IBM z/VSE
5.1

SNA Networking Support

SC34-2626-01

Note

Before using this information and the product it supports, be sure to read the general information under “Notices” on page 145.

This edition applies to Version 5 Release 1 of IBM® z/Virtual Storage Extended (z/VSE), Program Number 5609-ZV5, and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC34–2626–00.

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About This Book

This manual describes tasks which are necessary to configure the **SNA** communications part of a VSE system. The telecommunication access method described in this manual is **VTAM®** (which is the only telecommunications access method supported by the Interactive Dialog of z/VSE).

Note:

1. This publication does **not** describe z/VSE's implementation of the **TCP/IP** networking protocol. A description of z/VSE's implementation of the **TCP/IP** networking protocol is provided in z/VSE Planning.
2. Details of how to install and customize *TCP/IP for VSE/ESA* are provided in z/VSE TCP/IP Support.

Who Should Use This Book

This publication is intended for the system administrator or the system programmer who is responsible for planning, installing, and maintaining the SNA communications part of a VSE system.

Although z/VSE, through its Interactive Interface, substantially reduces the effort of configuring an SNA (VTAM) communications system, a skilled person familiar with IBM telecommunication products must plan and install it. Use the documentation listed in the Online Library *VSE Collection,* SK2T-0060, to obtain a list of the books related to SNA, VTAM, NCP, CICS, and related (optional) products.

Where to Find More Information

References to related publications are given in the text. For more information on the products and statements mentioned in this book refer to these z/VSE publications:

- z/VSE Planning
- z/VSE Guide to System Functions

Summary Of Changes

- The use of *VSE addresses* and *physical addresses* (first introduced with z/VSE 4.3) has been included in this information. See "Support for Physical Addresses and VSE Addresses" on page xvii.
- All previous information that is *specific to* TCP/IP (HiperSockets, Linux® Fast Path, and so on) has been moved from this publication to the:
  - z/VSE Planning
  - z/VSE Administration
- The instructions on how to define OAT (OSA address table) entries and install an SNA image using OSA/SF, have been moved from the publication z/VSE Planning to Chapter 4, "Configuring a Communications Device," on page 19.
- The following information has been *removed* from this publication:
  - How to control and monitor a network using NetView®.
  - How to submit/retrieve job files to/from another system *without* using the FTP facility of TCP/IP.
  - How to define token-ring attached devices via a gateway.
- An additional section "Setting Up OSA/SF" on page 28 has been added to this publication.
- The terminology and examples in this publication have been updated to reflect the current IBM hardware and software.
- Because this publication now mainly contains information about **SNA** and the IBM program **VTAM**, it has been renamed to the *SNA Networking Support* (previously it was called the *Networking Support*).

Support for Physical Addresses and VSE Addresses

From z/VSE 4.3 onwards, z/VSE supports device addresses (that is, *physical addresses*) of up to X'FFFF'. This support is implemented as follows:

- z/VSE applications, messages, commands, and so on, do not address a device by the physical address (**pcuu**), but instead by the *VSE address* (**cuu**).
- VSE addresses are in the range from X'000' to X'FFF'.
- To each physical address (pcuu) there is a corresponding VSE address (cuu).
- If the physical address is less than or equal to X'FFF', the VSE address (cuu) is equal to the physical address (pcuu).
- If the physical address is higher than X'FFF' (and therefore outside the range of VSE addresses), the physical address (pcuu) and VSE address (cuu) will be different.

CP commands (under z/VM) always use *physical addresses*.

z/VSE jobs, commands, dialogs, and messages use *VSE addresses*. However, in specified cases (for example, when using the `QUERY IO` command) *physical addresses* might be used.

Note: Throughout the z/VSE documentation, the term *address* of a device (used on its own) always refers to the *VSE address*.

Chapter 1. Concepts and Preliminaries

This chapter provides an overview of the networking concepts and possibilities when using SNA and VTAM in your z/VSE system.

It contains these main topics:

For details of how to use TCP/IP in your z/VSE system, refer to z/VSE Planning.

Using SNA in Your Configuration

An SNA network is one kind of communication system; it is based on the SNA architecture which is the description of the:

- logical structure
- formats
- protocols or rules and
- operational sequences of information flow throughout the network.

VTAM is IBM's implementation of the SNA architecture.

SNA defines both the functional responsibilities of each network component and the rules for communication between components. SNA also defines the principles by which a network administrator specifies a network, arranges the network configuration, and controls the network functions according to the needs of the users.

Because SNA prescribes the manner in which a network function should be carried out, any two SNA products with equivalent functions can easily interact according to the principles of the SNA architecture.

Since networks serve users, a user can be a person logging on to a display station to obtain a service. If that user interacts with the system via an application program, then that program is also considered a user in an SNA sense.

For further details about SNA and VTAM, refer to these IBM publications:

SNA Network Concepts and Products , GC30-3072
SNA Technical Overview , GC30-3073
VTAM Network Implementation Guide, SC31-6494.

Hardware Configuration Overview

In z/VSE, and consequently in the z/VSE documentation, the configuration of attached devices is divided into the following categories:

- Non-Communication Devices

  Tapes, disks, and some others.
- Communication Devices (by type of attachment):
  - Local Channel attachments.
    - SNA
    - Non-SNA
  - Remote attachments via a Communication Controller.
    - SNA clients/servers

  - TCP/IP clients/servers
- Attachments to a LAN, where the LAN is connected to an emulated OSA-2 port, OSA-Express port, or a 3172 Interconnect Controller.
  - SNA clients/servers
  - TCP/IP clients/servers

This publication deals with the configuration of *communication devices* for use with *SNA*. The IBM publication z/VSE Administration describes:

- The configuration of communications devices for use with *TCP/IP*.
- The configuration of *non-communications devices* (disk, tape, and printer devices).

The following sections briefly describe the various connections/devices, z/VSE's support, and where to find information in this publication.

Local Non-SNA

Local non-SNA devices are attached via:

- A non-SNA control unit.
- Telnet (TCP/IP)

The *Configure Hardware* dialog fully supports the configuration of local non-SNA devices. Refer to Chapter 4, “Configuring a Communications Device,” on page 19.

In the dialog, you define the terminal characteristics but not a physical unit (control unit).

Note: The OSA *Integrated Console Controller* (OSA-ICC) allows you to attach local terminals without the need to use a terminal controller. A TN3270E and non-SNA DFT 3270 can be emulated using OSA-ICC. For details, refer to z/VSE Planning.

Local SNA

Local SNA devices are attached via one of the models of local SNA control units IBM 3174 or 3274.

The telecommunication access method is *VTAM* (which also supports local *non-SNA* devices).

The *Configure Hardware* dialog fully supports the configuration of local SNA devices. Refer to Chapter 4, “Configuring a Communications Device,” on page 19.

In the dialog, you define the *physical unit* (control unit) and the *logical units*. Compare this with the configuration of local non-SNA devices where you can only define the *terminal* characteristics but not the control unit.

Please note that VTAM also offers the capability of *dynamically defining* 3174-attached dependent LUs. For details refer to the VTAM Network Implementation Guide.

Connecting a LAN to your z/VSE host

The dialogs of the Interactive Interface support these methods of connecting a LAN to your z/VSE host to:

1. A port provided by an IBM adapter:
   - An emulated OSA-2 port to be used for communicating in non-QDIO mode (VTAM). For this purpose, an OSA Express adapter must be configured to emulate an OSA-2 adapter.
   - An OSAD port, to be used by *OSA/SF* (the *Open Systems Adapter Support Facility*).
2. An IBM 3172 Interconnect Controller serving as a gateway.
3. An IBM 3174 (local or remote) Control Unit serving as a gateway for a Token-Ring LAN.
4. The Token-Ring interface coupler (TIC) which belongs to the Token-Ring Network Attachment Subsystem (TRSS) of the 37xx communication controller. NCP Token-Ring Interconnection (NTRI) controls the TRSS.

Using the attachment of a Token-Ring Network, you can attach *IBM workstations* to the Token-Ring to switch into 3270 emulation mode and to then access z/VSE host functions. In this way, a workstation on the Token-Ring can be used as a CICS® terminal device.

The possible dialog-supported attachments are briefly described in the following sections.

Connecting a LAN to a Port Provided by an IBM Adapter

This type of connection allows you to connect a LAN to a z/VSE host.

The *Configure Hardware* dialog supports this connection (refer to "Connecting a LAN to an Emulated OSA-2 or 3172 Device in Non-QDIO Mode" on page 25 and "OSA-2 Attached Configuration Example" on page 53 for details of how the dialog is used). You use:

- One **ADD** statement to define an **OSA** port (provided by an emulated OSA-2 adapter). OSA is the device type for *non-QDIO* OSA-2 data transfer
- One **ADD** statement for the **OSAD** port (which is used by the pre-installed OSA/SF software on the z/VSE host).

Note:

1. For details of how to define an OSAX port for QDIO data transfer via an OSA Express adapter, refer to the chapter "Configuring an OSA Express Adapter" in the manual z/VSE Administration.
2. Using the dialog, you can connect three types of LAN: Token-Ring, Ethernet (which includes Fast Ethernet), or FDDI. You can also make a logical connection (via Box Manager) for sending information to NetView installed on a Token-Ring LAN.
3. Using the OSA-2 ATM (asynchronous transfer mode), you can configure a LAN in ATM LE (LAN emulation) mode, using the OSA/SF dialogs and customization programs.

Related Topics:

- "Devices Attached to a LAN Connected via an Emulated OSA-2" on page 4.
- "Connecting a LAN to an Emulated OSA-2 or 3172 Device in Non-QDIO Mode" on page 25.

Connecting a LAN to an IBM 3172 Control Unit

This type of connection allows you to connect a LAN to a z/VSE host.

The *Configure Hardware* dialog supports this connection (refer to "Connecting a LAN to an Emulated OSA-2 or 3172 Device in Non-QDIO Mode" on page 25 for details). You use one **ADD** statement only to define a **3172** port.

Using the dialog, you can connect three types of LAN to the 3172: Token-Ring, Ethernet (which includes Fast Ethernet), and FDDI. You can also make these connections:

- a logical Box Manager connection for sending information to NetView that is installed on a Token-Ring LAN.
- a Token-Bus connection, for connecting to a network of Personal Computers.

Related Topics:

- "Devices attached to a LAN connected via a 3172" on page 4.
- "Connecting a LAN to an Emulated OSA-2 or 3172 Device in Non-QDIO Mode" on page 25.

Connecting a Token-Ring to an IBM 3174 Control Unit

This type of connection does not require an **integrated adapter** at the host node. It can therefore be used with any processor supported by z/VSE.

The IBM 3174 Model control unit must have the IBM Token-Ring Network Gateway feature, that has feature code 3025.

Connecting a Token-Ring to the TIC of an IBM 37xx

Using this type of connection, the Token-Ring Network Attachment Subsystem (TRSS) of the IBM 37xx communication controller provides a connection capability to the IBM Token-Ring Network. It works like a gateway device, such as the one described in the preceding section.

The TRSS consists of a number of token-ring adapters (TRA). The actual number of TRAs depends on the communication controller model and the installed usage tier. Each TRA has up to two token-ring interface couplers (TIC). One TIC can access only one IBM local area network (LAN).

The TRSS is controlled by the **NCP Token-Ring Interconnection (NTRI)**.

For this connection, the *Configure Hardware* dialog supports the configuration of units at the token ring, for example:

- An IBM 3174 xxR control unit (Model 6xR, for example)
- IBM workstations.

The description of this configuration is imbedded in the section “Defining NCP Link(s)” on page 30.

Connecting a Token Ring to a Token-Ring Adapter, with Workstation Gateway

This type of connection is almost identical to the one described in the preceding paragraphs. The difference lies in the **devices** that are attached to the token ring.

You may only define a maximum of 64 physical units (PUs) per token-ring adapter. To overcome this limit, you can intersperse several workstation gateways into the token ring, each workstation counting as one PU with up to 32 logical units (LUs). The other workstations that are "assigned" to this PU **must be defined as LUs only**.

The Hardware Configuration dialog offers a specific selection of 'PC Gateway', from the set of Display and Printer physical units. The selection panel is shown in Figure 15 on page 35.

Devices Attached to a LAN Connected via an Emulated OSA-2

The *Configure Hardware* dialog supports the attachment of remote **SNA** devices to the type of LAN you connect to an emulated OSA-2 port (see also “OSA-2 Attached Configuration Example” on page 53).

An emulated OSA-2 port is created by configuring an OSA Express adapter to emulate an OSA-2 adapter. This is described in the chapter "Configuring an OSA Express Adapter" in the manual z/VSE Administration.

The attachment of remote **non-SNA** devices is not supported by the dialog.

For information about how to configure the LAN and the remote **SNA** *and* **non-SNA** devices attached it, you should also refer to these publications:

- Planning for the S/390 Open Systems Adapter (OSA-1, OSA-2)Feature.
- Using the 3172 Operator Facility User''s Guide.

Devices attached to a LAN connected via a 3172

The *Configure Hardware* dialog supports the attachment of remote **SNA** devices to the type of LAN you connect to a 3172 Interconnect Controller. The attachment of remote **non-SNA** devices is not supported by the dialog of the Interactive Interface.

For information about how to configure the LAN and the remote **SNA** *and* **non-SNA** devices attached to it, you should also refer to these publications:

- *3172 Hardware Planning Guide,* GA27-4003.
- *Using the 3172 Operator Facility User's Guide,* SC30-3573.

These publications are also contained on the Online Library *Hardware Collection,* SK2T-5843.

Remote SNA, 37xx-Attached

The IBM 37xx communication controller is a unit separate from the host processor. Its operations are controlled by one or more programs stored and running in the unit (NCP, for example). A communication controller manages details of line control and the routing of data over the communication lines.

The *Configure Hardware* dialog supports the configuration of **SNA** devices that are attached at the IBM 3745.

- As part of the dialog, you are being guided into the generation of the Network Control Program (NCP).
- The dialog lets you define links, physical units, and logical units. Refer to Chapter 4, “Configuring a Communications Device,” on page 19.

Alternatively, you can emulate a 37xx communication controller using the "OSN mode" of an OSA Express2 or later adapter. OSN is an abbreviation for *Open Systems Adapter for NCP*. For details, refer to System z9 and zSeries Open Systems Adapter-Express Customer's Guide and Reference.

Remote Non-SNA, 37xx-Attached

As mentioned before, over BSC lines **VTAM** supports only 3270 terminals. When used with the IBM licensed program *X.25 NCP Packet Switching Interface* (NPSI), an NCP enables VTAM to communicate with certain non-3270 non-SNA terminals.

The z/VSE **dialogs** do not support the configuration of **NCP-controlled** non-SNA devices. You must code the NCP definition statements yourself. For some additional information, see Chapter 8, “Defining Remote NCP-Controlled Non-SNA Devices,” on page 69.

Naming Convention in Hardware Configuration Dialog

The Hardware Configuration dialog supports only a single-domain network.

The dialog assigns VTAM resource names according to some naming convention.

The resource names allow to encode information within eight characters. Part of the resource name is the **subarea number**. This scheme achieves the **uniqueness of resource names**, even in multi-domain networks.

For a detailed description of the naming convention refer to Appendix A, “Naming Convention,” on page 119.

Defining Terminals to CICS

You define terminals to the CICS Transaction Server in either of two ways:

1. Permanently installed
2. Autoinstall.

Permanently Installed Terminals

Based on your input, the Hardware Configuration dialog passes the following definitions to the CICS Transaction Server:

- Terminal definitions which describe the characteristics of a particular terminal (DEFINE TERMINAL statements).

  Every DEFINE TERMINAL statement refers to a

- Terminal type definition which describes the characteristics of a generalized terminal (DEFINE TYPETERM statement).

The dialog instructs the CICS Transaction Server to place the Terminal Control definitions in any of the groups VSETERM1, VSETERM2 and/or VSETERM3 in the CSD file.

z/VSE is delivered to you with predefined TYPETERMs in the CSD group VSETYPE. You can modify or add to these terminal type definitions using CEDA commands. CEDA is the transaction ID for CICS's Resource Definition Online (RDO). It is described in *CICS Resource Definition Guide*, SC33-0708.

Autoinstall Terminals

You may bypass the creation of permanent CSD entries by using the *autoinstall* facility of the CICS Transaction Server, which creates Terminal Control entries in the CICS system only when the device is actually needed.

Besides saving you time in updating and assembling tables, this may also mean that the CICS Transaction Server takes up less virtual storage. Terminal Control entries created in this way exist in the CICS system only while the terminal remains in session.

To make use of the autoinstall facility, a terminal must be defined to VTAM. When a user signs on from a terminal that is defined to VTAM but unknown to the CICS Transaction Server (no Terminal Control entry), the autoinstall facility is activated. It provides the CICS Transaction Server with VTAM, TYPETERM, and TERMINAL information. The CICS Transaction Server then creates a Terminal Control entry for the terminal in the CICS system ("automatic installation"). The Terminal Control entry remains activated as long as a CICS session is active for that terminal.

Note:

1. You do *not* need to have a separate TERMINAL definition for each autoinstall terminal. In fact, you may need as few as one per device type. This is known as *model definition*, which is discussed below.
2. The default autoinstall program is IESZATDX. Model definition is contained in the member IESINCLM. Both IESZATDX and IESINCLM are stored in ICCF library 59.
3. You should not use the autoinstall facility for defining printers, because the printer must be installed *before* the first terminal user attempts to use the printer.
4. The CICS Transaction Server has a limit for the number of autoinstall terminals that can be activated at the same time. You can set this limit via the AUTOINST operand of table DFHSITSP or DFHSITC2. The default value is 100.
5. You can also use the autoinstall facility to define APPC parallel sessions in the CICS system. Refer to the CICS TS Customization Guide, for details.

Model Definitions:

For an autoinstall terminal the DEFINE TERMINAL statement will indicate

1. that it is for an autoinstall terminal (parameter AUTINSTMODEL)
2. the name of a model DEFINE TERMINAL statement, which in turn refers to a model DEFINE TYPETERM statement.

To ensure that the autoinstall facility works with the z/VSE Interactive Interface, z/VSE provides its own TYPETERM and TERMINAL model definitions. The model definitions are shipped as a phase in the system library IJSYSRS.SYSLIB. During z/VSE installation they are added to the CICS System Definition (CSD) file as groups VSETYPE and VSETERM.

The model definitions provided by z/VSE are listed in Appendix C, “z/VSE Definitions for Autoinstall Terminals,” on page 123.

If you wish, you can use the model definitions as is, or change them, or provide your own definitions. You change model definitions with CEDA commands.

Tables for VTAM Model Terminal Support:

After you define an autoinstall terminal in the *Configure Hardware* dialog, an entry is built in the VTAM model terminal support table (MDLTAB macro). This entry carries the name of the terminal's model definition which derives from your AUTOINST MODEL specification in the dialog.

In addition, if in the dialog you entered a value for **PRINTTO** (the associated printer), an entry is built in the VTAM associated logical unit table (ASLTAB macro). This entry carries in the PRINTER1 parameter the term ID of the associated printer and optionally in the PRINTER2 parameter the **TERM ID (CICS)**.

Both tables are built in library 51, under the names VTMMDL and VTMASL. During VTAM startup the tables are cataloged as B books into sublibrary PRD2.CONFIG.

VTAM Parameters and Logon Mode Table:

The z/VSE logon mode table (IESINCLM) contains an entry for each model definition provided by z/VSE. When defining your terminals with the *Configure Hardware* dialog to VTAM, the following parameters are created:

- MODTAB

  This parameter identifies logon mode table IESINCLM.
- DLOGMOD

  Connects the terminal type to the correct entry in IESINCLM.

Both parameters are included in the VTAM source books which the dialog generates. You can modify both parameters via the *Hardware Configuration: VTAM Parm Table List* panel of the *Configure Hardware* dialog.

Note: If you change the DLOGMOD parameter, keep in mind that the parameter value is identical to the label of the corresponding entry in IESINCLM.

Multiple-Domain Configuration

So far this overview has covered the single domain. The following section is a brief preview of what a later chapter will present for the multiple-domain case.

In a multiple-domain network, two or more hosts are connected via **SDLC lines**, via the **IBM token ring**, via an **X.25 Packet-Switched Data Network**, or via **channel-to-channel adapters**. z/VSE can be

- A *peer* to another system, for example another z/VSE
- A subordinate system to a central host, for example a z/OS® or a VM system

The hosts can be connected as two subarea nodes, two APPN nodes, or as one subarea and one APPN node.

Before you make a single domain a part of a multiple-domain network, you must add a few more definitions than are necessary for a single domain. Examples are *cross-domain resource managers* and *VSE/POWER PNET node names* (if you plan on using VSE/POWER PNET). Resources defined in one domain **must be known in the other domain(s)**.

For subarea nodes (as opposed to APPN nodes), z/VSE has a facility which helps you in supplying these cross-domain definitions: the *network definition skeleton* (member SKDTRNET in the system sublibrary IJSYSRS.SYSLIB). See Chapter 9, “Configuring a Cross-Domain Network,” on page 71.

Chapter 2. Networking Functions Available with z/VSE

This chapter provides an overview of the SNA networking functions available with z/VSE.

It contains these main topics:

For details of the **TCP/IP** networking functions available with z/VSE, refer to the chapter "TCP/IP and Networking Support" in the manual z/VSE Planning .

Remote Operation of an Interconnected System

The system console of any interconnected system may be accessed for **cross-domain logon**.

This is a logon to applications on the other system. The applications can be CICS applications or other VTAM applications. They must be defined as cross-domain resources. A network skeleton provided with z/VSE makes the definitions for these cross-domain applications easier.

Through cross-domain logon, you can dedicate a terminal of one system for remote operation of the others system console. The *remote operator* function is part of your z/VSE. It works in a single domain as well as cross-domain.

On the remote operator terminal, you can

- Display the current content of the system console.
- Send commands to z/VSE if authorized.
- Scroll through the hardcopy file.
- Access the online message file which is a copy of all messages documented in z/VSE Messages and Codes Volume 1.

You can use this function, for example, to run a system or to monitor the execution of a program. Any commands entered are displayed on the system console and on the remote operator console. No special definitions are necessary to use this function.

For details, see "Remote Operating of System Console" on page 118 and z/VSE Operation.

Exchange of Data between Interconnected Systems

With z/VSE, two programs are available which facilitate the exchange of data between interconnected systems. Each one of these has its own unique applicability.

1. FTP (File Transfer Program) of TCP/IP for VSE/ESA.
2. VSE/POWER (generated with PNET support) - for the exchange of smaller, mostly system-related files.

For details of how to use FTP, refer to z/VSE TCP/IP Support. The following section briefly describes how you can use VSE/POWER to exchange files.

VSE/POWER Networking (PNET)

VSE/POWER PNET lets you communicate with other VSE systems that have VSE/POWER PNET installed. VSE/POWER PNET also communicates with systems managed by VM RSCS or z/OS with JES2 or JES3.

The networking capabilities of VSE/POWER PNET let you transfer output files and jobs to other systems to be run there. You can route the output of jobs to the same or to a different system.

If you need the VSE/POWER PNET capabilities in your system, you must replace the pregenerated VSE/POWER component in z/VSE by one that includes PNET. z/VSE provides the skeleton SKPWRGEN for you to generate the VSE/POWER options you need. In the skeleton, insert the PNET= operand as part of the POWER® macro definitions.

After completing the definition of the VSE/POWER PNET nodes and regenerating VSE/POWER, you can use the dialogs to:

- Submit jobs to interconnected systems (see "Submitting/Retrieving Job Files To/From Other Systems" on page 118).
- PNET connections are also possible via TCP/IP. For details, refer to VSE/POWER Networking.

VSE/POWER PNET functions independently of VTAM. Therefore, a downtime of VTAM would not affect PNET's proper functioning.

CICS Transaction Server Intercommunication

There are two ways in which CICS Transaction Server can communicate with other systems:

- Multiregion Operation (MRO)
- Intersystem Communication (ISC)

For communication between systems that are in different hosts, you require an SNA access method, such as VTAM, to provide the necessary communication protocols. Communication between systems via SNA is called *intersystem communication* (ISC).

For CICS-to-CICS communication in the same host, CICS Transaction Server provides an interregion communication that is **independent of the SNA method**. This form of communication is called *multiregion operation* (MRO). It is not discussed any further in this publication. The remainder of this section is devoted to ISC.

ISC within a single processor (intrahost ISC) is possible via the application-to-application facilities of VTAM. In a VSE system, you can use intrahost ISC for communication between two or more CICS Transaction Server systems.

ISC Protocols

The SNA protocols that CICS Transaction Server uses for intersystem communication are those of

- Logical Unit Type 6 (otherwise known as LUTYPE6.1), and of
- *Advanced Program to Program Communication* (APPC, which uses the LUTYPE6.2 protocol).

Accordingly, CICS Transaction Server supports two types of sessions: LUTYPE6.1 sessions and LUTYPE6.2 sessions.

LUTYPE6.1 sessions are supported by CICS and IMS/VS, and can be used for CICS-to-CICS and CICS-to-IMS/VS communication.

Like LUTYPE6.1 sessions, LUTYPE6.2 sessions can be used for data communication between transaction processing systems. However, LUTYPE6.2 provides an architecture within which not only host- or system-level products, but also device-level products (LUTYPE6.2 terminals, for example an application program in an AS/400) can communicate.

LUTYPE6.2 sessions can be used for CICS-to-CICS communication, and for communication between CICS and other LUTYPE6.2 systems or terminals.

Note: You are recommended to use LUTYPE6.2 for CICS-to-CICS communication.

Intercommunication Facilities

In the multi-system environment, each participating system can have its own, local, terminals and data bases, and can run its local application programs independently of other systems in the network. In addition, it can establish links to other systems, and thereby gain access to remote resources. This mechanism enables resources to be distributed among and shared by the participating systems.

ISC with z/VSE

ISC is not explicitly dialog-supported in z/VSE.

The network skeleton SKDTRNET provides a slot for ISC system entries for Terminal Control definitions. Section “CICS2 - ISC Terminal Control Entries” on page 86 contains an example of ISC Terminal Control definitions.

Applications across systems must be defined as cross-domain resources when you set up your network. The network skeleton SKDTRNET has a section which helps you do that.

Chapter 3. Networking Requirements

This chapter describes the system requirements for implementing various configurations of network in z/VSE.

It contains these main topics:

Hardware Considerations

Supported Communication Devices

For a complete list of supported communication devices refer to z/VSE Planning.

Configuring an OSA Express Adapter to Emulate an OSA-2 Adapter

Before you can use an IBM OSA Express adapter in an SNA network, you must configure it so that the OAT (OSA address table) will be loaded into the OSA Express adapter. For details of how to do so, refer to the chapter "Configuring an OSA Express Adapter" in the manual z/VSE Administration.

The *Open Systems Adapter Support Facility* (**OSA/SF**) is a program you use for customizing and managing your OSA Express adapters. You can communicate with OSA/SF either from:

- *A Java™-enabled workstation.* The interface that you set up is referred to as the OSA/SF GUI.
- *JCL that uses OSA/SF commands.* All of the tasks done from the OSA/SF GUI can also be done using JCL.

For details about how to set up and configure OSA/SF, see "Setting Up OSA/SF" on page 28.

For details of how to *customize* an OSA Express adapter, refer to the IBM publication Open Systems Adapter-Express Customer's Guide and Reference.

IBM 3172 Interconnect Controller

You must *customize* your IBM 3172 Interconnect Controller before you can use it. A utility program (the Operator Facility) is provided that runs on any Java-enabled workstation, and which you use for this purpose. The result is a diskette which remains in the Interconnect Controller, and which is used during IPL.

For details of how to customize your 3172 Interconnect Controller, refer to the IBM publication *Using the 3172 Operator Facility User's Guide,* SC30-3573.

IBM 3274/3174 Control Unit

You must *customize* local and remote IBM 3274/3174 control units before you can use them. This is done off-line by responding to a series of questions presented on the screen which is attached to port 0 of the control unit. The result is a diskette which remains in the control unit. When the unit is powered on, the microcode is loaded from the diskette. For details see the IBM publication *3174 Subsystem Control Unit Customization Guide* , order number GA23-0214.

Required Software

There are not very many special software requirements for the communications part of your system because the three prerequisite programs:

- VTAM
- CICS
- VSE/POWER

are base programs of your z/VSE as delivered to you.

Special requirements arise in these areas:

- SNA support in VSE/POWER.
- Communication controller IBM 37xx, or an *emulated* communication controller IBM37xx which is provided by an OSA Express2 or later adapter configured for *OSN mode*. OSN is an abbreviation for *Open Systems Adapter for NCP*.
- X.25 Network connection.
- Network Management.

They are discussed in the topics that now follow.

Remote VSE/POWER Stations

The configuration of remote VSE/POWER stations is included in the Hardware Configuration dialog, for example the IBM 3770 Data Communication System.

In addition to the definitions that you give in the dialog, you must generate SNA support in your VSE/POWER by filling out and submitting the job that is given in the skeleton SKPWRGEN. The skeleton is a member in library 59. Part of the content are instructions on how to fill out the skeleton.

The job performs a generation of VSE/POWER. Be sure to include the member SKPWRSNA, also in library 59. You include the member by removing the '*' from the statement

```
*/INCLUDE SKPWRSNA
```

Do not modify SKPWRSNA.

IBM 3745 Communication Controller Support

Each communication controller needs a control program the type of which depends on the line protocol. **NCP** supports SNA devices over SDLC lines. Among the set of non-SNA devices, it supports only IBM 3270s.

You need:

- *NCP* 7.8 for the IBM 3745.
- *ACF/SSP for VSE* 4.8

The above programs, that is: NCP, its usage tiers, and ACF/SSP, are all installable as z/VSE *optional programs*.

You can also use an *emulated* IBM37xx communication controller. This is provided by an OSA Express2 or later adapter configured for *OSN mode*. OSN is an abbreviation for *Open Systems Adapter for NCP*. For details, refer to Open Systems Adapter-Express Customer's Guide and Reference.

X.25 Communication Adapter Support

If a remote device is attached via a PSDN at a communication controller, you must augment your NCP definition by *X.25 NCP Packet Switching Interface* (NPSI) statements. X.25 NPSI is an optional program of z/VSE.

Activities in a Multiple Domain

Once a multiple domain (in a subarea network) has been established, the following activities can be carried out:

1. Accessing, in one domain, applications in the other domain. This activity is called *Cross-domain application communication*.
2. Requesting, from one domain, the execution of jobs in the other domain, and transferring data between the two domains. This activity is called *Job Networking*.

The software requirements are the following:

Cross-Domain Application Communication

Communication is over SDLC lines, and the other domain has one of the following products installed:

1. z/VSE (and NCP if you have an IBM 37xx communication controller)
2. VTAM (plus NCP if you have an IBM 37xx communication controller) under another operating system.

Job Networking Connections (SDLC)

to other processors with SNA functions are possible via **SDLC lines** if the other processor has **one** of the following software environments:

1. z/VSE **and** associated releases of
   - VTAM
   - NCP (if you have an IBM 37xx communication controller).
2. z/OS JES2 / JES3 or later **and** associated releases of
   - VTAM
   - NCP (if you have an IBM 37xx communication controller).

Note: Refer to VSE/POWER Networking, for details of the supported release levels of VSE and z/OS systems that you can attach via SDLC.

Job Networking Connections (BSC)

to other processors via **BSC lines** are possible if the other processor has **one** of the following software environments:

1. z/VSE
2. z/OS JES2 / JES3 or later
3. z/VM Remote Spooling Communications Subsystem.

Note: Refer to VSE/POWER Networking, for details of the supported release levels of z/VSE and z/OS systems that you can attach via BSC.

Job Networking Connections (CTCA)

For a connection of a z/VSE system to another processor via **channel-to-channel adapter (CTCA)** or **virtual** CTCA if running under VM, the same conditions hold as for a connection over SDLC lines.

VTAM Requirements

For VTAM under z/VSE, requirements arise in the following areas:

- Buffer pool allocations
- Data space allocation
- Data collections for APPN network implementation
- Password tailoring.

VTAM Buffer Pool Allocations

VTAM buffer pools are used to control transmission of data between VTAM and nodes. They are also used for internal control blocks.

Buffer pool allocations are given in the VTAM startup options list ATCSTRxx.B in library PRD2.CONFIG. An excerpt from the IBM-supplied default list ATCSTR00.B is shown in Figure 1 on page 16.

```
IOBUF31=YES,                                                          *
BSBUF=(28,,,,1),                                                      *
CRPLBUF=(60,,,,1),                                                    *
LFBUF=(70,,,,11),                                                     *
IOBUF=(70,288,,,11),                                                  *
LPBUF=(12,,,,6),                                                      *
SFBUF=(20,,,,20),                                                     *
SPBUF=(210,,,,32),                                                    *
XDBUF=(6,,,,1)
```

Figure 1. VTAM Buffer Pool Allocations in ATCSTR00.B

For more details, see the *VTAM Resource Definition Reference*, SC31-6498.

Data Space Allocation

VTAM uses data space storage. To define data spaces, you use the DSIZE and DFSIZE operands of the VSE system control statement SYSDEF (for the complete syntax refer to z/VSE System Control Statements). The DSIZE operand of the SYSDEF statement defines the **total amount** of virtual storage that can be allocated for data spaces within the entire system.

When determining a DSIZE value, be aware that VTAM always requires one 1 MB data space for initialization. In addition, for each partition where a VTAM application program is running, VTAM requires an additional 1 MB data space. For example, if you have CICS running in a partition, VTAM requires one 1 MB data space to support CICS sessions, plus the additional 1 MB data space for VTAM initialization, for a total VTAM data space requirement of 2 MB. If you have a VTAM user-written application program running in another partition, VTAM will require another 1 MB data space to support that application program's sessions, now bringing the total VTAM data space requirement to 3 MB.

To define the maximum allowed size for VTAM application programs, you use one of the following:

- The DSPACE operand of the JCL statement EXEC for the VTAM application program
- The DFSIZE operand of the VSE system control statement SYSDEF.

The DFSIZE value is a global system value and is used for each application program that needs data space storage. You can override this value for VTAM application programs by specifying a different value in the DSPACE operand for those VTAM application programs.

The VTAM startup job that is delivered as part of your z/VSE system specifies DSPACE=2M. Please refer also to the

```
// EXEC ISTINCVT, ... ,DSPACE=2M
```

statement in skeleton SKVTAM which is shown in Figure 69 on page 113.

The above value is regarded as sufficient for a majority of z/VSE installations. In exceptional cases, you may have to increase the DSPACE value.

Data for APPN Network Implementation

To implement an APPN network under z/VSE, you must supply a few data collections:

- A class-of-service (COS) table, similar to the logon mode table in a subarea network
- VSE/VSAM files for directory data.

For details refer to section Chapter 12, “Example of Connecting Two z/VSE Hosts in an APPN Network,” on page 97. In that section, you find a simple example of two network nodes (z/VSE systems) connected in an APPN network.

Password Tailoring

VTAM consists of three different levels:

- VTAM Client/Server
- VTAM MultiDomain
- VTAM InterEnterprise

VTAM Client/Server is designed for client/server networks that require basic APPN and subarea support. **VTAM MultiDomain** includes the functions available in VTAM Client/Server along with additional APPN and subarea functions, such as the capability to own an NCP. **VTAM InterEnterprise** includes the functions available in VTAM Client/Server and VTAM MultiDomain along with the APPN and subarea functions that are required in an interconnected network.

