INCOMING CALL REFUSED:COMM CTRL PROGRAM          │
│     RAPAN 9_67_46_  DEV  15:56 LINK ERROR:LINE/REMOTE NODE                      │
│     RAPAN RA7NCPX   COMC 15:55 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT    │
│     RAPAN EL071092  LAN  15:55 INCOMING CALL REFUSED:COMM CTRL PROGRAM          │
│     RAPAN EL071092  LAN  15:54 INCOMING CALL REFUSED:COMM CTRL PROGRAM          │
│     RAPAN EL071092  LAN  15:53 INCOMING CALL REFUSED:COMM CTRL PROGRAM          │
│     RAPAN EL071092  LAN  15:52 INCOMING CALL REFUSED:COMM CTRL PROGRAM          │
│     RAPAN EL071092  LAN  15:51 INCOMING CALL REFUSED:COMM CTRL PROGRAM          │
│     RAPAN EL071092  LAN  15:50 INCOMING CALL REFUSED:COMM CTRL PROGRAM          │
│                                                                                │
│  DEPRESS ENTER KEY TO VIEW ALERTS-STATIC                                        │
│                                                                                │
│   ???                                                                          │
│  CMD==>                                                                         │
└──────────────────────────────────────────────────────────────────────────────┘
```

Figure 135 (Part 2 of 3). S/390 Output of User-Written Service Point Application after focalpt change

```
 N E T V I E W           SESSION DOMAIN: RAPAN    WTWKSH1   10/17/95 15:59:22
 NPDA-43S                       * EVENT DETAIL *                   PAGE  2 OF  2

  RAPAN       NCP_NAME     RA6003CP      3NVCMD        RS60003
           +--------+   +--------+   +--------+   +--------+
  DOMAIN   |  COMC  |---|  CTRL  |---|   SP   |---|  DEV   |
           +--------+   +--------+   +--------+   +--------+

 USER ENTERED TEXT:
    nvcreateoa @ Tue Oct 17 15:58:32 1995 >> Testing after starting RA6003CP

 FLAGS:
    OPERATOR INITIATED




 UNIQUE ALERT IDENTIFIER: PRODUCT ID - 7013       ALERT ID - 37C07EDB

 ENTER A (ACTION) OR DM (DETAIL MENU)

 ???
 CMD==>
```

Figure 135 (Part 3 of 3). S/390 Output of User-Written Service Point Application after focalpt change

G.1.1.1 Summary

In certain situations, it will be necessary to initiate the SNASVCMG session for the Service Point by a S/390-initiated focalpt change command.

If the SNASVCMG session does not come active at the RISC System/6000 as indicated below:

```
[Oct 17 1995, 15:57:56]
    Command_to_Execute follows below:
>> sna -d s
    Output from Command_to_Execute follows below:

          Local            Partner         Mode       Link
 CGID     LU name          LU name         name       station    State
 ------   ----------------  ----------------  --------  ----------  ----------
 7        USIBMRA.RA6003CP  USIBMRA.RAP       SNASVCMG  RA60003     Available
```

Figure 136. Successful SNASVCMG Session Display

You should, then, issue a S/390-initiated focalpt change command as follows:

```
FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=ALERT
FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=OPS_MGMT
FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=SPCS
FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=STATUS
FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=LINKSERV
```

G.1.2 RISC System/6000 to S/390 Subarea Using CPNAME and Cross Subarea

In this second test, the RISC System/6000 is connected to the S/390 subarea (non-APPN) using CPNAME as discussed earlier in this chapter. However, after connection, we will initiate the SNASVCMG session from a remotely connected S/390.

```
           RISC System/6000
            Network Name: USIBMRA
           CPNAME=RA6003CP
           XID (IDBLK and IDNUM)
            Not used
           Service Point configured for:
            COS FP NETID = USIBMRA
            COS FP NAU   = RAI      (VTAM)
            ALERT FP NETID = USIBMRA
            ALERT FP NAU   = RAI      (VTAM)


          . ........|.............. .
          .                         .
          .     Token-Ring and       .
          .     Physical Connections  .
          .                         .
           ......................


        S/390
           NETID=USIBMRA
            RAP     Vtam Version: 4.2 (Subarea mode)
            RAPAN   NetView Version: 2.4
            VTAMLST Entry:
              RA60003  PU  ADDR=13,
                           CPNAME=RA6003CP,
                           .....
              RA60003W LU  LOCADDR=0,MODETAB=MQMTAB,DLOGMOD=LU62APPC
              RA600032 LU  LOCADDR=2,....
              RA600036 LU  LOCADDR=6,....


              ...


        S/390
           NETID=USIBMRA
            RAI     Vtam Version: 4.2 (APPN mode)
            RAIAN   NetView Version: 2.4
            VTAMLST Entry:        (Will be found via APPN Services)
               VBUILD TYPE=CDRSC  (It is not necessary to define
               NETWORK ID=USIBMRA  this in the RAI system)
        RA6003CP CDRSC ASLIST=(RA60003)
```

Figure 137. Overview of Subarea Connectivity Test 2

In fact, since this example is going to initiate the SNASVCMG session via a S/390-initiated focalpt change command, the RISC System/6000 Service

Point-configured COS FP and ALERT FP values will be overridden as a result of the focalpt change.

Note: Only *one* of the focalpt change relationships can be in effect at a time. Whichever S/390 initiates the focalpt change last will be the current focal point for the RISC System/6000 and Service Point.

```
                    ┌─────────────────────┐
                    │ RS60003             │
                    │ CPNAME: RA6003CP    │
                    │  Service Point      │
                    │  Applications       │
                    │                     │
                    │  Service Point      │
                    │                     │
                    │  SNA Server         │
                    └──────────▲──────────┘
          ┌──────── or ────────┼──────── or ────────┐
          ▼                                          ▼
  ┌─────────────────┐                      ┌─────────────────┐
  │ S/390           │                      │ S/390           │
  │ VTAM  RAP       │                      │ VTAM  RAI       │
  │                 │                      │                 │
  │  S/390 NetView  │                      │  S/390 NetView  │
  │                 │                      │                 │
  │  Focal Point    │                      │  Focal Point    │
  │  Applications   │                      │  Applications   │
  └─────────────────┘                      └─────────────────┘
```
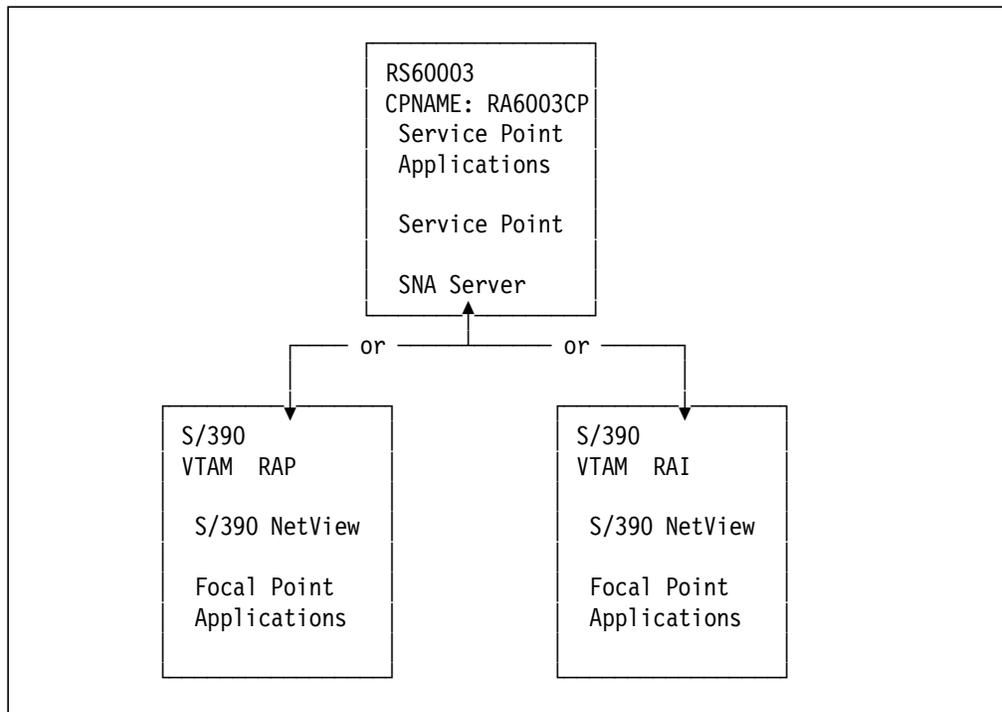
Figure 138. Example with Two Potential S/390s and One RISC System/6000 Service Point

After initial connection to the adjacent S/390 (RAP in the above figure), the connection is as discussed in G.1.1, "RISC System/6000 to S/390 Subarea Using CPNAME" on page 153.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│                        ┌──────────────────────┐                           │
│                        │ RS60003              │                           │
│                        │ CPNAME: RA6003CP     │                           │
│                        │  Service Point       │                           │
│                        │  Applications        │                           │
│                        │                      │                           │
│                        │  Service Point       │                           │
│                        │                      │                           │
│                        │  SNA Server          │                           │
│                        └──────────────────────┘                           │
│                           │              ▲                                 │
│                           │              │                                 │
│                           ▼              │                                 │
│           ┌──────────────────────┐   ┌──────────────────────┐            │
│           │ S/390                │   │ S/390                │            │
│           │ VTAM  RAP            │   │ VTAM  RAI            │            │
│           │                      │   │                      │            │
│           │  S/390 NetView       │   │  S/390 NetView       │            │
│           │                      │   │                      │            │
│           │  Focal Point         │   │  Focal Point         │            │
│           │  Applications        │   │  Applications        │            │
│           │                      │   │                      │            │
│           └──────────────────────┘   └──────────────────────┘            │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 139. Two Potential S/390s but Using RAP

As discussed previously, issuing the focalpt change from S/390 RAP results in the following:

```
[root@rs60003]/> nvsendmsg wtwksh1 "Testing after starting RA6003CP"
Sending Message to Operator WTWKSH1
Message Sent to Service Point. Waiting for Status.
Message Received by Service Point

[root@rs60003]/> nvcreateoa "Testing after starting RA6003CP"
Alert Sent to Service Point. Waiting for Status.
Alert Received by Service Point
```

Success appears in RAP S/390 NetView as indicated in Figure 140 on page 178.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│ NCCF                    N E T V I E W    RAPAN WTWKSH1  10/18/95 12:42:17     │
│ -           WTWS00I Wed Oct 18 12:41:15 1995 > Testing after starting RA60003CP │
│ ------------------------------------------------------------------------------- │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│     ???                                                                       │
│                                                                               │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 140 (Part 1 of 2). S/390 Output of User-Written Service Point Application after focalpt change

