SELECT

The Network Center

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Preface

This document provides general information about The Network Center's Select Component. Topics include:

- Introduction to Select

- How to use Rules to prioritize VTAM list resources

- How to create Rules quickly and efficiently

- Rule planning aids and example Rules

- How to implement Select

- How to track Select results

- Select Administration Menu choices

- Select messages

Who Should Read this Document

This document is for individuals who utilize Select at their installation. It provides information on using Select to manipulate and prioritize the contents of VTAM lists.

You might use the information in this book if you:

- Plan to administer or utilize Select at your installation

- Plan to install and/or maintain the Network Center and Select (this role is referred to as the "Network Administrator").

Examples Used in this Document

Examples included in this document are for illustrative purposes only; they should not be taken literally.

Where to Find More Information

The Network Center publications library consists of a base set, which is distributed to every Network Center installation, and optional Component manuals, which are distributed to Network Center installations based on Component license.

The base set includes the following manuals:

- *General Information* (TNC-0001): A general overview of the Network Center and each optional Component.

- *User's Guide* (TNC-0002): Guidance for utilizing the Network Center Interface.

- *Installation and Operations* (TNC-0003): Guidance for installing, configuring, and administering the Network Center and optional Components.

- *Query* (TNC-0006): Guidance for utilizing the Query Component.

The optional Component set includes the following manuals:

- *Access* (TNC-0005): Guidance for utilizing the Access Component.

- *Timeout* (TNC-0007): Guidance for utilizing the Timeout Component.

- *Alias* (TNC-0027): Guidance for utilizing the Alias Component.

- *Select* (TNC-0039): Guidance for utilizing the Select Component.

For online versions, visit www.North-Ridge.com on the World Wide Web.

How this Document is Organized

The Network Center's Select manual is organized into two parts called **The Select Guide** and **Select Reference**.

The Select Guide

The Guide contains the following chapters:

Chapter 1: "Introduction to Select" explains how Select allows you to control the various lists used by VTAM during its processing.

Chapter 2: "Using Rules to Prioritize VTAM List Resources" introduces the Select Rule: the tool that gives you precision control over the contents of VTAM lists.

Chapter 3: "Techniques for Creating Efficient Rules Faster" gives techniques and tools that can help you to define Rules quickly and for maximum processing efficiency.

Chapter 4: "Planning for Select Implementation" provides useful hints, examples, and worksheets for establishing Rules, Rulesets, and Groups before you implement them.

Chapter 5: "Implementing Select" guides you in defining and activating Rules online, as well as testing them to ensure that they are effective.

Chapter 6: "Tracking Select Activities" includes guidance on using tools that allow you to view session statistics, Rule messages, and other Rule activity resources. "System Accounting" tells how to activate the accounting option for one or more specific Network Center or Select messages.

Select Reference

Select Reference includes:

Chapter 7: "Select Component Administration Menu Choices", provides concise, detailed procedures for each Select Menu function.

Chapter 8: "Messages" describes Select messages and the expected system, operator, and Network Administrator responses.[1]

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[1] The Network Administrator is the person responsible for installing and maintaining the Network Center and, normally, Select.

Part One: The Select Guide

Chapter 1. Introduction to Select

Select is a member of the Network Center, a family of software components that operate independently or together in the z/OS and z/VM environments to provide you with the power to manage, monitor, and control VTAM based networks. (See the *General Information Manual*, TNC-0001, for more information on the Network Center).

This chapter provides further basic information on Select. Topics include the following:

* What Does Select Do?

* How Does Select Work?

What Does Select Do?

Select allows you to set conditions, called Rules, to manipulate and prioritize the contents of the following VTAM "lists":

* Gateway Path

* Adjacent Link Station

* Adjacent SSCP

* Network Virtual Route

The ability to set the contents of these lists provide several benefits. For example, you can improve Load Balancing by specifying the exact percentages of data traffic that you want to transmit across chosen routes. You can also reduce overhead and improve performance, restrict certain cross-domain and cross network activities, and set a desired processing order.

How Does Select Work?

While executing in a cross network environment, VTAM[2] often processes requests to establish connections, routes, and initiate searches between portions of the network or networks.[3]

Each time VTAM needs to determine if a particular List of items is appropriate, it calls the Select nucleus code residing in the Session Management Exit (SME) location. Select extracts appropriate information associated with the session request being issued, compares the information against the active Rules, and assigns or manipulates a Select List, if required.

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[2] VTAM is a key component of a SNA based network and handles many tasks associated with operating a network of devices, users, and applications. The Network Administrator at each installation controls VTAM processing via definitions and activities within VTAM (VTAMLST definitions, etc.).

[3] The term "network" identifies any processor or set of processors operating under the same VTAM Netid.

The following figure illustrates these concepts as applied to Select's placement within the network:

```
               *----------------------------------*
               | Station/Path Resolution Requests |
               *-----------------|----------------*
                                 |
             *-----|----------------------------------------------*
             |     |                                              |
             | *--|----*                                          |
             | | One   |                *----------------*        |
             | *-------*                |                |        |
             | | Two   |                |     Select     |        |
             | *-------*                |                |        |
             | | Three |                *--------|-------*        |
             | *-------*                         |                |
             | | Four  |                         |                |
             | *-------*                         |                |
             | | Five  |                *-----|-----*             |
             | *-------*                |   One     |             |
             |                          *-----------*             |
             |           VTAM-----------------|   Three   |       |
             |             |                  *-----------*       |
             *----------|----------------------------------------*
                 *--------|---------------*
                 | Gateway Path           |
                 | Adjacent Link Station  |
                 | Adjacent SSCP          |                      *----------------------*
                 | Virtual Route Selection|                      |                      |
                 *--------|---------------*                      |        FOUR          |
                          |                                      |                      |
 *----------------------*   *---|---*   *----------------------*  |                      |
 |                      |   | One   |   |                      |  |----------------------*
 |        ONE           --|-----*-------*-------|--   THREE    |  |
 |                      |   | Three |   |                      |  |
 |                      |   *-------*   |                      |  |
 *----------------------*               *----------------------*
        *----------------------*                 *----------------------*
        |                      |                 |                      |
        |         TWO          |                 |        FIVE          |
        |                      |                 |                      |
        |                      |                 |                      |
        *----------------------*                 *----------------------*
```

Figure 1.   General Select Network Structure

Chapter 2. Using Rules to Prioritize VTAM List Resources

Select Rules allow you to prioritize VTAM list resources on a session basis. For example, you can control which available VTAM path is used for a particular session and determine how session traffic is distributed across the available paths.

This Chapter describes Select Rules and the various structures that allow you to define, organize, and process the Rules. Topics include:

- "Rules"

- "Rule Operand Definitions" on page 12

- "Ruleset Rules" on page 24

- "Rule Groups" on page 27

- "Select Lists" on page 29

- "Rule Processing" on page 30

Rules

Select compares session requests against Rules that you create according to your installation's requirements. These Rules determine how a Select List will be built for a particular session or type of session.

You define Rules in the "Rule definition" panel; each Rule panel allows you to create one Rule:

```
_____
TNCRULD             Network Center Rule Definition              SELECT
Date: 01/15/2007      Time: 13:49:22      User: EXAMPLE     Version: 2.0.0

Name . . . . _____                  Title _____
Count  . . .
Action . . . Select___     . . Alias  . *_____
Date. .first *_____         . . Aliasnet *_____
. . . . last *_____         . . Hcvname. *_____
Day  . . . . *_____      . . Hcvtype. 0_
Dlu (Plu) . *_____        . . Netid  . *_____
. . Adjsscp  *_____       . . Sscp . . *_____
. . Alias  . *_____       . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____       Option . . . None____
. . Hcvtype. 0_             Rule type  . Slu-Plu
. . Netid  . *_____       Ruleset  . . No_
. . Sscp . . *_____       Time. .first *____
. . Subarea. *_____       . . . . last *____
From . . . . *_____       Session type *_____
Mode . . . . Active_        Select processing
Olu (Slu)  . *_____       Select list  _____
. . Adjsscp  *_____
-------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 2.   Rule Definition Panel (TNCRULD)

Each Rule panel contains definable **operands** (also called fields). These fields allow you to establish VTAM list specifications for a particular session. For example, you can specify the type of session the Rule applies to, the names of the session partners, the time of day the Rule will operate, and the contents of the VTAM list that the session will use.

Many of the operand values default to an asterisk (*****) pattern matching character that allows any applicable value to match the field operand. See "Pattern Matching: Creating Rule Operand Masks" on page 31 for more information.

Note: See "Chapter 5. Implementing Select" on page 61 for information on starting the Network Center Interface and defining Select Rules.

Rule Operand Definitions

As discussed in "Rules" on page 11, operands are the fields in the Rule Definition panel that you can set to determine which sessions should use a particular VTAM list specification.

This section defines each operand in alphabetical order. Operands that do not default to the asterisk pattern matching character (see "Pattern Matching: Creating Rule Operand Masks" on page 31) are underlined. Operands that accept a Value Group (see "Value Groups: Creating Symbolic Rule Operand Values" on page 33) specification, are noted within the definition.

Action

The **Action** operand establishes the action that Select will take when a session matches the Rule. You may use one of the following settings:

Setting   *Function*

<u>**SELECT**</u>   Builds a selection list for the session based on the Rule's Select list. The element in the list with the highest priority is placed first in the list (i.e. it is "selected" for use first, provided it is available within VTAM's domain or network).

REPLACE Replaces the contents of the supplied selection list with the contents of the Rule's Select List.

BYPASS   Does not modify the supplied selection list. Notifies VTAM to use the original list.

Date

The **Date** operand establishes the first and last calendar date that the Rule will be effective. The dates are inclusive.

To define the date field, enter the first calendar date in the YYMMDD format in the "first" field; Enter the last calendar date in the YYMMDD format in the "last" field.

Day

The **Day** operand establishes the day(s) of the week that the Rule will be effective.

  To define the field, enter MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY, or SUNDAY or use one of the following special groupings:

Grouping   *Includes*

MIDWEEK   TUESDAY, WEDNESDAY, and THURSDAY

WEEKDAYS   MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY

WEEKENDS   SATURDAY and SUNDAY

Dlu (Plu)

The **Dlu** or **(Plu)** operand identifies the Destination Logical Unit (DLU), which is normally also the Primary Logical Unit (PLU). Most often, this is the name of the application or subsystem associated with the session.

To define the field, enter the eight-character LU name for the Dlu/Plu.

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you may display or define the Value Group by placing the cursor on the field and using the F11=Select action.

| The Network Center derives the Dlu/Plu value from the Resource Identifier Control Vector (RIC) that is passed to the Session Management Exit (SME) by VTAM.

Adjsscp

The **Adjsscp** (Adjacent SSCP) operand identifies the eight-character name of the System Services Control Point (SSCP) that is in the direction of the DLU. This value is normally the name of the VTAM domain adjacent to the processor that the Network Center is operating on. However, this is not necessarily the "home domain" of the Dlu/Plu.

For INIT OTHER CD processing the Adjsscp is the name of the SSCP in the direction of the SLU.

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you may display or define the Value Group by placing the cursor on this field and using the F11=Select action.

Alias

The **Alias** operand identifies the alias name assigned to the Dlu/Plu (if an alias assignment has been made).

To define the field, enter the eight-character alias name of the Dlu/Plu, which is derived from the PLU Resource Identifier Control vector (RIC).

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you may display or define the Value Group by placing the cursor on the field and using the F11=Select action.

You may also specify an equal sign ("=") in the Dlu (Plu) Alias field to cause the Network Center to match or select the Rule if the corresponding "Name" or "Alias" field value matches the pattern in the corresponding Name field. This allows you to specify the LU name only once (in the Name field) and have the corresponding Rule apply whether the LU's name is the real name or the Alias name.

Aliasnet

The **Aliasnet** operand identifies the eight-character network id for the network in which the assigned alias name (LU) is known. This value is derived from the Resource Identifier Control Vector (RIC).

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you can display or define the Value Group by placing the cursor on the field and using the F11=Select action.

Hcvname

The **Hcvname** operand identifies the name of a resource that has been defined as a part of the upper level hierarchy for the LU (as defined within the Hierarchy Control Vector).

To define this field, enter the one to eight-character name of the Dlu/Plu's VTAMLST definition entry. You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you can display or define the Value Group by placing the cursor on the field and using the F11=Select action.

Hcvtype

The **Hcvtype** operand establishes the type of VTAM defined resource that is operating as the Dlu/Plu. (In other words, it has been defined as a part of the upper level hierarchy for this LU, as defined within the Hierarchy Control Vector.)

The values for this field are as follows:

```
        1       Communication controller
        2       APPL major node
        3       Local non-SNA major node
        4       Switched major node
        5       Local SNA major node
        6       CDRM major node
        7       CDRSC major node
        8       CA major node
        10      CDRM
        12      GROUP
        14      LINE
        15      Direct attachment node
        16      APPL
        18      PU
        22      LU
        23      Link station
        24      CDRSC
        28      LAN major node
        29      Packet major node
        30      XCA major node
```

Figure 3.   Hierarchy Control Vector Assignments

The Hierarchy Control Vector may contain several elements for a single LU, depending on the definition hierarchy used at your installation. You can determine the HCV contents by activating The Network Center's trace level messages.

Note: These values are reproduced here for convenience only. You should obtain the currently defined values from the VTAM Customization publication that applies to your version of VTAM.

Netid

The **Netid** field identifies the eight-character network name for the home network of the Dlu/Plu. This value is derived from the Resource Identifier Control Vector (RIC).

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you may display or define the Value Group by placing the cursor on the field and using the F11=Select action.

Sscp

The **Sscp** operand identifies the eight-character logical unit name for the system services control point (SSCP) for the domain that controls the Dlu/Plu. This value is derived from the Resource Identifier Control Vector.

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you may display or define the Value Group by placing the cursor on this field and using the F11=Select action.

Subarea

The **Subarea** operand identifies the numeric value of the subarea associated with the domain that controls the Dlu/Plu. This value is derived from the Resource Identifier Control Vector (RIC).

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you can display or define the Value Group by placing the cursor on the field and using the F11=Select action.

From

The **From** operand identifies the PLU (application or subsystem) that last went into session with the device.

This field is typically used in conjunction with allowing LOGAPPL type applications to forward a device to any desired subsystem. It also applies to subsystems that create additional sessions in order to service the actual subsystem requests (for example, TSO).

You may use pattern matching or a Value Group in this field. If you define a Value Group value, you may display or define the Value Group by placing the cursor on the field and using the F11=Select action.

Note: The Network Center uses the ILU (Initiating Logical Unit) identifier to establish the FROM value.

Mode

The **Mode** operand establishes the type of enforcement associated with the Rule. You must enter one of the following values (pattern matching is not valid):

Setting   *Function*

<u>**Active**</u>   The Rule will be used to evaluate sessions; the Component's action depends on the Action operand.

Dormant   The Rule will not be used when evaluating session conditions.

Test   The Rule will be used to evaluate sessions. If it matches, TNC0257 will be issued, but the Component will not perform actions. All messages, including Trace level messages, will be produced. The Test mode differs from the Warn mode in that the Test mode will evaluate the following Rules, while Warn mode will terminate when the Component finds a matching Rule. In this way, Test mode allows you to test a Rule without changing how the currently active Rules operate.

Warn   The Rule will be used to evaluate sessions, but no Component activity will be taken. However, messages and accounting will continue to operate as if in Active mode.

Name

The **Name** field establishes the Rule's name. This name is used in output log and associated accounting and maintenance processes. To define this field, enter a one to eight-character name to uniquely identify the Rule. (You can not use pattern matching or Value Group names in this field.)

Olu (Slu)

The **Olu** or **(Slu)** operand identifies the logical unit name associated with the Origination Logical Unit (OLU), which is also normally the Secondary Logical Unit (SLU). Most often, this is the logical name of the terminal that is associated with the session.

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you can display or define the Value Group by placing the cursor on the field and using the F11=Select action.

Adjsscp

The **Adjsscp** (Adjacent SSCP) operand identifies the eight-character name of the System Services Control Point (SSCP) that is in the direction of the Olu. This value is normally the name of the VTAM domain adjacent to the the processor that The Network Center is operating on. However, this is not necessarily the "home domain" for the Olu/Slu.

For INIT OTHER CD processing the Adjsscp is the name of the SSCP in the direction of the ILU.

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you can display or define the Value Group by placing the cursor on this field and using the F11=Select action.

Alias

The **Alias** operand identifies the alias name assigned to the Olu/Slu (if an alias assignment has been made).

To define this field, enter the eight-character alias name of the Olu/Slu, which is derived from the SLU Resource Identifier vector (RIC).

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you may display or define the Value Group by placing the cursor on the field and using the F11=Select action.

You may also specify an equal sign ("=") in the Olu(Slu) Alias field to cause the Network Center to match or select the Rule if the corresponding "Name" or "Alias" field value matches the pattern in the corresponding Name field. This allows you to specify the LU name only once (in the Name field) and have the corresponding Rule apply whether the LU's name is the real name or the Alias name.

Aliasnet

The **Aliasnet** operand identifies the eight-character network id for the network in which the assigned alias name (LU) is known. This value is derived from the Resource Identifier Control Vector (RIC).

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you can display or define the Value Group by placing the cursor on the field and using the F11=Select action.

Hcvname

The **Hcvname** operand is the 1 to 8 character name of a resource that has been defined as a part of the upper level hierarchy for the LU (as defined within the Hierarchy Control Vector).

To define this field, enter the one to eight-character name of the Olu/Slu's VTAMLST definition entry.

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you can display or define the Value Group by placing the cursor on the field and using the F11=Select action.

Hcvtype

The **Hcvtype** operand establishes the type of VTAM defined resource that is operating as the Olu/Slu. (In other words, it has been defined as a part of the upper level hierarchy for this Lu, as defined within the Hierarchy Control Vector.) The Hcvtype is a single decimal numeric value, with the values as described in Figure 3 on page 15.

The Hierarchy Control Vector may contain several elements for a single LU, depending on the definition hierarchy used at your installation. You can determine the HCV contents by activating The Network Center's trace level messages.

Netid

The **Netid** operand identifies the eight-character network name for the home network of the Olu/Slu. This value is derived from the Resource Identifier Control Vector (RIC).

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you can display or define the Value Group by placing the cursor on the field and using the F11=Select action.

Sscp

The **Sscp** operand identifies the eight-character logical unit name for the system services control point (SSCP) for the domain that controls the Olu/Slu. This value is derived from the Resource Identifier Control Vector (RIC).

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you may display or define the Value Group by placing the cursor on this field and using the F11=Select action.

Subarea

The **Subarea** operand identifies the numeric value of the subarea associated with the domain that controls the Olu/Slu. This value is derived from the Resource Identifier Control Vector (RIC).

You may use pattern matching or a Value Group in this field. If you enter a Value Group value, you can display or define the Value Group by placing the cursor on the field and using the F11=Select action.

Option

The **Option** operand establishes the type and level of messages that the Network Center will issue when the Rule is operating.

The operand may be set as one of the following values:

HEXDUMP Produces a hex dump of all the parameters passed to the SME in addition to the normal informational messages that are produced when the Rule is matched. These messages are reproduced in the Message Queue and output log. These displays are useful when debugging the action of the SME. See "Hexdump" on page 40 for an example of the output result.

NONE Produces the normal informational messages associated with the Rule. No additional trace or debugging messages are produced.

SUPPRESS Suppresses all of the messages that are issued for this Rule.

TRACE Produces a series of trace messages that provide all of the input values associated with both of the session partners, in addition to the normal informational messages that are produced when the Rule is matched. See "Trace" on page 41 for an example of the messages that will appear.

You can use these Option settings for additional flexibility in diagnosing and evaluating the Network Center's operations.

Ruleset

The **Ruleset** operand allows you to define the Rule as a Ruleset Rule.

A Ruleset Rule establishes conditions that must match the session criteria in order for the Rules that it contains to be processed. (See "Ruleset Rules" on page 24 for an extended explanation of Rulesets).

Setting Function

No Entering "no" indicates that the Rule is not a Ruleset.

Yes Entering "yes" indicates that the Rule establishes a Ruleset.

If you enter "yes" in the Ruleset field, an additional field called "Select" appears; you can mark it with any keyboard character to open the Ruleset Rule Name List. You may then enter the names of the Rules that the Ruleset will contain.

You can use pattern matching or Value Groups in these fields. If you enter a Value Group value, you can display or define the Value Group by placing the cursor on the field and using the F11=Select action. When you are done entering the Rule and or Ruleset names, use the F16=Save action to save the Ruleset Rule Name List and return to the Rule definition panel.

You can also display the Ruleset Rule Name List by using the F11=Select action. If the 'Ruleset' field has been marked "yes" the Ruleset Rule Name List will appear. If the 'Ruleset' field is marked "no", a pop up window appears asking you to confirm that you want to display the Ruleset list: Select choice 1 to display the list, or choice 2 to resume back to the Rule definition panel.

For more information on defining Rulesets, see "Defining Rules or Rulesets" in Chapter 5.

Rule Type

The **Rule type** operand determines how a requesting session's criteria is compared to the Rule's content in terms of the incoming Destination Logical Unit (DLU) or Primary Logical Unit (PLU) values and the Origination Logical Unit (OLU) or Secondary Logical Unit (SLU) values.

You may enter one of the following values:

Value	*Usage*
Dual	Compares the incoming Plu value to the Dlu (Plu) operand, and the incoming Slu value to the Olu (Slu) operand. If the conditions don't match, Select compares the incoming Plu value to the Olu (Slu) operand and the incoming Slu value to the Dlu (Plu) operand. (In other words, PLU to PLU and SLU to SLU first, then PLU to SLU and SLU to PLU).
	The Dual value is useful for situations where either session partner can act as the PLU or the SLU: It allows you to create just one Rule (instead of two) to handle both possibilities.
Olu-Dlu	Compares the incoming values for the Origin Logical Unit (OLU) against the Olu (Slu) operand and the incoming values for the Destination Logical Unit (DLU) against the Dlu (Plu) operand.
Slu-Plu	Compares the incoming values for the SLU against the Olu (Slu) operand, and the incoming values for the PLU against the Dlu (Plu) Rule settings.

Note: The Olu and Slu are usually the same value when the Slu is a terminal. However, certain programmable devices or LU6 programs can act as both a Dlu (Plu) and an Olu (Slu). If this is the case, VTAM will indicate the condition in the control vectors that are passed to Select. The "rule type" field is intended to give you control over which of the session elements the Dlu (Plu) and Olu (Slu) values apply to.

Select List

The **Select list** field identifies a previously defined Select list that will be used to control the selection process.

Each Select list contains a list of resource names and a "weighting factor" for each resource. The weighting factor determines which entry in the list will be selected when VTAM calls Select.

The Network Center adds up all of the weighting factor values in the Select list. It then orders the list for VTAM's usage based on the weighting factors and the number of elements, activities, etc., associated with the item (e.g. Virtual Route) currently being managed. For example, you can route a specific percentage of activity to another domain or network across specific Virtual Routes (this process is called "load balancing").

Set a list element's Weighting Factor to zero to always include it in the generated Select List, regardless of the current session traffic activity.

Note: See "Defining a Select List" on page 74 for more information on defining Select lists.

Session Type

The **Session type** operand identifies the type of session initiation that is defined by the Rule.

Value	*Usage*
*	Any type of session initiation.
AUTOLOGON	The session is being initiated as a result of a VARY LOGON or LOGAPPL.
INQUIRE	The selection request was initiated as a result of an inquire.
PLU-REQUEST	The subsystem has requested the session.
RD-SEARCH	The request was initiated as the result of a resource discovery search.
SLU-REQUEST	The terminal device has initiated the session.
THIRD-PARTY	Another PLU has requested the session (for example, a LOGAPPL type subsystem).

Session type information is extracted from the Exit Routine Function Code available to Select.

Time

The **Time** operand establishes the first and last wall clock time (HH:MM format) that the Rule will be effective. These are inclusive times of the day.

To define this operand, enter the start time for the Rule in the "first" field, and the end time for the Rule in the "last" field. For example, if you want the Rule to become effective at 8:00 a.m. and to end at 5:00 p.m., you would enter "08:00" in the first field and "17:00" in the last field.

Title

The **Title** operand allows you to establish a 1 to 28 character description of the Rule. The title will be used in several Component panels to help you identify the Rule.

Rule Operand Sources

In order to create appropriate Rules, you need to understand the source for each operand value. The following illustration provides a conceptual overview of these sources:

```
*---------------------------------------------------------------*
| Subarea 1- Cross Domain System                                |
|                        *---------------------------------*    |
|                        |             Node 1              |    |
|                        |   *-------------------------*   |    |
|                        |   |          SSCP           |   |    |
|                        |   |  *------*       *------* |   |    |
|                        |   |  | CICS |<----->| VTAM | |   |    |
|                        |   |  *------*       *------* |   |    |
|    *-----------*       |   *-------------------------*   |    |
|    | End User  |       *---------------/--------------*   |    |
|    | OLU/(SLU) |                      /                    |
|    *-----\-----*                *--/--*                    |
|          \                      |     |                    |
|     *----\------*               | NCP |                    |
|     | Node 2 --|---------------|--    |                    |
|     |          |               *-\\--*                     |
|     *----------*                   \\                      |
*-------------------------------------\\--------------------*
                                 *--\\-*
                                 |     |
                                 | NCP |--------> Other Networks
                                 |     |
                                 *--/--*
*---------------------------------/--------------------*
| Subarea 2 - Local Domain       /                     |
|         in Local Network      /                      |
|                              /                       |
|  *---------------------------/---------------------* |
|  |            VTAM - Gateway SSCP                   | |
|  |  *---------*     *---------*     *-----------*   | |
|  |  |  TND    |     |  TNC    |     |   TSO     |   | |
|  |  |         |     |         |     | DLU(PLU)  |   | |
|  |  *---------*     *---------*     *-----------*   | |
|  *-------------------------------------------------* |
*-----------------------------------------------------*
```

Figure 4.   Rule Operand Source Locations

Ruleset Rules

A **Ruleset Rule** is a Rule that defines a set of Rules. When Select is actively processing Rules, a Ruleset acts as a "gate" that allows Select to bypass the Rules it contains, unless the session criteria match its operands. If the session criterion matches the operands in the Ruleset Rule, Select will begin to process the Rules it contains. In this manner, Ruleset Rules ensure that Select does not waste time evaluating Rules that do not apply to a currently monitored session.

Ruleset Rules also allow you to organize and simplify your Rule structure. For example, you can place all of the Rules for a particular condition under one Ruleset Rule (according to their processing order). For instance, assume that you defined the following Rules for a domain (these examples provide a syntactical representation of the Rule definition panel):