When you ordered VTAM, you had to specify one of the three levels. With the z/VSE distribution cartridge(s) or tapes, you also receive a unique VTAM password customized for your site.

For initial installation, z/VSE uses a predefined password and no action on your side is necessary. However, when initial installation is complete and you tailor your system, you must activate your own VTAM customer number and password, by modifying skeleton SKVTAM. This skeleton is stored in VSE/ICCF library 59.

- Copy the skeleton into your primary VSE/ICCF library.
- Use the copy of the skeleton to modify the VTAM password.
- Submit the skeleton for processing.

The skeleton is shown in Figure 69 on page 113.

For overview information and technical details, refer to VTAM Overview and VTAM Network Implementation Guide.

Chapter 4. Configuring a Communications Device

This chapter describes how you configure a communications device that is used with *SNA and VTAM* in non-QDIO mode.

This chapter contains these main topics:

Introduction

During initial installation of z/VSE, you completed hardware configuration after signing on with the POST user ID. This is described in detail in the IBM publication z/VSE Installation.

Later on, you can add, change, or delete devices on your system at any time. You use the *Configure Hardware* dialog to add or delete hardware addresses and to specify device characteristics.

This chapter describes how to use the *Configure Hardware* to configure your **telecommunication** devices. This configuration includes

- **SNA** as well as **non-SNA** devices,
- **local** as well as **remote** devices.

The dialog produces several types of objects which the startup job will use to determine your hardware configuration. These objects fall into the following categories:

- IPL procedure
- VTAM books
- Terminal Control entries in the CICS Transaction Server *System Definition File* (CSD).
- NCP generation jobs and NCP books for the IBM 3745 Communication Controller.

Only for subarea networks:

The dialog produces definitions that are only valid for **subarea networks**. For APPN networks, you have to make the required definitions manually.

As was outlined in the preceding chapter, the *Hardware Configuration* dialog leads you through the following tasks:

- Defining the devices in the **Unit Address List**
- For remote devices: defining the **link**
- Defining the **Physical Unit** (PU)

- Defining the **Logical Unit** (LU).

Defining Devices in the Unit Address List

Entering the Hardware Configuration Dialog

Start with the *z/VSE Function Selection* panel and select:

2 (Resource Definition)
4 (Hardware Configuration and IPL)
1 (Configure Hardware)

You get the panel *Hardware Configuration: Unit Address List*. Figure 2 on page 20 shows an example.

```
ADM$HDWB          HARDWARE CONFIGURATION: UNIT ADDRESS LIST


OPTIONS: 2 = ALTER DEVICE TYPE CODE/MODE     3 = SELECT FOR FURTHER PROCESSING
         4 = LIST SIMILAR DEVICES            5 = DELETE A DEVICE

    OPT    VSE   PHYSICAL DEVICE     DTYPE     DEVICE  DEVICE  DEF
           ADDR  ADDR                CODE      MODE    DOWN    INCOMPL
     _      009   0009   3270CONS    3277
     _      00C   000C   2540-R      2540R
     _      A11   1A11   3390-X      ECKD
     _      A12   1A12   3390-X      ECKD
     _      D01   3D01   3592-E06    TPA11K    08
     _      D02   3D02   3592-E06    TPA11K    08
     _      D03   3D03   3592-E06    TPA11K    08
     _      D10   1D10   3390-X      ECKD
     _      500   1500   OSA         OSA
     _      501   1501   OSA         OSA
     _      502   1502   OSAD        OSAD
 POSITION NEAR ADDR == >  ___
PF1=HELP       2=REDISPLAY  3=END                    5=PROCESS    6=ADD ADDR
               8=FORWARD    9=PRINT     10=SORT PHY
```

Figure 2. Unit Address List of Hardware Configuration Dialog

The unit address list consists of one or more panels. It shows all VSE and physical device addresses, and the related devices as defined for your z/VSE system.

- The VSE ADDR column contains a list of the VSE addresses (cuu). By default, the displayed information is based upon a sort of this VSE address list.
- The PHYSICAL ADDR column contains a list of the physical addresses (pcuu) that were defined in the IOCDS or z/VM configuration. If the address is FFF or less, a zero is automatically inserted at the start of the address.
- An 'X' in the column DEVICE DOWN indicates for a tape or disk device that this device is not available. By selecting 3 (SELECT FOR FURTHER PROCESSING), this status can be changed.
- An 'X' in the column DEF INCOMPL (definition incomplete) indicates that you should specify additional details for that particular device address.

Note: To change the VSE address of a device, you must first delete the device (using 5 = DELETE A DEVICE), and then re-add it with a new VSE address but with the *same* physical address (using PF6=ADD ADDR).

Various options and PF-key functions allow you to maintain your hardware configuration. They are listed below.

OPTIONS:

2 = ALTER DEVICE TYPE CODE/MODE
Select option 2 if you want to change the Device Type Code, or the Device Specification Mode.

You would need this option if you wanted to declare a local non-SNA terminal as working in burst mode. In the case of an IBM 3277, for example, you would attach a 'B' to the device number to get a device type code of 3277B.

3 = SELECT FOR FURTHER PROCESSING
Select option 3 if you want to change or add device characteristics other than Device Type Code or Device Specification (Mode). This option is used to further define SCSI disk devices.

With this option, you continue the sequence of configuration tasks such as link definition or physical unit definition.

4 = LIST SIMILAR DEVICES
Select option 4 to have only devices displayed that belong to a particular group, for example all local non-SNA devices.

5 = DELETE A DEVICE
Select option 5 if you want to delete a device (including both the physical address and VSE address) from the device address list.

POSITION NEAR ADDR:

This selection allows you to position FULIST close to an address. This address can be either a VSE address (when the list is sorted by the VSE address), or a physical address (when the list is sorted by the physical address). To skip to the top or to the bottom of the fulist, you can use either:

- 0 or FFF (where list is sorted by the VSE address).
- 0 or FFFF (where list is sorted by the physical address).

The input in this field is ignored when you press a PF key.

PF Keys:

5=PROCESS
Press PF5 if you have done all your changes using the options 2, 3, 5 or 6, or PF6.

6=ADD ADDR
With PF6 you add a new address (device) to your hardware configuration. Depending on the type of device, several panels are displayed. You have to select the device you want to add to your installation and enter all device specific information required.

9=PRINT
Use PF9 to get a printout of the device address list. If you then enter an 'X' next to an entry in the list, a library member **CONFLIST** is created in your VSE/ICCF primary library containing the appropriate listing.

10=SORT PHY or 10=SORT VSE
Use PF10 to display the information based upon a sort of the physical address list, or based upon the VSE address list.

Adding the Unit Address

The Hardware Configuration dialog distinguishes between **local non-SNA** and (local and remote) **SNA** terminals. The dialog does not support remote non-SNA terminals.

During Initial Installation, the **VTAM** telecommunications access method is used at your installation for both non-SNA and SNA terminals.

A set of parameters defines the characteristics of each terminal. When you define a terminal via the *Configure Hardware* dialog, the system uses defaults for most of these parameters. They are shown to you after you reach the *Non-SNA Terminal List* or *SNA Logical Unit List* panels. You can then verify and, if necessary, change them. In addition, you can also view and verify the VTAM *Parameter Table List*.

Now, to add the unit address, in the panel *Hardware Configuration: Unit Address List*, press

PF6 (for ADD ADDR).

You receive the panel *Hardware Configuration: Add a Device* which asks you to specify two things:

1. One or several addresses for each pair of physical address and VSE address.
2. Device name.

Figure 3 on page 22 shows an example of the panel.

```
 ADM$ADD2            HARDWARE CONFIGURATION: ADD A DEVICE

 Enter the required data and press ENTER.

Specify the following physical addresses.
 STARTING ADDRESS..... ____        The physical start address of an
                                   address range, or the only address to
                                   be added.
 END ADDRESS.......... ____        The upper limit of the address range
                                   to be added.
Specify the following 3-digit VSE address, if needed.
 VSE STARTING ADDRESS........ ___  The VSE address which is the mapping
                                   of the physical starting address.
 VSE END ADDRESS............. ___  The VSE address which is the mapping
                                   of the physical end address.
 DEVICE NAME................. ________  The device you want to add or a "?"
                                   to get the group selection panel.



 PF1=HELP       2=REDISPLAY  3=END
```

Figure 3. Add a Device Panel

As you can see from the panel, the dialog allows you to specify a range of **contiguous addresses**. The devices must be of the same type, for example three IBM 3174-xxL at:

- The (physical) starting address 1386.
- The (physical) end address 1388.
- The VSE starting address 386.
- **Leave this field blank**. The VSE end address (388) will be automatically calculated by z/VSE.

The specification of an address serves to create a corresponding IPL ADD statement. For example:

```
  ADD 1386:1388 AS 386:388,CTCA,EML
```

Note: For one attachment at the **IBM Token-Ring Adapter (TRA)**, **four** sequential addresses are necessary. You add the lowest address, the system adds the other three. **Only one IPL ADD statement** will be created.

Please note that

Local Non-SNA Terminals

are attached via

- TCP/IP.
- Non-SNA control unit.

SNA terminals, on the other hand, are attached via an IBM 3174 or an IBM 3274 SNA control unit; it is this control unit's address that you add to the unit address list.

If a **non-SNA control unit** is involved, you do not add the control unit address, rather the channel unit addresses (cuu) of the terminals.

Specifying Device Name

In addition to the specification of the unit address, the panel *Hardware Configuration: Add Device(s)* asks you to specify the device name (which in some cases is a combination of device name and model).

Table 1 on page 23 lists the allowed device specifications. Note that quite a few of them are to be given in mnemonics. The dialog accepts each of these to create appropriate IPL ADD statements.

For some of the devices the dialog does just that: creating an IPL ADD statement. These devices are flagged by an 'A' in the second column of the figure below.

For cross-domain links, in addition to getting an IPL ADD statement generated, you can fill out the network skeleton SKDTRNET. This yields a complete definition in VTAM, CICS Transaction Server and VSE/POWER PNET. Please refer to Chapter 9, “Configuring a Cross-Domain Network,” on page 71. The cross-domain links are flagged by an 'X' in the figure below.

All other devices are eligible for a complete configuration, that is: the dialog creates a proper definition in VTAM and the CICS Transaction Server.

Table 1. Device Names Allowed in Dialog

Local Non-SNA		
24X80		This and the following local non-SNA device names are given by device characteristics.
24X80Q		24x80 screen; query support, for example IBM 3194, or PC DFT
32X80		32x80 screen; for example IBM 3278-3
43X80		43x80 screen; for example IBM 3278-4
27X132		27x132 screen; for example IBM 3278-5
24X80C		24x80 screen; color, for example IBM 3179
24X80CPS		24x80 screen, color, Programmed Symbol, SOSI; for example IBM 5555
32X80C		32x80 screen, color; for example IBM 3192-C
32X80CP		32x80 screen, color, Programmed Symbol, graphics; for example IBM 3279-S3G
DSCPRT		DSC printer
DSCPRTS		DSC printer, Programmed Symbol, SOSI; for example IBM 555x
Local SNA		
3274-x1A		Stands for IBM 3274-1A, 3274-21A, 3274-31A, 3274-41A
3174-xxL		Stands for IBM 3174-1L and IBM 3174-11L
3174-GW		Stands for IBM 3174 local control unit with token-ring gateway feature
Communication Controller Attached		
3745-130		Communication controller
3745-170		Communication controller configurable with NCP
3745-210		Communication controller configurable with NCP
3745-310		Communication controller configurable with NCP
3745-410		Communication controller configurable with NCP
3745-610		Communication controller configurable with NCP
3791	A	Local communication controller
CTCA	X	Channel-to-channel adapter
3172		Interconnect Controller
OSAD	A	Open System Adapter Feature (OSA/SF)
OSA		Open System Adapter (OSA) Port

Table 1. Device Names Allowed in Dialog (continued)		
OSAX		Open System Adapter Express (OSA Express) Port

For DEVICE NAME, in the ADD A DEVICE panel, specify either a *device name* according to the above list. Or, you may specify a *device type code*, which would give you a selection list of all devices which fall under that device type code. For example, by entering device type code 3277 you would get a selection list for all terminals of the IBM 3270 family.

Entering the device name based on the above table gives you a quick path into the remaining definitions. If you are just now configuring your hardware and do not have the above table by your side, the dialog can guide you toward selecting the proper device name. By entering a '?' or an incorrect device name, you cause the dialog to display the *Hardware Configuration: Device Group* panel, which is shown in Figure 4 on page 24.

```
 ADM$HDWD            HARDWARE CONFIGURATION: DEVICE GROUP

 Enter a selection number and press ENTER.

First VSE address of the device to be defined:  386

  Communication Devices                    Other I/O Devices
   1 Local non SNA (Terminals/PCs)          4 Card Devices
   2 Local SNA (Controller)                 5 Console Devices
   3 Com. Devices (NCP,CTCA,OSA,FCP)        6 Disk Devices
                                            7 Tape Units
                                            8 Printers
                                            9 ESCON Directors
                                           10 Unsupported Devices




 PF1=HELP       2=REDISPLAY  3=END


 ==>
```

Figure 4. Device Group Panel

Select the device group whereupon you receive a list of device names, for example a list of all allowed local SNA device names. From this list choose the desired device name.

How to Further Proceed in the Dialog

Depending on which of the three groups the device belongs to, the dialog takes a particular path.

Local Non-SNA and Local SNA

For the first two groups, that is: local non-SNA and local SNA, the dialog takes you into the definition of the terminals, or *logical units*. Turn to topic “Defining Logical Unit(s)” on page 40 to learn about this subject.

The first part of that topic discusses some topics that are **specific to SNA devices**. Therefore, when considering a local **non-SNA** device ignore that part and use the information beginning with topic “VTAM and CICS Transaction Server Parameters” on page 41.

Communication Controller-Attached

For the third group, communication controller devices, it is necessary to describe some properties of communication controllers. After you enter device name and address, the dialog

first takes you back

to the Unit Address List. Here you request 3=SELECT FOR FURTHER PROCESSING in order to get into the path for describing the communication controller. Please turn to “Defining a 3745 Communication Controller” on page 28 for the particular information.

Connecting a LAN to an Emulated OSA-2 or 3172 Device in Non-QDIO Mode

This topic describes how you use the *Configure Hardware* dialog to define a **VTAM** LAN connection (*non-QDIO mode*) to an:

- Emulated IBM Open Systems Adapter 2 (OSA-2) device.
- IBM 3172 Interconnect Controller device.

To configure an OSA Express adapter so that it emulates an OSA-2 adapter in non-QDIO mode, you must first follow the instructions provided in the chapter "Configuring an OSA Express Adapter" in the manualz/VSE Administration.

Note: A "physical" OSA-2 adapter is no longer supported.

The *Configure Hardware* dialog creates ADD statements for the following device types:

- **OSAD** (for the OSA/SF program)
- **OSA** (for an emulated OSA-2 adapter)
- **3172** (for a 3172 Interconnect Controller device)

For the device types OSA and 3172, the dialog also creates the required VTAM books.

In the *Configure Hardware* dialog, the SELECTION LIST: DEVICES includes these devices under group 3: Com. Devices:

```
CTCA        Channel-to-Channel Adapter
FCP         FCP Adapter
OSAD        Open System Adapter Feature
OSA         Open System Adapter Port
OSAX        Open System Adapter Express
2701        Data Adapter Unit
2703        Transmission Control Unit
3172        Interconnect Controller
3745-130    Communications Controller
3745-170    Communications Controller configurable with NCP
3745-17A    Communications Controller configurable with NCP
3745-210    Communications Controller
3745-310    Communications Controller
3745-31A    Communications Controller configurable with NCP
3745-410    Communications Controller
3745-610    Communications Controller
3745-61A    Communications Controller configurable with NCP
3791        Local Communication Controller
```

Figure 5. Configure Hardware Dialog - Selection List: Devices

Note that there are two *device types* to be specified for an emulated OSA-2 adapter (with different addresses):

- **OSAD** is the device type for the Open Systems Adapter Support Facility (OSA/SF) program. You can have only one OSAD definition (ADD statement) for an emulated OSA-2.

  Select "OSA Feature" in the dialog.
- **OSA** is the device type for emulated OSA-2 data transfer (non-QDIO mode). You can have more than one OSA definition (ADD statement) for an emulated OSA-2.

  Select "OSA Port" in the dialog.

When adding an emulated OSA-2 or 3172 device, the panels LAN LIST and MEDIUM TYPE are displayed to define device-specific information.

The LAN LIST panel is initially empty. When selecting ADD LAN (PF-Key 6), the panel MEDIUM TYPE is displayed to define a LAN (Local Area Network) to emulated OSA-2 or the 3172.

```
 COM$ICL1              HARDWARE CONFIGURATION: LAN LIST

 Enter the required data and press ENTER.

 OPTIONS: 2 = ALTER LAN DEFINITION   3 = SELECT FOR FURTHER PROCESSING
          5 = DELETE LAN
                              ---------------NETWORK TYPE ---------------
  OPT      CUADDR ADAPTER     TOKEN    TOKEN      CSMA/CD     FDDI     BOX
                              RING      BUS      (ETHERNET)            MGR
    _
    _
    _
    _
    _
    _
    _
    _
    _
    _
 PF1=HELP       2=REDISPLAY  3=END                     5=PROCESS   6=ADD LAN
```

Figure 6. Panel HARDWARE CONFIGURATION: LAN LIST

```
COM$LAN                  SELECTION LIST: MEDIUM TYPE

Select one of the entries by entering 1.


 SEL      MEDIUM TYPE DESCRIPTION

 _        RING        SNA TOKEN-RING
 _        BUS         SNA TOKEN-BUS
 _        CSMACD      CSMA/CD NETWORK (ETHERNET)
 _        FDDI        FDDI LAN
 _        BOXMGR      BOX MANAGER







PF1=HELP       2=REDISPLAY  3=END

DEFINE THE MEDIUM TYPE.3172
```

Figure 7. Panel SELECTION LIST: MEDIUM TYPE

On the panel MEDIUM TYPE, the selection BUS (SNA Token-Bus) is offered for the 3172 only. Since several networks can be attached to one 3172 address, the subsequent panel DEFINE ADDRESS (which is not shown) allows to define the cuu address for the LAN to be attached.

The medium type BOXMGR (Box Manager) establishes the communication between an emulated OSA-2 or 3172, and NetView. In this case, only some simplified VTAM definitions are needed. No further information is required for the BOXMGR and the dialog finishes here. For other medium types, the panel DEFINE LAN requests further information as shown in Figure 8 on page 27:

```
   ADAPTER NUMBER
   SAP ADDRESS
   TIMER
```

This panel is displayed for emulated OSA-2 and the 3172.

```
 COM$ICL2            HARDWARE CONFIGURATION: DEFINE LAN

 Enter the required data and press ENTER.


 Specify the following data for the local area network attached to your
 3172 interconnect controller or Open Systems Adapter.

ADAPTER NUMBER.............. ___         Enter the relative adapter
                                         number assigned to this adapter
SAP ADDRESS................. 4           Enter the address of the
                                         service access point (SAP).
TIMER....................... 60          Enter the time (in seconds)
                                         that VTAM will wait
                                         after the channel is activated
                                         for a response from the con-
                                         troller.



 PF1=HELP       2=REDISPLAY  3=END
```

Figure 8. Panel HARDWARE CONFIGURATION: DEFINE LAN

At this point, the panel LAN LIST is redisplayed (Figure 6 on page 26) with an entry for the newly defined LAN.

With option 3 (SELECT FOR FURTHER PROCESSING), the attached PUs and LUs can be defined. Note that option 3 is not valid for the BOXMGR. The PUs and LUs are defined as for remote devices on adapter attached links.

Naming Conventions Used (4-character)

The dialog assigns VTAM resource names according to the naming convention shown in Table 2 on page 27 below.

Table 2. VTAM Naming Convention.

VBUILD	Ycuusuba
Port	Ucuusuba
Group	Qcuusuba
Line	Mcuusuba
Dummy PU (TYPE=XCA)	Fnnnsuba
PU	Jnnnsuba
LU	Rnnnsuba
CICS termID	Rnnn

In the table:

- **cuu** is the channel unit address of the LAN. For emulated OSA-2, this is equal to the cuu of the OSA ADD statement. For the 3172, this is the value entered on panel DEFINE ADDRESS.
- **suba** is the 4-digit subarea number.
- **nnn** is a unique number from 000 - 999.

VTAM Books Created

The dialog creates two types of VTAM books,

```
   VBUILD TYPE=XCA
```

to define the medium, and

```
VBUILD TYPE=SWNET
```

to define the related switched major node with all PUs and LUs.

These definitions are stored in VSE/ICCF library 51 in members VTMOSA and VTMOSA2. These member names are used for OSA-2 and 3172 definitions in non-QDIO mode.

With the selection of "Catalog Startup Members" these definitions are cataloged and included in the VTAM startup job.

Setting Up OSA/SF

Before you can use OSA/SF, you must prepare z/VSE so that you can run OSA/SF jobs in static or dynamic partitions of z/VSE. OSA/SF includes the following jobs (available in VSE/ICCF library 59):

OSA/SF Job:	Explanation:
IOAMAIN	This job must be active in order to use OSA/SF. It must be running when submitting OSA/SF commands but also when using the GUI.
IOACMD	This job runs the command EXEC for submitting OSA/SF commands from the host (z/VSE).

To use the jobs IOAMAIN and IOACMD, you must prepare them as follows:

1. Modify them as required for your environment.
2. Submit them to the VSE/POWER reader queue.
3. Release them as needed for an OSA/SF task.

Defining OAT Entries and Installing an SNA Image Using OSA/SF

A typical task for SNA-mode customization is the definition of entries in the *OSA Address Table* (OAT) and installing the SNA image on emulated OSA-2.

Each emulated OSA-2 maintains an OAT to track the source and destination of the data being transferred through each of its ports in each of its modes of operation. An OAT entry consists of a base segment and an extension. An SNA entry type has an SNA extension.

For the entry definition and SNA-image installation you can use the OSA/SF GUI or submit OSA/SF commands. The advantage of the GUI is that you are asked for the input required and need not directly update the OAT file.

Using OSA/SF Commands:

This requires that you release jobs IOAMAIN and IOACMD so that you can submit OSA/SF commands to z/VSE.

Using the OSA/SF GUI:

This requires that you release job IOAMAIN so that you can use the GUI. You can then do the OAT changes as guided by the panels but you may defer the installation of the SNA image to a later time.

As a final step, you would activate the SNA image on the emulated OSA-2.

Defining a 3745 Communication Controller

This topic deals with 3745 communication controller whose operation is controlled by an NCP. You had specified the address of the NCP link plus device name of the communication controller (see Figure 3 on page 22). You were taken back to the Unit Address List and selected 3=SELECT FOR FURTHER PROCESSING in order to get into describing the properties of the communication controller. This is described in the following topic.

The 3745 communication controller is a *subarea node*. Your next panel, *Hardware Configuration: NCP Subarea*, asks you to specify the

SALIMIT
This is the highest subarea number within your network. The default is 255.

NCP subarea
This is a 3 to 5-digit decimal number which as subarea number is unique in your configuration. It must not exceed the maximum supported in your network (see the preceding parameter, SALIMIT).

The following (hardware related) information is unique to each controller type.

Channel Adapter Positioning

The Hardware Configuration dialog asks you to indicate the position where a channel adapter is located.

Each communication controller type has its own unique range of possible channel adapter positions:

3745-130, 170
0 through 3

3745-210, 310, 410, 610
0 through 15

Two-Processor Switch

Most channel adapters can be operated with a Two-Processor Switch (TPS). The applicable panel indicates which channel adapters are eligible. Refer to Figure 9 on page 29 which shows the panel layout for an IBM 3745-210.

```
NCP$CA5     HARDWARE CONFIGURATION: 3745 CAS AND STORAGE SIZE

Enter the required data and press ENTER.

Hardware information of 3745-210   at 07D:
Specify the channel adapters (CAs) installed in the 3745-210 controller and
whether they will be operated with a two-processor switch (TPS).  Mark with x.

 POSITION      CAs       TPS        POSITION      CAs       TPS
     0          _         _             8          _         _
     1          _                       9          _
     2          _         _            10          _         _
     3          _                      11          _
     4          _         _            12          _         _
     5          _                      13          _
     6          _         _            14          _         _
     7          _                      15          _

MEMORYSIZE................_____     Enter the memory size either in K or M.
USGTIER...................___       Number of scanners of the controller

PF1=HELP       2=REDISPLAY  3=END
```

Figure 9. Specifying Channel Adapters, Memory Size, 2-processor Switch

Memory Size

You can equip the IBM 3745 with various memory sizes. The following memory sizes are valid:

3745
512K bytes up to 8192K bytes, with increments of 128K.

Usage Tier

Usage tier is a number which specifies the scanners and channel adapters that you can attach to your communication controller. For example, 3 stands for: various combinations of low speed scanners (LSS)

and high speed scanners (HSS), 4 token-ring adapters and 8 channel adapters (note that Models 130 and 170 cannot have more than 4 channel adapters).

The usage tier value which you specify in the dialog cannot be higher than the usage tier level of the NCP you installed. If you violate this rule, your NCP generation will fail. On the other hand, the usage tier level of your installed NCP can be higher than the usage tier of your controller, that is, higher than the USGTIER value.

For an IBM 3745, a subsequent panel asks you for the *operation mode* of your processor. The processor's mode is used for validation of the channel adapters.

Defining NCP Link(s)

At this point, you are about to define a new NCP. Hence, in the *Hardware Configuration: NCP Name List* panel, you indicate (**PF6**) that you want to *ADD an NCP*. Figure 10 on page 30 shows the layout of the *Hardware Configuration: NCP Name List* panel. You can define eight NCPs for one communication controller.

```
NCP$PAN1        HARDWARE CONFIGURATION: NCP NAME LIST

LIST OF NCPS FOR A SPECIFIC CCU

Communication Control Unit: 3725 1    CCU-Address: 05A

OPTIONS: 3 = LIST ATTACHED LINES    5 = DELETE NCP     6 = GENERATE NCP

          OPT           NCP-NAME    GENERATED

            _
            _
            _
            _
            _
            _
            _
            _


PF1=HELP   2=REDISPLAY  3=END                    5=PROCESS    6=ADD NCP
                        9=ALT CCU
```

Figure 10. NCP Name List

In the *Hardware Configuration: ADD NCP* panel, you are asked to give the

Name of the new NCP.

Afterwards, when you have completed the NCP definition, that is:

- links
- physical units
- logical units

you will automatically come back to the *NCP Name List* panel. You should then request (option **6**) to

generate the NCP.

But first you proceed through the link definitions.

Remember: you had entered the name of the new NCP (in the *ADD NCP* panel). You receive the *Hardware Configuration: NCP Line List* panel.

In this panel press **PF6** to request an *ADD LINE*.

You receive the *Hardware Configuration: Define NCP Line* panel (not shown here). Defining the NCP link involves the following parameters:

- **Line type**

You indicate whether the link is on a

- leased line
- switched line, or
- NCP/Token Ring Interconnection (NTRI).

The remainder of data to be entered depends on whether the line you define is a **leased or switched** line, or whether it is an **NTRI** line.

Leased or Switched Line

For the specification of the following parameters refer also to the example shown in Figure 11 on page 31.

```
 NCP$LNK2        HARDWARE CONFIGURATION: DEFINE NCP LINE

 Enter the required data and press ENTER.

ADDRESS.................. ___      Enter number from 0 through 895

DATA MODE................ 1        1 = half-duplex
                                   2 = duplex

CLOCKING................. _        1 = external source provides clocking
                                   2 = 3745-210 provides clocking
                                   3 = direct line attachment use

SPEED.................... 2400     Enter the data rate for this line in
                                   bits per second (e.g. 1200).  Enter a
                                   "?" to get a list with all valid data
                                   rates (only for clocking=2 and
                                   clocking=3).
CARRIER FACILITY......... 2        1 = half-duplex
                                   2 = duplex


PF1=HELP       2=REDISPLAY  3=END
```

Figure 11. Defining an NCP Line (Leased or Switched)

- **ADDRESS**

  This is the link address at the communication controller (not to be confused with the channel unit address of the communication controller at the central processor).

  The allowed addresses are within the range of the following decimal numbers:

  3745 Model 170
  0 - 159

  3745 Model 17A
  0 - 159

  3745 Model 31A
  0 - 159

  3745 Model 61A
  0 - 895

  Alternatively, you can emulate a 37xx communication controller using the "OSN mode" of an OSA Express2 or later adapter. OSN is an abbreviation for *Open Systems Adapter for NCP*. For details, refer to *System z9 and zSeries Open Systems Adapter-Express Customer's Guide and Ref*, SA22-7935.

- **DATA MODE**

  This parameter indicates whether your NCP is to communicate with the device in half-duplex (**HDX**) or full-duplex (**FDX**) mode.

- **CLOCKING**

Specify whether the communication controller itself or an external source provides the clocking. This parameter is directly associated with the following, the SPEED parameter. Specify

1
if an external source provides the clocking. The external source is either a modem or an attached *Data Terminal Equipment* (DTE). A modem cable or a direct attach cable may be used.

2
if the communication controller provides the clocking **and propagates it to the attached DTE**. A data signal received by the controller will be synchronized with the controller's clock because the DTE used this clock to transmit. The SPEED operand is required, and a direct attach cable must be used.

3
if the communication controller provides the clocking **but does not propagate it to the attached DTE**. The controller synchronizes on the received data signal because a different clock source is used at each end of the link. The SPEED operand is required, and either a direct attach cable or a modem cable may be used.

- **SPEED**

  This is the data rate at which the stations (physical units) communicate with the communication controller. For external (modem) clocking, the SPEED parameter is optional. If given, it specifies the clocking rate of the modem.

  For controller-provided clocking the SPEED parameter is required. Its value must match the capabilities of the controller. Specify the data rate in bits per second omitting fractions (if the link speed is 134.5 bps, use 134).

  When entering a '?' or an invalid number, the dialog displays a selection list of allowed values.

- **CARRIER FACILITY** (links and modems).

  This parameter indicates the physical characteristics of the communication facility: half-duplex or full-duplex.

  Do not confuse this facility with the terms 'half-duplex' and 'full-duplex' for DATA MODE.

After entering the above values (in the *Hardware Configuration: Define NCP Line* panel), the dialog transfers you back to the *Hardware Configuration: NCP Line List* panel.

An example of the *Hardware Configuration: NCP Line List* panel is shown in Figure 13 on page 34.

NTRI Line

For the specification of the following parameters refer also to Figure 12 on page 33.

```
 NCP$LNK3           HARDWARE CONFIGURATION: DEFINE NCP LINE

 Enter the required data and press ENTER.

Specify the following data for TIC Number 1.

ADDRESS..................... ____        Enter the relative line number of
                                         your Token-Ring Interface Coupler
                                         (TIC). Enter a "?" to get a list with
                                         all valid addresses.
TR ADDRESS OF TIC........... ________    Enter the last 8 digits of the local-
                                         ly  administered address of the TIC.
                                         (LAN address/2).
ADAPTER DEFINITION.......... 1           Enter 1 for the token-ring adapter
                                         type 1, 2 for the token-ring adapter
                                         type 2 with a data speed of 4 Mbps
                                         and 3 for the token-ring adapter type
                                         2 with a data speed of 16 Mbps. This
                                         parameter is only valid for the 3745
                                         communication controller.

 PF1=HELP       2=REDISPLAY  3=END
```

Figure 12. Defining an NCP Line (NTRI)

- **ADDRESS**

  This is the relative line number of the token-ring interface coupler (TIC). The number identifies the port and line number address at the communication controller. It consists of up to 4 digits. Valid addresses are determined by the type and model of the communication controller and the usage tier installed.

- **TR ADDRESS OF TIC**

  This is the right-most part of the TIC's address on the token ring. It is made up of the last eight digits of the locally administered address of the TIC. Its value can range between 0 and 79999999.

- **ADAPTER DEFINITION**

  This parameter applies only to the IBM 3745 communication controller. It specifies the token-ring **adapter** that is attached to the NTRI physical line and the **speed of data** on the token ring:

  1 -
  for the token-ring adapter type 1 which can only be attached to the 4 Mbps token-ring network.

  2 -
  for a token-ring adapter type 2 that is attached to the 4 Mbps token-ring network.

  3 -
  for a token-ring adapter type 2 that is attached to the 16 Mbps token-ring network.

After entering the above values (in the *Hardware Configuration: Define NCP Line* panel), the dialog transfers you back to the *Hardware Configuration: NCP Line List* panel.

An example of the *Hardware Configuration: NCP Line List* panel is shown in Figure 13 on page 34.

```
NCP$LNK1         HARDWARE CONFIGURATION: NCP LINE LIST

LIST OF LINES ON AN NCP

NCP-Name: NCPNEW7     CCU-Model: 3745-210   CCU-Address: 05A
OPTIONS: 2 = ALTER LINE DEFINITION    3 = SELECT FOR FURTHER PROCESSING
         5 = DELETE LINE DEFINITION

       OPT      ADDR       LEASED     SWITCHED      NTRI

         _       020          X
         _       022          X
         _
         _
         _
         _
         _
         _
         _

PF1=HELP       2=REDISPLAY  3=END              5=PROCESS    6=ADD LINE
                            9=LIST SWI
```

Figure 13. NCP Line List

Repeat the PF6=ADD LINE process for all the links at the communication controller. When you are done with the last link and back at the *Hardware Configuration: NCP Line List* panel, select option

3 for Further Processing.

This leads you into the two remaining steps

- Physical unit definition
- Logical unit definition.

These tasks are described in the following topics.

Defining the Physical Unit (PU)

Figure 14 on page 34 shows an example of a *Physical Unit List* **after** definitions have been made. Later in the dialog, panels come into play which are special to a certain link type, for example the IBM token ring.

Two physical units are defined at link 035. Notice, by the way, how the dialog has assigned a link name of 'L0350001' according to its own naming convention which is laid out in Appendix A, “Naming Convention,” on page 119.

```
COM$COM1       HARDWARE CONFIGURATION: PHYSICAL UNIT LIST

LIST OF PU AT A LEASED SDLC LINK

Link Address: 035        Link Name: L0350001

OPTIONS: 3 = SELECT FOR FURTHER PROCESSING     5 = DELETE PHYSICAL UNIT

      OPT               SDLC       CONTROLLER
                      ADDRESS          TYPE
       _              C1           3274 31C
       _              C2           4700
       _
       _
       _
       _
       _
       _


PF1=HELP     2=REDISPLAY  3=END                  5=PROCESS    6=ADD PU
```

Figure 14. Physical Unit List

To start your physical unit definition, press PF6 for ADD PU.

The PU definition comprises the following parameters. With each parameter, the link types are shown to which the parameter applies.

1. **Subsystem Group** (applies to: all link types)

   In the *Hardware Configuration: Subsystem Group* panel, you are asked to select one of the following two:

   Display and Printer System, or
   Intelligent System

   Below, in Figure 15 on page 35 and Figure 16 on page 36, you find two lists of devices for each subsystem group.

2. **Physical Unit** (applies to: all link types)

   Indicate the device number/model of the physical unit.

   You will have to select from one of two selection sets, depending on the 'subsystem group' you had specified before.

   For subsystem group 'Display and Printer System', the selection set is the one shown in Figure 15 on page 35.