```
┌─────────────────────────────────────────────────────────────────────────────┐
│  N E T V I E W          SESSION DOMAIN: RAPAN    WTWKSH1   10/18/95 12:42:32  │
│  NPDA-30A                      * ALERTS-DYNAMIC *                             │
│                                                                               │
│      DOMAIN RESNAME  TYPE TIME  ALERT DESCRIPTION:PROBABLE CAUSE              │
│      RAPAN EL071092  LAN  12:42 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN RS60003   DEV  12:42 OPERATOR NOTIFICATION:NETWORK OPERATOR        │
│      RAPAN EL071092  LAN  12:41 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN EL071092  LAN  12:40 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN RA7NCPX   COMC 12:39 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT │
│      RAPAN EL071092  LAN  12:39 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN EL071092  LAN  12:38 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN EL071092  LAN  12:37 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN EL071092  LAN  12:36 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN EL071092  LAN  12:35 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN EL071092  LAN  12:34 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN EL071092  LAN  12:33 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN EL071092  LAN  12:32 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN EL071092  LAN  12:31 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│      RAPAN EL071092  LAN  12:30 INCOMING CALL REFUSED:COMM CTRL PROGRAM       │
│                                                                               │
│  DEPRESS ENTER KEY TO VIEW ALERTS-STATIC                                      │
│                                                                               │
│   ???                                                                         │
│  CMD==>                                                                        │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 140 (Part 2 of 2). S/390 Output of User-Written Service Point Application after focalpt change

Then, we decide to issue the focalpt change from an alternate S/390 resulting in the following service point-focal point relationship:

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                          ┌──────────────────────┐                            │
│                          │ RS60003              │                            │
│                          │ CPNAME: RA6003CP│                                 │
│                          │  Service Point       │                            │
│                          │  Applications        │                            │
│                          │                      │                            │
│                          │  Service Point       │                            │
│                          │                      │                            │
│                          │  SNA Server          │                            │
│                          └─────────▲────────────┘                            │
│                                    │      └──────────┐                        │
│       ┌──────────────────────┐     │     ┌───────────▼──────────┐            │
│       │ S/390                │           │ S/390                │            │
│       │ VTAM  RAP            │           │ VTAM  RAI            │            │
│       │                      │           │                      │            │
│       │  S/390 NetView       │           │  S/390 NetView       │            │
│       │                      │           │                      │            │
│       │  Focal Point         │           │  Focal Point         │            │
│       │  Applications        │           │  Applications        │            │
│       │                      │           │                      │            │
│       └──────────────────────┘           └──────────────────────┘            │
└─────────────────────────────────────────────────────────────────────────────┘
```
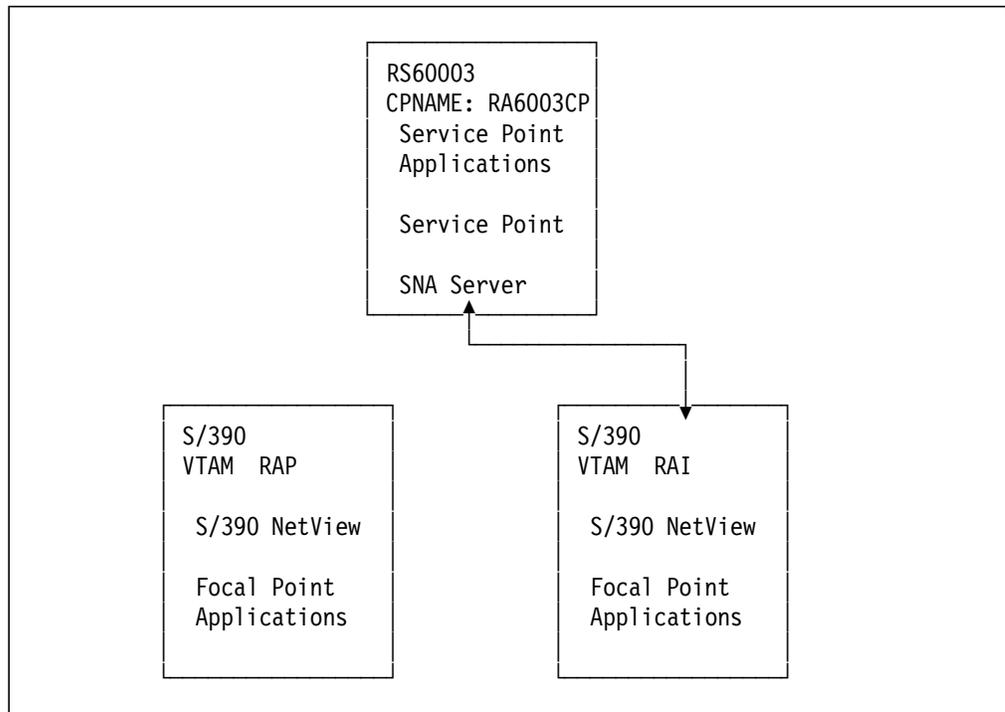
Figure 141. Two Potential S/390s but Using RAI

Issuing the focalpt change from S/390 RAI results in the following:

```
NCCF                      N E T V I E W    RAIAN WTWKSH2  10/18/95 12:44:13 A
C RAIAN    DSI013I COMMAND LIST SHOGFOCL COMPLETE
- RAIAN    DSI293I FOCAL POINT AUTHORIZATION FOR OPS_MGMT DATA HAS BEEN
           ACCEPTED BY RA6003CP
- RAIAN    DSI293I FOCAL POINT AUTHORIZATION FOR SPCS DATA HAS BEEN ACCEPTED
           BY RA6003CP
- RAIAN    DSI293I FOCAL POINT AUTHORIZATION FOR LINKSERV DATA HAS BEEN
           ACCEPTED BY RA6003CP
--------------------------------------------------------------------------------
- RAIAN    DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO RA6003CP FOR
           OPS_MGMT DATA
C RAIAN    FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=SPCS
- RAIAN    DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO RA6003CP FOR
           SPCS DATA
C RAIAN    FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=STATUS
- RAIAN    DWO184E FOCALPT CHANGE COMMAND TO NODE RA6003CP FOR STATUS FAILED:
           CNMTAMEL TASK MUST BE ACTIVE AND DEFINED AS A STATUS FOCAL POINT.
C RAIAN    FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=RA6003CP,FPCAT=LINKSERV
- RAIAN    DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO RA6003CP FOR
           LINKSERV DATA
- RAIAN    DSI293I FOCAL POINT AUTHORIZATION FOR ALERT DATA HAS BEEN ACCEPTED
           BY RA6003CP
???
```
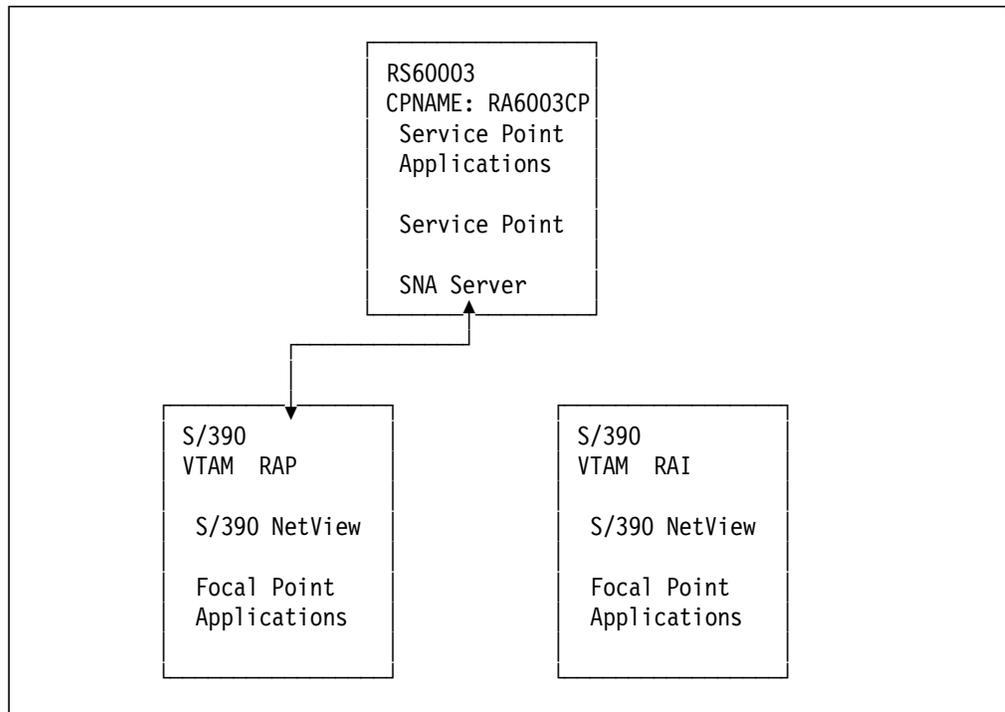
Figure 142. Successful Execution of focalpt change Command from RAI

Issuing at the RISC System/6000 the following, results in the information arriving
at the RAI S/390.

```
[root@rs60003]/> nvsendmsg wtwksh2 "Heading to operator on S/390 RAI"
Sending Message to Operator WTWKSH2
Message Sent to Service Point. Waiting for Status.
Message Received by Service Point

[root@rs60003]/> nvcreateoa "Alert headed to S/390 RAI"
Alert Sent to Service Point. Waiting for Status.
Alert Received by Service Point
```

Success appears in RAI S/390 NetView as indicated in Figure 143 on page 181.

```
  NCCF                      N E T V I E W    RAIAN WTWKSH2  10/18/95 12:44:48 A
  - RAIAN    WTWSOOI Wed Oct 18 12:44:22 1995 > Heading to operator on  S/390 RAI
  --------------------------------------------------------------------------------




















  ???
```

```
  N E T V I E W          SESSION DOMAIN: RAIAN    WTWKSH2   10/18/95 12:45:12
  NPDA-30A                      * ALERTS-DYNAMIC *

     DOMAIN RESNAME  TYPE TIME   ALERT DESCRIPTION:PROBABLE CAUSE
     RAIAN@RS60003   DEV  12:45  OPERATOR NOTIFICATION:NETWORK OPERATOR
     RAIAN LAS400D   LINE 15:53  DSR ON CHECK:LOCAL MODEM OFF/LOCAL MODEM
     RAIAN RA9NCPW   COMC 15:52  RESOURCES REQ ACTIVATION:COMMUNICATION CTRL
     RAIAN EG24P23   CTRL 15:50  NO DATA RECEIVED:DEVICE OFF/COMM
     RAIAN EG24P8F   CTRL 15:50  NO DATA RECEIVED:DEVICE OFF/COMM
     RAIAN RAONCPO   COMC 15:49  RESOURCES REQ ACTIVATION:COMMUNICATION CTRL
     RAIAN EG09P24   CTRL 15:44  NO DATA RECEIVED:DEVICE OFF/COMM
     RAIAN RA9NCPW   COMC 14:59  IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT
     RAIAN LAS400D   LINE 14:54  DSR ON CHECK:LOCAL MODEM OFF/LOCAL MODEM
     RAIAN RA9NCPW   COMC 14:54  RESOURCES REQ ACTIVATION:COMMUNICATION CTRL
     RANO3@EZLTSTS   DEV  02:00  RESOURCE UNAVAILABLE:UNDETERMINED
     RANO3@DSILOGMT  DEV  22:14  PROBLEM RESOLVED:SOFTWARE PROGRAM
     RANO3@DSIACBMT  DEV  22:14  PROBLEM RESOLVED:SOFTWARE PROGRAM
     RANO3@DSIWTOMT  DEV  22:14  PROBLEM RESOLVED:SOFTWARE PROGRAM
     RANO3@DSISTMMT  DEV  22:14  PROBLEM RESOLVED:SOFTWARE PROGRAM

  DEPRESS ENTER KEY TO VIEW ALERTS-STATIC

   ???
  CMD==>
```

*Figure 143. RAI Shows Received Data After focalpt change.   The above ALERTS
DYNAMIC panel is slightly different than seen previously due to S/390 NetView options in
affect on RAI as compared with the previous RAP displays.*

After initial connection with the S/390 as indicated in Figure 138 on page 176,
the Service Point configuration panel was as follows:

```
                    NetView Service Point Profile Summary

  Type or select values in entry fields.
  Press Enter AFTER making all desired changes.