```
  TERM1S   TNCRULE ACTION=SELECT,SLU=TERM1*,PLUNETID=NRS,SELECT=NRSPATHS
  TERM2S   TNCRULE ACTION=SELECT,SLU=TERM2*,PLUNETID=NRS,SELECT=NRSPATHS
  TERM3S   TNCRULE ACTION=SELECT,SLU=TERM3*,PLUNETID=NRS,SELECT=NRSPATHS
  SYS1435  TNCRULE ACTION=SELECT,SLU=SYS1435,PLUNETID=IIN,SELECT=IINPATHS
  SYS1422  TNCRULE ACTION=SELECT,SLU=SYS1422,PLUNETID=IIN,SELECT=IINPATHS
  I8204    TNCRULE ACTION=SELECT,SLU=IB204,PLUNETID=IIN,SELECT=IINPATHS
  SYS7045  TNCRULE ACTION=SELECT,SLU=SYS7045,PLUNETID=IIN,SELECT=IINPATHS
  ABTI83   TNCRULE ACTION=SELECT,SLU=ABTI83,PLUNETID=IIN,SELECT=IINPATHS
  OTHERS   TNCRULE ACTION=BYPASS,SLU=*
```

As you can see, these Rules specify Select List assignments (e.g. SELECT=NRSPATHS) for specific SLUs (e.g. SLU=TERM1*) that are requesting a list assignment to a specific network (e.g. PLUNETID=NRS).

Therefore, a list request from an SLU named TERM5500 to the HDQTRS network would cause Select to evaluate all nine Rules before using the OTHERS Rule to bypass the session request (in this case, to use the original list proposed by VTAM).

You could accelerate this process by using Ruleset Rules. Consider the following changes:

```
  TERMS     TNCRULE PLUNETID=NRS,SET=YES
      TERM1S    TNCRULE ACTION=SELECT,SLU=TERM1*,SELECT=NRSPATHS
      TERM2S    TNCRULE ACTION=SELECT,SLU=TERM2*,SELECT=NRSPATHS
      TERM3S    TNCRULE ACTION=SELECT,SLU=TERM3*,SELECT=NRSPATHS


  SYSTEMS  TNCRULE PLUNETID=IIN,SET=YES
      SYS1435  TNCRULE ACTION=SELECT,SLU=SYS1435,SELECT=IINPATHS
      SYS1422  TNCRULE ACTION=SELECT,SLU=SYS1422,SELECT=IINPATHS
      I8204    TNCRULE ACTION=SELECT,SLU=IB204,SELECT=IINPATHS
      SYS7045  TNCRULE ACTION=SELECT,SLU=SYS7045,SELECT=IINPATHS
      ABTI83   TNCRULE ACTION=SELECT,SLU=ABTI83,SELECT=IINPATHS


  OTHERS    TNCRULE ACTION=BYPASS,SLU=*
```

Figure 5.   Example Rulesets

As you can see, we have now grouped all of the Rules into Rulesets according to the name of the destination network that the Select List will route the information to (the PLUNETID operand). Each of these Ruleset Rules would only allow Select to process the Rules it contains if the device requesting a Select List matches the parameters contained in the Ruleset definition (i.e. the PLUNETID operand must match).

Now, if the same SLU (TERM5500) requested a Select List for the NRS network, Select would first evaluate the Rule operand values of the TERMS Ruleset. The HDQTRS value would not match the PLUNETID operand, so Select would skip to the SYSTEMS Rule to continue evaluation. The PLUNETID value in the SYSTEMS Rule operand would not match either, so Select would skip to OTHERS, where it would locate a match (the asterisk '*' indicates that any value matches). Notice that this Rule interpretation process evaluated only three Rules, instead of the previous nine Rules.

To define a Ruleset, set a Rule definition panel with the Ruleset's operands and press the F11=Select key to open the Ruleset Rule Name List panel. This panel provides an area for you to define the names of the Rules that the Ruleset will contain. For example, the following figure shows the "TERMS" Ruleset Rule Definition panel:

```
_____
TNCRULD            Network Center Rule Definition              SELECT
Date: 01/15/2007      Time: 13:49:22       User: EXAMPLE     Version: 2.0.0

Name . . . . TERMS___                   Title Ruleset_for_TERMS_____
Count  . . .
Action . . . Select___    . . Alias  . *_____
Date. .first *_____       . . Aliasnet *_____
. . . . last *_____       . . Hcvname. *_____
Day  . . . . *_____    . . Hcvtype. 0_
Dlu (Plu) . *_____      . . Netid  . *_____
. . Adjsscp *_____      . . Sscp . . *_____
. . Alias  . *_____     . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____        Option . . . None____
. . Hcvtype. 0_              Rule type  . Slu-Plu
. . Netid  . NRS_____       Ruleset  . . Yes Select _
. . Sscp . . *_____       Time. .first *____
. . Subarea. *_____       . . . . last *____
From . . . . *_____       Session type *_____
Mode . . . . Active_        Select processing
Olu (Slu) . *_____        Select list  _____
. . Adjsscp  *_____
-------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 6. TERMS Ruleset Rule

The "TERMS" Ruleset Rule Name List panel would appear as follows:

```
_____
TNCRNAM             Ruleset Rule Name List               SELECT
Date: 01/15/2007      Time: 14:38:09       User: EXAMPLE     Version: 2.0.0

   1. TERM1S__      20. _____      39. _____      58. _____
   2. TERM2S__      21. _____      40. _____      59. _____
   3. TERM3S__      22. _____      41. _____      60. _____
   4. _____      23. _____      42. _____      61. _____
   5. _____      24. _____      43. _____      62. _____
   6. _____      25. _____      44. _____      63. _____
   7. _____      26. _____      45. _____      64. _____
   8. _____      27. _____      46. _____      65. _____
   9. _____      28. _____      47. _____      66. _____
  10. _____      29. _____      48. _____      67. _____
  11. _____      30. _____      49. _____      68. _____
  12. _____      31. _____      50. _____      69. _____
  13. _____      32. _____      51. _____      70. _____
  14. _____      33. _____      52. _____      71. _____
  15. _____      34. _____      53. _____      72. _____
  16. _____      35. _____      54. _____      73. _____
  17. _____      36. _____      55. _____      74. _____
  18. _____      37. _____      56. _____      75. _____
  19. _____      38. _____      57. _____      76. _____
-------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 7. Ruleset Rule Name List with Example Ruleset

Be sure to place all of the Rules to be included in the Ruleset into the Rule List panel according
to their processing order.

Note: For more information on Ruleset definition, see "Defining Rules or Rulesets" on page 66. For information on setting the Rule processing order, see "Rule Processing" on page 30 and "Specifying the Active Rules" on page 93.

Rule Groups

A Rule **Group** is an organizational construct that lets you set the processing order for any combination of Rules, Rulesets, or Groups. Unlike Rulesets, a Group does not *define* a set of Rules, it contains and organizes them, allowing you to present Rules, Rulesets, and other groups to Select as one processing unit. The following figure shows a Group Definition panel:

```
_____
TNCGRPD                  Group Definition                            SELECT
Date: 01/15/2007         Time: 13:54:52        User: EXAMPLE        Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . _____                       Title _____

    1. _____        16. _____        31. _____        46. _____
    2. _____        17. _____        32. _____        47. _____
    3. _____        18. _____        33. _____        48. _____
    4. _____        19. _____        34. _____        49. _____
    5. _____        20. _____        35. _____        50. _____
    6. _____        21. _____        36. _____        51. _____
    7. _____        22. _____        37. _____        52. _____
    8. _____        23. _____        38. _____        53. _____
    9. _____        24. _____        39. _____        54. _____
   10. _____        25. _____        40. _____        55. _____
   11. _____        26. _____        41. _____        56. _____
   12. _____        27. _____        42. _____        57. _____
   13. _____        28. _____        43. _____        58. _____
   14. _____        29. _____        44. _____        59. _____
   15. _____        30. _____        45. _____        60. _____
-----------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 8. Group Definition Panel (TNCGRPD)

To define a Group, simply place the Rules, Rulesets, and/or Groups that you wish to include in the Group in the numbered fields. Select will then process them according to the defined order. For example, if you placed the TERMS and SYSTEMS Rulesets and the OTHERS Rule from Figure 5 on page 25 into a Rule Group panel, it would appear as follows:

```
_____
TNCGRPD              Group Definition                        SELECT
Date: 01/15/2007     Time: 13:54:52      User: EXAMPLE    Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . GROUP___                    Title Group_for_TERMS_and_SYSTEMS_

   1. TERMS___      16. _____     31. _____     46. _____
   2. SYSTEMS_      17. _____     32. _____     47. _____
   3. OTHERS__      18. _____     33. _____     48. _____
   4. _____      19. _____     34. _____     49. _____
   5. _____      20. _____     35. _____     50. _____
   6. _____      21. _____     36. _____     51. _____
   7. _____      22. _____     37. _____     52. _____
   8. _____      23. _____     38. _____     53. _____
   9. _____      24. _____     39. _____     54. _____
  10. _____      25. _____     40. _____     55. _____
  11. _____      26. _____     41. _____     56. _____
  12. _____      27. _____     42. _____     57. _____
  13. _____      28. _____     43. _____     58. _____
  14. _____      29. _____     44. _____     59. _____
  15. _____      30. _____     45. _____     60. _____
-------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 9.   Group Definition Example

Note: You must define the active Rule, Ruleset, or Group within the Component options record.
See "Specifying the Active Rules" on page 93 for more information.

Select Lists

Select lists allow you to determine how the available resources for a particular list, such as Virtual routes,[4] Gateway paths, SSCP names and Adjacent Link Station (ALS) names, should be used for a particular session.

You can assign each of these resources with a weighting factor that determines the percentage of traffic that will be routed across the resource to another domain or network (this process is called "load balancing"). Setting the weighting factor of zero will cause the resource to be included in the generated Select list, regardless of the current session traffic activity.

You can also specify Subarea numbers and/or NCP names in Gateway Path selection lists. Select will evaluate the list for both numeric and alphanumeric values. If the first value specified in the list is numeric, then Select will evaluate the list values as Subarea numbers. Conversely, if the first value specified in the list contains alpha characters, then Select will evaluate the list as NCP names.

To define a Select list, open a Group definition panel and press F11 (Select). From the resulting pop-up menu, select choice 4, 'Select list'; this will reformat the Group definition panel as a Select list. You can then enter the resource names and desired weighting factors in the numbered fields, as in the following example:

```
_____
 TNCGRPD                 Select List Definition                  SELECT
 Date: 01/15/2007       Time: 13:54:52       User: EXAMPLE      Version: 2.0.0

 Type the desired values in the listed entry fields. Then Enter.

 Name . . . . BALCRDIT                  Title Routes_to_Credit_____

  1. VR1TP1__ 80     16. _____ __     31. _____ __     46. _____ __
  2. VR2TP1__ 20     17. _____ __     32. _____ __     47. _____ __
  3. _____ __     18. _____ __     33. _____ __     48. _____ __
  4. _____ __     19. _____ __     34. _____ __     49. _____ __
  5. _____ __     20. _____ __     35. _____ __     50. _____ __
  6. _____ __     21. _____ __     36. _____ __     51. _____ __
  7. _____ __     22. _____ __     37. _____ __     52. _____ __
  8. _____ __     23. _____ __     38. _____ __     53. _____ __
  9. _____ __     24. _____ __     39. _____ __     54. _____ __
 10. _____ __     25. _____ __     40. _____ __     55. _____ __
 11. _____ __     26. _____ __     41. _____ __     56. _____ __
 12. _____ __     27. _____ __     42. _____ __     57. _____ __
 13. _____ __     28. _____ __     43. _____ __     58. _____ __
 14. _____ __     29. _____ __     44. _____ __     59. _____ __
 15. _____ __     30. _____ __     45. _____ __     60. _____ __
 ------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 10.   Select List Example Panel (TNCGRPD)

After defining the Select list, define the Rule that will set the conditions for its usage. For example, the following Rule assigns the BALCRDIT Select list to any logical unit residing in the local network (NRS) when using a PLU located in the HDQTRS netid:

---

[4] The name of any Virtual route resource must be specified as a six character name in the form 'VRxTPy', where 'x' is a numeric value (0 through 7) that represents the virtual route number, and where 'y' is a numeric value (0 through 2) that represents the Transmission Priority.

```
_____
TNCRULD              Network Center Rule Definition              SELECT
Date: 01/15/2007       Time: 14:02:28       User: EXAMPLE       Version: 2.0.0

Name . . . . HDQTRS__                  Title Select_list_for_HeadQuarters
Count  . . .
Action . . . Select___     . . Alias  . *_____
Date. .first *_____        . . Aliasnet *_____
. . . . last *_____        . . Hcvname. *_____
Day  . . . . *_____     . . Hcvtype. 0_
Dlu (Plu) . *_____       . . Netid  . NRS_____
. . Adjsscp  *_____      . . Sscp . . *_____
. . Alias  . *_____      . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____         Option . . . None____
. . Hcvtype. 0_               Rule type  . Slu-Plu
. . Netid  . HDQTRS__         Ruleset  . . No_
. . Sscp . . *_____         Time. .first *____
. . Subarea. *_____         . . . . last *____
From . . . . *_____         Session type *_____
Mode . . . . Active_          Select processing
Olu (Slu) . *_____          Select list  BALCRDIT
. . Adjsscp  *_____
------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 11.   Rule with Select List

Note: See "Defining a Select List" on page 74 and "Defining Rules or Rulesets" on page 66 for detailed definition instructions.

Rule Processing

When a session request is made to your local domain, Select collects information from the session and begins to process the active Rules, starting with the first defined Rule, Ruleset, or Group within the Component options record. If the Ruleset or Rule does not match the session information, Select skips to the next Ruleset or Rule.

If Select finds a Rule where all the operands are true, it takes the ACTION specified in the "action" operand: it either builds a Select list based on the Select list defined in the Rule, replaces the originally supplied selection list with the Select list defined in the Rule, or notifies VTAM to use the contents of the originally supplied selection list. If no Rule exists that matches the session, then Select automatically uses the original list supplied by VTAM.

If Select finds a Ruleset Rule where all of the operands are true, it continues to search the Rules contained within the Ruleset until it finds a match. If the operands in the Ruleset are not matched, then Select skips to the next active Ruleset (or Rule) to continue its search. (It may help to think of the Rule operands as being "**and**ed" together and the Rules as being "**or**ed" together.)

Note: See "Organizing Rules into a Hierarchy" on page 38 for information on Rule processing and "Specifying the Active Rules" on page 93 for more information on the Component options record.

Chapter 3. Techniques for Creating Efficient Rules Faster

This chapter describes techniques that can help you to build Rules quickly and for maximum processing efficiency. Topics include:

- "Pattern Matching: Creating Rule Operand Masks"

- "Value Groups: Creating Symbolic Rule Operand Values" on page 33

- "Organizing Rules into a Hierarchy" on page 38

- "Diagnosing Session Management Exit Information" on page 40

Note: "Testing Rules" on page 102 discusses how to test Rules for efficiency.

Pattern Matching: Creating Rule Operand Masks

Pattern matching is a process that allows a single value to represent one or more values. You can use pattern matching to greatly reduce the number of Rules you must define by creating masks for operand values. For example, the asterisk (*) pattern, which is the default value for many of the Rule operands, allows any applicable value to match the operand.

You can use pattern matching characters in all the Rule operands and panel fields unless it is specifically excepted under the description of the individual operand. To view a description while actively using Select, place the cursor on the operand field and use the F1=Help action. You can also view descriptions in "Rule Operand Definitions" on page 12

The following pattern characters are available for Select. You can use them to mask numbers and alphabetic characters:

Character Meaning

*   The asterisk represents any number of characters from 0 to the maximum number of characters in the operand. You may use as many asterisks as necessary within the operand.

%   The percent sign represents a single character of any value at the position that the percent sign is placed. You can use as many percent signs as necessary within the operand.

Figure 12.   Pattern Matching Characters

The following figure demonstrates the pattern characters ability to mask diverse values. The first row gives example field entries; the first column gives possible pattern strings; and the coordinates indicate whether the character string is matched by the pattern (YES) or not (NO):

Pattern	AB21HD00	AB31	SYS140	SSCP1
AB%1	NO	YES	NO	NO
AB%1*	YES	YES	NO	NO
*	YES	YES	YES	YES
HD	YES	NO	NO	NO
*1	NO	YES	NO	YES
%%%1*	NO	NO	NO	YES
%%%1*	YES	YES	YES	NO
1	YES	YES	YES	YES

Figure 13.   Pattern Matching Examples

To illustrate how pattern matching simplifies Rule definition, assume that you want to assign all devices that start with the naming convention "LOCAL" in your local network, NRS, to use the SYSTEMS Select list when establishing a route with any PLU located in the SYSTEMS network.

Instead of creating an individual Rule for each device, you could simply define the SLU operand as "LOCAL*" to signify that all LOCAL devices should use the Select list:

```
_____
TNCRULD                 Network Center Rule Definition              SELECT
Date: 01/15/2007        Time: 14:04:02        User: EXAMPLE     Version: 2.0.0

Name . . . . SYSTEMS_                     Title Selection_for_SYSTEMS_____
Count  . . .
Action . . . Select___    . . Alias  . *_____
Date. .first *_____       . . Aliasnet *_____
. . . . last *_____       . . Hcvname. *_____
Day  . . . . *_____     . . Hcvtype. 0_
Dlu (Plu)  . *_____      . . Netid  . NRS_____
. . Adjsscp  *_____      . . Sscp . . *_____
. . Alias  . *_____      . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____      Option . . . None____
. . Hcvtype. 0_           Rule type  . Slu-Plu
. . Netid  . SYSTEMS_     Ruleset  . . No_
. . Sscp . . *_____     Time. .first *____
. . Subarea. *_____      . . . . last *____
From . . . . *_____     Session type *_____
Mode . . . . Active_      Select processing
Olu (Slu)  . LOCAL*__     Select list  SYSTEMS_
. . Adjsscp  *_____
 -----------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 14.   Rule Panel with Pattern Matching Example

Now, any time a device starting with "LOCAL" requests a selection list to the SYSTEMS network, Select would assign it the SYSTEMS Select list.

Note: If a value is too diverse for pattern matching, use a Value Group instead; see "Value Groups: Creating Symbolic Rule Operand Values" on page 33.

Value Groups: Creating Symbolic Rule Operand Values

Value Groups simplify Rule definition by allowing you to create one symbolic value that references a group of values. Because Value Groups are all inclusive, they are useful for situations where you can't use pattern matching.

To illustrate how they work, assume that you need to balance usage across multiple paths from your "local machine" to a remote z/OS system operating TSO. The devices that use these paths have significantly different names. Without using a Value Group, you could create the following three Rules (each Rule represents a Rule Definition panel):

```
  TSO1 TNCRULE ACTION=SELECT,SLU=T34004,PLU=TSO,SELECT=OSPATHS
  TSO2 TNCRULE ACTION=SELECT,SLU=AXSR,PLU=TSO,SELECT=OSPATHS
  TSO3 TNCRULE ACTION=SELECT,SLU=JR9X329,PLU=TSO,SELECT=OSPATHS
```

Subsequently, if you decided that the same set of devices should have the same load balancing if they establish a session with a CICS system on the same host, you would create the following additional Rules:

```
  CICS1 TNCRULE ACTION=SELECT,SLU=T34004,PLU=CICS,SELECT=OSPATHS
  CICS2 TNCRULE ACTION=SELECT,SLU=AXSR,PLU=CICS,SELECT=OSPATHS
  CICS3 TNCRULE ACTION=SELECT,SLU=JR9X329,PLU=CICS,SELECT=OSPATHS
```

So far, you have created six Rules. However, if you define a Value Group, you could place the names of the three devices into a Group definition panel, identifying that it's a Value Group by specifying an "&" at the beginning of the Value Group's name. For example, the following figure shows a Value Group named "&SYSTEMS":

```
_____
TNCGRPD                Group Definition                        SELECT
Date: 01/15/2007       Time: 14:10:58       User: EXAMPLE      Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . &SYSTEMS                  Title Local_devices_____

   1. T34004__       16. _____      31. _____      46. _____
   2. AXSR____       17. _____      32. _____      47. _____
   3. JR9X329_       18. _____      33. _____      48. _____
   4. _____       19. _____      34. _____      49. _____
   5. _____       20. _____      35. _____      50. _____
   6. _____       21. _____      36. _____      51. _____
   7. _____       22. _____      37. _____      52. _____
   8. _____       23. _____      38. _____      53. _____
   9. _____       24. _____      39. _____      54. _____
  10. _____       25. _____      40. _____      55. _____
  11. _____       26. _____      41. _____      56. _____
  12. _____       27. _____      42. _____      57. _____
  13. _____       28. _____      43. _____      58. _____
  14. _____       29. _____      44. _____      59. _____
  15. _____       30. _____      45. _____      60. _____
  ---------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 15.   &SYSTEMS Value Group

The single value &SYSTEMS now specifies all of the devices' names. You would only then need to define the following two Rules (notice that we placed the Value Group in the SLU field), instead of the previous six:

```
 TSO  TNCRULE ACTION=SELECT,SLU=&SYSTEMS,PLU=TSO,SELECT=OSPATHS
 CICS TNCRULE ACTION=SELECT,SLU=&SYSTEMS,PLU=CICS,SELECT=OSPATHS
```

The actual Rule definition panel would appear as follows (this example shows the TSO Rule):

```
_____
TNCRULD                 Network Center Rule Definition              SELECT
Date: 01/15/2007       Time: 14:07:13       User: EXAMPLE       Version: 2.0.0

Name . . . . TSO_____                   Title Selection_for_TSO_____
Count  . . .
Action . . . Select___     . . Alias  . *_____
Date. .first *_____        . . Aliasnet *_____
. . . . last *_____        . . Hcvname. *_____
Day  . . . . *_____     . . Hcvtype. 0_
Dlu (Plu)  . TSO_____     . . Netid  . *_____
. . Adjsscp *_____       . . Sscp . . *_____
. . Alias  . *_____      . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____         Option . . . None____
. . Hcvtype. 0_               Rule type  . Slu-Plu
. . Netid  . *_____         Ruleset  . . No_
. . Sscp . . *_____         Time. .first *____
. . Subarea. *_____         . . . . last *____
From . . . . *_____         Session type *_____
Mode . . . . Active_          Select processing
Olu (Slu)  . &SYSTEMS         Select list  OSPATHS_
. . Adjsscp *_____
-------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 16.   Rule Panel with Value Group

You have now reduced the number of required Rules from six to two. If you needed to add a new device that would be susceptible to the TSO and CICS Rules, you would simply add it to the &SYSTEMS Value Group.