   For subsystem group 'Intelligent System', the selection set is the one shown in Figure 16 on page 36.

```
COM$MDL            HARDWARE CONFIGURATION: DISPLAY/PRINTER CU

SELECT A PRODUCT, ENTER ITS NUMBER  AND PRESS ENTER

   1  PC (standalone)
   2  PC Gateway
   3  Displaywriter
   4  8775 Display Terminal
   5  5550 Display System (Single Station)
   6  3820 Printer

      3270-Information-Display-System:
   7  ... 3274 Model 21C                  12  ... 3276 Model 12
   8  ... 3274 Model 31C                  13  ... 3276 Model 13
   9  ... 3274 Model 41C                  14  ... 3276 Model 14
  10  ... 3274 Model 51C
  11  ... 3274 Model 61C                  15  ... 3174 Model xxR
                                          16  ... 3174 xxR with TR gateway



PF1=HELP       2=REDISPLAY  3=END


==>
```

Figure 15. Display and Printer System - Physical Unit Selection

```
COM$INTL       HARDWARE CONFIGURATION: INTELLIGENT SYSTEM

SELECT A PRODUCT, ENTER ITS NUMBER, AND PRESS ENTER

  1  Personal Computer (with APPC)    10  3680 Programmable Store System
  2  Scanmaster                       11  3770 Data Communic. System
  3  Series/1                         12  4700 Finance Communic. System
  4  System/34                        13  5280 Distributed Data System
  5  System/36                        14  5520 Administrative System
  6  System/38                        15  6670 Information Distributor
  7  3630 Plant Communic. System      16  8100 Information System
  8  3650 Retail Store System
  9  3660 Supermarket System




PF1=HELP    2=REDISPLAY  3=END

==>
```

Figure 16. Intelligent System - Physical Unit Selection

3. **SDLC Station Address** (applies to: all link types except SDLC Token-Ring and NTRI)

   Specify two hexadecimal characters for the physical unit's station address. The address must be unique for each physical unit attached to the link. The valid range is X'01' through X'FE'.

   You establish this address during the customization of the control unit. Consult the relevant device publication for guidance in assigning this value.

   You can define up to eight physical units to a **leased** link. **Switched** links attach one physical unit at a time (the one that dialed in), but you can of course **define** any number of physical units.
4. **Identification Block** (applies to: all switched link types, SDLC Token-Ring, NTRI)

   This is the (binary) block number. For certain control units, z/VSE automatically generates this block number. If the number is not known, the dialog requests that you specify the number.

   The Identification Block is a 12-bit number (specified in hexadecimal notation - xxx). Check the appropriate device component description publication to determine the id block number for the given device.

   Workstations use special communication programs which make the specification of a special id block number mandatory. For some commonly used programs the id block number is the following:

   017 IBM Workstation 3270 Emulation Program Version 3
   049 IBM 3270-Workstation or 3270-Workstation/G Communication Program with PS/55
   050 APPC Workstation
   05D IBM OS/2 Extended Edition
   05D IBM Communication Manager/2
   05E IBM Workstation Program
   061 IBM Personal Communication/3270
5. **Identification Number** (applies to: all switched link types, SDLC Token-Ring, NTRI)

   This is a 20-bit identification number (specified in hexadecimal notation - xxxxx) which is required to identify the physical unit. You may regard it as some kind of password.

   The number can either be freely chosen according to a scheme that you developed for your installation. Or, you may use the device's serial number. You get the serial number from the component description publication for the device, or from the person who planned the device's installation.

   For a type 2.1 peripheral node on a switched line, in addition to or in place of the preceding parameters, Identification Block and Identification Number, you may supply a control point name (CPNAME) value:
6. **Control Point Name** (applies to: all switched link types, SDLC Token-Ring, NTRI)

This is the control point (CP) name of a type 2.1 peripheral node. It is valid only for type 2.1 nodes that have a control point name.

The name consists of 1 to 8 characters. The first character must be alphabetic or @, #, $.

7. **X.25 Packet-Switched Parameters** (applies to: SDLC X.25 SVC)

   When defining a physical unit attached at one or more Switched Virtual Circuits (SVCs), you must specify some or all of the following X.25-unique parameters.

   - DIAL OUT - indicates whether the host (= VTAM) can call the control unit (= physical unit). Note that DIAL OUT relates to host and physical unit. Compare this with the CALL DIRECTION parameter when defining the link (=SVC). The latter specifies in which direction(s) the transmission through the link (SVC) may flow. In other words, when the host calls the control unit over an SVC, the call can travel only via an *outgoing* or via a *two-way* SVC.

     The following four parameters appear on a separate panel.
   - DIAL NUMBER - is the calling address of the physical unit (not of the port). The number is between one and fifteen digits long. Your common carrier assigns the number when you subscribe to the network.
   - CUG INDEX - is the identifier of a *closed user group* (CUG). CUG is an X.25 *optional user facility*. Provided you have subscribed to this facility, specify the CUG index if the physical unit is a member of more than one closed user group.
   - RPOA NUMBER - is the identifier of a *recognized private operating agency* (RPOA). RPOA selection is an X.25 *optional user facility*. It applies to connections which span several networks. Provided you have subscribed to this facility, specify the RPOA number to indicate which route through the networks should be taken.
   - REVERSE CHARGING - indicates whether the physical unit will be charged for the call (reverse charging).

8. **SDLC Token-Ring Parameters** (applies to SDLC Token-Ring)

   When defining a physical unit that is attached via a token-ring link, you must specify some or all of the following token-ring related parameters. In doing this, bear in mind that VTAM treats this physical unit like an SDLC-switched station. As a result, the Interactive Interface dialog will generate a switched major node definition, plus a PU definition statement for each physical unit in the switched major node. The Hardware Configuration dialog cannot, at this switched major node, define physical units other than those at the token ring.

   The Interactive Interface *suggests* some values, either system-provided defaults or values which you had specified before. Please refer to the following two figures.

   The kind of data to be entered varies slightly depending on the type of token-ring **attachment**: integrated token-ring adapter (TRA) versus NCP/Token-Ring interconnection (NTRI).

   Integrated Token-Ring Adapter:

```
 COM$TRA3       HARDWARE CONFIGURATION: PU IDENTIFICATION

 Enter the required data and press ENTER.

 LAN ADDRESS/1 ........  4000         First 4 hex digits of the MAC address
 LAN ADDRESS/2 ........  ________     Last 8 hex digits of the MAC address
 IDBLK PARAMETER.......  017          Block number assigned to the specific
                                      device
 IDNUM PARAMETER.......  _____        Identification number assigned to the
                                      station being defined
 CPNAME................  ________     Control point (CP) name of a type 2.1
                                      peripheral node
 CALL DIRECTION........  3            1-in, 2-out, 3-inout

Token ring specific information (optional, not needed for 3172 or OSA)
 SIZE, STEP............  2      1      Dynamic window process
 TIMER, COUNT..........  10     1      Acknowledgement process
 TIMER, COUNT..........  20     2      Connected state
 TIMER, COUNT..........  50     1      Connection process
 TIMER.................  20            Inactivity timer

 PF1=HELP       2=REDISPLAY  3=END

 ==>
```

Figure 17. Describing the PU at the Integrated TRA

- LAN ADDRESS - is the address of the physical unit (the *station*) on the token ring, the so-called *medium access control* (MAC) address.

  The address consists of 12 hexadecimal digits. You specify the address in two parts: the first 4 digits and then the right-most 8 digits.

  If you do not enter the first 4 digits, VTAM's default value of 4000 will be used.

  The last 8 digits are determined as follows:

  a. You either use the burnt-in number in the token-ring adapter card. The number is also known as *universally administered address*.

  b. Or you override this number when you customize the token-ring adapter card. On a workstation, this is accomplished by an Emulation Program. For an IBM 3174 control unit, it is done via microcode customization. This number is also known as *locally administered address*.

- IDBLK and IDNUM and/or CPNAME - they are part of any SDLC-switched station definition. Please refer to items “4” on page 36 through “6” on page 36 above.
- CALL DIRECTION - specifies whether the stations, or VTAM, or both, can initiate calls over this line.

  If the line is to be used only for incoming calls, enter 1. If the line is to be used only for outgoing calls (VTAM is to call the physical unit), enter 2. If the line is to be used for both incoming and outgoing calls, enter 3.

- SIZE, STEP - specifies the *send window* size and the *window step*.

  The **send window** is the maximum number of sequentially numbered I-LPDUs (Information-Logical Link Level Protocol Data Units) that the link station may have outstanding at any time. Valid numbers are 1 through 127.

  Window step is the number of sequentially numbered I-LPDUs that a link station must receive before increasing the local window. Valid numbers are 1 through SIZE. A value of 0 means that the send window is static, and dynamic windowing cannot take place.

- **Acknowledgment** TIMER, COUNT - specifies the acknowledgment delay timer and the number of data units received prior to sending an acknowledgment. If either the timer expires or the count is reached, then an acknowledgment is sent.

  The TIMER value is expressed in tenths of seconds. The valid range is 0 - 255. A value of 0, however, means that the timer is disabled.

  Valid values for COUNT are 0 through 127.

If either TIMER or COUNT is specified as 0, then the other must be specified as 0.

- **Connection** TIMER, COUNT - the TIMER specifies the time period to elapse before a retry is attempted **during connection or disconnection** of a link station. The timer value is expressed in tenths of seconds, in the range 0 through 255.

  COUNT specifies the number of times to retry a transmission **during connection or disconnection** of a link station. The valid range is an integer from 0 through 255. A value of 0 means no retry.

  When the number of retries has been reached and the TIMER has elapsed for each retry, the link station is considered to be in an inoperative condition.
- **Connected state** TIMER, COUNT - the TIMER specifies the time period to elapse before a transmission retry is attempted, **at a time when the station is connected**. The timer value is expressed in tenths of seconds, in the range 0 through 255.

  COUNT specifies the number of times to retry a transmission. The valid range is an integer from 0 through 255. A value of 0 means no retry.

  When the number of retries has been reached and the TIMER has elapsed for each retry, the link station is considered to be in an inoperative condition.
- **Inactivity** TIMER - specifies the time period to elapse before a link station is considered to be inactive.

  The timer is expressed in tenths of seconds. The valid range is 0 - 255. If 0 is specified, then the timer is disabled.

NCP/Token-Ring Interconnection (NTRI):

```
COM$TRA4          HARDWARE CONFIGURATION: PU IDENTIFICATION

Enter the required data and press ENTER.


LAN ADDRESS/1.................4000        First part of the LAN address
                                         (cannot be modified)

LAN ADDRESS/2.............. ________     Second part of the LAN address.  The
                                         entry will be ignored for CALL
                                         DIRECTION = 1.
IDBLK PARAMETER............. 017         Block number assigned to the specific
                                         device

IDNUM PARAMETER............. _____       Identification number assigned to the
                                         station being defined
CPNAME...................... ________    Control point (CP) name of a type 2.1
                                         peripheral node.

BACKUP TIC.................. ____        Enter the relative line number of
                                         your backup TIC.  The entry will be
                                         ignored for CALL DIRECTION = 1.
CALL DIRECTION..............3           1=in,  2=out,  3=inout
PF1=HELP       2=REDISPLAY  3=END
```

Figure 18. Describing the PU at the Token-Ring (NTRI Attachment)

Except for BACKUP TIC, the parameters have the same meaning as in the case of an integrated TRA. Please refer to the explanations on the preceding pages.

LAN ADDRESS/2 is optional and will be ignored (no PATH statement generated) for call direction 1.

- BACKUP TIC - is the relative line number of the backup token-ring interface coupler (TIC), if there is any. The backup TIC provides for higher availability: if one coupler breaks down the other takes over.

  The dialog does not check, rather assumes that the TIC has been defined correctly (in the *Hardware Configuration: Define NCP Line* panel; see Figure 12 on page 33).

  The specification of a backup TIC here leads to a second PATH statement in the VTAM switched major node definition. It is therefore only meaningful for call directions 2 and 3.

Defining Logical Unit(s)

A logical unit is the means through which a user accesses the SNA network.

Logical units are, for example, IBM 3278 display stations attached to a physical unit such as the IBM 3274 control unit. In the case of *Intelligent Systems*, the logical unit may not be a separately identifiable device. Rather, the subsystem as a whole must be thought of as comprising the physical unit **and the logical unit**.

Defining the logical unit involves the following items:

- Device name
- Local address
- VTAM and CICS Transaction Server parameters.

These items are presented in the following topics.

Note: Although the discussion primarily has an SNA network in mind, the later part of it is also applicable to **non-SNA terminals**. Therefore, refer to topic "VTAM and CICS Transaction Server Parameters" on page 41 to learn about describing the characteristics of local non-SNA terminals. This is the task you have to do after you entered device name and address (which was discussed in the preceding chapter).

Device Name of Logical Unit

At this stage of your hardware configuration you will normally come to the *Hardware Configuration: Add Device(s)* panel. Either:

- You were in the *Hardware Configuration: SNA Logical Unit List*, if you had already defined some logical units. In this case you would press PF6 for 'ADD LU' (see Figure 20 on page 42 for an example of the Logical Unit List).
- The Logical Unit List is still empty, in which case the dialog leads you directly into *Add Device(s)*.

For the layout of the panel see the following figure. You may notice that it has a structure similar to the *Hardware Configuration: Add Device(s)* panel, shown in Figure 3 on page 22. But be aware that it deals with the *channel unit address* at the central processor whereas below you are specifying the **local address** at the control unit (or PU).

```
COM$ILU0       HARDWARE CONFIGURATION: ADD DEVICE(S)

Enter the required data and press ENTER.


STARTING ADDR.............. 102      This may be the starting address of
                                    an address range or the only address
                                    to be added

END ADDR................... ___      This address specifies the upper lim
                                    it of the address range to be added

DEVICE NAME................ 32X80___  This is the device name (generic
                                    name) of the device to be added.
                                    Enter a ? to get the list of all
                                    applicable device names.


PF1=HELP       2=REDISPLAY  3=END
```

Figure 19. Define Local Address Panel

Under 'DEVICE NAME', you do not enter the actual device type (such as 3278-3), rather a *generic name* which refers to a typical device characteristic, for example the screen size 32X80.

By entering a '?' you can ask the dialog to display a list of *all valid generic names*.

Local Address of the Logical Unit

Under 'STARTING ADDR' (see Figure 19 on page 40) you specify the local address at the control unit (physical unit).

If you are currently defining a physical unit of type '3270 Information Display System' (see Figure 15 on page 35) the local addresses often correspond to the port numbers, as follows:

```
PORT  LOC ADDR

A00   2
A01   3
A02   4
 .    .
 .    .
```

For other device types (*Intelligent Systems* in particular) local addresses are assigned as part of the customizing of the control unit which is described in the applicable device publication.

You must specify a value of 0 (zero) for an *independent logical unit* in a Type 2.1 peripheral node. Type 2.1 nodes can have independent LUs, dependent LUs, or both, depending on the capabilities of the device. Independent LUs can have more than one concurrent LU-LU session (including parallel sessions for LU 6.2) and can act as primary LU.

IBM Series 1 and IBM System/36 are examples of Type 2.1 nodes. z/VSE, during activation of the node, **automatically determines** whether a peripheral node is a type 2.1 or a type 2.0.

The dialog allows you to enter a **range** of local addresses. This is useful when defining either

- A set of similar devices at contiguous local addresses, or
- A device capable of maintaining multiple sessions to the VTAM host, for example the IBM 3650 Retail Store System, the IBM 3290 which has *multiple interactive screens* (MIS), an IBM PC, or an IBM 3194.

The Hardware Configuration dialog does not allow to add multiple LUs with local address 0. You are therefore advised not to define LUs of type 6.2 through the dialog, but to let VTAM reconfigure them **dynamically**.

Note: There are devices, for example the IBM 5550, which carry a so-called *secondary local address*. For the IBM 5550, the primary local address defines the IBM 5555 Display Station, and the secondary local address the IBM 5553/7 printer. In the dialog, you specify this secondary address just like the primary address, that is: under 'STARTING ADDR' with a proper DEVICE NAME.

VTAM and CICS Transaction Server Parameters

After you enter device name and local address(es), the dialog already knows a lot about the device in question. It now displays, in the *Hardware Configuration: SNA Logical Unit List*, the information that you had given, plus some other parameter values which the dialog generated itself. For an example of this display see the following figure.

```
COM$ILUF       HARDWARE CONFIGURATION: SNA LOGICAL UNIT LIST

ENTER OPTIONS (AND CHANGE THE FIELDS WITH OPTION 2)

OPTIONS: 2 = ALTER   4 = SHOW VTAM PARMS               CU-type: 3274 X1A
         5 = DELETE  6 = TERM-ID FOR AUTOINST          CU-ADDR: 333
                                                       PU-name: A3330001
OPT   LOC    DEVICE    NETNAME   LOGAPPL  VTAM PARM  PRINT  AUTOINST  CICS
      ADDR                          TABLE     TO      MODEL  TERM ID
2     2      LU3PRT__  S0060001  DBDCCICS  PLU3PRT    ____   ________
_     4      24X80     S0110001  ________  D32702S    S006   VSELU2A
_     5      24X80Q    S0090001  ________  D3272QS    S006   VSELU2Q
_     6      24X80Q    S0100001  ________  D3272QS    ____   VSELU2Q
_                      ________  ________  ________   ____   ________
_                      ________  ________  ________   ____   ________
_                      ________  ________  ________   ____   ________
_                      ________  ________  ________   ____   ________
_                      ________  ________  ________   ____   ________
_                      ________  ________  ________   ____   ________
POSITION NEAR ADDR == >                      LOCATE NETNAME == >
PF1=HELP      2=REDISPLAY  3=END                5=PROCESS  6=ADD LU
                           9=VTAM
```

Figure 20. SNA Logical Unit List

The logical unit definition works differently depending on how the logical unit is defined to CICS Transaction Server. There are two possibilities:

1. Permanently installed
2. Autoinstalled

1. Permanently Installed

units have a permanent entry in the *CICS system definition* (CSD) file. Based on your input, the dialog creates this definition in at least one of the CSD *groups* VSETERM1, VSETERM2 or VSETERM3. The definition essentially consists of a DEFINE TERMINAL command:

```
DEFINE TERMINAL(trmidnt) GROUP(VSETERMn)
      TYPETERM(ttname)
      NETNAME(netname)
      .
      .
```

Associated with a DEFINE TERMINAL command is always a TYPETERM definition:

```
DEFINE TYPETERM(ttname) GROUP...
      DEVICE...   TERMMODEL...
      PAGESIZE...
      .
      .
```

TYPETERM definitions are made via the transaction CEDA of CICS Transaction Server *Resource Definition Online* (RDO). A TYPETERM defines a class of terminals which have identical properties.

The dialog generates as default a TYPETERM name (**ttname**) that fits best the selected terminal. You may change this default to another name. If the TYPETERM name you selected does not exist, you must add this TYPETERM definition to the CSD file using transaction CEDA.

z/VSE supplies a set of TYPETERM definitions in the CSD *group* VSETYPE. Appendix C, “z/VSE Definitions for Autoinstall Terminals,” on page 123 has a complete listing of these definitions.

You can create your own TYPETERM definitions by using transaction CEDA.

Note: If you migrated your terminal definitions via z/VSE migration at POST BASE time, the system built TYPETERM definitions in group VSETYPE1 for any of your own definitions or for any of the VSE/SP supplied definitions that you had changed.

2. Autoinstalled

terminals have no permanent definition. Instead, CICS Transaction Server creates and installs the resource definition dynamically when the terminal is needed, at logon time. To do this, CICS Transaction Server uses a **model TERMINAL definition** from the CSD. This process is known as automatic installation, or *autoinstall*.

When a logon request is received from a terminal, an *autoinstall exit program* may have to choose one from a number of model TERMINAL definitions. IESZATDX is the autoinstall exit program that is provided by z/VSE. It picks up the terminal's model name as supplied by VTAM using the specified entry in the MDLTAB macro. It also picks up (if available) the term ID of the PRINTTO printer and term ID of the terminal as supplied by VTAM using the specified entry in the ASLTAB macro.

The autoinstall exit program IESZATDX is further discussed in topic "Autoinstall Exit Program IESZATDX" on page 50.

The CICS Transaction Server has a limit for the number of autoinstall terminals that can be active at the same time. You are able to set this limit via the AUTOINST operand of table DFHSITSP. The default value is 100.

Each terminal definition should have an AUTINSTNAME. Also, it must make itself known as model definition via the AUTINSTMODEL parameter. The DEFINE TERMINAL command shown above would then be augmented as follows:

```
DEFINE TERMINAL(trmidnt) GROUP...
       TYPETERM(ttname)
       .
       .
       .
       AUTINSTMODEL(ONLY)
       AUTINSTNAME(autinstname)
```

To learn about all aspects of autoinstall, please refer to the *CICS Resource Definition Guide* SC33-0708.

Note: Do not define a **terminal printer** as an autoinstall terminal, because the printer must already be *installed* before the first terminal user attempts to use the printer.

The dialog presents to you a default autoinstall model name that fits best the selected terminal. All default models are delivered with the z/VSE package in the CSD group VSETERM.

If you overtype the AUTOINST MODEL name with a name that is not defined in your system, it is your responsibility to create this model by using the CICS transaction CEDA.

z/VSE supplies a set of model definitions in group VSETERM, but you can create your own model definitions. Place your own definitions into a separate group, and be sure to *install* this group.

The names of z/VSE supplied models are shown in the following figure.

Table 3. Mapping of Terminal Generic Names to Autoinstall Model Names

Generic Name	SNA or not	Name of Bestfitting Model
24X80	non-SNA	VSE32782
24X80Q	non-SNA	VSE3278Q
32X80	non-SNA	VSE32783
43X80	non-SNA	VSE32784
27X132	non-SNA	VSE32785
24X80C	non-SNA	VSE32792
24X80CPS	non-SNA	VSE5555
32X80C	non-SNA	VSE32793
32X80CP	non-SNA	VSE3279G
DSCPRT	non-SNA	VSEDSCP

Table 3. Mapping of Terminal Generic Names to Autoinstall Model Names (continued)		
Generic Name	**SNA or not**	**Name of Bestfitting Model**
DSCPRTQ	non-SNA	VSEDSCPQ
DSCPRTS	non-SNA	VSE5557
24X80	SNA	VSELU2A
24X80Q	SNA	VSELU2Q
32X80	SNA	VSELU2B
43X80	SNA	VSELU2C
27X132	SNA	VSELU2D
24X80C	SNA	VSELU2E
24X80CPS	SNA	VSELU2H
32X80C	SNA	VSELU2F
32X80CP	SNA	VSELU2G
LU3PRT	SNA	VSELU3A
LU3PRTQ	SNA	VSELU3Q
LU3PRTS	SNA	VSELU3C
SCSPRT	SNA	VSESCSPA
SCSPRTQ	SNA	VSESCSPQ
SCSPRTS	SNA	VSESCSPC

The model definitions are listed in Appendix C, “z/VSE Definitions for Autoinstall Terminals,” on page 123.

The *SNA Logical Unit List*, which was shown in Figure 20 on page 42, has four examples: the first line for a permanently installed terminal, the other three for autoinstall terminals.

In this panel you may review the parameter values which the dialog had created. In case of an **autoinstall terminal**, you can change any value by overtyping the displayed value and then selecting option

2 ALTER DEFINITIONS

In addition, option

6 TERM-ID FOR AUTOINST

takes you into the *Hardware Configuration: Terminal (LU) Details* panel, which is shown below. Here you can enter the TERM ID (CICS). You are advised, however, to supply a CICS term ID for an autoinstall terminal only if your installation requires it. It may impact the performance during logon.

In case of a **permanently installed** terminal, remember that the dialog (as a first guess) always assumes that you want to define an autoinstall terminal. If you want to override this assumption, **erase the AUTOINST MODEL name** (VSELU2A|Q in the above example) before you request 2=ALTER DEFINITIONS. The dialog now understands that you want to define a permanently installed terminal. It displays for you the *Hardware Configuration: Terminal (LU) Details* panel whose content is limited to **one terminal (LU) only**.

This panel displays different values depending on whether it describes a permanently installed terminal or an autoinstall terminal. The example shown in Figure 21 on page 45 is for a permanently installed terminal.

```
COM$ILUG       HARDWARE CONFIGURATION: TERMINAL (LU) DETAILS

ENTER THE REQUIRED DATA AND PRESS PF5=PROCESS

You may change the parameters for LU3PRT device at address 2 .

AUTOINST MODEL NAME..... ________
NETNAME (VTAM)........... S0060001
TERM ID (CICS)........... S006

SPOOLTO/SPOOLDEST........ ________
PRINTTO.................. ____
LOGAPPL.................. DBDCCICS

VTAM PARM TABLE.......... PLU3PRT
Show VTAM PARM TABLE..... _               To show enter any character.
CICS TYPETERM name....... VSELU3A

Enter an X next to the terminal group the device should be defined to.
  VSETERM1: X             VSETERM2: _               VSETERM3: _

PF1=HELP       2=REDISPLAY  3=END                     5=PROCESS
                            9=VTAM
```

Figure 21. Terminal (LU) Details Panel

The parameters of the above panel are explained in the following.

AUTOINST MODEL NAME
This parameter applies only to an autoinstall terminal. It is the name of a model terminal definition. Leaving the name blank indicates to the dialog that the terminal being defined is a *permanently installed* terminal.

NETNAME (VTAM)
This name identifies the logical unit to VTAM. The dialog supplies a default according to its naming convention. See Appendix A, “Naming Convention,” on page 119.

For NETNAME (VTAM) and the following parameter, TERM ID (CICS), please note: if you change any of the defaults provided by z/VSE, make sure that the names or identifiers you use **are outside** of z/VSE's naming convention. The *Configure Hardware* could, by chance, generate duplicate names or identifiers if you choose a name which is also possible under the z/VSE naming convention.

TERM ID (CICS)
This 4-character name identifies the logical unit to CICS Transaction Server. A default is supplied according to the dialog's naming convention. See also the topic Appendix A, “Naming Convention,” on page 119.

When defining an autoinstall terminal, the parameter is optional and should only be specified if required by your installation.

SPOOLTO/SPOOLDEST
SPOOLTO is a 1 to 8-character CICS Transaction Server spool destination name. It applies only to the definition of a **display station**. It designates a terminal printer which prints list output generated by a CICS Transaction Server transaction at this display station. The list output would be routed, via the VSE/POWER list queue, to the SPOOLTO printer rather than to the system printer.

The name is identical to the SPOOLDEST name of the complementary terminal printer definition (see below).

SPOOLDEST is a 1 to 8-character CICS Transaction Server spool destination name. It applies only to the definition of a **terminal printer**. The name identifies the terminal printer as the target of a SPOOLTO specification (see above paragraph).

SPOOLTO/SPOOLDEST cannot be specified for autoinstalled devices. If you need this parameter, you must supply your own model terminal definition with this parameter using the CICS transaction CEDA.

PRINTTO
This name (sometimes called *associated printer*) points to the terminal printer that is to print the output generated by the CICS Transaction Server ISSUE PRINT command or by pressing a print request key (usually the PA1 key unless defined differently in the CICS startup job). A typical application is the copying of the current screen display. The name is the term ID on the definition for the printer.

LOGAPPL
This is the VTAM identifier of the application to which the logical unit is to be automatically logged on. For the IBM 3270 Information Display System, a default is supplied. You can set the default via the *Maintain VTAM Application Names* dialog; see "Application Major Node" on page 108.

For an *autoinstall terminal*, it is recommended **not to supply a LOGAPPL** (this does not hold, however, for a terminal printer; see below). Leaving the name blank means that the terminal will not be automatically connected to CICS during system startup. On autoinstall terminals, z/VSE displays the *VTAM Application Selection Menu* as initial panel. From it, users can select an VTAM application (DBDCCICS, for example). This causes z/VSE to display the *z/VSE Online* panel for signing on to the system.

As was noted already, it is recommended *not* to define terminal printers as autoinstall terminals. If you do, however, it is recommended that you **supply a LOGAPPL** value.

VTAM PARM TABLE
This is the name of a table which defines certain VTAM parameters, for example DLOGMOD or USSTAB. The dialog supplies the name of the table which is used by default.

You can specify the name of a table that you created yourself. In fact, from the current panel you can temporarily exit (by pressing the **PF9** key) into another dialog and add a new table, or alter or delete an existing one.

Show VTAM PARM TABLE
This is not truly a parameter, rather an option. By entering a nonblank character you ask for a display of the current values of the specified VTAM PARM table. From this display you may alter some table values.

Note that this selection is directed to **one particular table**. It is the same selection as 4=SHOW VTAM in the *SNA Logical Unit List*. Contrast these selections with the PF9 key selection which requests a display (*FULIST*) of **all** VTAM PARM tables.

CICS TYPETERM NAME
This names the TYPETERM definition which is to be associated with the logical units's DEFINE TERMINAL definition. The dialog supplies a default. You may override the default by another name, perhaps a TYPETERM definition of your own. Be sure the TYPETERM definition exists in your CSD file.

The CICS TYPETERM NAME can be specified only for permanently installed terminals (that is, not for autoinstall terminals).

The last row in the panel allows you to indicate, by an 'X', the CSD group(s) into which the terminal definition will be cataloged. Specifying no 'X' for any of the three groups indicates that the terminal will not be defined to CICS.

You now have completed the definition of one telecommunication device. The next two topics describe how you tell the dialog to process and catalog your input.

Getting Your Input 'Processed'

Up to now, the dialog has only *collected* the information you fed into it. Library members (containing, for example, IPL procedures or VTAM startup books) have not been changed as yet.

To achieve this, you move through the dialog in the reverse direction. Each step consists of

- Initiating the reverse move: press **PF5**=PROCESS
- Reviewing the next displayed list of your specifications

- Altering, deleting or adding to these specifications.

As an example, consider the definition of a 3745-attached device.

Starting from one of the logical unit selection panels, the reverse movement takes you through the following panels:

- *Hardware Configuration: Physical Unit List*

  Either press **PF6** to indicate that you want to add more physical units to **this link**. Or, if you are done with this link, press **PF5**=*Process*; you arrive at the

- *Hardware Configuration: NCP Line List*

  Again, either press **PF6** to indicate that you want to add more links at **this communication controller**. Or, if you are done with this communication controller, press **PF5**=*Process*; you arrive at the

- *Hardware Configuration: NCP Name List*

  Because you have entered all the information necessary for an NCP, you should now *Generate NCP* (option **6**). The dialog creates a generation job. The *Job Submission* panel appears which lets you choose between submitting the job now and/or filing it in your primary library.

  Note:

  1. Make sure that **SSP and NCP are installed** as optional licensed programs before you generate your NCP.
  2. If the generation is for a large NCP, you may need more work file space than the generated job provides. Data which cannot be accommodated in the normal way will overflow into the work file DBWRKFL. This workfile is mandatory if your configuration includes an NCP/Token-Ring interconnection (NTRI). Use skeleton SKNCPWKF from library 59 to define this workfile.

     Also, in an exceptional case, the BG partition may be too small for running the generated job. For detailed information refer to the topic "Generating and Loading under VSE" in the IBM publication *NCP Generation and Loading Guide* , order number SC30-3348.

  In addition to the job, the dialog creates in library 51 CICS Transaction Server objects plus VTAM and NCP definitions. **Prior to setting your network into operation, you must assemble and catalog these objects**. For more information, see “Cataloging the Configuration” on page 47.

  After exiting from the *Job Submission* panel, you come back to the

- *NCP Name List*

  Press **PF5** to arrive at the

- *Hardware Configuration: Unit Address List*

  This is the panel you started out with. Pressing **PF5**=*Process* leads you into the *Hardware Configuration: Catalog Startup Members* panel. The subject of cataloging will be taken up below, in topic “Cataloging the Configuration” on page 47.

Cataloging the Configuration

After you provided definitions via the Hardware Configuration dialog, the information has only been *collected*. Now this information must be *processed* leading to newly cataloged startup members.

Specifically, the following categories are candidates:

- IPL procedures
- VTAM startup books
- Definitions in the CICS System Definition (CSD) file.

Part of the cataloging will be handled through the *Hardware Configuration: Catalog Startup Members* dialog; see the following topic.

Another part is accomplished by submitting a generation job: the NCP generation job. This will be discussed in “Cataloging via Generation Job” on page 50.

Cataloging via Dialog

The *Hardware Configuration: Catalog Startup Members* panel (see Figure 22 on page 48) allows you to catalog specific objects.

After receiving a catalog request, the dialog processes **all the information** that it has gathered for a specific object. This means: if you had just configured a part of your telecommunications environment but had configured and cataloged another part earlier, the dialog combines the "earlier" and the "fresh" parts into one catalog operation.

For example, from an earlier configuration, the CSD group VSETERM1 may contain entries that were already assembled and cataloged. At a later time, you added more terminals. When you now request the cataloging of

```
CICS CSD Group for terminals - VSETERM1
```

the dialog processes the entire group, thereby recataloging the earlier definitions.

The cataloging of VTAM books for **NCP-attached** terminals is part of the NCP generation, which is triggered by a job submission (see the following topic). In fact, the panel in the figure below is taken immediately after definition of an NCP configuration (and nothing else before). You can see that the dialog *suggests*, by an 'X' in the pertinent line, to catalog only IPL procedures and the CSD group VSETERM1 but no VTAM books for terminals. These will be cataloged by submitting an NCP generation job.

```
 ADM$CRE1       HARDWARE CONFIGURATION: CATALOG STARTUP MEMBERS


Press ENTER to catalog the objects marked by an X. You may add or delete
an X as needed.

               X      IPL Procedures
               _      VTAM Book with Startup Options
               X      VTAM Books for Model Terminal Support
               X      VTAM Book for Local Non-SNA Terminals
               X      VTAM Book Local SNA Terminals
               X      VTAM Books for ICA attached Terminals
               _      VTAM Books for OSA or 3172 attached Terminals
               _      CICS CSD Group for terminals-VSETERM1
               _      CICS CSD Group for terminals-VSETERM2
               _      CICS CSD Group for terminals-VSETERM3


 PF1=HELP       2=REDISPLAY  3=END
```

Figure 22. Catalog Startup Members

After you exit the above panel, the *Job Disposition* panel appears. Assuming you leave the suggested job name unchanged, a job is created which looks like the one in Figure 23 on page 49. The job catalogs a new IPL procedure which now contains ADD statements for the devices that you just added.

It also includes (see the 6th line) another member, DTRCSDJ1. This is a sequence of job steps to store the terminal definitions into the CICS Transaction Server CSD group VSETERM1.

```
* $$ JOB JNM=STARTUP,DISP=D,PRI=3,                                    C
* $$ NTFY=YES,                                                        C
* $$ LDEST=*,                                                         C
* $$ CLASS=0
// JOB STARTUP  CATALOG STARTUP MEMBERS AND PHASES
* $$ SLI ICCF=(DTRCSDJ1),LIB=(51)
// EXEC LIBR,PARM='MSHP'
ACCESS SUBLIB=IJSYSRS.SYSLIB
* $$ SLI ICCF=(IPLPROC),LIB=(51)
CONNECT SUBLIB=IJSYSRS.SYSLIB:PRD2.SAVE
COPY $IPLESA.PROC REPLACE=YES
DELETE VTMMDL.SAVE
RENAME VTMMDL.B:VTMMDL.SAVE
CATALOG     VTMMDL.B        REPLACE=YES
* $$ SLI ICCF=(VTMMDL),LIB=(51)
/+
/*
/&
* $$ EOJ
```

Figure 23. Job STARTUP

Summary of VTAM and CICS Startup Members

Figure 24 on page 49 lists the members for VTAM and CICS terminal definitions.