                                                    [Entry Fields]
  * Use MDS transport?                                yes                  +
  *    If no, enter SSCP ID                           [05000000ffff]       +
       If no, enter Polling Period (msec)             [3000]                    #
       If no, enter PUNAME                            []
       If yes, enter the COS FP NETID                 [USIBMRA]
       If yes, enter the COS FP NAU                   [RAP]
       If yes, enter the ALERT FP NETID               [USIBMRA]
       If yes, enter the ALERT FP NAU                 [RAP]
    Service Point Codepage                            [ ]




  F1=Help              F2=Refresh          F3=Cancel          F4=List
  F5=Reset             F6=Command          F7=Edit            F8=Image
  F9=Shell             F10=Exit            Enter=Do
```

*Figure 144. RISC System/6000 Service Point Configuration after Base Connection. The
adjacent (connected) VTAM was RAP and the initial Service Point connection was with
that S/390.*

After issuing the focalpt change from S/390 RAI, the Service Point configuration
panel was as follows:

```
                    NetView Service Point Profile Summary

  Type or select values in entry fields.
  Press Enter AFTER making all desired changes.

                                                    [Entry Fields]
  * Use MDS transport?                                yes                  +
  *    If no, enter SSCP ID                           [05000000ffff]       +
       If no, enter Polling Period (msec)             [3000]                    #
       If no, enter PUNAME                            []
       If yes, enter the COS FP NETID                 [USIBMRA]
       If yes, enter the COS FP NAU                   [RAI]
       If yes, enter the ALERT FP NETID               [USIBMRA]
       If yes, enter the ALERT
```

*Figure 145. RISC System/6000 Service Point Configuration After focalpt change from
RAI. The adjacent (connected) VTAM was RAP and the initial Service Point connection
was with that S/390.*

G.1.2.1 Summary

Issuing a successful focalpt change from a particular S/390 results in that S/390 becoming the focal point for the RISC System/6000 Service Point. There may be only one such focal point relationship in progress at a given time.

G.1.3 RISC System/6000 to S/390 Subarea Using CPNAME and Cross Network

In this third test, the RISC System/6000 is connected to the S/390 subarea (non-APPN) using XID. For this test, the connected-to subarea is in the network: USIBMSC. However, after connection, we will initiate the SNASVCMG session from a remotely-connected S/390 in another network: USIBMRA and point to the CPNAME resource in USIBMSC.

```
┌─────────────────────────────────────────────────────────────────────┐
│     ┌─────────────────────────────────────────────────┐             │
│     │   RISC System/6000                              │             │
│     │    Network Name: USIBMSC                        │             │
│     │    CPNAME=SC05300I (Not used for conn'n)        │             │
│     │    XID (IDBLK and IDNUM)                        │             │
│     │         071        05300                        │             │
│     │    Service Point configured for:                │             │
│     │     COS FP NETID = USIBMRA                      │             │
│     │     COS FP NAU   = RAP     (VTAM)               │             │
│     │     ALERT FP NETID = USIBMRA                    │             │
│     │     ALERT FP NAU   = RAP    (VTAM)              │             │
│     └──────────────────────▲──────────────────────────┘             │
│                            │                                        │
│          . ........|.............. .                               │
│          .                            .                            │
│          .      Token-Ring and         .                           │
│          .      Physical Connections   .                           │
│           .                          .                             │
│            ......................                                   │
│                            │                                        │
│     ┌──────────────────────▼──────────────────────────┐            │
│     │   S/390                                          │            │
│     │    NETID=USIBMSC                                 │            │
│     │     SCG20    Vtam Version: 4.2 (Subarea mode - non APPN)      │
│     │                                                  │            │
│     │     VTAMLST Entry:                               │            │
│     │       SC05300  PU  ADDR=13,                      │            │
│     │                    IDBLK=071,                    │            │
│     │                    IDNUM=05300,                  │            │
│     │                    .....                         │            │
│     │       SC05300I LU  LOCADDR=0                     │            │
│     │       SC05300J LU  LOCADDR=0                     │            │
│     │       SC053006 LU  LOCADDR=6,....                │            │
│     └──────────────────────▲──────────────────────────┘            │
│                            │                                        │
│                           ...                                       │
│                            │                                        │
│     ┌──────────────────────▼──────────────────────────┐            │
│     │   S/390                                          │            │
│     │    NETID=USIBMRA                                 │            │
│     │     RAP      Vtam Version: 4.2 (Subarea Mode - non APPN)      │
│     │     RAPAN    NetView Version: 2.4                │            │
│     │     VTAMLST Entry:                               │            │
│     │        VBUILD TYPE=CDRSC                         │            │
│     │        NETWORK ID=USIBMSC                        │            │
│     │   SC05300I CDRSC ASLIST=(SC05300)                │            │
│     └──────────────────────────────────────────────────┘            │
└─────────────────────────────────────────────────────────────────────┘
```

Figure 146. Overview of Subarea Connectivity Test 3

In prior examples in this chapter we had connected using CPNAME.

In this example, the connected-to S/390 did not use CPNAME -- we were directed to use XID (IDBLK and IDNUM) instead. This is pointed out for information purposes and does not affect our results.

The VTAMLST entry shown in G.1.3, "RISC System/6000 to S/390 Subarea Using CPNAME and Cross Network" on page 184 provided an independent LU, SC05300I.

We used this as the CPNAME for the RISC System/6000 and the CDRSC representing this resource was activated by a separate CDRSC in the USIBMRA network. The CDRSC pointed to the USIBMSC network which used VTAM DYNLU=YES support for creation of the resource.

The following panels and discussions further discuss this non-APPN subarea example.

```
  NETVIEW.BRWS ------ BROWSE SWRAL10  (VTAMLST ) --- LINE 00001 TO 00018 OF 00618
                                                              SCROLL ==> CSR
 ****************************** TOP OF DATA **************************
 ********************************************************************
 * RALEIGH
 SWRAL10  VBUILD  TYPE=SWNET,                                          +
                  MAXGRP=10,                                           +
                  MAXNO=18
   .......
 SCO5300  PU      ADDR=13,              COULD BE ANYTHING (NOT USED)  +
                  IDBLK=071,            SHOGREN -- USED FOR NVIX      +
                  IDNUM=05300,                                        +
                  MODETAB=POKMODE,                                    +
                  MAXPATH=2,                                          +
                  MAXDATA=265,                                        +
                  MAXOUT=7,                                           +
                  PACING=7,                                           +
                  ANS=CONTINUE,                                       +
                  PASSLIM=7,                                          +
                  PUTYPE=2,                                           +
                  DISCNT=(NO),                                        +
                  ISTATUS=ACTIVE,                                     +
                  VPACING=8
 **
 SCO5300I LU      LOCADDR=0
 SCO5300J LU      LOCADDR=0
 SCO5300K LU      LOCADDR=0
 SCO53006 LU      LOCADDR=6,USSTAB=USSRDYN,SSCPFM=USSSCS,MODETAB=POKMODE, *
                  DLOGMOD=DYNRMT
 SCO53007 LU      LOCADDR=7,USSTAB=USSRDYN,SSCPFM=USSSCS,MODETAB=POKMODE, *
                  DLOGMOD=DYNRMT

  CMD==>
  1=HELP  2=END  3=RET  4=TOP  5=BOT  6=ROLL  7=BACK  8=FWD  9=RPTFND  12=CURSOR
```

Figure 147. Switched Major Node for this Example. CPNAME was not used in the VTAMLST entry but the RISC System/6000 AIX SNA Server definitions include CPNAME. We used a separately activated CDRSC to represent this resource in the S/390.

Prior to activation, a display of the SC05300 PU looks as shown in Figure 148 on page 186.

```
NCCF                     N E T V I E W    CNM20 SADTLER  10/24/95 14:27:26
C CNM20    DISPLAY NET,ID=SC05300,SCOPE=ALL
  CNM20    IST097I  DISPLAY  ACCEPTED
′ CNM20
IST075I  NAME = SC05300          , TYPE = PU_T2
IST486I  STATUS= CONCT     , DESIRED STATE= CONCT
IST136I  SWITCHED SNA MAJOR NODE = SWRAL10
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  SC053006 CONCT      SC053007 CONCT
IST314I  END
--------------------------------------------------------------------------------




















 ???

```

Figure 148. Resource Not Active in S/390 Yet

After successful connection of the RISC System/6000 to the USIBMSC network
the following display appears.

```
NCCF                     N E T V I E W   CNM20 SADTLER  10/24/95 14:32:25
C CNM20    DISPLAY NET,ID=SC05300,SCOPE=ALL
  CNM20    IST097I  DISPLAY  ACCEPTED
' CNM20
IST075I  NAME = SC05300          , TYPE = PU_T2.1
IST486I  STATUS= ACTIV    , DESIRED STATE= ACTIV
IST1043I  CP NAME = SC05300I, CP NETID = USIBMSC , DYNAMIC LU = YES
IST136I  SWITCHED SNA MAJOR NODE = SWRAL10
IST081I  LINE NAME = J000N061, LINE GROUP = SC23USER, MAJNOD = NCP23SC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  SC053006 CONCT      SC053007 CONCT
IST314I  END
--------------------------------------------------------------------------------




    ???
```

Figure 149. After SNA Server, Link Station and Physical Connection Started

The SC05300I resource is not connected to the desired VTAM/NetView until we
issue the focalpt change from the USIBMRA RAP S/390.

```
NCCF                          N E T V I E W   CNM20 SADTLER  10/24/95 14:32:55
C CNM20    DISPLAY NET,ID=SC05300I,SCOPE=ALL
  CNM20    IST097I  DISPLAY  ACCEPTED
' CNM20
IST075I  NAME = SC05300I          , TYPE = CDRSC
IST486I  STATUS= ACTIV     , DESIRED STATE= ACTIV
IST599I  REAL NAME = ***NA***
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST861I  MODETAB=POKMODE  USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=***NA*** USS LANGTAB=***NA***
IST597I  CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I  CDRSC    MAJOR NODE = ISTPDILU
IST1044I  ALSLIST = SC05300
IST082I  DEVTYPE = INDEPENDENT LU / CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000000, SESSION REQUESTS = 0000000000
IST172I  NO SESSIONS      EXIST
IST314I  END
--------------------------------------------------------------------------------




???
```

*Figure 150. SC05300I Resource Not Connected to RAP Until focalpt change.   This display
is from the USIBMSC network.   The resource will be affected, in our example, by a focalpt
change arriving from the USIBMRA network.*

The following figure summarizes the successful focalpt change.

