CA NetMaster® Network Automation

User Guide

r11.7

Second Edition

CA Product References

This document references the following CA products:

- CA ACF2™ for z/OS (CA ACF2)
- CA NetMaster® Network Automation (CA NetMaster NA)
- CA NetMaster® Network Management for SNA (CA NetMaster NM for SNA)
- CA NetSpy™ Network Performance (CA NetSpy)
- CA Top Secret® for z/OS (CA Top Secret)

Contact CA

Contact Technical Support

For your convenience, CA provides one site where you can access the information you need for your Home Office, Small Business, and Enterprise CA products. At http://ca.com/support, you can access the following:

- Online and telephone contact information for technical assistance and customer services
- Information about user communities and forums
- Product and documentation downloads
- CA Support policies and guidelines
- Other helpful resources appropriate for your product

Provide Feedback

If you have comments or questions about CA product documentation, you can send a message to techpubs@ca.com.

If you would like to provide feedback about CA product documentation, complete our short customer survey, which is also available on the CA Support website, found at http://ca.com/docs.

Contents

Chapter 5: Managing Messages

63

Chapter 6: Managing Alerts

65

Chapter 7: Monitoring and Controlling SNA Groups

73

Chapter 8: Using Logs   79

Chapter 9: Using Monitors   87

Chapter 10: Using Operator Console Services 109

Chapter 11: Using Print Services 139

Index 143

Chapter 1: Introduction

This section contains the following topics:

Product Overview

The product is an operations automation and management application. It can be implemented on one or more computers in an organization, depending on the operations requirements of the organization.

The product enables you to automate the operation of the SNA network resources in your organization. The product establishes a *region* that uses the information in a knowledge base to automate your organization's operations processes.

The product enables you to implement a service-driven operations perspective of the SNA resources you want to manage. You can group resources into SNA groups and services, and automate the operation of those groups and services.

From the region, you can monitor the status of services, SNA groups, and resources, and act on them when problems occur.

The product provides focal point management to support multisystem operation (that is, management at a focal point with subordinates feeding information to it). Multisystem support enables you to monitor and control the resources from a single terminal.

The product establishes a region on your system that does the following:

- Performs the necessary actions to maintain the availability of services and SNA resources, based on information stored in a knowledge base

- Monitors and controls the defined services and resources

- Manages the message flow in your network

- Consolidates VTAM messages to a single console

SNA Resource Management

When you start the product region on a system that contains a VTAM domain, you can monitor the SNA resources controlled by that domain immediately. The region monitors those resources and takes appropriate recovery actions to maintain the availability of those resources. This basic feature enables you to manage your networks on a resource basis.

The product obtains the status of resources from the VTAM message flow. It then compares the actual status of a resource with the desired state of that resource and responds accordingly by using the information in the knowledge base.

Individual resource management, however, does not provide you with a view of the services you are providing to the different business units in your organization. This product helps you implement views of your SNA resources from a service-driven operations perspective. You can group resources by business function and manage those SNA groups. You can monitor the groups by using the service monitor, resource monitor, or graphical monitor.

This product also provides an event management facility that lets you manage (for example, suppress) unwanted messages. You can also monitor VTAM messages in a multisystem environment.

Message Processing

The region gains information about the SNA resources it manages by interpreting the primary program operator (PPO) message flow.

Note: If you are running CA NetMaster NM for SNA in the same region as this product, you also have available a CNM message flow. For information about how to set up the CNM message flow, see the *Installation Guide*.

The region intercepts the messages and resends them by using the resource name as the job name, and 17, 18, or 19 as the MVS routing codes.

Components

The main components of the product are illustrated in the following diagram.

```
        ┌──────────────┐
        │     SNA      │
        │   Resource   │
        │  Discovery   │
        └──────┬───────┘
               │ Resource
               │ and Status
               │ Information
               ▼
   ┌───────────┴───────────┐
   │                       │
┌──┴───────┐         ┌─────┴────┐
│   SNA    │         │          │
│ Network  │         │Automation│
│  Status  │         │          │
│ Display  │         │          │
└──────────┘         └──────────┘
```
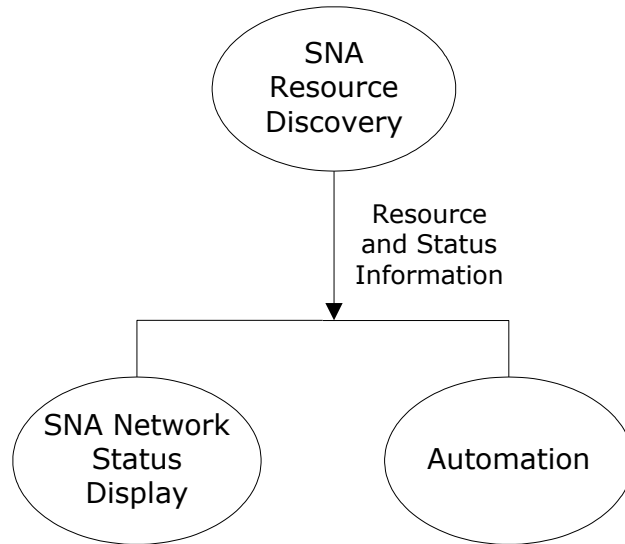
SNA resource discovery

> Discovers SNA resources in the local VTAM domain to build the SNA network model and monitors their status.

SNA network status display

> Provides a monitoring and control facility for the SNA resources in the network model. This component lets you perform basic management of your resources.

Automation

> Lets you define the service policies. It maintains the desired availability of those services, and provides the monitoring and control facility that lets you operate those services. This component lets you manage the SNA resources from a service-driven operations perspective.

Features

This product lets you do the following:

- Start monitoring SNA resources immediately. You do not need to define the resources to the knowledge base as for the automation component.

- Obtain an enterprise-wide view of the SNA resources by using the SNA network summary display.

- Access other products for problem determination by using commands.

- Define filters that enable selective display of SNA resources.

- Customize the stored operations methods for an SNA resource through SNA resource model.

- Define SNA resource tags that provide a more meaningful description of an SNA resource.

- Manage the SNA resources from a service perspective by grouping them in SNA groups and including these groups in services.

Multisystem Support

The product provides focal point management to support multisystem operation (that is, management at a focal point with subordinates feeding information to it).

You can link regions together to provide you with an enterprise view of the managed resources, messages, and alerts. You can monitor and control all the services and resources defined in the linked regions from a focal point region.

In a multisystem environment where each region manages the local resources, failure of one region does not affect the automated operation of resources on the other systems, and you can still have an enterprise view of the resources managed on those systems.

Note: For information about how to implement your multisystem environment, see the *Administration Guide*.

Focal Point Regions

From a focal point region, you have visibility of all the managed services and resources.

Subordinate Regions

From a subordinate region, you have visibility of the locally managed resources only. By using subordinates, you reduce the amount of traffic in the multisystem environment.

Conventions for User Actions

This guide uses the following conventions when describing user actions:

- **Bold** characters indicate literals entered by you.

- You select **menu options** at the Select Option ===> prompt on the second line of a menu. Type the option code (for example, **M** for the Monitors : Primary Menu), and press Enter.

- You enter **commands** at the Command ===> prompt on the second line of a panel. Some commands may be valid only on certain panels. To enter system commands, type **CMD** at the prompt and press Enter. The Command Entry panel appears. You can now enter system commands (for example, **SYSCMD D NET,APPLS**).

  Frequently used commands such as EXIT and SAVE are assigned to function keys. Press the appropriate function key to execute these commands.

  Enter used in conjunction with commands means: type the command at the prompt, and press Enter.

- You can apply **actions** to listed items (if the list is an action list, such as the SNA group list). You can apply actions such as browsing, copying, or updating to individual items. Press your New Line key to move the cursor down to the required item and enter the action code (for example, **U** for update) beside the item.

  Enter used in conjunction with actions means: position the cursor beside the required item, type the action code, and press Enter.

- You can enter options, commands, and actions in either uppercase or lowercase.

- Use the TAB key to move the cursor from field to field across a panel. Use the New Line key to move the cursor from field to field down a panel.

Chapter 2: Getting Started

This chapter explains how to access and navigate the product's 3270 interface, and the major components of that interface.

This section contains the following topics:

Log On

To access your product, you must log on to it through a region. The logon procedure is the same whether you are logging on in a single system or a multisystem environment. Before you can log on to a region, you need a user ID and password. Ensure that your system administrator has defined your user ID to the region and has allocated the relevant level of authority.

Note: You may have access to one or more regions. This depends on whether your organization has set up a single system or a multisystem environment.

To log on to your product

1. Use your installation defined method for establishing SNA sessions to connect to the ACB name of the region.

    For example, enter **LOGON APPLID(***acb-name***)**, using the ACB name of the region.

2. Enter your user ID and password on the displayed logon panel.

    The Primary Menu appears.

Note: When you first log on to a region, the region uses a default profile for your primary menu. You can update the profile to change the format of the menu. To update the profile, enter **PROFILE** at the command prompt.

If Region Initialization Is Still in Progress

If the Initialization in Progress panel appears on your screen instead of the primary menu, the initialization of the region is still in progress. Press F3 (Exit) to exit to the primary menu.

Note: For information about the initialization process, see the *Installation Guide*.

If the System Image Is Still Being Loaded

If the local system image is still being loaded, the primary menu contains the **LS** option. You can select this option to monitor the loading process. You can also perform functions that do not depend on an active local image.

Note: For information about system image loading, see the *Administration Guide*.

Log Off

To log off from the region, enter **=X** at the prompt. This terminates your current window.

If you are at the primary menu, enter **X** at the prompt to terminate your current window.

Note: You can have two windows for each logon to a region. If you have two windows, repeat the procedure to terminate the remaining window to log off from the region.

More information:

Work in Two Windows

Access the Region from a Local Terminal

When VTAM is not active and you have a local terminal that can access the region, you can log on to the region from the local terminal and have full use of the user interface.

Note: For information about how to implement this type of terminal, see the *Reference Guide*.

Access the Region by Telnet

When VTAM is not active and the region is set up for Telnet access, you can log on to the region from a terminal.

To access a region that supports Telnet connections, use the IP address and port number that have been set up.

Note: For information about how to implement Telnet access, see the *Reference Guide*.

Your Password

Your password is verified by the User Access Maintenance Subsystem (UAMS).

The subsystem lets you change your password, or prompts you to change your password when it has expired after a period of time. You can change your password at any time after you log on to a region. The change becomes effective the next time you log on to the region.

Note: Your installation might have linked UAMS with an external security system, such as CA ACF2, CA Top Secret, and Resource Access Control Facility (RACF). If this is the case, your system administrator will tell you of any special considerations that apply when changing your password.

In a multisystem environment, the administrator might have set up the environment for the synchronization of UAMS user definitions and passwords. Changed passwords are then synchronized across connected regions.

Change Your Password

To change your password

1. Enter **/CHGPWD** at the prompt.

   The User Password Maintenance panel appears.

2. Complete the following fields:

   Current Password

   Specifies your current password.

   New Password

   Specifies your new password.

   Retype your new password, and press F3 (File).

   The system changes your password.

   Note: If UAMS synchronization is enabled, a Linked Regions UAMS Update Report panel appears when you save your changed password. The panel reports the success or failure of the password change in the connected regions.

Menus

The user interface includes several menus. The region issues an error message if you try to use a function that you are not authorized to use.

Note: In a multisystem environment, the following menus are not applicable in subordinate regions: the Service Administration menu and the System Console Consolidation menu.

The hierarchy of the menu panels is illustrated in the following diagram. Shortcuts (see page 24) to the menu options are shown in parentheses.
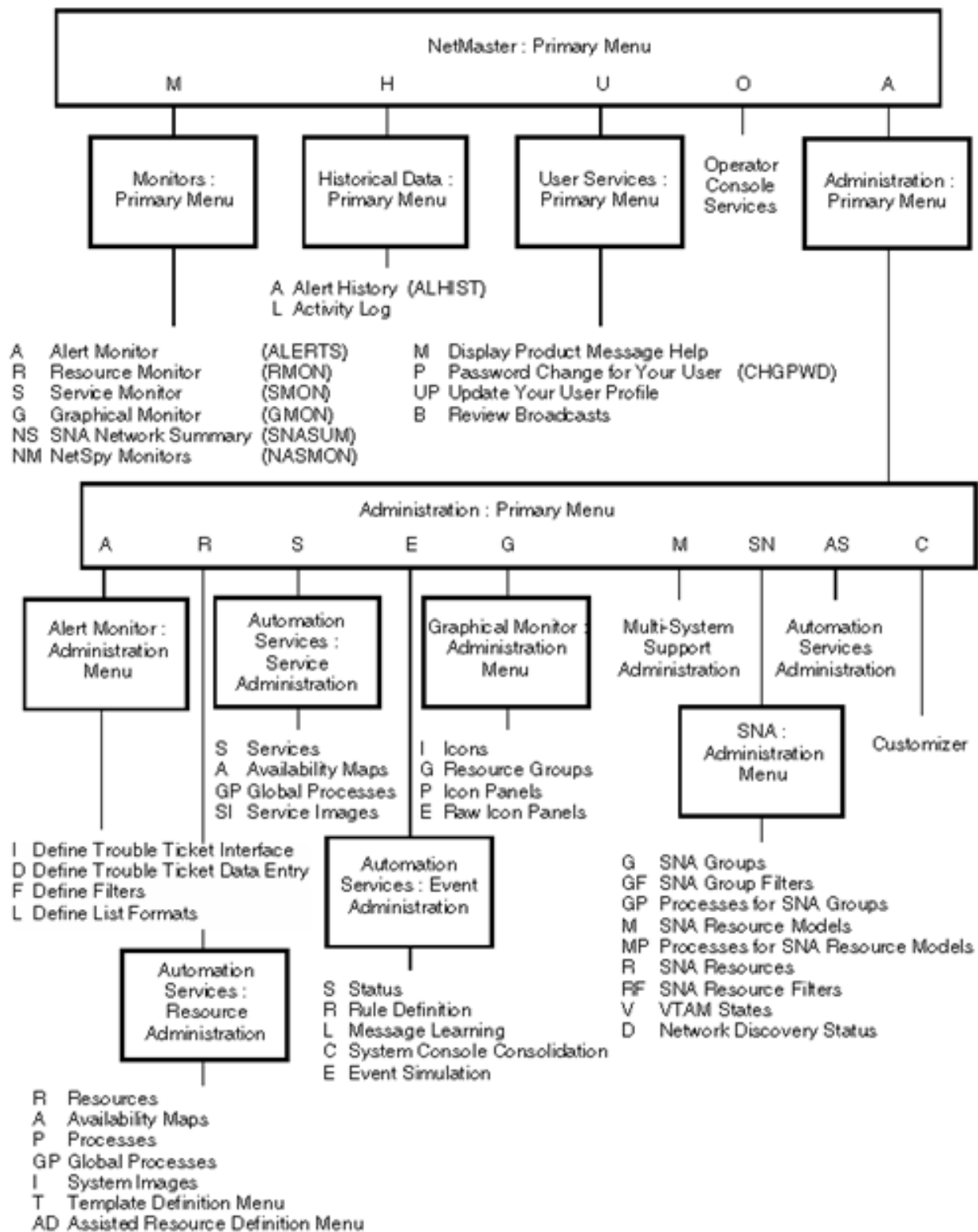
Access Functions

To access functions through the user interface menus, do *one* of the following:

- Select an option from each menu that leads to the function.

- Specify a path.

- Specify a shortcut.

Select an Option

You select an option by entering the option code at the prompt. For example, entering **A** at the prompt on the primary menu takes you to the Administration primary menu.

If you specify a collapsed or expanded menu format in your profile, you can expand or collapse the displayed menu hierarchy. In these formats, you can also place your cursor beside a required option and press Enter to select it. For more information, press F1 (help) from the primary menu.

Specify a Path

You can jump to the panel of a function directly by specifying the exact path to that panel. Construct the path by linking the options you need with periods. Depending on which panel you start from, you can display a panel that:

- Is lower in the panel hierarchy

- Is higher in the panel hierarchy

- Requires input data

Lower in the Panel Hierarchy

If you start from a menu and want to access a panel lower in the panel hierarchy, specify the path as it is. For example, if you are at the primary menu and want to change your password, type **U.P** at the prompt and press Enter.

Higher in the Panel Hierarchy

If you want to access a panel that requires you to pass through a panel higher up in the panel hierarchy, you must precede the path specification with the equals sign (=). The = character brings you back to the primary menu and then to the required panel. You can specify such a path at any prompt. For example, if you are at Resource Definition panel and want to change your password, enter **=U.P** at the prompt and press Enter.

To return to the primary menu, enter **==**.

Input Data

If you want to access a panel that requires you to enter data, you can enter the data by separating them from the path by a semicolon (;).

For example, if you are at the primary menu and want to access the alert history for the linked region PROD2, type **H.A;PROD2** at the prompt and press Enter.

Some panels have more than one input field for entering data. You should use the correct number of semicolons to identify the field.

For example, you must use two semicolons if you want to enter *data_2* in the second field:

option_1.option_2;;*data_2*

Specify a Shortcut

You can jump to the panel of a function directly by using shortcuts. You can specify the shortcut at a prompt in one of the following ways:

- Specify /*shortcut-name* to retain the current panel on return.
- Specify =/*shortcut-name* to close the current panel and return to the primary menu on exit.

Each entry on a menu may have an associated shortcut, displayed in turquoise.

Note: If you do not remember a shortcut, enter / or =/ to list the shortcuts and then select one.

/shortcut-name

Important! If the current panel provides automatic updates and you no longer need this information, use =/shortcut-name rather than a nested shortcut. This saves storage and resources because the region does not need to maintain a display that you no longer need.