VTAM Books:

1. VTMNSNA for local non-SNA terminals.
2. VTMSNA for local SNA terminals.
3. VTMCA1, VTMCA3, and VTMSW1 for remote SNA terminals.
4. VTMMDL and VTMASL for autoinstall model terminal support books containing definitions for permanently-installed terminals that are to be stored into the CICS System Definition (CSD) file.
5. VTMTRxx for ICA-attached token ring definitions.
6. Other VTAM books produced due to processing of Option 6 (GENERATE NCP):
   ncpnameV - for major node definition of switched line.
   ncpnameM through ncpnameT - for major node definitions of NTRI lines.
   Note: 'ncpname' is the 7-character name you selected when generating the NCP.
7. O*cuusuba* and VTMXPU for ICA-attached X.25 VTAM definitions (where 'cuu' is the channel address, and 'suba' is the subarea of the host).
8. VTMOSA for defining the medium for OSA or 3172. VTMOSA2 for defining the switched major node, with all PUs and LUs, for OSA or 3172.

CICS Definitions for Permanently Installed Terminals:

1. The CSD terminal groups VSETERM1, VSETERM2, and VSETERM3. Members associated with group (where *n*=1, 2, or 3):
   a. DTRCSD*n*L for local non-SNA terminals.
   b. DTRSCD*n*S for local SNA terminals.
   c. DTRCSD*n*R for remote SNA terminals, attached via ICA.
   d. DTRCSD*n*N for remote SNA terminals, controlled by NCP (more CSD definitions for NCP are included by this member).
   e. DTRCSD*n*O for OSA or 3172 attached terminals.
2. DTRCSDJ1, DTRCSDJ2, or DISCSDJ3, for the job that catalogs new CICS terminals into the CSD groups VSETERM1, VSETERM2, or VSETERM3, respectively.

Figure 24. Hardware Configuration Startup Members

Cataloging via Generation Job

Related Topic:

- “3745 (NCP)-Attached Configuration Example” on page 55.

In the *Hardware Configuration: NCP Name List* panel, you should have requested an NCP generation job (see “Getting Your Input 'Processed'” on page 46). If you didn't submit the job right then, you must do it at some time prior to setting your system into operation.

Assuming that you named your NCP 'NCPNEW7' (as part of “Defining NCP Link(s)” on page 30), the generation job is contained in member NCPNEW7J of your primary library.

The job NCPNEW7J

- assembles an NCP source program which contains NCP generation macro instructions
- catalogs the resulting phase in sublibrary PRD2.COMM2, and
- catalogs VTAM definitions in sublibrary PRD2.CONFIG.

Input are members with name prefix NCPNEW7 which contain NCP generation macro instructions **and other VTAM** definitions. The Hardware Configuration dialog had created those members as a result of your input.

Note: If you want to define more than one NCP, make sure that the resource names of all NCPs are unique. This means that you must make the appropriate changes in the NCPNEW7 members prior to cataloging the definitions.

After completion of job NCPNEW7J, all NCP **and VTAM** definitions are cataloged.

For a very large NCP, the generation job may need the special workfile DBWRKFL. This workfile is mandatory if your configuration includes an NCP/Token-Ring interconnection (NTRI). Use skeleton SKNCPWKF from library 59 to define this workfile.

To **activate** the new NCP, you either use VTAM operator commands. Or you add the NCPNEW7 members as VTAM major nodes to the *VTAM configuration list* ATCCONxx (see “Configuration List” on page 107). The new NCP will then be activated at the next startup of VTAM.

Autoinstall Exit Program IESZATDX

As was briefly mentioned in topic “VTAM and CICS Transaction Server Parameters” on page 41, a CICS Transaction Server *autoinstall exit program* gets control after a logon request is received from an autoinstall terminal.

The name of the z/VSE version is IESZATDX and is defined in the AUTOINST parameter of table DFHSITSP or DFHSITC2. IESZATDX is automatically activated when a user logs on from a terminal defined to VTAM but unknown to CICS. This allows you to include *user modifications* required for your environment. User modifications may also be implemented by providing your own user-written installation-wide exit routine.

The exit does the following:

- Retrieves the autoinstall model name, as defined via dialog, from the VTAM CINIT information.
- Retrieves the associated printer ID, as defined via dialog, from the VTAM CINIT information. If not available, no printer ID will be passed to CICS.
- Retrieves the CICS terminal ID if available from the VTAM CINIT information. If not available, the exit will generate a CICS terminal ID. According to the z/VSE naming conventions, this is an A followed by a 3-digit number.

  If IESZATDX needs to generate a CICS Transaction Server terminal ID, it uses A as the first character. You can change this prefix to any other letter by locating and changing the entry PREFIX in program IESZATDX. This might be necessary in an environment with communicating CICS Transaction Server systems where unique terminal IDs are required.
- If IESZATDX does not find an autoinstall model name in the VTAM CINIT information or if the model name found is VSE51DEF, it selects the best fitting model from the z/VSE-supplied models.

For a detailed description, refer to the comment section of program IESZATDX. The source code of program IESZATDX is available in VSE/ICCF library 59 as member IESZATDX. Note also that for z/VSE systems running under VM, the "Reset to VM" function only works correctly if the VTAM netname follows the z/VSE naming convention.

Note:

1. If the CICS Emergency Restart is used for autoinstall terminals which make use of the IBM-supplied autoinstall exit program IESZATDX, the Temporary Storage queue IEZATDNM must be defined as recoverable. You do this by adding the appropriate entry to the Temporary Storage Table (DFHTSTSP). The source code of this table is available in VSE/ICCF library 59 as member DFHTSTSP.
2. For CICS/VSE in a coexistence environment, you should use member IESZATCO.

For a general description of autoinstall exit programs, refer to the CICS Customization Guide.

Table 4. Parameter Identification for Autoinstall Terminals

TERMINAL MODELS:		
Device Characteristics	**Local Non-SNA Terminal**	**Local/Remote SNA Terminal**
QUERY SUPPORT		
Any number of lines	VSE3278Q	VSELU2Q
NO QUERY SUPPORT		
27 lines (alternate)	VSE32785	VSELU2D
32 lines (alternate)	VSE32783	VSELU2B
43 lines (alternate)	VSE32784	VSELU2C
24 lines	VSE32782	VSELU2A
24 lines EDS	VSE32792	VSELU2E
32 lines (alternate) EDS	VSE32793	VSELU2F
PRINTER MODELS:		
Device Characteristics	**Local Non-SNA Terminal**	**Local/Remote SNA Terminal**
QUERY SUPPORT		
LU type: 1 (SCS)	N/A	VSESCSPQ
LU type: 3	N/A	VSELU3Q
LU type: none	VSEDSCPQ	N/A
NO QUERY SUPPORT		
LU type: 1 (SCS)	N/A	VSESCSPA
LU type: 3	N/A	VSELU3A
LU type: none	VSEDSCP	N/A

Reconfiguring without Shutting down Subsystems

In z/VSE you can add or change networking definitions, for example terminal definitions, without shutting down the subsystems CICS or VTAM.

The following procedure shows you how a new terminal is added and activated at a local SNA control unit.

1. Go through the Hardware Configuration dialog to add the terminal. Then run the job which was generated after you pressed PF5 (*PROCESS*) in the *Catalog Startup Members* panel.

2. For a **permanently installed terminal**:

   INSTALL the group where the terminal was added (VSETERM1 for example) using the CICS transaction CEDA. Option 7 of the z/VSE *Function Selection* panel gives you easy access to "CICS Supplied Transactions." Enter for example:

   ```
   CEDA INSTALL GROUP(VSETERM1)
   ```

   CICS will tell you that you have to set resources out-of-service.

   For an **autoinstall terminal** you do not have to do anything extra for CICS.

3. Refresh the tables VTMMDL and VTMASL by entering

   ```
   MODIFY NET,TABLE,NEWTAB={VTMMDL|VTMASL},OPTION=LOAD
   ```

4. Deactivate and reactivate the VTAM major node where the terminal is defined: at the operator console enter

   ```
   V NET,INACT,ID=VTMSNA
   V NET,ACT,ID=VTMSNA
   ```

For **non-SNA terminals** please note:

You can change the CICS and VTAM definitions of non-SNA terminals using the same procedure as above (except that the non-SNA major node has the ID VTMNSNA). But you **cannot add** a non-SNA terminal, because this requires a re-IPL with a corresponding IPL ADD statement.

Recovering from Incorrect CICS or VTAM Definitions

The situation might occur where your input to the Hardware Configuration dialog results in incorrect CICS or VTAM definitions. If you are unable to identify the cause of the problem, you might consider performing a reIPL followed by a basic start.

This is described in z/VSE Operation.

Chapter 5. Examples of OSA-2 and NCP-Attached Configurations

This chapter provides two configuration example cases:

- an OSA-2 -attached configuration
- a NCP-attached configuration.

If you are working at a terminal with z/VSE online, you may want to actually repeat the example sessions at your terminal. This would help you get familiar with the Hardware Configuration dialogs. But if you are just reading, it is still worth your while to check the source members which result from the assumed input.

This chapter contains these main topics:

OSA-2 Attached Configuration Example

This section picks up on the example that was briefly presented in section "Connecting a LAN to an Emulated OSA-2 or 3172 Device in Non-QDIO Mode" on page 25. Figure 25 on page 53 illustrates the example configuration.

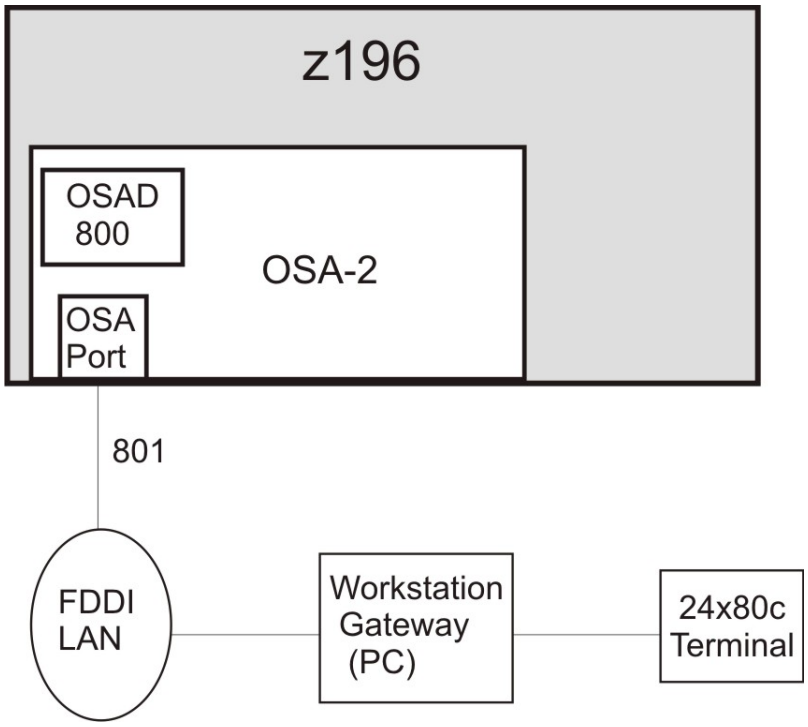

Figure 25. Example Configuration - OSA-2 Attached Links

The above example shows the following configuration:

- A VSE Host (an IBM z196 in this example) with **OSAD** installed (at address 800).
- An FDDI LAN attached to the z/VSE host (at address 801).
- A Workstation Gateway attached to the FDDI LAN.
- A 24x80c Terminal attached to the Workstation Gateway.

This section describes

1. The sequence of steps you have to go through and your input at each step.
2. The result, that is: the contents of the library members which the dialog creates based on your input.

Proceeding through the Dialog

Note: The term 'HC' used within a panel name is an abbreviation for 'Hardware Configuration.'

```
Name of panel                |   Your Input
_____________________________|_____________________________________________
HC: UNIT ADDRESS LIST .......|...PF6    for ADD ADDRESS
HC: ADD A DEVICE ............|...800    for STARTING ADD
                             |   OSAD   for DEVICE NAME
HC: UNIT ADDRESS LIST .......|...PF6    for ADD ADDR
HC: ADD A DEVICE ............|...801    for STARTING ADd
                             |   OSA    for DEVICE NAME
HC: LAN LIST ................|...PF6    for ADD LAN
SELECTION LIST: MEDIUM TYPE .|...1      for FDDI LAN
HC: DEFINE LAN ..............|...1      for ADAPTER NUMBER
HC: LAN LIST ................|...3      for FOR FURTHER PROCESSING (of 801)
HC: PUS AT A LAN ............|...PF6    for ADD PU
HC: SUBSYSTEM GROUP .........|...1      for DISPLAY AND PRINTER SYSTEM
HC: DISPLAY/PRINTER CU ......|...2      for PC gateway
HC: PU IDENTIFICATION .......|...80010000 for LAN ADDRESS/2
                             |   80001  for IDNUM PARAMETER
HC: ADD DEVICE(S) ...........|...2      for STARTING ADDRESS
                             |   24x80C for DEVICE NAME
HC: SNA LOGICAL UNIT LIST ...|...PF5    for PROCESS
HC: PUS AT A LAN ............|...PF5    for PROCESS
HC: LAN LIST ................|...PF5    for PROCESS
HC: UNIT ADDRESS LIST .......|...PF5    for PROCESS
HC: CATALOG STARTUP MEMBERS .|...x      for IPL Procedures
                             |   x      for VTAM Books for Model Terminal Support
                             |   x      for VTAM Books for ICA attached Terminals
                             |   x      for VTAM Books for OSA or 3172 attached
                             |          Terminals
```

Resulting Library Members

The above dialog ends with the *Job Disposition* panel. You can now submit the catalog job. For its content see Figure 26 on page 54.

```
* $$ JOB JNM=STARTUP,DISP=D,PRI=3,                                        C
* $$ NTFY=YES,                                                            C
* $$ CLASS=0
* $$ LST DISP=H
// JOB STARTUP  CATALOG STARTUP MEMBERS AND PHASES
// EXEC LIBR,PARM='MSHP'
ACCESS SUBLIB=IJSYSRS.SYSLIB
* $$ SLI ICCF=(IPLPROC),LIB=(51)
CONNECT SUBLIB=IJSYSRS.SYSLIB:PRD2.SAVE
COPY $IPLESA.PROC REPLACE=YES
ACCESS SUBLIB=PRD2.CONFIG
* $$ SLI ICCF=(VTMOSA),LIB=(51)
DELETE VTMOSA2.SAVE
RENAME VTMOSA2.B:VTMOSA2.SAVE
CATALOG     VTMOSA2.B          REPLACE=YES
* $$ SLI ICCF=(VTMOSA2),LIB=(51)
/+
DELETE VTMMDL.SAVE
RENAME VTMMDL.B:VTMMDL.SAVE
CATALOG     VTMMDL.B        REPLACE=YES
* $$ SLI ICCF=(VTMMDL),LIB=(51)
/+
/*
/&
* $$ EOJ
```

Figure 26. Example of Catalog Startup Members (OSA-2)

The catalog job *includes* from library 51 several members which the dialog had created:

- IPLPROC

  IPLPROC contains a job step which catalogs the IPL procedure $IPLESA.PROC in the system library. Due to the above dialog, the IPL procedure will contain the statements

```
ADD 800,OSAD
ADD 801,OSA
```

  for the FDDI LAN attachments you just configured.

- VTMOSA, VTMOSA2, and VTMDDL.

  These members contain VTAM definitions for the FDDI LAN (VTMOSA), the attached LU and PU (VTMOSA2), and the terminal models used (VTMDDL). Their content is shown in Figure 27 on page 55. As a result of the catalog job, the VTAM books will be cataloged in sublibrary PRD2.CONFIG.

```
VTMOSA in ICCF lib 51
*****************************************************
   DELETE VTMO801.SAVE
   RENAME VTMO801.B:VTMO801.SAVE
   CATALOG VTMO801.B REPLACE=YES
Y8010001 VBUILD TYPE=XCA
U8010001 PORT MEDIUM=FDDI,     TYPE OF LAN                          X
               SAPADDR=4,      SERVICE ACCESS POINT ADDRESS         X
               ADAPNO=001,     ADAPTER NUMBER                       X
               CUADDR=801,     CHANNEL UNIT ADDRESS                 X
               TIMER=60
Q8010001 GROUP DIAL=YES,       SWITCHED PERIPHERAL NODE             X
               ISTATUS=ACTIVE
M0010001 LINE  ISTATUS=ACTIVE
F0010001 PU    ISTATUS=ACTIVE
/+
```

```
VTMOSA2 in ICCF lib 51
*****************************************************

*
*********************************************************************
* OSA or 3172 RELATED SWITCHED MAJOR NODE                           *
*********************************************************************
*
         VBUILD TYPE=SWNET,MAXGRP=2,MAXNO=7
J0010001 PU    ADDR=C1,                                             X
               IDBLK=017,         identification block              X
               IDNUM=80001,       identification number             X
               DISCNT=NO,         VTAM does not hang up             X
               ISTATUS=ACTIVE,PACING=0,VPACING=0,                   X
               PUTYPE=2,          SNA cluster controller            X
               MAXDATA=265,       max abount of data for  PU        X
               MAXOUT=7,          max no of PIUs send before response X
               MAXPATH=1,         max no of dial paths              X
               SAPADDR=4          service access point address
         PATH  DIALNO=0104400080010000,                             X
               GRPNM=Q8010001
*
R0010001 LU    LOCADDR=2,DLOGMOD=SP3272ES,                          X
               ISTATUS=ACTIVE,MODETAB=IESINCLM,                     X
               MDLTAB=VTMMDL,                                       X
               MDLENT=VSELU2E,                                      X
               SSCPFM=USSSCS,USSTAB=VTMUSSTR
```

Figure 27. Example of Generated VTAM Books (OSA-2)

3745 (NCP)-Attached Configuration Example

Figure 28 on page 56 illustrates the example configuration.

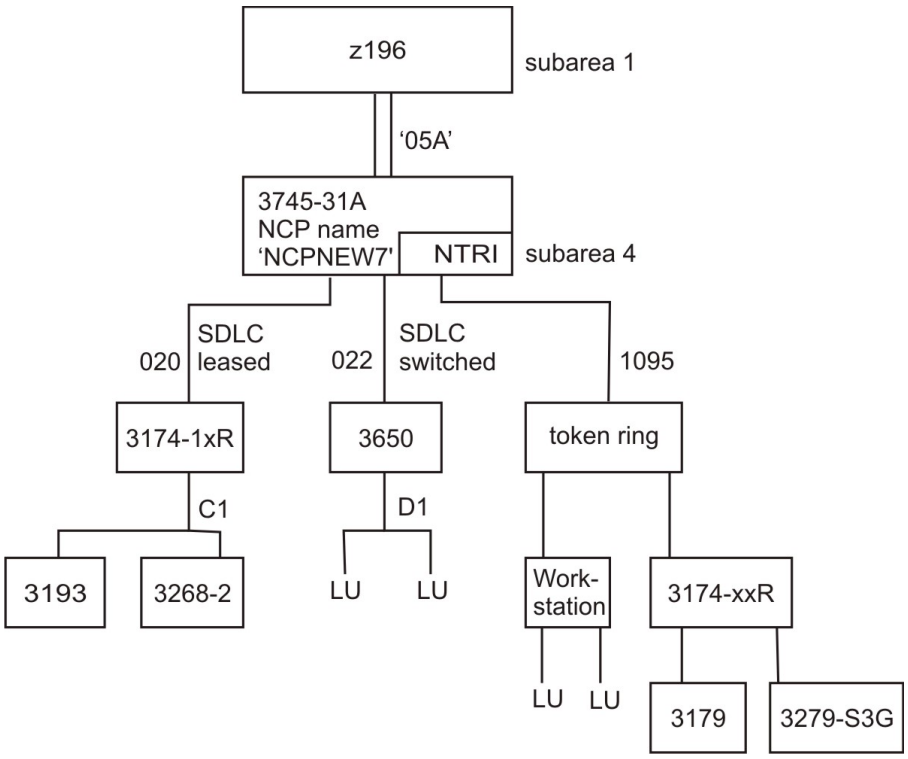

Figure 28. Example Configuration - 3745 (NCP)-Attached Links

The above example shows the following configuration:

- A 3745-31A communication controller at channel unit address 05A.
- A remote control unit IBM 3174-1xR at link 020. Its SDLC station address is C1. It serves two logical units: an IBM 3193 display station and an IBM 3268-2 printer, both **permanently installed** (not autoinstalled). The dialog knows the display station under the generic name 32X80CP and the printer under the generic name LU3PRT.
- A remote *Intelligent System* (IBM 3650 Retail System) at switched line 022. Its SDLC station address is D1.
- A token ring connected via the NCP/Token Ring Interconnection (NTRI). The Token-Ring Interface Coupler (TIC) has relative line number 1095.

  Attached at the token ring are a workstation with two logical sessions defined, plus an IBM 3174 control unit with IBM 3179 and IBM 3279-S3G terminals as logical units.

This section describes

1. The sequence of steps you have to go through and your input at each step.
2. The result, that is: the contents of the library members which the dialog creates based on your input.

Proceeding through the Dialog

Note: The term 'HC' used within a panel name is an abbreviation for 'Hardware Configuration.'

```
Name of panel                |   Your Input
_____________________________|_____________________________________________
HC: UNIT ADDRESS LIST .......|...PF6    for ADD ADDRESS
HC: ADD A DEVICE ............|...800    for STARTING ADD
                             |   OSAD   for DEVICE NAME
HC: UNIT ADDRESS LIST .......|...PF6    for ADD ADDR
HC: ADD A DEVICE ............|...801    for STARTING ADd
                             |   OSA    for DEVICE NAME
HC: LAN LIST ................|...PF6    for ADD LAN
SELECTION LIST: MEDIUM TYPE .|...1      for FDDI LAN
HC: DEFINE LAN ..............|...1      for ADAPTER NUMBER
HC: LAN LIST ................|...3      for FOR FURTHER PROCESSING (of 801)
```

```
HC: PUS AT A LAN ............|...PF6    for ADD PU
HC: SUBSYSTEM GROUP .........|...1      for DISPLAY AND PRINTER SYSTEM
HC: DISPLAY/PRINTER CU ......|...2      for PC gateway
HC: PU IDENTIFICATION .......|...80010000 for LAN ADDRESS/2
                             |   80001  for IDNUM PARAMETER
HC: ADD DEVICE(S) ...........|...2      for STARTING ADDRESS
                             |   24x80C for DEVICE NAME
HC: SNA LOGICAL UNIT LIST ...|...PF5    for PROCESS
HC: PUS AT A LAN ............|...PF5    for PROCESS
HC: LAN LIST ................|...PF5    for PROCESS
HC: UNIT ADDRESS LIST .......|...PF5    for PROCESS
HC: CATALOG STARTUP MEMBERS .|...x      for IPL Procedures
                             |   x      for VTAM Books for Model Terminal Support
                             |   x      for VTAM Books for ICA attached Terminals
                             |   x      for VTAM Books for OSA or 3172 attached
                             |          Terminals
```

Resulting Library Members

The above dialog ends with the *Job Disposition* panel. You can now submit the catalog job. For its contents see Figure 29 on page 57.

```
* $$ JOB JNM=SUBMCAT,DISP=D,PRI=3,                                        C
* $$ NTFY=YES,                                                            C
* $$ LDEST=*,                                                             C
* $$ CLASS=0
// JOB SUBMCAT  CATALOG STARTUP MEMBERS AND PHASES
* $$ SLI ICCF=(DTRCSDJ1),LIB=(51)
// EXEC LIBR,PARM='MSHP'
ACCESS SUBLIB=IJSYSRS.SYSLIB
* $$ SLI ICCF=(IPLPROC),LIB=(51)
CONNECT SUBLIB=IJSYSRS.SYSLIB:PRD2.SAVE
COPY $IPLESA.PROC REPLACE=YES
ACCESS SUBLIB=PRD2.CONFIG
DELETE VTMMDL.SAVE
RENAME VTMMDL.B:VTMMDL.SAVE
CATALOG     VTMMDL.B        REPLACE=YES
* $$ SLI ICCF=(VTMMDL),LIB=(51)
/+
/*
/&
* $$ EOJ
```

Figure 29. Example of Catalog Startup Members (NCP)

The catalog job *includes* from library 51 three members which the dialog had created:

1. NCPNEW71 (via member DTRCSDJ1)

   This member contains the DEFINE TERMINAL statements for the display station and the printer which you configured at line 020. For the content see Figure 30 on page 57.

   ```
   ************************************************************************
   * NCP     CONTROLLED REMOTE TERMINAL ENTRIES                           *
   ************************************************************************
            DC C'DEFINE TERMINAL(N001) GROUP(VSETERM1) '
            DC C'TYPETERM(VSELU2G) '
            DC C'NETNAME(N0010004) '
            DC X'FFFFFFFF'
            DC C'DEFINE TERMINAL(N002) GROUP(VSETERM1) '
            DC C'TYPETERM(VSELU3A) '
            DC C'NETNAME(N0020004) '
            DC C'SPOOLPRTRSL(1) '
            DC C'OPERRSL(1) '
            DC X'FFFFFFFF'
   ```

   Figure 30. Example of DEFINE TERMINAL Instructions (Member NCPNEW71)

   As a result of the catalog job, the terminal definitions will be stored in the specified CSD group.

2. IPLPROC

IPLPROC contains a job step which catalogs the IPL procedure $IPLESA.PROC in the system library. Due to the above dialog, the IPL procedure will contain the statement

```
ADD 05A,3745,01
```

for the communication controller you just configured.

3. VTMMDL

   The job catalogs into the system library the VTAM book VTMMDL.B which contains a cross-reference from the AUTINST MODEL specification in the dialog to the name of the LU's model definition in the CSD. For the LUs the following entry in VTMMDL appears:

   ```
   VSELU2A  MDLENT MODEL=VSELU2A
   ```

   It indicates that for AUTINST MODEL 'VSELU2A' the name of the model definition is 'VSELU2A' (under z/VSE the names are identical).

Requesting the NCP generation job results in the creation of four library members:

- NCPNEW7J in your primary library

  For the content see Figure 31 on page 58.

  Job NCPNEW7J takes its input from members

  NCPNEW7
  NCPNEW7M
  NCPNEW7V

  They will be discussed after the following figure.

  Figure 31. Job NCPNEW7J for NCP Generation

```
* $$ JOB JNM=NCPNEW7J,DISP=D,PRI=3,
* $$ NTFY=YES,
* $$ LDEST=*,
* $$ CLASS=0
* $$ LST    DISP=D,CLASS=A
// JOB NCPNEW7J
* ********************************************************************
* THIS JOB ASSEMBLES AN NCP SOURCE PROGRAM CONTAINING NCP GENERATION
* MACRO INSTRUCTIONS BY USING NDF.
*
* THIS JOB ALSO CATALOGS THE NCP SOURCE PROGRAM FOR USE AS AN
* ACF/VTAM MAJOR NODE DEFINITION
* ********************************************************************
// LIBDEF *,SEARCH=(PRD2.COMM,PRD2.COMM2),TEMP
*
* THE SYSPCH FILE IS USED AS THE PUNCH CODE OUTPUT FILE BY NDF.
* IT WILL BE USED AS THE INPUT FILE FOR THE TABLE ASSEMBLIES.
*
// DLBL IJSYSPH,'TMP.FILE',0,SD
// EXTENT SYSPCH,SYSWK1,,,1,375
// ASSGN SYSPCH,DISK,PERM,VOL=SYSWK1,SHR
// DLBL IJSYSNW,'NEWDEFN',0001,SD
// EXTENT SYS001,SYSWK1,,,9075,60
// ASSGN SYS001,DISK,PERM,VOL=SYSWK1,SHR
*
* IF THE GENERATION FAILS BECAUSE THE VSAM WORK FILE DBWRKFL IS
* MISSING, YOU CAN USE SKELETON SKNCPWKF IN ICCF LIBRARY 59 TO
* CREATE THE WORK FILE.
*
// EXEC   ICNDNDF,SIZE=AUTO
* $$ SLI ICCF=(NCPNEW7),LIB=(51)
/*
// IF $RC GE 4 THEN
// GOTO CLSPCH
CLOSE SYSPCH,FED
* DEFINITION OF THE INPUT FILE FOR ALL 3 ASSEMBLIES
// DLBL IJSYSIN,'TMP.FILE'
// EXTENT SYSIPT
// ASSGN SYSIPT,DISK,PERM,VOL=SYSWK1,SHR
* DEFINITION OF THE PUNCH CODE OUTPUT FILE FOR ALL 3 ASSEMBLIES
```

```
*
// DLBL IJSYSPH,'TABLE.TEXT',0,SD
// EXTENT SYSPCH,SYSWK1,,,377,375
// ASSGN SYSPCH,DISK,PERM,VOL=SYSWK1,SHR
// OPTION DECK,SXREF
// EXEC ASMA90,PARM='RA2,SIZE(MAX,ABOVE),OP(XA)'
// IF $RC GE 4 THEN
// GOTO CLSBOTH
// EXEC ASMA90,PARM='RA2,SIZE(MAX,ABOVE),OP(XA)'
// IF $RC GE 4 THEN
// GOTO CLSBOTH
// EXEC ASMA90,PARM='RA2,SIZE(MAX,ABOVE),OP(XA)'
// IF $RC GE 4 THEN
// GOTO CLSBOTH
CLOSE SYSIPT,FEC
CLOSE SYSPCH,FED
* LIBRARIAN USED TO CATALOG THE TABLE.TEXT FILES INTO OBJ MEMBERS
*
* THE PUNCH CODE OUTPUT FILE FROM THE TABLE ASSEMBLIES SERVES AS A
* INPUT FILE FOR THE LIBRARIAN
// DLBL IJSYSIN,'TABLE.TEXT'
// EXTENT SYSIPT
// ASSGN SYSIPT,DISK,PERM,VOL=SYSWK1,SHR
// EXEC LIBR,PARM='ACC S=PRD2.COMM2'
// IF $RC GT 0 THEN
// GOTO CLSIPT
// LIBDEF PHASE,CATALOG=PRD2.COMM2
// OPTION CATAL
   ACTION MAP,NOAUTO
   INCLUDE INLINKED
// EXEC LNKEDT
CLOSE SYSIPT,FEC
// DLBL IJSYSIN,'NEWDEFN',0001,SD
// EXTENT SYSIPT,SYSWK1,,,9075,60
// ASSGN SYSIPT,DISK,PERM,VOL=SYSWK1,SHR
// EXEC LIBR,PARM='A S=PRD2.CONFIG;CATALOG NCPNEW7.B R=Y EOD=*?'
/*
// IF $RC GT 0 THEN
// GOTO CLSIPT
CLOSE SYSIPT,FEC
// EXEC LIBR
ACCESS S=PRD2.CONFIG
CATALOG NCPNEW7M.B    REPLACE = YES
* $$ SLI ICCF=(NCPNEW7M),LIB=(51)
/+
/*
// EXEC   LIBR
ACCESS SUBLIB=PRD2.CONFIG
CATALOG NCPNEW7V.B   REPLACE=YES
* $$ SLI ICCF=(NCPNEW7V),LIB=(51)
/+
/*
// GOTO $EOJ
/. CLSPCH
CLOSE SYSPCH,FED
// GOTO $EOJ
/. CLSBOTH
CLOSE SYSPCH,FED
/. CLSIPT
CLOSE SYSIPT,FEC
/&
* $$ EOJ
```

- NCPNEW7 in library 51

  This member contains macro specifications for NCP. Figure 32 on page 60 shows its content.
- NCPNEW7V in library 51

  This member contains VTAM macros defining the IBM 3650 at the swiched line. Figure 33 on page 63 shows its content.
- NCPNEW7M in library 51

  This member, too, contains VTAM macros. The macros define the devices at the token ring. Figure 34 on page 64 shows the content of NCPNEW7M.

Notice how the dialog has assigned resource names according to the 4-digit naming convention (which is described in Figure 70 on page 119).

To **activate** the new NCP, you either use VTAM operator commands. Or you add the NCPNEW7 members as VTAM major nodes to the *VTAM configuration list* ATCCONxx (see "Configuration List" on page 107); the new NCP will then be activated at the next startup of VTAM.