If you wanted to generalize this structure even more, you could create an additional Value Group (call it &NETWORK) that contains the destination PLUs TSO and CICS:

```
_____
TNCGRPD              Group Definition                            SELECT
Date: 01/15/2007     Time: 14:14:01      User: EXAMPLE      Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . &NETWORK                 Title Value_Group_for_Network_____

  1. TSO_____        16. _____      31. _____      46. _____
  2. CICS____        17. _____      32. _____      47. _____
  3. _____        18. _____      33. _____      48. _____
  4. _____        19. _____      34. _____      49. _____
  5. _____        20. _____      35. _____      50. _____
  6. _____        21. _____      36. _____      51. _____
  7. _____        22. _____      37. _____      52. _____
  8. _____        23. _____      38. _____      53. _____
  9. _____        24. _____      39. _____      54. _____
 10. _____        25. _____      40. _____      55. _____
 11. _____        26. _____      41. _____      56. _____
 12. _____        27. _____      42. _____      57. _____
 13. _____        28. _____      43. _____      58. _____
 14. _____        29. _____      44. _____      59. _____
 15. _____        30. _____      45. _____      60. _____
 ------------------------------------------------------------------------

 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 17.   &NETWORK Value Group

Notice that the &SYSTEMS Value Group defines the SLU values and that the &NETWORK Value Group defines the PLU values. Using these two Value Groups, you could create just one Rule, instead of the previous six, as follows:

```
ONLINE TNCRULE ACTION=SELECT,SLU=&SYSTEMS,PLU=&NETWORK,SELECT=OSPATHS
```

The actual Rule definition panel would appear as follows:

```
TNCRULD               Network Center Rule Definition                SELECT
Date: 01/15/2007      Time: 14:17:04      User: EXAMPLE      Version: 2.0.0

Name . . . . ONLINE__                 Title Rule_for_TSO_and_CICS_____
Count  . . .
Action . . . Select___    . . Alias  . *_____
Date. .first *_____       . . Aliasnet *_____
. . . . last *_____       . . Hcvname. *_____
Day  . . . . *_____    . . Hcvtype. 0_
Dlu (Plu)  . &NETWORK     . . Netid  . *_____
. . Adjsscp *_____      . . Sscp . . *_____
. . Alias  . *_____     . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____        Option . . . None____
. . Hcvtype. 0_              Rule type  . Slu-Plu
. . Netid  . *_____        Ruleset  . . No_
. . Sscp . . *_____        Time. .first *____
. . Subarea. *_____        . . . . last *____
From . . . . *_____        Session type *_____
Mode . . . . Active_         Select processing
Olu (Slu)  . &SYSTEMS        Select list  OSPATHS_
. . Adjsscp *_____
-------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
```

Figure 18.   Rule with Two Value Groups

You can specify Value Groups in the majority of Rule operands. A Value Group can also contain another reference to an additional Value Group.

You can modify Value Groups via the Display (Value) Group choice from the Select Menu. For more information see "Defining a Rule Group" on page 84.

Organizing Rules into a Hierarchy

An efficient Rule hierarchy provides for quick and efficient Rule processing: the less time it takes Select to process the Rules, the less CPU time it uses. An efficient Rule hierarchy can also help you to more easily organize and maintain various Rule, Ruleset, and Group definitions.

The following examples of a simple and complex Rule structure are provided to help you see how you can use Rulesets and Groups to keep your Rules manageable. To review: Select Rules can be standalone, collected into Rulesets and/or collected into Groups; a Ruleset can contain Rules and Rulesets; and a Group can contain Rules, Rulesets, and other Groups. (See "Chapter 5. Implementing Select" on page 61 for more information).

Simple Rule Structure

Assume that you are in the local network "NRS", and wish to do the following:

1. Assign Virtual Routes in a specific sequence for the SYSTEMS devices

2. Balance usage of two connections to SYSTEMB

You would first create the following two Rules:

Rule   *Contents*

SYSTEMS Set the Olu (Slu) value to "SYS*" to identify all the SYSTEMS devices, and the Select List to SYSORDER, and ACTION to "Replace"

BALANCE Set the Dlu (Plu) Netid field to "SYSTEMB", the Select List to BALSYS, and ACTION to "Select"

After creating the Rules, you need to group them for reference purposes (see "Defining a Rule Group" on page 84). You would create a Group called "PROD" that includes the SYSTEMS and BALANCE Rules, in that order, as illustrated in the following figure:

```
        *---------------*
        |      PROD     |
        | Group         |
        */-------------*
        /
       /
 *-----/-----*      *------------*
 | SYSTEMS --|---->|   BALANCE    |
 | Rule      |     |   Rule       |
 *-----------*      *------------*
```

Figure 19. Simple Rule Hierarchy

When the "PROD" Group is activated via the Component Options panel), Select loads and evaluates the Rules as indicated by the arrow.

Complex Rule Structure

Now, assume that you wish to provide Virtual Route processing for the following devices as well:

---

1. Allow device T32001 to use the default lists without regard for the other criteria

2. Send all traffic to CICSTEST and DB2TEST in NETID OTHER via VR1

3. Send all traffic to IBMIN across VR2

4. Balance the usage of VR1 and VR2 for all other sessions to the OTHER system

---

You would create the following five Rules:

Rule	*Contents*
SPECIAL	Set the Olu (Slu) value to "T32001" and the ACTION to Bypass
CICSTEST	Set the Dlu (Plu) value to "CICSTEST", the NETID to "OTHER", the Select list to SELVR1, and the ACTION to "Replace"
DB2TEST	Set the Dlu (Plu) value to "DB2TEST", the NETID to "OTHER", the Select list to SELVR1, and the ACTION to "Replace"
IBMIN	Set the Dlu Netid value to "IBMIN", the Select List to SELVR2, and the ACTION to Replace
BALANCE	Set the Dlu (Plu) Netid field to "OTHER", the Select List to BALSYS, and ACTION to "Select"

You could then create a single group called "COMPLEX" that references each Rule by its processing order. If you expected to reference the VR1 based Rules (CICSTEST and DB2TEST) in more than one Group, you could also collect them into a Ruleset. The following figure illustrates the Complex Group with the VR1 Rules collected into a Ruleset (VR1SET):

```
                  *---------------*
                  |    COMPLEX    |
                  | Group         |
                  *---------------*
                   /
                  /
   *------/----*    *------------*   *----------*    *-----------*
   | SPECIAL--|--->|   VR1SET    |   |  IBMIN   |--->|  BALANCE  |
   | Rule     |    | Ruleset     |   | Rule     |    | Rule      |
   *----------*    *---/--------*    *---/------*    *-----------*
            *-------/---*        *------/-----*
            | CICSTEST --|----->|  DB2TEST    |
            | Rule       |      | Rule        |
            *-----------*        *-----------*
```

   Figure 20.   Complex Rule Hierarchy

As you can see, by using Rulesets and Groups, you can structure the defined Rules into an ongoing set of groupings that match your installation's unique requirements.

Diagnosing Session Management Exit Information

While planning Select Rules, you may need to isolate the information that is available to the Select Session Management Exit (SME). To do this, you can activate a Rule with a setting that produces diagnostic information into the Message Queue.

Note: For information on defining Rules, see "Defining Rules or Rulesets" on page 66. For information on using the Message Queue, see the *Installation and Operations* manual (TNC-0003).

Hexdump

Setting the Option operand to **Hexdump** allows you to evaluate the parameter list that is passed to the Session Management Exit from VTAM. When a Rule with Hexdump in effect is used, the Network Center will produce a series of TNC0245 messages in the following general format:

```
TNC0245N 01.00 0000  01000000                        * ....          *
TNC0245N 01.04 0000  006A9000                         * .]..          *
TNC0245N 01.08 0000  00000000                         * ....          *
TNC0245N 01.12 0000  40404040 40404040                *               *
TNC0245N 01.16 0000  0000002A C1F4F2E5 D4404040       * ....A42VM      *
TNC0245N 01.20 0000  00000001 E3F0F1E2 D3F1F0F4       * ....T01SL104   *
TNC0245N 01.24 0000  01000200 00000000 00010001       * ............   *
TNC0245N 01.28 0000  02000100 00000000 00000000       * ............   *
TNC0245N 01.32 0000  03000100 00000000 00000000       * ............   *
TNC0245N 01.36 0000  01010100 00000000 00000001       * ............   *
TNC0245N 01.40 0000  02010100 00000000 00000000       * ............   *
TNC0245N 01.44 0000  03010100 00000000 00000000       * ............   *
TNC0245N 01.48 0000  01020100 00000000 00000001       * ............   *
TNC0245N 01.52 0000  02020100 00000000 00000000       * ............   *
TNC0245N 01.56 0000  03020100 00000000 00000000       * ............   *

TNC0245N 01.00 0000  01000000                        * ....          *
TNC0245N 01.24 0000  01010100 00000000 00000001       * ............   *
TNC0245N 01.28 0000  01020100 00000000 00000001       * ............   *
TNC0245N 01.32 0000  01000200 00000000 00010001       * ............   *

TNC0245N CC.00 0000  CC000000                         * ....          *
TNC0245N CC.04 0000  00000000                         * ....          *
```

Each word in the parameter list points at a portion of storage, which is formatted for placement into the Message Queue. This allows you to evaluate precisely what has been passed to Select. The first set of TNC0245N messages represent the "input" parameter list to the Session Management Exit. The second set of TNC0245N messages are the output parameter list from the Session Management Exit. Finally, the third set of TNC0245N messages represent the "return code" set from the Session Management Exit and passed back to VTAM.

You can interpret these parameter list entries by referring to the Vtam *Customization* manual for your version of VTAM.

Trace

Setting the Option operand to **Trace** allows you to evaluate the individual operand values associated with the session being evaluated. When a Rule with Trace in effect is used, the Network Center produces a series of messages in the following general format:

```
TNC0192W Rule: INPUT , Action: None , Start-date: 061023, End-date: , Day: Friday
TNC0193W ..PLU Name: A42VM , Adjsscp: , Alias: A42VM , Alias-net: NRS
TNC0194W ..PLU Netid: NRS , Sscpname: SSCPV42 , Subarea: 00000042
TNC0195W ..PLU Hcvtype: 16, Hcvname: A42VM
TNC0193W ..SLU Name: T01001 , Adjsscp: SSCPVM , Alias: T01001 , Alias-net: NRS
TNC0194W ..SLU Netid: NRS , Sscpname: SSCPVM , Subarea: 00000001
TNC0195W ..SLU Hcvtype: 24, Hcvname: T01001
TNC0196W ..From: ,Mode: None , Start-time: 10:12, End-time: , Type: Slu-request
```

The information presented is similar to Hexdump, but in a more readable format (because Trace does not require that you parse the hexadecimal information displayed by Hexdump).

Chapter 4. Planning for Select Implementation

Select's flexible design provides maximum control over VTAM list processing. However, this flexibility means that you may want to do some planning prior to implementation, such as identifying which selection list should be used for particular sessions, what resources the selection list should contain, and what priority the resources should have.

This chapter guides you in analyzing your domain to determine the types of Rules and Selection lists you may want to create, in organizing your findings into Rules and/or Rulesets, and in setting the Rules into a Rule processing order. You can use much of the information to create a Rule plan that is easily implemented online.

Topics include:

- "Establishing Rule Criteria and Requirements"

- "Example Rule Arrangements" on page 44

- "Example Network Rules" on page 53

- "Rule Definition Worksheet" on page 57

- "Group Definition Worksheet" on page 60

Note: Testing is also an important resource in planning for implementation. See "Testing Rules" on page 102 for more information.

Establishing Rule Criteria and Requirements

Before creating Rules, you should evaluate the selection list requirements for your domain. We recommend considering the following points:

- Evaluate your network for sessions that you want to provide specific select lists for. Any session that does not match a Rule will automatically be assigned the original VTAM assigned list.

- You can control Select list assignment for sessions by any Rule condition or combination of Rule conditions. Some of these conditions are explained in the following section, "Example Rule Arrangements" on page 44.

- You may want to create a Rule that "bypasses" all requests that you will not provide a Select list for. Although it is not necessary, it will cause Select to log the information so that you can view it to see which sessions are using the original lists.

- You should proceed carefully when first implementing Select, you will probably discover that the Select Session Management Exit receives control for list selection in some surprising situations. We recommend testing your Rules prior to full implementation; see "Testing Rules" on page 102 for more information.

Note: See "First Time Implementation" on page 61 for additional suggestions.

Example Rule Arrangements

The following simple examples show how you can use Select Rules to manage the various aspects of VTAM "List" processing. There are a multitude of other uses for Select as well; we encourage you to explore the options.

Note: Assume that each example contains the complete active Rule list for an executable domain with Select in MODE=ACTIVE (see "Activating Rules" on page 93 for more information on setting the MODE).

Load Balancing

Select allows you to balance workloads across routes of your choosing. Whenever VTAM asks Select to choose a route, Select evaluates the number of sessions operating across the identified routes. It then chooses the route that is below the desired percentage and orders the list for VTAM so that the desired route is first in the list.

For example, assume that you operate two data centers connected by a high-speed link and a medium-speed link. You want to route the majority of the traffic between the two systems across the high-speed link and the rest of the traffic across the medium-speed link. You create the following Rule and Select List:

```
  TWOPATHS  TNCRULE  LIST=(VR1TP1,65,VR2TP1,35)
  TODC2     TNCRULE  ACTION=SELECT,SLU=*,NETID=TODC2,SELECT=TWOPATHS
```

The TWOPATHS Rule describes the two routes (VR1TP1 and VR2TP1) and assigns a "weighting" factor of 65 to VR1TP1 and 35 to VR2TP1. This means that 65% of all sessions assigned to the routes will be assigned to the high-speed link, and 35% of all sessions to the medium-speed link. The TWOPATHS Select list panel would appear as follows:

```
_____
TNCGRPD              Select List Definition                    SELECT
Date: 01/15/2007     Time: 14:23:29      User: EXAMPLE     Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . TWOPATHS                  Title VR1TP1_and_VR2TP1_____

  1. VR1TP1__ 65    16. _____ __    31. _____ __    46. _____ __
  2. VR2TP1__ 35    17. _____ __    32. _____ __    47. _____ __
  3. _____ __    18. _____ __    33. _____ __    48. _____ __
  4. _____ __    19. _____ __    34. _____ __    49. _____ __
  5. _____ __    20. _____ __    35. _____ __    50. _____ __
  6. _____ __    21. _____ __    36. _____ __    51. _____ __
  7. _____ __    22. _____ __    37. _____ __    52. _____ __
  8. _____ __    23. _____ __    38. _____ __    53. _____ __
  9. _____ __    24. _____ __    39. _____ __    54. _____ __
 10. _____ __    25. _____ __    40. _____ __    55. _____ __
 11. _____ __    26. _____ __    41. _____ __    56. _____ __
 12. _____ __    27. _____ __    42. _____ __    57. _____ __
 13. _____ __    28. _____ __    43. _____ __    58. _____ __
 14. _____ __    29. _____ __    44. _____ __    59. _____ __
 15. _____ __    30. _____ __    45. _____ __    60. _____ __
-------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 21. TWOPATHS Select List

The TODC2 Rule panel would appear as follows:

```
_____
TNCRULD              Network Center Rule Definition            SELECT
Date: 01/15/2007     Time: 14:25:51      User: EXAMPLE     Version: 2.0.0

Name . . . . T0DC2___                  Title Routing_for_TODC2_____
Count . . .
Action . . . Select___    . . Alias  . *_____
Date. .first *_____       . . Aliasnet *_____
. . . . last *_____       . . Hcvname. *_____
Day  . . . . *_____     . . Hcvtype. 0_
Dlu (Plu) . *_____       . . Netid  . *_____
. . Adjsscp *_____       . . Sscp . . *_____
. . Alias  . *_____       . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____       Option . . . None____
. . Hcvtype. 0_             Rule type  . Slu-Plu
. . Netid  . T0DC2___       Ruleset  . . No_
. . Sscp . . *_____       Time. .first *____
. . Subarea. *_____       . . . . last *____
From . . . . *_____       Session type *_____
Mode . . . . Active_        Select processing
Olu (Slu) . *_____        Select list  TWOPATHS
. . Adjsscp *_____
-------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 22. TODC2 Rule Panel

Path Priorities

You can expand your load balancing capabilities by prioritizing certain types of data over others. For example, assume that you wish to add Rules to the examples given in "Load Balancing" on page 44 that schedule CICS oriented work over the higher capacity link. You would simply define a Select list with the new criteria (CICSPATH) and a Rule that assigns CICS work to the list (CICS):

```
CICSPATH TNCRULE LIST=(VR1TP1,90,VR2TP1,10)
TWOPATHS TNCRULE LIST=(VR1TP1,65,VR2TP1,35)
CICS     TNCRULE ACTION=SELECT,PLU=CICS*,NETID=TODC2,SELECT=CICSPATH
TODC2    TNCRULE ACTION=SELECT,SLU=*,NETID=TODC2,SELECT=TWOPATHS
```

Now, any sessions with any system starting with the letters "CICS" in the TODC2 network will have 90% of the sessions assigned to the higher priority route. All the other work in the network will continue according to the TWOPATHS rule.

The CICSPATH Select List would appear as follows:

```
_____
TNCGRPD                 Select List Definition                    SELECT
Date: 01/15/2007        Time: 14:30:14       User: EXAMPLE        Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . CICSPATH                  Title CICS_Priority_____

  1. VR1TP1__ 90    16. _____ __    31. _____ __    46. _____ __
  2. VR2TP1__ 10    17. _____ __    32. _____ __    47. _____ __
  3. _____ __    18. _____ __    33. _____ __    48. _____ __
  4. _____ __    19. _____ __    34. _____ __    49. _____ __
  5. _____ __    20. _____ __    35. _____ __    50. _____ __
  6. _____ __    21. _____ __    36. _____ __    51. _____ __
  7. _____ __    22. _____ __    37. _____ __    52. _____ __
  8. _____ __    23. _____ __    38. _____ __    53. _____ __
  9. _____ __    24. _____ __    39. _____ __    54. _____ __
 10. _____ __    25. _____ __    40. _____ __    55. _____ __
 11. _____ __    26. _____ __    41. _____ __    56. _____ __
 12. _____ __    27. _____ __    42. _____ __    57. _____ __
 13. _____ __    28. _____ __    43. _____ __    58. _____ __
 14. _____ __    29. _____ __    44. _____ __    59. _____ __
 15. _____ __    30. _____ __    45. _____ __    60. _____ __
 -------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 23. CICSPATH Select List Panel

The TWOPATHS Select list panel would appear as follows:

```
TNCGRPD                    Select List Definition                      SELECT
Date: 01/15/2007        Time: 14:23:29         User: EXAMPLE      Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . .  TWOPATHS                    Title VR1TP1_and_VR2TP1_____

   1. VR1TP1__ 65    16. _____ __    31. _____ __    46. _____ __
   2. VR2TP1__ 35    17. _____ __    32. _____ __    47. _____ __
   3. _____ __    18. _____ __    33. _____ __    48. _____ __
   4. _____ __    19. _____ __    34. _____ __    49. _____ __
   5. _____ __    20. _____ __    35. _____ __    50. _____ __
   6. _____ __    21. _____ __    36. _____ __    51. _____ __
   7. _____ __    22. _____ __    37. _____ __    52. _____ __
   8. _____ __    23. _____ __    38. _____ __    53. _____ __
   9. _____ __    24. _____ __    39. _____ __    54. _____ __
  10. _____ __    25. _____ __    40. _____ __    55. _____ __
  11. _____ __    26. _____ __    41. _____ __    56. _____ __
  12. _____ __    27. _____ __    42. _____ __    57. _____ __
  13. _____ __    28. _____ __    43. _____ __    58. _____ __
  14. _____ __    29. _____ __    44. _____ __    59. _____ __
  15. _____ __    30. _____ __    45. _____ __    60. _____ __
 ------------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
```

Figure 24.   TWOPATHS Select List

The CICS Rule panel would appear as follows:

```
TNCRULD                Network Center Rule Definition                  SELECT
Date: 01/15/2007        Time: 14:33:26         User: EXAMPLE      Version: 2.0.0

Name . . . .  CICS____                 Title Routing_for_CICS_traffic____
Count  . . .
Action . . .  Select___     . . Alias  . *_____
Date. .first *_____         . . Aliasnet *_____
. . . . last *_____         . . Hcvname. *_____
Day  . . . . *_____      . . Hcvtype. 0_
Dlu (Plu) .  CICS*___       . . Netid  . *_____
. . Adjsscp  *_____       . . Sscp . . *_____
. . Alias  . *_____       . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____          Option . . . None____
. . Hcvtype. 0_                Rule type  . Slu-Plu
. . Netid  . TODC2___          Ruleset  . . No_
. . Sscp . . *_____          Time. .first *____
. . Subarea. *_____          . . . . last *____
From . . . . *_____          Session type *_____
Mode . . . . Active_           Select processing
Olu (Slu) .  *_____          Select list  CICSPATH
. . Adjsscp  *_____
 ------------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
```

Figure 25.   CICS Rule Panel

The TODC2 Rule panel would appear as follows:

```
_____
TNCRULD               Network Center Rule Definition              SELECT
Date: 01/15/2007        Time: 14:25:51        User: EXAMPLE      Version: 2.0.0

Name . . . . T0DC2___                    Title Routing_for_TODC2_____
Count  . . .
Action . . . Select___      . . Alias  . *_____
Date. .first *_____          . . Aliasnet *_____
. . . . last *_____          . . Hcvname. *_____
Day  . . . . *_____       . . Hcvtype. 0_
Dlu (Plu)  . *_____        . . Netid  . *_____
. . Adjsscp  *_____        . . Sscp . . *_____
. . Alias  . *_____        . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____        Option . . . None____
. . Hcvtype. 0_              Rule type  . Slu-Plu
. . Netid  . T0DC2___        Ruleset  . . No_
. . Sscp . . *_____        Time. .first *____
. . Subarea. *_____        . . . . last *____
From . . . . *_____        Session type *_____
Mode . . . . Active_         Select processing
Olu (Slu)  . *_____        Select list  TWOPATHS
. . Adjsscp  *_____
-----------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 26. TODC2 Rule Panel

Adjacent SSCP Table

You can also use Select to reduce unnecessary traffic between processors in a network of machines. For example, assume that your network is connected to ten other machines (three production z/OS systems, four production z/VM machines, and three test systems). If VTAM processes a session request for a locally "unidentified" item, VTAM will begin to search all processors identified in the **Adjacent SSCP** table.

Thus, if the table contains all ten machines, but the desired application is in the tenth machine, VTAM will have to search the other nine systems first, causing traffic and CPU cycles that would be better used elsewhere. You can reduce the number of adjacent SSCPs that are searched by creating the following Select list and Rule:

```
OSPROD   TNCRULE LIST=(OSPROD1,OSPROD2,OSPROD3)
OS       TNCRULE ACTION=REPLACE,DLU-SSCP=OS*,SELECT=OSPROD
```

The OSPROD Select List would appear as follows:

```
TNCGRPD                 Select List Definition                     SELECT
Date: 01/15/2007        Time: 15:40:42        User: EXAMPLE        Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . OSPROD__                     Title OSPROD1,_OSPROD2,_OSPROD3___

   1. OSPROD1_ 0_    16. _____ __    31. _____ __    46. _____ __
   2. OSPROD2_ 0_    17. _____ __    32. _____ __    47. _____ __
   3. OSPROD3_ 0_    18. _____ __    33. _____ __    48. _____ __
   4. _____ __    19. _____ __    34. _____ __    49. _____ __
   5. _____ __    20. _____ __    35. _____ __    50. _____ __
   6. _____ __    21. _____ __    36. _____ __    51. _____ __
   7. _____ __    22. _____ __    37. _____ __    52. _____ __
   8. _____ __    23. _____ __    38. _____ __    53. _____ __
   9. _____ __    24. _____ __    39. _____ __    54. _____ __
  10. _____ __    25. _____ __    40. _____ __    55. _____ __
  11. _____ __    26. _____ __    41. _____ __    56. _____ __
  12. _____ __    27. _____ __    42. _____ __    57. _____ __
  13. _____ __    28. _____ __    43. _____ __    58. _____ __
  14. _____ __    29. _____ __    44. _____ __    59. _____ __
  15. _____ __    30. _____ __    45. _____ __    60. _____ __
--------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
```

Figure 27. OSPROD Select List

The OS Rule would appear as follows:

```
TNCRULD            Network Center Rule Definition                  SELECT
Date: 01/15/2007        Time: 15:42:28        User: EXAMPLE        Version: 2.0.0

Name . . . . . OS_____              Title Selection_for_OS_systems____
Count  . . .
Action . . . Replace__    . . Alias  . *_____
Date. .first *_____       . . Aliasnet *_____
. . . . last *_____       . . Hcvname. *_____
Day  . . . . *_____    . . Hcvtype. 0_
Dlu (Plu)  . *_____     . . Netid  . *_____
. . Adjsscp  *_____     . . Sscp . . *_____
. . Alias  . *_____     . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____          Option . . . None____
. . Hcvtype. 0_               Rule type  . Slu-Plu
. . Netid  . *_____         Ruleset  . . No_
. . Sscp . . OS*_____         Time. .first *____
. . Subarea. *_____         . . . . last *____
From . . . . *_____         Session type *_____
Mode . . . . Active_          Select processing
Olu (Slu)  . *_____         Select list  OSPROD__
. . Adjsscp  *_____
--------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
```

Figure 28. OS Rule Panel

This structure routes any session in Select's domain that is destined for any machine with an SSCPNAME that starts with "OS" to the three production z/OS systems in the OSPROD list.

However, let's assume that your systems maintenance personnel (at devices that start with the letters SYS) want their session requests to be routed using the default Adjacent SSCP table. You would simply create a Rule, called (SYSTEMS), as follows:

```
OSPROD    TNCRULE LIST=(OSPROD1,OSPROD2,OSPROD3)
SYSTEMS   TNCRULE ACTION=BYPASS,SLU=SYS*
OS        TNCRULE ACTION=REPLACE,DLU-SSCP=OS*,SELECT=OSPROD
```

The SYSTEMS Rule panel would appear as follows:

```
_____
TNCRULD              Network Center Rule Definition              SELECT
Date: 01/15/2007     Time: 15:44:17      User: EXAMPLE      Version: 2.0.0

Name . . . . SYSTEMS_                 Title Selection_for_systems_maint_
Count  . . .
Action . . . Bypass___     . . Alias  . *_____
Date. .first *_____        . . Aliasnet *_____
. . . . last *_____        . . Hcvname. *_____
Day  . . . . *_____     . . Hcvtype. 0_
Dlu (Plu) . *_____       . . Netid  . *_____
. . Adjsscp *_____       . . Sscp . . *_____
. . Alias  . *_____      . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____         Option . . . None____
. . Hcvtype. 0_               Rule type  . Slu-Plu
. . Netid  . *_____         Ruleset  . . No_
. . Sscp . . *_____         Time. .first *____
. . Subarea. *_____         . . . . last *____
From . . . . *_____         Session type *_____
Mode . . . . Active_          Select processing
Olu (Slu) . SYS*____          Select list  _____
. . Adjsscp *_____
------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 29.   Systems Rule Panel

Gateway Path Selection

You can also use Select to control the list of SNI Gateways that will be considered by the local domain VTAM (see "Adjacent SSCP Table" on page 48 for examples of similar Rules). For example, assume that you want to restrict your standard users to only do cross network searches for remote applications within the INHOUSE network. You want your systems staff (devices that start with SYS) to also be able to logon to items in the IBMIN (The IBM Information Network) and any other defined networks.