To select the function you want, enter its corresponding shortcut, preceded by the slash (/) character, at a prompt.

When you access a function by using its shortcut, your current panel is retained. When you press F3 to exit out of the function, this panel, with any updates, is restored. By using shortcuts, panels can be nested to a maximum of 64 levels.

For example, to access the Alert Monitor History Menu, enter **/ALHIST** at the prompt on your current panel. When you are finished with the menu, press F3 to redisplay your previous panel.

=/shortcut-name

When you have finished with your current panel, you can access the next function by prefixing the shortcut call with the equals (=) sign. This goes directly to the function without retaining the current panel and closes all other nested panels in this window.

For example, to access the Alert Monitor History Menu without retaining the current panel, enter **=/ALHIST** at the prompt on your current panel. When you are finished with the menu, press F3 to display the primary menu.

Access a Function That Does Not Have a Shortcut

You can combine a shortcut with option codes to form a path to access a function that does not have a shortcut itself.

For example, to access the alert history, you can enter the **/ALHIST.B** path.

Lists

Lists comprise a series of items that you can select or against which you can perform actions. The panel shows the actions that you can perform on the listed items.

There are four types of list:

Action Lists

Let you apply *actions* to one or more listed items. Enter the required action code beside the appropriate records.

Single Selection Lists

Let you select one item from a list (for example, the list of valid values for a data entry field) by doing *one* of the following:

- Entering the **S** (Select) action code beside the item

- Moving the cursor to a position anywhere in the line containing the item you want to select and pressing Enter

Multiple Selections Lists

Let you select one or more items in a list (for example, the list of panels used to customize your user profile).

Numbered Lists

Let you select a single item from the list by entering the appropriate number at the prompt (for example, the list of valid values for a data entry field).

Scrolling

If the listed information cannot fit onto the screen, use scrolling to access the off-screen information. You can scroll vertically and horizontally.

Scroll Vertically

Use the F8 (Forward) or F7 (Backward) function key to scroll the displayed information by the amount displayed at the Scroll prompt.

The following table shows valid scroll amounts.

Scroll Amount	Action
C (or CSR)	If scrolling forward, the line on which the cursor is currently positioned is moved to the top of the screen.
	If scrolling backward, the line on which the cursor is currently positioned is moved to the bottom of the screen.
D (or DATA)	The display is scrolled one full page, less one row, in the specified direction.
	If scrolling forward, the last line of the current page appears as the first line on the next page.
	If scrolling backward, the first line on the current page appears as the last line on the next page.
H (or HALF)	The display is moved half a page in the specified direction.
M (or MAX)	The display is moved to the beginning or the end of the displayed information, depending on the function key (Forward or Backward) used.
P (or PAGE)	The display is moved one full page in the specified direction.
n	The display is moved *n* lines in the specified direction.
	If you enter a temporary scroll amount at the command prompt (for example, Command ===> 5), then when you press the F7 (Backward) or F8 (Forward) function key, the displayed information is scrolled by the specified value once only.

Scroll Horizontally

Use the F11 (Right) or F10 (Left) function key to scroll the displayed information to the right or to the left.

Search for an Item

You can search for specific items in the retrieved information by using the F5 (Find) function key or the LOCATE command.

F5 (Find) Function Key

The F5 (Find) function key lets you find text in the retrieved information. Enter the text you want to find, and press F5. If the text contains more than one word, enclose the text in quotation marks.

You can press F5 again to find the next instance of the text.

For some lists, you can enhance the Find function in the following ways:

- Expand the search beyond the columns currently displayed by using the FMODE command
- Change the number of records searched between prompts by using the FPROMPT command

Note: For information about the FMODE and FPROMPT commands, see the online help.

LOCATE Command

The LOCATE command enables you to locate a particular record in a list. Enter **LOCATE** or **L** followed by a text string mask. The command locates the first record name that matches the mask.

Data Entry Panels

Resource definitions are displayed and maintained through a sequence of panels on which you enter the data for that resource.

UPDATE Mode

Many definition panels enable authorized users to switch from the BROWSE mode to the UPDATE mode by pressing F4 (Edit). You can then edit the displayed information.

Enter Data

On a color screen, mandatory fields that you must complete are colored white. Optional fields, which you can complete as and when required, are colored turquoise. Both types of fields can be prompted fields that provide you with a list of valid values, from which you can choose one item.

Prompted Fields with a List of Valid Values

Many fields on the data entry panels are linked to lists containing the values that you can choose for the field. These fields are called prompted fields. Most, but *not* all, prompted fields are identified by a plus sign (+).

Enter **?** in a prompted field to display the value list, which can be a numbered list or a single select list.

You can prefix the question mark (?) with one or more characters. The displayed list is then restricted to values that start with those characters. For example, enter **S?** to display a list of values that start with S.

Validate and File Data

During data entry, you can press Enter to validate your data. Validation also occurs when you:

- Access another panel (for example, when you press F8 (Forward) to access the next panel)

- Save your entered data (for example, when you press F3 (File) to save a definition)

When you finish entering data, you can do *one* of following:

- Press F3 (File) to save the data and exit the panel.

- Press F4 (Save) to save the data and remain on the panel. When adding definitions, this enables you to quickly create other similar definitions, minimizing the typing required.

- If you do *not* want to save the data, press F12 (Cancel) to exit the panel.

Move Between Panels

Some functions lead to a series of data entry panels (for example, when you update a resource definition).

You can use *one* of the following methods to move through these panels, depending on what you need to do:

- Select all panels.

- Select specific panels from the Panel Display List.

- Select a panel from another panel.

- Select a panel from the Index Menu.

- Save a sequence of definition panels for repeated access.

Select All Panels

You may want to access every panel. All panels are listed on a Panel Display List (for example, the panel that lists the resource definition panels). Enter **S** next to the name of the panel you want to access first, or enter the number that identifies that panel in the panel sequence at the command prompt (for example, 1 for the first panel). The selected panel appears.

Press F8 (Forward) to scroll forward to the next panel; press F7 (Backward) to scroll backward to the previous panel.

When you finish entering data, press F3 (File) to save the data. Press F12 (Cancel) if you decide not to save the data.

Select Specific Panels from the Panel Display List

You may want to access certain panels only (for example, when you want to update only certain parts of a resource definition). All the panels required for a definition are listed on a Panel Display List. Type **S** next to the names of the panels you want to access. After you complete your selections, press Enter to display the first panel you selected. Then press F8 (Forward) to scroll forward through the panels you selected. Press F7 (Backward) to scroll backward through the panels you selected.

When you finish entering the data, press F3 (File) to save the data. Press F12 (Cancel) if you decide not to save the data.

Select a Panel from Another Panel

If you want to skip to a panel that is not next in the sequence, and you know the sequence number of the panel you want, enter that number at the Command prompt. The required panel appears.

Select a Panel from the Index Menu

From some data entry panels, you can press F11 (Panels) to display the Index Menu panel. This menu lists all the panels available for that function. Use the Index Menu if you want to jump to a panel but do not know its place in the panel sequence.

Note: If you have selected two or more panels previously, pressing F11 (Panels) displays a list of the selected panels only. You can press F6 (AllPanel or SelPanel) to switch between the full list and the partial list.

Save a Sequence of Definition Panels for Repeated Access

On a definition list panel, you can select more than one definition. You can then work on the selected definitions in sequence. Each definition can contain a number of definition panels. Normally, the list of panels appears on your screen for you to select each time you access a new definition. However, if you want to browse or update the same panels for each selected definition, you can save the list of panels you want, as shown in the following procedure.

As you move through the sequence of selected definitions, the panels appear on your screen according to the saved list. You do not have to select the panels again when you move on to the next definition.

To save the resource definition panels for repeated access

Note: The following procedure uses the SNA group definition panels as examples.

1. Enter the **=/SNADMIN.G** path.

   The SNA Group List panel appears.

2. Type **B** (Browse) or **U** (Update) next to the definitions you want to access and press Enter.

   Note: You can use the F7 (Backward) or F8 (Forward) function keys to scroll through the list.

   The Panel Display List window appears.

3. Type **S** next to the panels you want, and press F4 (SaveSeq).

   The system saves the list of selected panels.

4. Press Enter.

   The first selected panel appears.

Note: When you finish with one group definition, the panels for the next definition are displayed in the same sequence.

Work With Definitions in the Knowledge Base

You can add, browse, update, copy, and delete the definitions in the knowledge base.

If you have several regions connected together, changes to the knowledge base in one region are automatically propagated to the knowledge bases in the other regions (that is, the knowledge bases are synchronized).

Important! You should restrict the update of a definition to a single focal point region. Updating the same definition from more than one region may cause the linked knowledge bases to become unsynchronized.

The activity log contains an audit trail of definition maintenance activities, identifying the time an activity occurs and the user responsible for that activity. The information is also displayed on the definition list panels. You can press F11 (Right) to view the information.

Add a Definition

To add a definition

1. Access the list that displays the type of definitions you want to add.

   For example, if you want to add a definition for a started task, you can enter the **=/RADMIN.R.STC** path to access the list of definitions.

2. Add the definition in one of the following ways:

   ■ Press F4 (Add)

   ■ Update a copy of another definition

Note: To see the new definition, press F6 (Refresh) to update the list. You may also need to scroll the list to view the new addition.

Browse Definitions

To browse the details of a definition in read-only mode

1. Access the list of definitions.

2. Enter **B** beside the definition you want to browse.

   The definition appears.

Note: To browse more than one definition, type **B** beside all the definitions you want to browse and press Enter. If you select multiple definitions, pressing F3 (Exit) when viewing a definition exits the current definition and calls up the next definition.

Update Definitions

To update a definition

1. Access the list of definitions.

2. Enter **U** beside the definition you want to update.

   A panel appears displaying the fields you can update. A definition can have multiple panels.

3. Update the required fields, and press F3 (File).

   The definition is saved.

Note: To update more than one definition, type **U** beside all the definitions you want to update and press Enter.

Copy Definitions

Copy a definition if you want to create a similar definition.

To copy a definition

1. Access the list of definitions.

2. Enter **C** beside the definition you want to copy.

3. Change the value in the field that uniquely identifies the new copy, update the other fields as required, and press F3 (File).

   The new definition is saved.

Note: When you make a copy of a definition, the F4 (Save) function key lets you continue creating independent copies of that definition. In Step 3, instead of pressing F3, press F4. The definition remains open, and you can perform Step 3 again to define a new copy. To copy more than one definition, type **C** beside all the definitions you want to copy and press Enter.

Delete Definitions

To delete definitions

1. Access the list of definitions.

2. Type **D** beside the definitions you want to delete, and press Enter.

   A confirmation panel or message appears.

   Important! If the confirmation prompt is a message, only one confirmation message is displayed even if you are deleting more than one definition. If you want to cancel the operation, you must press F12 (Cancel) before the next step.

3. Press Enter.

   The selected definitions are deleted.

Commands

The region supports line commands, primary commands, and system commands. You can issue commands to perform various actions, depending on your authority level.

Line Commands

A line command acts on a specific item in a list. For example, if you are using the status monitor and want to display the status of an SNA group named ATM, you enter **D** (for Display) next to ATM. The region issues the appropriate command to retrieve the status of the ATM group and displays this information on your screen.

To find out which line commands are available, enter a question mark (**?**).

The following example shows the response to the **?** command.

```
SOLVPROD------- Automation Services : Command Definition List -----------------
Command ===>                                                    Scroll ===> PAGE
                                          Use 'S' to select the required Command
        Command        Description
        BLD            Rebuild an SNA Group
        D              Display an SNA Group
        Z              Zoom in on a SNA Group
        ZS             Zoom in on a SNA Group (Sorted)
        A              Activate a Resource
        ASA            Set Actual State to Active
        ASD            Set Actual State to Degraded
        ASF            Set Actual State to Failed
        ASI            Set Actual State to Inactive
        ASU            Set Actual State to Unknown
        B              Browse Resource Status and Modes
        CFG            Invoke external Configuration appl
        CHK            Request a Check of The Resource
        CMD            Command Entry - Local or Remote System
        DB             Database Administration for a Resource
        DEL            Delete a Resource
        DSA            Set Desired State Override to Active
 F1=Help     F2=Split     F3=Exit     F4=Return    F5=Find      F6=Refresh
 F7=Backward F8=Forward   F9=Swap     F10=Left     F11=Right
```

Select a line command from the list to issue the command.

Primary Command

A primary command affects general processing. You enter a primary command at the command prompt on a panel. For example, you can enter **=X** to exit from the region.

From the status and graphical monitors, authorized users can issue primary commands that enable processing in a region. For example, you may want to shut down the automated resources in a system image. To do this, enter **SHUTSYS** at the command prompt on your monitor and select the required system image.

To find out which commands are available, enter a question mark (**?**).

System Commands

You can issue system commands from the Operator Console Services (OCS) window or the Command Entry facility. To access the Command Entry facility, enter **CMD** at a prompt, or press F5 from OCS.

Use the SYSCMD command to issue system commands. Other commands are also supported. To find out about those commands, type a question mark (**?**) and press F1.

Set the Refresh Rate of a Monitor

You can set the refresh rate on the SNA network resources monitor.

When you first access the monitor, the monitor screen refreshes one second after an alert activity, as indicated at the top right of your screen. When many alert activities occur, the screen may refresh every second, causing interruptions. You can use the F6 (RefDelay) function key to increase this refresh delay interval or disable screen refresh.

More information:

SNA Network Summary Display (see page 49)
Expand the Network Summary (see page 50)

Change Refresh Delay Interval

To change the refresh delay interval

1. Type a number in the range 1 through 60 at the command prompt and press F6 (RefDelay).

   The interval is set to the corresponding number of seconds.

Disable and Enable Screen Refresh

To disable or enable screen refresh

1. Press F6 (RefDelay).

   The state appears at the top right of the screen as follows:

   ■ Holding when refresh is disabled. You can press Enter to manually refresh the screen.

   ■ RefDelay=*n* when refresh is enabled, where *n* is the previously specified delay interval. (You can also specify a new delay interval when you enable screen refresh.)

Online Help

Online help is provided for panels and messages.

Context-sensitive help is available at different levels. When you are viewing a help panel, pressing F1 (Help) takes you to the next level of help available. Pressing F3 (Exit) takes you back to the previous level, or exits from help and returns you to the application. Pressing F4 (Return) exits help and returns you to the application immediately.

Tip of the Day

The region displays a tip about using the product at the bottom of the primary menu. To display the detailed tip, place the cursor on the tip and press F1 (Help).

Help About a Panel

Panel-based online help includes information about what each panel is used for, how to complete the fields, the actions you can perform, and the use of available function keys. Use this online help to supplement the information in this guide while you are working in the region.

Press F1 (Help) to retrieve the online help for a given panel. When you are viewing a help panel, you can press F6 (HelpHelp) to find out how to use the help facility.

If the block of help text you require splits across two panels, use the arrow keys to move the cursor to the top or the bottom of the block and press F8 (Forward) or F7 (Backward) to bring the block into view.

Help About Fields on a Panel

Many panels provide field-level online help.

To retrieve the online help for an input field, move your cursor to the field and press F1 (Help).

Help for a Message

While you are working in the region, you receive messages that advise you of various events. These messages might be providing information only (for example, informing you that an update was successful). They might also alert you to errors (for example, if you try to enter an action that is not valid for a resource).

Each message has detailed online help text associated with it. Access the help text for a particular message in *one* of the following ways:

- If you are at a panel and a message appears in red on the third line of that panel, move the cursor to that line and press F1 (Help).

- If you receive a message referring you to the activity log for more detail, enter **/LOG** at the prompt to display the activity log.

- If you are using the activity log, a Command Entry panel, or Operator Console Services (OCS), you can do *one* of the following:

    – Move the cursor to the line displaying the message, and press F1 (Help).

    – Type the message ID at the prompt, and press F1 (Help).

- If you are viewing a transient log, enter **H** beside the message.

- You can also enter **/CODES** to display the Messages and Codes Menu that enables you to obtain help on messages and on miscellaneous error codes.

Customize Your User Profile

You can customize your user profile to suit your own requirements. Your user profile sets up your view of the region. In a multisystem environment, your profiles in the connected regions are synchronized.

Enter the **=U.UP** path to access your user profile.

Note: For a description of the profile parameters, see the online help.

Work in Two Windows

You can divide your physical screen into two logical windows. Each window operates independently of the other, enabling you to perform multiple functions concurrently.

To open a second window in the region, press the F2 (Split) or F9 (Swap) function key.

When one window takes up the entire screen, the other window is considered *closed*.

Split Screens

Using the SPLIT command, you can perform the following actions:

- Split your screen horizontally and have one window above the other. Move the cursor to a row where you want to split screens, and press F2 (Split).

- Split your screen vertically and have two windows side by side. Move the cursor to any column on the bottom row, and press F2 (Split).

- Return a split screen to single window display in one of the following ways:

  - Move the cursor to the first line on your screen, and press F2 (Split) to minimize the window. The window containing the cursor disappears, and the other window expands to full size.

  - Enter **=X** to exit one of the windows. Your session with that window ends.

Swap Screens

Using the SWAP command, you can perform the following actions:

- Reverse the dimensions of the active window if you have two windows open and both are visible on the screen, and switch between them.

- Open a second full-screen window if you are currently operating with a single window open, and then switch between them.

To swap two full-screen windows

1. Display one of the panels.

2. Press F9 (Swap).

   The primary menu appears.

3. Proceed to the second panel you require and press F9 (Swap).

   The first of your swap-panels appears.