```
NCCF                      N E T V I E W    RAPAN WTWKSH1  10/17/95 15:50:04
* RAPAN    SHOGFOCL
C RAPAN    *
C RAPAN    * RS60003  PU=RA60003  CPNAME=SC05300I located in USIBMSC
C RAPAN    *
C RAPAN    FOCALPT CHANGE,TARGNET=USIBMSC,TARGET=SC05300I,FPCAT=ALERT
- RAPAN    DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO SC05300I FOR
           ALERT DATA
C RAPAN    FOCALPT CHANGE,TARGNET=USIBMSC,TARGET=SC05300I,FPCAT=OPS_MGMT
- RAPAN    DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO SC05300I FOR
           OPS_MGMT DATA
C RAPAN    FOCALPT CHANGE,TARGNET=USIBMSC,TARGET=SC05300I,FPCAT=SPCS
- RAPAN    DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO SC05300I FOR
           SPCS DATA
C RAPAN    FOCALPT CHANGE,TARGNET=USIBMSC,TARGET=SC05300I,FPCAT=STATUS
- RAPAN    DWO431I FOCALPT CHANGE FAILED - THE CNMTAMEL TASK IS INACTIVE
C RAPAN    FOCALPT CHANGE,TARGNET=USIBMSC,TARGET=SC05300I,FPCAT=LINKSERV
- RAPAN    DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO SC05300I FOR
           LINKSERV DATA
C RAPAN    DSI013I COMMAND LIST SHOGFOCL COMPLETE
- RAPAN    DSI293I FOCAL POINT AUTHORIZATION FOR ALERT DATA HAS BEEN ACCEPTED
           BY SC05300I
- RAPAN    DSI293I FOCAL POINT AUTHORIZATION FOR OPS_MGMT DATA HAS BEEN
           ACCEPTED BY SC05300I
- RAPAN    DSI293I FOCAL POINT AUTHORIZATION FOR SPCS DATA HAS BEEN ACCEPTED
           BY SC05300I
- RAPAN    DSI293I FOCAL POINT AUTHORIZATION FOR LINKSERV DATA HAS BEEN
           ACCEPTED BY SC05300I
--------------------------------------------------------------------------------
??? ***
```

Figure 151. foclalpt change Command from USIBMRA to USIBMSC. Note that the focalpt change includes the TARGNET.

The above focalpt change command was from the USIBMRA network to the USIBMSC network.

Following this focalpt change, the USIBMSC resource is connected to the USIBMRA resource as indicated in Figure 152 on page 190.

```
NCCF                        N E T V I E W   CNM20 SADTLER 10/24/95 14:39:33
C CNM20    DISPLAY NET,ID=SC05300I,SCOPE=ALL
  CNM20    IST097I  DISPLAY  ACCEPTED
' CNM20
IST075I  NAME = SC05300I          , TYPE = CDRSC
IST486I  STATUS= ACT/S     , DESIRED STATE= ACTIV
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST861I  MODETAB=POKMODE  USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=***NA*** USS LANGTAB=***NA***
IST597I  CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I  CDRSC    MAJOR NODE = ISTPDILU
IST1044I  ALSLIST = SC05300
IST082I  DEVTYPE = INDEPENDENT LU / CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000001, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST1081I  ADJACENT LINK STATION = SC05300
IST634I  NAME      STATUS          SID          SEND RECV VR TP NETID
IST635I  RAP     ACTIV-P    F88F0164BB4E5CDA                  USIBMRA
IST314I  END
-------------------------------------------------------------------------------




???
```

Figure 152. SC05300I Resource in USIBMSC Now Connected to USIBMRA RAP

After this, the results from the Service Point were the same as discussed in the
earlier example.

G.1.3.1 Summary
If the connected-to RISC System/6000 is in one VTAM network and the desired
focalpt is in another, the focalpt change together with the VTAM DYNLU=YES
support can make the connection quite straightforward.

In this example one matter of notice was that it was necessary to modify the
CPNAME of the RISC System/6000 to match a resource known in the TARGNET
system. This may or may not be necessary in all cases.

G.1.4 RISC System/6000 with Two Connections to S/390

In this fourth test, the RISC System/6000 is connected to the S/390 in two ways:

1. SDLC

2. Token-ring

The two connections, in this example, are two separate S/390s: RAP and RAI.

We will use focalpt change from the S/390s to determine which S/390 is used as the focal point. Only one will be in progress at a time.

We also changed the CPNAME of the RISC System/6000 to be an LU known to the non-APPN system (RAP) which we were using for SDLC connection. The CDRSC representing this LU was built using the VTAM DYNLU=YES support. In our case, we used a different RISC System/6000 CPNAME for either one of the VTAM subareas:

- T07173B0 for SDLC connection on VTAM RAP

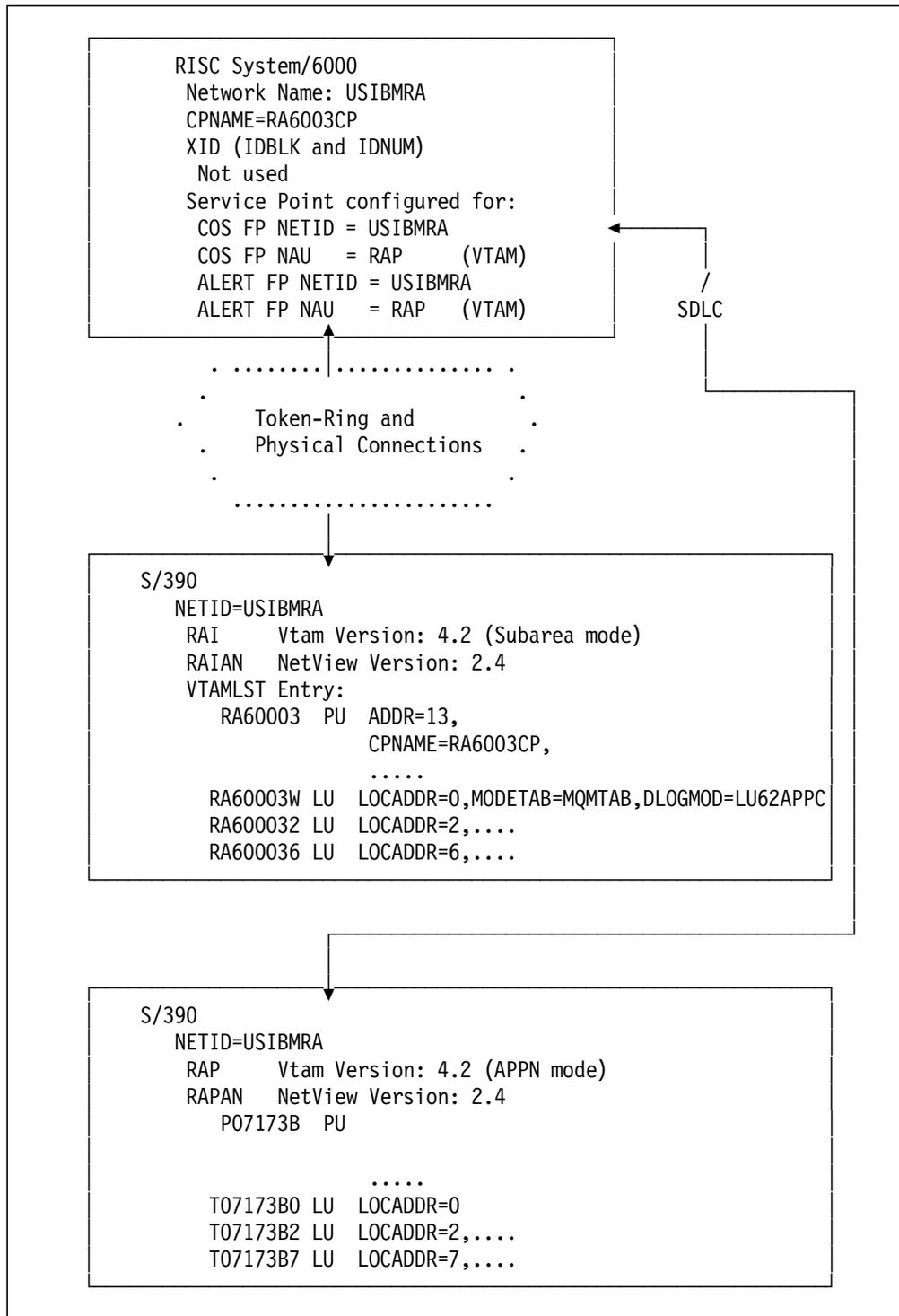- RA60003 for Token-ring connection on VTAM RAI

```
┌──────────────────────────────────────────────────────────────────────────────┐
│  ┌──────────────────────────────────────────────────┐                          │
│  │       RISC System/6000                           │                          │
│  │        Network Name: USIBMRA                     │                          │
│  │       CPNAME=RA6003CP                            │                          │
│  │       XID (IDBLK and IDNUM)                      │◀──────────┐              │
│  │        Not used                                  │           │              │
│  │       Service Point configured for:             │           │              │
│  │        COS FP NETID = USIBMRA                    │           │              │
│  │        COS FP NAU   = RAP     (VTAM)             │           │              │
│  │        ALERT FP NETID = USIBMRA                  │    /      │              │
│  │        ALERT FP NAU   = RAP     (VTAM)           │   SDLC    │              │
│  └──────────────────────────────────────────────────┘           │              │
│                    . ........|............. .                    │              │
│                 .                              .                 │              │
│               .       Token-Ring and            .               │              │
│               .       Physical Connections      .               │              │
│                 .                              .                 │              │
│                    ......................                        │              │
│                             │                                   │              │
│                             ▼                                   │              │
│  ┌──────────────────────────────────────────────────┐          │              │
│  │   S/390                                          │          │              │
│  │      NETID=USIBMRA                               │          │              │
│  │       RAI      Vtam Version: 4.2 (Subarea mode)  │          │              │
│  │       RAIAN    NetView Version: 2.4              │          │              │
│  │       VTAMLST Entry:                             │          │              │
│  │         RA60003  PU  ADDR=13,                    │          │              │
│  │                      CPNAME=RA6003CP,            │          │              │
│  │                      .....                       │          │              │
│  │         RA60003W LU  LOCADDR=0,MODETAB=MQMTAB,DLOGMOD=LU62APPC│              │
│  │         RA600032 LU  LOCADDR=2,....              │          │              │
│  │         RA600036 LU  LOCADDR=6,....              │          │              │
│  └──────────────────────────────────────────────────┘          │              │
│                             │                       ◀───────────┘              │
│                             ▼                                                  │
│  ┌──────────────────────────────────────────────────┐                          │
│  │   S/390                                          │                          │
│  │      NETID=USIBMRA                               │                          │
│  │       RAP      Vtam Version: 4.2 (APPN mode)     │                          │
│  │       RAPAN    NetView Version: 2.4              │                          │
│  │         P07173B  PU                              │                          │
│  │                                                  │                          │
│  │                      .....                       │                          │
│  │         T07173B0 LU  LOCADDR=0                   │                          │
│  │         T07173B2 LU  LOCADDR=2,....              │                          │
│  │         T07173B7 LU  LOCADDR=7,....              │                          │
│  └──────────────────────────────────────────────────┘                          │
└──────────────────────────────────────────────────────────────────────────────┘
```

Figure 153. Overview of Subarea Connectivity Test 4

The SDLC connection did not use CPNAME for connection. It used normal RISC
System/6000 and VTAM SDLC connection definitions (refer to G.1.4.1, "RISC
System/6000 SDLC Configuration Parameters" on page 197). The CPNAME
(T07173B0) was used for the SNASVCMG session used for Service Point activity.

Note: Only *one* of the focalpt change relationships can be in affect at a time.
Whichever S/390 initiates the focalpt change last will be the current focal point
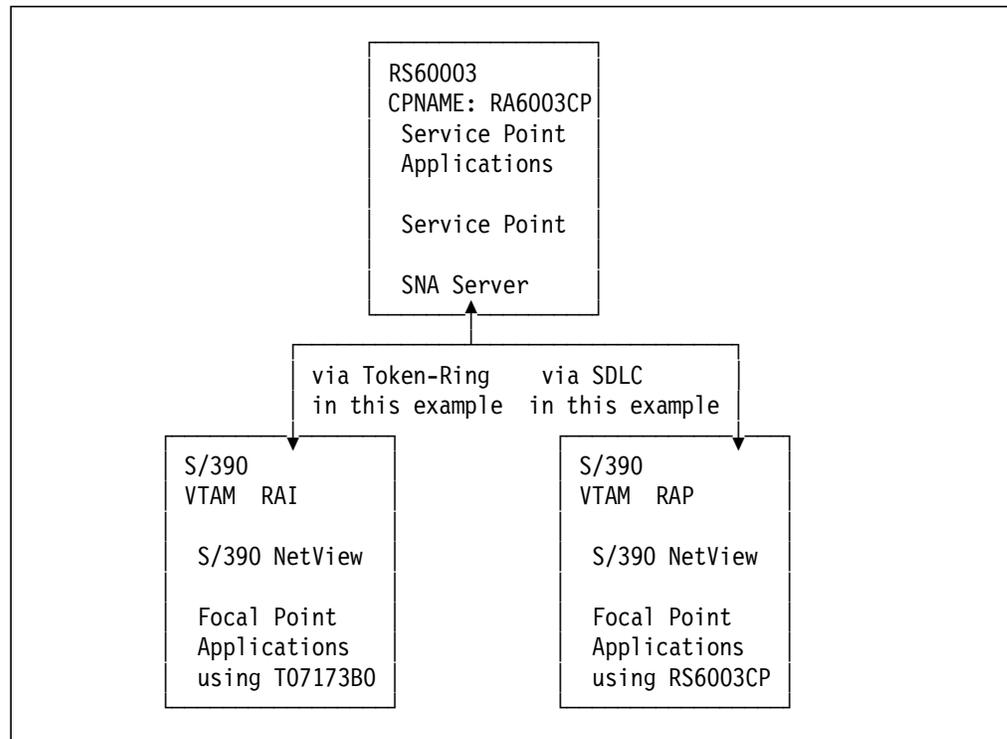for the RISC System/6000 and Service Point.