You could create the following Rule structure:

```
MYNET     TNCRULE LIST=(INHOUSE)
SYSTEMS   TNCRULE ACTION=BYPASS,SLU=SYS*
MYUSERS   TNCRULE ACTION=REPLACE,SLU=*,SELECT=MYNET
```

The MYNET Select List would appear as follows:

```
TNCGRPD                 Select List Definition                    SELECT
Date: 01/15/2007        Time: 15:46:39       User: EXAMPLE      Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . MYNET___                    Title Selection_for_INHOUSE_____

  1. INHOUSE_ 0_    16. _____ __    31. _____ __    46. _____ __
  2. _____ __    17. _____ __    32. _____ __    47. _____ __
  3. _____ __    18. _____ __    33. _____ __    48. _____ __
  4. _____ __    19. _____ __    34. _____ __    49. _____ __
  5. _____ __    20. _____ __    35. _____ __    50. _____ __
  6. _____ __    21. _____ __    36. _____ __    51. _____ __
  7. _____ __    22. _____ __    37. _____ __    52. _____ __
  8. _____ __    23. _____ __    38. _____ __    53. _____ __
  9. _____ __    24. _____ __    39. _____ __    54. _____ __
 10. _____ __    25. _____ __    40. _____ __    55. _____ __
 11. _____ __    26. _____ __    41. _____ __    56. _____ __
 12. _____ __    27. _____ __    42. _____ __    57. _____ __
 13. _____ __    28. _____ __    43. _____ __    58. _____ __
 14. _____ __    29. _____ __    44. _____ __    59. _____ __
 15. _____ __    30. _____ __    45. _____ __    60. _____ __
 ---------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
```

Figure 30. MYNET Select List

The SYSTEMS Rule panel would appear as follows:

```
_____
 TNCRULD                  Network Center Rule Definition            SELECT
 Date: 01/15/2007        Time: 15:44:17       User: EXAMPLE     Version: 2.0.0

 Name . . . . SYSTEMS_                  Title Selection_for_systems_maint_
 Count  . . .
 Action . . . Bypass___    . . Alias  . *_____
 Date. .first *_____       . . Aliasnet *_____
 . . . . last *_____       . . Hcvname. *_____
 Day  . . . . *_____    . . Hcvtype. 0_
 Dlu (Plu) . *_____      . . Netid  . *_____
 . . Adjsscp *_____      . . Sscp . . *_____
 . . Alias  . *_____     . . Subarea. *_____
 . . Aliasnet *_____
 . . Hcvname. *_____        Option . . . None____
 . . Hcvtype. 0_              Rule type  . Slu-Plu
 . . Netid  . *_____        Ruleset  . . No_
 . . Sscp . . *_____        Time. .first *____
 . . Subarea. *_____        . . . . last *____
 From . . . . *_____        Session type *_____
 Mode . . . . Active_         Select processing
 Olu (Slu)  . SYS*____        Select list  _____
 . . Adjsscp *_____
 --------------------------------------------------------------------------
   Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
 _____
```

Figure 31. SYSTEMS Rule Panel

The MYUSERS Rule panel would appear as follows:

```
_____
 TNCRULD                  Network Center Rule Definition            SELECT
 Date: 01/15/2007        Time: 15:48:40       User: EXAMPLE     Version: 2.0.0

 Name . . . . MYUSERS_                  Title Selection_for_users_____
 Count  . . .
 Action . . . Replace__    . . Alias  . *_____
 Date. .first *_____       . . Aliasnet *_____
 . . . . last *_____       . . Hcvname. *_____
 Day  . . . . *_____    . . Hcvtype. 0_
 Dlu (Plu) . *_____      . . Netid  . *_____
 . . Adjsscp *_____      . . Sscp . . *_____
 . . Alias  . *_____     . . Subarea. *_____
 . . Aliasnet *_____
 . . Hcvname. *_____        Option . . . None____
 . . Hcvtype. 0_              Rule type  . Slu-Plu
 . . Netid  . *_____        Ruleset  . . No_
 . . Sscp . . *_____        Time. .first *____
 . . Subarea. *_____        . . . . last *____
 From . . . . *_____        Session type *_____
 Mode . . . . Active_         Select processing
 Olu (Slu)  . *_____        Select list  MYNET___
 . . Adjsscp *_____
 --------------------------------------------------------------------------
   Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
 _____
```

Figure 32. MYUSERS Rule Panel

Example Network Rules

The following Example Network demonstrates how to evaluate and plan Select Rules. It consists of the local system (Netid NRS, subarea 12) connected to two NCPs (Subarea 34 and 35). The front-end processors are connected via SNA Gateways to the HDQTRS Network directly and indirectly via the CREDIT Network:

```
                                    *------------------------*
                                    |                        |
                                    |                        |
                                    |      Netid CREDIT       |
                                    |                        |
                                    |                        |
                                    *-----------|------------*
                                                |
*-----------------------*     *-------*        *---|---*
|                     --|------|--   ==|========|==    |
|                       |    *-------*   VR1   *---||--*
|       Netid NRS       |                      ||
|                       |    *-------*        *---||---*
|                     --|------|--   ==|========|==    |
*-----------------------*     *-------*   VR2   *---|----*
                                                |
                                    *-----------|------------*
                                    |                        |
                                    |                        |
                                    |      Netid HDQTRS       |
                                    |                        |
                                    |                        |
                                    *------------------------*
```

Figure 33. Hypothetical Network

In these examples, assume that you are installing Select into Subarea 12 (a simulated mainframe) and that you wish to balance the usage of the paths between your system (NRS) and the HDQTRS and CREDIT Networks. Assume that the direct connection between the NRS system and HDQTRS is a relatively low-speed connection and the connection from NRS to CREDIT, as well as from CREDIT to HDQTRS is high-speed.

The following table expresses the Rules you would need to create to meet these conditions:

Administrative			Session Criteria		
Rule name	Title	Action	Olu (Slu) Netid	Dlu (Plu) Netid	Select List
HDQTRS	Balance HDQTRS Usage	Select	NRS	HDQTRS	BALHDQTR
CREDIT	Balance CREDIT Usage	Select	NRS	CREDIT	BALCRDIT
Others	Any other device	Bypass	*	*	*
Note: Unspecified fields indicate that the default value for the field is acceptable. For "Session Criteria" type fields, the default is the asterisk (*) pattern matching character, which allows any value to match.					

These three Rules are intended to control the generation of the Select Rules and allow the Select interpretation to provide Virtual Route selection in very specific situations.

Note: These examples use only a single, simple division of the entire network based upon NETID. In actual Rules, you can assign Select Rules based on significantly more complex criteria. You can also control many other aspects of VTAM List processing, aside from load balancing.

HDQTRS

The HDQTRS Rule directs any logical unit residing in the local network, "NRS", to use the BALHDQTR Select list to establish the route to use when using a PLU located in the HDQTRS netid. The HDQTRS Rule panel would appear as follows:

```
────────────────────────────────────────────────────────────────────────────
TNCRULD              Network Center Rule Definition              SELECT
Date: 01/15/2007        Time: 16:08:06      User: EXAMPLE       Version: 2.0.0

Name . . . . HDQTRS__                    Title Balance_HDQTRS_usage_____
Count . . .
Action . . . Select___     . . Alias  . *_____
Date. .first *_____        . . Aliasnet *_____
. . . . last *_____        . . Hcvname. *_____
Day  . . . . *_____     . . Hcvtype. 0_
Dlu (Plu)  . *_____      . . Netid  . NRS_____
. . Adjsscp  *_____      . . Sscp . . *_____
. . Alias  . *_____      . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____      Option . . . None____
. . Hcvtype. 0_            Rule type  . Slu-Plu
. . Netid  . HDQTRS__      Ruleset  . . No_
. . Sscp . . *_____      Time. .first *____
. . Subarea. *_____      . . . . last *____
From . . . . *_____      Session type *_____
Mode . . . . Active_       Select processing
Olu (Slu)  . *_____      Select list  BALHDQTR
. . Adjsscp  *_____
────────────────────────────────────────────────────────────────────────────
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
────────────────────────────────────────────────────────────────────────────
```

Figure 34.   HDQTRS Example Network Rule

CREDIT

The CREDIT Rule directs the BALCRDIT list to control the route of any logical unit residing in the NRS network that initiates a session with an element of the CREDIT network. This allows traffic to be distributed across the multiple paths to the CREDIT network. The CREDIT Rule panel would appear as follows:

```
_____
TNCRULD               Network Center Rule Definition              SELECT
Date: 01/15/2007      Time: 16:17:47       User: EXAMPLE      Version: 2.0.0

Name . . . . CREDIT__                   Title Balance_CREDIT_usage_____
Count  . . .
Action . . . Select___    . . Alias  . *_____
Date. .first *_____       . . Aliasnet *_____
. . . . last *_____       . . Hcvname. *_____
Day  . . . . *_____    . . Hcvtype. 0_
Dlu (Plu) . *_____      . . Netid  . NRS_____
. . Adjsscp *_____      . . Sscp . . *_____
. . Alias  . *_____     . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____      Option . . . None____
. . Hcvtype. 0_            Rule type  . Slu-Plu
. . Netid  . CREDIT__      Ruleset  . . No_
. . Sscp . . *_____      Time. .first *____
. . Subarea. *_____      . . . . . last *____
From . . . . *_____      Session type *_____
Mode . . . . Active_       Select processing
Olu (Slu) . *_____       Select list  BALCRDIT
. . Adjsscp *_____
------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 35.   CREDIT Example Network Rule

OTHERS

If the Slu is not associated with the NRS NETID and is not initiating a session within CREDIT or HDQTRS, Select will allow VTAM to use its default selection list to control the routing of session traffic between session partners. The OTHERS Rule will record this activity within the Network Center log. The OTHERS Rule panel would appear as follows:

```
_____
 TNCRULD                 Network Center Rule Definition                SELECT
 Date: 01/15/2007        Time: 16:19:32       User: EXAMPLE        Version: 2.0.0

 Name . . . . OTHERS__                   Title Any_other_device_____
 Count  . . .
 Action . . . Bypass___      . . Alias  . *_____
 Date. .first *_____         . . Aliasnet *_____
 . . . . last *_____         . . Hcvname. *_____
 Day  . . . . *_____      . . Hcvtype. 0_
 Dlu (Plu)  . *_____       . . Netid  . *_____
 . . Adjsscp  *_____       . . Sscp . . *_____
 . . Alias  . *_____       . . Subarea. *_____
 . . Aliasnet *_____
 . . Hcvname. *_____       Option . . . None____
 . . Hcvtype. 0_             Rule type  . Slu-Plu
 . . Netid  . *_____       Ruleset  . . No_
 . . Sscp . . *_____       Time. .first *____
 . . Subarea. *_____       . . . . last *____
 From . . . . *_____       Session type *_____
 Mode . . . . Active_        Select processing
 Olu (Slu)  . *_____       Select list  _____
 . . Adjsscp  *_____
 -------------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 36. OTHERS Example Network Rule

Rule Definition Worksheet

After establishing which sessions will be assigned to particular Select list(s), you are ready to create the Rules. The Rule Worksheet aids you in doing this. It contains all of the same operands as an actual Rule definition panel, but organizes them into four sections, allowing you to "see" your Rule before you define it online:

- The first section, "Administrative", contains the operands that name the Rule and control when and how it is processed.

- The second section, "Session Criteria", contains the operands that define the type of session, and whether or not the Rule will monitor the session for selection list assignment.

- The third section, "Select processing" provides an area to define a Select list and its resources.

- The fourth section "Rule list" provides an area to define the names of the Rules that this Rule defines if it is a Ruleset Rule.

Note: The asterisk pattern matching character (*) is the default for each operand, with the exception of Name, Title, Action, Hcvtype, Mode, Option, Rule type, Select List, and Ruleset. It indicates that all values for the field match.

Note: This section provides a blank worksheet for your own use. We recommend that you make copies of this worksheet if you plan on using it to define more than one Rule.

Administrative

Name:	Ruleset (select one): Yes No	Action (select one): Select Replace Bypass	From:
Title:		Day:	
Mode (select one): Active Dormant Warn Test		Option (select one): Hex None Suppress Trace	Time first:	Time last:
Session type (choose one): * Autologon Plu-request Slu-request Third-party Rd-search		Date first:	Date last:

Session Criteria

OLU (SLU):

DLU (PLU):		
Adjsscp:	Hcvtype:	Adjsscp:	Hcvtype:
Alias:	Netid:	Alias:	Netid:
Aliasnet:	Sscp:	Aliasnet	Sscp.
Hcvname	Subarea	Hcvname	Subarea

Select Processing

Select List (the name of the Select list):

Select list resources (list the resources in the numbered fields with their associated weights; the actual Select list provides additional fields):

1.	2.	3.	4.	5.	6.
7.	8.	9.	10.	11.	12.
13.	14.	15.	16.	17.	18.

Rule list (if this is a Ruleset, write the names of the Rules it defines in the blanks below according to their processing order. The actual Rule list panel provides additional fields):

1.	2.	3.	4.	5.	6.
7.	8.	9.	10.	11.	12.

Group Definition Worksheet

If you define more than one Rule or Ruleset, you must place them into a Rule Group to set their processing order (see "Specifying the Active Rules" on page 93). The Rule Group worksheet allows you to place your Rules, Rulesets, and/or Groups into order.

Note: This section provides one blank worksheet for your own use. We recommend that you make copies of this worksheet if you plan on using it to define more than one Group.

Group name	Group title		
Rule, Ruleset, or Group name			
1.	14.	27.	40.
2.	15.	28.	41.
3.	16.	29.	42.
4.	17.	30.	43.
5.	18.	31.	44.
6.	19	32.	45.
7.	20.	33.	46.
8.	21.	34.	47.
9.	22.	35.	48.
10.	23.	36.	49.
11.	24.	37.	50.
12.	25.	38.	51.
13.	26.	39.	52.

Table 1. Group Worksheet

Chapter 5. Implementing Select

This chapter guides you in implementing Select using the Network Center Interface. It demonstrates how to define and modify Rules, how to set the Rule processing order, and how to activate the Rules. It also discusses Rule-testing methods.

You can use the sections in this chapter as individual procedures, but they are organized for you to use step-by-step as you define and activate one or more Rules. Topics include:

*   "First Time Implementation"

*   "Summary of Rule Definitions and Procedures" on page 62

*   "Opening the Select Menu" on page 62

*   "Defining Rules or Rulesets" on page 66

*   "Defining a Select List" on page 74

*   "Modifying or Deleting Rules and Rulesets" on page 79

*   "Defining a Rule Group" on page 84

*   "Modifying or Deleting Groups, Value Groups, and Select Lists" on page 88

*   "Activating Rules" on page 93

*   "Verifying the Operation of the Active Rules" on page 99

*   "Testing Rules" on page 102

Note: See the *User's Guide* (Document Number TNC-0002) for information on using the Network Center Interface, including selection techniques, field entry methods, function key and common dialog actions, and navigational techniques.

First Time Implementation

You should proceed cautiously when first implementing Select. Likely, you will discover that sessions are occurring between network elements that you didn't realize were occurring before. You may also discover that the Select Session Management Exit receives control for list selection in some relatively surprising situations.

You may want to take the following precautions:

*   Set the MODE=WARN in the Component Options record until you have ensured that list selection assignments are as desired. The WARN setting places all Rules, Rulesets, and Groups into a global warn mode. When you have established that the Rule structure is

operating as planned, you can set the MODE=ACTIVE. See "Specifying the Active Rules" on page 93 for information on setting the MODE.

- Test your Rules and Rule hierarchy prior to full activation. Testing allows you to see how Rules function within your system and helps you to ascertain whether or not they are effective. See "Testing Rules" on page 102 for more information.

Summary of Rule Definitions and Procedures

This section briefly summarizes the basic steps for defining and activating a Select Rule:

1. Define the desired Rules (including any Rulesets) using the 'Rule definition' choice (see "Defining Rules or Rulesets" on page 66).

2. Define each Select list to be assigned to each Rule (see "Defining a Select List" on page 74).

3. If you have defined more than one Rule or Ruleset, place them into the order that they should be processed by creating a Rule Group. This function is available from the 'Group definition' choice (see "Defining a Rule Group" on page 84).

4. Test the Rules using the 'Rule test' choice (see "Testing Rules" on page 102).

5. Define the Rule, Ruleset, or Group that you wish to be the active entity in the 'Component options' function (see "Specifying the Active Rules" on page 93).

6. Activate this Rule, Ruleset, or Group using the 'Rule reload' function (see "Reloading Rules" on page 96).

Opening the Select Menu

The "Select Component Administration" menu panel provides a base for all Rule definition and maintenance procedures.

Steps:

1. Logon to CMS or TSO

2. Start a session with Select by entering one of the following commands:

    - For TSO, enter "TNCENTER" (TSO CLIST)

    - For CMS, enter "TNCENTER" (CMS Command)

The Network Center LOGO panel appears:

```
_____

                    \\\\\\\\     \\\\\\\\\
                    \NNNNNNNN    \NNNNNNNNN
                    \NNNNNNNNNN   \NNNN\\\\\\\\\\\\\\\\\\\\
                    \NNNNNNNNNNN  \NNNN\RRRRRRRRRRRRRRRRRRR
                    \NNNNNNNNNNNN\NNNN\RRRRRRRRRRRRRRRRRRRR\\\\\\\\\\\\\\\
                    \NNNNNNNNNNNNNNNNN\RRRRRRRR  \RRRRRR\SSSSSSSSSSSSSSSS
                    \NNNNNNNNN\NNNNNNN\RRRRRRRR\\\RRRRR\SSSSSSSSSSSSSSSSSS
                    \NNNNNNNNN \NNNNNN\RRRRRRRRRRRRRRRRR\SSSSSSSS     \SSS
                    \NNNNNNNNN   \NNNNN\RRRRRRRR\RRRRRRR\SSSSSSSS\\\\\\\
                    \NNNNNNNNN    \NNNN\RRRRRRRR \RRRRRRR\SSSSSSSSSSSSSSSS
                                  \RRRRRRRR  \RRRRRR\\     \SSSSSSSSS
                                  \RRRRRRRR   \RRRR\SSS\\\\\SSSSSSSSS
                                                \SSSSSSSSSSSSSSSSSS
                                                 \SSSSSSSSSSSSSSSS


                                   z/OS
                    *-------------------------------------------*
                    |              The Network Center           |
                    |                 Version 2.0.0             |
                    *-------------------------------------------*


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                        Enter to continue or PF12 to cancel
_____
```

Figure 37.   Network Center LOGO Panel

3.   Press Enter to clear the logo panel and open the main Network Center menu (TNCMENU):

```
_____
  Options  Exit  Help
-----------------------------------------------------------------------------
TNCMENU                      The Network Center

Select one of the following choices by typing the number, or make a selection
by positioning the cursor at your choice. Then Enter.

__    1.  Administration
      2.  Access
      3.  Alias
      4.  Query
      5.  Ruletest
      6.  Select
      7.  Timeout







-----------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F10=Actions  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 38.   Network Center Menu Panel (TNCMENU)

4. Open the Select Administration menu panel by placing the cursor on the 'Select' choice and pressing Enter:

```
_____
TNCSSEL                   Select Component Administration              SELECT

Choose a Select function by typing a number in the entry field, or make a
selection by positioning the cursor at your choice. Then Enter.

  __    1. Adjacent Link Station selection
        2. Adjacent SSCP selection
        3. Gateway Path selection
        4. Virtual Route selection










      ---------------------------------------------------------------------------
      Enter  F1=Help  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 39.   Select Component Administration Panel (TNCSSEL)

Note: If the 'Select' choice appears blue or low intensity, you are not authorized to administer Select. Contact the Network Administrator.

The Select Component Administration panel displays a selectable menu of the four VTAM exit points that you can control with Select:

•   **Adjacent Link Station selection** allows you to set the ALS to be used for a session initiation request for an Independent LU that serves as the destination LU.

•   **Adjacent SSCP selection** allows you to route a particular session request to an SSCP.

•   **Gateway Path selection** allows you to specify the order by which supplied Gateway Paths should be used by VTAM to process a session initiation request.

•   **Virtual Route selection** allows you to specify which virtual route should be used for a particular session initiation request.

In addition, you can control the amounts, or even types, of session traffic that are handled by each of the specified resources.

5. After opening the main Select menu, you may open the Administration Menu for any of the four VTAM exit points. The following figure shows the Virtual Route Administration panel:

```
 _____
   Options   Exit   Help   Component
 ----------------------------------------------------------------------------
 TNCADMC                  Virtual Route Administration                  SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __   1.  Active rules
      2.  Component options
      3.  Define (value) Group or Select list
      4.  Display (value) Group or Select list
      5.  Rule counts
      6.  Rule definition
      7.  Rule display
      8.  Rule reload
      9.  Rule test
     10. Statistics
     11. Status




 ----------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
 _____
```

Figure 40.   Select Administration Panel (TNCADMC)

Each Administration panel (TNCADMC) provides a base for Rule definition and maintenance activities.

Note: The Administration panel for each VTAM exit point provides exactly the same selections: Active rules, Component options, Define (value) Group or Select list, etc. Thus, each of the tasks discussed in this chapter applies equally to each exit point.

Defining Rules or Rulesets

After opening the Administration menu (TNCADMC) for the VTAM selection list you wish to control, you can define Rules and/or Rulesets using the 'Rule definition' function.

Steps:

1. Go to the desired Select Rule Administration menu (see "Opening the Select Menu" on page 62). The following figure shows the Virtual Route Administration panel:

```
_____

   Options  Exit  Help  Component
 -------------------------------------------------------------------------------
 TNCADMC                 Virtual Route Administration                    SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __   1.  Active rules
      2.  Component options
      3.  Define (value) Group or Select list
      4.  Display (value) Group or Select list
      5.  Rule counts
      6.  Rule definition
      7.  Rule display
      8.  Rule reload
      9.  Rule test
     10.  Statistics
     11.  Status




 -------------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 41. Select List Administration Panel (TNCADMC)

2. Select choice 6, 'Rule definition' to open the Network Center Rule Definition panel:

```
_____
TNCRULD              Network Center Rule Definition              SELECT
Date: 01/15/2007      Time: 13:49:22        User: EXAMPLE      Version: 2.0.0

Name . . . . _____                    Title _____
Count  . . .
Action . . . Select___    . . Alias  . *_____
Date. .first *_____       . . Aliasnet *_____
. . . . last *_____       . . Hcvname. *_____
Day  . . . . *_____     . . Hcvtype. 0_
Dlu (Plu)  . *_____      . . Netid  . *_____
. . Adjsscp *_____      . . Sscp . . *_____
. . Alias  . *_____      . . Subarea. *_____
. . Aliasnet *_____      . . IP data. ___
. . Hcvname. *_____      Option . . . None____
. . Hcvtype. 0_           Rule type  . Slu-Plu
. . Netid  . *_____      Ruleset  . . No_
. . Sscp . . *_____      Time. .first *____
. . Subarea. *_____      . . . . last *____
From . . . . *_____      Session type *_____
Mode . . . . Active_      Select processing
Olu (Slu)  . *_____      Select list  _____
. . Adjsscp *_____
--------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 42.   Network Center Rule Definition Panel (TNCRULD)

3. Define the operand fields, starting with the 'Name' and 'Title'. The following figure shows a defined Rule panel (see "HDQTRS" on page 55 for more information on this Rule):

```
_____
TNCRULD              Network Center Rule Definition              SELECT
Date: 01/15/2007      Time: 16:47:52        User: EXAMPLE      Version: 2.0.0

Name . . . . HDQTRS__                    Title Activity_to_HeadQuarters____
Count  . . .
Action . . . Select___    . . Alias  . *_____
Date. .first *_____       . . Aliasnet *_____
. . . . last *_____       . . Hcvname. *_____
Day  . . . . *_____     . . Hcvtype. 0_
Dlu (Plu)  . *_____      . . Netid  . NRS_____
. . Adjsscp *_____      . . Sscp . . *_____
. . Alias  . *_____      . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____      Option . . . None____
. . Hcvtype. 0_           Rule type  . Slu-Plu
. . Netid  . HDQTRS__     Ruleset  . . No_
. . Sscp . . *_____      Time. .first *____
. . Subarea. *_____      . . . . last *____
From . . . . *_____      Session type *_____
Mode . . . . Active_      Session COS  *_____
Olu (Slu)  . *_____      Select processing
. . Adjsscp *_____      Select list  BALHDQTR
--------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 43.   Sample Rule Definition

To define a Select List

To define a Select list, enter the name of the Select list in the 'Select list' field and press F11 (Select); the Select List Definition panel appears (see Figure 53 on page 77). Enter the Name, Title, Select list values, and weighting factors. To save the Select list, press F3 (Exit); from the resulting pop-up window, select choice 1, 'Exit and save record'. See "Defining a Select List" on page 74 for more information.

To define a Ruleset

In the Ruleset field, enter 'yes'; an additional field, called "Select", appears next to the Ruleset operand, as shown in the following figure:

```
_____
TNCRULD                Network Center Rule Definition                SELECT
Date: 01/15/2007       Time: 12:04:55        User: EXAMPLE        Version: 2.0.0

Name . . . . HDQTRS__                 Title Activity_to_HeadQuarters____
Count  . . .
Action . . . Select___     . . Alias  . *_____
Date. .first *_____        . . Aliasnet *_____
. . . . last *_____        . . Hcvname. *_____
Day  . . . . *_____     . . Hcvtype. 0_
Dlu (Plu) . *_____       . . Netid  . NRS_____
. . Adjsscp  *_____      . . Sscp . . *_____
. . Alias  . *_____      . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____      Option . . . None____
. . Hcvtype. 0_            Rule type  . Slu-Plu
. . Netid  . HDQTRS__      Ruleset  . . Yes Select _
. . Sscp . . *_____      Time. .first *____
. . Subarea. *_____      . . . . last *____
From . . . . *_____      Session type *_____
Mode . . . . Active_       Session COS  *_____
Olu (Slu) . *_____       Select processing
. . Adjsscp  *_____      Select list  BALHDQTR
--------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 44. Ruleset Selection Field

Mark the Select field with any keyboard character and press Enter; the Ruleset Rule Name List panel appears:

```
TNCRNAM                    Ruleset Rule Name List                       SELECT
Date: 01/15/2007        Time: 12:31:16        User: EXAMPLE        Version: 2.0.0

  1. _____       20. _____       39. _____       58. _____
  2. _____       21. _____       40. _____       59. _____
  3. _____       22. _____       41. _____       60. _____
  4. _____       23. _____       42. _____       61. _____
  5. _____       24. _____       43. _____       62. _____
  6. _____       25. _____       44. _____       63. _____
  7. _____       26. _____       45. _____       64. _____
  8. _____       27. _____       46. _____       65. _____
  9. _____       28. _____       47. _____       66. _____
 10. _____       29. _____       48. _____       67. _____
 11. _____       30. _____       49. _____       68. _____
 12. _____       31. _____       50. _____       69. _____
 13. _____       32. _____       51. _____       70. _____
 14. _____       33. _____       52. _____       71. _____
 15. _____       34. _____       53. _____       72. _____
 16. _____       35. _____       54. _____       73. _____
 17. _____       36. _____       55. _____       74. _____
 18. _____       37. _____       56. _____       75. _____
 19. _____       38. _____       57. _____       76. _____
 ------------------------------------------------------------------------------

 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
```

Figure 45. Ruleset Rule Name List Panel (TNCRNAM)

Note: You can also open a Ruleset Rule Name List by using the F11 (Select) action.