4. Press F9 (Swap) to switch between the two swap-panels.

Chapter 3: SNA Resource Management

This section contains the following topics:

SNA Resources

The region provides basic SNA resource management using the SNA network model and the SNA resource models. The network model monitors the status of the SNA resources in a VTAM domain. The resource model stores the operations methods for a resource.

Your first level of visibility of the managed resources is through the SNA network summary display. The display provides a summary of the status of the resources by SNA resource types and actual states.

From the summary display, you can list the resources that are in a particular state. If a resource encounters operational problems, you can issue commands to access other products that can help you determine the cause of the problems.

You can use SNA resource filters to select which resources are displayed in the list. In a multisystem environment, you can select the VTAM domains you want to monitor.

The behavior of the monitored resources depends on a set of default resource models. You can change the behavior of a resource by associating it with a different model.

Basic resource management does not require you to create definitions in the knowledge base; however, it does not give you a business view of the services you are providing. To carry network management further, you need to group resources into the services they provide by creating SNA group and service definitions.

SNA Resource States

The status of an SNA resource is governed by its desired state. The region ensures that the actual state of the resource corresponds to the desired state.

Desired States

The desired state of an SNA resource is set as follows:

If the resource ...	Then the desired state is ...
Does not belong to an SNA group or belongs to an SNA group that is not managed automatically	Based on the discovered resource VTAM state. The state can be changed by VTAM commands.
Belongs to an SNA group that is managed automatically	Set by the availability requirements of the group.

The desired states are ACTIVE and INACTIVE.

Actual States

The initial actual states of discovered SNA resources are derived from the resource VTAM states.

After a resource is discovered, its actual state is determined by the message rules in the associated SNA resource model.

The actual states are as follows:

ACTIVE

Indicates that the monitored resource is available for use.

DEGRADED

Indicates that the monitored resource is available for use but is not operating in the optimal condition. For example, if the region receives alerts from CA NetSpy, the state indicates that an alert exists currently for the resource.

FAILED

Indicates that the monitored resource failed and requires manual intervention.

INACTIVE

Indicates that the monitored resource is unavailable for use.

STARTING

Indicates that the monitored resource is being activated.

STOPPING

Indicates that the monitored resource is being inactivated.

UNKNOWN

Indicates that the region is unable to determine the actual state of the monitored resource.

View Relationships Between VTAM and Actual States

To view the relationships between the VTAM and actual states

1. Enter **/SNADMIN.V**.

   The VTAM State List panel appears listing the VTAM states with the corresponding actual states.

SNA Resource Types

The following types of SNA resources are supported:

ADJCP

Is an adjacent control point minor node.

APPL

Is an application program major node.

APPNLU

Is a logical unit (LU) involved in an APPN session.

CDRM

Is a cross-domain resource manager.

CDRSC

Is a cross-domain resource.

DLURPU

Is a dependent LU requestor physical unit (PU).

LCL3270

Is a channel-attached (local) non-SNA terminal.

LCLSNA

Is a channel-attached (local) SNA cluster controller.

LINE

Is an SNA line (NCP-PU session).

LINK

Is an SNA link (SSCP-SSCP, SSCP-NCP, and NCP-NCP sessions).

LINKSTA

Is an SNA link station.

LU

Is a logical unit.

MAJNODE

Is an SNA major node.

NCP

Is a network control program.

PU

Is a physical unit.

RTP

Is a Rapid Transit Protocol PU.

SSCP

Is a system service control point.

SWLU

Is a switched LU.

SWPU

Is a switched PU.

TGPU

Is a transmission group PU.

TRLE

Is a transport resource list entry.

SNA Network Model

The SNA network model is a database that contains records of the local SNA resources. The model is built during initial resource discovery and updated as additional resources are discovered during operation.

SNA Resource Records

An SNA resource record is created automatically when an SNA resource is discovered and included in the SNA network model.

If you want to change the operations behavior of a resource, update the SNA resource model association in the record.

The following diagram shows the relationship between SNA resource records and models.
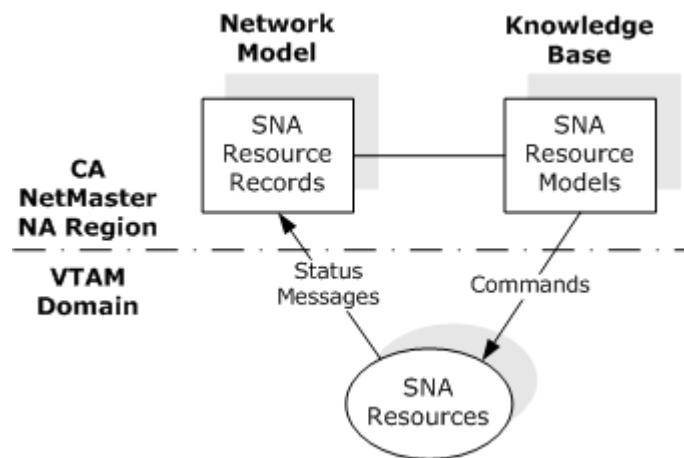
List SNA Resource Records

To list SNA resource records

1. Enter **/SNADMIN.R**.

    The SNA resource records appear.

SNA Resource Models

An SNA resource model contains the operations methods for a particular SNA resource type (for example, SNA lines). Resource models are used directly by regions to maintain the desired state of discovered SNA resources.

The product supplies a default model for each type of SNA resource. That is, SNA resources of the same type use the same operations methods as defined in the corresponding model. You can create different models for the same resource type to handle different operations requirements.

These models let you automate actions that are more complex than those provided by the VTAM program.

An SNA model is a template that specifies the operational methods for an associated SNA resource. Sample models are provided. The supplied models reside in Version 0003 of the $TEMPLAT system image. Initially, these resources are associated with the SNA resources by resource type.

List SNA Models

To list SNA models

1. Enter **/SNADMIN.M**.

    The SNA models appear.

Chapter 4: Managing Individual SNA Resources

This section contains the following topics:

SNA Network Summary Display

```
SOLVPROD------------- NetMaster Automation : Network Summary ------------NET001
Command ===>
         Active Inactive Starting Stopping Degraded   Failed  UnKnown    Total
        -------- -------- -------- -------- -------- -------- -------- --------
   APPL    1040        2        0        0        0        0        0     1042
   CDRM       2        1        0        0        0        0        0        3
  CDRSC     120        0        0        0        0        0        0      120
   LINE      28        5        0        0        0        0        0       33
   LINK       4        0        0        0        0        0        0        4
LINKSTA       3        1        0        0        0        0        0        4
     LU     430      812        0        0        0        0        0     1242
     PU       7       33       15        0        0        0        0       55
   SWLU     667       15        0        0        0        0        7      689
   SWPU      31        0        0        0        0        0        1       32
    NCP       1        0        0        0        0        0        0        1
   SSCP       1        0        0        0        0        0        0        1
MAJNODE      43        0        0        0        0        0        0       43
 LCLSNA       1        0        0        0        0        0        0        1
LCL3270       0       32        0        0        0        0        0       32
  Total    2378      901       15        0        0        0        8     3302
                              Resources in Recovery    0
 F1=Help       F2=Split     F3=Exit     F4=Return    F5=Filter    F6=Refresh
 F7=Backward  F8=Forward   F9=Swap                  F11=Domains
```

The SNA network summary lets you monitor and control network resources. The display is updated when an event occurs.

Note: Depending on the DISPLAY parameter group, there is a delay between when an event occurs and when the display is updated. You can force the panel to refresh by pressing F6 (Refresh).

The summary displays the following information:

- SNA resource types down the left side

- Available states for a resource across the top and color-coded

- The number of resources of each state and type with the total in the last column

- The total number of resources that are in a particular state

- The number of resources that are in recovery

If there are no resources of a particular type, the type does not appear.

The information is displayed for resources discovered by the region based on a filter specified in the AUTOSNACNTL parameter group.

Note: For information about the AUTOSNACNTL parameter group, see the online help and the *Installation Guide*.

Note: If no status is displayed, press F11 (Domains) to verify that you have selected an active VTAM domain to monitor.

Access SNA Network Summary

To access the SNA Network Summary panel

1. Enter **/SNASUM.**

    The NetMaster Automation : Network Summary panel appears.

Note: If discovery of the SNA resources is still in progress, you cannot access the SNA network summary panel (see page 61).

Expand the Network Summary

Each resource state in the network summary has an input field. You can access additional information about resources by using this input field.

To access more information about resources

1. Tab to the appropriate input field and press Enter.

    Resources of the type and state you selected are displayed.

Refresh Display

When you access this screen, a refresh delay interval displays at the top right. This interval controls how often the screen refreshes.

If display refresh is interfering with your tasks, use the F6 (RefDelay) function key to change the behavior of the display refresh action. If resources are disappearing from your display because of status changes, use the SS action code to create a static list.

Identify the Reason for a Particular Resource Status

The Network Resources panel contains the reason why an SNA resource is in a particular state. If an SNA resource has an unsatisfactory status, check the Reason column to see what has happened.

To display the reason for a resource status, do *one* of the following:

- Press F11 (Right) until Reason displays

- Enter **B** (Browse) beside the resource

Example: Reason for a Resource Status

The following example shows the Reason column display. The example indicates that the SOLV11 SNA resource has been reactivated since it was discovered.

```
SOLVPROD-------- NetMaster Automation : Network Resources ---------- RefDelay=5
Command ===>                                             Scroll ===> CSR

           S/B=Browse A=Activate D=Display T=Terminate SS=Static List ?=More
   Resource Last Updated
   Name     Date        Time      Reason
   SOLV1    14-MAY-1996 08.04.13  NETWORK DISCOVERY
   SOLV1CNM 14-MAY-1996 08.04.14  NETWORK DISCOVERY
   SOLV1NTS 12-MAY-1996 17.22.16  NETWORK DISCOVERY
   SOLV1PPO 12-MAY-1996 17.22.17  NETWORK DISCOVERY
   SOLV1SSI 12-MAY-1996 17.22.18  NETWORK DISCOVERY
   SOLV10   12-MAY-1996 17.22.19  NETWORK DISCOVERY
   SOLV10CN 12-MAY-1996 17.22.19  NETWORK DISCOVERY
   SOLV11   17-MAY-1996 10.16.14  INTERNAL OVERRIDE (ACTIVE IST093I SOLV11 A
   SOLV11CN 12-MAY-1996 17.22.21  NETWORK DISCOVERY
   SOLV12   17-MAY-1996 09.24.16  NETWORK DISCOVERY
   SOLV12CN 12-MAY-1996 17.22.22  NETWORK DISCOVERY
   SOLV13   15-MAY-1996 08.53.49  NETWORK DISCOVERY
   SOLV13CN 12-MAY-1996 17.22.24  NETWORK DISCOVERY
   SOLV14   12-MAY-1996 17.22.25  NETWORK DISCOVERY
   SOLV14CN 12-MAY-1996 17.22.26  NETWORK DISCOVERY
   SOLV15   12-MAY-1996 17.22.26  NETWORK DISCOVERY
 F1=Help     F2=Split    F3=Exit                  F5=Find      F6=RefDelay
 F7=Backward F8=Forward  F9=Swap     F10=Left     F11=Right
```

Special Display Characters

An asterisk (*) indicates that the SNA resource has a particular status because its parent is inactive.

A plus sign (+) indicates that the SNA resource is in recovery.

Sort Monitored Resources

You can sort the resources by up to four fields.

To sort the monitored resources

1. Enter **SORT** at the command prompt.

    A message appears listing the fields by which you can sort the resources.

2. Enter the SORT command.

    The results are sorted according to your criteria.

Example: Sort Monitored Resources

The following command sorts the resources by network ID, then by parent name, then by user tag 1, and lastly by user tag 3.
```
SORT NETID,PRNAME,USRTAG1,USRTAG3
```

Use Commands to Determine Problems

When you have a list of network resources, commands can be entered beside each resource to assist with problem determination. Some of these commands are applicable only if you have the appropriate applications on your system.

To list the commands, enter **?** beside a resource.

Use Commands on Multiple Resources

You can use some commands on multiple resources at the same time. For example, you can use the RL command to display a list of more than one resource.

To use commands on multiple resources

1. Enter the command at the command prompt.

    A command validation panel appears.

2. Specify the command parameters.

SNA Resource Filter List

The SNA resource filter determines which SNA resources display on the Network Resources panel. The SNA Resource Filter List displays the available filters.

```
SOLVPROD-------- NetMaster Automation : SNA Resource Filter List --------------
Command ===>                                                    Scroll ===> PAGE

                                   S/=Select B=Browse U=Update C=Copy D=Delete

     Filter Name   Description
     SNAPU         SNA PU resources
     SNALINES      SNA lines
     **END**
```

Access SNA Resource Filter List

To access the SNA Resource Filter List

1. Enter **FILTER ?** at the command prompt.

    The SNA Resource Filter List appears. You can select a filter to display the resources you want.

Create a Temporary Filter

You can use a temporary SNA resource filter to help you handle special filtering requirements that are not provided by the defined filters. A temporary filter is not stored in the knowledge base and is lost after you use it.

To create a temporary filter to select SNA resources

1. Press F5 (Filter) from the Network Summary panel.

    The SNA Resource Filter definition panel appears.

2. Specify the Boolean filter expression, and press F6 (Action).

    The selected resources appear.

If you press F3 (Exit) after you finish with the displayed resources, you are returned to the filter definition panel. You can take *one* of the following actions:

■ If you have finished with filtering, press F12 (Cancel).

■ If you want to display a different group of resources, repeat Step 2.

■ If you want to save the filter, press F3 (File) to display the Filter Definition window. Specify the name and description of the filter, and press F3 (File) again to save the filter.

Select VTAM Domains to Monitor

In multidomain environments, you can select the VTAM domains you want to monitor.

Note: Multidomain support is available in focal point regions only.

To select the VTAM domains to monitor

1. Press F11 (Domains) from the SNA Network Summary panel.

   The VTAM Domain Consolidation Profile panel appears.

2. Enter **I** beside all of the domains that you want to monitor. If you want to include all domains, press F10.

3. Press F3 (OK).

   Your selections are saved.

Note: You can make default selections in your user profile. Enter **=U.UP** and update your VTAM Domain Consolidation Profile panel.

Change the Operations Methods of an SNA Resource

The operations methods of an SNA resource are contained in the associated SNA model. By default, resources are associated with the supplied models.

You can change the operations methods of SNA resources by modifying the associated models. However, if you modify a model, the behavior of all resources associated with that model changes. If you want to change the behavior of a single resource only, associate it with a different model.

To change the model association for a resource

1. Enter **S** next to the required resource from the Network Resources panel.

   The SNA Resource panel appears.

2. Press F4 (Edit).

   The panel changes to a data-entry panel.

3. Complete the following field:

   Model Name

   Specifies the SNA resource model that is used to operate the resource.

   Press F3 (File).

   The record is saved and the behavior of the resource now follows the methods in the new model.

Important! Changes to an SNA resource record are retained only across warm starts of the SNA resource discovery process. If you want the changes to be permanent, update the requirements in the $RSUSRAX SNA resource discovery exit. See the *Administration Guide*.

Considerations When Defining SNA Resource Models

An SNA resource model, although a template, has its own special characteristics. The definition of an SNA resource model is similar to a template, but it does not have the following information:

- Availability map

- Log details

- Owner details

- Extended function exit

The missing information, however, can be specified in the SNA group definition for SNA resources belonging to that group.

To define a resource model, you must enter information on a series of panels. This section describes considerations when using these panels.

Activation Method Considerations

To minimize processing overhead, you should not use activation processes in SNA resource models. The supplied models actually prevent you from adding activation processes.

Recovery Method Considerations

The Recovery Details panel lets you:

- Limit the number of activations that can be retried in a specified period (restart control)
- Specify the actions to take if the limit is exceeded

To use the specified recovery method, enter **YES** in the Perform Recovery field on the Activation Details panel. The Perform Recovery and the Assume Status fields are mutually exclusive.

The restart control for SNA resources is similar to the standard restart control for resources that can be managed by the region.

Note: For information about the standard restart control, see the *Reference Guide*.

However, the behavior of the retry time period is different. The standard retry time period starts when a resource is first activated. For an SNA resource, the retry time period starts some time after first activation as follows:

- If activation is not successful, the retry period starts when the activation time-out period expires.
- If activation is successful, the retry period starts as soon as the resource becomes active and is used to monitor the resource state for the duration of that period.

Display Method Considerations

Status monitoring of the managed SNA resources is performed in the SNA network model and does not use the display methods specified in the SNA resource models. The method specified in a resource model is used only when you issue the D command to display the status of an SNA resource.

Heartbeat Monitoring for APPL Resources

When an APPL type SNA resource comes out of the ACTIVE, STARTING, or STOPPING actual state, sometimes no messages are generated to indicate the state change.

In the SNA resource model, you can activate heartbeat monitoring. Then when the model is associated with an APPL resource and that resource is in the ACTIVE, STARTING, or STOPPING state, polling takes place for that resource at regular intervals until a state change is detected.

You can change the polling interval by updating the AUTOSNACNTL parameter group.

Heartbeat Monitoring for Switched PU Resources

When an attempt is made to connect to a switched PU type SNA resource, as indicated by the IST590I message, the resource is considered to be in the STARTING state. No messages are generated to indicate the actual activation of the resource, which might take some time to complete. Heartbeat monitoring enables the actual state change to be detected.

You can activate heartbeat monitoring in the SNA resource model. Then when the model is associated with a switched PU resource and a connection is made to that resource, polling takes place for that resource at regular intervals until a state change is detected or until the polling limit expires.

You can change the polling interval and limit by updating the AUTOSNACNTL region customization parameter group.

Message Rule Considerations

An SNA resource model definition does not provide extended message filtering and extended display attribute functions.