```
┌─────────────────────────────────────────────────────────────────┐
│                                                                   │
│                     ┌─────────────────────┐                       │
│                     │ RS60003             │                       │
│                     │ CPNAME: RA6003CP    │                       │
│                     │  Service Point       │                      │
│                     │  Applications        │                      │
│                     │                      │                      │
│                     │  Service Point       │                      │
│                     │                      │                      │
│                     │  SNA Server          │                      │
│                     └─────────────────────┘                       │
│                            ▲                                       │
│              ┌─────────────┘────────────────┐                     │
│              │ via Token-Ring   via SDLC    │                     │
│              │ in this example  in this example                   │
│              │                              │                     │
│         ┌─────────────────┐       ┌─────────────────┐             │
│         │ S/390           │       │ S/390           │             │
│         │ VTAM  RAI       │       │ VTAM  RAP       │             │
│         │                 │       │                 │             │
│         │  S/390 NetView  │       │  S/390 NetView  │             │
│         │                 │       │                 │             │
│         │  Focal Point    │       │  Focal Point    │             │
│         │  Applications   │       │  Applications   │             │
│         │  using T07173B0 │       │  using RS6003CP │             │
│         └─────────────────┘       └─────────────────┘             │
│                                                                   │
└─────────────────────────────────────────────────────────────────┘
```

Figure 154. Example with Two Potential S/390s and One RISC System/6000 Service Point

Once the physical connectivity shown above was in place, the results were the same as previously discussed.

The following summarizes the relationship of the LU used for service point activity on the P07174B (SDLC) link station connection.

```
 NCCF                        N E T V I E W    RAPAN WTWKSH1  10/20/95 11:39:12
 C RAPAN    DISPLAY NET,ID=P07173B,SCOPE=ALL
   RAPAN    IST097I  DISPLAY  ACCEPTED
 ' RAPAN
 IST075I  NAME = P07173B          , TYPE = PU_T2.1
 IST486I  STATUS= ACTIV--L--, DESIRED STATE= ACTIV
 IST1043I  CP NAME = T07173B0, CP NETID = USIBMRA , DYNAMIC LU = YES
 IST081I  LINE NAME = L07173 , LINE GROUP = G07S1   , MAJNOD = RA7NCPX
 IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
 IST1500I  STATE TRACE = OFF
 IST355I  LOGICAL UNITS:
 IST080I  T07173B1 NEVAC       T07173B2 NEVAC       T07173B3 NEVAC
 IST080I  T07173B4 NEVAC       T07173B5 ACTIV       T07173B6 NEVAC
 IST080I  T07173B7 NEVAC       T07173B8 NEVAC
 IST080I  T07173B0 ACT/S----Y
 IST314I  END
 -----------------------------------------------------------------------------



 ???
```

Figure 155 (Part 1 of 2). Active SDLC Connection P07173B in RAP

```
NCCF                         N E T V I E W    RAPAN WTWKSH1  10/20/95 12:26:16
C RAPAN     DISPLAY NET,ID=T07173B0,SCOPE=ALL
  RAPAN     IST097I  DISPLAY  ACCEPTED
′ RAPAN
IST075I  NAME = USIBMRA.T07173B0 , TYPE = CDRSC
IST486I  STATUS= ACT/S----Y, DESIRED STATE= ACTIV
IST1447I  REGISTRATION TYPE = NO
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST1333I  ADJLIST = ***NA***
IST861I  MODETAB=***NA*** USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=SNASVCMG USS LANGTAB=***NA***
IST597I  CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I  CDRSC     MAJOR NODE = ISTCDRDY
IST1184I  CPNAME = USIBMRA.T07173B0  - NETSRVR = ***NA***
IST1044I  ALSLIST = P07173B
IST1131I  DEVICE = ILU/CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST634I  NAME       STATUS        SID          SEND RECV VR TP NETID
IST635I  RAP        ACTIV-P   F88F0164BAA35FB5 0000 0005  0  0 USIBMRA
IST635I  RAP        ACTIV-S   E0B7781385C269C4 0019 0000  0  0 USIBMRA
IST314I  END
??? ***
```

*Figure 155 (Part 2 of 2). Active SDLC Connection P07173B in RAP. The T07173B0
resource was built due to DYNLU=YES VTAM support on the S/390.*

The focalpt change could be successfully issued from either S/390 (RAP or RAI).
Only the RAP-issued commands are shown below.

```
NCCF                         N E T V I E W    RAIAN WTWKSH2  10/18/95 12:44:13 A
C RAIAN    DSIO13I COMMAND LIST SHOGFOCL COMPLETE
- RAIAN    DSI293I FOCAL POINT AUTHORIZATION FOR OPS_MGMT DATA HAS BEEN
           ACCEPTED BY T07173B0
- RAIAN    DSI293I FOCAL POINT AUTHORIZATION FOR SPCS DATA HAS BEEN ACCEPTED
           BY T07173B0
- RAIAN    DSI293I FOCAL POINT AUTHORIZATION FOR LINKSERV DATA HAS BEEN
           ACCEPTED BY T07173B0
--------------------------------------------------------------------------------
- RAIAN    DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO T07173B0 FOR
           OPS_MGMT DATA
C RAIAN    FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=T07173B0,FPCAT=SPCS
- RAIAN    DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO T07173B0 FOR
           SPCS DATA
C RAIAN    FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=T07173B0,FPCAT=STATUS
- RAIAN    DWO184E FOCALPT CHANGE COMMAND TO NODE T07173B0 FOR STATUS FAILED:
           CNMTAMEL TASK MUST BE ACTIVE AND DEFINED AS A STATUS FOCAL POINT.
C RAIAN    FOCALPT CHANGE,TARGNET=USIBMRA,TARGET=T07173B0,FPCAT=LINKSERV
- RAIAN    DSI258I CHANGE FOCAL POINT COMMAND HAS BEEN SENT TO T07173B0 FOR
           LINKSERV DATA
- RAIAN    DSI293I FOCAL POINT AUTHORIZATION FOR ALERT DATA HAS BEEN ACCEPTED
           BY T07173B0
???
```

*Figure 156. Successful focalpt change. The results are the same from either the SDLC or
Token-Ring attached connection.*

The following summarizes the relationship of the LU used for service point activity on the RA60003 (Token-Ring) RAI link station connection.

```
 NCCF                      N E T V I E W   RAIAN WTWKSH2  10/20/95 12:29:55
 C RAIAN    DISPLAY NET,ID=RA60003,SCOPE=ALL
   RAIAN    IST097I  DISPLAY  ACCEPTED
 ' RAIAN
 IST075I  NAME = RA60003          , TYPE = PU_T2.1
 IST486I  STATUS= ACTIV--L--, DESIRED STATE= ACTIV
 IST1043I  CP NAME = RA6003CP, CP NETID = USIBMRA , DYNAMIC LU = YES
 IST1105I  RESOURCE STATUS TGN CP-CP TG CHARACTERISTICS
 IST1106I  RA60003  AC/R   21 YES   982D0000000000000000017100808080
 IST1482I  HPR = YES - OVERRIDE = N/A - CONNECTION = NO
 IST136I  SWITCHED SNA MAJOR NODE = RS60003
 IST081I  LINE NAME = J0009019, LINE GROUP = RA9GT89B, MAJNOD = RA9NCPX
 IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
 IST1500I  STATE TRACE = OFF
 IST355I  LOGICAL UNITS:
 IST080I  RA600032 PACTL     RA600033 PACTL     RA600034 PACTL
 IST080I  RA600035 PACTL     RA600036 ACTIV     RA600037 ACTIV
 IST080I  RA600038 ACTIV     RA600039 ACTIV     RA60003C ACTIV
 IST080I  RA6003CP ACT/S----Y
 IST314I  END
 -------------------------------------------------------------------------------

 ???
```

Figure 157 (Part 1 of 2). Active Token-Ring Connection RA60003 in RAI

```
NCCF                      N E T V I E W   RAIAN WTWKSH2  10/20/95 12:27:12
C RAIAN    DISPLAY NET,ID=RA6003CP,SCOPE=ALL
  RAIAN    IST097I  DISPLAY  ACCEPTED
' RAIAN
IST075I  NAME = USIBMRA.RA6003CP , TYPE = ADJACENT CP
IST486I  STATUS= ACT/S----Y, DESIRED STATE= ACTIV
IST1447I  REGISTRATION TYPE = NO
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST1333I  ADJLIST = ***NA***
IST861I  MODETAB=***NA*** USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=CPSVCMG  USS LANGTAB=***NA***
IST597I  CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I  CDRSC    MAJOR NODE = ISTCDRDY
IST1184I  CPNAME = USIBMRA.RA6003CP  - NETSRVR = ***NA***
IST1044I  ALSLIST = ISTAPNPU
IST082I  DEVTYPE = INDEPENDENT LU / CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000005, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST1081I  ADJACENT LINK STATION = RA60003
IST634I  NAME       STATUS        SID        SEND RECV VR TP NETID
IST635I  RAI       ACTIV-S    E0B7781385C269C5 0001 0000  0   0 USIBMRA
IST635I  RAI       ACTIV-S    E0B7781385C269C3 0004 0000  0   0 USIBMRA
IST635I  RAI       ACTIV/CP-S E0B7781385C269C2 001D 0002  0   0 USIBMRA
IST635I  RAP       ACTIV-P    F88F0164BAA35FB5           0   0 USIBMRA
IST635I  RAI       ACTIV/CP-P F86FE164F1554404 0001 0012  0   0 USIBMRA
IST924I  -------------------------------------------------------------
IST075I  NAME = USIBMRA.RA6003CP , TYPE = DIRECTORY ENTRY
IST1186I  DIRECTORY ENTRY = REGISTERED EN
IST1184I  CPNAME = USIBMRA.RA6003CP  - NETSRVR = USIBMRA.RAI
IST314I  END
??? ***
```

Figure 157 (Part 2 of 2). Active Token-Ring Connection RA60003 in RAI

G.1.4.1 RISC System/6000 SDLC Configuration Parameters

Figure 158 on page 197 shows the AIX SNA Server SDLC parameters used in this project.