In the numbered fields, enter the names of the Rules the Ruleset will contain according to their processing order. The following figure shows an example:

```
_____
TNCRNAM                Ruleset Rule Name List                   SELECT
Date: 01/15/2007       Time: 12:31:16       User: EXAMPLE       Version: 2.0.0

  1. HDQTRS1_      20. _____      39. _____      58. _____
  2. HDQTRS2_      21. _____      40. _____      59. _____
  3. HDQTRS3_      22. _____      41. _____      60. _____
  4. HDQTRS4_      23. _____      42. _____      61. _____
  5. _____      24. _____      43. _____      62. _____
  6. _____      25. _____      44. _____      63. _____
  7. _____      26. _____      45. _____      64. _____
  8. _____      27. _____      46. _____      65. _____
  9. _____      28. _____      47. _____      66. _____
 10. _____      29. _____      48. _____      67. _____
 11. _____      30. _____      49. _____      68. _____
 12. _____      31. _____      50. _____      69. _____
 13. _____      32. _____      51. _____      70. _____
 14. _____      33. _____      52. _____      71. _____
 15. _____      34. _____      53. _____      72. _____
 16. _____      35. _____      54. _____      73. _____
 17. _____      36. _____      55. _____      74. _____
 18. _____      37. _____      56. _____      75. _____
 19. _____      38. _____      57. _____      76. _____
-------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 46. Ruleset Rule Name List Example

After entering the Rule and/or Ruleset names, press F3 (Exit) to save the Ruleset Rule Name
List and exit the panel; a window prompt appears:

```
TNCRNAM                Ruleset Rule Name List                          SELECT
Date: 01/15/2007   *-------------------------------*        Version: 2.0.0
                   | TNCSXIT  Exit Function         |
  1. HDQTRS1_      |-------------------------------|        58. _____
  2. HDQTRS2_      | _ 1. Exit and save record.    |        59. _____
  3. HDQTRS3_      |   2. Exit current function.    |        60. _____
  4. HDQTRS4_      |   3. Resume current function.  |        61. _____
  5. _____      |-------------------------------|        62. _____
  6. _____      |  F12=Cancel                    |        63. _____
  7. _____      *-------------------------------*        64. _____
  8. _____        27. _____       46. _____        65. _____
  9. _____        28. _____       47. _____        66. _____
 10. _____        29. _____       48. _____        67. _____
 11. _____        30. _____       49. _____        68. _____
 12. _____        31. _____       50. _____        69. _____
 13. _____        32. _____       51. _____        70. _____
 14. _____        33. _____       52. _____        71. _____
 15. _____        34. _____       53. _____        72. _____
 16. _____        35. _____       54. _____        73. _____
 17. _____        36. _____       55. _____        74. _____
 18. _____        37. _____       56. _____        75. _____
 19. _____        38. _____       57. _____        76. _____
 -----------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
```

Figure 47. Ruleset Rule Name List Prompt

Select choice 1, 'Exit and save record'; a confirmation message appears:

```
TNCRNAM                  Ruleset Rule Name List                        SELECT
Date: 01/15/2007   *-------------------------------*       Version: 2.0.0
                   | TNCSXIT   Exit Function        |
  1. HDQTRS1_       |-------------------------------|       58. _____
  2. HDQTRS2_       | _ 1. Exit and save record.    |       59. _____
  3. HDQTRS3_       |   2. Exit current function.    |       60. _____
  4. HDQTRS4_       |   3. Resume current function.  |       61. _____
  5. _____       |-------------------------------|       62. _____
  6. _____       |  F12=Cancel                    |       63. _____
  7. _____  *--------------------------------------------------*  _____
  8. _____  | TNCDMSG        The Network Center                |  _____
  9. _____  |--------------------------------------------------|  _____
 10. _____  | TNC0049N Record updated successfully, Key =      |  _____
 11. _____  | R3LHDQTRS , Component = Select                    |  _____
 12. _____  |--------------------------------------------------|  _____
 13. _____  |  F12=Cancel                                      |  _____
 14. _____  *--------------------------------------------------*  _____
 15. _____         34. _____         53. _____         72. _____
 16. _____         35. _____         54. _____         73. _____
 17. _____         36. _____         55. _____         74. _____
 18. _____         37. _____         56. _____         75. _____
 19. _____         38. _____         57. _____         76. _____
 ------------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
```

Figure 48.   Ruleset Rule Name List Confirmation

Press F12 (Cancel) to cancel the message and return to the Rule definition panel.

4.   After entering the Rule operands, press Enter to refresh and edit the panel.

5. If the operands are correct, press F16 (Save) to save the Rule or Ruleset; a confirmation message appears, as in the following example:

```
_____
TNCRULD              Network Center Rule Definition              SELECT
Date: 01/15/2007      Time: 14:17:46      User: EXAMPLE      Version: 2.0.0

Name . . . . HDQTRS__                    Title Activity_to_HeadQuarters____
Count . . .
Action . . . Select___    . . Alias  . *_____
Date. .first *_____       . . Aliasnet *_____
. . . . last *_____       . . Hcvname. *_____
Day  . . . . *_____     . . Hcvtype. 0_
Dlu (Plu)   *----------------------------------------------------*
. . Adjsscp | TNCDMSG      The Network Center                    |
. . Alias   |----------------------------------------------------|
. . Aliasne | TNC0049N Record updated successfully, Key =        |
. . Hcvname | R3RHDQTRS , Component = SELECT                     |
. . Hcvtype |----------------------------------------------------|
. . Netid   |  F12=Cancel                                        |
. . Sscp .  *----------------------------------------------------*
. . Subarea. *_____         . . . . last *____
From . . . . *_____        Session type *_____
Mode . . . . Active_         Session COS  *_____
Olu (Slu) . *_____         Select processing
. . Adjsscp *_____         Select list  BALHDQTR
--------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 49. Rule Confirmation Message

Press F12 (Cancel) to cancel the message if it is in a pop up window.

The panel will appear with the default values reinstated; you may proceed with defining the next Rule, if desired.

Note: You can display a defined Ruleset by placing the cursor on the Ruleset 'Select' field and pressing Enter.

Defining a Select List

You can create customized Select lists that specify a list of resources - such as Virtual routes, Gateway paths, SSCP names, or ALS names - and a weighting factor for each resource. You can then use the Select list to control the VTAM paths that are used for a particular session and to control the balance of session traffic across the available paths. (See "Select Lists" on page 29 for more information on Select lists).

This section describes how to define a Select list using the Group definition panel. (For information on defining a Select list using the Rule definition panel, see "Defining Rules or Rulesets" on page 66.)

Steps:

1. Go to the desired Select Rule Administration panel (see "Opening the Select Menu" on page 62) The following example shows the Virtual Route Administration panel:

```
_____
   Options   Exit   Help   Component
 ------------------------------------------------------------------------------
 TNCADMC                   Virtual Route Administration                 SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __   1.   Active rules
      2.   Component options
      3.   Define (value) Group or Select list
      4.   Display (value) Group or Select list
      5.   Rule counts
      6.   Rule definition
      7.   Rule display
      8.   Rule reload
      9.   Rule test
     10.   Statistics
     11.   Status




 ------------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 50.   Select List Administration Panel

2. Select choice 3, 'Define (value) Group or Select List'; the Group definition panel (TNCGRPD) appears:

```
_____
TNCGRPD                 Group Definition                           SELECT
Date: 01/15/2007        Time: 14:20:32       User: EXAMPLE         Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . _____                    Title _____

   1. _____        16. _____        31. _____        46. _____
   2. _____        17. _____        32. _____        47. _____
   3. _____        18. _____        33. _____        48. _____
   4. _____        19. _____        34. _____        49. _____
   5. _____        20. _____        35. _____        50. _____
   6. _____        21. _____        36. _____        51. _____
   7. _____        22. _____        37. _____        52. _____
   8. _____        23. _____        38. _____        53. _____
   9. _____        24. _____        39. _____        54. _____
  10. _____        25. _____        40. _____        55. _____
  11. _____        26. _____        41. _____        56. _____
  12. _____        27. _____        42. _____        57. _____
  13. _____        28. _____        43. _____        58. _____
  14. _____        29. _____        44. _____        59. _____
  15. _____        30. _____        45. _____        60. _____
 ----------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 51.   Group Definition Panel (TNCGRPD)

3. Enter the Select list's 'Name' and 'Title' and press F11 (Select); the Group/List function window appears:

```
TNCGRPD              Group Definition                         SELECT
Date: 01/15/2007     Time: 14:20:32       User: EXAMPLE      Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.
          *-------------------------------*
Name . . | TNCSTYP  Group/List function  | e _____
         |-------------------------------|
   1. ___ | _ 1. Normal/Value Group      | _____         46. _____
   2. ___ |    2. Value Group (16)       | _____         47. _____
   3. ___ |    3. Value Group (32)       | _____         48. _____
   4. ___ |    4. Select List            | _____         49. _____
   5. ___ |    5. Resume current function.| _____        50. _____
   6. ___ |-------------------------------| _____         51. _____
   7. ___ | F12=Cancel                   | _____         52. _____
   8. ___ *-------------------------------* _____         53. _____
   9. _____       24. _____       39. _____         54. _____
  10. _____       25. _____       40. _____         55. _____
  11. _____       26. _____       41. _____         56. _____
  12. _____       27. _____       42. _____         57. _____
  13. _____       28. _____       43. _____         58. _____
  14. _____       29. _____       44. _____         59. _____
  15. _____       30. _____       45. _____         60. _____
 --------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
```

Figure 52.   Group/List Function Window

4. Select choice 4, 'Select list' to reformat the panel into a Select List Definition panel, as shown in the following figure:

```
_____
TNCGRPD                 Select List Definition                    SELECT
Date: 01/15/2007      Time: 11:00:00        User: EXAMPLE       Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . _____                      Title _____

    1. _____ __       16. _____ __       31. _____ __       46. _____ __
    2. _____ __       17. _____ __       32. _____ __       47. _____ __
    3. _____ __       18. _____ __       33. _____ __       48. _____ __
    4. _____ __       19. _____ __       34. _____ __       49. _____ __
    5. _____ __       20. _____ __       35. _____ __       50. _____ __
    6. _____ __       21. _____ __       36. _____ __       51. _____ __
    7. _____ __       22. _____ __       37. _____ __       52. _____ __
    8. _____ __       23. _____ __       38. _____ __       53. _____ __
    9. _____ __       24. _____ __       39. _____ __       54. _____ __
   10. _____ __       25. _____ __       40. _____ __       55. _____ __
   11. _____ __       26. _____ __       41. _____ __       56. _____ __
   12. _____ __       27. _____ __       42. _____ __       57. _____ __
   13. _____ __       28. _____ __       43. _____ __       58. _____ __
   14. _____ __       29. _____ __       44. _____ __       59. _____ __
   15. _____ __       30. _____ __       45. _____ __       60. _____ __
------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 53.   Select List Definition Panel (TNCGRPD)

5. In the numbered fields, enter the names of the desired resources and their weighting factors:

    •   In the first blank of each field, specify the name of the resource.

        Virtual Route names are defined via VTAMLST definitions to VTAM and must be specified as a six character name in the form 'VRxTPy', where 'x' is a value (0 through 7) that represents the virtual route number and 'y' is a value (0 through 2) that represents the Transmission priority.

    •   In the second blank of each field, specify the weighting factor for the resource. Enter a weight of zero ("0") to always include the list element in the generated Select List. (See "Select Lists" on page 29 and "Select List" on page 22 for more information.)

    For example, the following figure shows a Select list that would assign 80% of the session traffic that matches the Rule to a route named VR1TP1 and the other 20% to a route named VR2TP1:

```
_____
TNCGRPD               Select List Definition                       SELECT
Date: 01/15/2007      Time: 11:01:54         User: EXAMPLE       Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . TWOPATHS                    Title Selection_for_CICS_traffic__

  1. VR1TP1__ 80     16. _____ __     31. _____ __     46. _____ __
  2. VR2TP1__ 20     17. _____ __     32. _____ __     47. _____ __
  3. _____ __     18. _____ __     33. _____ __     48. _____ __
  4. _____ __     19. _____ __     34. _____ __     49. _____ __
  5. _____ __     20. _____ __     35. _____ __     50. _____ __
  6. _____ __     21. _____ __     36. _____ __     51. _____ __
  7. _____ __     22. _____ __     37. _____ __     52. _____ __
  8. _____ __     23. _____ __     38. _____ __     53. _____ __
  9. _____ __     24. _____ __     39. _____ __     54. _____ __
 10. _____ __     25. _____ __     40. _____ __     55. _____ __
 11. _____ __     26. _____ __     41. _____ __     56. _____ __
 12. _____ __     27. _____ __     42. _____ __     57. _____ __
 13. _____ __     28. _____ __     43. _____ __     58. _____ __
 14. _____ __     29. _____ __     44. _____ __     59. _____ __
 15. _____ __     30. _____ __     45. _____ __     60. _____ __
-------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 54.   Example Select List

6. After entering the Select List values and their weighting factors, press F16 (Save) to save the List.

Modifying or Deleting Rules and Rulesets

If you have defined a Rule or Ruleset, you can use the 'Rule display' function to ensure that it is defined and saved correctly. You can also use this function to open a Rule or Ruleset panel for modification or to delete the record.

Steps:

1. Go to the desired Select Rule Administration menu (see "Opening the Select Menu" on page 62). The following example shows the Virtual Route Administration panel:

```
_____
  Options   Exit   Help   Component
-------------------------------------------------------------------------
TNCADMC                 Virtual Route Administration              SELECT

Select one of the following choices by typing the number, or make a selection
by positioning the cursor at your choice. Then Enter.

__   1.  Active rules
     2.  Component options
     3.  Define (value) Group or Select list
     4.  Display (value) Group or Select list
     5.  Rule counts
     6.  Rule definition
     7.  Rule display
     8.  Rule reload
     9.  Rule test
    10.  Statistics
    11.  Status




 -------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 55.   Select List Administration Panel

2. Select choice 7, 'Rule display'; an alphabetized list of all the defined Rules appears, as in the following example:

```
_____
TNCRULS                        Network Center Rules                      SELECT

Select a rule by typing the number, or positioning the cursor at your choice.
Then Enter. The selected rule will be displayed.

__    1. CREDIT    Rule         Activity to CREDIT Network
      2. HDQTRS    Rule         Activity to HeadQuarters
      3. OTHERS    Rule         Catch all other traffic




 ------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Find  F12=Cancel  F21=Command
_____
```

Figure 56.   Network Center Rules Panel (TNCRULS)

To scroll through a list that exceeds the screen, use the F7 (Backward) and F8 (Forward) actions. Use the F11 (Find) action to locate a specific Rule.

3. Place the cursor on the Rule or Ruleset you wish to view or modify and press Enter. The Rule definition panel appears, as in the following example:

```
_____
TNCRULD                Network Center Rule Definition               SELECT
Date: 01/15/2007       Time: 16:47:52       User: EXAMPLE       Version: 2.0.0

Name . . . . HDQTRS__                      Title Activity_to_HeadQuarters____
Count . . .
Action . . . Select___      . . Alias  . *_____
Date. .first *_____         . . Aliasnet *_____
. . . . last *_____         . . Hcvname. *_____
Day  . . . . *_____      . . Hcvtype. 0_
Dlu (Plu) . *_____         . . Netid  . NRS_____
. . Adjsscp  *_____        . . Sscp . . *_____
. . Alias  . *_____        . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____        Option . . . None____
. . Hcvtype. 0_              Rule type  . Slu-Plu
. . Netid  . HDQTRS__        Ruleset  . . No_
. . Sscp . . *_____        Time. .first *____
. . Subarea. *_____        . . . . last *____
From . . . . *_____        Session type *_____
Mode . . . . Active_         Session COS  *_____
Olu (Slu) . *_____         Select processing
. . Adjsscp  *_____        Select list  BALHDQTR
--------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 57.   Example Rule Definition panel

You may now make any desired modifications:

- **To display a Ruleset, Select list, or Value Group**, place the cursor on the related field and press F11 (Select).

- **To delete an entry**, type over it with a new value; press F16 (Save) to save the changes.

- **To delete the Rule**, press F20 (Delete); the "Delete function" window appears:

```
_____
TNCRULD                 Network Center Rule Definition                SELECT
Date: 01/15/2007       Time: 14:18:06        User: EXAMPLE        Version: 2.0.0
                       *-------------------------------*
Name . . . . HDQTRS__ | TNCDELT  Delete function      | _HeadQuarters____
Count  . . .          |-------------------------------|
Action . . . Select__ | _ 1. Delete the record.       |
Date. .first *_____   |    2. Resume current function. |
. . . . last *_____   |-------------------------------|
Day  . . . . *_____ |  F12=Cancel                   |
Dlu (Plu)  . *_____ *-------------------------------*
. . Adjsscp  *_____     . . Sscp . . *_____
. . Alias  . *_____     . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____     Option . . . None____
. . Hcvtype. 0_          Rule type  . Slu-Plu
. . Netid  . HDQTRS__    Ruleset  . . No_
. . Sscp . . *_____    Time. .first *____
. . Subarea. *_____    . . . . last *____
From . . . . *_____    Session type *_____
Mode . . . . Active_     Session COS  *_____
Olu (Slu)  . *_____    Select processing
. . Adjsscp  *_____    Select list  BALHDQTR
-------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 58.   Delete Function window

Select choice 1, 'Delete the record'; a message appears stating that the record deleted successfully:

```
_____
TNCRULD                Network Center Rule Definition              SELECT
Date: 01/15/2007        Time: 14:18:06      User: EXAMPLE      Version: 2.0.0
                    *-------------------------------*
Name . . . . HDQTRS__ | TNCDELT  Delete function    | _HeadQuarters____
Count  . . .          |-------------------------------|
Action . . . Select__ | _ 1. Delete the record.      |
Date. .first *_____   |    2. Resume current function. |
. . . . last *_____   |-------------------------------|
Day  . . . . *_____ | F12=Cancel                   |
Dlu (Plu)    *----------------------------------------------------*
. . Adjsscp | TNCDMSG      The Network Center                    |
. . Alias   |----------------------------------------------------|
. . Aliasne | TNC0050N Record deleted successfully, Key =        |
. . Hcvname | R3RHDQTRS , Component = SELECT                      |
. . Hcvtype |----------------------------------------------------|
. . Netid   |  F12=Cancel                                        |
. . Sscp .  *----------------------------------------------------*
. . Subarea. *_____        . . . . last *____
From . . . . *_____        Session type *_____
Mode . . . . Active_         Session COS  *_____
Olu (Slu)  . *_____        Select processing
. . Adjsscp  *_____        Select list  BALHDQTR
--------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 59.   Rule Deletion Confirmation

Note: After viewing, modifying, or deleting the Rule, you can return to the selection list by pressing F12 (Cancel). To return to the Administration panel, press F12 (Cancel) twice. To make the changes active, reload the Rules (see "Reloading Rules" on page 96).

Defining a Rule Group

If you define more than one Rule, Ruleset, or Group, you must define them into a Rule Group so that the Network Center knows the order in which to process them. (See "Rule Groups" on page 27 for more information on processing order.)

Steps:

1. Go to the desired Select Administration menu (see "Opening the Select Menu" on page 62). The following example shows the Virtual Route Administration panel:
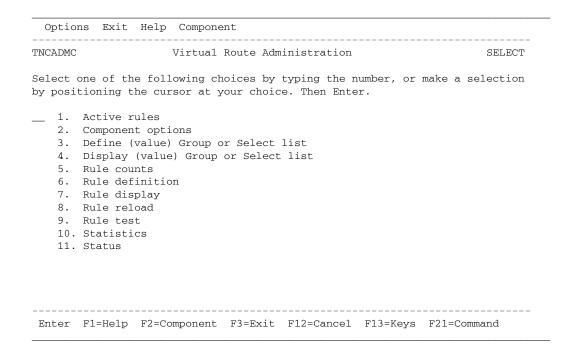
```
_____
  Options   Exit   Help   Component
 ---------------------------------------------------------------------------
 TNCADMC                  Virtual Route Administration                SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __   1.  Active rules
      2.  Component options
      3.  Define (value) Group or Select list
      4.  Display (value) Group or Select list
      5.  Rule counts
      6.  Rule definition
      7.  Rule display
      8.  Rule reload
      9.  Rule test
     10.  Statistics
     11.  Status




 ---------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```
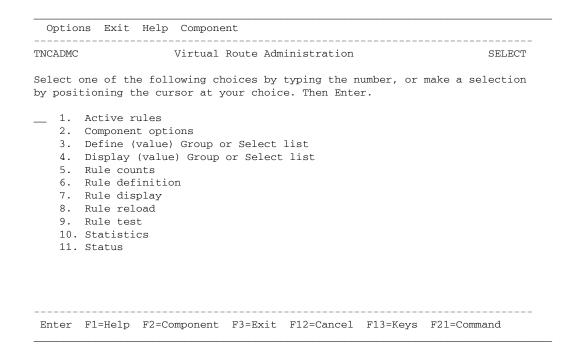
Figure 60.   Select List Administration Panel

2. Select choice 3, 'Define (value) Group'; the Group Definition panel appears:

```
TNCGRPD                Group Definition                        SELECT
Date: 01/15/2007       Time: 13:54:52       User: EXAMPLE      Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . _____                    Title _____

   1. _____        16. _____        31. _____        46. _____
   2. _____        17. _____        32. _____        47. _____
   3. _____        18. _____        33. _____        48. _____
   4. _____        19. _____        34. _____        49. _____
   5. _____        20. _____        35. _____        50. _____
   6. _____        21. _____        36. _____        51. _____
   7. _____        22. _____        37. _____        52. _____
   8. _____        23. _____        38. _____        53. _____
   9. _____        24. _____        39. _____        54. _____
  10. _____        25. _____        40. _____        55. _____
  11. _____        26. _____        41. _____        56. _____
  12. _____        27. _____        42. _____        57. _____
  13. _____        28. _____        43. _____        58. _____
  14. _____        29. _____        44. _____        59. _____
  15. _____        30. _____        45. _____        60. _____
-------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
```
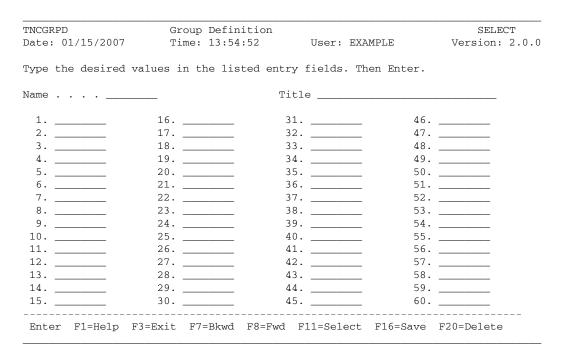
Figure 61.   Group Definition Panel (TNCGRPD)

3. Enter the Group's 'Name' and 'Title' first. Then, in the numbered blanks, enter the names of the Rules, Rulesets, and/or Groups to be included in the Group according to their processing order. The following figure shows a defined Rule Group panel:

```
TNCGRPD                Group Definition                        SELECT
Date: 01/15/2007       Time: 14:43:28       User: EXAMPLE      Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . ROUTES__                    Title Group_for_ROUTE_selection___

   1. HDQTRS__        16. _____        31. _____        46. _____
   2. CREDIT__        17. _____        32. _____        47. _____
   3. OTHERS__        18. _____        33. _____        48. _____
   4. _____        19. _____        34. _____        49. _____
   5. _____        20. _____        35. _____        50. _____
   6. _____        21. _____        36. _____        51. _____
   7. _____        22. _____        37. _____        52. _____
   8. _____        23. _____        38. _____        53. _____
   9. _____        24. _____        39. _____        54. _____
  10. _____        25. _____        40. _____        55. _____
  11. _____        26. _____        41. _____        56. _____
  12. _____        27. _____        42. _____        57. _____
  13. _____        28. _____        43. _____        58. _____
  14. _____        29. _____        44. _____        59. _____
  15. _____        30. _____        45. _____        60. _____
-------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
```

Figure 62.   Example Group Definition Panel

To insert additional fields in the Group definition list, enter "**.I**" in the field following the insertion point.

(If the field already contains an entry, insert "**.I**" at the beginning of the field). Five input fields will appear, as in the following example:

```
_____
TNCGRPD                Group Definition                          SELECT
Date: 01/15/2007       Time: 14:43:28      User: EXAMPLE         Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . ROUTES__                    Title Group_for_ROUTE_selection___

    1. HDQTRS__        16. _____       31. _____        46. _____
    2. _____        17. _____       32. _____        47. _____
    3. _____        18. _____       33. _____        48. _____
    4. _____        19. _____       34. _____        49. _____
    5. _____        20. _____       35. _____        50. _____
    6. _____        21. _____       36. _____        51. _____
    7. CREDIT__        22. _____       37. _____        52. _____
    8. OTHERS__        23. _____       38. _____        53. _____
    9. _____        24. _____       39. _____        54. _____
   10. _____        25. _____       40. _____        55. _____
   11. _____        26. _____       41. _____        56. _____
   12. _____        27. _____       42. _____        57. _____
   13. _____        28. _____       43. _____        58. _____
   14. _____        29. _____       44. _____        59. _____
   15. _____        30. _____       45. _____        60. _____
--------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 63.   Inserting Additional Fields

After defining the desired fields, press Enter and the unmodified inserted fields will disappear.

To display a Group, Ruleset, or Rule defined within the Group, place the cursor on its name and press F11 (Select).