You cannot use the $AA-, $DN-, and $MN- special message prefixes in a model definition.

Variable Usage Considerations

You can use variables with the &ZRS prefix to pass values to processes. However, in command strings and message text, you can only use the &ZRMDBNAME variable. You can also use the < and > characters for left-justified and right-justified fixed-length name fields in message text.

Note: For a list of &ZRS-prefixed variables, see the *Administration Guide*.

Testing

After you define a model, you can test it by using the event simulator. You can generate a simulated message for a particular SNA resource that is associated with the model and check the returned results. You simulate events from the Simulation Events List panel. To access the list, enter the **/EADMIN.E** path.

Note: For more information about how to simulate events, see the *Administration Guide*.

You define the message you want to simulate on the Simulate Message panel. To test SNA resources and the associated SNA resource models, you should specify the following values:

- In the Jobname field, the name of the SNA resource.

- In the Route Codes field, 17 and 18, and optionally 19. Routing code 19 indicates that the message is the response to an operator command.

Simplify the Identification of an SNA Resource

You can use up to five SNA resource tags to provide a more meaningful description for an SNA resource. When managing resources, you can create filters to select resources based on these tags.

Usually, the tags are defined during the startup of the region by the $RSUSRAX SNA resource discovery exit. However, you can update them through the SNA resource record.

Important! Changes to an SNA resource record are retained only across warm starts of the SNA resource discovery process. If you want the changes to be permanent, update the requirements in the $RSUSRAX SNA resource discovery exit. See the *Administration Guide*.

To update the tags

1. Enter **S** beside the required resource from the Network Resources panel.

   The SNA Resource panel appears.

2. Press F4 (Edit).

   The panel changes to a data-entry panel.

3. Complete the following fields:

   User Tag1-5

   Specifies the text strings you want to use to identify the resource.

   Press F3 (File).

   The record is updated.

Maintain the SNA Network Model

The maintenance functions for the SNA network model let you do the following:

- Create a record for an SNA resource in the network model if you cannot find it in the SNA resource list

- Delete a record from the network model if the SNA resource is redundant

- Maintain the SNA model association and the user-defined tags for an SNA resource

Access SNA Maintenance Functions

You can add, copy, delete, update, and view SNA resource records in your SNA network model through maintenance functions.

To access the maintenance functions

1. Enter **/SNADMIN.R**.

   The SNA resource records are listed.

Important! Changes to an SNA resource record are retained only across warm starts of the SNA resource discovery process. If you want the changes to be permanent, update the requirements in the $RSUSRAX SNA resource discovery exit. See the *Administration Guide*.

Discover SNA Resources

The region automatically discovers the SNA resources on the system at region startup.

To rediscover the resources at any other time

1. Enter **/PARMS**.

   The parameter groups appear.

2. Select the AUTOSNACNTL parameter group and update the discovery criteria.

   Note: For information about these criteria, see the online help and the *Installation Guide*.

3. Press F6 (Action).

   The resources are rediscovered.

Network Discovery Status Panel

If the initial discovery of the SNA resources is in progress while you are using the SNA network summary display, your monitor session ends and the Network Discovery Status panel appears.

Similarly, if you attempt to access the summary display while discovery is in progress, the Network Discovery Status panel appears.

To rectify this, do *one* of the following:

- Press F6 (Action) to monitor the discovery process
- Press Enter to refresh the information in the status window
- Press F3 (Exit) to exit the panel

You can return to the summary display when the discovery process completes.

Chapter 5: Managing Messages

This section contains the following topics:

Overview

The product collects system and VTAM messages. You can use these messages to trigger actions that cannot be handled by the service or resource definitions. You can monitor VTAM messages from the Operator Console Services (OCS) window.

If you are running the CA NetMaster NM for SNA product in the same region as this product, you also have available a CNM message flow.

Note: For information about how to set up the CNM message flow, see the *Installation Guide*. For information about how to use the EventView component that enables you to perform these functions, see the *Administration Guide*.

How to Manage Messages

To control message delivery and automation actions, you define rule sets and rules. After you define the rule set, you activate it by associating it with an active system image.

Note: Besides managing messages, rule sets can also execute rule set initialization actions and timed actions.

Note: For more information about defining rule sets, see the *Administration Guide*.

Control Message Delivery

You use rule sets and their rules to control the delivery of messages. You can specify the following actions for selected messages:

- Suppress the delivery of messages

- Specify to where messages should be delivered

- Specify how repeating messages are handled

Note: For information about how to define rule sets and message rules, see the *Administration Guide*.

Automate Actions in Response to Messages

You use message rules to automate actions that are dependent on the arrival of certain messages. You can:

- Modify the delivered message

- Execute commands and processes

Note: For information about how to define message rules and message group rules, see the *Administration Guide*.

Consolidate VTAM Messages to a Single Console

You can use OCS as a consolidated console where you can monitor VTAM messages from different connected systems.

Note: The consolidated console is fully functional in focal point regions only. In subordinate regions, only local message traffic is visible.

To monitor messages on the consolidated console, you must define message profiles to select the messages you want to monitor. The defined profiles are global, that is, profiles defined in one region are available to the other connected regions.

A message profile determines which messages are displayed on a consolidated console. Different users can have different sets of message profiles. When you access the consolidated console, your message profiles determine your view of the message flow.

Note: For more information about defining message profiles, see the *Administration Guide*.

Chapter 6: Managing Alerts

This section contains the following topics:

Alert Monitor

The Alert Monitor provides an integrated, correlated event notification system that indicates to operators that a problem has occurred and that some action needs to be taken. Such alerts, known as active alerts, are displayed on the Alert Monitor.

The Alert Monitor refreshes your screen each time an alert arrives. The clock in the title line indicates when the screen was refreshed last.

The title line of the Alert Monitor includes a total indicator, which shows the total number of alerts and the total number of alerts of each severity level. For example, (43: 5 23 8 7) means that there are a total of 43 alerts, comprising 5 severity one, 23 severity two, 8 severity three, and 7 severity four. Each severity level appears in a different color. The following illustration shows an example:

The Alert Monitor can initiate actions such as starting recovery procedures and creating trouble tickets, either automatically or manually.

In a multisystem environment, you can monitor active alerts from all linked regions in a focal point region. You can monitor only local active alerts in a subordinate region.

Alerts that were raised before the region was shut down are not displayed on the Alert Monitor when the region restarts, but are displayed on the Alert History panel. The alert history contains information about all alerts.

Access the Alert Monitor

The Alert Monitor lets you know of problems that have occurred in your environment. You can then take appropriate action based on the alert information.

To access the Alert Monitor

1. Enter **/ALERTS** at the prompt.

   The monitor appears displaying any alerts.

You can also access the Alert Monitor by issuing the AL command against a resource from a resource monitor. The monitor displays the alerts for that resource.

Sort Alerts

Alerts are color coded by severity. They are sorted in order of severity, then time—the most severe alerts are listed first, then, in each category of severity, the most recent of the alerts are listed first.

To change the sort order, use the **SORT** command.

To list the column fields by which you can sort, enter **SORT ?**.

Filter Alerts

You can restrict the alerts displayed by using filters. When you apply a filter, the filter name appears on the right of the Alert Monitor and the totals in the title line reflect the number of alerts displayed under the filter.

To filter alerts, enter the following command at the command prompt:

FILTER *filter_name*

To remove the applied filter, enter **FILTER NONE**.

Note: To display a selection list of filters, enter **FILTER**.

Change the Display Format

Display format determines what and in what order information columns are displayed.

To change the alert monitor format, enter the following command at the command prompt:

FORMAT *format_name*

To return to the default format, enter **FORMAT DEFAULT**.

Note: To display a selection list of formats, enter **FORMAT.**

Change the Alert Monitor Profile Using the User Profile Menu

To change your alert monitor profile using the User Profile Menu

1. Enter **=U.UP** from any panel.

   The Panel Display List appears.

2. Enter **S** beside Alert Monitor Profile.

   The Alert Monitor Profile panel appears.

3. Complete the following fields:

   Monitor List Filter

   Specifies the name of the default filter.

   Monitor List Format

   Specifies how and what is displayed.

   Alert Sort Criteria

   Specifies the order in which the alerts are displayed.

   Press F3 (File).

   The changes to your user profile are saved.

How to Work with Alerts

The Alert Monitor displays the alert when it arrives. An alert can be closed automatically by the region (when it recognizes that the problem that caused the alert no longer exists) or manually by the operator. When an alert is closed, it is removed from the active alert monitor. However, it is still accessible from the Alert History panel.

Typically, when an alert arrives, do this:

1. Enter **B** (Browse) beside the alert to find out whether any suggested recommended actions are provided.

2. Enter **A** (Analyze) beside the alert to diagnose it. Diagnosis displays additional information for some alerts.

3. Enter **T** (Track) beside the alert to indicate to other users that you will be working on it. Your user ID is displayed in the Track column.

4. Perform any necessary actions to remove the alert condition. For information about actions, press F1 (Help).

5. Enter **N** (Notes) beside the alert to view or record notes that provide future reference information about this alert in the alert definition.

6. Enter **C** (Close) beside the alert after the alert condition is resolved.

Display Alert Details

The Alert Display describes an active alert and provides information about its generation time and its identity. An alert comes with the following information:

- General information such as severity level, the source of the alert, update history, and number of occurrences

- Possible causes of the alert and any recommended actions

To display the Alert Display

1. Enter **B** or **S** beside an alert on the Alert Monitor panel.

   The Alert Display appears.

   Note: For information about the fields, press F1 (Help).

Print Alert Details

To print details about the displayed alert

1. Enter **PRINT** at the command prompt.

   The Confirm Printer panel appears.

2. Specify your printing requirements, and then press F6 (Confirm).

   The details are sent to the printer.

Access the Status Monitor from the Alert Monitor

If an alert is generated by the region on behalf of a defined service or resource, you can access the status monitor to work on that service or resource.

To access the status monitor, enter **A** beside the alert.

The status monitor appears. (You may need to wait for a short time.)

Access the Transient Log from the Alert Monitor

If a monitored resource generates an alert, you can access the corresponding transient log for the affected resource from the Alert Monitor.

To access the transient log

1. Enter **TL** beside the alert.

   The transient log appears.

Raise a Trouble Ticket for an Alert

If your system administrator has implemented the interface for raising a trouble ticket, you can request a trouble ticket as defined to your region.

Note: For information about how to implement the trouble ticket interface, see the *Administration Guide*.

To raise a trouble ticket

1. Enter **TT** next to the alert.

   The Alert Monitor : Trouble Ticket Details panel appears.

2. Enter the details of the trouble ticket and press F6 (Confirm).

   The trouble ticket is raised.

Add Operator Notes to an Alert

You can add notes to an alert for future reference. For example, you may want to leave the next operator some notes about an alert that has not been closed. Notes are also added automatically to provide a history of the actions performed on the alerts.

When an alert is closed, the severity and description of the alert are added to the notes so that you can easily identify which alert has been closed. When an alert severity changes, the description is added to the alert notes.

To add notes to an alert

1. Enter **N** beside the alert.

   The Alert Notes panel appears.

2. Press F4 (Add).

   The panel becomes editable.

3. Enter your notes about the alert, and press F3 (File) when you have finished.

   The notes are saved with the alert.

   Note: For information about how to use the editor, see the online help.

Close Alerts

Alerts can be closed automatically by the region or manually.

For example, an alert might be generated because a monitoring threshold is exceeded. When the condition is corrected, the alert is closed automatically. Another alert might be a reminder alert and needs to be closed manually.

To close an alert

1. Enter **C** beside the alert.

   The alert is closed.

To close multiple alerts

1. Enter **CLOSE** at the Command prompt.

   The Valid Value List panel appears.

2. Select ALL to close all displayed alerts or a severity level to close alerts with that level.

   The Command Confirm panel appears.

3. Press F6 (Confirm).

   The targeted alerts are closed and removed from the monitor.

Display Alert History

The alert history lists all alerts, both active and closed, that occurred during a predefined period.

To view the alert history

1. Press F4 (History) from the alert monitor.

   The alerts for the current date appear. If you want to display the alerts for the other dates, use the DATE command (for example, DATE *yymmdd*).

   Note: For more information about the command, see the online help.

2. (Optional) Enter **N** beside an alert to view the history of actions performed on it.

   The Alert Notes panel appears.

Note: The length of time an alert is kept in the alert history log is set by your administrator.

Chapter 7: Monitoring and Controlling SNA Groups

This section contains the following topics:

Monitor SNA Groups

From the SNA network summary display, you can manage the individual SNA resources. By creating the SNA group and service definitions, you put your network operations in a service-driven operations perspective. From this perspective, the amount of information you need to monitor is reduced. To manage these groups and services, you use the status and the graphical monitors.

You can monitor the services and SNA groups from any of the connected regions. Logs can be used to display the messages associated with a service or group and therefore with system activity, and authorized users can define filters and profiles that enable the viewing of information about specific services and groups. From an SNA group, you can display the status of the resources it contains.

The product provides the following monitors:

- Service Monitor

- Resource Monitor

- Graphical Monitor

More information:

Access Monitors

You use monitors to keep track of the environment monitored by the region.

To access a monitor from the main primary menu

1. Enter **M** at the prompt.

   The Monitors : Primary Menu appears.

2. Enter an option to access the required monitor.

   The Monitor panel appears. This panel lets you access the entities monitored in the currently active system images.

   The format of the displayed information is determined by the type of monitor.

You can select a predefined filter to display specific services and resources. You can specify your default filter in your monitor profile.

More information:

Graphical Monitor (see page 89)
Use the Status Monitor (see page 92)

Manage SNA Resources in SNA Groups

To list the SNA resources belonging to an SNA group

1. Enter **Z** beside the group from the resource monitor.

   The details are listed.

From this list you can issue commands specific to SNA resources.

Example: Monitor Network Operations from the Service Monitor

This example shows how you can respond to a service problem.

Assume that you have created a number of service definitions, which your region now manages. You want to ensure that the managed services are operating normally. You access the service monitor to view their status.

The services have been behaving normally for some time. Suddenly, you notice that one of them turns yellow, indicating that it has degraded. One of its resources might have failed.

To investigate the problem

1. Enter **Z** beside the service to list its members.

    One of the SNA groups is displayed in yellow, indicating that it has degraded.

2. Enter **Z** beside the group to list its resources.

    An SNA line is displayed in red, indicating that it has failed.

3. Enter **B** (or S) beside the line to find out what caused it to acquire the FAILED state.

    The message is displayed in the Reason field on the SNA Resource panel.

    If you require more information, use commands to isolate the problem further.

    You can also enter **L** beside the degraded SNA group to view its transient log for further hints about the cause of the problem. Find the message that indicates the failure of the SNA line. You can jump from the transient log to the activity log to find out what was happening when the line failed. Enter **L** beside the message.

4. Review all the information available to you, and correct the problem. If everything is correct, the SNA line, SNA group, and service turn green, indicating normal operation.

Remove Members from SNA Groups

Sometimes, you may want to remove an SNA resource member from the SNA groups so that it does not affect the status of the groups. You can use the following commands to remove a member from all monitored SNA groups and then restore it to them later:

RMV

Removes an SNA resource from all SNA groups.

RST

Restores a previously removed SNA resource to all SNA groups.

Important! If a restored resource was included in a group as a result of a >> downstream indicator, the group will not rediscover it. To restore such a resource, you can use the BLD or BLDALL group command.

Control SNA Groups

You can issue commands to perform various actions from the service, resource, and graphical monitors, depending on your authority level.

You have available to you all the common commands registered in the region, such as activate, terminate, and override commands. You can use these commands on services and SNA groups.

In addition, the product provides specific commands for SNA resources.

More information:

Use Commands in the Status and Graphical Monitors (see page 98)

Control the System Image

The region loads a user-specified system image during region initialization. The image is identified in the AUTOIDS parameter group. You can access the list of parameter groups by entering the **/PARMS** shortcut.

During operation, you can:

- Use the GLOBAL command to change the operation mode of the image.

- Use the LOAD command to change the image.

- Use the SHUTSYS or SHUTFORCE command to shut down the resources in the image.

- Use the STARTSYS command to restart the resources in the image.

Monitor Messages

To view VTAM messages, enter the **=O** path. If the lower right of your screen is not displaying CC ON or CC PND, enter **CCON** to change the monitor to a consolidated console. The messages you see are determined by enabled message profiles in your user profile.

To change your view of the messages, enter **PROFILE CC**. You can then change the status of the message profiles.

Note: For more information about the consolidated console, see the *Administration Guide*.

Monitor Alerts

To view alerts, enter the **/ALERTS** shortcut. An alert is generated when a defined service or SNA group, or a discovered SNA resource, changes its status. Alerts are displayed in descending order of severity.

On the alert monitor, you can:

■ Browse the actions recommended for an alert

■ Add notes to an alert for future reference

■ Browse the alert history log for any recorded past experiences with an alert

More information:

Chapter 8: Using Logs

You can access various logs to assist in solving problems.

This section contains the following topics:

Log Types

Typically, a region keeps two types of logs: transient logs and activity logs.

Each resource has its own transient log. The transient log provides a real-time view of the activity associated with a particular resource. Transient logs are not kept between region restarts. However, depending on the log details defined for a resource, the transient log information may be written to the permanent activity log.

The activity log provides a historical view of the system activities associated with all resources monitored by the region. A region can have more than one activity log, of which only one is open for logging. The activity log is stored on DASD, so that you can access the activity log (see page 80) if necessary. You can also access the activity log from the transient log (see page 81).

The information that is logged is determined by the log parameters specified in the resource definition. The region logs the information to the transient log, as well as to any other destinations specified in the definition.