```
                        Change/Show Control Point Profile

  Type or select values in entry fields.
  Press Enter AFTER making all desired changes.

                                                [Entry Fields]
  * Profile name                                 node_cp
    XID node ID                                 [*]
    Network name                                [USIBMRA]
    Control Point (CP) name                     [T07173B0]
    Control Point alias                         [T07173B0]
    Control Point type                           appn_end_node          +
    Maximum number of cached routing trees      [500]                   #
    Maximum number of nodes in the TRS database [500]                   #
    Route addition resistance                   [128]                   #

    Comments                                    []




  F1=Help            F2=Refresh        F3=Cancel         F4=List
  F5=Reset           F6=Command        F7=Edit           F8=Image
  F9=Shell           F10=Exit          Enter=Do
```

Figure 158 (Part 1 of 6). SDLC Parameters Used in this Project

```
                                Links

  Move cursor to desired item and press Enter.

    SDLC
    Ethernet
    Token Ring
    FDDI
    X.25
    APPN Connection Network
    LU 0 Primary Line


  F1=Help            F2=Refresh        F3=Cancel         F8=Image
  F9=Shell           F10=Exit          Enter=Do
```

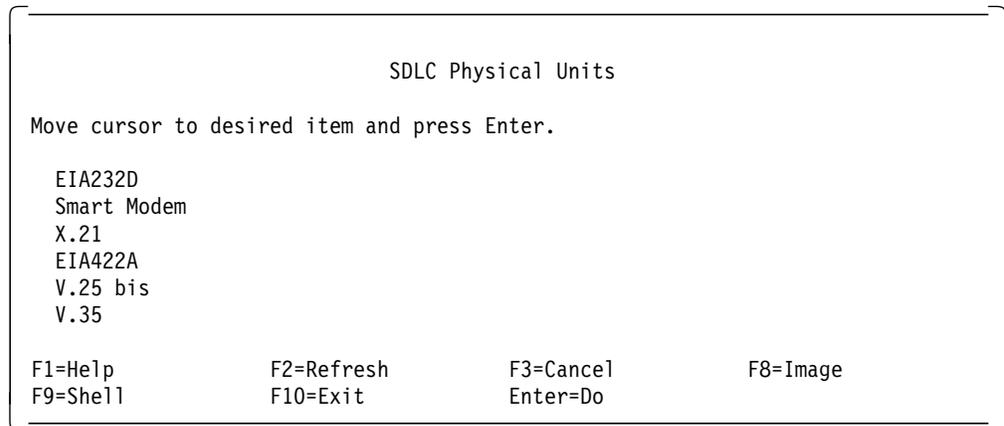*Figure 158 (Part 2 of 6). SDLC Parameters Used in this Project*

```
┌─────────────────────────────────────────────────────────────────────┐

                          SDLC Physical Units

  Move cursor to desired item and press Enter.

    EIA232D
    Smart Modem
    X.21
    EIA422A
    V.25 bis
    V.35

  F1=Help              F2=Refresh           F3=Cancel           F8=Image
  F9=Shell             F10=Exit             Enter=Do
└─────────────────────────────────────────────────────────────────────┘
```

Figure 158 (Part 3 of 6). SDLC Parameters Used in this Project

```
┌─────────────────────────────────────────────────────────────────────┐

                              EIA232D

  Move cursor to desired item and press Enter.

    EIA232D SNA DLC
    EIA232D Link Station




  F1=Help              F2=Refresh           F3=Cancel           F8=Image
  F9=Shell             F10=Exit             Enter=Do
└─────────────────────────────────────────────────────────────────────┘
```
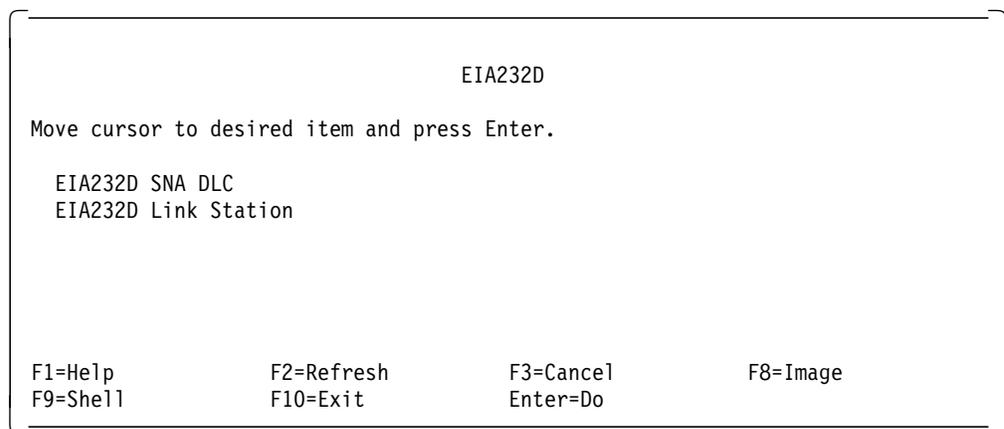
Figure 158 (Part 4 of 6). SDLC Parameters Used in this Project

```
                  Change/Show SDLC EIA232D SNA DLC Profile

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]                                              [Entry Fields]
  Current profile name                             RS60003MQ0
  New profile name                                 []
  Data link device name                            [mpq0]                 +
  Force disconnect time-out (1-600 seconds)        [120]                     #
  User-defined maximum I-Field size?               no                     +
     If yes, Max. I-Field size (265-30729)         [265]                     #
  Link type                                        multipoint             +
  Max. num of active link stations (1-255)         [1]                       #
     Number reserved for inbound activation        [0]                       #
     Number reserved for outbound activation       [0]                       #
  Serial encoding                                  nrzi                   +
  Request to send (RTS)                            controlled             +
  DTR control                                      DTR                    +
  Bit clocking                                     external               +
     If internal, Transmit rate (600-38400)        [9600]                    #
  Network type                                     switched               +
  Answer mode                                      automatic              +
  Transmit window count                            7                      +
  Retransmit count (1-50)                          [10]                      #
  Retransmit threshold (0-100)                     [10]                      #

  Secondary and Negotiable stations
     Secondary inactivity time-out (1-120 sec)     [30]                      #

  Primary and Negotiable stations
     Primary repoll frequency (1-250, .1 sec)      [30]                      #
     Primary repoll threshold (1-100%)             [10]                      #
     Primary repoll count (3-50 repolls)           [15]                      #

  Primary stations
     Primary idle list poll frequency (30-180 sec) [60]                      #
     Primary slow list poll frequency (1-60 sec)   [1]                       #

  Link Recovery Parameters
     Retry interval (1-10000 seconds)              [60]                      #
     Retry limit (0-500 attempts)                  [20]                      #
[MORE...4]

F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Reset            F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 158 (Part 5 of 6). SDLC Parameters Used in this Project

```
                 Change/Show SDLC EIA232D Link Station Profile
  [TOP]                                                    [Entry Fields]
    Current profile name                               RS60003
    New profile name                                   []
    Use Control Point's XID node ID?                    yes                       +
       If no, XID node ID                              [*]
  * SNA DLC Profile name                               [RS60003MQ0]               +
    Stop link station on inactivity?                    no                        +
       If yes, Inactivity time-out (0-10 minutes)      [0]                             #
    LU address registration?                            yes                       +
       If yes, LU Address Registration Profile name    [RA60003]                  +
    Trace link?                                         no                        +
       If yes, Trace size                              long                       +
    Local secondary station address                    [194]                           #
    Station type                                        secondary                 +
       If primary,
          Remote secondary station address (1-255)     [1]                             #

    Adjacent Node Identification Parameters
       Verify adjacent node?                            no                        +
       Network ID of adjacent node                     []
       CP name of adjacent node                        []
       XID node ID of adjacent node (LEN node only)    [*]
       Node type of adjacent node                      learn                      +

    Link Activation Parameters
       Solicit SSCP sessions?                           yes                       +
       Initiate call when link station is activated?    no                        +
       Activate link station at SNA start up?           no                        +
       Activate on demand?                              no                        +
       CP-CP sessions supported?                        yes                       +
       If yes,
          Adjacent network node preferred server?       no                        +
       Partner required to support CP-CP sessions?      no                        +
       Initial TG number (0-20)                        [0]                             #

    Restart Parameters
       Restart on normal deactivation?                  no                        +
       Restart on abnormal deactivation?                no                        +

    Transmission Group COS Characteristics
       Effective capacity                              [9600]                          #
       Cost per connect time                           [0]                             #
       Cost per byte                                   [0]                             #
       Security                                         nonsecure                 +
       Propagation delay                                telephone                 +
       User-defined 1                                  [128]                           #
       User-defined 2                                  [128]                           #
       User-defined 3                                  [128]                           #
```

Figure 158 (Part 6 of 6). SDLC Parameters Used in this Project

G.2 Example of S/390 NetView Operator Panel

In a previous document, *Overview and Examples of Using AIX NetView/6000*, GG24-3804, an example was shown using a basic set of shells and one NetView/390 panel definition for use in issuing RUNCMDs from a S/390 to the RISC System/6000.

This project made use of this approach and is provided here for the convenience of readers of this document.

G.2.1 AIXOP

We refer to the set of routines involved in this example as AIXOP.

The contents of AIXOP are:

- AIXOP CNMPANEL placed in a S/390 NetView PANEL library

- REXX CLISTs also placed in a S/390 library

  - NV6KSETP which is issued once per S/390 NetView initialization

  - AIXOP which is called by the S/390 NetView operator

  Plus two additional CLISTs which are executed as a result of AIXOP

  - SENDAIX

  - AIXUPD

The following summarizes an execution of AIXOP.