Figure 32. NCP Generation Member NCPNEW7

```
*************************************************************************
*                                                                       *
*        OPTIONS MACRO SPECIFICATION                                    *
*                                                                       *
*************************************************************************
*
         OPTIONS NEWDEFN=(YES,ECHO)
         EJECT
*************************************************************************
*                                                                       *
*        PCCU MACRO SPECIFICATION                                       *
*                                                                       *
*************************************************************************
*
         PCCU  CUADDR=05A,        3745-31A CONTROL UNIT ADDRESS        X
               MAXDATA=4000,      MAXIMUM DATA TRANSFER TO NCP         X
               AUTOIPL=NO,        DO NOT AUTOIPL AND RESTART           X
               SUBAREA=1,         SAME AS ACF/VTAM HOSTSA OPERAND      X
               NCPLUB=SYS005      UNIT CONTAINING NCP LOAD MODULE
         EJECT
*************************************************************************
*                                                                       *
*        BUILD MACRO SPECIFICATION                                      *
*                                                                       *
*************************************************************************
*
         BUILD BFRS=240,          NCP BUFFER SIZE                      X
               BRANCH=500,        BRANCH TRACE ENTRIES                 X
               CWALL=26,          MIN. BUFFERS BEFORE SLOWDOWN         X
               DR3270=YES,        DYNAMIC RECONFIG FOR SDLC 3270       X
               DSABLTO=11.5,      DISABLE TIMEOUT FOR DATA SET READY   X
               ENABLTO=11.5,      ENABLE TIMEOUT FOR DATA SET READY    X
               LTRACE=2,          ALLOW LINE TRACE                     X
               MAXSSCP=8,         MAXIMUM CONCURRENT SSCP-NCP SESSIONS X
               MAXSUBA=255,       THE MAXIMUM FOR SA NUMBERS (PRE-ENA) X
               SALIMIT=255,       THE MAXIMUM FOR SA NUMBERS (ESA*)    X
               MEMSIZE=4096,      3745-31A STORAGE SIZE IN K-BYTES     X
               USGTIER=5,         SCANNER RELATED FEATURE CODE         X
               MODEL=3745-31A,    MODEL FOR 3745-31A                   X
               NEWNAME=NCPNEW7,                                        X
               OLT=YES,           ONLINE TEST AVAILABLE                X
               PRTGEN=NOGEN,      SUPPRESS PRINTING OF MACRO GEN STMTS X
               SLODOWN=12,        SLOWDOWN WHEN 12% OF BUFFERS AVAIL   X
               SUBAREA=4,                                              X
               TRACE=(YES,64),    64 ADDRESS TRACE ENTRIES             X
               TRANSFR=,          MAX NCP BUFFER TRANSFER TO HOST      X
               TYPGEN=NCP,        CONTROLLER OPERATES CHANNEL ATTACHED X
               TYPSYS=DOS,        VSE/ESA IS A DOS BASED SYSTEM        X
               NETID=VTAM1,       NAME OF THE NETWORK                  X
               VERSION=V7R1       ACF/NCP VERSION V7R1 IS USED
         EJECT
*************************************************************************
*                                                                       *
*        SYSCNTRL MACRO SPECIFICATION                                   *
*                                                                       *
*************************************************************************
*
         SYSCNTRL OPTIONS=(BHSASSC,ENDCALL,MODE,RCNTRL,RCOND,RECMD,    X
               RIMM,NAKLIM,SESSION,SSPAUSE,XMTLMT,STORDSP,DLRID,RDEVQ)
*
        EJECT
*************************************************************************
*                                                                       *
*        HOST MACRO SPECIFICATION                                       *
*                                                                       *
*************************************************************************
*
         HOST  BFRPAD=15,         15 REQUIRED BY VSE VTAM              X
               INBFRS=3,          MINIMUM NCP BUFFER ALLOCATION        X
               MAXBFRU=15,        VTAM BUFFER UNIT ALLOCATION          X
```

```
               SUBAREA=(1),       ACF/VTAM SUBAREA ADDRESS             X
               UNITSZ=288         ACF/VTAM IO BUFFER SIZE (LFBUF)
         EJECT
*********************************************************************
*                                                                   *
*        DYNAMIC RECONFIGURATION POOL SPACE                         *
*        LUDRPOOL AND PUDRPOOL MACRO SPECIFICATIONS                 *
*                                                                   *
*********************************************************************
*
         LUDRPOOL NUMTYP1=1,      ALLOW 1 LU ON PU.T1 PU               X
               NUMTYP2=6   ALLOW 6 LUS ON PU.T2 PU
*
         PUDRPOOL NUMBER=2        CAN ADD 2 PUS
         EJECT
*********************************************************************
*                                                                   *
*        PATH MACRO SPECIFICATION                                   *
*                                                                   *
*********************************************************************
*
         PATH  DESTSA=(1),                                           X
               ER0=(1,1)
         EJECT
         EJECT
*********************************************************************
*                                                                   *
*        GROUP MACRO SPECIFICATION FOR SDLC LEASED LINES            *
*                                                                   *
*********************************************************************
*
GNCP0004 GROUP LNCTL=SDLC,DIAL=NO,TYPE=NCP  LEASED, NCP ONLY
         EJECT
*********************************************************************
*                                                                   *
*        LINE MACRO SPECIFICATION                                   *
*                                                                   *
*********************************************************************
*
L0200004 LINE  ADDRESS=020,       TRANSMIT AND RECEIVE ADDRESS        X
               CLOCKNG=INT,       DEFINE TIMING AND ATTACHMENT        X
               DATRATE=HIGH,                                          X
               DUPLEX=HALF,       MODEM STRAPPING IS HALF-DUPLEX      X
               ISTATUS=ACTIVE,    INITIAL STATUS IS ACTIVE            X
               NEWSYNC=NO,        CAN MODEM HANDLE NEW SYNC SIGNAL?   X
               NRZI=YES,          MODEM OPERATES IN NRZI MODE         X
               SPEED=1200,        DATA RATE FOR THIS LINE             X
               RETRIES=(5)        5 RETRIES PER RECOVERY SEQUENCE
*              SERVICE MACRO SPECIFICATION
         SERVICE ORDER=(CVLT0004)
          EJECT
*********************************************************************
*
*   3174-XXR PU AND LU SPECIFICATIONS
*
*********************************************************************
*
CVLT0004 PU    ADDR=C1,           PHYSICAL UNIT ADDRESS               X
               ANS=CONT,          CONTINUE POLLING AFTER LOSING SSCP  X
               DISCNT=(NO),       KEEP SSCP-PU AND SSCP-LU SESSIONS   X
               IRETRY=NO,         NO REPOLL AFTER IDLE DETECT TIMEOUT X
               ISTATUS=ACTIVE,    ACTIVATE WHEN MAJOR NODE ACTIVATED  X
               MAXDATA=265,       MAXIMUM DATA TRANSFER PU CAN ACCEPT X
               MAXOUT=7,          MAX PIU TRANSFER BEFORE RESPONSE    X
               PASSLIM=4,         MAX CONSECUTIVE DATA TRANSFERS      X
               PUTYPE=2,          PU TYPE 2                           X
               RETRIES=(,1,4),PACING=0,VPACING=0
*
N0010004 LU    LOCADDR=2,DLOGMOD=SP3273ES,LOGAPPL=DBDCCICS,           X
               ISTATUS=ACTIVE,MODETAB=IESINCLM,                       X
               SSCPFM=USSSCS,USSTAB=VTMUSSTR
N0020004 LU    LOCADDR=3,DLOGMOD=SPLU3PRT,LOGAPPL=DBDCCICS,           X
               ISTATUS=ACTIVE,MODETAB=IESINCLM,                       X
               SSCPFM=USSSCS
         EJECT
*********************************************************************
*                                                                   *
*        GROUP MACRO SPECIFICATION FOR SDLC SWITCHED LINES          *
*                                                                   *
*********************************************************************
*
HNCP0004 GROUP LNCTL=SDLC,DIAL=YES,TYPE=NCP  SWITCHED, NCP ONLY
```

```
         EJECT
*************************************************************************
*                                                                       *
*        LINE MACRO SPECIFICATION                                       *
*                                                                       *
*************************************************************************
*
L0220004 LINE  ADDRESS=022,       TRANSMIT AND RECEIVE ADDRESS         X
               CALL=IN,                                                X
               CLOCKNG=INT,       DEFINE TIMING AND ATTACHMENT         X
               DATRATE=HIGH,                                           X
               DUPLEX=HALF,       MODEM STRAPPING IS HALF-DUPLEX       X
               ISTATUS=ACTIVE,    INITIAL STATUS IS ACTIVE             X
               NEWSYNC=NO,        CAN MODEM HANDLE NEW SYNC SIGNAL?    X
               NRZI=YES,          MODEM OPERATES IN NRZI MODE          X
               SPEED=1200,        DATA RATE FOR THIS LINE              X
               RETRIES=(5)        5 RETRIES PER RECOVERY SEQUENCE
Z00Y0004 PU    ISTATUS=ACTIVE
         EJECT
*************************************************************************
*                                                                       *
*        PHYSICAL GROUP MACRO SPECIFICATION FOR TIC 1                   *
*                                                                       *
*************************************************************************
*
TG950004 GROUP ECLTYPE=PHYSICAL   PHYSICAL GROUP
         EJECT
*************************************************************************
*                                                                       *
*        LINE MACRO SPECIFICATION FOR TIC 1                             *
*                                                                       *
*************************************************************************
*
TI950004 LINE  ADDRESS=(1095,FULL), TICS ADDRESS IN 3745-31A           X
               PORTADD=1,          WHERE TH950004 POINTS TO            X
               ADAPTER=TIC1,       ADAPTER TYPE                        X
               TRSPEED=4,          DATA SPEED ON THE RING              X
               LOCADD=400012345678 'SOFT' ADDRESS FOR TIC
TP950004 PU
TL950004 LU    ISTATUS=INACTIVE
*************************************************************************
*                                                                       *
*        LOGICAL GROUP MACRO SPECIFICATION FOR TIC 1                    *
*                                                                       *
*************************************************************************
*
TH950004 GROUP ECLTYPE=LOGICAL,   LOGICAL GROUP                        X
               AUTOGEN=2,          AUTOGEN 2 LINES/PUS                 X
               CALL=INOUT,         ALLOW DIAL IN AND DIAL OUT          X
               PHYPORT=1           POINTS TO TIC (PORTADD)
         EJECT
*
*        GROUP MACRO SPECIFICATION FOR CAs (NEW STYLE GENs)
*
CAGROUP  GROUP LNCTL=CA,          THE FOLLOWING VALUES ARE FOR ALL CAS X
               DELAY=0.2,          CA ATT. DELAY                       X
               TIMEOUT=(120),      TIME, NCP WAITS FOR A RESPONSE      X
               NCPCA=ACTIVE,       STATUS OF THE CHANNEL ADAPTER       X
               CASDL=0,            INFINITE CA SLOW DOWN TIME          X
               ISTATUS=INACTIVE
CA005A   LINE  ADDRESS=0,                                              X
               CA=TYPE6
CP005A   PU    PUTYPE=5
CA105A   LINE  ADDRESS=1,                                              X
               CA=TYPE6
CP105A   PU    PUTYPE=5
CA205A   LINE  ADDRESS=2,                                              X
               CA=TYPE6
CP205A   PU    PUTYPE=5
CA305A   LINE  ADDRESS=3,                                              X
               CA=TYPE6
CP305A   PU    PUTYPE=5
CA805A   LINE  ADDRESS=8,                                              X
               CA=TYPE6
CP805A   PU    PUTYPE=5
CA905A   LINE  ADDRESS=9,                                              X
               CA=TYPE6
CP905A   PU    PUTYPE=5
CA1005A  LINE  ADDRESS=10,                                             X
               CA=TYPE6
CP1005A  PU    PUTYPE=5
CA1105A  LINE  ADDRESS=11,                                             X
```

```
               CA=TYPE6
CP1105A  PU    PUTYPE=5
*
*********************************************************************
*        GENEND DELIMITER                                           *
*********************************************************************
*
         GENEND
*?
         END
```

```
NCPNEW7V VBUILD TYPE=SWNET
*
*********************************************************************
*   3650 PU AND LU SPECIFICATIONS
*********************************************************************
*
CSG10004 PU    ADDR=D1,VPACING=3,                                    X
               IDBLK=004,IDNUM=0C1F7,MAXPATH=256,PACING=0,           X
               PUTYPE=2,MAXDATA=265
*
N0030004 LU    LOCADDR=118,DLOGMOD=SP32702S,                         X
               ISTATUS=ACTIVE,MODETAB=IESINCLM,                      X
               MDLTAB=VTMMDL,                                        X
               MDLENT=VSELU2A,                                       X
               SSCPFM=USSSCS,USSTAB=VTMUSSTR
N0040004 LU    LOCADDR=119,DLOGMOD=SP32702S,                         X
               ISTATUS=ACTIVE,MODETAB=IESINCLM,                      X
               MDLTAB=VTMMDL,                                        X
               MDLENT=VSELU2A,                                       X
               SSCPFM=USSSCS,USSTAB=VTMUSSTR
```

Figure 33. Member NCPNEW7V - VTAM Definitions for IBM 3650

```
NCPNEW7M VBUILD TYPE=SWNET,                                            X
               MAXGRP=1,          NUMBER OF UNIQUE PATH GROUPS         X
               MAXNO=1            NUMBER OF UNIQUE TELEPHONE NUMBERS
*
*********************************************************************
*   PC PU, PATH AND LU SPECIFICATIONS
*********************************************************************
*
CSG20004 PU    ADDR=C1,VPACING=0,                                      X
               MAXPATH=256,PACING=0,                                   X
               CPNAME=CPTRPS2,PUTYPE=2,MAXDATA=265
*
N0050004 LU    LOCADDR=2,DLOGMOD=SP3272ES,                             X
               ISTATUS=ACTIVE,MODETAB=IESINCLM,                        X
               MDLTAB=VTMMDL,                                          X
               MDLENT=VSELU2E,                                         X
               SSCPFM=USSSCS,USSTAB=VTMUSSTR
N0060004 LU    LOCADDR=3,DLOGMOD=SP3272ES,                             X
               ISTATUS=ACTIVE,MODETAB=IESINCLM,                        X
               MDLTAB=VTMMDL,                                          X
               MDLENT=VSELU2E,                                         X
               SSCPFM=USSSCS,USSTAB=VTMUSSTR
*
*********************************************************************
*   3174-XXR PU, PATH AND LU SPECIFICATIONS
*********************************************************************
*
CSG30004 PU    ADDR=C1,VPACING=0,                                      X
               IDBLK=017,IDNUM=D2E30,MAXPATH=256,PACING=0,             X
               PUTYPE=2,MAXDATA=265
*                                                                     *
         PATH  DIALNO=0104400044445555, UNIQUE TELEPHONE NUMBER        X
               GRPNM=TH950004,    CONNECTION TO LOGICAL GROUP          X
               GID=1,             IDENTIFIES A GROUP OF PATHS          X
               PID=1              IDENTIFIES THE PATH
*
*
N0070004 LU    LOCADDR=2,DLOGMOD=SP3272ES,                             X
               ISTATUS=ACTIVE,MODETAB=IESINCLM,                        X
               MDLTAB=VTMMDL,                                          X
               MDLENT=VSELU2E,                                         X
               SSCPFM=USSSCS,USSTAB=VTMUSSTR
N0080004 LU    LOCADDR=3,DLOGMOD=SP3273ES,                             X
               ISTATUS=ACTIVE,MODETAB=IESINCLM,                        X
               MDLTAB=VTMMDL,                                          X
               MDLENT=VSELU2G,                                         X
               SSCPFM=USSSCS,USSTAB=VTMUSSTR
```

Figure 34. Member NCPNEW7M - VTAM Definitions for NTRI-Attached Devices

Chapter 6. Deleting a Communications Device

This chapter describes how you can delete a device that you defined previously.

At almost every stage of the Hardware Configuration dialog, you can perform this action. For example, in the

- *Hardware Configuration: Logical Unit List* panel,

  you can delete a logical unit. Select option **5**=DELETE AN LU; in the
- *Hardware Configuration: Physical Unit List* panel,

  you can delete a physical unit. Select option **5**=DELETE PHYSICAL UNIT; in the
- *Hardware Configuration: Unit Address List* panel,

  you can delete an I/O address. Select option **5**=DELETE A DEVICE.

As **a general rule**, deleting one object causes all attached subordinate objects to be deleted as well. For example, deletion of a link definition results in the deletion of all attached physical units and logical units. Or, deletion of an I/O address deletes links plus physical units plus logical units.

Three **exceptions** must be observed:

1. After you deleted an X.25 packet-switched object, all subordinate objects **will be** deleted. Therefore, you would no longer be able to activate them with VTAM. However, the associated source books (VTMXPU and PORxxxxx) remain in the system. They won't do any harm. But if you decide to remove them, you must delete the **two copies** that exist: (1) in VSE/ICCF library 51, (2) in library PRD2.CONFIG.
2. Similarly, source books for NCP major nodes remain in the system after you have deleted the communication controller I/O address, or an NCP link, PU or LU, **until you regenerate your NCP**.
3. Deletion of a **switched link** does not delete the attached physical units or logical units. There is still the possibility that these units dial into the system via another switched link.

Please observe the following restriction with regard to

VSE/POWER and VSE/ICCF Dummy Devices:

You cannot change or delete the following VSE/POWER and VSE/ICCF dummy devices: FDF, FEC, FFA, FFC.

You can change but not delete the following VSE/POWER and VSE/ICCF dummy devices: FED, FEE, FEF, FFD, FFE.

Note: Because the CICS Transaction Server uses Language Environment® (LE) I/O routines, not all device types are supported. *Your CICS system might not start if a non-supported device is used!.* For a list of supported devices, refer to the members CEEYPR0.A and CEEYCD0.A contained in the library IJSYSRS.SYSLIB.

You cannot change nor delete the dummy device FFF which is a place holder for a dedicated system console.

Chapter 7. Configuring IBM Workstations

This chapter describes how you configure IBM workstations to VTAM. It contains these main topics:

Introduction

IBM workstations are supported by the *Configure Hardware* dialog in various ways, depending on their type and use:

- Standalone
- Workstation Gateway
- IBM DBCS Workstation (the IBM 5550 for example)
- Workstation with APPC
- 3270 display station.

The first four varieties essentially act as **physical units** and often include the **logical unit** function too. That's why you encounter them in the context of physical unit selection. See Figure 15 on page 35 and Figure 16 on page 36.

The last type within the above group acts solely as **logical unit**. You find it, therefore, in the panel for selecting the logical unit device.

z/VSE supports any workstation as a 3270 display station, provided the workstation supports 3270 terminal emulation via a suitable adapter and the corresponding emulation control program. Such a workstation is connected and defined to VTAM like a normal 3270 display station: as a local or as a remote workstation (SNA or non-SNA).

For information about required emulation adapter cards and possible host connections, refer to the appropriate workstation and emulation program documentation, or contact your IBM marketing representative.

The *Configure Hardware* dialog helps you in defining an IBM workstation.

For an IBM workstation with more than one host session, each session must be defined to z/VSE as a separate device (in case of a non-SNA attachment), or as a separate logical unit (in case of an SNA attachment).

When defining a workstation to z/VSE you must know whether it operates in **DFT** (distributed function terminal) mode or in **CUT** (Control Unit Terminal) mode as explained below. If you do not know or cannot find out, assume that your workstation operates in DFT mode.

Defining a Workstation Operating in DFT Mode

For workstations operating in **DFT** mode, the Extended Data Stream (EXTDS) feature must be specified for each device associated with a host session. For the VSE Workstation File Transfer support to work, the workstation needs the EXTDS feature and therefore the DFT mode specification.

Examples of workstations operating in DFT mode are:

- IBM 3270 workstation if customized for DFT mode
- All IBM 5550/3270 workstations
- All workstations working with the IBM workstation 3270 Emulation Program
- All workstations working with the IBM Personal Communication/3270 Program

- All workstations working with the IBM OS/2 Extended Edition Communication Manager (unless customized for ASCII mode).

Following is a **selection of attachments** for IBM workstations operating in DFT mode for any model of an IBM 3174/3274 control unit that supports extended data streams. For such a control unit, special configuration is required. For information about this support, refer to the appropriate publication of your IBM workstation.

Local Attachments:

Any model of an IBM 3174/3274 control unit that supports extended data streams. For such a control unit, special configuration is required. For details, refer to the appropriate publication for your IBM workstation.

SDLC Attachments:

IBM workstations operating in SDLC mode (that is, as a remote device) are defined to z/VSE like an IBM 3274-51C or 3274-61C control unit with one or more display stations. In this case you would pass through the *Hardware Configuration: Display/Printer CU* panel and select options 10 or 11 for the physical unit. Please see Figure 15 on page 35.

To define a workstation in DFT mode, specify at the logical unit level the DEVICE NAME (or select from the *Selection List: Devices*):

```
24X80Q
```

Defining a Workstation Operating in CUT Mode

Workstations operating in **CUT** mode do not require the EXTDS feature. Examples of workstations operating in CUT mode are:

- IBM 3270 workstation if customized for CUT mode
- All workstations working with the IBM workstation 3270 Emulation Program, Entry Level
- All workstations working with the IBM Workstation/Host File Transfer and Emulation Program
- All workstations working with the IBM OS/2 Extended Edition Communication Manager if customized for ASCII mode.

This chapter describes a **selection of attachments** for IBM workstations operating in CUT mode for any model of an IBM 3174/3274 control unit. No special configuration support is required for such a control unit.

To define a workstation in CUT mode, specify at the logical unit level the DEVICE NAME (or select from the *Selection List: Devices*):

```
24X80, 32X80, ...
```

Be sure that **this definition** agrees with how you **configured your workstation**.

ASCII Attachments:

IBM workstations operating in ASCII emulation mode are treated like 3278-2 display stations. IBM workstations of this type can be attached to the IBM 3174 control unit with the ASCII Emulation Adapter.

Chapter 8. Defining Remote NCP-Controlled Non-SNA Devices

This chapter describes how you configure **remote NCP-controlled** non-SNA devices. **Local** non-SNA devices have been discussed in Chapter 4, “Configuring a Communications Device,” on page 19.

Remote NCP-controlled non-SNA devices connect to the host via BSC lines. There are no z/VSE dialogs to support their configuration.

z/VSE does not provide any dialogs to configure non-SNA NCP-attached devices. You have to do this manually, that is, code a set of NCP macros structured like so:

```
GROUP LNCTL=BSC,

LINE

SERVICE ORDER

CLUSTER CUTYPE

TERMINAL

TERMINAL

TERMINAL
...
```

You insert this into the remainder of your NCP definitions, **prior to the SDLC** part (if there is any).

If you configured other NCP-attached (SNA) devices, most likely by using the z/VSE dialogs, you have already a working structure of an NCP. It is then fairly easy to add the non-SNA part. But if all your NCP-attached devices are non-SNA, you must, of course, code the **entire** NCP yourself.

For any detailed information refer to the publications of NCP.

Chapter 9. Configuring a Cross-Domain Network

This chapter describes the steps that are necessary to define a cross-domain network. It contains these main topics:

Introduction

A network that is made up of two or more single domains is called a cross-domain network or *multiple-domain* network. In a cross-domain network, single domains (or processors, or *System Services Control Points*) are interconnected.

Defining the cross-domain network consists of the following steps:

1. Copy the network definition skeleton to your primary library
2. Gather information about your network
3. Fill out the network skeleton
4. Create the network tape
5. Install the network tape
6. Change VTAM startup options
7. Change VTAM application names
8. Change application ID in the SIT of the CICS Transaction Server
9. Generate VSE/POWER
10. Update the VSE/POWER startup procedure

Each step will be explained in more detail in the topics that follow.

Related Topics:

- Chapter 10, "Filling Out a Cross-Domain Network Skeleton," on page 77
- Chapter 11, "Example of a Cross-Domain NCP Configuration," on page 91

Copying SKDTRNET to the Primary Library

Use, in *command mode*, the VSE/ICCF command LIBRP to "punch" SKDTRNET.B from the system sublibrary IJSYSRS.SYSLIB to your primary library as member SKDTRNET:

```
librp ijsysrs.syslib skdtrnet.b skdtrnet
```

This copy operation causes three VSE JCL statements to be included. Close to the top of the member:

```
'CATALOG SKDTRNET.B   EOD=xx     REPLACE=YES'
```

Close to the bottom of the member:

```
'xx'
'/*'
```

(where '**xx**' is any 2-character EOD delimiter).

Edit the member to delete these statements.

Gathering Network Information

You should determine, ahead of time, all the information required for the definition of the cross-domain network. This includes:

- System IDs (nodenames)
- cross-domain lines
- cross-domain terminals (terminals that can access the other domain)
- cross-domain resource manager

Take into account the z/VSE naming conventions; see Appendix A, “Naming Convention,” on page 119.

Completing the Network Skeleton

This subject will be discussed in a separate chapter. See Chapter 10, “Filling Out a Cross-Domain Network Skeleton,” on page 77. Using a simple example of a cross-domain network, you will learn how to fill out each part of the skeleton.

The structure of the network skeleton is specifically geared toward

- TRA to TRA
- CTCA.

connections.

An example for an NCP-to-NCP definition is also shown, this one of course created without using a network skeleton. See Chapter 11, “Example of a Cross-Domain NCP Configuration,” on page 91.

Changing VTAM Startup Options

Prior to setting your cross-domain network into operation, a VTAM startup option must be adjusted:

HOSTSA - the **host** subarea number (a decimal number) of **this** domain.

After you installed the network tape (see the preceding section), library 59 has a member DTR$NET. This member contains instructions for the administrator. These instructions include the value that you should use for HOSTSA.

A z/VSE dialog helps you change the VTAM startup options.

Starting with the *z/VSE Function Selection* panel, select:

2 (Resource Definition)
6 (Maintain VTAM Startup Options)

After you enter the options, a new list of startup options is stored in library 51. Also, the dialog builds a job to catalog the new options list as member ATCSTR00.B in library PRD2.CONFIG. See also Figure 65 on page 106 for the default startup options list ATCSTR00.B.

The VTAM resource names ("netname") of cross-domain systems initially created by the dialogs **may** be identical. Duplicate netnames must be avoided at all cost.

When you use the above dialog to change the HOSTSA value, you get prompted for *automatic renaming* of VTAM resources. A reply of **1** (=yes) replaces the default **host** subarea in the VTAM netname by the new subarea value. This would establish uniqueness of resource names.

Note: Do not opt for automatic renaming if you had deviated from the Hardware Configuration dialog's naming conventions (see Appendix A, “Naming Convention,” on page 119). Automatic renaming could interfere with your own naming scheme by overriding the right-most positions of the netname which contain the subarea number.

Supplying VTAM Application Names

As explained in the preceding section, the resource names of cross-domain systems initially created by the dialogs **may** be identical. To avoid duplicate names, change resource names as needed.

A z/VSE dialog helps you change VTAM application names.

Starting with the *z/VSE Function Selection* panel, select:

2 (Resource Definition)
5 (Maintain VTAM Application Names)

After you enter the application names, a job is created which catalogs member VTMAPPL.B in library PRD2.CONFIG. See also Figure 67 on page 108 for the default application program major node VTMAPPL.B.

Changing Application-ID in the SIT

Now that you have defined unique application names, you must update the System Initialization Table (SIT) of each affected domain.

As an example, you may have created an entry in VTMAPPL.B

```
VSE1CICS APPL  AUTH=(PASS,ACQ),ACBNAME=...,...
```

The SIT still carries the default specification

```
APPLID=DBDCCICS
```

Edit member DFHSITSP in library 59 to say:

```
APPLID=VSE1CICS
```

Request a compile-and-catalog run to create an updated member DFHSITSP.PHASE in library PRD2.CONFIG.

Also, change the SIT parameter in the CICS startup job accordingly.

Note: If you change the APPLID in the SIT and are also using *prefixing* for security (i.e. SECPRFX=YES), you must define a corresponding Userid in the Control File. You can use DBDCCICS as a model.

Generating VSE/POWER

Copy member SKPWRGEN from library 59 into your primary library and change the following parameters:

- Label in POWER macro

  This provides a unique name for the VSE/POWER phase. You will have to specify the same name in the POWSTRTn procedure; see the following section.

- SNA

  Insert SNA=YES,

- PNET

Insert PNET=phasename of the Network Definition Table.

Member DTR$NET in library 59 instructs you which name to use.

Submit the job POWERGEN which makes up the contents of SKPWRGEN (in library 59). The job catalogs an updated VSE/POWER phase.

Updating the VSE/POWER Startup Procedure

Change two parameters in the VSE/POWER startup procedure. Skeleton SKPWSTRT in library 59 provides a job which catalogs the VSE/POWER startup procedure.

Note that the skeleton as supplied to you by IBM contains the statement

```
CATALOG POWSTRTn.PROC
```

where 'n' stands for the environment (A, B, or C) that you selected during initial installation.

You are expected to *tailor* the procedure name to your particular startup. For details see the section "Skeletons for Starting Up VSE/POWER" in the z/VSE Administration.

The two parameters in skeleton SKPWSTRT to be changed are:

- VSE/POWER phasename

  Replace 'IPWPOWER' in the statements

  ```
  // EXEC IPWPOWER
  ```

  by the new VSE/POWER phasename. This is the label in the POWER macro; see the preceding section.
- Name of VSE/POWER Network Definition Table

  Specify in the statement

  ```
  SET PNET=
  ```

  the name of the Network Definition Table. Member DTR$NET in library 59 instructs you which name to use.

Cross-Domain Partners of a z/VSE Domain

A z/VSE system as part of a cross-domain network can be connected to

- Another z/VSE system
- A z/OS system.

A connection between a z/VSE domain and a VM system via a Remote Spooling and Communication Subsystem (RSCS) is not considered an SNA cross-domain network.

From a practical-use point of view, the z/VSE domain can be a partner in a peer-to-peer connection, or a subordinate to a host (z/OS for example). But the particular practical application has no bearing on the way you define the network.

The Network Definition

The z/VSE Interactive Interface has no dialogs for the configuration of cross-domain networks. Instead, z/VSE as delivered to you contains a *network skeleton*. The network skeleton defines

- VTAM books
- the VSE/POWER PNET network definition table (NDT)
- some special VSE/ICCF members.

The skeleton's definitions are only valid for **subarea networks**. The following chapter, Chapter 12, “Example of Connecting Two z/VSE Hosts in an APPN Network,” on page 97, gives some hints about connecting two z/VSE systems in an APPN network.

In a cross-domain network, a domain may need to use resources that belong to another domain. These resources must then be known (*defined*) not only in the domain to which they belong but also in the domain that uses them "from the outside." This is what the network skeleton achieves, among other things.

The network skeleton accommodates the following connections:

1. From one **TRA** (IBM Token-Ring Adapter) to another.
2. **CTCA** (channel-to-channel adapter).

The network skeleton does not support an NCP cross-domain connection.

Chapter 10. Filling Out a Cross-Domain Network Skeleton

This chapter describes how you should fill out the network skeleton SKDTRNET for a cross-domain network.

The network skeleton is a member of the system sublibrary IJSYSRS.SYSLIB. Remember that, before entering information of your own, you should have copied the skeleton into your primary library as described in "Copying SKDTRNET to the Primary Library" on page 71.

This chapter contains these main topics:

Related Topics:

- Chapter 9, "Configuring a Cross-Domain Network," on page 71
- Chapter 11, "Example of a Cross-Domain NCP Configuration," on page 91

The Example Cross-Domain Network Configuration

An example configuration helps to become familiar with the network skeleton. The configuration is depicted in the following figure.

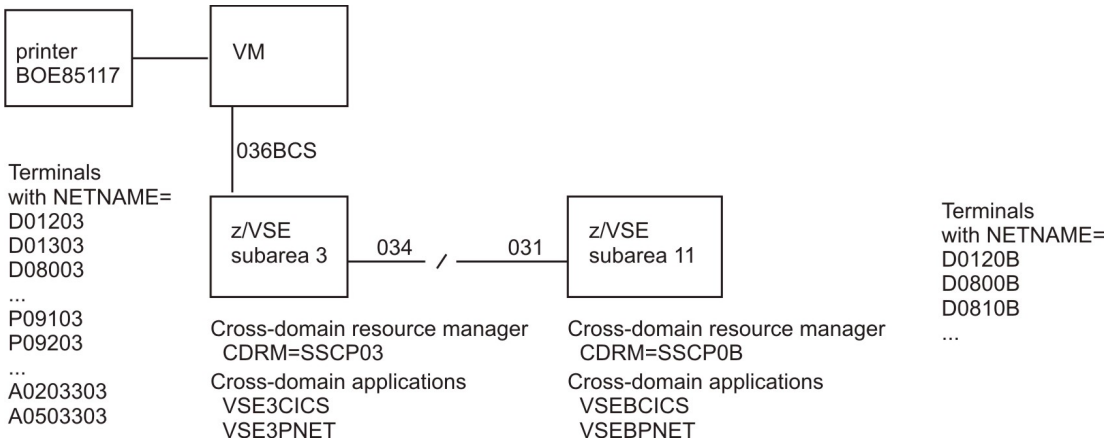

Figure 35. Example Configuration of a Cross-Domain Network

Figure 35 on page 77 contains all the information (parameters) that you need to fill out the network skeletons **for both domains**.

The connection from subarea 3 to VM is a BSC connection, not a true SNA network connection. It is shown only because VSE/POWER PNET definitions will combine definitions for both types of connections. See section 'PNET1' in the network skeleton.

The Structure of the Network Skeleton

The network skeleton is divided into various sections. Each section is identified by a 3 to 6-character term, such as VTAM3 or SP3.

The first group provides **VTAM** definitions.

VTAM1
Cross-domain switched major node for SDLC lines.

VTAM2
Cross-domain connection via a Channel-to-channel adapter (CTCA)

VTAM3
Cross-domain path table

VTAM4
Cross-domain resource managers

VTAM5
Cross-domain resources

VTAM6
Application logon commands

VTAM7
Application selection menu

VTAM8
System Activation of commands and messages

The second group is for **CICS definitions**.

CICS1
Terminal Entries for X-Domain Logon

CICS2
ISC Terminal Control entries

The third group is for **VSE/POWER PNET**.

PNET1
VSE/POWER network definition table (NDT)

The fourth group contains information for **z/VSE**.

SP1
Online information for the system administrator (member DTR$NET)

SP2
List of PNET nodes (member PNT$NODE)

SP3
PNET node-related JCL information and references to other JCL in section SP4 for file transfer/receive (member PNT$JCLT)

SP4
PNET node-related JCL for file transfer/receive

Filling out the Individual Sections

This section describes the individual sections of the network skeleton. Whenever applicable, parameters from the example configuration will be used for illustration.

Note: In the following figures, the values you supply are shown twice: once within the definition statements (mandatory) and again inside the 'L E G E N D' (optional, shown only in this publication for clarity).

The example values refer to the first z/VSE domain (subarea 03). But remember that a second skeleton has to be completed for the other domain, with the parameters adjusted accordingly.

VTAM1 Cross-domain switched major node for SDLC Lines

```
ACCESS SUBLIB=PRD2.CONFIG
 /* --------------------------- BEGIN OF NETWORK DEFINITION SKELETON -
                                                                      -
    VTAM DEFINITIONS                                                  -
                                                                      -
   ---VTAM1-------------- X-DOMAIN SWITCHED MAJOR NODE FOR SDLC LINES */
CATALOG VTMCA4.B REPLACE=YES
*
VTMCA4   VBUILD TYPE=SWNET,MAXNO=--VT01--,MAXGRP=--VT02--
--VT03-- PU    PUTYPE=5,SUBAREA=--VT04--,DISCNT=YES,                 *
               ADDR=C1,IDNUM=--VT05--,MAXPATH=--VT06--
--VT07-- PATH  DIALNO=--VT08--,GRPNM=--VT09--
*
/+
 /* L E G E N D                                                      -
    --VT01-- :   NUMBER OF UNIQUE PHONE# DEFINED IN PATH STATEMENTS   -
    --VT02-- :   NUMBER OF GROUPS DEFINED IN THE VTAM CA MAJOR NODE   -
    --VT03-- :   MINOR NODE NAME OF THE PHYSICAL UNIT                 -
    --VT04-- :   SNA SUBAREA NUMBER OF ATTACHED PHYSICAL UNIT         -
    --VT05-- :   20BIT IDENTIFICATION NUMBER (STATIONS)               -
                 IT IS USED TO CORRELATE THE PU DEFINITIONS BETWEEN   -
                 THE TWO SSCPS THAT OWN EACH END OF THE SWITCHED      -
                 LINE, THE SAME IDNUM MUST BE SPECIFIED ON THE        -
                 PU DEFINITIONS FOR BOTH LINK STATIONS. IT MUST BE    -
                 UNIQUE FOR ALL PU DEFINITIONS WITHIN AN SSCP.        -
    --VT06-- :   MAXIMAL NUMBER OF PATH STATEMENTS                    -
    --VT07-- :   MINOR NODE NAME OF THE PATH                          -
    --VT08-- :   PHONE# USED TO INITIATE A CONNECTION OVER A SWITCHED -
                 LINK WITH A PHYSICAL UNIT                            -
    --VT09-- :   MINOR NODE NAME OF THE GROUP WHERE THE LINK IS       -
                 DEFINED.                                             -
                 THIS NAME MUST MATCH THE GROUP NAME --V111-- IN      -
                 YOUR SDLC MAJOR NODE VTMCA2.                         -
                                                                      -
    N O T E  :   PLACE AN * IN FRONT OF THE VBUILD, PATH AND          -
                 PU STATEMENTS WHEN THE VSE SYSTEM CONFIGURATION      -
                 HAS NO TELECOMMUNCATION SUBSYSTEM CONTROLLER OR      -
                 FLAG THOSE PARTS WHICH ARE NOT USED.                 -
                 DO NOT DELETE THIS PART OF THE NETWORK DEFINITION.   -
                                                                      -

-
```

Figure 36. Inactive Section of Network Skeleton - Example

VTAM2 - Cross-Domain Line Connections via a CTCA

Because, in the example under consideration, the two domains are connected over a (leased) SDLC line, not over a channel-to-channel adapter (CTCA), this section of the skeleton has no entries. The definition statements are "deactivated" by asterisks.

```
    --VTAM2------------------- X-DOMAIN LINE CONNECTIONS VIA AN CTCA */
CATALOG VTMCTCA.B REPLACE=YES
*
*VTMCTCA VBUILD    TYPE=CA
*-V201-- GROUP     ISTATUS=ACTIVE,LNCTL=CTCA
*-V202-- LINE      ADDRESS=--V203--,MAXBFRU=10
*-V204-- PU
*
/+
 /* L E G E N D                                                      -
    --V201-- :   MINOR NODE NAME OF THE LINE GROUP                    -
    --V202-- :   MINOR NODE NAME OF THE COMMUNICATION LINE            -
    --V203-- :   PHYSICAL LINE ADDRESS                                -
    --V204-- :   MINOR NODE NAME OF THE PHYSICAL UNIT                 -
                                                                      -
    N O T E  :   PLACE AN * IN FRONT OF THE VBUILD, GROUP, LINE AND   -
                 PU STATEMENTS WHEN THE VSE/ESA SYSTEM CONFIGURATION  -
                 HAS NO CHANNEL TO CHANNEL ADAPTER (CTCA).            -
                 DO NOT DELETE THIS PART OF THE NETWORK DEFINITION.   -
                                                                      -
                                                                      -
```

Figure 37. Cross-Domain CTCA Connections

VTAM3 - Cross-Domain Path Table

Because the example is for a two-domain network, you need only one path definition. If more than one domain were connected, you would have to duplicate the PATH statement for each adjacent subarea. The name VTMPATH goes only with the first PATH statement. Leave the name field of any other PATH statement blank.

```
   ---VTAM3------------------------------------ X-DOMAIN PATH TABLE */
CATALOG VTMPATH.B REPLACE=YES
*
VTMPATH   PATH DESTSA=11,                                             *
               ER0=(11,1),                                            *
               VR0=0
*
/+
 /* L E G E N D                                                      -
    --V301-- :   SNA SUBAREA NUMBER OF DESTINATION-NODE 1            -
    11                                                               -
    --V302-- :   SNA SUBAREA NUMBER OF DESTINATION-NODE 2            -
    ...      :   SNA SUBAREA NUMBER OF DESTINATION-NODE ...          -
    --V303-- :   SNA SUBAREA NUMBER OF ADJACENT PASS-THRU NODE       -
    11                                                               -
    --V304-- :   SNA TRANSMISSION GROUP NUMBER FOR THE EXPLICIT      -
    1                      ROUTE BEING DEFINED                       -
    --V305-- :   SNA EXPLICIT ROUTE NUMBER TO WHICH THE VIRTUAL      -
    0                      ROUTE IS MAPPED                           -
                                                                     -
                                                                     -
```

Figure 38. Cross-Domain Path Table

VTAM4 - Cross-Domain Resource Managers

Specify the resource manager for this domain **first** (SSCP03). Then specify the CDRM statements for the other domains.