Display an Activity Log

The activity log provides a historical view of the system activities associated with all resources monitored by the region. It records all commands, responses to commands, and messages that occur in your regions. You can display an activity log from the Historical Data : Primary Menu or OCS. By accessing the activity log, you can browse through recent activity to assist you in locating information and analyzing problems.

To display the activity log in the current region

1. Enter **H** at the command prompt on the primary menu.

   The Historical Data : Primary Menu appears.

2. Enter **L**.

   The activity log appears with the last logged activities. A message also displays the day, date, and time when the region was last initialized.

3. Press the F8 (Forward) and F7 (Backward) function keys to scroll through the log for the current day and for previous days.

Note: You can also enter the /**LOG** shortcut at the command prompt to display the current activity log

If you want to access the log in a linked region, identify the region in the Link Name field on the Historical Data : Primary Menu.

Browse the Activity Log Online

The following aids are available to help you use the activity log:

- Forward and backward scroll
- Various display formats
- Highlighting log records
- Log filter to restrict the records displayed
- Positioning by date or time, either absolute or relative
- Positioning by labels set in the log
- Searching forward or backward for text
- Selective printing of log records

Note: For detailed information about these aids, see the online help.

Record Additional Information in the Activity Log

You can use the LOG command to record additional information in the log that is outside the scope of that recorded by default. For example, enter the following at the prompt:

```
LOG PRODUCTION LINK TO LOS ANGELES DOWN FOR MAINTENANCE
```

This produces the following entry in the log for the time the command was issued:

```
LOG ENTRY : PRODUCTION LINK TO LOS ANGELES DOWN FOR MAINTENANCE
```

You can record a message up to 256 characters long.

Display a Transient Log

The transient log provides a real-time view of the activity associated with a particular resource. You can display the transient log from your monitor. This log and the activity log contain messages and other information associated with a resource. The logs help you diagnose problems (for example, resource failure).

To display the transient log

1. Enter **L** beside a resource on the monitor.

   The Transient Log Browse panel appears for the selected resource. The panel displays messages in chronological order.

2. (Optional) Enter **L** beside a message in the transient log to access the activity log to see what was happening in the system at that time.

Set Criteria to Display Logged Messages Selectively

When you access the transient log of a resource, you are profiled to view all messages logged for that resource. You can limit the number of messages you see in the current session by profiling for certain criteria.

To set profile values

1. Enter the **PROFILE** command at the prompt.

   A panel appears displaying the current profile setting.

2. Change the settings, as required.

   Note: For information about the settings, see the online help.

You can also supply the profile values directly by using the command operands. The syntax of the PROFILE command is:

```
PROFILE [[SEV={1|2|3|4|5|6}]
        [NCLID=ncl-process-identifier]
        [PROC=ncl-procedure-name]] |
       [RESET=YES]
```

You can profile messages according to the following:

SEV

Determines how critical the messages are. For example, specify **SEV=1** to see only the most critical messages or **SEV=4** to see the messages of severity levels 1 through 4.

NCLID

Specifies the ID of the NCL process that issued the messages you want to see. The NCL processes are created when NCL procedures are executed. The region creates NCL processes when performing automation tasks.

Each NCL process has a unique ID, so you can use the NCLID operand to differentiate between executing copies of the same NCL procedure if, for example, the same NCL procedure was run more than once in a given period.

The region processes resources asynchronously, and a number of NCL processes for the resource may be active at the same time. Messages raised by these NCL processes intermingle in the transient log. You can use the NCLID operand to view the messages raised by a particular NCL process (that is, to view the messages for a particular task).

PROC

Specifies the name of the executing NCL procedure that issued the messages you want to see.

You can use the asterisk (*) wildcard character to include more than one NCL procedure. The wild card represents any single character except at the end of a string when the wild card represents one or more characters.

RESET

Specify **RESET=YES** to reset the profile to view all available messages.

Display User-defined Log Messages

A user-defined log message can be specified for a resource on the Define Event Related Actions panel when the resource is defined.

If you want to see only these messages in the transient logs, enter **UL** beside the resource.

Obtain Help on a Logged Message

You can obtain more information about product messages in a transient log through help.

To display the detailed help text associated with a message in the transient log

1. Enter **H** beside the message.

    The help text appears.

Print a Transient Log

To print a transient log

1. Enter **P** beside a resource to print its transient log.

    The Generate a Report panel appears, which lets you print a default report or an extended report of the resource's transient log.

2. Specify your printing requirements.

    ■   To print the default report (TRANSIENTLOG), ensure that the displayed information is satisfactory.

    ■   The extended report contains additional fields that display the S (severity), Nclid (NCL ID), and Proc (procedure) for each item in the transient log. To print the extended report, enter **?** in the Report Name field, and then select TRANSX.

    Press F6 (Action).

    The log report is printed.

Reset a Transient Log

When you do not need the messages in the transient log anymore, you can clear the messages by resetting the log.

To reset the transient log of a resource

1. Enter **LR** beside the resource.

    Its transient log is cleared of all messages.

Change Logging Options

Logging options for a resource are specified on the Automation Log Details panel when the resource is defined. These options determine how and what information is logged.

Note: For more information about resource logging, see the *Administration Guide* and the *Reference Guide*.

Merge Transient Logs

For a resource, instead of displaying only the messages logged for that resource, you can display a merged transient log that also includes the messages logged for the resources belonging to it. To identify the owner of a message, the merged log contains the following additional information: the system image name and version, the class name, and the resource name.

Important! This command may take some time to execute and consume many system resources.

To display a merged transient log

1. Enter **LC** beside the resource.

   The merged transient log appears.

   Note: The log display may extend over several screens. Use the F7 (Backward) and F8 (Forward) function keys to scroll through the screens. To refresh the log, press F6 (Refresh).

To print a merged transient log

1. Enter **PC** beside the resource.

   The PSM : Confirm Printer panel appears.

2. Specify your printing requirements, and press F6 (Confirm).

   The log report is printed.

Transient Logs From Different Time Zones

When transient logs from different time zones are merged, all dates and times refer to the local time zone.

Size of a Merged Transient Log

The size of the merged transient log is limited by the size of the transient log of the selected resource. The size of the transient log is specified in the Automation Log Details panel of the definition. When the merged log becomes full, the oldest messages are replaced by the new messages.

Chapter 9: Using Monitors

Various monitors let you keep track of defined resources. General usage of these monitors is described here.

This section contains the following topics:

Monitor Services and Resources

The status monitor and graphical monitor enable you to monitor at the service and resource levels in your environment in real time.

You can monitor the services and resources from any of the connected focal point regions. From subordinate regions, you can monitor locally-managed resources only. Logs can be used to display the messages associated with a service or resource and therefore with system activity, and authorized users can define filters and profiles that enable the viewing of information about specific services and resources.

The two monitors enable you to monitor the service and resource activities from two different viewpoints. Use the status monitor to view the status of *individual* services and resources, and the graphical monitor to view the status of *groups* of services and resources.

Control Services and Resources

A monitored service or resource can operate in the AUTOMATED operation mode, the MANUAL operation mode, or the IGNORED operation mode. In the AUTOMATED operation mode, the region has control of the service or resource but you can still indirectly influence the operation of that service or resource. In the MANUAL operation mode, you have direct control of the service or resource. The IGNORED operation mode is the same as the MANUAL operation mode except that the logical state of the affected service or resource is always set to OK (used typically when the state of the service or resource is of no interest).

From the monitors, you can perform the following:

■ You can override the operation mode or the desired state of a service or resource, thus indirectly influencing its behavior.

■ You can, if authorized, change the active knowledge base information dynamically without having to shut down the region. For example, a service level agreement might have changed and you need to update the resource availability to reflect the change.

■ You can start or stop a service or resource that is in the MANUAL operation mode.

Graphical Monitor

The graphical monitor displays groups of resources as graphical images called *icons*. This monitor uses display attributes to alert you to changes in the status of the represented groups. Changes in an icon are caused by changes in the members in the group. Thus, if an icon changes color, you can look at its members to see what is causing the change.

The display attributes of an icon reflect the status of the represented member that is in the worst state. The attributes are controlled by the display attribute tables, except that icons do not use the highlighting attribute, as all icons appear in reverse video. The display attributes can be customized by a user with the appropriate authority.

Note: For information about the default display attributes and how to change them, see the *Administration Guide*.

An icon is associated with a group of resources, or a panel, as follows:

Group of Resources

A group, when represented by an icon, enables items managed by the region to be presented with a service-driven operations perspective.

When you issue the Z (Zoom) command against an icon associated with a group, the members in the group are listed. You can then monitor the individual resources.

When you issue an operations command against an icon associated with a group, the command acts on all the members.

Important! Issuing commands that return responses against a group with many resources results in many panels that you have to scroll through.

Panel

When you issue the Z (Zoom) command against an icon associated with a panel, a panel of component icons is displayed. For example, an icon may represent all the resources in the system EASTTEST. When you select the icon, a panel of icons is displayed. The component icons may contain specific types of resources. Each of these icons may be associated with another panel or with a group of resources. You can follow a very specific path leading directly to any resource that is causing the problem.

You cannot issue operations commands against an icon associated with a panel.

Access the Graphical Monitor

To access the graphical monitor

1. Enter **/GMON** at the prompt.

    The Graphical Monitor appears.

Interpret the Graphical Monitor Display

Icons on the graphical monitor group resources together. Icons can group different types of resources, and can group resources from different systems.

Typically, each icon is identified by a name. You can enter commands in the command entry window. The following shows an icon and the information it contains.

An icon may display other information (for example, the resource states).

Operations From the Graphical Monitor

From the graphical monitor, you can do the following:

■ Use the Z (Zoom) command to view the status of the resources attached to an icon

■ Issue commands to solicit information about, or to modify the behavior of, all the resources attached to an icon

Use the Z (Zoom) Command

Use the graphical monitor to get a high level view of the monitored resources. If an icon indicates a failure, issue the **Z** command from the icon command entry window to access the icon components and find the problem.

Zooming to the Status Monitor

If the icon is associated directly with a list of resources, the Monitor panel is displayed. This panel contains only those resources defined to the selected icon.

Use the Monitor panel to check the status of resources to see which resources are causing the problem. You can then perform status monitor actions, access the logs, or issue line commands to locate the source of the problem.

Zooming to an Icon Panel

If the icon is associated with a panel, the panel is displayed. This panel contains icons that are subsets of the main icon. For example, the icon containing all resources in EASTTEST may change to red, indicating a problem. You can zoom to the next panel of icons to see which icon has caused the main icon to change color. Select any icons that have changed state to see which resources are causing the problem. When you display the monitor, the status of the individual resources appears.

Use Other Commands

You can enter line commands in the command entry field of an icon that directly represents a group of resources (that is, an icon that is *not* pointing to another icon panel). To list commonly used commands, enter **?**; to list all available commands, enter **??**.

A command acts on all the members of the group.

When you use a command on a group, a Confirm Command panel may appear (depending on a setting in the DISPLAYS region parameter group).

The panel advises you of the number of members in the group. You can:

- Press F6 (Action) to confirm the command.

- Press F5 (Zoom) to list the members if you decide that you do not want to issue the command against all the members. The list enables you to issue the command against individual members.

- Press F12 (Cancel) if you change your mind and do not want to issue the command.

Change to a Different Default Icon Panel

When you access the graphical monitor, the type of information available is determined by your default icon panel.

To change the panel

1. Enter **PROFILE** at the prompt.

    A Profile panel appears. This panel contains a field that enables you to change your default icon panel for the monitor.

2. To select a new default, enter **?** in the Panel Name field.

    A list of available panels appears.

3. Select the required panel by entering **S** beside the panel name.

4. Do one of the following:

    ■   Press F3 (File) to save the new default and return to the graphical monitor.

    ■   Press F4 (Save) to save the new default and remain on the panel.

    ■   If you change your mind and do *not* want to change the default, press F12 (Cancel) to return to the graphical monitor without saving the changes.

Note: If you want to view a different icon panel temporarily, use the F5 (Panel) function key or the PANEL command.

Use the Status Monitor

The status monitor displays services and resources line by line, and uses color and highlighting to notify you of changes in their states. The display attributes and the display format can be customized by a user with the appropriate authority.

Note: For information about the default display attributes and the display formats, and how to customize them, see the *Administration Guide*.

If a state change occurs for a service or resource that is off the display area, a message is displayed to alert you of the change.

From the status monitor you can enter commands against resources and services. The commands vary depending on your product and the class of the resource.

Interpret the Status Monitor Display

The default status monitor display format provides the following information:

- The name of the system image that contains the service or resource.

- The name of the service or resource and its class.

  Note: Resources of the INTNL class with names in the form *xx*(*) are dynamic resources that provide communications between regions.

- The operation mode, desired state, actual state, and logical state (as applicable).

- The override flag that indicates whether normal operation is overridden.

  Note: For information about override flags, see the online help.

A blinking service or resource indicates that the region is performing an automated action on it.

You are notified of changes in the status of monitored items that are not in view.

Organize the Information on the Status Monitor

You can enter the following commands at the prompt to organize the information on the status monitor.

COLS {1|2|3|4|5}

Use this command to display the services and resources in up to five columns across your screen. For example, enter **COLS 5** to display in the 5-column format. This command is useful if there is more than one panel of services and resources.

EXTDISP {OFF|ON}

Use this command to control the display of user-defined extended displays. User-defined extended displays, if they exist, overwrite the last four columns of the normal status monitor display.

For example, the status line for a tape unit might contain a text string that provides information about a tape mounting operation.

FORMAT {?|*format-name*}

Use this command to change the way information is displayed on your screen for a particular columns setting. If you do not know the name of a format, enter **FORMAT** and select it from the displayed list of format definitions.

Notes:

■ The product supplies a number of predefined formats. If authorized, you can define your own formats from the List Definition List panel. To access the list, enter **/ASADMIN.L** at the prompt. For information about how to define status monitor formats, see the *Administration Guide.*

■ If you updated the current format, you need to enter the REFORMAT command to make the updates effective in the current session.

SORT *operand*

Use this command to sort the services and resources displayed on your screen in a particular order. *operand* can be one of the following:

?

Displays a list of available operands to use with the SORT command. Enter the number of the operand. The sort is in the order you specified. See the following SORT operands for a description of the types of sorts.

ACTSTAT

Enables you to sort the services or resources by the actual state according to the following in descending order of ranking: UNKNOWN, FAILED, INACTIVE, DEGRADED, STOPPING, STARTING, and ACTIVE.

CLASS

Enables you to sort the services and resources by the class number in numeric order.

CLSNAME

Enables you to sort the services and resources by the class name in alphabetic order.

DSTACUR

Enables you to sort the services and resources by the desired state according to the following in descending order of ranking: ACTIVE, INACTIVE, and UNKNOWN.

LOGSTAT

Enables you to sort the services and resources by the logical state according to the ranking in the logical state attributes table.

MODECUR

Enables you to sort the services and resources by the operation mode according to the following in descending order of ranking: IGNORED, MANUAL and AUTOMATED.

NAME

Enables you to sort the services and resources by the name in alphanumeric order.

OBJID

Enables you to sort the services and resources by the object ID that comprises (in order) the system image name, the system image version, the class number, and the name.

SYSNAME

Enables you to sort the services and resources by the system image name in alphabetic order.

TYPE

Enables you to sort the resources by the resource type in alphabetic order. Services, which do not have the TYPE parameter, are listed at the beginning.

USRKEYW

Enables you to sort the resources by user-defined filter keywords. Services and resources for which filter keywords are currently not applicable are listed at the end.

Filter keywords are defined in the resource definitions. The keywords are message related. That is, a keyword becomes active only if certain messages are received for a resource.

For example, if a keyword is specified in the rule for the IEC501A message that requests a tape mounting operation, you can use the USRKEYW operand to group tape units that request tape mounting operations together on the status monitor.

Note: Services and resources that rank the same by *operand* are further sorted by the object IDs.

Change to a Different Status Monitor Filter

Authorized users can create filters to define which services and resources are displayed on the status monitor. Filters are sets of rules stored in the knowledge base that enable you to display a subset of the monitored services and resources. For example, a tape operator may only want to see the tape units in each system, or in a combination of systems. Another operator might want to see only the batch jobs in the production system during his or her shift. A third operator may want to see all the hardware resources for a particular system.

The services and resources you see the first time you access the status monitor depend on the filter specified in your user profile. If no filter is specified, you see all the services and resources for the selected monitor.

You can change your view of displayed services and resources by using a temporary status monitor filter. The filter that you select remains valid for the current monitor session only.

Note: You can also filter the resources on the monitor by using the PREFIX command. The command lets you display only those resources with names that match a specified mask (for example, **NM or REGION*1).

To select a status monitor filter and change the view of displayed resources

1. Enter one of the following commands at the command prompt of the status monitor:

   FILTER

   Enter this command to display a list of the available filters. Enter the number that identifies the filter you want to use. Only the services and resources that match the filter are displayed on the status monitor.

   FILTER *filter-name*

   Enter the name of the filter that you want to use. Only the services and resources that match the filter are displayed on the status monitor.

   FILTER NONE

   This command removes any filtering. You now see every service and resource for the systems to which you are connected.

   The resources, as specified in the filter, appear.

Notes:

- If authorized, you can enter **F** on the Automation Services Administration Menu panel to select the Status Monitor Filters option to create and maintain status monitor filters. You can also use the /ASADMIN.F path to select the Status Monitor Filters option.

- If you updated the current filter, you need to enter the REFILTER command to make the updates effective in the current session.

Change Your Default Status Monitor Profile

When you access the status monitor, the type of information available is determined by your default status monitor profile. The profile specifies the following:

- Filter to use when you first enter each type of status monitor.