The Service Point resource involved was RA6003CP, shown active in the following two figures.

```
 NCCF                      N E T V I E W   RAPAN WTWKSH1  10/25/95 14:21:49
 C RAPAN    DISPLAY NET,ID=RA60003,SCOPE=ALL
   RAPAN    IST097I  DISPLAY  ACCEPTED
 ' RAPAN
 IST075I  NAME = RA60003          , TYPE = PU_T2.1
 IST486I  STATUS= ACTIV--L--, DESIRED STATE= ACTIV
 IST1043I  CP NAME = RA6003CP, CP NETID = USIBMRA , DYNAMIC LU = YES
 IST136I  SWITCHED SNA MAJOR NODE = RS60003
 IST081I  LINE NAME = J0007023, LINE GROUP = EG07L02 , MAJNOD = RA7NCPX
 IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
 IST1500I  STATE TRACE = OFF
 IST355I  LOGICAL UNITS:
 IST080I  RA600032 PACTL     RA600033 PACTL      RA600034 PACTL
 IST080I  RA600035 PACTL     RA600036 ACTIV      RA600037 ACTIV
 IST080I  RA600038 ACTIV     RA600039 ACTIV      RA60003C ACTIV
 IST080I  RA6003CP ACT/S
 IST314I  END
 --------------------------------------------------------------------------------




   ???
```

Figure 159. RA60003 PU Active and Related to RA6003CP

The RS6003CP resource was active with RAP and configured in AIX NetView
Service Point as previously discussed in this document.

```
NCCF                        N E T V I E W   RAPAN WTWKSH1  10/25/95 14:22:05
C RAPAN    DISPLAY NET,ID=RA6003CP,SCOPE=ALL
  RAPAN    IST097I  DISPLAY  ACCEPTED
' RAPAN
IST075I  NAME = USIBMRA.RA6003CP , TYPE = CDRSC
IST486I  STATUS= ACT/S     , DESIRED STATE= ACTIV
IST1447I  REGISTRATION TYPE = NO
IST977I  MDLTAB=***NA*** ASLTAB=***NA***
IST1333I  ADJLIST = ***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 = RS6KSP3
IST1044I  ALSLIST = RA60003
IST1131I  DEVICE = ILU/CDRSC
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I  STATE TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000001, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST1081I  ADJACENT LINK STATION = RA60003
IST634I  NAME      STATUS        SID          SEND RECV VR TP NETID
IST635I  RAP       ACTIV-P    F88F0164BB4E851B 0008 0005  1  0 USIBMRA
IST314I  END
??? ***
```

Figure 160. RS6003CP Active

The AIXOP CNMPANEL was previously installed in: SHOGREN.PANELS.

```
NCCF                        N E T V I E W   RAPAN WTWKSH1  10/25/95 14:26:15
' RAPAN
CNM299I
DDNAME   DATA SET NAME                                              DISP
-------- ---------------------------------------------------------- --------
DSIVTAM  RISC.VTAMLST                                               SHR,KEEP
         ITSC.VTAMLST                                               SHR,KEEP
DSIPRF   SA01.DSIPRF                                                SHR,KEEP
         NETVIEW.V2R4M0.DSIPRF                                      SHR,KEEP
         ITSC.DSIPRF                                                SHR,KEEP
DSIMSG   NETVIEW.V2R4M0.SDSIMSG1                                    SHR,KEEP
BNJPNL1  NETVIEW.V2R4M0.BNJPNL1                                     SHR,KEEP
BNJPNL2  NETVIEW.V2R4M0.BNJPNL2                                     SHR,KEEP
CNMPNL1  NETVIEW.V2R4M0.CNMPNL1                                     SHR,KEEP
         SA01.PANELS                                                SHR,KEEP
         KREUKV.NTUNEV2.V4.SATUPNL1                                 SHR,KEEP
         SHOGREN.PANELS                                             SHR,KEEP
CNMMSGF  NETVIEW.V2R4M0.CNMMSGF                                     SHR,KEEP
CNMCMDF  NETVIEW.V2R4M0.CNMCMDF                                     SHR,KEEP
DSILOGP  SYS1.RAPAN.DSILOGP                                         SHR,KEEP
DSILOGS  SYS1.RAPAN.DSILOGS                                         SHR,KEEP
DSITRCP  SYS1.RAPAN.DSITRCP                                         SHR,KEEP
??? ***
```

Figure 161. Some S/390 NetView Libraries

Prior to executing the shells, the shells were modified to fit the tested environment, including:

- Service Point application name. In this example, we used the AIX NetView for AIX RUNCMD catcher, configured with a name: RS60003S

- RUNCMD resource, RS6003CP in this example

- S/390 NetView automation task to use, in this example: AUTO1

Executing NV6KSETP is a one-time per S/390 NetView initialization matter. It could be done automatically rather than as an operator-entered command.

```
NCCF                     N E T V I E W    RAPAN WTWKSH1  10/25/95 14:30:09
 * RAPAN    NV6KSETP
 - RAPAN    DSI041I AUTO1 ALREADY ACTIVE OR IN PROCESS OF BECOMING ACTIVE
 C RAPAN    NetView/6000 samples environment set up
 ----------------------------------------------------------------------------




 
 
 
 
 
 
 
 
 
 
 
 
 
 
 
 
 
 ???
```

Figure 162. Executing NV6KSETP

Executing AIXOP results in a full-screen type of interface that the operator can enter commands into. The shells were previously modified to point to the proper variables (RUNCMD catcher: RS60003S configured into NetView for AIX spappld and RA6003CP used as SP in the RUNCMD issued by AIXOP).

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                                                               │
│   AIXOP        AIX Service Point Command panel.      Service Point =  RA6003CP │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│   CMD=>                                                                        │
│             PF3= End    PF6= Roll  PF7= Back  PF8= Forward  PF12= Clear display │
│                                                                               │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 163 (Part 1 of 4). Executing AIXOP

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                                                               │
│   AIXOP        AIX Service Point Command panel.      Service Point =  RA6003CP │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│   Command to AIX==> df                                                         │
│   Executing RUNCMD "DF"                                                        │
│   Filesystem     Total KB    free %used    iused %iused Mounted on            │
│   /dev/hd4         36864     4752  87%     1670   16% /                        │
│   /dev/hd9var      65536    19692  69%     1893   11% /var                     │
│   /dev/hd2       1085440    67320  93%    32530   11% /usr                     │
│   /dev/hd3        131072    20032  84%      454    1% /tmp                     │
│   /dev/hd1        450560    99032  78%     1473    1% /home                    │
│   /dev/lv00        24576     3032  87%       94    1% /usr/lpp/netviewdm       │
│   DFS            9000000  9000000   0%        0    0% /...                      │
│                                                                               │
│                                                                               │
│   CMD=>  df                                                                    │
│             PF3= End    PF6= Roll  PF7= Back  PF8= Forward  PF12= Clear display │
│                                                                               │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 163 (Part 2 of 4). Executing AIXOP

```
AIXOP          AIX Service Point Command panel.     Service Point =  RA6003CP

    root 46307      1   0 13:07:48  hft/1  0:00 xclock
    root 46363   9645   1 18:15:23      -  0:00 spappld -hrs60003 -pRS60003S -b/
    root 46615  47119   0 18:11:41      -  0:00 /usr/lpp/sna/bin/luxlns
    root 47119  40193   0 18:11:39      -  0:00 /usr/lpp/sna/bin/luxcr
    root 47892  47119   0 18:11:40      -  0:00 /usr/lpp/sna/bin/luxdi
    root 48582   9645   0 17:37:52      -  0:00 snmpCollect
    root 48835   9645   0 17:37:49      -  0:00 nvcold -O
    root 49349   9645   0 17:37:52      -  0:03 netmon -P
    root 49595   9645   0 17:37:43      -  0:05 trapd
    root 49698  43030   0 18:11:43      -  0:00 /usr/lpp/sna/bin/luxalrm
    root 49945  47119   0 18:11:41      -  0:00 /usr/lpp/sna/bin/luxasm
    root 50463  47119   0 18:11:41      -  0:00 /usr/lpp/sna/bin/luxgw
    root 50718  47119   0 18:11:41      -  0:00 /usr/lpp/sna/bin/luxms
    root 51218  47119   0 18:11:40      -  0:00 /usr/lpp/sna/bin/xxxddpr0
    root 51741  47119   0 18:11:41      -  0:00 /usr/lpp/sna/bin/luxscm
    root 52160   9645   0 17:37:48      -  0:00 nvcorrd
    root 52275      1   0 18:11:47      -  0:00 /bin/trace -a -g -o /var/sna/RA6
    root 52676   9645   0 17:37:52      -  0:00 C5d -l/usr/OV/log/c5d.log -r60 -
    root 14015  39614   0 18:22:17  pts/0  0:04 smitty
    root 14286   9645   0   Oct 23      -  0:00 actionsvr
CMD=>  ps -ef
        PF3= End    PF6= Roll  PF7= Back  PF8= Forward  PF12= Clear display
```

Figure 163 (Part 3 of 4). Executing AIXOP

```
AIXOP          AIX Service Point Command panel.     Service Point =  RA6003CP

    root 14522   9645   0 17:37:43      -  0:02 ovwdb -O -n5000 -t
    root 14690  19294   0   Oct 23      -  0:00 /usr/etc/nfsd 8
    root 15460  19294   0   Oct 23      -  0:00 /usr/etc/nfsd 8
    root 15810   3945   0 18:14:21      -  0:00 /usr/lpp/nvix/bin/evp_nvixAcmd
    root 15985   3945   0   Oct 23      -  0:00 /etc/qdaemon
    root 16210      1   0   Oct 23      -  0:24 /opt/dcelocal/bin/sec_clientd
    root 16759      1   0   Oct 23      ?  0:00 /etc/getty /dev/pts/11
    root 17011   3945   0   Oct 23      -  0:00 /etc/writesrv
    root 17331   7788   0   Oct 23  hft/0  0:00 /bin/ksh
    root 17497  17748   0   Oct 23      -  0:00 /usr/etc/biod 6
    root 17748   3945   0   Oct 23      -  0:00 /usr/etc/biod 6
    root 18008  17748   0   Oct 23      -  0:00 /usr/etc/biod 6
    root 18266  17748   0   Oct 23      -  0:00 /usr/etc/biod 6
    root 18567      1   0   Oct 23      -  0:13 /opt/dcelocal/bin/cdsadv
    root 18779  17748   0   Oct 23      -  0:00 /usr/etc/biod 6
    root 19294   3945   0   Oct 23      -  0:00 /usr/etc/nfsd 8
    root 19610      1   0   Oct 23      -  1:28 /opt/dcelocal/bin/dtsd
    root 19867  18567   0   Oct 23      -  2:23 /opt/dcelocal/bin/cdsclerk -U (0
    root 20067  19294   0   Oct 23      -  0:00 /usr/etc/nfsd 8
    root 20986      1   0   Oct 23      -  0:14 /opt/dcelocal/bin/dfsbind
CMD=>  ps -ef
        PF3= End    PF6= Roll  PF7= Back  PF8= Forward  PF12= Clear display
```

Figure 163 (Part 4 of 4). Executing AIXOP

G.2.1.1 CNMPANEL and Shells

```
***
+AIXOP  %AIX Service Point Command panel.    $Service Point =+&SPT
$
&RS6M1
&RS6M2
&RS6M3
&RS6M4
&RS6M5
&RS6M6
&RS6M7
&RS6M8
&RS6M9
&RS6M10
&RS6M11
&RS6M12
&RS6M13
&RS6M14
&RS6M15
&RS6M16
&RS6M17
&RS6M18
&RS6M19
&RS6M20
+CMD=> &CMD
+     PF3= End     PF6= Roll  PF7= Back  PF8= Forward  PF12= Clear display
```

Figure 164. AIXOP CNMPANEL

```
/* Exec to set up the environment for NV/6000 examples */

nv6kauto = "AUTO1"     /* name of auto-task for service point cmds*/

ARG nv6kdgw            /* default gateway (ie pu address) of svc pt */
if nv6kdgw = "" then nv6kdgw = "RA6003CP" /*use rs6k3 if not spec */

/* nv6kcritlist is not currently used. */
nv6kcritlist = "9.67.32.23 9.67.32.28 9.67.32.85 9.67.32.150" ,
               "9.67.32.25"
                         /* list of 'critical' (monitored) ip addresses*/

rs6kmcnt = 100  /* number of aix responses to keep for each user */

"GLOBALV PUTC NV6KAUTO NV6KDGW NV6KCRITLIST RS6KMCNT"

"AUTOTASK OPID="nv6kauto

say "NetView/6000 samples environment set up "
```