4. After entering the names of the Rules, Rulesets, and/or Groups, press Enter to refresh and edit the panel.

5. If the fields are correct, press F16 (Save) to save the Group; a confirmation message appears stating that the record updated successfully:
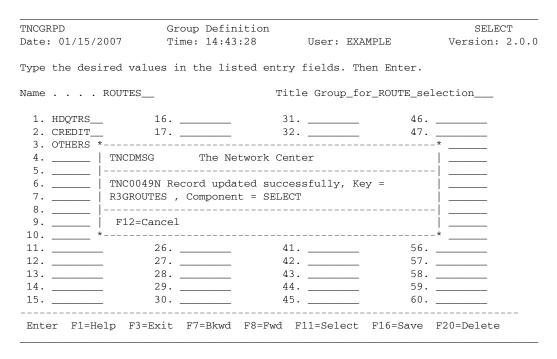
```
_____
 TNCGRPD                 Group Definition                          SELECT
 Date: 01/15/2007        Time: 14:43:28      User: EXAMPLE      Version: 2.0.0

 Type the desired values in the listed entry fields. Then Enter.

 Name . . . . ROUTES__                    Title Group_for_ROUTE_selection___

    1. HDQTRS__        16. _____        31. _____         46. _____
    2. CREDIT__        17. _____        32. _____         47. _____
    3. OTHERS  *--------------------------------------------------*  _____
    4. _____  | TNCDMSG        The Network Center              |  _____
    5. _____  |--------------------------------------------------|  _____
    6. _____  | TNC0049N Record updated successfully, Key =     |  _____
    7. _____  | R3GROUTES , Component = SELECT                  |  _____
    8. _____  |--------------------------------------------------|  _____
    9. _____  |   F12=Cancel                                    |  _____
   10. _____  *--------------------------------------------------*  _____
   11. _____        26. _____        41. _____         56. _____
   12. _____        27. _____        42. _____         57. _____
   13. _____        28. _____        43. _____         58. _____
   14. _____        29. _____        44. _____         59. _____
   15. _____        30. _____        45. _____         60. _____
 --------------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 64.   Group Definition Confirmation Message

Note: To cancel a pop-up message, press F12 (Cancel).

Modifying or Deleting Groups, Value Groups, and Select Lists

After you have defined a Group, Value Group or Select list, you can use the 'Display (value) Group or Select list' function to ensure that it is defined and saved correctly. You can also use this function to open a Group Definition or Select list panel for modification or to delete the record.

Steps:

1. Go to the desired Select List Rule Administration menu (see "Opening the Select Menu" on page 62) The following example shows the Virtual Route Administration panel:

```
_____
   Options  Exit  Help  Component
 ---------------------------------------------------------------------------
 TNCADMC                 Virtual Route Administration                SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __   1.  Active rules
      2.  Component options
      3.  Define (value) Group or Select list
      4.  Display (value) Group or Select list
      5.  Rule counts
      6.  Rule definition
      7.  Rule display
      8.  Rule reload
      9.  Rule test
     10.  Statistics
     11.  Status




 ---------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 65.   Select List Administration Panel

2. Select choice 4, 'Display (value) Group or Select list'; a panel appears displaying an alphabetized list of all the defined Groups and Select lists. The first column in the panel indicates the Group, Value group, and Select list names and the second column indicates the Group, Value group, and Select list titles. The following figure points out these areas:

```
_____
TNCGRPS                 Network Center Groups                      SELECT

Select a group by typing the number, or positioning the cursor at your choice.
Then Enter. The selected group will be displayed.

__    1. ADJSSCP    Group for ADJSSCP Select
      2. BALHDQTR   Select for HeadQuarters
      3. MVSLIST    ADJSSCP list for MVS
      4. ROUTES     Group for ROUTE selection
      5. SELECT     Select list assignment NRS




















 ------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Find  F12=Cancel  F21=Command
_____
```

Figure 66.   Network Center Groups Panel (TNCGRPS)

3. To view or modify a Group, Value group, or Select list, place the cursor on the choice and press Enter; the Group Definition or or Select list panel appears. The following example shows a Group definition panel:

```
_____
TNCGRPD                 Group Definition                          SELECT
Date: 01/15/2007        Time: 14:43:28       User: EXAMPLE        Version: 2.0.0

Type the desired values in the listed entry fields. Then Enter.

Name . . . . ROUTES__                       Title Group_for_ROUTE_selection___

   1. HDQTRS__        16. _____        31. _____        46. _____
   2. CREDIT__        17. _____        32. _____        47. _____
   3. OTHERS__        18. _____        33. _____        48. _____
   4. _____        19. _____        34. _____        49. _____
   5. _____        20. _____        35. _____        50. _____
   6. _____        21. _____        36. _____        51. _____
   7. _____        22. _____        37. _____        52. _____
   8. _____        23. _____        38. _____        53. _____
   9. _____        24. _____        39. _____        54. _____
  10. _____        25. _____        40. _____        55. _____
  11. _____        26. _____        41. _____        56. _____
  12. _____        27. _____        42. _____        57. _____
  13. _____        28. _____        43. _____        58. _____
  14. _____        29. _____        44. _____        59. _____
  15. _____        30. _____        45. _____        60. _____
  ------------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 67.   Example Group Definition Panel

> **Note:** See Figure 53 on page 77 for an example of the Select List Definition panel.

You can then proceed with modifications:

- **To delete a field entry**, overtype it with blanks or use the delete key. Press F16 (Save) to save the changes.

- **To modify a field entry**, overtype it with the new value. Press F16 (Save) to save the changes.

- **To insert a field into a Group or Select list**, use the '.I' prefix command (see "Defining a Rule Group" on page 84 for more information).

- **To display a Group, Ruleset, or Rule** defined within the Group, place the cursor on its name and press F11 (Select); the resource's definition panel will then appear.

- **To delete the Group**, press F20 (Delete); the "Delete function" window appears as in the following figure:

```
TNCGRPD                Group Definition                            SELECT
Date: 01/15/2007       Time: 14:59:09       User: EXAMPLE          Version: 2.0.0
                      *-------------------------------*
Type the desired valu | TNCDELT   Delete function    | Enter.
                      |-------------------------------|
Name . . . . ROUTES__ | _ 1. Delete the record.      | OUTE_selection___
                      |    2. Resume current function.|
    1. HDQTRS__       |-------------------------------|    46. _____
    2. CREDIT__       | F12=Cancel                    |    47. _____
    3. OTHERS__       *-------------------------------*    48. _____
    4. _____      19. _____      34. _____       49. _____
    5. _____      20. _____      35. _____       50. _____
    6. _____      21. _____      36. _____       51. _____
    7. _____      22. _____      37. _____       52. _____
    8. _____      23. _____      38. _____       53. _____
    9. _____      24. _____      39. _____       54. _____
   10. _____      25. _____      40. _____       55. _____
   11. _____      26. _____      41. _____       56. _____
   12. _____      27. _____      42. _____       57. _____
   13. _____      28. _____      43. _____       58. _____
   14. _____      29. _____      44. _____       59. _____
   15. _____      30. _____      45. _____       60. _____
-------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
```

Figure 68.   Delete Function Window

Select choice 1, 'Delete the record'. A message appears stating that the record deleted successfully:

```
_____
TNCGRPD              Group Definition                        SELECT
Date: 01/15/2007     Time: 14:59:09      User: EXAMPLE       Version: 2.0.0
                     *-------------------------------*
Type the desired valu | TNCDELT  Delete function      | Enter.
                      |-------------------------------|
Name . . . . ROUTES__ | _ 1. Delete the record.       | OUTE_selection___
                      |   2. Resume current function. |
  1. HDQTRS__         |-------------------------------|     46. _____
  2. CREDIT__         |  F12=Cancel                   |     47. _____
  3. OTHERS  *-----------------------------------------------------*  _____
  4. _____  | TNCDMSG        The Network Center                 |  _____
  5. _____  |---------------------------------------------------|  _____
  6. _____  | TNC0050N Record deleted successfully, Key =       |  _____
  7. _____  | R3GROUTES , Component = SELECT                    |  _____
  8. _____  |---------------------------------------------------|  _____
  9. _____  |  F12=Cancel                                       |  _____
 10. _____  *-----------------------------------------------------*  _____
 11. _____        26. _____      41. _____      56. _____
 12. _____        27. _____      42. _____      57. _____
 13. _____        28. _____      43. _____      58. _____
 14. _____        29. _____      44. _____      59. _____
 15. _____        30. _____      45. _____      60. _____
-------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Select  F16=Save  F20=Delete
_____
```

Figure 69.   Group Deletion Confirmation

Note: Press F12 (Cancel) to cancel the message.

4. To save any modifications, press F16 (Save).

Activating Rules

After ensuring that your Rules are saved correctly (see "Modifying or Deleting Groups, Value Groups, and Select Lists" on page 88), you are ready to activate your Rules. There are two steps to Rule activation: specifying the Rules in the 'Component Options' record and reloading the Rules using the 'Rule reload' function. You can then verify that the Rules are active by using the 'Active rules' function.

Specifying the Active Rules

Steps:

1. Go to the desired Select List Administration menu (see "Opening the Select Menu" on page 62). The following example shows the Virtual Route Administration panel:

```
 _____
   Options   Exit   Help   Component
 ---------------------------------------------------------------------------
 TNCADMC                   Virtual Route Administration                SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __   1.  Active rules
      2.  Component options
      3.  Define (value) Group or Select list
      4.  Display (value) Group or Select list
      5.  Rule counts
      6.  Rule definition
      7.  Rule display
      8.  Rule reload
      9.  Rule test
     10.  Statistics
     11.  Status




 ---------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
 _____
```

Figure 70.   Select List Administration Panel

2. Select choice 2, 'Component Options'; the "Component Options" panel appears:

```
_____
TNCOPTR                      Component Options                       SELECT
Date: 01/15/2007        Time: 14:20:40        User: EXAMPLE      Version: 2.0.0

Type the desired options in the listed entry fields. Then Enter.

Definition entity  ROUTES__
Mode . . . . . . . Active_




        ------------------------------------------------------------------------
         Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 71.   Component Options Panel (TNCOPTR)

3. In the 'Definition entity' field, enter the name of the Rule, Ruleset, or Group that you wish to be active (i.e. used during Rule processing).

4. In the 'Mode' field, enter one of the following methods of operation:

   • Enter **Active** to allow the Select Rules for the VTAM path selection list to operate. 'Active' also honors the 'Mode' setting for each Rule included in the 'Definition entity'.

   • Enter **Dormant** to turn off Rule processing. Select will operate without using the defined Rules.

   • Use the default, **Warn**, to cause Select to evaluate the Rules defined in the 'definition entity' field and to issue messages, but not to perform any of the requested operations. This option is useful for testing a Rule structure without affecting your installation.

   Note: We recommend that you set the mode to "Warn" during initial implementation. After determining that the Rule structure is satisfactory, change the mode to "Active".

5. After entering the field values, press F16 (Save) to save the options; a message appears confirming the update:

```
_____
TNCOPTR                    Component Options                      SELECT
Date: 01/15/2007        Time: 14:20:40        User: EXAMPLE      Version: 2.0.0

Type the desired options in the listed entry fields. Then Enter.

Definition entity  ROUTES__
Mode . . . . . . . Warn___


            *-----------------------------------------------------*
            | TNCDMSG        The Network Center                   |
            |-----------------------------------------------------|
            | TNC0049N Record updated successfully, Key =         |
            | R3OPTNRECD , Component = SELECT                     |
            |-----------------------------------------------------|
            |   F12=Cancel                                        |
            *-----------------------------------------------------*




 --------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
_____
```

Figure 72. Component Options Confirmation Message

Note: After defining the Component options, you can view the active Rules by locating the cursor on the 'Definition entity' field and pressing F11 (Select).

Reloading Rules

After defining the active Rules using the Component options panel, you are ready to reload the Rules. You should also reload the Rules anytime you make a change to a Rule, Ruleset, or Group that you wish to make active.

The 'Rule reload' function causes Select to obtain the "entity" defined in the Component Options record, load the Rules, and immediately begin using them.

Steps:

1. Go to the desired Select Rule Administration menu (see "Opening the Select Menu" on page 62) The following figure shows the Virtual Route Administration panel:

```
_____
  Options  Exit  Help  Component
----------------------------------------------------------------------
TNCADMC                Virtual Route Administration              SELECT

Select one of the following choices by typing the number, or make a selection
by positioning the cursor at your choice. Then Enter.

__   1.  Active rules
     2.  Component options
     3.  Define (value) Group or Select list
     4.  Display (value) Group or Select list
     5.  Rule counts
     6.  Rule definition
     7.  Rule display
     8.  Rule reload
     9.  Rule test
    10.  Statistics
    11.  Status




----------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 73.   Select List Administration Panel

2. Select choice 8, "Rule reload"; a pop up window appears asking you to confirm that the Rules should be reloaded:

```
 _____
   Options   Exit   Help   Component
  -----------------------------------------------------------------------------
 TNCADMC               *-------------------------------*             SELECT
                       | TNCDELT   Reload function      |
 Select one of the fol |-------------------------------|  or make a selection
 by positioning the cu | _ 1. Reload the rules.        |
                       |   2. Resume current function. |
 __  1.  Active rules  |-------------------------------|
     2.  Component opt |  F12=Cancel                   |
     3.  Define (value *-------------------------------*
     4.  Display (value) Group or Select list
     5.  Rule counts
     6.  Rule definition
     7.  Rule display
     8.  Rule reload
     9.  Rule test
    10. Statistics
    11. Status




  ---------------------------------------------------------------------------------
   Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
 _____
```

Figure 74.   Reload Function (TNCDELT)

3. Press Enter to confirm the Reload; a message appears stating that your Rules are being reloaded:

```
 _____

  Options  Exit  Help  Component
 ----------------------------------------------------------------------------
 TNCADMC                *------------------------------*            SELECT
                        | TNCDELT   Reload function    |
 Select one of the fol  |------------------------------|  or make a selection
 by positioning the cu  | _ 1. Reload the rules.       |
                        |    2. Resume current function. |
 __   1.  Active rules  |------------------------------|
      2.  Component opt  |  F12=Cancel                  |
      3.  Def *------------------------------------------------------*
      4.  Dis | TNCDMSG         The Network Center                   |
      5.  Rul |----------------------------------------------------|
      6.  Rul | TNC0055N Rule definitions being reloaded for        |
      7.  Rul | component SELECT                                    |
      8.  Rul |----------------------------------------------------|
      9.  Rul |   F12=Cancel                                        |
     10.  Sta *------------------------------------------------------*
     11.  Status




 ----------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
 _____
```

Figure 75. Rule Reload Message

Select will now process the Rules based on the 'mode' field in the Component options record (see "Specifying the Active Rules" on page 93 for more information.)

Verifying the Operation of the Active Rules

After activating your Rules, you can verify that they are operating by using the 'Active rules' function. Active rules lists the Rules, Rulesets, and Groups that have been activated for the VTAM Selection list according to their processing order. You can also use this option to view how often an active Rule has been used.

Note: You can also verify that the active Rules are operating by searching the Message Queue for messages TNL1802 and TNL1803, which indicate that sessions are being evaluated by the proper Rules. (See "Viewing Rule Messages" on page 114 for more information on using the Message Queue.)

Steps:

1. Go to the desired Select Rule Administration menu (see "Opening the Select Menu" on page 62). The following example shows the Virtual Route Administration panel:

```
_____
  Options   Exit   Help   Component
--------------------------------------------------------------------------------
TNCADMC                   Virtual Route Administration                  SELECT

Select one of the following choices by typing the number, or make a selection
by positioning the cursor at your choice. Then Enter.

__   1.  Active rules
     2.  Component options
     3.  Define (value) Group or Select list
     4.  Display (value) Group or Select list
     5.  Rule counts
     6.  Rule definition
     7.  Rule display
     8.  Rule reload
     9.  Rule test
    10.  Statistics
    11.  Status




 --------------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 76. Select List Administration Panel

2. Select choice 1, 'Active Rules'; the Network Center Rules panel appears (the panel you receive will reflect the Rules defined at your installation). The following figure points out the information available on the Rules Panel:

```
_____
TNCRULS                        Network Center Rules                     SELECT

Select a rule by typing the number, or positioning the cursor at your choice.
Then Enter. The selected rule will be displayed.

__   1. ROUTES    Group    1  Group for Route Selection       0
     2. HDQTRS    Rule     2  Activity to HeadQuarters         14482
     3. CREDIT    Rule     2  Activity to CREDIT Network       8535
     4. OTHERS    Rule     2  Catchall for other traffic       21554












  ----------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Find  F12=Cancel  F21=Command
_____
```

Figure 77.   Network Center Rules Panel (TNCRULS)

Note: If no Rules are currently defined, you will receive an error message.

The Network Center Rules panel displays the active Rules according to the Rule processing order. The "Rule match counter" column indicates how many times the Rule or Ruleset has been used since the last Rule reload.

3. To display a Rule, Ruleset, or Group, place the cursor on its name and press Enter. The Rule definition panel will display an additional field named 'count'. This field indicates how often the Rule has been used since the last Rule reload, as in the following example:

```
TNCRULD              Network Center Rule Definition              SELECT
Date: 01/15/2007     Time: 15:52:59      User: ACTIVE     Version: 2.0.0

Name . . . . HDQTRS__                    Title Activity_to_HeadQuarters____
Count  . . . 14482
Action . . . Select___    . . Alias  . *_____
Date. .first *_____       . . Aliasnet *_____
. . . . last *_____       . . Hcvname. *_____
Day  . . . . *_____    . . Hcvtype. 0_
Dlu (Plu)  . *_____     . . Netid  . NRS_____
. . Adjsscp  *_____     . . Sscp . . *_____
. . Alias  . *_____     . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____     Option . . . None____
. . Hcvtype. 0_           Rule type  . Slu-Plu
. . Netid  . HDQTRS__     Ruleset  . . No_
. . Sscp . . *_____     Time. .first *____
. . Subarea. *_____     . . . . last *____
From . . . . *_____     Session type *_____
Mode . . . . Active_      Session COS  *_____
Olu (Slu)  . *_____     Select processing
. . Adjsscp  *_____     Select list  BALHDQTR
----------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F11=Select  F16=Save  F20=Delete
```

Figure 78. Rule Definition Panel with Count Field

Testing Rules

We recommend testing all Rules prior to making them fully active (i.e. setting the Rule's mode to 'active' in the Rule definition and Component options panels). Testing allows you to determine the effectiveness of your Rules and to modify any Rule or Rule processing order that might be detrimental to your system's operation.

There are a couple of ways to test Rules. "Testing Session Criteria against the Active Rules" guides you in using the 'Rule test' function to create mock sessions to test against your Rules. "Testing the Rule Hierarchy" on page 105 shows how to use the 'Ruletest component' function to transfer your whole Rule hierarchy or individual Rules into a test Component environment.

Testing Session Criteria against the Active Rules

You can use the 'Rule test' function to create a sample session and test it against the active Rules (see "Activating Rules" on page 93). This allows you to determine if a Rule successfully selects a Select list, replaces a Select list, or bypasses selection list assignment based on the Rule's ACTION.

Steps:

1. Go to the desired Select Rule Administration menu (see "Opening the Select Menu" on page 62) The following example shows the Virtual Route Administration panel:

```
_____
  Options   Exit   Help   Component
 ------------------------------------------------------------------------
 TNCADMC                 Virtual Route Administration                SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __   1.  Active rules
      2.  Component options
      3.  Define (value) Group or Select list
      4.  Display (value) Group or Select list
      5.  Rule counts
      6.  Rule definition
      7.  Rule display
      8.  Rule reload
      9.  Rule test
     10.  Statistics
     11.  Status




  ------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
 _____
```

Figure 79.   Select List Administration Panel

2. Select choice 9, 'Rule test'; the Network Center Rule Match panel appears:

```
TNCRULD                 Network Center Rule Match Test                  SELECT
Date: 01/15/2007       Time: 15:56:24       User: EXAMPLE       Version: 2.0.0

Name . . . . RULETEST                 Title Match_a_rule_____
Count  . . .
Action . . . Select___    . . Alias  . *_____
Date. .first *_____        . . Aliasnet *_____
. . . . last *_____        . . Hcvname. *_____
Day  . . . . *_____    . . Hcvtype. 0_
Dlu (Plu)  . *_____      . . Netid  . *_____
. . Adjsscp  *_____      . . Sscp . . *_____
. . Alias  . *_____      . . Subarea. *_____
. . Aliasnet *_____
. . Hcvname. *_____      Option . . . None____
. . Hcvtype. 0_            Rule type  . Slu-Plu
. . Netid  . *_____      Ruleset  . . No_
. . Sscp . . *_____      Time. .first *____
. . Subarea. *_____      . . . . last *____
From . . . . *_____      Session type *_____
Mode . . . . Active_       Session COS  *_____
Olu (Slu)  . *_____      Select processing
. . Adjsscp  *_____      Select list  _____
-------------------------------------------------------------------------------
 Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F16=Test  F21=Command
```

Figure 80.   Network Center Rule Match Test Panel (TNCRULD)

3. Enter the operands for the session that you wish to test against the active Rules. (To get help on an operand, point the cursor at the operand and press F1 (Help) or see "Rule Operand Definitions" on page 12.)

4. After defining the session parameters, press F16 (Test). A message appears stating that either no Rule matched the session or stating the first active Rule that matched the session. The following figure shows an example:

```
_____
 TNCRULD            Network Center Rule Match Test              SELECT
 Date: 01/15/2007      Time: 15:56:24      User: EXAMPLE      Version: 2.0.0

 Name . . . . RULETEST                Title Match_a_rule_____
 Count  . . .
 Action . . . Select___    . . Alias  . *_____
 Date. .first *_____       . . Aliasnet *_____
 . . . . last *_____       . . Hcvname. *_____
 Day  . . . . *_____    . . Hcvtype. 0_
 Dlu (Plu)    *--------------------------------------------------*
 . . Adjsscp | TNCDMSG        The Network Center                |
 . . Alias   |--------------------------------------------------|
 . . Aliasne | TNC0069N Supplied parameters are matched by      |
 . . Hcvname | SELECT rule OTHERS                                |
 . . Hcvtype |--------------------------------------------------|
 . . Netid   |   F12=Cancel                                     |
 . . Sscp .  *--------------------------------------------------*
 . . Subarea. *_____      . . . . last *____
 From . . . . *_____      Session type *_____
 Mode . . . . Active_       Session COS  *_____
 Olu (Slu) . *_____       Select processing
 . . Adjsscp *_____       Select list  _____
 -------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F16=Test  F21=Command
_____
```

Figure 81.   Rule Match Test Message

5.   If a Rule match was found, press F12 (Cancel) to cancel the pop up window message. A
     window appears that allows you to display the Rule, as in the following figure:

```
_____
 TNCRULD            Network Center Rule Match Test              SELECT
 Date: 01/15/2007      Time: 15:56:24      User: EXAMPLE      Version: 2.0.0
                       *------------------------------*
 Name . . . . RULETEST | TNCDELT  Display function    | e_____
 Count  . . .          |------------------------------|
 Action . . . Select__ | _ 1. Display selected rule.  |
 Date. .first *_____   |   2. Resume current function.|
 . . . . last *_____   |------------------------------|
 Day  . . . . *_____ |  F12=Cancel                  |
 Dlu (Plu)    *------- *------------------------------* --------*
 . . Adjsscp | TNCDMSG        The Network Center                |
 . . Alias   |--------------------------------------------------|
 . . Aliasne | TNC0069N Supplied parameters are matched by      |
 . . Hcvname | SELECT rule OTHERS                                |
 . . Hcvtype |--------------------------------------------------|
 . . Netid   |   F12=Cancel                                     |
 . . Sscp .  *--------------------------------------------------*
 . . Subarea. *_____      . . . . last *____
 From . . . . *_____      Session type *_____
 Mode . . . . Active_       Session COS  *_____
 Olu (Slu) . *_____       Select processing
 . . Adjsscp *_____       Select list  _____
 -------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F16=Test  F21=Command
_____
```

6.   To view the Rule definition panel, select choice 1, 'Display selected rule'. To return to the
     Network Center Rule Match Test panel, select choice 2, 'Resume current function'.

Note: After determining that your Rules are satisfactory, you may want to change the Rule mode
to 'active' in both the Component Options record (see "Specifying the Active Rules" on page 93)

and in each Rule definition panel (see "Defining Rules or Rulesets" on page 66). If you change the modes, make sure to do a Rule reload as well (see "Reloading Rules" on page 96).

Testing the Rule Hierarchy

The Ruletest Component is available from the main Network Center menu. It allows you to test Select's complete active Rule hierarchy or individual Rules in a test environment: you may create, modify, "activate", and test Rules. You can save the changes back to Select.

Steps:

1. Go to the main Network Center menu (TNCMENU) (see "Opening the Select Menu" on page 62):

```
_____
  Options   Exit   Help
 ---------------------------------------------------------------------------
TNCMENU                        The Network Center

Select one of the following choices by typing the number, or make a selection
by positioning the cursor at your choice. Then Enter.

__    1.  Administration
      2.  Access
      3.  Alias
      4.  Query
      5.  Ruletest
      6.  Select
      7.  Timeout




 ---------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F10=Actions  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 82.   Network Center Menu (TNCMENU)

2. Select choice 1, 'Administration'; the Network Center Administration panel appears:

```
 _____
   Options   Exit   Help   Component
 --------------------------------------------------------------------------------
 TNCADMN                    Network Center Administration                 CENTER

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 ___    1.   Applied Ptfs
        2.   Authorization
        3.   Center options
        4.   Close TNCLOG output
        5.   Install a component
        6.   Message queue
        7.   Network data file
        8.   Reload Data File
        9.   Remove a component
       10.   Reset Anchor Blocks
       11.   Rule processing
       12.   Storage usage
       13.   Status output log
       14.   Swap output log


 --------------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
 _____
```

Figure 83.   Network Center Administration Panel

3. Select choice 7, 'Network Data File'; the Network Data File Administration menu appears:

```
 _____
   Options   Exit   Help   Component
 --------------------------------------------------------------------------------
 TNCADMF                    Network Data File Administration              CENTER

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __     1.   Copy records
        2.   Data area offsets
        3.   Data area definitions
        4.   Data area identifiers
        5.   Data area tables
        6.   Data file records
        7.   Help text
        8.   Message text
        9.   Status of file
       10.   Summary report
       11.   Switch file mode




 --------------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
 _____
```

Figure 84.   Network Data File Administration Panel (TNCADMF)

4. Select choice 1, 'Copy records'; the Copy Data File Records panel appears:

```
TNCMOVF                      Copy Data File Records

Enter the desired From and To record keys and component Ids to copy records

From component Id . . _____
From record key(mask) _____

To component Id . . . _____
To record key . . . . _____




















--------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F11=Copy  F12=Cancel  F13=Keys  F21=Command
```

Figure 85.   Copy Data File Records Panel (TNCMOVF)

5. Define the fields as follows:

> From component id   SELECT
> From record key(mask)   R*
>
> To component Id   RULETEST
> To record key (mask)

The panel should appear as follows:

```
_____
TNCMOVF                        Copy Data File Records

Enter the desired From and To record keys and component Ids to copy records

From component Id . . SELECT__
From record key(mask) R*_____

To component Id . . . RULETEST
To record key . . . . _____




















--------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F11=Copy  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 86. Example Copy Data File Records

6. Press F11 (Copy) to copy the records from the Network Data File Select Component to the
    Ruletest Component; a confirmation message appears:

```
_____
TNCMOVF                        Copy Data File Records

Enter the desired From and To record keys and component Ids to copy records

From component Id . . SELECT__
From record key(mask) R*_____

To component Id . . . RULETEST
To record key . . . . _____
              *----------------------------------------------------*
              | TNCDMSG        The Network Center                  |
              |----------------------------------------------------|
              | TNC0075N Record R* from SELECT has been copied to  |
              | RULETEST as R*                                     |
              |----------------------------------------------------|
              |   F12=Cancel                                       |
              *----------------------------------------------------*




--------------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F11=Copy  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 87. Copy Data File Confirmation Message

You can now actively use the Ruletest Component.

7. Open the Ruletest Component by selecting the Ruletest choice from the Network Center Menu (TNCMENU), or to jump straight to the Ruletest Component, enter "RULETEST" in the command line. The following panel appears:

```
   Options  Exit  Help  Component
--------------------------------------------------------------------------------
TNCADMC                   Ruletest Component Administration              RULETEST

Select one of the following choices by typing the number, or make a selection
by positioning the cursor at your choice. Then Enter.