- Number of monitored entities to display across the screen and the corresponding display format (if applicable).

- Criteria that determine how the monitored entities are sorted for display.

- Flag that indicates whether to see extended displays.

To change the defaults

1. Enter **PROFILE** at the prompt.

   A Profile panel for your current status monitor type appears.

   This panel contains fields that enable you to change your default profile for this type of monitor.

2. To select a new default, enter **?** in the appropriate field.

   A list of available values appears.

3. Select a value, and press Enter.

4. Do *one* of the following:

   - Press F3 (File) to save the new defaults and return to the status monitor.

   - Press F4 (Save) to save the new defaults and remain on the panel.

   - If you change your mind and do *not* want to change the defaults, press F12 (Cancel) to return to the status monitor without saving the changes.

Use Commands in the Status and Graphical Monitors

You can issue commands to perform various actions from the monitors, depending on your authority level.

Use the **?** command to find a short list of commands (ShortLst) available for the selected resource. For descriptions of the commands, press F1 (Help).

Use the **??** command to find a full list of commands (FullList) available for the selected resource. For descriptions of the commands, press F1 (Help).

Note: While displaying a list of commands, you can press F4 to toggle between the full list and the short list.

Find Out More About Monitored Services and Resources

Use the **D** command to display information about the selected services or resources.

Use the **B** or **S** command to display information about the current and defined states, and the operation mode of selected services and resources. If necessary, you can override the current operation mode and state.

Note: You can also use commands to override the operation mode and the states.

Remove the User-defined Extended Display

If the last columns of a display are overwritten by an extended display and you want to view the original information in those columns, use the **EDR** command. The command removes the extended display temporarily. The extended display re-appears on the next update of the status.

Notes:

- Enter the EXTDISP {OFF|ON} command at the prompt to turn the extended display on or off for all the resources. The setting stays for the duration of the session.

- If you want to retain the setting across sessions, specify the setting in your monitor profile.

Access Extended Functions

Use the **XF** command to access any extended functions provided.

Browse or Update the Definition of Monitored Services and Resources

Use the **DB** command to browse selected service and resource definitions. Users with the appropriate authority can also update the definitions. The update is effective immediately. For example, you may need to add a new status monitor message.

Important: Resources of the INTNL class with names in the forms DT(*), ET(*), SE(*), and ST(*) are dynamic APPC resources that provide communications between regions. These resources are defined only for the duration of the APPC link. Some products also use dynamic resources of the form xx(*). Do not change these resource definitions.

Note: You can use the F4 (Add) function key or the ADD primary command to add definitions to and the DEL command to delete definitions from the knowledge base. For more information, see help.

Override the Operation Mode

The following commands enable you to modify the operation mode of selected services and resources:

■ Use the **MA** command to set the operation mode to AUTOMATED. The region takes control of the affected service or resource.

   Note: If the global operation mode is MANUAL, the mode cannot change even though the AUTOMATED override is applied. This condition is indicated by a G in the Ovr column.

■ Use the **MM** command to set the operation mode to MANUAL. The region relinquishes control of but continues to monitor the affected service or resource.

■ Use the **MI** command to set the operation mode to IGNORED. This mode is the same as the MANUAL mode except that the logical state of the affected service or resource is always set to OK. Use this mode if you are not interested in the state of the service or resource.

■ Use the **MR** command to remove the override.

On the status monitor, an M in the Ovr column identifies a service or resource as having an operation mode override.

Override the Service and Resource States

You can override the actual state and the desired state of selected services and resources.

Override the Actual State

Override the actual state only if you believe that the displayed state is wrong. The following commands enable you to modify the actual state of selected services and resources:

■ Use the **ASA** command to set the actual state to ACTIVE.

■ Use the **ASD** command to set the actual state to DEGRADED.

■ Use the **ASF** command to set the actual state to FAILED.

■ Use the **ASI** command to set the actual state to INACTIVE.

■ Use the **ASU** command to set the actual state to UNKNOWN to recheck the status.

Override the Desired State

The following commands enable you to modify the desired state of selected services and resources:

■ Use the **DSA** command to set the desired state to ACTIVE.

■ Use the **DSI** command to set the desired state to INACTIVE. If you enter DSI beside a resource or service that has the SVC override flag, a panel is displayed listing the services that might be affected by the action.

■ Use the **DSR** command to remove the override.

On the status monitor, a DSA, DSI, G/D, or M/D, in the Ovr column identifies a service or resource as having a desired state override.

If you set the desired state of a service to ACTIVE, then when the service is started (either through automation or by you manually), the service places an ACTIVE desired state override on its members. On the status monitor, an SVC in the Ovr column identifies a service or resource as having a desired state override imposed on it by a service. Similarly, if you set the desired state of a service to INACTIVE, then when the service is stopped, the service removes the ACTIVE desired state override from its members.

Modify the Scheduled Operations Changes for a Monitored Item

Scheduled changes in the operation of a service or resource are defined in an availability map. An availability map defines the desired service or resource status at specific times. If a service or resource is attached to the map and is in the AUTOMATED operation mode, the region will try to ensure that the actual status of the service or resource matches the desired status defined in the map. More than one service or resource can use the same map.

You can modify those changes in one of the following ways:

- Create a map to override any existing requirements.
- Update the attached map. This action, however, also modifies the behavior of other services and resources attached to the map.

Override the Scheduled Operations Changes

Use an overriding map when you want to modify the behavior of a service or resource for a defined period of time only.

Enter **MPO** to create an overriding map that specifies your new requirements. You must specify the map expiry date and time, and the map is deleted automatically at the specified date and time. The scheduled operations changes then revert back to what were specified originally.

You can revert the scheduled operations changes back to what were specified originally, at any time. To do this, enter **MPR**. The command replaces the overriding map by the original map. The command does not, however, delete the overriding map.

Once the map is created, it is available for use by other services and resources. (To attach an overriding map to another service or resource, specify the name of the map in the appropriate definition. You can update the definition by using the DB command from your monitor or through the Definition menus.)

Browse or Update Maps

Important! Updating a map affects the operation of all services or resources attached to the map.

Use the **MAP** command to browse the map for selected service and resource definitions. Users with the appropriate authority can use the **MAP** command to update maps to which selected services and resources are attached. The update is effective immediately.

Control Manual Services and Resources

You have direct control over services and resources that are in the MANUAL or IGNORED operation mode. That is, you can start and stop manual services and resources. You can use these modes of operation when automatic error recovery fails.

Note: For a resource, these operations use the methods specified in the definition for that resource, provided that you have not registered commands that override the supplied commands.

Start Manual Services and Resources

You can start selected services and resources manually. For example, you may want to restart a resource after recovering it from a failure. Ensure that the operation mode of the service or resource you want to start is MANUAL or IGNORED. Use the **A** command to start the services and resources. A message appears prompting you for confirmation. Press Enter to confirm the action. The actual state changes to ACTIVE if the service or resource starts successfully.

Stop Manual Services and Resources Normally

You can stop selected services and resources manually. For example, you might want to stop a resource because its status is degrading and you want to take it out of service. Ensure that the operation mode of the service or resource you want to stop is MANUAL or IGNORED. Use the **T** command to stop the services and resources. A message appears prompting you for confirmation. Press Enter to confirm the action. The actual state changes to INACTIVE if the service or resource stops successfully.

Stop Manual Resources by Force

You can stop selected resources manually by force. For example, in an emergency, you want to stop a resource quickly. The normal stop process can take some time to complete. Ensure that the operation mode of the resource you want to stop is MANUAL or IGNORED. Use the **TF** command to stop the resources. A message appears prompting you for confirmation. Press Enter to confirm the action. The actual state changes to INACTIVE when the resource has stopped.

Acknowledge a Link Failure

When a link between connected regions fails, the resources being monitored through the failed link appear in the UNKNOWN state. A failed link can affect a large number of resources and fill your monitor with link failure error states. Use the **ACKLNKFAIL** command to acknowledge that you note the failure and to clear your monitor of the affected resources so that you can better monitor the other resources. The affected resources reappear when the link recovers.

To acknowledge a link failure

1. On your Monitor panel, type **ACKLNKFAIL** at the prompt and press Enter.

   The Execute ACKLNKFAIL Command panel appears.

   The panel displays the list of regions connected to your region. The panel identifies the access method control block (ACB) name of each region and the system image that is active in that region.

2. Type **S** beside the regions affected by the failed link, and press Enter.

   A confirmation panel appears.

3. Enter **CONFIRM** in the Response field to execute the command.

   The Monitor panel appears with the resources under the control of the selected regions removed from the list of monitored resources.

Respond to the Initialization Status Panel

If the loading of a system image starts in your region while you are using the monitor, your monitor session ends and the Initialization Status panel is displayed. Similarly, if you attempt to access the monitor while the system image is being loaded, the Initialization Status panel is displayed. You can take *one* of the following actions:

■ Press F6 (Action) to monitor the loading process.

■ Press Enter to refresh the information in the status window.

■ Press F3 (Exit) to exit the panel.

You can return to the monitor when the loading process completes.

Respond to the Database Synchronization Panel

If knowledge base synchronization is started for your region while you are using the monitor, your monitor session ends and the Database Synchronization panel is displayed. Similarly, if you attempt to access the monitor while the knowledge base is being synchronized, the Database Synchronization panel is displayed. You can take *one* of the following actions:

- Press F6 (Action) to monitor the synchronization process.

- Press Enter to refresh the information in the status window.

- Press F3 (Exit) to exit the panel.

You can return to the monitor when the synchronization process completes.

Recover a Failed Resource

If a resource fails and no automated recovery action is performed, the resource remains in the FAILED actual state, and you need to recover the resource manually.

To recover a failed resource

1. Ensure that the resource is in the MANUAL operation mode. If the mode is AUTOMATED, enter **MM** beside the resource to set its operation mode to MANUAL. This indicates to other operators that the resource is being attended to.

2. Enter **L** beside the resource to access its transient log. The log provides information about the cause of the problem, which helps you determine the actions to take.

3. Correct the problem, and ensure that the resource can be safely restarted.

   Note: You can use the Command Entry facility to issue system commands. Enter **CMD** at the prompt, and issue the SYSCMD command from the Command Entry panel.

4. Enter **CHK** or **RES** beside the resource to reset the status of the resource. If the resource is in the AUTOMATED operation mode, automation restarts for the resource. If the resource is in the MANUAL operation mode, enter **A** beside the resource to start it.

   Note: For the differences between the CHK and RES commands, see the online help.

Recover From Failed Automation

Automation fails for a resource in the AUTOMATED operation mode when the region cannot maintain the desired state of the resource. The status monitor displays the resource as having an INERROR logical state.

To recover from failed automation

1. Enter **MM** beside the resource to set its operation mode to MANUAL. This indicates to other operators that the resource is being attended to.

2. To confirm that automation has actually failed, enter **S** beside the resource to access the Modes and States panel. The panel displays the automation status, which should be FAILED.

3. Press F12 (Cancel) to return to the status monitor. Enter **L** beside the resource to access its transient log. The log provides information about the cause of the problem, which helps you determine the actions to take. A likely cause is that the recovery action specified in the resource definition is inappropriate.

4. Correct the problem, and ensure that the resource can be safely restarted.

5. Enter **RES** beside the resource to reset the status of the resource.

   Automation restarts for the resource.

Obtain Operations Statistics

You can obtain operations statistics of a service or resource in your region or a connected region on your screen.

Obtain the Operations Statistics of a Monitored Service or Resource

The operations statistics of a service or resource provide information about the message and command traffic in relation to the service or resource, and its actual availability. Use the ST command to display the statistics. You can display the statistics from the status monitor or the graphical monitor.

To display the statistics from the status monitor

1. Access a status monitor.

   The Monitor panel appears.

2. Enter **ST** beside the service or resource for which you want to display the statistics.

   The Statistics panel appears.

3. Press F6 (Refresh) to refresh the statistics.

4. Press F3 (Exit) to exit the panel when you finish browsing the statistics.

Interpret the Statistics

The Statistics panel contains the operations statistics of a service or resource.

It displays the time at which the statistics collection starts. There are two windows. The windows contain statistics on messages and commands, and on the availability of the selected item.

Interpreting the Messages and Commands Statistics

The Messages and Commands window contains the following statistics:

■ Messages Processed provides a count of the messages processed by the region on behalf of the service or resource.

■ Automation Commands Issued provides a count of the start and stop commands issued by the region on behalf of the service or resource.

Interpreting the Availability Statistics

If the service or resource is available, the Availability window displays the time at which the service or resource became available; if the service or resource is *not* available, the window displays the time at which the service or resource became unavailable.

The window contains the following statistics:

■ Availability Percentage indicates the portion of time when the service or resource is available as a percentage.

■ Total Time Available gives the number of time units over which the service or resource is available.

■ Total Time Unavailable gives the number of time units over which the service or resource is unavailable.

■ Number of Times Available gives the number of times the status of the service or resource goes from unavailable to available.

■ Number of Times Unavailable gives the number of times the status of the service or resource goes from available to unavailable.

Chapter 10: Using Operator Console Services

This section contains the following topics:

Operator Console Services

Operator Console Services (OCS) lets you enter commands to control and monitor your resources.

OCS uses a formatted display panel called an OCS window to provide an environment for executing commands or NCL procedures. Your command results are returned to the window, along with other system information, to provide a console function.

The actions you can perform in OCS are limited by the level of authority granted in your user ID definition. You control the way your OCS window looks and the way you use it. This set of attributes, privileges, and options is called your *operator profile*.

Certain attributes of your operator profile are controlled by UAMS. Other attributes can be changed using the PROFILE command.

Access OCS

To access OCS

1. Enter **O** at the prompt at the main Primary Menu.

   The OCS window appears.

OCS Panel

The OCS panel has two distinct activity areas: a one-line command input area at the bottom of the window, and an output message display area called the roll delete area, which occupies the remaining space above the command line.

Command Line

The command line is the bottom line of the OCS window. The command line is the only display field where input is permitted. The cursor is automatically positioned to the right of the command line prompt when the panel is first displayed. To enter a command, position the cursor in the command line and press Enter.

Operating Mode Indicators

A mode indicator may appear to the left of your command entry area to indicate how the OCS window is currently operating. Values of the operating mode indicators and their meanings are as follows:

M (Monitor)

Terminal has monitor status and receives monitor messages.

P (Paused)

An NCL procedure has paused awaiting the entry of a GO, END, or FLUSH command. The SHOW NCL command gives you further details.

W (Waiting)

An NCL procedure is waiting for specific text to arrive. The SHOW NCL command gives you further details.

Roll Delete Area

When you receive messages as the result of commands entered on the command line, they are reported in the roll delete area with any unsolicited information you are profiled to receive.

Output to the roll delete area is written line-by-line from top to bottom of the screen. When the display area is full, new output messages wrap back to the top of the screen, overwriting the oldest displayed messages first.

Non-roll Delete Area

Any messages requiring a reply are delivered as non-roll delete messages. This means that the messages stay on your screen until you respond. These messages are displayed at the top of an OCS window above the roll delete area. The non-roll delete area is created only when a non-roll delete message is delivered to your OCS window.

Roll-delimiter Line

Messages are written from top to bottom of the screen. The next line for use is filled by a line of underscore (_) characters. This line is called the roll-delimiter line. It separates the oldest and newest output displayed. Output below this line is the oldest display information; output above the line is the most recent.

Note: The underscore characters used for this line can be changed using the PROFILE DELCHAR command.

Title Line

The top of the roll delete display area is reserved for a title that can be set or reset by using the TITLE command.

Time Display

The top left of the title line includes the present time in *hh*.*mm* format and is automatically updated each time anything is written to the OCS window.

Run Multiple OCS Panels

You can use the screen-splitting function to run two OCS windows in parallel on the same screen.

You can have one screen window operating in OCS with the other part-screen or window in full-screen mode (for example, as a menu).

Set Window IDs

When two OCS windows are running simultaneously, it helps if you can distinguish each window while executing NCL procedures.

To set a name for each OCS window, enter the OCSID command followed by a 1- to 8-character name at the command prompt on an OCS window and press Enter. The name for each window appears to the right of the line, immediately above the command line.

Example: Set Window ID

To set a window ID of NET01, enter the following command:

```
OCSID NET01
```

After pressing Enter, NET01 appears to the right of the line immediately above the command line.

Note: You can set profile attributes for each OCS window, so that two OCS windows on the same terminal can have different profiles and appearances.

Function Keys

OCS windows have full support for 24 function keys. You can set function keys for each OCS window to suit your requirements. If you are running two OCS windows, each window can have a separate set of function key definitions.

A variety of function keys are available:

- Default (system-wide) function keys
- Immediate function keys
- Conversational function keys
- Prefix function keys
- Suffix function keys
- NCL controlled function keys

The OCS function keys are set to system default values when you enter OCS.

When you redefine a function key, its defined value applies only to the function key settings for your current window, and remains in effect only while your current window is active.

When you press an immediate function key, its assigned value is immediately entered into the system, without the need for further action by you.

Note: To discover the assignment of each function key, use the PF LIST command.

Conversational Function Keys

A conversational function key lets you modify its action before you release it for processing. When you press a conversational function key, its assigned value is displayed in the command line, so you can add to or modify the text. Press Enter to run the command after you modify it.

Prefix and Suffix Function Keys

A prefix function key assigns a set value as a prefix to the line of text where the cursor is located when that function key is pressed (that is, the command line or any other line in the OCS window display area).

Example: Prefix and Suffix Function Keys

The F6 function key is defined using the following command:

```
PF6 PREF,MSG USER1+
```

When you enter a message in the command line saying: SYSTEM DOWN AT 17.00, and press F6, the following command is generated and entered:

```
MSG USER1 SYSTEM DOWN AT 17.00
```

Note: The plus sign (+) leaves a blank after the text before concatenating it with the entered string.