Because the example is for a two-domain network, you need only two CDRM statements. If more than two domains were connected, you would have to duplicate the CDRM statement for each additional domain.

The specifications concerning **dynamic** cross-domain resource definition (parameters CDRDYN and CDRSC) are preset by the skeleton. If you ever change these specifications, make sure that the new values are consistent with the specifications at the other node.

```
   ----VTAM4------------------------------ X-DOMAIN RESOURCE MANAGER */
CATALOG VTMCDRM.B REPLACE=YES
*
VTMCDRM  VBUILD TYPE=CDRM
SSCP03   CDRM  SUBAREA=3,CDRDYN=YES,                                    *
               ISTATUS=ACTIVE,VPACING=0
SSCP0B   CDRM  SUBAREA=11,CDRSC=OPT,                                    *
               ISTATUS=ACTIVE,VPACING=0
*
/+
 /* L E G E N D                                                         -
    --V401-- :   NAME OF OWN SNA CROSS-DOMAIN MANAGER                   -
    SSCP03       NOTE: IT IS RECOMMENDED THAT THIS NAME MATCHES THE     -
                 NAME SPECIFIED UNDER 'SSCPNAME=' IN THE VTAM START     -
                 LIST. THE VSE/ESA NAMING CONVENTION IS                 -
                 'SSCPNAME=SSCPXXXX'                                    -
                 WHERE 'XXXX' STANDS FOR THE HEXADECIMAL SUBAREA        -
                 NUMBER OF THE HOST DOMAIN.                             -
    --V402-- :   SNA SUBAREA NUMBER OF OWN DOMAIN                       -
    3                                                                   -
    --V403-- :   NAME OF INTERCONNECTED SNA CROSS-DOMAIN MANAGER        -
    SSCP0B       NOTE: IT IS RECOMMENDED THAT THIS NAME MATCHES THE     -
                 NAME SPECIFIED UNDER 'SSCPNAME=' IN THE VTAM START     -
                 LIST. THE VSE/ESA NAMING CONVENTION IS                 -
                 'SSCPNAME=SSCPXXXX'                                    -
                 WHERE 'XXXX' STANDS FOR THE HEXADECIMAL SUBAREA        -
                 NUMBER OF THE INTERCONNECTED DOMAIN.                   -
    --V404-- :   SNA SUBAREA NUMBER OF INTERCONNECTED DOMAIN            -
    11                                                                  -
                                                                        -
```

Figure 39. Cross-Domain Resource Managers

VTAM5 - Cross-Domain Resources

This section of the skeleton defines minor nodes for **resources in other domains** with which an application or logical unit in this domain can have a session.

In the example here, the two applications in subarea 11 (VSEBCICS and VSEBPNET) are accessible from this domain. Specify these resource names in the leftmost portion of the CDRSC statements. In addition, specify in the CDRM parameter the name of the cross-domain resource manager in the other domain (SSCP0B).

Note: The skeleton's definitions allow for *dynamic resource definition* (CDRDYN=YES and CDRSC=OPT in VTAM4 on the preceding page). Therefore, the terminals in the other domain are **not represented** by CDRSC statements in the VTAM5 section.

```
   ----VTAM5------------------------------------ X-DOMAIN RESOURCES */
CATALOG VTMCDRS.B REPLACE=YES
*
VTMCDRS   VBUILD    TYPE=CDRSC
VSEBCICS  CDRSC     CDRM=SSCP0B
VSEBPNET  CDRSC     CDRM=SSCP0B
*
/+                                                                      -
 /* L E G E N D                                                        -
    --V501-- :   LU NAME OF RESOURCE IN ANOTHER DOMAIN                  -
    VSEBCICS , VSEBPNET                                                 -
    --V502-- :   NAME OF THE CDRM CONTROLLING THAT RESOURCE             -
    SSCP0B                                                              -
                                                                        -
                                                                        -
```

Figure 40. Cross-Domain Resources

VTAM6 - Application Logon Commands

This section of the skeleton has definitions of applications to which you can log on from this domain. In the example, these are the two CICS Transaction Server subsystems, one in each domain.

The other domain would have an identical definition.

Note that the application which resides in the other domain (VSEBCICS) is represented in the skeleton's VTAM5 section as a cross-domain resource. The following three sections, VTAM6 through VTAM13, are largely identical to skeleton SKVTMUSS in VSE/ICCF library 59.

```
   ----VTAM6---------------------------- APPLICATION LOGON COMMANDS */
CATALOG  VTMUSSCD.A   REPLACE=YES
*
A        USSCMD  CMD=A,REP=LOGON,FORMAT=BAL
         USSPARM PARM=P1,REP=APPLID,DEFAULT=VSE3CICS
         USSPARM PARM=P2,REP=DATA
*
B        USSCMD  CMD=B,REP=LOGON,FORMAT=BAL
         USSPARM PARM=P1,REP=APPLID,DEFAULT=VSEBCICS
         USSPARM PARM=P2,REP=DATA
*
* C        USSCMD  CMD=C,REP=LOGON,FORMAT=BAL
*          USSPARM PARM=P1,REP=APPLID,DEFAULT=--V603--
*          USSPARM PARM=P2,REP=DATA
* *
* D        USSCMD  CMD=D,REP=LOGON,FORMAT=BAL
*          USSPARM PARM=P1,REP=APPLID,DEFAULT=--V604--
*          USSPARM PARM=P2,REP=DATA
* *
* E        USSCMD  CMD=E,REP=LOGON,FORMAT=BAL
*          USSPARM PARM=P1,REP=APPLID,DEFAULT=--V605--
*          USSPARM PARM=P2,REP=DATA
* *
* F        USSCMD  CMD=F,REP=LOGON,FORMAT=BAL
*          USSPARM PARM=P1,REP=APPLID,DEFAULT=--V606--
*          USSPARM PARM=P2,REP=DATA
* *
/+
 /* L E G E N D                                                  -
    --V601-- :   NAME OF APPLICATION CORRESPONDING TO SELECTION A      -
    VSE3CICS                                                           -
    --V602-- :   NAME OF APPLICATION CORRESPONDING TO SELECTION B      -
    VSEBCICS                                                           -
    --V603-- :   NAME OF APPLICATION CORRESPONDING TO SELECTION C      -
    --V604-- :   NAME OF APPLICATION CORRESPONDING TO SELECTION D      -
    --V605-- :   NAME OF APPLICATION CORRESPONDING TO SELECTION E      -
    --V606-- :   NAME OF APPLICATION CORRESPONDING TO SELECTION F      -
                                                                       -

     N O T E  :   IF THERE IS NO APPLICATION NAME CORRESPONDING TO A   -
                  PARTICULAR VARIABLE, DELETE THE USSPARM STATEMENT    -
                  CONTAINING THE VARIABLE; ALSO, DELETE THE USSCMD     -
                  STATEMENT PRECEEDING IT AND THE USSPARM STATEMENT    -
                  FOLLOWING IT.                                        -
                                                                       -
```

Figure 41. Application Logon Commands

VTAM7 - Application Selection Menu

This section of the selection has definitions for an application selection menu.

Select a meaningful term so the user can easily identify the desired application. The term can be eight characters long.

It is only by coincidence that the example menu shows terms that are identical to the application names as defined for VTAM. The example could just as well have picked BIGCICS and TINYCICS as meaningful terms.

Figure 42. Application Selection Menu

```
   ----VTAM7---------------------------- APPLICATION SELECTION MENU */
CATALOG  VTMUSSTZ.A   REPLACE=YES
*
* THE FOLLOWING MENU WILL BE DISPLAYED ON SNA TERMINALS ONLY
*
         DC    X'15'                NEW LINE (ROW 5)
         DC    CL9' '
         DC    CL2'A '
         DC    CL8'VSE3CICS'
*
```

```
         DC    X'15'                NEW LINE (ROW 6)
         DC    CL9' '
         DC    CL2'B '
         DC    CL8'VSEBCICS'
*
         DC    X'15'                NEW LINE (ROW 7)
         DC    CL9' '
         DC    CL2'C '
         DC    CL8'________'
*
         DC    X'15'                NEW LINE (ROW 8)
         DC    CL9' '
         DC    CL2'D '
         DC    CL8'________'
*
         DC    X'15'                NEW LINE (ROW 9)
         DC    CL9' '
         DC    CL2'E '
         DC    CL8'________'
*
         DC    X'15'                NEW LINE (ROW 10)
         DC    CL9' '
         DC    CL2'F '
         DC    CL8'________'
/+
CATALOG VTMUSSTX.A REPLACE=YES
*
* THE FOLLOWING MENU WILL BE DISPLAYED ON NON-SNA TERMINALS ONLY
*
         DC    X'11'                SET BUFFER ADDRESS ORDER
         DC    X'C5C9'              ROW 5 COLUMN 10
         DC    X'1D'                START FIELD ORDER
         DC    X'F8'                PROTECT SKIP INTENSIFIED ATTRIBUTE
         DC    CL2'A '
         DC    X'1D'                START FIELD
         DC    X'F0'                PROTECT SKIP NORMAL
         DC    CL8'VSE3CICS'
*
         DC    X'11'                SET BUFFER ADDRESS ORDER
         DC    X'C6D9'              ROW 6 COLUMN 10
         DC    X'1D'                START FIELD ORDER
         DC    X'F8'                PROTECT SKIP INTENSIFIED ATTRIBUTE
         DC    CL2'B '
         DC    X'1D'                START FIELD
         DC    X'F0'                PROTECT SKIP NORMAL
         DC    CL8'VSEBCICS'
*
         DC    X'11'                SET BUFFER ADDRESS ORDER
         DC    X'C7E9'              ROW 7 COLUMN 10
         DC    X'1D'                START FIELD ORDER
         DC    X'F8'                PROTECT SKIP INTENSIFIED ATTRIBUTE
         DC    CL2'C '
         DC    X'1D'                START FIELD
         DC    X'F0'                PROTECT SKIP NORMAL
         DC    CL8'________'
*
         DC    X'11'                SET BUFFER ADDRESS ORDER
         DC    X'C8F9'              ROW 8 COLUMN 10
         DC    X'1D'                START FIELD ORDER
         DC    X'F8'                PROTECT SKIP INTENSIFIED ATTRIBUTE
         DC    CL2'D '
         DC    X'1D'                START FIELD
         DC    X'F0'                PROTECT SKIP NORMAL
         DC    CL8'________'
*
         DC    X'11'                SET BUFFER ADDRESS ORDER
         DC    X'4AC9'              ROW 9 COLUMN 10
         DC    X'1D'                START FIELD ORDER
         DC    X'F8'                PROTECT SKIP INTENSIFIED ATTRIBUTE
         DC    CL2'E '
         DC    X'1D'                START FIELD
         DC    X'F0'                PROTECT SKIP NORMAL
         DC    CL8'________'
*
         DC    X'11'                SET BUFFER ADDRESS ORDER
         DC    X'4BD9'              ROW 10 COLUMN 10
         DC    X'1D'                START FIELD ORDER
         DC    X'F8'                PROTECT SKIP INTENSIFIED ATTRIBUTE
         DC    CL2'F '
         DC    X'1D'                START FIELD
         DC    X'F0'                PROTECT SKIP NORMAL
         DC    CL8'________'
```

```
*
/+
 /* L E G E N D                                                    -
    --V701-- :   APPLICATION NAME (MUST BE 8 CHARACTERS OR LESS)    -
    VSE3CICS                                                       -
    --V702-- :   APPLICATION NAME (MUST BE 8 CHARACTERS OR LESS)    -
    VSEBCICS                                                       -
    ________ :   APPLICATION NAME (MUST BE 8 CHARACTERS OR LESS)    -
    ________ :   APPLICATION NAME (MUST BE 8 CHARACTERS OR LESS)    -
    ________ :   APPLICATION NAME (MUST BE 8 CHARACTERS OR LESS)    -
    ________ :   APPLICATION NAME (MUST BE 8 CHARACTERS OR LESS)    -
                                                                   -
     N O T E  :   IF THERE IS NO APPLICATION NAME CORRESPONDING TO A   -
                  PARTICULAR VARIABLE, REPLACE IT WITH ________ TO     -
                  INDICATE THAT THERE IS NO NAME.                      -
                                                                       -
```

VTAM8 - System Activation of Commands and Messages

This section consists of assembly and link-edit steps.

You are not expected to supply any input. Therefore, this section of the skeleton is not shown here. If you want to look at it, please refer to the skeleton in its original form.

CICS1 - Terminal Control Entries for Cross-Domain Logon

Terminals at **other domains** which are allowed to log on at this domain must be defined to the CICS Transaction Server of **this node**. You can do this in two ways:

1. Using the CICS Transaction Server transactions CEDA and CEDB.

   These transactions allow online definitions to the CICS System Definition (CSD) file. Please refer to the *CICS Resource Definition Guide* SC33-0708 if you want to use this approach.
2. Using skeleton SKDTRNET which generates Terminal Control entries. You use the CICS utility DFHCSDUP to upgrade the CSD file (please refer to the *CICS TS Operations and Utilities Guide* SC33-1654 for details). The remainder of this section only discusses this approach.

Two types of terminal attachments must be accounted for:

- **Local** attachment at the other node (TRMTYPE=3270)
- **Remote** attachment at the other node (TRMTYPE=LUTYPE2)

Also, your z/VSE contains up to three groups of Terminal Entries. Consequently, this section of the skeleton has the following structure:

DTRTCT1X
- local terminals
- remote terminals

DTRTCT2X
- local terminals
- remote terminals

DTRTCT3X
- local terminals
- remote terminals

Using the skeleton, duplicate the DEFINE TERMINAL entry for each cross-domain terminal, and then follow the instructions provided in the skeleton SKDTRNET shown below.

Figure 43. Terminal Control Entries for Cross-Domain Logon

```
    ----CICS1-------------------- TERMINAL ENTRIES FOR X-DOMAIN LOGON */
ACCESS SUBLIB=PRD2.CONFIG
CATALOG DTRTCT1X.Z REPLACE=YES
*********************************************************************
* TERMINAL DEFINITION FOR X-DOMAIN  L O C A L  ATTACHED TERMINALS     *
*                OF TYPE 'L3277'                                      *
*********************************************************************
```

```
DEFINE TERMINAL(--C101--)
         GROUP(--C102--)
         DEFSCREEN(24,80)
         ALTSCREEN(--C103--,80)
         AUDIBLEALARM(--C104--)
         COLOR(--C104--)
         EXTENDEDDS(--C104--)
         HILIGHT(--C104--)
         PARTITIONS(--C104--)
         NETNAME(--C105--)
         RELREQ(YES)
         DISCREQ(YES)
         USERAREALEN(255)
         IOAREALEN(1024,4096)
************************************************************************
* TERMINAL DEFINITION FOR X-DOMAIN  R E M O T E  ATTACHED TERMINALS   *
*               OF TYPE 'LUTYPE2'                                      *
************************************************************************
DEFINE TERMINAL(--C101--)
         GROUP(--C102--)
         DEFSCREEN(24,80)
         ALTSCREEN(--C103--,80)
         BRACKET(YES)
         DEVICE(LUTYPE2)
         SENDSIZE(1536)
         RECEIVESIZE(1024)
         BUILDCHAIN(YES)
         AUDIBLEALARM(--C104--)
         COLOR(--C104--)
         EXTENDEDDS(--C104--)
         HILIGHT(--C104--)
         PARTITIONS(--C104--)
         NETNAME(--C105--)
         RELREQ(YES)
         DISCREQ(YES)
         USERAREALEN(255)
         IOAREALEN(1024,4096)
/+
CATALOG DTRTCT2X.Z REPLACE=YES
************************************************************************
* TERMINAL DEFINITION FOR X-DOMAIN  L O C A L  ATTACHED TERMINALS     *
*               OF TYPE 'L3277'                                        *
************************************************************************
DEFINE TERMINAL(--C101--)
         GROUP(--C102--)
         DEFSCREEN(24,80)
         ALTSCREEN(--C103--,80)
         AUDIBLEALARM(--C104--)
         COLOR(--C104--)
         EXTENDEDDS(--C104--)
         HILIGHT(--C104--)
         PARTITIONS(--C104--)
         NETNAME(--C105--)
         RELREQ(YES)
         DISCREQ(YES)
         USERAREALEN(255)
         IOAREALEN(1024,4096)
************************************************************************
* TERMINAL DEFINITION FOR X-DOMAIN  R E M O T E  ATTACHED TERMINALS   *
*               OF TYPE 'LUTYPE2'                                      *
************************************************************************
DEFINE TERMINAL(--C101--)
         GROUP(--C102--)
         DEFSCREEN(24,80)
         ALTSCREEN(--C103--,80)
         BRACKET(YES)
         DEVICE(LUTYPE2)
         SENDSIZE(1536)
         RECEIVESIZE(1024)
         BUILDCHAIN(YES)
         AUDIBLEALARM(--C104--)
         COLOR(--C104--)
         EXTENDEDDS(--C104--)
         HILIGHT(--C104--)
         PARTITIONS(--C104--)
         NETNAME(--C105--)
         RELREQ(YES)
         DISCREQ(YES)
         USERAREALEN(255)
         IOAREALEN(1024,4096)
/+
CATALOG DTRTCT3X.Z REPLACE=YES
```

```
************************************************************************
* TERMINAL DEFINITION FOR X-DOMAIN  L O C A L  ATTACHED TERMINALS     *
*               OF TYPE 'L3277'                                        *
************************************************************************
DEFINE TERMINAL(--C101--)
         GROUP(--C102--)
         DEFSCREEN(24,80)
         ALTSCREEN(--C103--,80)
         AUDIBLEALARM(--C104--)
         COLOR(--C104--)
         EXTENDEDDS(--C104--)
         HILIGHT(--C104--)
         PARTITIONS(--C104--)
         NETNAME(--C105--)
         RELREQ(YES)
         DISCREQ(YES)
         USERAREALEN(255)
         IOAREALEN(1024,4096)
************************************************************************
* TERMINAL DEFINITION FOR X-DOMAIN  R E M O T E  ATTACHED TERMINALS    *
*               OF TYPE 'LUTYPE2'                                      *
************************************************************************
DEFINE TERMINAL(--C101--)
         GROUP(--C102--)
         DEFSCREEN(24,80)
         ALTSCREEN(--C103--,80)
         BRACKET(YES)
         DEVICE(LUTYPE2)
         SENDSIZE(1536)
         RECEIVESIZE(1024)
         BUILDCHAIN(YES)
         AUDIBLEALARM(--C104--)
         COLOR(--C104--)
         EXTENDEDDS(--C104--)
         HILIGHT(--C104--)
         PARTITIONS(--C104--)
         NETNAME(--C105--)
         RELREQ(YES)
         DISCREQ(YES)
         USERAREALEN(255)
         IOAREALEN(1024,4096)
/+
 /* L E G E N D                                                       -
    --C101-- :   4-DIGIT SEQUENTIAL NUMBER UNIQUE FOR EACH TERMINAL   -
                 CONTROLLED BY AN OTHER DOMAIN, FROM WHERE OWN VSE/ESA-
                 CAN BE LOGGED ON.                                    -
                 EXAMPLE: X001,X002,X003,X004,X005...XNNN             -
    --C103-- :   GROUP IN WHICH THE TERMINAL IS DEFINED               -
    --C103-- :   ALTERNATE SCREEN SIZE. ENTER ONE OF THE FOLLOWING    -
                 NUMBERS DEPENDING ON HOW MANY LINES THE TERMINAL CAN -
                 DISPLAY: 24, 32, OR 43                               -
    --C104-- :   ENTER THE FEATURES THE TERMINAL HAS. ADDITIONAL      -
                 DEFINITIONS MAY BE ADDED.                            -
                 FOR EXAMPLE:                                         -
                       KATAKANA(YES)                                  -
                       LIGHTPEN(YES)                                  -
                       PRINTADAPTER(YES)                              -
                                                                      -
    --C105-- :   8 CHARACTER NETNAME OF THAT TERMINAL                 -
```

CICS2 - ISC Terminal Control Entries

Intersystem Communication (ISC) allows one CICS Transaction Server to communicate with a CICS Transaction Server in another system.

You make an ISC entry **for the other system**. Thus for the example under consideration, you make in the subarea 3 definition an entry **for subarea 11**.

Because the CICS Transaction Server does not use a TCT, the ISC Terminal Control entries (shown in Figure 44 on page 87) must be migrated to a Resource Definition Online (RDO) format used by the CSD file. You must use the CICS utility DFHCSDUP to do so (please refer to the CICS Operations and Utilities Guide for details).

The recommended alternative to building Terminal Control entries is that you use the CICS Transaction Server *Resource Definition Online* (RDO). In this case, CICS Transaction Server builds its own temporary tables. For further information refer to the CICS Resource Definition Guide .

In addition, other CICS Transaction Server definitions must be made. For these, consult the CICS Transaction Server publications, in particular the CICS Intercommunication Guide .

```
   ----CICS2---------------------------------- ISC TERMINAL ENTRIES */
CATALOG DTRTCT1I.Z REPLACE=YES
************************************************************************
*  I S C  SYSTEM   ENTRIES IN                                          *
*                  DEFINE LINKS TO OTHER SYSTEMS                       *
************************************************************************
DEFINE SESSION(--C201--)
         GROUP(--C202--)
         CONNECTION(--C203--)
         NETNAME(--C204--)
         PROTOCOL(APPC)
         MAXIMUM(--C205--)
         MODEMNAME(--C206--)
DEFINE CONNECTION(--C203--)
         ACCESSMETHOD(VTAM)
/+
CATALOG DTRTCT2I.A REPLACE=YES
************************************************************************
*  I S C  SYSTEM   ENTRIES IN                                          *
*                  DEFINE LINKS TO OTHER SYSTEMS                       *
************************************************************************
DEFINE SESSION(--C201--)
         GROUP(--C202--)
         CONNECTION(--C203--)
         NETNAME(--C204--)
         PROTOCOL(APPC)
         MAXIMUM(--C205--)
         MODEMNAME(--C206--)
DEFINE CONNECTION(--C203--)
         ACCESSMETHOD(VTAM)
/+
CATALOG DTRTCT3I.A REPLACE=YES
************************************************************************
*  I S C  SYSTEM   ENTRIES IN                                          *
*                  DEFINE LINKS TO OTHER SYSTEMS                       *
************************************************************************
DEFINE SESSION(--C201--)
         GROUP(--C202--)
         CONNECTION(--C203--)
         NETNAME(--C204--)
         PROTOCOL(APPC)
         MAXIMUM(--C205--)
         MODEMNAME(--C206--)
DEFINE CONNECTION(--C203--)
         ACCESSMETHOD(VTAM)
/+
 /* L E G E N D                                                        -
    --C201-- :   1- TO 4-CHARACTER NAME TO IDENTIFY THE               -
                 INTERCOMMUNICATION LINK.                             -
    --C202-- :   GROUP INTO WHICH THE DEFINITION IS DONE              -
    --C203-- :   1- TO 8-CHARACTER NAME THAT IDENTIFIES THE           -
                 CONNECTION TO ACF/VTAM                               -
    --C204-- :   1- TO 8-CHARACTER NETWORK NAME THAT IDENTIFIES THE   -
                 REMOTE CICS TO ACF/VTAM.                             -
    --C205-- :   MAXIMUM NUMBER OF SESSIONS (DEFAULT = 1)             -
                 IF VSE/OFFICE (E.G. PS/CICS, DISOSS, ...) IS TO      -
                 BE USED, THIS NUMBER MUST BE AT LEAST 3              -
    --C206-- :   1- TO 8-CHARACTER LOGMODE NAME THAT IDENTIFIES THE   -
                 GROUP OF RELATED SESSIONS.                           -
 N O T E :       ALL ENTRIES ARE FOR THE REMOTE CICS SYSTEM           -
                                                                      */
 /*-------------------------------------------------------------------  -
```

Figure 44. ISC Terminal Control entries

Here is an example of how the CICS utility DFHCSDUP can be used for updating the CICS System Definition file.

```
* ====================================================================
*
*  CICS CSD FILE UPDATE
*
*       If CICS TERMINALS WERE DEFINED IN SOURCE MEMBERS DTRTCTXX.Z
*       FOLLOWING JOB WILL UPDATE THE CSD FILE ACCORDINGLY:
*
* ====================================================================
// EXEC DFHCSDUP,SIZE=600K
* $$ SLI Z.DTRTCT1X
* $$ SLI Z.DTRTCT2X
* $$ SLI Z.DTRTCT3X
* $$ SLI Z.DTRTCT1I
* $$ SLI Z.DTRTCT2I
* $$ SLI Z.DTRTCT3I
/*
```

Figure 45. Example DFHCSDUP Update Job

PNET1 - VSE/POWER Network Definition Table

This section contains PNODE macros which define *nodes* to VSE/POWER.

Note that in the example there is a BSC connection between subarea 3 and VM. Although not linked by an SNA connection, they are nevertheless *nodes* in the VSE/POWER context. The same is true for the *indirect link* between subarea 3 and the VM-attached printer BOE85117.

Therefore, the example below shows **four** PNODE macros. Because the printer BOE85117 can be accessed from subarea 11 as well, the network skeleton for subarea 11 will also have a PNODE macro for this printer.

The first node is the one for which you are defining the network skeleton (LOCAL=YES). The name that you specify in the leftmost field (IESPNDT in the example) becomes the phase name of the network definition table.

APPLID must be identical to the cross-domain resource name that you chose in the VTAM5 section.

AUTH defines the level of remote operator control at the other PNET node(s).

- NET - the operator at the interconnected node can manipulate all entries in this node's VSE/POWER queues using PNET networking commands.
- JOB - in addition to general operator console display functions, the interconnected node operator can manipulate the following contents of the VSE/POWER queues at this node:
  - Any job which originated from the interconnected node.
  - Any output produced by a job that originated at the interconnected node.
  - Any output which is destined for the interconnected node.
- NOJOB - the operator at the interconnected node may issue only some general operator console display commands. No manipulation of this node's VSE/POWER queues is allowed.

```
 /*-------------------------------------------------------------  -
                                                                   -
   POWER DEFINITIONS                                               -
                                                                   -
   ----PNET1------------------------- POWER NETWORK DEFINITION TABLE */
/*
// LIBDEF PHASE,CATALOG=PRD2.CONFIG
// OPTION CATAL
// EXEC ASMA90,SIZE=(ASMA90,64K),PARM='EXIT(LIBEXIT(EDECKXIT)),SIZE(MAXC
              -200K,ABOVE)'
*
* DEFINITION FOR THIS NODE
*
         PRINT NOGEN
IESPNDT  PNODE NODE=BOEVSES3,                                          *
               APPLID=VSE3PNET,                                        *
               LOCAL=YES
*
* DEFINITIONS FOR INTERCONNECTED SYSTEMS
*
* POSSIBILITY 1: DIRECT LINK TO INTERCONNECTED SYSTEM
*                  WITHOUT ALTERNATE ROUTE
         PNODE NODE=BOEVSESB,                                          *
               APPLID=VSEBPNET,AUTH=NET
         PNODE NODE=BOEVM3,AUTH=NET
*
* POSSIBILITY 2: DIRECT LINK TO INTERCONNECTED SYSTEM
*                  WITH ALTERNATE ROUTE
*        PNODE NODE=--P102--,                                    *
*              APPLID=--P104--,AUTH=--P109--,                    *
*              ROUTE2=--P105--
*
* POSSIBILITY 3: INDIRECT LINK TO INTERCONNECTED SYSTEM
*                  VIA ADJACENT NODE WITHOUT ALTERNATE ROUTE
         PNODE NODE=BOE85117,AUTH=NOJOB,ROUTE1=BOEVM3
*
*
* POSSIBILITY 4: INDIRECT LINK TO INTERCONNECTED SYSTEM
*                  VIA ADJACENT NODE WITH ALTERNATE ROUTE
*        PNODE NODE=--P106--,AUTH=--P109--,                    *
*              ROUTE1=--P107--,                                *
*              ROUTE2=--P108--
*
         END
/*
// EXEC LNKEDT
*
* L E G E N D
*  --P101-- :   PHASE NAME OF THE NETWORK DEFINITION TABLE GENERATED
*  IESPNDT      BY THE ASSEMBLY OF THE PNODE MACROS.
*  --P102-- :   PNET NODE NAME OF YOUR OR AN INTERCONNECTED SYSTEM
*  BOEVSES3 , BOEVSESB , BOEVM3
*  --P103-- :   NAME BY WHICH VTAM KNOWS THIS NODE'S NETWORK SYSTEM
*  VSE3PNET
*  --P104-- :   PNET APPLIC.-ID OF INTERCONN. SYSTEM VIA DIRECT LINK
*  VSEBPNET
*  --P105-- :   PNET ALTERNATE NODE NAME TO DESTINATION NODE --P102--
*  --P106-- :   PNET NODE NAME OF INTERCONNECTED SYSTEM VIA INDIRECT
*  BOE85117                                        LINK
*  --P107-- :   PNET ADJACENT NODE NAME TO DESTINATION NODE --P106--
*  BOEVM3
*  --P108-- :   PNET ALTERNATE NODE NAME TO DESTINATION NODE --P106--
*  --P109-- :   AUTHORIZATION LEVEL OF INTERCONNECTED SYSTEM FOR POWER
*               OPERATION ON OWN NODE. POSSIBLE ENTRIES ARE: NET
*                                                            JOB
*                                                            NOJOB
*
```

Figure 46. VSE/POWER Network Definition Table

SP1 - Information for the Other Administrator

This section has instructions for the administrator who will install the network definition tape. The administrator is either

- Yourself - if you are filling out the network skeleton for your own domain, or
- Another administrator - if you are creating, **at your domain**, the network definition tape for another domain.

After installing the network definition tape, the administrator can access the information by displaying member DTR$NET in library 59. This member has information on:

- VTAM startup options
- VTAM application names
- VSE/POWER generation parameters
- VSE/POWER startup parameters.

Member DTR$NET for the example case is shown in Figure 47 on page 90. You don't have to input anything in this section.

```
* ----SP1-----------------------INFORMATION FOR SYSTEM ADMINISTRATOR---
PURGE LIBRARY(59) MEMBER(DTR$NET)
ADD MEMBER(59,DTR$NET,AAAA)
*
YOU NEED THE FOLLOWING INFORMATION FOR YOUR RESOURCE DEFINITION
DIALOG 'MAINTAIN VTAM START OPTIONS':
YOUR HOSTSA IS    3
*
YOU NEED THE FOLLOWING INFORMATION FOR YOUR RESOURCE DEFINITION
DIALOG 'MAINTAIN VTAM APPLICATION NAMES':
THE APPLID OF YOUR CICS SUBSYSTEM(S) IS  VSE3CICS,--S103,...
THE APPLID OF YOUR LOCAL PNET NODE IS    VSE3PNET
*
YOU NEED THE FOLLOWING INFORMATION FOR POWER GENERATION.
SPECIFY FOR THE PNET OPERAND OF THE POWER MACRO THE
NAME OF YOUR NETWORK DEFINITION TABLE:   IESPNDT
*
YOU NEED THE FOLLOWING INFORMATION TO START PNET:
NAMES OF ADJACENT PNET NODES ARE BOEVSESB,BOEVM3
*
END OF MEMBER
*
* L E G E N D
*  --S101-- :   SNA SUBAREA NUMBER OF THIS NODE
*  3
*  --S102-- :   NAME BY WHICH VTAM KNOWS THIS NODE'S CICS SUBSYSTEM(S)
*  VSE3CICS
*  --S103-- :   NAME BY WHICH VTAM KNOWS THIS NODE'S CICS SUBSYSTEM(S)
*  --S104-- :   NAME BY WHICH VTAM KNOWS THIS NODE'S PNET SYSTEM AS
*               DEFINED IN --P103--
*  VSE3PNET
*  --S105-- :   NAME OF NETWORK DEFINITION TABLE AS DEFINED IN --P101--
*  IESPNDT
*  --S106-- :   PNET NODE NAMES OF INTERCONNECTED SYSTEMS VIA DIRECT
*               LINKS AS DEFINED IN --P102-- WITHOUT 'LOCAL=YES'
*  BOEVSESB , BOEVM3
*
```

Figure 47. DTR$NET - Administrator Instructions

Chapter 11. Example of a Cross-Domain NCP Configuration

This chapter provides an example of a cross-domain definition based on an NCP-to-NCP connection. It contains these main topics:

Related Topics:

- Chapter 9, "Configuring a Cross-Domain Network," on page 71
- Chapter 10, "Filling Out a Cross-Domain Network Skeleton," on page 77

The Example Cross-Domain NCP Configuration

This is a very simplified example, intended to stress the unique aspects of an NCP-to-NCP connection. The configuration is depicted in the following figure.