 __   1.  Active rules
      2.  Component options
      3.  Define (value) Group
      4.  Display (value) Group
      5.  Rule counts
      6.  Rule definition
      7.  Rule display
      8.  Rule reload
      9.  Rule test




   --------------------------------------------------------------------------------
   Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
```

Figure 88.   Ruletest Component Administration Panel (TNCADMC)

The menu choices contain all of the same tools as operational Network Center Components. You may use any of these functions as normal, including creating, modifying, and activating Rules, Rulesets, and Groups.

8. After testing your Rules and making any necessary changes, you can copy your Rule records back to Select by using the Copy Record function. For example, the following definitions would copy back all of the Records from the Ruletest Component to the Select Component:

From component Id   RULETEST
From record key(mask)   R*

To component ID   SELECT
To record key(mask)

The panel would appear as follows:

```
_____
TNCMOVF                        Copy Data File Records

Enter the desired From and To record keys and component Ids to copy records

From component Id . . RULETEST
From record key(mask) R*_____

To component Id . . . SELECT__
To record key . . . . _____




                                                                              
 -----------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F11=Copy  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 89.   Copying Records Back to Select

9. Press F11 (Copy) to copy the records from the Network Data File Ruletest Component to the
    Select Component.

Chapter 6. Tracking Select Activities

This chapter guides you in using Network Center functions that allow you to view session, Rule, and Component information. Topics include:

- "Viewing Session Statistics"

- "Viewing Rule Messages" on page 114

- "Viewing the Status of Select Resources" on page 118

- "System Accounting" on page 121

Viewing Session Statistics

The 'Statistics' choice lists recent session activity that has been processed by Select, including the number of requested sessions, denied sessions, selection requests, selection requests processed, selection requests bypassed, sessions terminated, and currently active sessions.

Steps:

1. Go to the desired Select Rule Administration menu (see "Opening the Select Menu" on page 62) The following example shows the Virtual Route Administration panel:

```
   Options   Exit   Help   Component
 --------------------------------------------------------------------------------
 TNCADMC                 Virtual Route Administration                SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __   1.  Active rules
      2.  Component options
      3.  Define (value) Group or Select list
      4.  Display (value) Group or Select list
      5.  Rule counts
      6.  Rule definition
      7.  Rule display
      8.  Rule reload
      9.  Rule test
      10. Statistics
      11. Status




 --------------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
```

Figure 90.   Select List Administration Panel

2.   Select choice 10, 'Statistics', from the Administration panel (TNCADMC); a list of current
     session statistics appears:

```
 TNCSTAT                 Network Center Statistics                SELECT

 Sessions requested . . : 6248
 Sessions denied  . . . : 1041
 Virtual Route requests : 341
 Virtual Route processed: 304
 Virtual Route bypassed : 37
 Sessions terminated  . : 5430
 Sessions active  . . . : 818










 --------------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F12=Cancel
```

Figure 91.   Network Center Statistics Panel (TNCSTAT)

Each value provides a quick overview of the following activities processed by Select:

Sessions requested   The number of times the Session Management Exit was entered to evaluate a session request.

Sessions denied   The number of sessions denied by the Session Management Exit.

\<exit\> requests   The number of times the identified exit has been driven by VTAM.

\<exit\> processed   The number of times the identified exit has evaluated a set of conditions against the Active Rules

\<exit\> bypassed   The number of times a Rule in "bypass" mode circumvented the exit.

Sessions terminated   The number of sessions that have been terminated by the Session Management Exit.

Sessions active   The number of sessions that are still underway in the local domain.

3. After viewing the Statistics panel, press F3 (Exit) to return to the Select Administration menu (TNCADMC).

Note: You can also use the 'Active rules' function to view how often a particular Rule has been matched. See "Verifying the Operation of the Active Rules" on page 99 for more information.

Viewing Rule Messages

All Select activities are recorded and sent to the Message queue. You can use the Rule counts function to update the Message queue with information on how often Select Rules have been used. This information, in turn, can help you to gauge Rule effectiveness and frequency of use.

Activating the Rule Counts Function

'Rule counts' displays how many times Select Rules have been matched and places the results in the Message queue for viewing.

Steps:

1. Go to the desired Select Rule Administration menu (see "Opening the Select Menu" on page 62) The following example shows the Virtual Route Administration panel:

```
_____
  Options  Exit  Help  Component
 -----------------------------------------------------------------------------
 TNCADMC                Virtual Route Administration                SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __  1.  Active rules
     2.  Component options
     3.  Define (value) Group or Select list
     4.  Display (value) Group or Select list
     5.  Rule counts
     6.  Rule definition
     7.  Rule display
     8.  Rule reload
     9.  Rule test
    10. Statistics
    11. Status




 -----------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 92. Selection List Administration Panel

2. Select choice 5, 'Rule counts'; a message appears stating that the Select Rules have been logged.

```
_____
  Options   Exit   Help   Component
 --------------------------------------------------------------------------------
 TNCADMC                    Virtual Route Administration                  SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __   1.  Active rules
      2.  Component options
      3.  Def *----------------------------------------------------*
      4.  Dis | TNCDMSG       The Network Center                   |
      5.  Rul |----------------------------------------------------|
      6.  Rul | TNC0080N Rule counts for component SELECT have     |
      7.  Rul | been logged                                       |
      8.  Rul |----------------------------------------------------|
      9.  Rul |   F12=Cancel                                      |
     10.  Sta *----------------------------------------------------*
     11.  Status



 --------------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
 _____
```

Figure 93.   Rule Counts Panel

Note: If the message is in a pop-up window, press F12 (Cancel) to cancel the message.

3. You can now view the results in the Message queue. Press F12 (Cancel) to cancel the Select Component Administration panel and return to the Network Center Menu (TNCMENU):

```
_____
  Options   Exit   Help
---------------------------------------------------------------------
TNCMENU                        The Network Center

Select one of the following choices by typing the number, or make a selection
by positioning the cursor at your choice. Then Enter.

__     1.  Administration
       2.  Access
       3.  Alias
       4.  Query
       5.  Ruletest
       6.  Select
       7.  Timeout




       ---------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F10=Actions  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 94.   Network Center Menu

4. Select choice 1, 'Administration'; the Network Center Administration menu appears:

```
_____

  Options   Exit   Help   Component
------------------------------------------------------------------------
TNCADMN                  Network Center Administration               CENTER

Select one of the following choices by typing the number, or make a selection
by positioning the cursor at your choice. Then Enter.

___     1.  Applied Ptfs
        2.  Authorization
        3.  Center options
        4.  Close TNCLOG output
        5.  Install a component
        6.  Message queue
        7.  Network data file
        8.  Reload Data File
        9.  Remove a component
       10.  Reset Anchor Blocks
       11.  Rule processing
       12.  Storage usage
       13.  Status output log
       14.  Swap output log


------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 95. Network Center Administration Menu

5. Select choice 6, 'Message queue'; the Message queue appears:

```
_____
TNCMSGQ                  Network Center Message Queue              More:    +
------------------------------------------------------------------------
TNC0136N CMS User EXAMPLE requested File Read
TNC0136N CMS User EXAMPLE requested File Read
TNC0136N CMS User EXAMPLE requested File Read
TNC0136N CMS User EXAMPLE requested File Read
TNC0136N CMS User EXAMPLE requested File Read
TNC0136N CMS User EXAMPLE requested Query Addressable Storage
TNC0136N CMS User EXAMPLE requested Query Addressable Storage
TNC0136N CMS User EXAMPLE requested Query Addressable Storage
TNC0136N CMS User EXAMPLE requested Query Addressable Storage
TNC0136N CMS User EXAMPLE requested File Request FAB information
NC0136N CMS User EXAMPLE requested Query Addressable Storage
NC0136N CMS User EXAMPLE requested Query Addressable Storage
NC0136N CMS User EXAMPLE requested Query Addressable Storage
TNC0136N CMS User EXAMPLE requested File Read rule definitions
TNC0136N CMS User EXAMPLE requested Query Addressable Storage
TNC0136N CMS User EXAMPLE requested NDF Log rule counts
TNT0238N SELECT rule ROUTES was matched 0 times
TNT0238N SELECT rule HDQTRS was matched 14,482 times
TNT0238N SELECT rule CREDIT was matched 8,535 times
TNT0238N SELECT rule OTHERS was matched 21,554 times
------------------------------------------------------------------------
 F1=Help  F2=Prefix  F7=Bkwd  F8=Fwd  F11=Find  F12=Cancel  F19=Left  F20=Right
_____
```

Figure 96. Network Center Message Queue

You can now view the Rule Counts messages. To scroll through messages, use the F8 (Forward) and F7 (Backward) action. To display specific information, use the F2 (Prefix) action. To locate a specific message or type of message, use the F11 (Find) action.

Note: See the *Installations and Operations* manual (TNC-0003) for information on the Message queue.

Viewing the Status of Select Resources

The 'Status' choice of the Administration panel (TNCADMC) lets you display information for each of the following currently allocated resources:

- The resource name (Virtual route name, Gateway path name, SSCP name, ALS name, etc.).

- The weighting factor that is to be used to determine whether new session traffic will be routed to the resource.

- The current count of sessions assigned to the resource.

Steps:

1. Go to the desired Select Rule Administration menu (see "Opening the Select Menu" on page 62). The following example shows the Virtual Route Administration panel:

```
_____
   Options  Exit  Help  Component
 ------------------------------------------------------------------------------
 TNCADMC                 Virtual Route Administration                   SELECT

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 __   1.  Active rules
      2.  Component options
      3.  Define (value) Group or Select list
      4.  Display (value) Group or Select list
      5.  Rule counts
      6.  Rule definition
      7.  Rule display
      8.  Rule reload
      9.  Rule test
     10.  Statistics
     11.  Status




 ------------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 97.   Select List Administration Panel

2. Select choice 11, 'Status'; the Network Center Select Rules panel appears; the column to the
    right displays how many times each Rule has been used since the last Rule reload:

```
_____
TNCSRUL                    Network Center Select Rules                    SELECT

Choose a Select rule by typing the number, or positioning the cursor at your
choice. Then Enter. The status of the Select rule will be displayed.

__   1. ROUTES   Group for Route Selection    0
     2. HDQTRS   Activity to HeadQuarters      14482
     3. CREDIT   Activity to CREDIT network    8535
     4. OTHERS   Catchall for other traffic    21554












     -----------------------------------------------------------------------------
     Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 98. Network Center Select Rules Panel (TNCSRUL)

3. From the list, you may select a Rule to display its current status information. The following
    figure shows the status for the CREDIT Rule:

```
_____
 TNCSLST                 Network Center Select List CREDIT                    SELECT

   Name      Weight    Select
   VR1TP1    50        180
   VR2TP2    30        108
   VR3TP1    20        72












 --------------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 99.   Network Center Select List Status Panel (TNCSLST)

The Select list panel lists the name of the Resource (Name), the amount of session traffic
assigned to it (Weight), and how often it has been used (Select).

System Accounting

The Network Center allows you to record any event that occurs while it is operational, including the events occurring in the unique Select exit points.

To record the information, you can simply activate the accounting option for any of the Network Center or Select messages. For example, activating Account for TNL1802 will record when a Gateway selection list has been requested for a particular PLU and SLU by a particular Rule.

When the message is issued, the Network Center Server will produce an SMF record for z/OS systems, a VM account record for z/VM systems, or a sequential output record for either system.

Steps:

1.   Go the the Network Center Administration menu (TNCADMC):[5]

```
_____
  Options   Exit   Help   Component
 -----------------------------------------------------------------------------
 TNCADMN                    Network Center Administration                  CENTER

 Select one of the following choices by typing the number, or make a selection
 by positioning the cursor at your choice. Then Enter.

 ___    1.  Applied Ptfs
        2.  Authorization
        3.  Center options
        4.  Close TNCLOG output
        5.  Install a component
        6.  Message queue
        7.  Network data file
        8.  Reload Data File
        9.  Remove a component
       10.  Reset Anchor Blocks
       11.  Rule processing
       12.  Storage usage
       13.  Status output log
       14.  Swap output log


 -----------------------------------------------------------------------------
  Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
_____
```

Figure 100.   Network Center Administration Menu

_____

[5]   To jump to this panel, enter "**ADM**IN" in the Command area (press F21 (Command) to activate the Command area), or, go to the main Network Center menu (TNCMENU) and select choice 1, 'Administration'.

2. Select choice 7, 'Network data file'; the Network Data File Administration panel appears:

```
  _____
   Options  Exit  Help  Component
  -------------------------------------------------------------------------------
  TNCADMF                    Network Data File Administration              CENTER

  Select one of the following choices by typing the number, or make a selection
  by positioning the cursor at your choice. Then Enter.

  __    1.  Copy records
        2.  Data area offsets
        3.  Data area definitions
        4.  Data area identifiers
        5.  Data area tables
        6.  Data file records
        7.  Help text
        8.  Message text
        9.  Status of file
       10.  Summary report
       11.  Switch file mode




  -------------------------------------------------------------------------------
   Enter  F1=Help  F2=Component  F3=Exit  F12=Cancel  F13=Keys  F21=Command
  _____
```

Figure 101.   Network Data File Administration Menu

3. Select choice 8, 'Message text'; a pull down window listing the active Components. appears, as in the following example:

```
  _____
   Options  Exit  Help  Component
  -------------------------- *-----------------------------------------* -------
  TNCADMF              Netwo | TNCDFAB  Active components              | CENTER
                             |-------------------------------------|
  Select one of the following | Select from the components : CENTER  | ection
  by positioning the cursor at | __    1. CENTER    TNC              |
                             |       2. RULETEST  TTT              |
  __    1.  Copy records      |       3. QUERY     TNQ              |
        2.  Data area offsets  |       4. ACCESS    TNA              |
        3.  Data area definitio|       5. SELECT    TNL              |
        4.  Data area identifie|       6. TEIMOUT   TNT              |
        5.  Data area tables   |       7. ALIAS     TNY              |
        6.  Data file records  |       8. TESTING   TNA              |
        7.  Help text          |                                     |
        8.  Message text       |                                     |
        9.  Status of file     |                                     |
       10.  Summary report     |                                     |
       11.  Switch file mode   |                                     |
                             |                                     |
                             |                                     |
                             |                                     |
                             |                                     |
                             |-------------------------------------|
  -------------------------- |  F3=Exit  F7=Bkwd  F8=Fwd  F12=Cancel | -------
   Enter  F1=Help  F2=Componen *-----------------------------------* nd
  _____
```

Figure 102.   Active Components Select List

4. Select the Component that you wish to set the message account option for; the Network Center Message Numbers panel appears. In the following example, we selected Select:

```
_____
TNCMSGT                  Network Center Message Numbers              SELECT

Select a message by typing the number, or position the cursor at your choice.
Then Enter. The selected message will be displayed.
                                                          More:      +
__   1. TNL1801  Select Component &comp is now active
     2. TNL1802  Gateway path selection requested for &4 &6 : &1 and &5 &7 :
     3. TNL1803  Gateway path selection bypassed for &4 &6 : &1 and &5 &7 : &
     4. TNL1804  No gateway path select for &3 &6 : &1 and &4 &7 : &2 , due t
     5. TNL1805  Gateway path select bypass for &3 &5 : &1 and &6 : &4 &2 , n
     6. TNL1808  &1 Name: &2 , Netid: &3 , Subarea: &4
     7. TNL1809  &1 Sscp: &2 , Alias: &3 , Aliasnet: &4
     8. TNL1812  Adjacent SSCP selection requested for &4 &6 : &1 and &5 &7 :
     9. TNL1813  Adjacent SSCP selection bypassed for &4 &6 : &1 and &5 &7 :
    10. TNL1814  No adjacent SSCP selection for &3 &5 : &1 and &4 &6 : &2 , d
    11. TNL1815  Adjacent SSCP select bypass for &3 &5 : &1  and &6 : &4 &2 ,
    12. TNL1822  Virtual route selection requested for &4 &6 : &1 and &5 &7 :
    13. TNL1823  Virtual route selection bypassed for &4 &6 : &1 and &7 : &5
    14. TNL1824  No virtual route select for &3 &5 : &1 and &4 &6 : &2 , due
    15. TNL1825  Virtual route select bypass for &3 &5 : &1 and &4 &6 : &2 ,
    16. TNL1832  ALS selection requested for &4 &6 : &1 and &5 &7 : &2 by rul
    17. TNL1833  ALS selection bypassed for &4 &6 : &1 and &5 &7 : &2 by rule
 ----------------------------------------------------------------------------
 Enter  F1=Help  F3=Exit  F7=Bkwd  F8=Fwd  F11=Find  F12=Cancel  F21=Command
_____
```

Figure 103.   Message List Panel for Select

This panel gives you modification access to all of the Network Center messages for Select. To scroll through the messages, you can use the F7 (Backward) and F8 (Forward) actions.

5. Select the message that you wish to add the account option to by placing the cursor on the message and pressing Enter; the message's Network Center Message text panel appears. The following figure shows the Message Text panel for TNL1802:

```
_____
TNCMSGR                    Network Center Message Text                 SELECT

Type desired modifications in the displayed entry fields. Then Enter.

Message number   1802

Actions  . . .   Options _____ _____ _____ _____ _____

Class  . . . .   Notification

Language . . .   A US.English

Route codes  .   __ __ __ __ __ __ __ __ __ __ __ __ __ __ __

Descript.codes   __ __ __ __ __ __ __ __ __ __ __ __ __ __ __

Text . . . . .
Gateway_path_selection_requested_for_&4_&6_:_&1_and_&5_&7_:_&2_by_rule_&3____



    ---------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F12=Cancel   F16=Save  F20=Delete  F21=Command
_____
```

Figure 104.   Example Network Center Message Text Panel

6. Enter "Account" in the 'Actions' field, as in the following example:

```
_____
TNCMSGR                  Network Center Message Text                 SELECT

Type desired modifications in the displayed entry fields. Then Enter.

Message number    1802

Actions  . . .   Options Account _____ _____ _____ _____

Class  . . . .   Notification

Language . . .   A US.English

Route codes  .   __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __

Descript.codes   __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __

Text . . . . .
Gateway_path_selection_requested_for_&4_&6_:_&1_and_&5_&7_:_&2_by_rule_&3____




 --------------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F12=Cancel   F16=Save  F20=Delete  F21=Command
_____
```

Figure 105.   Network Center Message Text Panel with Account Option

7. Press F16 (Save) to save the changes; a message appears stating that the record updated
    successfully, as in the following figure:

```
_____
TNCMSGR                  Network Center Message Text                 SELECT

Type desired modifications in the displayed entry fields. Then Enter.

Message number    1802

Actions  . . .   Options Account _____ _____ _____ _____

Class  . . . .   Notification
            *-----------------------------------------------------*
Language . | TNCDMSG      The Network Center                      |
           |-----------------------------------------------------|
Route codes | TNC0049N Record updated successfully, Key =         |
           | MA1802 , Component = SELECT                          |
Descript.co |-----------------------------------------------------|
           |   F12=Cancel                                        |
Text . . . *-----------------------------------------------------*
Gateway_path_selection_requested_for_&4_&6_:_&1_and_&5_&7_:_&2_by_rule_&3____




 --------------------------------------------------------------------------------
  Enter  F1=Help  F3=Exit  F12=Cancel   F16=Save  F20=Delete  F21=Command
_____
```

Figure 106.   Confirmation Message

  Note: Press F12 (Cancel) to cancel the message if it appears in a pop up window.

Note: For more information on modifying Messages, see the *Installation and Operations* manual (TNC-0003).

Part Two: Select Reference

Chapter 7. Select Administration Menu Choices

This chapter contains information for users who want to look up specific menu choices and functions within Select.

Menu choices are arranged alphabetically, as they appear on the Selection Administration panel (TNCADMC) that is available for each VTAM exit point selection list available from Select. When it is applicable, each section in this chapter contains the following subsections:

Title   The Name of the menu item/function, followed by the tasks it lets you perform

Definition   What the menu item/function does

Starting state Any prerequisites for using the menu item/function

Access   The keystrokes or commands that will get you to the menu item/function

Step-by-step   Abbreviated steps for using the menu item/function

Tips   advice for increasing your efficiency when using this menu item/function

Warnings   problems that might arise when you are using this menu item/function

See also   where to go for more information

Active Rules

Definition:
"Active Rules" lists the Rules, Rulesets, or Groups that have been activated in Select via the "Component Options" function. They are listed according to the Rule processing order.

You may select any of the list items for viewing. If you select a Rule or Ruleset, Select displays its Rule definition panel with an additional field called 'Count'. The Count field displays the number of times a Rule has been matched.

Starting state:
Rules, Rulesets, and/or Groups have been activated via the "Component Options" function.

Access:
Select choice 1, 'Active Rules', from the Selection Administration panel, TNCADMC; the TNCRULS panel appears.

Step-by-step:

1. Select a Rule, Ruleset, or Group from the list to display its definition panel. Use F7=Backward and F8=Forward to scroll through lists that exceed the screen. Use F11=Find to find a particular list item.

2. After selecting a list item, use F12=Cancel to exit the panel.

Tips:
To get help on an operand, place the cursor on the operand field and use the F1=Help action

Warnings:
If there are no active Rules, the Network Center will issue an error message. Cancel the message if it is in a pop up window. You may then proceed as normal.

See also:
See "Component Options" on page 131 for information on defining the active Rules.

See "Rule Processing" on page 30 for a definition of Rule processing.

Component Options

Definition:
"Component options" lets you specify the Rule, Ruleset, or Group that Select will use when processing selection list requests. This Rule, Ruleset, or Group is active when the Network Center initializes or restarts, and after a Rule Reload.

Most likely, you will use "Component Options" to specify a Group that contains all of the Rules, Rulesets, and Groups that you want to use to assign Select lists.

"Component options" also contains a mode field that sets the Rules as active, dormant, or warn (in "warn" mode Select issues messages but does not perform the action specified in the Rules while processing Select lists requests).

Starting state:
One or more Rules, Rulesets, or Groups have been defined via the "Rule definition" or "Define (value) Group" function.

Access:
Select choice 2, 'Component options' from the Selection Administration panel, TNCADMC. The Component options panel appears.

Step-by-step:

1. In the 'Definition entity' field, enter the Rule, Ruleset, or Group that will be active. You may use a character mask (pattern matching);

2. In the 'Mode' field, enter the method of operation for the Active Rule, Ruleset, or Group.

3. Use F16=Save to save the options; a message should appear stating that activation was successful. You can also save the record by using F3=Exit and selecting choice 1. If you do not wish to save the record at this time, do one of the following:

    *   Use F3=Exit and select choice 2 to exit and return to the main menu.

    *   Use F3=Exit and select choice 3 to return to the current panel.

    *   Use F12=Cancel to return to the Select Component Administration panel.

Tips:

*   To make the Component options active, use the "Rule Reload" function.

*   For help, use the F1=Help action

*   If you use a character mask in the 'Definition entity' field, any Rule, Ruleset, or Group that matches the mask will be included in the Rule hierarchy. However, pattern matching only applies to the first level that is satisfied. For example, if a Group matches the pattern mask, no pattern matching will be done for subordinate Rulesets or Rules.

Warnings:
Using the "active" mode causes Select to perform the action specified in each Rules Action operand: This will affect the processing of your system. If you have not yet tested the Rules, we recommend placing them in "warn" mode first.

See also
See "Pattern Matching: Creating Rule Operand Masks" on page 31 for information on identifying a character mask.

Define (value) Group or Select List

Definition:
"Define (value) Group or Select list" produces a Group definition panel, which you can use to create a Group, Value Group, or Select list.

You can think of a **Group** as a container that allows you to place any combination of Rules, Rulesets, and Groups into order from the first Rule, Ruleset, or Group that you wish to be processed to the last. (In other words, a Group sets the Rule processing order for the items that it contains.)

A **Value Group** is a symbolic value that references a group of values. For example, you can create a Value Group to reference operands that are too diverse for pattern matching. Using Value Groups can reduce the need for creating or changing a Rule, Ruleset, or Group.

A **Select list** gives you precision control over assigning session traffic to particular resources, such as Virtual Routes, Gateway paths, SSCP names, and ALS names. You can also assign each resource a weighting factor that determines the percentage of traffic that will be routed across the resource to another domain (load balancing).

Access:
Select choice 3, 'Define (value) Group' from the Selection Administration panel (TNCADMC); The Group definition panel appears.

Defining a Group

Starting state:
One or more Rules, Rulesets, and/or Groups have been defined via the "Rule definition" or "Define (value) Group" function.

Step-by-step:

1. Enter the name in the 'Name' field

2. Enter the title in the 'Title' field

3. In the numbered fields, enter the Rules, Rulesets, and/or Groups that you want the Group to contain according to their processing order.

4. After entering the values, use the F16=Save action to save the Group. You can also save the record by using F3=Exit and selecting choice 1. If you do not wish to save the record at this time, do one of the following:

    *   Use F3=Exit and select choice 2 to exit the panel

    *   Use F3=Exit and select choice 3 to return to the Group definition panel

- Use F12=Cancel to return to the selection list Administration panel

Defining a Value Group

Starting state:
You have a group of Rule operands that are too diverse to match with pattern matching characters.

Step-by-step:

1. Decide which values need to be included in the Value Group. (They can be operand values, Rule names, Group names, or other Value Group names).