A suffix function key acts like a prefix key, but adds its value to the end of the line of text where your cursor is positioned (that is, the command line or any other line in the OCS window display area).

Assign Your Own Values to Function Keys

You can assign your own values to function keys so that they invoke an NCL procedure or act as the Enter key. If a function key is being used as the Enter key, you can redefine the Enter key to perform an OCS function.

Specify Commands to Function Keys

To redefine function keys, use the PF command. You can specify the new function key value as *one* of the following:

Conversational

The value of the function key appears in the command line so that it can be edited before being issued.

Immediate

The function key performs an immediate function such as Enter.

Suffix

The function key value is placed at the end of an entry in the command line.

Prefix

The function key value is placed at the beginning of an entry in the command line.

Example: Assign a Conversational Function Key

To assign the SHOW NCL command as a conversational function key to the F4 key, enter the following command:

```
PF4 CONV,SHOW NCL=
```

When you press F4 from now on, SHOW NCL= is displayed at the command prompt so that you can add to it before executing it.

Example: Define Multiple Commands

You can use a semicolon as a command separator in the function key value to define multiple commands. When entering the PF command, specify two semicolons.

To define F20 to clear the screen and display users, enter the following:

```
PF20 CLEAR;;SHOW USERS
```

Set Function Keys as Enter Keys

The PF command can set a function key to act as the Enter key. The Enter key is defined as an immediate function key with no associated value.

Example: Define Enter Key

To define PF12 as the Enter key, enter the following:

```
PF12 IMM
```

PF12 acts as the Enter key because there is no entry after IMM. When you press F12, text is executed from the command line as if the Enter key is pressed.

Redefine the Enter Key

You can use the ENTER command to redefine the action of the Enter key.

Important! You must define at least one function key to act as Enter *before* you redefine the Enter key.

Example: Redefine Enter Key to Act as CLEAR Command

To redefine the value of the Enter key to act as the CLEAR command, type the following:

```
ENTER CLEAR
```

The Enter key no longer acts in its standard manner.

Example: Reset Enter Key

To reset the Enter key, type the following text and then press the function key that is defined as Enter:

```
ENTER IMM
```

Specify Function Keys Using NCL Procedures

You can also assign values to a function key from an NCL procedure. By setting the appropriate function keys in an NCL procedure and setting your initial command to execute the NCL procedure on entry to OCS, you can set the function keys for your OCS window.

Use Commands in OCS

OCS windows can be used to enter product commands and monitor the results. Commands are entered on the command line and take effect when you press the Enter key.

You can access a list of all product commands from online help.

To access the list of commands from any OCS window

1. Press F1 (Help).

    The OCS Overview panel appears.

2. Enter **S** beside the List of Commands topic.

    The commands are listed. You can select any of the commands displayed to get more information about its use and syntax.

Command Authority Levels

All commands are assigned an authority level within the range 0 to 255, zero being the lowest and 255 the highest authority level. The operands on some commands might require a higher authority than the base command itself.

You are allocated a command authority level in your user ID definition, corresponding to the scope of system control you require. Whenever you enter a command, your user ID authority level must be equal to or higher than the authority level of the command entered, otherwise the command is rejected.

This authority level checking also applies to commands executed from NCL processes invoked under your user ID.

Abbreviate Commands

All commands consist of a single command, which can be followed by one or more operands. Most commands can be abbreviated to the smallest number of characters consistent with their being distinguishable from any other product command. For example, the SHOW command can be abbreviated to SH.

Concatenate Commands

Several commands can be entered simultaneously by concatenating them into the same OCS command line and separating each command with a semicolon (;). The concatenated commands are processed from left to right in the order they are entered.

Example: Concatenate Commands

The command string D LU10;D LU11 is treated by the system as two independent commands:

```
D LU10
D LU11
```

You can use the CLEAR command in this manner to clear the display area before the results of the next command are displayed. For example:

```
CLEAR;D BFRUSE
```

If you need to enter a semicolon as part of a command (that is, to use it as part of the command text), you must enter two semicolons instead of one.

To enter the command a;b, you must enter a;;b. The second semicolon is stripped from the text and the a;b string passed to the system as a single command. The remaining semicolon is not regarded as a command separator character.

Command separators are specified by using the PROFILE CMDSEP command.

Prevent Command Concatenation

You can prevent command concatenation by using the CMDSEP operand of the PROFILE command. When CMDSEP is set to NO, semicolons are not regarded as command separators and are always treated as part of the command string.

You can assign concatenated commands to function keys because the value of the CMDSEP operand is overridden by the value that the operand contained when the function key was defined.

Reuse Commands

If you enter a command regularly, you do not need to retype it every time you want to issue the command. There are facilities provided with OCS that let you reuse commands you have previously entered.

More information:

Use the Command Stack

Each OCS window keeps a stack of the commands most recently entered from its command line. The stack does not include immediate function key entries. The number of entries kept in this stack can be changed by using the PROFILE CMDSTACK command.

You can use the command stack to retrieve previous commands entered and redisplay them on the command line so that they can be modified for re-entry.

Commands are retrieved from the stack using the CS+ or CS- commands. The default system function key series includes settings for the CS+ and CS- commands. These are F10 and F11 respectively. We recommend that you retain these.

Retain Commands on the Command Line

When you execute a command, the command can be retained on the command line so that you can execute it again, or edit the command before executing it again. This facility lets you increment and enter command sequences with minimal effort.

This feature can be turned on or off using the PROFILE CMDKEEP command. When turned off, the command line is cleared as soon as the Enter key is pressed and a command must be retrieved from the command stack if it is required again. When turned on, the command you enter is retained on the command line so that you can enter it again.

Copy Display Lines into the Command Line

To copy a command (or some other message) from an OCS window display area to the command line, put the cursor on the line you want to copy, and enter CS+ or CS- (or press F10 or F11).

The command or message appears in the command line.

Rename Commands

EQUATE commands can be included in initialization procedures to do the following:

- Override or rename standard commands
- Define a series of 1- to 8-character strings for use in place of lengthy command strings

Monitor and Control in OCS

OCS allows you to monitor and control your regions by receiving messages and allowing you to issue commands. Events from your network are sent to your OCS window. You can issue commands to take control of any problems that might occur.

As you receive messages and output from commands, you can control, reorder, or clear output on the screen so that it can be read more easily.

Control Message Presentation Speed

When the bottom line of the display area is filled, the system pauses before wrapping back to the top of the display area to write the next message.

Sometimes, a large number of messages might be sent to the screen within a very short period of time. This causes the display to roll messages faster than you can read them. There are two options you can use to temporarily suspend message delivery or change the way the messages display:

- The HOLD option
- The AUTOHOLD option

Stop Message Flow Manually

To stop the flow of output to the screen at any time, press the Enter key while nothing is in the command line. This freezes the display and no further messages appear until you enter data.

While the screen is frozen, the word HOLDING appears immediately above the command line.

Stop Message Flow Automatically

The default value for automatic hold supplied with your system automatically freezes an OCS window when a message fills the last line and there are messages queued to wrap back to the top of the screen. This is specified by the AUTOHOLD command.

When AUTOHOLD freezes your screen, the caption AUTOHOLD is displayed above the command line. No further messages appear until you input something.

The AUTOHOLD command option is part of your operator profile.

Note: If more unsolicited messages arrive while the screen is in HOLDING or AUTOHOLD mode, the caption above the command line changes to MSG QUED, and the terminal alarm sounds.

Message Queue Holding Limit

Your system queues a limited number of messages for an OCS window while in the HOLDING or AUTOHOLD mode. The queue limit default before any OCS window messages are discarded is 200 messages.

The HOLDING or AUTOHOLD caption above the command line changes to 75% LIMIT, HOLD LIMIT, and then MSGS LOST, as this limit is approached, reached, and then exceeded. Each caption change also sounds the terminal alarm. These conditions vary and update while you actively monitor and release system messages in the OCS window.

You can define the queue limit for each OCS user window by using the PROFILE command.

Contention Delay Interval

One of the characteristics of an OCS window is that your system can send messages to your window at the same time as you are entering a command. These messages are displayed differently depending on the type of terminal you are using:

A Non-SNA Terminal

Any data you have just entered is immediately frozen and any new data entered is ignored while the message writes to the screen. You can then continue to type in your command text when message delivery has finished.

An SNA 3270 Terminal

A contention condition arises. The terminal is seen as being in a send state (because you have started typing on the keyboard), and refuses to accept any output from your system until your input has been sent. However, rather than defer your system, the system interrupts you after a set period and forces the output of a message.

The default contention delay interval is 15 seconds. This is usually long enough to let you complete a standard command input operation.

Unwrap Messages

To resequence or unwrap messages displayed in your OCS window, enter the **ORDER** command.

The OCS messages are redisplayed in the window in chronological order, with the oldest messages at the top of the window.

The ORDER command is assigned to F12 by default.

Note: This command does not affect the HOLDING or AUTOHOLD condition.

Clear the OCS Window

After many messages have appeared in your OCS window, you may want to clear the window before any new messages arrive.

To clear your OCS window, enter the **CLEAR** or **K** command.

Receive Unsolicited Messages in OCS

Events occur in a network or within your system, which do not result directly from any operator action you have taken, yet need to be reported. The various kinds of messages resulting from these events are termed unsolicited messages.

Receive Network Warning Messages

VTAM generates messages for events taking place within the network, called Primary Program Operator (PPO) messages. VTAM can route these messages to the system console (to notify the system operator), and to any suitably authorized programs.

When your system receives any PPO messages from VTAM, it filters out messages, by message number, through the DEFMSG table, and passes them to PPOPROC, if active. It then checks to see if any OCS operators logged on have the authority to receive such messages.

By default, a PPO message for a particular resource is sent out to ALL operators authorized to receive it. If a message cannot be delivered to any operator, it is sent to the system console.

A PPO message which does not concern a particular resource and cannot be delivered to an appropriate operator is tagged as undeliverable. These messages are sent to all operators that are profiled to receive undeliverable messages. These messages are prefixed by U when displayed on your terminal. If there are no such operators, it is sent to the system console.

If you are authorized to receive VTAM PPO messages, they appear in your OCS window. All VTAM messages are displayed in high-intensity, and are time-stamped. Your terminal alarm sounds to notify you whenever an unsolicited event has been reported.

In addition, your VTAM message access can be prescribed for receiving only those messages above a given severity level.

Reply to PPO Messages

Some VTAM messages sent to you through the PPO interface require a reply. These messages are delivered to appropriate operators in the same way as standard non-reply PPO messages.

PPO messages that require a reply are delivered as non-roll delete messages that remain on your screen unchanged, until answered. Replying to a VTAM message automatically changes the NRD status of the message and places it on the roll delete area list.

To reply to these messages, use the **REPLY** command.

Receive Non-roll Delete Messages

Most messages displayed on an OCS window are classified as roll delete messages. This means they are displayed once and eventually roll off the top of the screen as subsequent messages arrive and overwrite them.

When a non-roll delete (NRD) message is delivered to an OCS window, it remains in your OCS window until deleted. There are two categories of NRD messages:

- Those that are remembered by the system and are retained until explicitly deleted by the issuing process

- Those that are only displayed at individual OCS windows until deleted, and are not remembered by the system

The non-roll delete area is separated from the roll delete area by a delimiter line. This line is usually a series of dash (-) characters. To change the character, use the PROFILE NRDELCH command.

NRD messages are managed centrally and held in a queue. The size of this queue is determined by your systems administrator. If there are more NRD messages than this limit, the oldest outstanding NRD message is deleted to remove copies of the message from all affected OCS windows.

However, NRD messages from &WRITE NCL statements are never deleted automatically. It is therefore only possible to exceed the NRDLIM queue depth if very large numbers of &WRITE-generated NRD messages exist at the same time.

A warning message is sent to all OCS users with monitor status to notify them when the NRD message queue reaches 75% full.

You can hide these messages to allow other message flows to continue in your OCS window, and then reveal them again when you are able to deal with them.

Hide NRD Messages

To remove an NRD message from the OCS display, move your cursor to the line on the screen with the NRD message you want to remove and then press Enter.

The NRD message disappears and the screen is reformatted. Removing NRD messages in this way provides more room for pending NRD messages or a larger roll delete area.

Note: System NRD messages are not deleted from the NRD message queue, only from your OCS window. NRD messages specific to your OCS window are deleted, and cannot be recalled.

Restore Hidden NRD Messages

Hidden NRD messages can be restored by entering the NRDRET command. The oldest hidden NRD messages are returned to the non-roll delete area first, until the area has expanded to its maximum size.

The NRDRET command displays all hidden NRD messages that you are entitled to view, including those that occurred before you entered OCS and any that are still outstanding.

NRDRET can be issued from any environment capable of receiving NRD messages, including NCL &INTCMD environments.

Delete NRD Messages

An NRD message is automatically deleted when *one* of the following conditions is satisfied:

- The condition to which an NRD message refers is satisfied

- An NCL process issues an &NRDDEL NCL statement to delete a specific NRD message

- The NCL process that generated the NRD is terminated

You can only delete NRD messages that are remembered by the system by using the PURGE command.

Use NRD Messages with ROF Sessions

Messages that originate from a remote system carry the NRD message attribute and appear as NRD messages, in the same way as locally-produced messages.

When an INMC link fails and breaks any ROF sessions traveling across it, all NRD messages from that remote system are automatically deleted.

When you close a ROF session to a particular remote system by using the SIGNOFF command, any NRD messages you have received across the ROF session are deleted from your window. Other users displaying the same NRD messages are not affected.

Use the Activity Log to Help Monitor Your Regions

The activity log records all commands, responses to commands, and messages that occur in your regions. By accessing the activity log when you are in OCS you can browse through recent activity on the system to assist you in locating information and analyzing problems.

To access the activity log browse function from OCS, enter **/LOG** at the prompt.

On initial entry to the activity log, you are positioned at the end of the log for the current day. You can use the F8 (Forward) and F7 (Backward) function keys to scroll through the log for the current day as well as for previous days.

Note: For more information about locating information in the activity log, press F1 (Help) from the activity log panel.

Interpret Messages and Codes to Help Monitor Your Region

The information database provides categories of information about commonly used codes and errors. By accessing the information database from OCS, you can get information about error messages that appear in your OCS window.

To access the information database from OCS, enter **/CODES** at the prompt.

Issue Commands

Being able to issue commands from OCS is an important part of controlling your regions. From OCS you can issue commands to the background processes of your product, and you can set commands to issue automatically, based on a specified time.

Issue Commands in Background Environments

Background environments are internal to your system and services. They process commands submitted to them by users and support system level procedures such as LOGPROC. Each background process has a user ID, but is not associated with any physical terminal.

The following background environments are available:

BSYS

Background system environment

BMON

Background monitor environment

BSVR

Background server environment

BLOG

Background logger environment

You can send commands to these environments for them to execute, as if they were real OCS users by using the SUBMIT command. You can submit commands or NCL procedures. For example, if you want the background system environment to start the procedure MONPROC, enter the following command:

```
SUBMIT BSYS START MONPROC
```

After a command is submitted, its processing is managed by that environment. It is not affected if you log off or leave OCS, and its command authority remains the same as the user ID of the submitter.

Background environment processing is ideal for monitoring an NCL procedure that regularly checks the status of network components. Commands directed to the Background Monitor route the command and its results to all monitor status terminals logged on to the system, and to the activity log. Commands directed to the Background Logger for execution log the command and its results only.

Timer commands (see page 128) can also be routed to background environments by the SUBMIT command or by the ROUTE operand for the timer command being issued.

Issue Commands at Specified Times

You can issue commands at specified times and at specified intervals. These commands are known as timer-initiated commands. The following timer-initiated commands are available:

AT

Executes commands at a specified time of day. Timer commands use a 24-hour clock with the format *hh*.*mm*.*ss*.

Limits: 24.00.00 (midnight)

EVERY

Repeats commands at a given time frequency.

Default: 10 seconds

Timer commands can be entered in OCS, or included in NCL procedures.

A maximum of 9999 concurrent timer commands is supported, and this maximum is the default.

If you log off after issuing a timer command, that command is not executed. However, you can use the ROUTE or KEEP operand when you enter an AT command to specify another user to issue the command in your place. This feature allows you to sign off and have the results of the command returned to you when you sign on again.

The ROUTE and KEEP options are ideal if you are including timer commands for specific operators in the system initialization procedures that are executed automatically during startup.

Timer commands can also be specified with a limit to the number of times they can execute before being automatically purged.

Example: Monitor Users at a Specified Interval

To monitor the users that are logged on to the system every half hour, enter the following command:

```
EVERY .30 CMD=SHOW USERS
```

Also, if you want to remind users of a three o'clock meeting one hour before it starts, enter the following command:

```
AT 14.00 MSG ALL DON'T FORGET MEETING AT 15.00
```

When a timer command executes, the command text is echoed on all applicable terminals as if the command had been entered from those terminals. A unique timer ID prefixes the command text echo and has the following format:

#nnnn command_text

Display Active Timer Commands

You can display pending timer commands by using the SHOW TIMER command. By default, this command lets you display any timer commands initiated by your user ID. However, by specifying the ALL operand you can display all outstanding timer commands on your system.