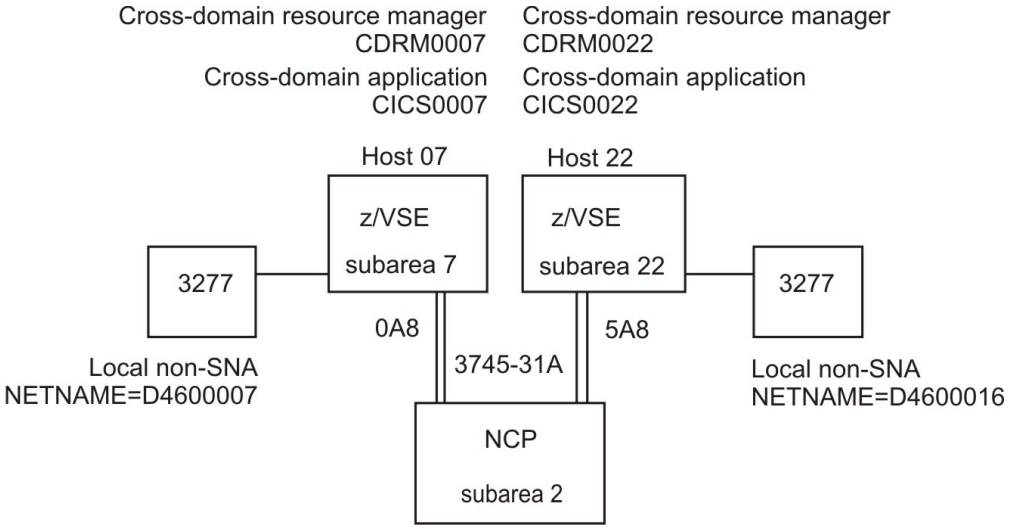

Figure 48. Example NCP-to-NCP Connection

One or more terminal sessions can be established from the 3277 at Host 07 to CICS0022, or from the 3277 at Host 22 to CICS0007. Terminal Control entries for the CICS Transaction Server are not necessary because autoinstall is used for both CICSs. Note that the terminals' netnames are built according to the 4-digit subarea naming convention (which is described in Appendix A, "Naming Convention," on page 119).

Below, you find the VTAM definitions for Host 07. Definitions for Host 22 are similar.

VTAM and NCP Definitions

VTAM Startup Options

The startup options, in this example case, are cataloged in ATCSTR07.B, in other words, in a member separate from the default startup options list ATCSTR00.B. VTAM is directed to that special list either via the operator entry LIST=07, or via the entry LIST=07 in ATCSTR00.B.

Figure 49 on page 92 shows the list for Host 07.

```
CATALOG  ATCSTR07.B     REPLACE=YES
ASYDE=TERM,                                                          X
CDRSCTI=50,                                                          X
COLD,                                                                X
MSGMOD=NO,                                                           X
HOSTSA=7,                                                            X
HOSTPU=NODE0007,                                                     X
SSCPNAME=SSCP0007,                                                   X
NETID=NET3246,       MUST BE THE SAME FOR ALL CDRM'S FOR THIS DOMAIN X
MAXSUBA=255,                                                         X
PPOLOG=NO,                                                           X
PROMPT,                                                              X
SUPP=NOSUP,                                                          X
SONLIM=(60,30),                                                      X
SSCPDYN=YES,                                                         X
SSCPID=1,                                                            X
SSCPORD=PRIORITY,                                                    X
TRACE,TYPE=VTAM,SIZE=200,OPT=ALL,                                    X
NOTNSTAT,                                                            X
IOINT=40,                                                            X
SGALIMIT=0,                                                          X
BSBUF=(28,,,1),                                                      X
CRPLBUF=(60,,,1),                                                    X
IOBUF=(70,288,,,11),                                                 X
LFBUF=(70,,,,30),                                                    X
LPBUF=(50,,,,6),                                                     X
SFBUF=(50,,,,20),                                                    X
SPBUF=(210,,,,32),                                                   X
XDBUF=(6,,,,1),                                                      X
CONFIG=07,                                                           X
XNETALS=YES
/+
```

Figure 49. Startup Options List for Host 07

VTAM Configuration List

This is the list of major nodes that VTAM needs to activate for the network to operate. They are:

1. Path table
2. NCP and cross-domain link
3. Local non-SNA terminal
4. Application
5. Cross-domain resource manager
6. Cross-domain resources

Definitions for these major nodes will be presented one by one in the following sections.

The configuration list, in this example case, is cataloged in ATCCON07.B, in other words, in a member separate from the default configuration list ATCCON00.B. VTAM is directed to that special list via the entry CONFIG=07 in ATCSTR07.B (see above).

Figure 50 on page 93 shows the configuration list for Host 07. Note that

- The first entry **must be** the path table.
- The name of the NCP major node (NCPN02C) matches the value of the NEWNAME parameter of the NCP BUILD macro.

```
CATALOG  ATCCON07.B     REPLACE=YES
         PATH0007,                                                  *
         NCPN02C,                                                   *
         VTMNSNA,                                                   *
         APPL0007,                                                  *
         CDMS0007,                                                  *
         CDRS0007,
/+
```

Figure 50. VTAM Configuration List for Host 07

Cross-Domain Path Table

This table designates a transmission group (TG) for each destination subarea.

Figure 51 on page 93 shows the path table for Host 07.

```
CATALOG PATH0007.B     REPLACE=YES
PATH0007 PATH DESTSA=2,                                             *
              ER0=(2,1),VR0=0
         PATH DESTSA=22,                                            *
              ER0=(2,1),VR0=0
/+
```

Figure 51. Path Table for Host 07

NCP Major Node

This defines the cross-domain link from Host 07 to Host 22.

Figure 52 on page 93 shows the NCP major node definition for Host 07. Only those parts are shown which have entries relevant to the cross-domain definition.

Figure 52. NCP Major Node of Host 07

```
*************************************************************************
*   PCCU FOR SA 7  N-SYSTEM                                             *
*************************************************************************
PCCU07   PCCU  DUMPDS=SYS009,      DDNAME FOR NCPDUMP DATA SET         P
               CDUMPDS=SYS009,     DDNAME FOR CSP DUMP DATA SET        P
               MDUMPDS=SYS009,     DDNAME FOR MOSS DUMP DATA SET       P
               AUTODMP=NO,                                             P
               OWNER=SA07,                                             P
               MAXDATA=32800,                                          P
               NCPLUB=SYS007,                                          P
               AUTOIPL=NO,         DO NOT AUTOIPL AFTER CRASH          P
               AUTOSYN=NO,         NO AUTOSYNCH IF ALREADY LOADED      P
               INITEST=NO,         NO INITIAL DIAGNOSTIC TEST          P
               BACKUP=YES,                                             P
               CUADDR=0A8,         FOR 3745-N                          P
               VFYLM=YES,          OPER.INTERV.IF SUA NAME AND NEWNAME P
               VFYC=YES,           OPER.INTERV IF TIMESTAMP MISSMATCH  P
               SUBAREA=7
*************************************************************************
*   PCCU FOR SA 22 N-SYSTEM                                             *
*************************************************************************
PCCU22   PCCU  DUMPDS=SYS009,      DDNAME FOR NCPDUMP DATA SET         P
               CDUMPDS=SYS009,     DDNAME FOR CSP DUMP DATA SET        P
               MDUMPDS=SYS009,     DDNAME FOR MOSS DUMP DATA SET       P
               AUTODMP=NO,                                             P
               MAXDATA=9134,                                           P
               NCPLUB=SYS012,                                          P
               AUTOIPL=NO,         DO NOT AUTOIPL AFTER CRASH          P
               AUTOSYN=NO,         NO AUTOSYNCH IF ALREADY LOADED      P
               CHANCON=CON,        NCP CAN REJ. CONTACT IF SA IS USED  P
               INITEST=NO,         NO INITIAL DIAGNOSTIC TEST          P
               BACKUP=YES,                                             P
               CUADDR=5A8,         FOR 3745-N                          P
               VFYLM=YES,          OPER.INTERV.IF SUA NAME AND NEWNAME P
               VFYC=YES,           OPER.INTERV IF TIMESTAMP MISSMATCH  P
               SUBAREA=22
*************************************************************************
*   BUILD FOR SA 07 N-SYSTEM                                            *
*************************************************************************
```

```
BUILDN07 BUILD MAXSUBA=255, >>>063 MAX SUBAREA FOR THE NETWORK         B
               NETID=NET3246,      NETID FOR THIS NCP AND THIS VTAM    B
               ADDSESS=100,                                            B
               MAXSESS=50,         MAX SESSIONS FOR IND LU             B
               AUXADDR=10,         ADDITIONAL ADR. FOR IND LUS         B
               PRTGEN=NOGEN,       NO STATEMENT LIST OF ASM1           B
               SUBAREA=02,         NCP SUBAREA                         B
               USGTIER=5,          SCANNER RELATED FEATURE CODE        B
               MODEL=3745-31A,     GEN RUNS ON 3745 CONTROLLER (N)     B
               TYPGEN=NCP,         CHANNEL OR LINK ATTACHED PEP GEN    B
               VERSION=V7R1,       NCP VERSION (REQUIRED FOR NDF)      B
               NEWNAME=NCPN02C,    NAME OF NCP LOAD MODULE             B
               TYPSYS=VSE,         NCP TO BE GENERATED FOR VSE         B
               OLT=NO,             ONLINE TERMINAL TEST                B
               SLODOWN=25,         BUFFER SLOWDOWN THRESHOLD (PERCENT) B
               TRACE=(YES,256),    MAXIMUM SIZE ADDRESS TRACE TABLE    B
               LTRACE=2,           LINES TRACED SIMULTANEOUSLY         B
               LINETRC=(YES,,200), BSC LINE TRACE POSSIBILITY          B
               PNLTEST=YES,                                            B
               BFRS=240,           NCPBUFF SIZE                        B
               TRANSFR=137,        68 X 288 + 47 = MAX DATA            B
               MAXSSCP=6,          NUMBER OF CONCURRENT SSCP'S         B
               NUMHSAS=6,          HOST SA IN CONCURRENT COMMUNICATION B
               VRPOOL=(50,50),     MAX VIRTUAL ROUTES                  B
               BRANCH=100,         MINIMUM SIZE BRANCH TRACE TABLE     B
               CATRACE=(YES,255)   MAXIMUM SIZE CHANNEL TRACE TABLE
         SYSCNTRL OPTIONS=STORDSP
*********************************************************************
*   HOST FOR SA 7 N-SYSTEM                                          *
*********************************************************************
HOST07   HOST  MAXBFRU=32,         MINIMUM HOST BUFFER ALLOCATION      H
               UNITSZ=288,         SIZE OF DATA PORTION OF HOST BUFFER H
               SUBAREA=07,         VTAM HOST SUBAREA FOR VSE07         H
               BFRPAD=0,           VTAM BUFFER PAD REQUIREMENT (TSC)   H
               INBFRS=70,          NCP BUFS ALLOC FOR READ FROM HOST   H
               DELAY=0.2,          NCP DELAY BEFORE ATTN ISSUE         H
               TIMEOUT=420         7 MIN FROM ATTN TO ANS ENTRY
*********************************************************************
*   HOST FOR SA 22 N-SYSTEM                                         *
*********************************************************************
HOST22   HOST  MAXBFRU=32,         MINIMUM HOST BUFFER ALLOCATION      H
               UNITSZ=288,         SIZE OF DATA PORTION OF HOST BUFFER H
               SUBAREA=22,         VTAM HOST SUBAREA FOR VSE22         H
               BFRPAD=0,           VTAM BUFFER PAD REQUIREMENT (TSC)   H
               INBFRS=70,          NCP BUFS ALLOC FOR READ FROM HOST   H
               DELAY=0.2,          NCP DELAY BEFORE ATTN ISSUE         H
               TIMEOUT=420         7 MIN FROM ATTN TO ANS ENTRY
*********************************************************
*                                                       *
* PATH DEFINTIONS FOR CONNECTIONS TO SUBAREA  7 and 22  *
*                                                       *
*********************************************************
PATHSA07 PATH  DESTSA=(7),                                           X
               ER0=(7,1),VR0=0
PATHSA22 PATH  DESTSA=(22),                                          X
               ER0=(22,1),VR0=0
*********************************************************

    . . .

         GENEND
         END
/+
```

Local Non-SNA Terminal

This definition does not contain any information that is special to the cross-domain configuration. It would look the same in a single-domain environment. It is shown here for completeness, and because it is referenced in the VTAM configuration list (see above).

Figure 53 on page 95 shows the start of the terminal definitions.

Note that this example disregards CICS Transaction Server definitions because the terminals are assumed to be defined via autoinstall.

```
CATALOG  VTMNSNA.B     REPLACE=YES
VTMNSNA  LBUILD
D4600007 LOCAL CUADDR=460,TERM=3277,                                  *
               USSTAB=VTMUSSTB,                                       *
               DLOGMOD=SP32703N,                                      *
               LOGAPPL=DBDCCICS,                                      *
               MODTAB=IESINCLM,                                       *
               MDLTAB=VTM$MDL,                                        *
               MDLENT=VSE32783,                                       *
               FEATUR2=(MODEL2)
               ...  ...
/+
```

Figure 53. Local Non-SNA Terminal at Host 07

Applications

This part defines an application major node. Aside from the system-required application IESWAITT, in this example CICS is the only application under VTAM.

Figure 54 on page 95 shows the application major node for host 07.

```
CATALOG APPL0007.B     REPLACE=YES
NETAPPL  VBUILD TYPE=APPL
CICS0007 APPL  AUTH=(VPACE,PASS,ACQ),VPACING=4,EAS=64,PARSESS=YES
IESWAITT APPL  AUTH=(NOACQ)
/+
```

Figure 54. Application Major Node for Host 07

Cross-Domain Resource Manager

This part defines the "cross-domain resource manager" major node. In each domain, the local and the other cross-domain resource manager must be defined.

Figure 55 on page 95 shows the definition in Host 07.

```
CATALOG CDMS0007.B     REPLACE=YES
        VBUILD TYPE=CDRM
CDRM0007 CDRM  ISTATUS=ACTIVE,VPACING=1,CDRDYN=YES,                   *
               CDRSC=OPT,RECOVERY=YES,SUBAREA=07
CDRM0022 CDRM  ISTATUS=INACTIVE,VPACING=1,CDRDYN=YES,                 *
               CDRSC=OPT,RECOVERY=YES,SUBAREA=22
/+
```

Figure 55. Cross-Domain Resource Managers Defined in Host 07

Cross-Domain Resources

This part defines the "cross-domain resource" major node. In the example under consideration, CICS Transaction Server is the only cross-domain resource.

Figure 56 on page 95 shows the definition.

```
CATALOG CDRS0007.B     REPLACE=YES
        VBUILD TYPE=CDRSC
CICS0022 CDRSC CDRM=CDRM0022
/+
```

Figure 56. Cross-Domain Resource Defined in Host 07

This finishes the VTAM and NCP definitions of the example NCP-to-NCP multiple-domain network.

Chapter 12. Example of Connecting Two z/VSE Hosts in an APPN Network

This chapter presents a simple example of two z/VSE systems connected in an APPN network.

This chapter contains these main topics:

Overview of Example Used

The z/VSE systems (network nodes 'V01' and 'V05') are connected by two different link types:

- SDLC leased line
- IBM Token Ring.

The connection is shown in the following diagram.

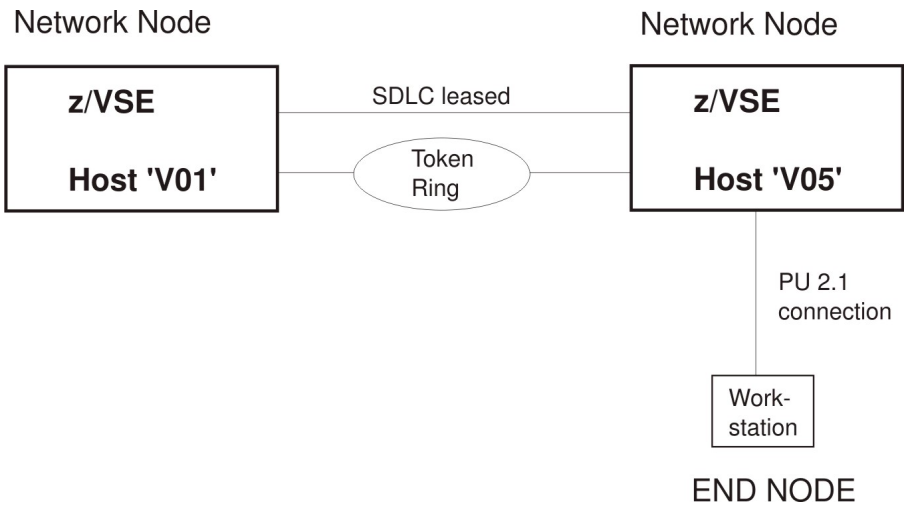

Figure 57. Example of Two z/VSE Systems Connected in APPN Network

The following pages show several VTAM definitions:

- Link books
- Application major node
- Class-of-service (COS) specifications
- Checkpoint VSE/VSAM files
- Start options
- VTAM startup job.

Definitions for the attached workstation are not included. The attachment is only shown to illustrate the position of an **end node**. Conceivably, the Host V01 node could also be an end node.

Link Books

At both network nodes, you need a link definition for each type of connection:

- SDLC leased line
- IBM Token Ring.

The following figure shows these two link definitions for host V01, the next figure for host V05. Note that the DIALNO parameter of the PATH statement, in an APPN definition, has an arbitrary value.

```
* SDLC LEASED LINE   FROM V01 TO V05
CATALOG CPLL501.B REPLACE=YES
CPLL501  VBUILD     TYPE=CA
GRP501   GROUP      DIAL=NO,ISTATUS=ACTIVE,LNCTL=SDLC
LINE501  LINE       ADDRESS=501,MODE=PRI
PU501    PU         PUTYPE=2,XID=YES,CONNTYPE=APPN,CPCP=YES,ADDR=C1
/+
:
 CATALOG CPTR900.B  REP=YES
*********************************************************************
*          LAN MAJOR NODE FOR CONNECTION V01 TO V05                 *
* MACADDR: TOKEN-RING ADDRESS OF THE ADAPTER ON THIS PU             *
*********************************************************************
CPTR900  VBUILD TYPE=LAN
PORT900  PORT  CUADDR=900,                                          X
               MACADDR=400900000000,                                X
               LANCON=(02.0,2),                                     X
               MAXDATA=4096,                                        X
               SAPADDR=4
*
GRP900   GROUP DIAL=YES
LINE900  LINE  ISTATUS=ACTIVE,ANSWER=ON,CALL=INOUT
PU       PU
/+
:
 CATALOG CPTR900S.B  REP=YES
*********************************************************************
*    SWITCHED MAJOR MODE FOR TOKEN-RING CONNECTION  V01 TO V05       *
*    MACADDR: TOKEN-RING ADDRESS OF THE ADAPTER ON THE OTHER PU      *
*********************************************************************
CPTR900S VBUILD TYPE=SWNET,MAXNO=25,MAXGRP=1
PU900    PU     ISTATUS=ACTIVE,PUTYPE=2,ADDR=C2,                     X
                MAXPATH=1,                                          X
                SAPADDR=4,                                          X
                MACADDR=400200000000,                               X
                MAXOUT=7,                                           X
                IRETRY=YES,                                         X
                DISCNT=YES,                                         X
                CPCP=YES,                                           X
                CONNTYPE=APPN,                                      X
                CPNAME=SSCP0005
PATH900  PATH   DIALNO=PATH21D-444-5894,                            X
                PID=1,                                              X
                GID=1,                                              X
                USE=YES,                                            X
                GRPNM=GRP900
/+
```

Figure 58. Link Books - SDLC Leased and Token-Ring (Host V01)

```
* SDLC LEASED LINE   FROM V05 TO V01
CATALOG CPLL181.B REPLACE=YES
CPLL181  VBUILD     TYPE=CA
GRP181   GROUP      DIAL=NO,ISTATUS=ACTIVE,LNCTL=SDLC
LINE181  LINE       ADDRESS=181,MODE=SEC
PU181    PU         PUTYPE=2,XID=YES,CONNTYPE=APPN,CPCP=YES,ADDR=C1
/+
  .
  .
  .
 CATALOG CPTR200.B  REP=YES
*********************************************************************
*          LAN MAJOR NODE FOR CONNECTION V05 TO V01                 *
* MACADDR: TOKEN-RING ADDRESS OF THE ADAPTER ON THIS PU             *
*********************************************************************
CPTR200  VBUILD TYPE=LAN
PORT200  PORT  CUADDR=200,                                          X
               MACADDR=400200000000,   ADDRESS OF THE LAN OF THIS CPU   X
               LANCON=(10.0,5),                                     X
               MAXDATA=4096,                                        X
               SAPADDR=4
*
GRP200   GROUP DIAL=YES
LINE200  LINE  ISTATUS=ACTIVE,ANSWER=ON,CALL=INOUT
PU       PU
/+
  .
  .
  .
 CATALOG CPTR200S.B  REP=YES
*********************************************************************
*    SWITCHED MAJOR MODE FOR TOKEN-RING CONNECTION  V05 TO V01       *
*    MACADDR: TOKEN-RING ADDRESS OF THE ADAPTER ON THE OTHER PU      *
*********************************************************************
CPTR200S VBUILD TYPE=SWNET,MAXNO=25,MAXGRP=1
PU200    PU     ISTATUS=ACTIVE,PUTYPE=2,ADDR=C2,                      X
                MAXPATH=1,                                          X
                SAPADDR=4,                                          X
                MACADDR=400900000000,  ADDR OF THE LAN OF THE OTHER CPU X
                MAXOUT=7,                                           X
                IRETRY=YES,                                         X
                DISCNT=YES,                                         X
                CPCP=YES,                                           X
                CONNTYPE=APPN,                                      X
                CPNAME=SSCP0001
PATH200  PATH   DIALNO=PATH21D-444-5894,                            X
                PID=1,                                              X
                GID=1,                                              X
                USE=YES,                                            X
                GRPNM=GRP200
/+
```

Figure 59. Link Books - SDLC Leased and Token-Ring (Host V05)

Application Major Node

The application major node defines all applications that run at the 'this host' (that is, the one where the definition is made).

The following figure shows only the application major node at host V05 (definitions for host V01 are similar). ECHO0005 and RECEIVLU are user-supplied VTAM applications.

```
CATALOG APPL0005.B      REPLACE=YES
APPL0005 VBUILD TYPE=APPL
DBDCCICS APPL  AUTH=(VPACE,PASS,ACQ),VPACING=4,EAS=64,PARSESS=YES
CICS0005 APPL  AUTH=(VPACE,PASS,ACQ),VPACING=4,EAS=64,PARSESS=YES
PWR0005  APPL  AUTH=(PASS,ACQ),VPACING=3,MODETAB=VTMLOGTB,DLOGMOD=PNET
PNET0005 APPL  AUTH=(ACQ,PASS),VPACING=3,MODETAB=VTMLOGTB,DLOGMOD=PNET
IESWAITT APPL  AUTH=(NOACQ)
ECHO0005 APPL  AUTH=(ACQ,SPO,PASS),PARSESS=YES,APPC=YES,                X
               MODETAB=TAPAPPCM,DLOGMOD=APPCLOGA
RECEIVLU APPL  AUTH=(ACQ,PASS),VPACING=7,APPC=YES,AUTOSES=1,            X
               MODETAB=TAPAPPCM,PARSESS=YES,DLOGMOD=APPCLOGA,           X
               DMINWNL=3,DMINWNR=3,DRESPL=ALLOW,DSESLIM=6
/+
```

Figure 60. Application Major Node (Host V05)

Class-of-service (COS) Specifications

IBM provides seven default APPN class-of-service definitions:

CPSVCMG
SNASVCMG
#CONNECT
#INTER
#INTERSC
#BATCH
#BATCHSC

It is recommended that you use the defaults wherever possible and that the class-of-service definitions be the same throughout the network.

The definitions are contained in sublibrary PRD1.BASE as member COSAPPN.Z. You must recatalog them as member COSAPPN.B as shown in the example job below.

```
* $$ JOB JNM=COSAPPN,CLASS=0,DISP=D
// JOB COSAPPN
// EXEC LIBR
A S=PRD2.CONFIG
CATALOG COSAPPN.B     REPLACE=YES
* $$ SLI MEM=COSAPPN.Z,S=PRD1.BASE
/+
/*
/&
* $$ EOJ
```

Figure 61. Cataloging Class-of-Service (COS) Definitions

VSE/VSAM Files for Directory Data Base

VTAM uses topology and routing services (TRS) and directory services (DS) to learn and maintain information on the topology and resources of the network.

You have to define four VSE/VSAM files in support of those services. The following figure shows a job stream that defines the corresponding clusters.

Figure 62. Defining VSE/VSAM Files for Directory Data Base

```
*/$$ JOB JNM=SKAPPN,CLASS=0,DISP=D
// JOB SKAPPN      DEFINE FILES FOR VTAM APPN
* ********************************************************************  C
* *                                                                  *  C
* * - - - - - - - VTAM CLUSTERS FOR APPN CONNECTIONS - - - - - - - *  C
* *               DEFINE CLUSTERS AND ACTIVATE LABELS                *  C
* *                                                                  *  C
* *  THIS JOB DEFINES THE VTAM CLUSTERS USED FOR APPN.               *  C
* *  THE CLUSTER NAMES ARE:                                          *  C
* *      VTAM.DSDBCTL       NAME:   DSBCTL                           *  C
* *      VTAM.DSDB1         NAME:   DSDB1                            *  C
```

```
* *      VTAM.DSDB2         NAME:   DSDB2                          *  C
* *      VTAM.TRSDB         NAME:   TRSDB                          *  C
* *                                                                *  C
* *  THE COS TABLE IS COPIED TO PRD2.CONFIG                        *  C
* *                                                                *  C
* *  THE FOLLOWING VARIABLE IS USED AND HAS TO BE CHANGED:         *  C
* *                                                                *  C
* *     -V001-  VOLUME OR VOLUMES THAT HAVE AVAILABLE VSAM SPACE   *  C
* *             WHICH IS CONTROLLED BY THE USER CATALOG: VSESPUC   *  C
* *                                                                *  C
* ******************************************************************  C
*                                                                      C
                                                                       C
                                                                       C
         AFTER YOU HAVE MODIFIED THE SKELETON ENTER '@DTRSEXIT'        C
         FROM THE EDITOR'S COMMAND LINE.                               C
         THIS MACRO WILL DELETE ALL DESCRIPTIVE TEXT FROM THIS FILE,   C
         BY DELETING ALL LINES WHICH ARE MARKED WITH THE CHARACTER C   C
         IN COLUMN 71.                                                 C
                                                                       C
                                                                       C
// DLBL IJSYSUC,'VSESP.USER.CATALOG',0,VSAM
// EXEC IDCAMS,SIZE=AUTO
   DELETE (VTAM.DSDBCTL) PURGE CL              -
          CATALOG(VSESP.USER.CATALOG)
   DELETE (VTAM.DSDB1) PURGE CL                -
          CATALOG(VSESP.USER.CATALOG)
   DELETE (VTAM.DSDB2) PURGE CL                -
          CATALOG(VSESP.USER.CATALOG)
   DELETE (VTAM.TRSDB) PURGE CL                -
          CATALOG(VSESP.USER.CATALOG)
   DEFINE CLUSTER (NAME(VTAM.DSDBCTL)          -
          RECORDS (1 1)                        -
          FREESPACE (20 10)                    -
          NONINDEXED                           -
          RECORDSIZE (20,20)                   -
          REUSE                                -
          SHAREOPTIONS (2,3)                   -
          VOLUMES (-V001-))                    -
          CATALOG (VSESP.USER.CATALOG)
   DEFINE CLUSTER (NAME(VTAM.DSDB1)            -
          RECORDS (1 1)                        -
          FREESPACE (20 10)                    -
          NONINDEXED                           -
          RECORDSIZE (1000,1000)               -
          REUSE                                -
          SHAREOPTIONS (2,3)                   -
          VOLUMES (-V001-))                    -
          CATALOG (VSESP.USER.CATALOG)
   DEFINE CLUSTER (NAME(VTAM.DSDB2)            -
          MODEL (VTAM.DSDB1))                  -
          CATALOG (VSESP.USER.CATALOG)
   DEFINE CLUSTER (NAME(VTAM.TRSDB)            -
          MODEL (VTAM.DSDB1))                  -
          CATALOG (VSESP.USER.CATALOG)
   SET MAXCC = 0
*//*
// OPTION STDLABEL=DELETE
DSDBCTL
DSDB1
DSDB2
TRSDB
*//*
// OPTION STDLABEL=ADD
// DLBL DSDBCTL,'VTAM.DSDBCTL',,VSAM,CAT=VSESPUC
// DLBL DSDB1,'VTAM.DSDB1',,VSAM,CAT=VSESPUC
// DLBL DSDB2,'VTAM.DSDB2',,VSAM,CAT=VSESPUC
// DLBL TRSDB,'VTAM.TRSDB',,VSAM,CAT=VSESPUC
*//*
// EXEC IESVCLUP,SIZE=AUTO             ADD LABEL TO STDLABUP PROC
D                                              DSDBCTL
D                                              DSDB1
D                                              DSDB2
D                                              TRSDB
A VTAM.DSDBCTL                                 DSDBCTL VSESPUC
A VTAM.DSDB1                                   DSDB1   VSESPUC
A VTAM.DSDB2                                   DSDB2   VSESPUC
A VTAM.TRSDB                                   TRSDB   VSESPUC
*//*
// EXEC LIBR,PARM='MSHP'
CONNECT S=PRD1.BASE:PRD2.CONFIG
COPY COSAPPN.Z:COSAPPN.B R=Y
```

```
*//*
*//&
*/$$ EOJ
```

Start Options

The following figure shows a start options list for host V05 (start options for host V01 are similar).

```
CATALOG ATCSTRA5.B         REPLACE=YES
ASYDE=TERM,                                                          X
APPNCOS=COSAPPN,                                                     X
CONFIG=A5,                                                           X
CDRSCTI=50,                                                          X
COLD,                                                                X
CDSERVR=NO,                                                          X
CMPMIPS=100,                                                         X
CMPVTAM=4,                                                           X
CPCP=YES,                                                            X
DATEFORM=DMY,                                                        X
DYNADJCP=YES,                                                        X
DYNLU=YES,                                                           X
HOSTSA=5,                                                            X
HOSTPU=NODE0005,                                                     X
HOTIOTRM=25,                                                         X
IOINT=70,                                                            X
MSGMOD=NO,                                                           X
MSGLEVEL=V4R2,                                                       X
NOTNSTAT,                                                            X
NETID=NET3246,                                                       X
NODETYPE=NN,                                                         X
NQNMODE=NQNAME,                                                      X
PPOLOG=NO,                                                           X
PROMPT,                                                              X
ROUTERES=1,                                                          X
SSCPNAME=SSCP0005,                                                   X
SUPP=NOSUP,                                                          X
SONLIM=(60,30),                                                      X
SSCPDYN=YES,                                                         X
SSCPID=5,                                                            X
SSCPORD=PRIORITY,                                                    X
SGALIMIT=500M,                                                       X
SGA24=16M,                                                           X
TRACE,TYPE=VTAM,SIZE=200,OPT=ALL,                                    X
XNETALS=YES,                                                         X
BSBUF=(28,,,,1),                                                     X
CRPLBUF=(60,,,,1),                                                   X
IOBUF=(70,288,,,11),                                                 X
LFBUF=(70,,,,30),                                                    X
LPBUF=(50,,,,6),                                                     X
SFBUF=(50,,,,20),                                                    X
SPBUF=(210,,,,32),                                                   X
XDBUF=(6,,,,1)                                                       X
/+
```

Figure 63. Start Options List (APPN)

Note:

1. By including the HOSTSA option, you indicate that the node is an Interchange Node (ICN). An ICN is an APPN network node with full subarea SSCP functions.
2. The name that is assigned to the SSCPNAME option is the control point name (CPNAME) of the node.

VTAM Startup Job

The figure below shows portions from a VTAM startup job that are relevant for APPN networks, in particular label information for VSE/VSAM files.

For a complete VTAM startup job refer to Figure 69 on page 113.

```
// DLBL DSDBCTL,'VTAM.DSDBCTL',,VSAM,CAT=IJSYSCT
// DLBL DSDB1,'VTAM.DSDB1',,VSAM,CAT=IJSYSCT
// DLBL DSDB2,'VTAM.DSDB2',,VSAM,CAT=IJSYSCT
// DLBL TRSDB,'VTAM.TRSDB',,VSAM,CAT=IJSYSCT
   .
   .
   .
// EXEC ISTINCVT,SIZE=AUTO,PARM='CUSTNO=XXXX-XXX-XXXX,VTAMPW=YYYY-YYYY-X
               YYYY-YYYY-YYYY,LIST=A5',DSPACE=2M
```

Figure 64. VTAM Startup Job Statements

Note that startup parameter LIST=A5 points to start options list ATCSTRA5 (see the preceding figure).

Chapter 13. Tailoring VTAM

This chapter describes how you can tailor VTAM. It contains these main topics:

Introduction

VTAM starts up and controls the communication resources. It activates and deactivates:

- Application program major nodes
- Application program minor nodes
- SNA and non-SNA major nodes
- SNA and non-SNA minor nodes
- The paths defined between subareas, for example, between VTAM and NCP.
- In an NCP environment, NCP supervises the protocol and data routing aspects. It handles line errors, performs error recovery actions, and controls dynamic buffering. Before it assumes its network control function, you must load it into the communication controller. To do this, use the:
  - VTAM VARY command or
  - the ACF/SSP Independent Loader Utility (see "Loading NCP" on page 111).

But before you actually start up VTAM, you may want to *tailor*, assemble (if necessary), and catalog the following IBM-supplied default values:

- Partition size.
- Startup options.
- Configuration list.
- Path definitions.
- Application program major nodes.
- USS tables.
- Logmode tables.

Note: Part of the following discussion relates only to subarea networks, not to APPN networks.

VTAM Startup Options

Under z/VSE the VTAM startup options are taken from five sources:

1. Defaults
2. Values entered through a dialog
3. Values created by the system
4. Values entered in a special member

5. Values entered at VTAM startup time.

Defaults

The default VTAM startup options (designated for subarea networks) are contained in member ATCSTR00.B of sublibrary PRD2.CONFIG. Figure 65 on page 106 shows the content (the underlying assumption is that resource names are built according to the 4-digit subarea naming convention).

```
CATALOG  ATCSTR00.B     REPLACE=YES
SSCPID=1,                                                          *
SSCPNAME=SSCP01,                                                   *
NETID=VTAM1,                                                       *
HOSTSA=1,                                                          *
HOSTPU=NODE01,                                                     *
MAXSUBA=255,                                                       *
CONFIG=00,                                                         *
NOPROMPT,                                                          *
IOINT=0,                                                           *
SGALIMIT=0,                                                        *
IOBUF31=YES,                                                       *
BSBUF=(28,,,,1),                                                   *
CRPLBUF=(60,,,,1),                                                 *
LFBUF=(70,,,,11),                                                  *
IOBUF=(70,288,,,11),                                               *
LPBUF=(12,,,,6),                                                   *
SFBUF=(20,,,,20),                                                  *
SPBUF=(210,,,,32),                                                 *
XDBUF=(6,,,,1)
/+
```

Figure 65. Default VTAM Startup Options

Values Entered through a Dialog

The *Maintain VTAM Startup Options* dialog allows you to modify the three options

- HOSTSA
- PROMPT
- NETID

Access the *Maintain VTAM Startup Options* dialog as follows. Starting with the *z/VSE Function Selection* panel, select:

2 (Resource Definition)
6 (Maintain VTAM Startup Options)

At the end of the dialog, a new list of startup options is stored in library 51. Also, the dialog builds a job to catalog the new options into sublibrary PRD2.CONFIG.