2. In the 'Name' field, enter an ampersand ("&") immediately followed by the name for the Value Group

3. In the 'Title' field, enter the title for the Value Group

4. In the numbered fields, enter the Value Group's values. You may use pattern matching masks.

5. After entering the values, use the F16=Save action to save the Value Group. You can also save the record by using F3=Exit and selecting choice 1. If you do not wish to save the record at this time, do one of the following:

   - Use F3=Exit and select choice 2 to exit and return to the Selection Administration panel

   - Use F3=Exit and select choice 3 to return to the current panel

   - Use F12=Cancel to cancel the Group Definition panel and return to the Selection Administration panel.

6. If necessary, use the Value Group's 'Name' in the Rule operand, Ruleset, Group, or Value Group field that references the Value Group.

Defining a Select List

You can use the "Group Definition" panel in a special manner to define a Selection list of resources that is assigned to a Select Rule.

Starting state:
You have defined, or are going to define one or more Rules that will contain this Select list.

Step-by-step:

1. In the Group definition panel (TNCGRPD), enter a one to eight character name in the 'Name' field and a descriptive title in the 'Title' field. Then, use the F11=Select action; the Select List Definition panel appears.

2. Enter the desired resources; each numbered field contains two input fields: In the first input field, specify the name of the resource; in the second input field, specify the weighting factor for the resource.

    The name of any Virtual route resource must be specified as a six character name of the form 'VRxTPy' where 'x' is a numeric value (0 through 7) that represents the virtual route number and 'y' is a numeric value (0 through 2) that represents the Transmission priority.

    The weighting factor determines the percentage of traffic that will be routed across the particular resource (i.e. load balancing). Enter a zero to indicate that the list element should always be included in the generated Select List, regardless of the current session traffic activity.

    You can specify Subarea numbers and/or NCP names in Gateway Path selection lists. Select will evaluate the list for both numeric and alphanumeric values. If the first value specified in the list is numeric, then Select will evaluate the list values as Subarea numbers. Conversely, if the first value specified in the list contains alpha characters, then Select will evaluate the list as NCP names.

3. After entering the Select List values and their weighting factors, use the F16=Save action to save the list. Use the F12=Cancel action to return to the Selection Administration panel (TNCADMC).

Tips:
For help on a field, use the F1=Help action

See also:
See "Pattern Matching: Creating Rule Operand Masks" on page 31 for information on defining pattern masks. See "Value Groups: Creating Symbolic Rule Operand Values" on page 33 for detailed information on defining and using Value Groups. See "Select Lists" on page 29 and "Defining a Select List" on page 74 for information on using and defining Select Lists.

Display (value) Group or Select List

Definition:

The "Display (value) Group or Select list" function produces an alphabetical list of all the Groups and Select lists defined for a particular VTAM exit point in Select. You can select the Groups, Value Groups, or Select lists for viewing and modification: add or delete Groups, Value Groups, or Select lists, or simply browse to see which elements are defined within a Group, Value Group, or Select list.

Starting state:

One or more Groups, Value Groups or Select lists have been defined.

Access:

Select choice 4, "Display (value) Group or Select list" from the Selection Administration panel (TNCADMC); the Group definition panel (TNCGRPS) appears.

Step-by-step:

1. Select the desired Group, Value Group, or Select list from the list; its definition panel (TNCGRPD) appears. Use F7=Backward and F8=Forward to scroll through lists that exceed the screen.

2. If desired, delete or modify the Group, Value Group, or Select list:

    *   To delete the Group, Value Group, or Select List, use the F20=Delete action.

    *   To modify a field, overtype it with the new value.

    *   To insert additional fields, use the '.I' prefix command.

    *   To display a Rule, Ruleset, Group, Value Group defined within the Group, place the cursor on its name and use the F11=Select action.

3. After modifying the Group, Value Group, or Select List, use F16=Save to save the changes. You can also save the record by using F3=Exit and selecting choice 1. If you do not wish to save the record at this time, do one of the following:

    *   Use F3=Exit and select choice 2 to exit the panel without saving changes.

    *   Use F3=Exit and select choice 3 to return to the Group definition panel.

    *   Use F12=Cancel to cancel the Group Definition panel and return to the selection list Administration panel.

Tips:

For help, use the F1=Help action.

See also:

See "Modifying or Deleting Groups, Value Groups, and Select Lists" on page 88 for details on modifying Groups.

Rule Counts

Definition:
"Rule Counts" displays how many times Select Rules have been matched (used) and places the results in the Message Queue for viewing. This helps you to gauge a Rule's frequency of use.

Starting state:
The active Rules must be in "active" or "warn" mode.

Access:
Select choice 5, 'Rule Counts' from the Selection Administration panel; a message appears on the command line or in a pop up window stating that the Rule counts for Select have been logged. Use the F12=Cancel action to cancel the message if it is in a pop up window.

Step-by-step:
After invoking the Rule counts function, go to the Message Queue to view the results:

1. Go to the main Network Center menu panel (TNCMENU) and select choice 1, 'Administration'.

2. From the Administration menu, select choice 6, 'Message queue'; the Message queue panel will appear.

    Use F7=Backward and F8=Forward to scroll through the Message queue panels. Use F2=Prefix to reformat the display. Use F11=Find to find a specific type of message. To exit the Message queue use F3=Exit or F12=Cancel.

See also:
See the *Installations and Operations* manual (TNC-0003) for more information on using the Message Queue and other Administration panel choices.

Rule Definition

Definition:
The Rule definition panel contains operands that allow you to specify exactly which characteristics a particular VTAM session must match in order for it to be assigned a particular selection list. You can define the selection list, including any weighting factors, or you can specify that VTAM should assign the original list.

Additionally, the Rule definition panel allows you to create Ruleset Rules using the Ruleset operand. A Ruleset Rule is a Rule that contains other Rules. It acts as a gateway for the Network Center to process the Rules it contains. Rulesets can decrease the time it takes to process Rules.

Access:
Select choice 6, "Rule definition", from the Selection Administration panel; The Network Center Rule Definition panel (TNCRULD) appears.

Step-by-step:

1. Enter the Rule's name in the 'Name' field.

2. Enter the Rule's title in the 'Title' field.

3. Modify the operands. You may use pattern matching.

    To define a Ruleset:

Open the Ruleset Rule Name List panel by using the F11=Select action or by entering "yes" in the 'Ruleset' field and entering any keyboard character into the resulting 'select' field. In the Ruleset Rule Name List panel (TNCRNAM), enter the names of the Rules to be included in the Ruleset in the numbered fields, according to their processing order. Then, use F16=Save to save the Ruleset Rule Name List. Use F12=Cancel to return to the Rule definition panel.

4. After defining the fields, use F16=Save to save the Rule. You can also save the record by using F3=Exit and selecting choice 1. If you do not wish to save the record at this time, do one of the following:

- Use F3=Exit and select choice 2 to exit the panel without saving the changes

- Use F3=Exit and select choice 3 to return to the Rule definition panel

- Use F12=Cancel to exit the Rule definition panel

Tips:

- For help with operands, place your cursor on the field and use the F1=Help action.

- The Rule will not be active unless you make it part of the Rule hierarchy using the "Component options" function.

- If you define a Ruleset, you can display the Rule list whenever you open the Rule by placing your cursor on the 'Name' field and using the F11=Select action.

Warnings:
Select will issue an error message if you do not define the 'Name' first. If you receive the message in a pop up window, use F12=Cancel to cancel the message. You may then proceed with Rule definition.

See also:
See "Rule Operand Definitions" on page 12 for detailed descriptions of the Rule operands. See "Ruleset Rules" on page 24 for example Rulesets. See "Pattern Matching: Creating Rule Operand Masks" on page 31 for information on creating pattern masks for operand fields.

Rule Display

Definition:
The "Rule display" function displays an alphabetical list of all of the Rules and Rulesets defined within Select. You can select the Rules and Rulesets for modification or deletion.

Starting state:
One or more Rules have been defined.

Access:
Select choice 7, "Rule display" from the Selection Administration panel; a list of all the current Rule(set) definitions appears.

Step-by-step:

1. Select a Rule or Ruleset from the Network Center Rules panel; the Rule or Ruleset's definition panel appears.

2. If desired, you may modify or delete the Rule:

    *   To delete the Rule, use the F20=Delete action.

    *   To modify a field, overtype it with the new value.

    *   To delete a field, overtype it with blanks.

    *   To display a Value Group that has been identified in one of the Rule's operand fields, place the cursor on the Value Group's name and use the F11=Select action.

3. Use F16=Save to save any changes. You can also save changes by using F3=Exit and selecting choice 1. If you do not wish to save the record at this time, do one of the following:

    *   Use F3=Exit and select choice 2 to return to the Selection Administration panel without saving any changes.

    *   Use F3=Exit and select choice 3 to Return to the Rule definition panel.

    *   Use F12=Cancel to cancel the panel and return to the Network Center Rules list.

See also:
See "Modifying or Deleting Rules and Rulesets" on page 79 for details on modifying Rules.

Rule Reload

Definition:
"Rule reload" allows you to refresh the active Rules from the Network Data File with any changes that you have made to the Rules. You do not need to restart VTAM to reload Select Rules.

Starting state:
The active Rules have been set via the Component options function.

Access:
Select choice 8, 'Rule reload' from the Selection Administration panel; the 'Reload function' window appears.

Step-by-step:

From the 'Reload function' window, select choice 1 to reload the Rules; a message appears stating that the Rules were reloaded. (If the message is in a pop up window, use the F12=Cancel action to cancel the message.)

Warnings:
This function will replace any previously defined active Rules with the currently defined active Rules.

See also:
For more information on making Rules active and using the Rule reload function, see "Activating Rules" on page 93.

Rule Test

Definition:
The "Rule test" function lets you create a sample "session" to test against the active Rules. When you issue the test function, Select will compare the "session" against each Rule as in actual Rule processing. The first Rule that matches the session conditions will be noted in a message.

Access:
Select choice 9, 'Rule test' from the Selection Administration panel; the Network Center Rule Match Test panel appears.

Step-by-step:

1. In the Network Center Rule Match Test panel, enter the operand values for the "session" that you wish to test against the active Rules. You may use pattern matching characters.

2. After defining the session parameters, use F16=Test to test the Rules; a message appears via pop up window stating which active Rule matched the session. If no Rule is found that matches, you will receive a message stating so.

3. Use the F12=Cancel action to cancel the message. If a Rule matched the session, you will receive a Display function window. Select choice 1 to display the Rule that matched the session; select choice 2 to return to the Network Center Rule Match Test panel.

See also:
See "Testing Rules" on page 102 for more information and techniques for testing Rules.

Statistics

Definition:
"Statistics" lists recent session activity for Select, including the number of requested sessions, denied sessions, selection requests, processed selection requests, bypassed selection requests, terminated sessions, and active sessions.

Access:
Select choice 10, 'Statistics' from the Select Component Administration panel; a list of current session statistics appears. Use F3=Exit or F12=Cancel to return to the Select Component Administration panel.

Status

Definition:
The "Status" choice lets you display information for each of the currently allocated resources: The resource name (Virtual route name, Gateway path name, SSCP name, ALS name, etc.); the weighting factor that is to be used to determine whether new session traffic will be routed to the resource; and the current count of sessions assigned to the resource.

Access:
Select choice 11, 'Status', from the Selection Administration panel (TNCADMC); a list of the active Rules appears.

Step-by-step:

1. Select the Rule that you wish to view status information for; the Network Center Select List appears (TNCSLST).

2. Use the F12=Cancel or F3=Exit action to return to the Selection Administration panel.

Chapter 8. Messages

The Network Center messages are listed in numerical order by the 4 character numeric value uniquely associated with the message.

Constant information is portrayed **in this font** and variable information (filled in during execution) is portrayed in standard font.

General Network Center messages are documented in the *User's Guide* (publication TNC-0002).

TNL1801N Select Component [logical name] **is now active**

> **Explanation:** The identified logical Component has initialized and is active.
>
> **System Action:** List assignment, replacement, and other Select processing will now begin according to the active Rules.
>
> **Operator Response:** None
>
> **Network Administrator Response:** None

TNL1802N Gateway path selection requested for [type] [netid:luname] **and** [netid:luname] **by rule** [rulename]

> **Explanation:** The Select Component has received a request to process a Gateway Path selection between the identified elements by the identified Rule. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.
>
> **System Action:** The session will continue normally with Select processing applied.
>
> **Operator Response:** None
>
> **Network Administrator Response:** None

TNL1803W Gateway path selection bypassed for [type] [netid:luname] **and** [type] [netid:luname] **by rule** [rulename]

> **Explanation:** The Select Component will not do any alternative processing of lists for the session between the identified logical units as a result of the identified Rule. The [type] indicates if the OLU or DLU is an Alias, SLU or PLU name.
>
> **System Action:** The requested activity will continue with no Select list assignment.
>
> **Operator Response:** None

TNL1804N No gateway path select for [type] [netid:luname] **and** [type] [netid:luname] **due to Warn mode**

Explanation: The Select Component has received a request to process a Gateway Path selection between the identified elements by the identified Rule. The requested action is not performed because the matching Rule (or Component option) specified "Warn" mode. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

System Action: The session will continue. No Select list assignment will be done.

Operator Response: None

Network Administrator Response: None

TNL1805N Gateway path select bypass for [type] [netid:luname] **and** [type] [netid:luname]**, no rules match**

Explanation: No Rules can be located by Select for evaluation of the pending session. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

System Action: No Select processing is attempted.

Operator Response: None

Network Administrator Response: This will normally occur when the Network Center Server has not initialized sufficiently to have loaded the active Select Rules into storage yet. This may also occur if you have not defined an Select Rule for the type of session involved in Rule evaluation.

TNL1808T [PLU/SLU] **Name:** [name]**, Netid:** [netid]**,Subarea:** [subarea]

Explanation: A session is being evaluated by The Network Center's Rule processor and the display information is associated with the Logical Unit displayed.

System Action: Processing continues normally.

Operator Response: None

Network Administrator Response: None.

TNL1809T [PLU/SLU] **Sscp:** [sscpname]**, Alias:** [alias]**, Aliasnet:** [alias net]

Explanation: An applicable Rule indicated that trace level information should be displayed and The Network Center's Rule processor is simply reporting the applicable action.

System Action: Processing continues normally.

Operator Response: None

Network Administrator Response: None.

TNL1812N Adjacent SSCP selection requested for [type] [netid:luname] **and** [type] [netid:luname] **by rule** [rulename]

Explanation: The Select Component has received a request to process an Adjacent SSCP selection between the identified elements by the identified Rule. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

System Action: The session will continue normally with Select processing applied.

Operator Response: None

Network Administrator Response: None

TNL1813W Adjacent SSCP selection bypassed for [type] [netid:luname] **and** [type] [netid:luname] **by rule** [rulename]

Explanation: The Select Component will not do any alternative processing of lists for the session between the identified logical units as a result of the identified Rule. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

System Action: The requested activity will continue with no Select list assignment.

Operator Response: None

Network Administrator Response: None

TNL1814N No adjacent SSCP selection for [type] [netid:luname] **and** [type] [netid:luname] **due to Warn mode**

Explanation: The Select Component has received a request to process an adjacent SSCP selection between the identified elements by the identified Rule, but it will not be actually serviced as a result of the matching Rule (or Component option) specifying "Warn" mode. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

System Action: The session will continue normally with VTAM defaults applied.

Operator Response: None

Network Administrator Response: None

TNL1815N Adjacent SSCP select bypass for [type] [netid:luname] **and** [type] [netid:luname]**, no rules match**

Explanation: No Rules can be located by Select for evaluation of the pending session. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

System Action: No Select processing is attempted.

Operator Response: None

Network Administrator Response: This will normally occur when the Network Center Server has not initialized sufficiently to have loaded the active Select Rules into storage yet. This may also occur is you have not defined an Select Rule for the type of session involved in Rule evaluation.

TNL1822N Virtual route selection requested for [type] [netid:luname] **and** [type] [netid:luname] **by rule** [rulename]

Explanation: The Select Component has received a request to process a virtual route selection between the identified elements by the identified Rule.

System Action: The session will continue normally with Select processing applied.

Operator Response: None

Network Administrator Response: None

TNL1823W Virtual route selection bypassed for [netid:slu] **and** [netid:plu] **by rule** [rulename]

Explanation: The Select Component will not do any alternative processing of lists for the session between the identified logical units as a result of the identified Rule.

System Action: The requested activity will continue with no Select list assignment.

Operator Response: None

Network Administrator Response: None

TNL1824N No virtual route select for [type] [netid:luname] **and** [type] [netid:luname] **due to Warn mode**

Explanation: The Select Component has received a request to process a virtual route selection between the identified elements by the identified Rule, but it will not be actually serviced as a result of the matching Rule (or Component option) specifying "Warn" mode. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

System Action: The session will continue normally with VTAM defaults applied.

Operator Response: None

Network Administrator Response: None

TNL1825N Virtual route select bypass for [type] [netid:luname] **and** [type] [netid:luname]**, no rules match**

Explanation: No Rules can be located by Select for evaluation of the pending session. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

System Action: No Select processing is attempted.

Operator Response: None

Network Administrator Response: This will normally occur when the Network Center Server has not initialized sufficiently to have loaded the active Select Rules into storage yet. This may also occur is you have not defined an Select Rule for the type of session involved in Rule evaluation.

TNL1832N ALS selection requested for [type] [netid:luname] **and** [type] [netid:luname] **by rule** [rulename]

Explanation: The Select Component has received a request to process an adjacent link station selection between the identified elements by the identified Rule. The [type] indicates if the OLU or DLU is an Alias, SLU or PLU name.

System Action: The session will continue normally with Select processing applied.

Operator Response: None

Network Administrator Response: None

TNL1833W ALS selection bypassed for [type] [netid:luname] **and** [type] [netid:luname] **by rule** [rulename]

Explanation: The Select Component will not do any alternative processing of lists for the session between the identified logical units as a result of the identified Rule. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

System Action: The requested activity will continue with no Select list assignment.

Operator Response: None

Network Administrator Response: None

TNL1834N No ALS selection performed for [type] [netid:luname] **and** [type] [netid:luname] **due to Warn mode**

Explanation: The Select Component has received a request to process an adjacent link station selection between the identified elements by the identified Rule, but it will not be actually serviced as a result of the matching Rule (or Component option) specifying "Warn" mode. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

System Action: The session will continue normally with VTAM defaults applied.

Operator Response: None

Network Administrator Response: None

TNL1835N ALS selection bypass for [type] [netid:luname] **and** [type] [netid:luname]**, no rules match**

> **Explanation:** No Rules can be located by Select for evaluation of the pending session. The [type] indicates if the OLU or DLU is an Alias, SLU, or PLU name.

> **System Action:** No Select processing is attempted.

> **Operator Response:** None

> **Network Administrator Response:** This will normally occur when the Network Center Server has not initialized sufficiently to have loaded the active Select Rules into storage yet. This may also occur is you have not defined an Select Rule for the type of session involved in Rule evaluation.

Glossary

The following definitions are intended to aid the reader in clarifying terminology as it is used in this publication and in regards to the Network Center suite of software Components. Some definitions are based on descriptions and entries in *Common User Access Panel Design and User Interaction*, IBM publication SC26-4351.

Access: A Network Center Component that allows authorized users to control and monitor session establishment and denial within a VTAM domain.

Alias: A Network Center Component that provides resource name assignment from within the VTAM session management exit (SME).

alias name: A name used within a local host to identify a logical unit (etc.) in another network, guaranteeing that values remain unique amongst network nodes.

CMS: See *conversational monitor system*.

Common User Access (CUA): IBM guidelines for the dialog between an end-user and a computing system. CUA is based from Systems Application Architecture (SAA).

control vector: A portion of a defined SNA structure or sub-structure that contains information about an activity occurring within the network.

conversational monitor system (CMS): A virtual machine (VM) operating system that provides general interactive time sharing and program development facilities.

cross-domain: An action or activity that occurs between more than one domain. For example, in a cross-domain session, different VTAM domains own the PLU and the SLU.

cross-network: An action or activity that occurs between two or more SNA networks. For example, in a cross-network session different SNA networks own the PLU and SLU.

CUA: See *Common User Access*.

destination logical unit (DLU): A logical unit that is the target of a session initiation request. Normally, the DLU is an application subsystem residing in a host. See also *primary logical unit (PLU)* and *origin logical unit*.

DLU: See *destination logical unit*.

domain: The part of a network where the data processing (hardware and software) are under the common control of VTAM.

Group: A defined collection of Rules, Rulesets, and/or Groups that controls how a particular Network Center resource or Component should operate.

ISTEXCAA: The name of the VTAM Session Management Exit (SME). See *Session Management Exit*.

Message Queue: A Network Center facility that allows the Network Administrator to display messages issued during execution by the Network Center Components, the Network Center Server, and VTAM.

MVS: Multiple Virtual Storage. A variation of IBM's OS operating system, which includes MVS/390, MVS/XA, MVS/ESA, and the MVS element of OS/390.

NETID: Network Id or network identifier. A 1- to 8-byte name that identifies one or more domains operating as a single SNA network.

Network Administrator: In the Network Center, the person responsible for installation and operations.

Network Center: North Ridge Software's suite of software components that provide increased control over the VTAM network activities.

Network Center Interface: The portion of the Network Center that executes in the host subsystem to manage communication between a Network Center workstation, the end-user, and the Network Center Server.

Network Data File: The information stored on disk that supports installed Network Center Components. The Network Center uses the BSAM access method to access the information via the Network Center Server or TNCUTIL.

Network Director: North Ridge Software's Network Management software that provides control over the logical aspects of a VTAM network.

OLU: See *origin logical unit*.

origin logical unit (OLU): Origin Logical Unit. A logical unit that is the requesting side of a session initiation sequence (e.g. a user at a terminal). See also *destination logical unit* and *secondary logical unit*.

OS/390: The IBM operating system that includes and integrates functions previously provided by many IBM software products, including the MVS operating system.

pattern-matching character: The special characters, asterisk (*) or percent sign (%), which can be used to represent one or more characters in the comparison of character strings. Any character or set of characters can replace a pattern-matching character.

PLU: See *primary logical unit (PLU)*.

primary logical unit (PLU): In SNA, the logical unit (LU) that sends the BIND to activate a session with its partner LU. The PLU identifies one side of a session and is typically an application subsystem (e.g. the Network Center Server operates as a PLU to the Network Center Interface in TSO). Contrast with *secondary logical unit*.

Query: A Network Center Component that allows authorized users to display and interrogate operational VTAM.

Rule: A set of criteria that establishes the operational characteristics of a portion of the VTAM network in relation to one of the Network Center's Components. For example, in Select, a Rule can be set to build a Selection List in response to a session request.

Ruleset: A Rule that defines a set of Rules. During processing, the Component will bypass the Rules defined in the Ruleset unless the session matches the criteria defined in the Ruleset. Ruleset Rules help to decrease processing time.

secondary logical unit (SLU): In SNA, the logical unit (LU) that contains the secondary half-session of a particular LU-LU session. The SLU identifies one side of a session and is typically a terminal device, but may also be a processing program (e.g. the Network Center Interface for TSO operates as an SLU). Contrast with *primary logical unit*.

Select: A Network Center Component that provides control over which VTAM path will be selected for a particular session. It can also be used to balance session traffic across the available paths.

Select List: A list of elements (Routes, Paths, etc.) that specifies how the Select Component should build a Selection List to be returned to VTAM in response to a Selection List request.

session: In SNA, the communications between two logical units; for example, a session exists between a terminal device and a subsystem.

Session Management Exit (SME): An exit point within VTAM that provides the local installation with control over the actions of VTAM. This routine is also known as ISTEXCAA.

SLU: See *secondary logical unit*.

SME: See *Session Management Exit*.

SSCP: See *system services control point*.

subarea: Within an SNA network, the unique value that represents a unique processing location (host or front end processor). A subarea includes a subarea node, attached peripheral nodes, and associated resources. Within a subarea node, all network accessible units (NAUs), links, and adjacent link stations (in attached peripheral or subarea nodes) that are addressable within the subarea share a common subarea address and have distinct element addresses.

subsystem: A VTAM processing APPLICATION, such as CICS, TSO, CMS, and NetView. These subordinate systems are capable of operating independently of, or asynchronously with, VTAM.

system services control point (SSCP): The key processing point within a VTAM domain that manages session initiation and termination.

The Network Center: See *Network Center*.

The Network Director: See *Network Director*.

Timeout: A Network Center Component that provides a domain wide inactivity timer for idle terminal sessions. Timeout also allows for session time limits.

Time Sharing Option (TSO): A portion of IBM's OS (i.e. MVS) operating system that provides interactive time sharing capabilities.

TSO: See *Time Sharing Option*.

Value Group: In the Network Center, a collection of values that are referenced from an operand as a single entity. For example, users can simplify Rule definitions by creating one symbolic value that references a group of values.

virtual route (VR): In SNA, either (a) a logical connection between two subarea nodes that is physically realized as a particular explicit route or (b) a logical connection that is contained wholly within a subarea node for intranode sessions. A virtual route between distinct subarea nodes imposes a transmission priority on the underlying explicit route, provides flow control through virtual route pacing, and provides data integrity through sequence numbering of path information units (PIUs).

Virtual Telecommunications Access Method (VTAM): An IBM software product that provides network support services to the operating system, including controlling communication and the flow of data in an SNA network. VTAM provides the SNA application programming interfaces and SNA networking functions.

Note: Beginning with Release 5 of the OS/390 operating system, the VTAM for MVS/ESA function was included in Communications Server for OS/390. Subsequently, in z/OS VTAM was included in the z/OS Communications Server.

VM/SNA Console Support (VSCS): A VTAM component for the VM environment that provides an interface between SNA devices and the VM Control Program (CP). It allows SNA terminals to be virtual machine consoles.

VSCS: See *VM/SNA Console Support*.

VTAM: See *Virtual Telecommunications Access Method*.

Weighting Factor: A value assigned to an element of a Select List that, based on prior and existing conditions, determines the relative priority of the element (i.e. its position within the generated Selection List).

z/OS: An IBM mainframe operating system that provides extended services to meet the demands of enterprise businesses using open software technologies, including distributed IP networking. z/OS includes and integrates functions previously provided by other IBM products including MVS operating systems.

z/VM: IBM's VM operating system that is based on 64-bit architecture and that provides extended services to meet the demands of enterprise businesses desiring multi-server solutions with a broad support for operating system environments including z/OS, OS/390, TPF, VS/ESA, CMS, and Linux.

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