Example: Display Active Timer Commands

To find out what timer commands you have initiated, enter the following command:

```
SHOW TIMER
```

Using the example given above, the following is displayed:

```
 ID BY INTERVAL -USERID-R LIM CNT K/P ENV P/M TID  NEXT
  4 EV 00:30:00 USER01     0   0  NO PRI YES -   12:29:48
     CMD=SHOW USERS
  5 AT 14:00:00 USER01     0   0  NO PRI YES -   14:00:00
     CMD=MSG ALL DON'T FORGET MEETING AT 15.00
NUMBER OF TIMER COMMANDS DISPLAYED WAS 2.
```

Delete Timer Commands Manually

When you initiate a timer command, the system allocates a unique four-digit number known as the timer ID, or purge ID. This number prefixes all displays resulting from that command, and must be used when manually deleting a timer command.

To delete a timer command manually, use the **PURGE** command.

To delete a timer command created by another user, you require a command authority level of 2 or higher.

Example: Delete Command

To delete an AT timer command, enter the following command:

```
PURGE TIMER=5
```

The value 5 is the purge ID assigned to the AT command.

Delete Timer Commands Automatically

By default, your timer commands remain active only while you are logged onto the system. Before each attempt to execute the command, the system checks that you are still logged on.

If you are no longer logged on to your system, the timer command is automatically deleted, without further execution.

Redirect Timer Commands

If you want your timer-initiated commands to continue to execute after you log off, you can redirect the command results to the background logger, background monitor, or the system background environment.

To redirect the timer command, specify an AT or EVERY command with the KEEP operand.

By default, the KEEP operand requires a command authority level of 2 or higher.

Example: Redirect Timer Commands

To redirect the SHOW USERS command for execution by the background system environment, enter the following command:

```
EVERY .30 KEEP=SYS CMD=SHOW USERS
```

If the KEEP operand is in use, the execution of timer commands continues irrespective of whether you are logged on to the region.

Limit Timer Command Executions

When defining a timer command, you can use the LIMIT operand to specify a limit on the number of times the command is executed. When this limit is reached, the command is automatically purged.

The limit you assign and the number of times a command has already executed are displayed by the SHOW TIMER command.

Example: Limit Timer Command Execution

To limit the number of times the SHOW USERS command is executed to 5, enter the following command:

```
EVERY .30 LIMIT=5 CMD=SHOW USERS
```

When the SHOW USERS command has been executed five times, the timer command is deleted.

Execute a Timer Command Under Another User ID

The ROUTE operand lets you direct a command for execution under another user ID—the target user ID. The operand requires a command authority level of at least 2.

With this option, the timer command is retained even if the target user ID is not logged on. Command execution is bypassed and the time interval reset. The command is attempted again only after the time interval has again elapsed.

Example: Execute Timer Command Under Another User ID

If you want USER02 to execute the SHOW USERS command, enter the following command:

```
EVERY .30 ROUTE=USER02 CMD=SHOW USERS
```

Specify Concatenated Commands in Timer Commands

Concatenated commands can be specified in the command text for a timer command. Separate each command in the concatenation with a colon (:). These are internally translated into normal concatenation characters, that is, semicolons (;), before execution.

Execute or Start NCL Processes from OCS

There is an NCL processing environment for each window of your terminal that allows commands and NCL processes to execute on behalf of that window.

When you use an EXEC or START command to invoke an NCL process, the NCL process executes in the NCL processing environment for the OCS window.

Note: If you enter the EXEC or START command incorrectly, the system attempts to execute the command as if it were an NCL process.

Any NCL process can have a dependent processing environment that lets it issue commands or execute other NCL processes independently using the &INTCMD statement. NCL procedures can also use ROF sessions to collect information from other systems.

Execute NCL Processes Serially

An OCS window can execute a serial stream of NCL processes so that they are invoked one after the other. Serial execution is suitable for processes with a short duration.

To execute NCL processes serially, use the **EXEC** command.

Processes invoked by the EXEC command can issue the &PAUSE statement to wait for further input from the OCS window. The GO, END, FLUSH, and INTQ commands, together with the process's unique identifier, let you communicate with the process.

Example: Execute Processes in Sequence

To execute PROC1 and PROC2 in sequence, enter the following commands:

```
EXEC PROC1
EXEC PROC2
```

Your OCS window places the two processes in an EXEC queue, which are executed on a first-come, first-served basis. Process PROC1 is scheduled for immediate execution and process PROC2 is queued to execute after PROC1 ends.

Execute NCL Processes Concurrently

An OCS window can execute NCL processes in parallel at the same time.

Any started procedure can issue an &PAUSE statement to wait for further input from GO, END, and FLUSH commands from the OCS window. These commands, together with the process's unique identifier, let you communicate with the process explicitly.

Example: Execute NCL Processes Concurrently

To execute PROC1 and PROC2 at the same time, enter the following commands:

```
START PROC1
START PROC2
```

NCL Identifiers

Each NCL process is allocated a unique identifier that links it to the issuing OCS window. This ensures any &WRITE or &PANEL statements issued by the NCL process (or any other processes it starts or executes), are returned to that window only. If the window is terminated, any queued process is deleted.

Execute an NCL Process from a Serial or Concurrent Process

An NCL process executed from an OCS window (or any process it invokes) can itself issue EXEC or START commands.

If an EXEC command is used to execute an NCL process, the process issuing the command is suspended when the new process starts executing. Only when the new process ends does the issuing process resume processing.

Invoking a process from another process in this way is called nesting. Nesting is an easy way to structure a series of processes.

Note: The &CALL PROC NCL statement is the recommended method for nesting procedure calls.

If a START command is used to execute an NCL process, the new process starts executing immediately. The new process runs concurrently with the invoking process and independently of it. Each process is unaffected by the termination of the other process.

Advantages of Started Procedures

Using the START command to invoke NCL processes has the following advantages:

■ You can perform relatively complex, long-term tasks from your OCS window. This does not prevent other operations from performing concurrently.

■ You can perform periodic checking of the network status without operator involvement.

■ You can operate a large number of independent, slave procedures on behalf of one OCS window. This lets you monitor many different aspects of the same operation, and various procedures need only communicate with you if errors are detected.

Start REXX Programs from OCS

Your region supports the REXX language. A processing environment for each OCS window lets REXX processes execute on behalf of that window.

To start a REXX program from OCS, enter the following command:

REXX *program_name*

Note: For information about how your product supports REXX, see the *NetMaster REXX Guide*.

Monitor and Control in a Restricted Environment

The Network Partitioning Facility (NPF) is used to limit the range of resources that you receive messages from and can control.

Your user ID can be defined so that commands and messages can be accepted for some network resources, but you are not authorized to issue commands for others.

If you are restricted in your ability to control only particular resources, your user ID is said to be *command partitioned*. If you are restricted to receiving messages from only specific resources, your user ID is said to be *message partitioned*.

The resources available to you are defined within a series of NPF resource tables that reside on the system NPF data set. The set of resources you can influence is set by your systems administrator and cannot be changed from the OCS window. However, you can list the NPF tables for your user ID or list the resources within each table to see which network resources are available to you.

Display Network Partition Tables

Two commands allow you to display the command and message table details that apply to your user ID. They are the SHOW NP and SHOW NPTAB commands.

The SHOW NP command first displays your current NPF environment, including the status of any message tables. Tables that apply to commands only cannot have their status changed and are always classified as ACTIVE. Message tables can have a status of ACTIVE or INACTIVE.

The SHOW NP command returns a list of table names (showing any that are in error) which you then use in the SHOW NPTAB command to display the resources defined within those tables.

Note: Resources named in a table can be specified using a generic form containing wildcard characters. The wildcard character, usually an asterisk (*), lets your system accept any character for that position in the name for the item. For example, L5*8, targets any resource name that is four characters long and starts with the characters L5, and ends with an 8. Any character in the third position is accepted (for example L5B8 or L598).

Enter Commands in a Restricted Environment

If your user ID has a command table specified, any attempt you make to issue a VTAM command for a resource not defined in this table is rejected. As an option, your organization might let you see any resource in the network, but restrict the issuing of commands.

Receive Messages in a Restricted Environment

Where message partitioning has been specified for your user ID, you only receive unsolicited VTAM messages for those resources defined within your message resource tables.

Message tables are allocated an initial status of ACTIVE or INACTIVE when they are defined. An INACTIVE message table is not used when determining whether you should receive messages about a particular resource. This lets operators have overlapping spheres of control and allows for time zones or geographical boundary requirements in a network.

Change the Status of Message Tables

You can change the status of your message resource tables so that you can control the sections of the network about which you want to be kept informed.

Changes to the status of message tables apply immediately to all OCS windows where you are operating, and continue to apply if you exit from OCS. Once you log off, they reset to their previous status for when you log on again.

To change the status of message resource tables, use the **NPTAB** command.

Example: Change the Status of Message Tables

To inactivate the message table ZONE1 and activate the message table ZONE2, enter the following command:

```
NPTAB ACT=ZONE1 INACT=ZONE2
```

Change the Severity Level of Messages You Receive

NPF allows you to change the severity level of the unsolicited messages you receive, so that you see only SEVERE messages, for example. A severity selection is first set when your user ID is defined and can be changed for the duration of an OCS session, by using the PROFILE PPO command.

As an option, you can be profiled to receive undeliverable messages, which are displayed on your terminal prefixed by U.

Detect Errors in Your Restricted OCS Environment

Your NPF environment can contain syntax errors, or errors can occur when the environment is created during logon.

This situation causes one or more error messages to be displayed identifying the types of error that have occurred when you enter OCS. You must then determine if these errors significantly affect your use of the region.

Use a Restricted Monitoring Environment with the Remote Operator Facility

If you use Remote Operator Facility (ROF) to connect to a remote region, then the authority and privileges assigned to your user ID for the remote region apply, including any network partitioning defined for your user ID in the remote region.

To display your NPF environment in the remote region, use the **ROUTE** command to direct the SHOW NP command to the remote region for execution.

The results are returned to your terminal.

Issue System Commands from Your Console

The SYSCMD facility gives you the ability to issue operating system commands and receive responses without having to use a *real* operating system console; for example, to display the channel path or unit status of a local non-SNA terminal.
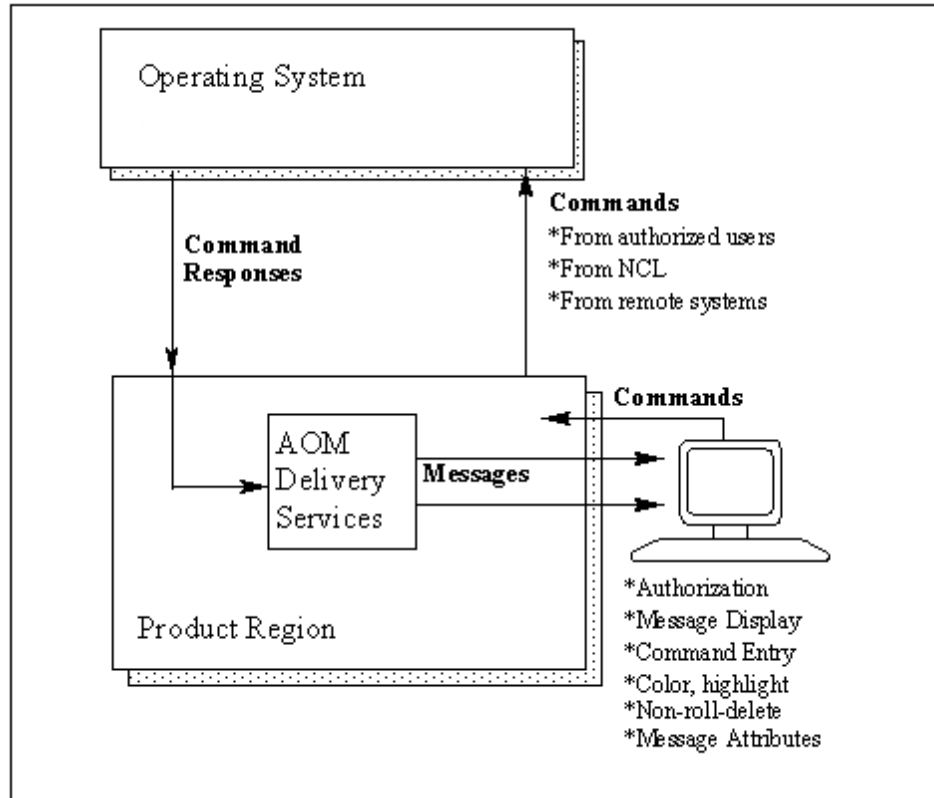
Use the SYSCMD Facility

The SYSCMD command has several operands that you can use to enter master console commands, lock a console, or issue a command as if it came from a specific console.

In its most basic form, the SYSCMD command is:

SYSCMD *command-text*

command-text

> The command to be entered.

Note: You are restricted in your use of the SYSCMD facility by both your command authority and your user security profile. These are set by your systems administrator.

Enter Master Console Commands

If the command to be entered is usually restricted to the master console, the CON=MASTER operand must be used with the SYSCMD command.

Example

```
SYSCMD CON=MASTER DATA=VARY CPU(0) OFFLINE
```

You must have MASTER authority for this.

Note: This is not necessary if you are using Extended Multiple Console Support (EXTMCS) consoles.

Lock a Console

To ensure that you can issue commands when you need to, you can lock a console to a specific environment using the following operand:

```
OPT=LOCK
```

When you no longer require the console, you should release it, using the following operand, so that it is made available to other SYSCMD users:

```
OPT=REL
```

Simulate Command Issue from a Specific Console

If you want to simulate issuing a command from a specific console that you are not using, enter the following form of the SYSCMD command (where *n* is the console number):

```
SYSCMD CON=n DATA=command-text
```

This can be done from anywhere in the system.

As no console authority checks are made by the SYSCMD facility, the existing authority for the specified console is used.

Note: The form of the SYSCMD command described in the example above is not supported if you are using EXTMCS consoles.

Chapter 11: Using Print Services

This section contains the following topics:

Print Services Manager

Print Services Manager (PSM) lets you control the physical printing of the reports your organization generates on JES or network printers. Output can be viewed online before or after printing and can be redirected to another destination.

PSM provides the following facilities:

Print-spooling

Writes output to a print spool providing more control over output. This lets you redirect output to another printer if one is not available.

Centralized Printer Definition Facilities

Supports VTAM (LU1) and JES (SYSOUT) devices and lets you assign printer aliases. It also allows the output destination to be a printer exit.

Print Request Control

Lets you hold, release, browse and delete print requests, redirect print requests to another printer, change priorities and numbers of copies, and display the status of requests.

Notes:

■ This chapter describes how to use PSM. For information about defining and maintaining printers, see the *Administration Guide*.

■ References to JES in this chapter also apply to VOS3's JES3 and JES4 subsystems.

Access PSM

To access PSM

1. Enter **/PSM** at the prompt.

    The PSM : Primary Menu appears.

List Entries in the Print Queue

You can list all of the entries that are queued to print, and on which printer they are to print.

To display the entries in the print queue

1. Enter **Q** at the prompt on the PSM : Primary Menu.

   The PSM : Output Queue appears.

   Note: You can limit the display to the print queue for a specific printer by specifying a printer in the Printer field on the PSM : Primary Menu before entering the Q option.

Display the Output of a Print Request

The information provided lets you discover exactly how the print request looks when printed.

Note: Only data lines, not heading lines, are displayed.

To browse the output of a print request

1. Enter **B**, **/**, or **S** next to the required print request in the PSM : Output Queue.

   The details appear.

Example: Browse Output

```
PROD----------------------- PSM : Browse Output --------------------REQ# 0265
Command ===>                                              Scroll ===> PAGE


 S A B U Data
       --+----10---+----20---+----30---+----40---+----50---+----60---+----70
 N  N  ==============================================================
 1  N    COMMAND ENTRY CAPTURE PRINT
 1  N  ==============================================================
 2  N    USERID : USER01              NAME : USER NUMBER 1           LO
 2  N    DATE   : MON 18-SEP-2006
 2  N    TIME   : 11.16.39
 2  N    ==============================================================
 2  N    pr
 1  N    N10601 USERID: USER01 TERMINAL-ID: TERM02
 1  N    N10602 NCL PROCEDURE LIBRARY ID: COMMANDS
 1  N    N13450 PANEL SERVICES PATH NAME: PANELS
 1  N    N10603 AUTHORITY LEVEL IS 82
 1  N    N13451 NO EDS PROFILES ACTIVE IN ENVIRONMENT.
 1  N    N13433 USER SERVICES PROCEDURE: $USERSER
 1  N    N10624 NO NPF COMMAND RESTRICTIONS.
 1  N    N10627 PPO MESSAGE DELIVERY DETAILS:
 1  N    N10628 ..NO NPF MESSAGE RESTRICTIONS.
 F1=Help      F2=Split    F3=Exit    F4=Return   F5=Find     F6=Refresh
 F7=Backward  F8=Forward  F9=Swap               F11=Right
```

Modify a Printer Entry

You can modify a print request to change where and how it is to be printed.

To modify a print request

1. Enter **M** next to the required print request in the PSM: Output Queue.

   The PSM : Print Request panel appears.

The PSM : Print Request Panel provides all details about the print request. You can alter some of the fields on the panel.

Confirm Printing

When you send a print request to a printer, the PSM : Confirm Printer panel appears. This panel is used to confirm the printer name, the number of copies, and the hold and keep settings that you require for your print request. The fields displayed on the panel are set to the values you used last.

To change any of these fields, overwrite them with the required information, and press F6 (Confirm).

The new information is used to print your request.

Note: For more information about the fields displayed on this panel, press F1 (Help).

Select the Printer

If you do not know what printers are available to send your print request to, you can display a list of active printers.

To select the printer

1. Enter a question mark (?) in the Printer Name field on the PSM: Print Request panel.

   The list of active printers appears.

   Note: If the list is longer than a full page, use F8 (Forward) and F7 (Backward) to scroll through the list.

2. Enter the selection code at the prompt.

   The printer is selected.

Index