Figure 165. NV6KSETP REXX CLIST

```
/*REXX*/
/* ---------------------------------------------------------------\
| (c) Copyright IBM Corporation 1995                             |
|----------------------------------------------------------------|
|                                                                |
|        Author : Rob Macgregor, IBM ITSO-Raleigh and IBM UK     |
|                 ITSO Raleigh                                   |
|                                                                |
|        Progam name : aixop                                     |
|                                                                |
|        Description : Invokes full-screen  access to AIX via the|
|                      NetView/6000 service point application.   |
|                                                                |
|                                                                |
|                                                                |
|----------------------------------------------------------------|
| Invocation : aixop <sppuid>                                    |
|----------------------------------------------------------------|
| Parameters : sppuid - the pu address of the NetView/6000 node. |
|              The default is to extract the default puid from    |
|              common global variable NV6KDGW                     |
|----------------------------------------------------------------|
| Calls      : SENDAIX exec, under the nv6k autotask             |
|----------------------------------------------------------------|
| Returns    : nothing                                          |
|----------------------------------------------------------------|
| Global     : NV6KDGW - default gateway (=puname) of NV6K machine|
| Variables  : NV6KAUTO- name of auto task for NV6K operations   |
| used       : RS6KMSG.opid.n - pool of messages for this opid   |
|            : RS6KMCNT- size of the RS6KMSG... pool             |
|            : RS6KCPTR.opid - current position within var pool  |
|            : RS6KTOP - (taskglob) pool position of 1st screenline|
|            : RS6Mn   - (taskglobs) variables for screen display |
\---------------------------------------------------------------- */

trace "0"

PARSE ARG spt

/* use the NV6K default service point if none specified  */
if spt = "" THEN DO
                "GLOBALV GETC NV6KDGW"
                 spt = nv6kdgw
                end
```

Figure 166 (Part 1 of 3). AIXOP REXX CLIST

```
/* find out the name of the NV/6000 auto-task */
"GLOBALV GETC NV6KAUTO"

myid = opid()
"GLOBALV GETC RS6KCPTR."myid
if datatype(rs6kcptr.myid) ¬= "NUM" then rs6kcptr.myid = 1
"GLOBALV PUTC RS6KCPTR."myid

/* Setup panel field attributes and initialize the task globals
   that contain the messages on the screen  */

$spt = "FI CR"
$cmd = "FI CR UY"
lines_on_screen = 20
var_list = ""
do i = 1 to lines_on_screen
 interpret "$rs6m" || i "= 'CT'"
 interpret "rs6m" || i "= ''"
 var_list = var_list "RS6M" || i
end
"GLOBALV PUTT" var_list

scroll = 1        /* '1' if user pressed a scroll key, '0' otherwise */
scramt = 0        /* number of lines to scroll. '0' = refresh as-is */

/* Here is the main panel display loop.   */

do forever
 if scroll then , /* this piece refreshes the variables on the panel */
   do
    "GLOBALV GETT RS6KTOP"
    if datatype(rs6ktop) ¬= "NUM" then rs6ktop = 1
    call aixupd (rs6ktop + scramt)
    scroll = 0
   end

"VIEW AIXOP AIXOP MSG INPUT"     /* Invoke VIEW for the panel  */
"GLOBALV GETC RS6KCPTR."myid

  /* Handle the user action following VIEW  */
```

Figure 166 (Part 2 of 3). AIXOP REXX CLIST

```
   select
    when viewaid = "PF3" then exit
    when viewaid = "PF6" then "CMD HIGH ROLL"
    when viewaid = "PF7" then do
                              scroll = 1
                              scramt = -20
                            end
    when viewaid = "PF8" then do
                            scroll = 1
                            scramt = 20
                          end

    /* PF12 causes the user's common global pool to be re-initialized */

    when viewaid = "PF12" then do
                              rs6kcptr.myid = 1
                              "GLOBALV PUTC RS6KCPTR."myid
                              rs6ktop = 1
                              "GLOBALV PUTT RS6KTOP"
                              scroll = 1 ; scramt = 0
                              do i = 1 to 100
                               rs6kmsg.myid.i = ""
                               "GLOBALV PUTC RS6KMSG."myid"."I
                              end
                            end

    /* ENTER sends the command to be executed by AIX  */

    when (viewaid = "ENTER") ,
       & (cmd ¬= "") then ,
    if spt = "" then $spt = "FI CR HR"
    else ,
     do
     "TRAP AND SUPPRESS MESSAGES DSI268I"
     ADDRESS NETVASIS "EXCMD" nv6kauto "SENDAIX" myid spt cmd
     "TRAP NO MESSAGES"
     ptr = rs6kcptr.myid
     rs6kmsg.myid.ptr = "Command to AIX==>" cmd
     rs6kcptr.myid = rs6kcptr.myid+1
     "GLOBALV PUTC RS6KMSG."myid"."ptr "RS6KCPTR."myid
     end
    otherwise nop
   end
end
```

Figure 166 (Part 3 of 3). AIXOP REXX CLIST

```
/*REXX*/
/* ----------------------------------------------------------------\
| (c) Copyright IBM Corporation 1991                                |
|-------------------------------------------------------------------|
|                                                                   |
|        Author : Rob Macgregor, IBM ITSO-Raleigh and IBM UK        |
|                 ITSO Raleigh                                      |
|                                                                   |
|        Progam name : sendaix                                      |
|                                                                   |
|        Description : Issues RUNCMD containing AIX command and     |
|                      stores the response. Part of the full-       |
|                      screen AIX access NetView/6000 service       |
|                      service point sample application.            |
|                                                                   |
|                                                                   |
|   Note:  Change svcpt  to meet your spappld-configured name.      |
|                                                                   |
|-------------------------------------------------------------------|
| Invocation : sendaix target_op svcpt cmd                          |
|              Called internally by AIXOP                           |
|-------------------------------------------------------------------|
| Parameters : target_op - originator of the command (AIXOP user)   |
|              svcpt - PU name to use for service point access      |
|              cmd   - AIX command to be executed                   |
|-------------------------------------------------------------------|
| Calls      : RUNCMD, AIXUPD (to refresh screen on completion)     |
|-------------------------------------------------------------------|
| Returns    : nothing                                              |
|-------------------------------------------------------------------|
| Global     : NV6KAUTO- name of auto task for NV6K operations      |
| variables  : RS6KMSG.opid.n - pool of messages for this opid      |
| used       : RS6KMCNT- size of the RS6KMSG... pool                |
|            : RS6KCPTR.opid - current position within var pool     |
\------------------------------------------------------------------ */
```

Figure 167 (Part 1 of 2). SENDAIX REXX CLIST

```
trace "0"


svcpt = "RS60003S"   /* Name of configured spappld service point appl */

arg target_op spt cmd

"GLOBALV GETC RS6KMCNT"   /* max number of messages saved for each op*/

/* Find out what the current global var for the identified op is */

 "GLOBALV GETC RS6KCPTR."target_op
 if datatype(rs6kcptr.target_op)¬= "NUM" then rs6kcptr.target_op = 1
 curptr = rs6kcptr.target_op

"RUNCMD SP="spt",APPL="svcpt",CLISTVAR=YES" cmd

if rc ¬= 0 ,       /* RUNCMD failed, so tell operator */
 then do
       rs6kmsg.target_op.curptr = "RUNCMD failed"
       "GLOBALV PUTC RS6KMSG."target_op"."curptr
      end

 /* If RUNCMD worked, place each line of the response sequentially
    in the global variable pool assigned for messages to this
    operator */

 else do i = 1 to dsiruncnt
       interpret "rs6kmsg.target_op.curptr = dsirun" || right("00"||i,3)
       /* messages arrive with incorrect trailing x'25' - remove it */
       rs6kmsg.target_op.curptr = ,
               strip(rs6kmsg.target_op.curptr,"t",'25'x)
       "GLOBALV PUTC RS6KMSG."target_op"."curptr
       curptr = curptr + 1
       if curptr > rs6kmcnt then curptr = 1
      end

 /* Reset the pointer to the current global variable to the new value*/

 rs6kcptr.target_op = curptr + 1
 "GLOBALV PUTC RS6KCPTR."target_op

 /* Drive the callback routine to update panel variables */

 "EXCMD" target_op "?AIXUPD"
exit
```

Figure 167 (Part 2 of 2). SENDAIX REXX CLIST

```
/*REXX*/
/* -------------------------------------------------------------\
| (c) Copyright IBM Corporation 1991                            |
|-------------------------------------------------------------- |
|        Author : Rob Macgregor, IBM ITSO-Raleigh and IBM UK    |
|                 ITSO Raleigh                                  |
|        Progam name : aixupd                                   |
|        Description : Refreshes task global variables for full-|
|                      screen AIX access NetView/6000 service   |
|                      service point application.               |
|-------------------------------------------------------------- |
| Invocation : AIXUPD <top_of_screen>                           |
|              Called internally by AIXOP and SENDAIX           |
|-------------------------------------------------------------- |
| Parameters : top_of_screen - pointer to position in user's pool|
|              of message variables of current top of screen    |
|-------------------------------------------------------------- |
| Calls     :                                                   |
|-------------------------------------------------------------- |
| Returns    : nothing                                          |
|-------------------------------------------------------------- |
| Global     : NV6KAUTO- name of auto task for NV6K operations  |
| variables  : RS6KMSG.opid.n - pool of messages for this opid  |
| used       : RS6KMCNT- size of the RS6KMSG... pool            |
|              : RS6KCPTR.opid - current position within var pool|
|              : RS6KTOP - (taskglob) pool position of 1st screenline|
|              : RS6Mn   - (taskglobs) variables for screen display |
\-------------------------------------------------------------- */
trace "O"
arg rs6ktop
myid = opid()
/* Get the size of global variable pool assigned for messages to
   each op and the current pool pointer for this op */

"GLOBALV GETC RS6KMCNT RS6KCPTR."myid
lines_on_screen = 20

/* rs6ktop is the position in the pool of the top line of the screen */

if rs6ktop = "" then rs6ktop = rs6kcptr.myid - lines_on_screen + 1
if rs6ktop < 1 then rs6ktop = rs6kmcnt + rs6ktop
if rs6ktop > rs6kmcnt then rs6ktop = rs6ktop - rs6kmcnt
"GLOBALV PUTT RS6KTOP"

/* assign task global variables to appear on screen from the common
   global pool  */

i = rs6ktop
do j = 1 to 20
 "GLOBALV GETC RS6KMSG."myid"."i
 interpret "RS6M" || j "= rs6kmsg.myid.i"
 "GLOBALV PUTT RS6M" || j
 i = i + 1
 if i > rs6kmcnt then i = 1
end
```

Figure 168. AIXUPD REXX CLIST

Index

Special Characters

A

C

D

E

F

H

I

V

VTAM   17, 75
VTAM SSCP   129
VTAM Start Option List   17
VTAM subarea   60
VTAM switched major node definition   131
VTAMCP   38

X

XID node ID   128, 137

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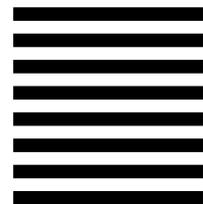

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