When changing the HOSTSA, you get prompted for *automatic renaming* of VTAM resources. A reply of **1** (=yes) replaces the default **host** subarea in the VTAM netname by the new subarea value. Consider **carefully the following two notes:**

Note:

1. Do not opt for automatic renaming if you had deviated from the Hardware Configuration dialog's naming conventions (see Appendix A, “Naming Convention,” on page 119). Automatic renaming could interfere with your own naming scheme by overriding the right-most positions of the netname which contain the subarea number.
2. After an automatic renaming, regenerate any NCP that is associated with the new subarea host. Various NCP definition statements refer to the host's subarea number.

Values Created by the System

Whenever you enter something in the *Maintain VTAM Startup Options* dialog, the system builds three values depending on your input to the dialog:

- SSCPID
- SSCPNAME
- HOSTPU

Again, these options will be integrated into the list of startup options which is stored in library 51.

Values Entered in Member E$$VTMST

To modify VTAM startup options other than those described above, use the special member E$$VTMST in library 2. The member has already initial entries as delivered with your z/VSE. They have the same format as in the list shown in Figure 65 on page 106.

Change the existing entries, or add new ones, according to your needs. The options in member E$$VTMST are "appended" to the options built from the dialog, and both groups are integrated into the startup options list in library 51.

Values Entered at VTAM Startup Time

You can supply startup options at the time of VTAM startup if PROMPT is specified in the source book ATCSTR00.B. The operator either

- enters startup options at the console during VTAM startup **or**
- enters 'LIST=xx' during VTAM startup to read in a different list altogether, say, ATCSTR02. In this case, the operator would enter 'LIST=02' during VTAM startup. ATCSTR02 can also contain the 'CONFIG=xx' parameter pointing to the configuration list in the VTAM source book ATCCONxx.

Note that you may also supply a LIST value in the PARM list of the EXEC statement that starts VTAM.

Configuration List

When starting up, VTAM needs a configuration list of major nodes to be activated. These are application program major nodes and SNA as well as non-SNA local and remote major nodes. The configuration list must contain system-provided major nodes and it may contain your own major nodes.

You would, for example, add

- NCP major nodes
- X.25 packet-switched major nodes VTMXPU and PORxxxxx
- Local Area Network (LAN) major nodes VTMTRLc and VTMTRSc

if you choose to have them activated automatically at VTAM startup time.

But be aware that the more major nodes you select to be activated during VTAM startup the longer this startup will take. It is conceivable that an installation would want the local devices activated quickly and the remote part (an NCP for example) in a second step. In this case the remote part should be activated manually, not via the configuration list.

The default configuration list is stored in PRD2.CONFIG under the name ATCCON00.B (see Figure 66 on page 108). If you want to add your own major nodes, you should copy the source book to your primary library. When you recatalog the source book, think of renaming it (see the next paragraph).

```
         VTMAPPL,                                                *
         TCPAP00,                                                *
         VTMSNA,                                                 *
         VTMNSNA,                                                *
         VTMPATH,                                                *
         VTMCA1,                                                 *
         VTMCA2,                                                 *
         VTMCA3,                                                 *
         VTMCTCA,                                                *
         VTMCDRM,                                                *
         VTMCDRS,                                                *
         VTMSW1
```

Figure 66. Default VTAM Configuration List

By default, VTAM searches the source book ATCCON00 for that configuration list. If you used CONFIG=02 in your startup options list ATCSTRxx, you would have to define a source book with the name ATCCON02 which VTAM would search first. If you want a different configuration list, depending on your specific work profile on a given day, you could also use, say, ATCCON03. In this case, the operator should enter CONFIG=03 for ATCCON03.

The activation of major nodes is always in the sequence in which the major node names appear in the configuration list. If you use LOGAPPL=DBDCCICS and ISTATUS=ACTIVE in your LU minor node definition for automatic logon to CICS Transaction Server, put the APPL entry first, before the SNA and non-SNA (local and remote) major nodes. This will activate the **application prior to the terminals** accessing that application.

Path Definitions

Communication between two addressable nodes, for example, VTAM and NCP, takes place via a path called a route. You must define one or more routes whenever your system has at least two subareas (a single domain with an Integrated Communication Adapter does not require a route definition).

You can define two levels of routing, a physical route called Explicit Route (ER) and a logical route, called Virtual Route (VR). One end of each VR must be located in a host subarea, that is, the VTAM subarea.

You define routes via the PATH macro. Skeleton SKDTRNET instructs you how to code the PATH macro. Refer to section VTAM8 of the skeleton. For an example see “VTAM3 - Cross-Domain Path Table” on page 80.

Application Major Node

All application programs using VTAM services (such as CICS) must be defined to VTAM using the APPL statement in an application major node definition.

z/VSE provides default definitions which are stored as member VTMAPPL.B in sublibrary PRD2.CONFIG. Refer to Figure 67 on page 108 for the z/VSE-provided defaults.

```
CATALOG  VTMAPPL.B      REPLACE=YES
VTMAPPL  VBUILD TYPE=APPL
DBDCCICS APPL  AUTH=(PASS,ACQ),MODETAB=IESINCLM,PARSESS=YES
PRODCICS APPL  AUTH=(PASS,ACQ),MODETAB=IESINCLM,PARSESS=YES
OLDCICS  APPL  AUTH=(PASS,ACQ),MODETAB=IESINCLM,PARSESS=YES
POWER    APPL  AUTH=(ACQ)
PNET     APPL  AUTH=(PASS,ACQ),VPACING=3,MODETAB=VTMLOGTB,DLOGMOD=PNET
PSFAPPL  APPL  AUTH=ACQ,EAS=1,SONSCIP=YES
IESWAITT APPL  AUTH=(NOACQ)
/+
```

Figure 67. Default VTMAPPL - Application Major Node

The application major node name (VTMAPPL) in turn is listed in the configuration list example under “Configuration List” on page 107.

Note: IESWAITT is required for CICS Transaction Server startup.

The *Maintain VTAM Application Names* dialog helps you to define (among others) the following application **types**.

1. VSE/CICS
2. VSE/POWER RJE
3. VSE/POWER PNET
4. PSF/VSE
5. TCP/IP
6. Selfdefined

Access the dialog as follows. Starting with the *z/VSE Function Selection* panel, select:

2 (Resource Definition)
5 (Maintain VTAM Application Names)

The dialog displays the *VTAM APPLID Maintenance: APPLID LIST* panel. For an example see Figure 68 on page 109.

```
COM$APPA            VTAM APPLID MAINTENANCE: APPLID LIST


OPTIONS:     2 = ALTER AN APPLID             5 = DELETE AN APPLID


   OPT       APPLID   APPLICATION  APPLICATION   DEFAULT
                         TYPE        PROPERTY     LOGAPPL
    _       DBDCCICS     CICS       LOGAPPL       X
    _       PRODCICS     CICS       LOGAPPL       _
    _       POWER        RJE                      _
    _       PNET         PNET                     _
    _       --------                              _
    _       --------                              _
    _       --------                              _
    _       --------                              _
    _       --------                              _
    _       --------                              _

PF1=HELP       2=REDISPLAY  3=END                   5=PROCESS    6=ADD APPL
```

Figure 68. Maintain VTAM Application Names

The panel lists the application names (APPLIDs) of the VTAM applications installed on your system. The applications shown are:

- CICS TS (Applid DBDCCICS)
- A second CICS TS (Applid PRODCICS)
- CICS/VSE 2.3 (Applid OLDCICS), used in addition to CICS TS
- RJE, a standard POWER/RJE definition
- PNET, a POWER networking application.

The APPLIDs listed are defined as minor nodes of the VTAM application major node VTMAPPL.

Other possible application types are PSF (if you are using the IBM software product Print Services Facility) and *selfdefined* for self-defined applications. The definition of self-defined applications is further explained a few lines below.

Application property LOGAPPL, as shown for application types CICS indicates that you can set up a direct signon to that application.

The dialog allows you to

- Add another application (**PF6**).

The application must be one of the 6 types listed above at the beginning of this section. In the example, a second CICS-type application has already been added.

The sixth type (*selfdefined*) lets you write your own application definitions in the special member E$$VTMAP. Your z/VSE as delivered to you already has in library 2 an initial (dummy) E$$VTMAP without any entries. You may add to this member, or you may create a separate E$$VTMAP in your primary library.

Code as many VTAM APPL statements (application minor nodes) as you need. **These definitions must be complete**, that is: **all parameters** that you want to have included must be present.

The dialog asks you to name the NEW APPLID. Choose any name that will identify this special set of APPL statements. Only if one in the set is designated as *default logon application* (see the next item below), the name of its APPL statement must be taken as NEW APPLID.

After you press ENTER, the dialog returns you to the original APPLID LIST (see Figure 68 on page 109). Press PF5 for *PROCESS*. The dialog will now include member E$$VTMAP (from your primary library or, if not there, from library 2) into the application major node.

- Define a default logon application for terminal configuration.

  As was described at “LOGAPPL” on page 46, a default logon application is presented to you in the LOGAPPL parameter when you define a 3270 terminal. By entering an 'X' in the above panel, you declare the APPLID as that DEFAULT LOGAPPL.

  Only one out of several CICS Transaction Server applications, or out of several self-defined applications, with the application property LOGAPPL can be specified as DEFAULT LOGAPPL. The LOGAPPL for the already configured terminals remains the same. Only the terminals which are configured from now on will get the new default LOGAPPL.

USS Table Definition

When a user starts an LU-LU session, that is, signs on to an application program at a display station, a USSTAB (Unformatted System Services Table) is used by USS (Unformatted System Services), a component of the SSCP. With the USS table, you can modify messages that are sent to the terminal to provide certain information to the user about a logon procedure.

The USS table is one of the VTAM tables which the user can provide if the default table is not adequate for a specific application.

z/VSE provides a table called VTMUSSTR for SNA display products and VTMUSSTB for non-SNA display products. A jobstream with the member name SKVTMUSS in VSE/ICCF library 59 assembles, link-edits, and catalogs these tables so that they are available to VTAM. The skeleton is not shown in this publication. However, the network definition skeleton SKDTRNET in its sections VTAM11 through VTAM13 has the same information.

You specify the table you want to use by coding the USSTAB parameter on the LU, LOCAL, or TERMINAL macros. If you do not specify your own USSTAB, VTAM uses the IBM default USSTAB with the phase name ISTINCDT as mentioned above.

Logon Mode Table Definition

Logon mode tables are the second category of tables you may want to specify for certain applications. Similar to USS tables, they are used by VTAM to interpret logon requests and to set proper session parameters when an application program (PLU) and a terminal (SLU) go into session. If you have only CICS Transaction Server applications in your system, there is no need to code these logon mode tables; CICS may generate its own session parameters from CICS terminal definitions. But if you use other applications, for example NetView, you must code a logon mode table.

Logon mode tables consist of mode entries. The tables must be assembled and link-edited into phases. The MODETAB macro defines the table, the MODEENT defines the entry, and MODEEND ends the table. The IBM publication *VTAM Customization* explains how to code logon mode entries.

To select a particular logon mode table and a particular entry within this table, you code the parameters

- MODETAB (for the table)
- DLOGMOD (for the entry)

in the VTAM definition statements:

- APPL
- LU
- TERMINAL

If you do not supply a logon mode table, an IBM-supplied logon mode table is used. Your z/VSE provides this table in sublibrary IJSYSRS.SYSLIB as IESINCLM.PHASE. The source is available in library 59 under the same name. A listing is shown in the appendix, in Figure 74 on page 138.

If you replace or modify the IBM-supplied entries, you should copy the IBM-supplied table and **give a new name** to this copy. Make sure to adjust the references to the table name in the APPL, LU, and TERMINAL statements accordingly.

Skeleton SKVTMMOD (in library 59) also helps you code the logon mode table entries.

You can specify logon mode entries either in the logon mode table or in the USS logon command. If you use both, the USS command overrides the DLOGMOD parameter.

Loading NCP

Before you load the NCP into the communication controller, you must create a sequential disk file for the NCP module to be loaded into the communication controller. VSE/ICCF skeleton SKNCPCLF in library 59 contains job NCPFILE to create that file. Modify it to match your configuration and run the job. To actually load the NCP load module into the communication controller, either

- Issue the VTAM command

  V NET,ACT,ID=ncpname,LOAD=YES

  or
- Use the ACF/SSP independent loader utility to load NCP from disk. Use VSE/ICCF skeleton SKNCPLD (in library 59) containing job LOAD37XX.

If loaded via the independent loader utility, the NCP has to be activated with the VTAM command

V NET,ACT,ID=ncpname,LOAD=NO

Chapter 14. Operating Considerations

This chapter provides some items you should consider when operating your VTAM system. It contains these main topics:

- “z/VSE Operating” on page 113
- “Cross-Domain Operating” on page 118

z/VSE Operating

Part of the following discussion relates only to subarea networks, not to APPN networks.

z/VSE Startup

Before you initiate an SNA session, z/VSE must be started. This is normally part of your automatic startup.

After you installed your z/VSE, a default z/VSE startup job stream is used by the system. Its VSE/POWER job name is VTAMSTRT. It is based on the skeleton job stream SKVTAM which is shown in Figure 69 on page 113.

If you want to add your installation-dependent parameters, you must modify skeleton SKVTAM. Copy it from library 59 into your primary library and follow the instructions that are given inside the member.

After you complete the skeleton, submit it to the VSE/POWER reader queue. If you chose a VSE/POWER name other than VTAMSTRT, make sure you adjust skeleton SKUSERBG which is the base for the automatic startup. The publication z/VSE Administration, gives information on how to handle SKUSERBG.

The VTAM startup shown here is based on the assumption that VTAM runs under VSE/POWER.

Figure 69. Skeleton SKVTAM for z/VSE Startup Job

```
         AFTER YOU HAVE MODIFIED THE SKELETON ENTER '@DTRSEXIT'       C
         FROM THE EDITOR'S COMMAND LINE.                              C
         THIS MACRO WILL DELETE ALL DESCRIPTIVE TEXT FROM THIS FILE,  C
         BY DELETING ALL LINES WHICH ARE MARKED WITH THE CHARACTER C  C
         IN COLUMN 71.                                                C
                                                                      C
* ******************************************************************  C
*                                                                     C
*            VTAM STARTUP JOB FOR PARTITION F3                        C
*            ---------------------------------                        C
*                                                                     C
*   IT ASSUMES, THAT VTAM WILL BE STARTED IN A POWER CONTROLLED       C
*   PARTITION.                                                        C
*                                                                     C
* ******************************************************************  C
* THIS SKELETON PROVIDES A JOB WHICH                                  C
*                                                                     C
* 1. CATALOGS THE VTAM STARTUP JOB AS VTAMSTRT.Z INTO IJSYSRS.SYSLIB  C
* 2. CATALOGS THE PROCEDURE LDVTAM WHICH LOADS VTAMSTRT.Z INTO THE    C
*    POWER RDR QUEUE VIA DTRIINIT.                                    C
* 3. EXECUTES LDVTAM.PROC                                             C
*    IF YOU DO NOT WANT TO LOAD IT IMMEDIATELY INTO THE ACTIVE RDR    C
*    QUEUE, DELETE FOLLOWING LINE:                                    C
*    // EXEC PROC=LDVTAM                                             C
*                                                                     C
* NOTE: ADDITIONAL '$$' SIGNS ARE NEEDED IN THE JOB TO BE CATALOGED.  C
*       THESE SIGNS MASK THE POWER JECL STATEMENTS SO THAT THEY ARE   C
*       NOT EXECUTED. THE DTRIINIT PROGRAM CHANGES THE '$$' SIGNS     C
*       INTO THE APPROPRIATE JECL STATEMENTS.                         C
*                                                                     C
* ******************************************************************  C
* FILL IN MISSING PARAMETERS IN VTAMSTRT                              C
* ------------------------------------                                C
* FILL IN THE MISSING PARAMETERS SHOWN HERE BY A STRING OF Y'S. THE   C
* NUMBER OF Y'S INDICATES THE MAXIMUM OF CHARACTERS EXPECTED.         C
* REMOVE CHARACTER C IN COLUMN 71 IF Y'S ARE CHANGED.                 C
*                                                                     C
```

```
* CHANGE,DELETE OR ADD ANY STATEMENT OR PARAMETER NEEDED TO MEET YOUR C
* REQUIREMENTS.                                                       C
*                                                                     C
* CHANGE THE DEFAULT CUSTOMER NUMBER AND THE RELATED PASSWORD IN THE  C
* // EXEC ISTINCVT STATEMENT TO YOUR INDIVIDUAL VALUES.               C
*                                                                     C
* ******************************************************************  C
* CHANGING THE NAME 'VTAMSTRT.Z'                                      C
* ------------------------------                                      C
*                                                                     C
* DO NOT FORGET TO UPDATE:                                            C
*    - PROCEDURE USERBG (SKUSERBG)                                    C
*    - PROCEDURE COLDJOBS (SKCOLD)                                    C
* ******************************************************************  C
* $$ JOB JNM=CATVTAM,DISP=D,CLASS=0
// JOB CATVTAM           CATALOG VTAMSTRT AND LDVTAM, LOAD VTAMSTRT
// EXEC LIBR,PARM='MSHP'
ACC S=IJSYSRS.SYSLIB
CATALOG  VTAMSTRT.Z        REPLACE=YES
$$$$ JOB JNM=VTAMSTRT,DISP=L,CLASS=3
// JOB VTAMSTRT  START VTAM
// OPTION DUMP,SADUMP=5
// SETPARM XNCPU='
// EXEC PROC=$COMVAR,XNCPU
// EXEC DTRSETP,PARM='CPUVAR&XNCPU;;SET XSTATF3=ACTIVE'
$$/*
// SETPFIX LIMIT=424K
* IN CASE YOUR SYSTEM HAS MORE THAN 16MB REAL STORAGE ACTIVATE NEXT   C
* STATEMENT BY REMOVING THE '* '.                                     C
* // SETPFIX LIMIT=(,300K)
// ASSGN SYS000,UA
// ASSGN SYS001,DISK,VOL=SYSWK1,SHR     TRACE FILE ASSIGNMENT
// ASSGN SYS004,DISK,VOL=SYSWK1,SHR     TRACE FILE ASSIGNMENT
// ASSGN SYS005,DISK,VOL=SYSWK1,SHR     NCP LOAD/DIAG FILE ASSGN
                                                                       C
                  SPECIFY THE IDENTIFIERS OF THE VOLUMES WHERE THE     C
                  INDICATED FILES RESIDE. SYS000 MUST REMAIN UN-       C
                  ASSIGNED IT IS INTERNALLY USED BY VTAM.              C
                  THE TRACE FILE IS ADDRESSED AS SYS001 BY THE TRACE   C
                  PROGRAM AND AS SYS004 BY THE TPRINT PROGRAM.         C
                  THIS JOB ASSUMES, THAT THE APPROPRIATE               C
                  LABELS HAVE BEEN LOADED PREVIOUSLY AS SYSTEM OR      C
                  PARTITION STANDARD LABELS.                           C
                                                                       C
                                                                       C
// LIBDEF  PHASE,SEARCH=(PRD2.COMM,                                     X
               YYYYYYY.YYYYYYYY,YYYYYYY.YYYYYYYY,YYYYYYY.YYYYYYYY,     CX
               PRD2.COMM2,PRD2.CONFIG,PRD1.BASED,PRD1.BASE),PERM
                                                                       C
                   DEFINE THE PERMANENT LIBRARY SEARCH CHAIN FOR THE   C
                   TYPE PHASE MEMBERS.                                 C
                   DON'T EXCLUDE THE SYSTEM USED SUBLIBRARIES OR       C
                   CHANCES ARE, THAT SOME FUNCTIONS WHICH ARE CREATED  C
                   BY DIALOGS DON'T WORK ANYMORE.                      C
                                                                       C
// LIBDEF    OBJ,SEARCH=(PRD2.COMM,                                     X
               YYYYYYY.YYYYYYYY,YYYYYYY.YYYYYYYY,YYYYYYY.YYYYYYYY,     CX
               PRD2.COMM2,PRD2.CONFIG,PRD1.BASED,PRD1.BASE),PERM
                                                                       C
                   DEFINE THE PERMANENT LIBRARY SEARCH CHAIN FOR THE   C
                   TYPE OBJ MEMBERS.                                   C
                   DON'T EXCLUDE THE SYSTEM USED SUBLIBRARIES OR       C
                   CHANCES ARE, THAT SOME FUNCTIONS WHICH ARE CREATED  C
                   BY DIALOGS DON'T WORK ANYMORE.                      C
// LIBDEF SOURCE,SEARCH=(PRD2.COMM,                                     X
               YYYYYYY.YYYYYYYY,YYYYYYY.YYYYYYYY,YYYYYYY.YYYYYYYY,     CX
               PRD2.COMM2,PRD2.CONFIG,PRD1.BASED,PRD1.BASE),PERM
                                                                       C
                   DEFINE THE PERMANENT LIBRARY SEARCH CHAIN FOR THE   C
                   TYPE SOURCE MEMBERS.                                C
                   DO NOT PUT  IJSYSRS.SYSLIB IN THIS SEARCH CHAIN.    C
                   DON'T EXCLUDE THE SYSTEM USED SUBLIBRARIES OR       C
                   CHANCES ARE, THAT SOME FUNCTIONS WHICH ARE CREATED  C
                   BY DIALOGS DON'T WORK ANYMORE.                      C
                                                                       C
                                                                       C
// LIBDEF   DUMP,CATALOG=SYSDUMP.F3,PERM
                                                                       C
                   DEFINE THE PERMANENT SUBLIBRARY FOR THE             C
                   TYPE DUMP MEMBERS.                                  C
                                                                       C
                                                                       C
```

```
// EXEC ISTINCVT,SIZE=ISTINCVT,PARM='CUSTNO=XXXX-XXX-XXXX,VTAMPW=YYYY-Y*
               YYY-YYYY-YYYY-YYYY',DSPACE=2M
// EXEC DTRSETP,PARM='CPUVAR&XNCPU;;SET XSTATF3=INACTIVE'
$$/*
$$/&
$$$$ EOJ
/+
CATALOG  LDVTAM.PROC     REPLACE=YES DATA=YES
// EXEC DTRIINIT
   LOAD VTAMSTRT.Z
/*
/+
/*
// EXEC PROC=LDVTAM        TO LOAD  VTAM STARTUP  INTO RDR QUEUE
/&
* $$ EOJ
```

Starting NCP

After you have initiated z/VSE, activate the z/VSE path definitions for your NCP subarea before you attempt to load the NCP program. NCP is actually started as described in “Loading NCP” on page 111.

Starting VSE/POWER PNET

In order to activate job and file transfer capabilities, you have to start PNET on each node. On each node, you start the PNET application of the other node by issuing, for example:

```
PSTART PNET,BOEVSES5
```

Session Initialization

Sessions between logical units can be initiated:

1. By z/VSE automatically via the application program named in the LOGAPPL=xxxxxxxx LU definition statement or via the VTAM Application Selection Menu.
2. By an application program. In this case, CICS Transaction Server, for example, simulates a logon on behalf of the secondary logical unit (SLU) if you coded CONNECT=AUTO in the TCT TYPE=TERMINAL macro **and the terminal is powered on**.

   It is also possible that the master terminal operator, via the CICS TS master terminal command CEMT, acquires a terminal.
3. By a terminal.

   The terminal issues a request which causes it to be logged on to the application program. The terminal user enters, for example:

   - LOGON APPLID(DBDCCICS)

   at the terminal which has been activated by z/VSE (said to be in SSCP-LU session)

   or

   the appropriate application logon command represented by perhaps an abbreviated command shown in an application panel.
4. By the operator who specifies certain LUs to be logged on to certain application programs by entering:

   - V NET,ACT,ID=luname,LOGON=DBDCCICS

   at the console.

LU-LU Sessions

There are four session types which z/VSE can establish. They are:

- SSCP-PU
- SSCP-LU

- LU-LU
- SSCP-SSCP (for multiple domains only)

For the LU-LU session type it is recommended that, if you have **only one CICS Transaction Server** installed, use the **automatic logon** technique. If you have **more than one CICS Transaction Server** installed, use the **SLU-initiated** technique. If you have **several application programs** installed which can be accessed from one terminal and you **code your own USS table**, users can more easily select those application programs from a selection panel. To establish user-defined z/VSE tables, see "USS Table Definition" on page 110.

To establish a session, z/VSE needs session parameters (such as RECEIVESIZE and others) which are obtained from the CICS Transaction Server terminal definition. Therefore, a separate z/VSE LOGMODE table entry is not needed. In certain cases, however, take NetView for example, you should have a separate LOGMODE table. For how to code such a table, see "Logon Mode Table Definition" on page 110.

Controlling Your Network (including PNET)

After you have brought up z/VSE, you can control all major and minor nodes in z/VSE by issuing activating or deactivating commands for these nodes.

For example, in order to **activate** your connections, you must activate all major and minor nodes using the VARY NET,ACT command. The format is:

```
VARY NET,ACT,ID=xxxxxxxx
```

For the equivalent command under TCP/IP for VSE/ESA, refer to the chapter "Configuring an OSA Express Adapter" in the manualz/VSE TCP/IP Support.

Use the following commands to start:

```
VARY NET,ACT,ID=linename
VARY NET,ACT,ID=puname
```

where ID is the node name cataloged in the z/VSE source library. If you activate a **major node** and if you generated the minor nodes under it with ISTATUS=ACTIVE, the minor nodes will become active also.

You start VSE/POWER connections like so:

```
PSTART PNET,node ID        PNET over an SDLC line
PSTART PNET,node ID,,cuu   PNET over a  BSC  line
```

```
PSTART RJE,SNA             RJE over an SDLC line
PSTART RJE,lineaddr        RJE over a  BSC  line
```

Similarly, if you want to **deactivate** a node, use the VARY NET,INACT command. The format is:

```
VARY NET,INACT,ID=xxxxxxxx
```

For example, to deactivate application program PAYROLL, say:

```
VARY NET,INACT,ID=PAYROLL
```

Note: If you have updated the z/VSE configuration entries, be sure to deactivate them and then reactivate them to get the changes online.

To deactivate VSE/POWER connections, use the PSTOP command:

```
PSTOP PNET,node ID     PNET over an SDLC or a BSC line
```

```
PSTOP RJE,SNA          RJE over an SDLC line
PSTOP lineaddr         RJE over a  BSC line
```

Activating Path Definitions

All paths which you defined for the SNA subareas and cataloged in the z/VSE source library must be activated using the VARY NET,ACT command. To activate PATH1, say:

```
VARY NET,ACT,ID=PATH1
```

Similarly, if you want to deactivate a path, use the VARY NET,INACT command. The format is:

```
VARY NET,INACT,ID=xxxxxxxx
```

Diagnosing with z/VSE

z/VSE allows you to test communication links, display NCP storage, perform various traces, and collect tuning statistics. You can check into buffer contents, buffer usage, I/O activity, and various internal operations. To activate a trace, use the F NET,TRACE command. For example, to trace the I/O activity of an NCP node, say NCPNEW7, you would enter:

```
F NET,TRACE,ID=NCPNEW7,TYPE=IO
```

This places the output of the I/O trace in the z/VSE trace file. Default assignments are shown in Figure 69 on page 113 (SYS001 and SYS004). Make sure you have loaded label information for file TRFILE into STDLABEL.PROC.

To end the trace, enter:

```
F NET,NOTRACE,ID=NCPNEW7,TYPE=IO
```

To print the contents of the trace, use the TPRINT program (described in *ACF/VTAM Operation* SC31-6408).

Session Termination

Three types of session termination are possible depending on who initiates the request.

1. SLU-requested session termination

   In this case, the operator at a display terminal (SLU) enters a logoff command which disconnects this operator from the application program. The format is:

   ```
   LOGOFF [APPLID(appl name)] [TYPE(COND|UNCOND|FORCE)] [HOLD(YES|NO)]
   ```

   where you must enter the application name from which to log off, whether the type of LOGOFF is conditional, unconditional (default), or forced, and whether or not the SSCP-PU, that is, the higher ranking, session is to be maintained (default) or not.

2. Application program-requested session termination

   In this case, the application program wants to terminate the session with a terminal (SLU). This could be activated by a terminal operator entering CSSF LOGOFF or by the master terminal operator disconnecting all connected terminals or only specific ones. Since these commands do not interrupt the SSCP-LU session, z/VSE commands can be entered again from any terminal.

3. Operator-requested session termination

   In this case, the z/VSE operator disconnects a specific logical unit from a specific application program. The operator enters, at the system console:

   ```
   V NET,TERM,ID=luname

         or

   V NET,INACT,ID=luname
   ```

   The latter command actually terminates the SSCP-LU session first, and with it of course, the lower ranking LU-LU session.

Terminating z/VSE

To shut down z/VSE connections, use the HALT command (or its more common form: the Z command). Two types of z/VSE shutdown are possible.

1. In a **normal** shutdown, issue the command

   ```
   Z NET
   ```

   This lets z/VSE request application programs to disconnect themselves when convenient. They are not canceled immediately. Therefore, when you issue this form of Z command, currently connected programs are not immediately forced to disconnect themselves. Application programs that do not use z/VSE at the time cannot initiate a session after the Z command is given.
2. If you want to shut down your network **as quickly as possible**, enter:

   ```
   Z NET,QUICK
   ```

   Application programs not using z/VSE can no longer access it. Existing I/O requests are processed but new I/O requests are not accepted and no new LU-LU sessions are possible. Z NET,QUICK issues VARY NET,INACT commands with the IMMEDIATE option for every active major node.

Cross-Domain Operating

This section describes special functions built into z/VSE. Be aware that powerful tools for cross-domain operating are offered through NetView, VSE/DSNX, and (especially) TCP/IP.

Remote Operating of System Console

You can view the console of an interconnected z/VSE and enter certain commands for that system by using the *Display Console* dialog of the Interactive Interface.

After you do a cross-domain logon, the procedure to select the dialog and to work with the dialog is exactly the same as if you were a local user of the interconnected system (for details, see z/VSE Operation).

In case of a cross-domain logon, you will see the name of the system in the network (z/VSE application ID) on the first line of the console display.

Submitting/Retrieving Job Files To/From Other Systems

If you are using TCP/IP for VSE/ESA in your z/VSE system, you are recommended to use the File Transfer Program (FTP) utility to transfer or submit jobs to other systems.

Refer to z/VSE TCP/IP Support, for details of how to use this facility.

Appendix A. Naming Convention

The dialogs assign z/VSE resource names according to some naming convention.

Part of the resource name is the **subarea number**. This scheme preserves the **uniqueness of resource names**, even in multi-domain networks.

The naming convention uses a four-digit subarea number. This naming convention accommodates more than 255 subareas. It is a prerequisite for *extended subarea addressing*, and you are *strongly recommended* to use this naming convention.

If you migrate your hardware and terminal definitions from an earlier VSE system, you have to stick with the naming convention that you previously used (you cannot change naming conventions during the migration).

If you **do not migrate**, you can make a selection: after Initial Installation of your z/VSE, the dialog asks you to indicate whether your VTAM resource names are to follow the old naming convention or the one which carries a four-digit subarea number. *Choose the four-digit subarea number option.*

Figure 70 on page 119 shows the 4-digit subarea naming convention.

	Local non-SNA	Local SNA	NCP		X.25		OSA-2 or 3172 (see Note 1)	Token-Ring (NTRI)
			Leased	Switched	PVC	SVC		
LBUILD	VTMNSNA							
VBUILD		VTMSNA	VTMCA1	VTMCA3 VTMSW1 ncpnameV	Ocuusuba	Ocuusuba	Ycuusuba	ncpnameM N ... T
Port							Ucuusuba	
Group			GICAsuba GNCPsuba	HICAsuba HNCPsuba	Gcuusuba	Hcuusuba	Qcuusuba	TGlnsuba (physical) THlnsuba (logical)
Line			Lcuusuba	Lcuusuba	Vnnnsuba	Vnnnsuba	Mcuusuba (see Note 2)	TIlnsuba
PU		Acuusuba	Caaasuba	Caaasuba	Xhhhsuba	Xnnnsuba	Jnnnsuba	TPlnsuba (NCP) Caaasuba (VTAM)
LU	Dcuusuba Pcuusuba	Snnnsuba	Rnnnsuba Nnnnsuba	Rnnnsuba Nnnnsuba	Rnnnsuba	Rnnnsuba	Rnnnsuba	TLlnsuba (NCP) Nnnnsuba (VTAM)
CICS termID	Dcuu Pcuu	Snnn	Rnnn Nnnn	Rnnn Nnnn	Rnnn	Rnnn	Rnnn	Nnnn

L E G E N D : Capital letters are constants, small letters represent variables.

c	=	channel number
cuu	=	for OSA or 3172: channel unit address of the LAN (see Note 1 below) for NCP: address of line at controller for local: channel unit address
ln	=	last two digits of TIC relative line number
suba	=	host or NCP subarea number; four hexadecimal digits
nnn	=	000 - 999
hhh	=	3-digit hexadecimal number from A00 to FFF
aaa	=	3-character alphanumeric string

First letter of CICS termID:
D = Display
P = Printer
R = OSA- or 3172-attached
N = NCP-attached
S = local SNA

Note 1: The channel unit address of the LAN is:
For OSA - the cuu of the OSA ADD statement
For 3172 - the value entered on panel COM$ADDR

Note 2: The TYPE=XCA definition contains a PU statement with dummy PU Fnnnsuba

Figure 70. 4-Digit Subarea Resource Naming Convention

Some Special Rules:

1. The CICS termID of an **autoinstall** terminal starts with an 'A'.
2. Some VTAM books have PU statements that serve as a placeholder and do not correspond to any device you defined. Under the 4-digit subarea naming convention, their names start with 'Z'. An example of such a book is VTMSW1 - the switched line definition.

Appendix B. Networking Job Skeletons

Table 5. Skeletons Used for Networking Support		
Member Name	**Library**	**Use**
SKNCPLD	59	Load 37xx from CKD device using ACF/SSP.
SKNCPCLF	59	Create NCP load module file.
SKNCPCST	59	Set up NCP configurable station.
SKNCPSAL	59	Define the Subarea Link.
SKNCPWKF	59	Create NCP workfile.
SKPWRBSC	59	Define POWER BSC lines and work stations.
SKPWRDAT	59	Dynamic extension of VSE/POWER data file (which permits a VSE/POWER warm start).
SKPWRGEN	59	Generate VSE/POWER.
SKPWRNDT	59	Create PNET network definition table (SSL support).
SKPWRSNA	59	Define SDLC work stations.
SKPWSTRT	59	Startup job for VSE/POWER.
SKPWREXT	59	Extend or relocate VSE/POWER files.
SKPWRDMP	59	Create dump of the VSE/POWER spool file.
SKVTMMOD	59	Create VTAM Logon Mode table.
SKVTMUSS	59	Create VTAM USS table.

Appendix C. z/VSE Definitions for Autoinstall Terminals

CICS System Definition File

During initial installation, z/VSE creates and initializes a CICS System Definition (CSD) file with DFHPPTSP and DFHPCTSP entries. These entries are placed into group *VSESPG*, which can then be manipulated by the Resource Definition Online (RDO) transaction of CICS. The transaction ID for RDO is *CEDA*. The name of the CSD file is *CICS.CSD*. Figure 71 on page 123 shows the JCL you use for upgrading the original definition made during base installation. Note that the file is not used by the job stream that starts up CICS and VSE/ICCF.

Note: You will normally use skeleton SKCSDFC2 for your *production environment* (since it does not include VSE/ICCF).

Figure 71. Skeleton SKCSDFIL to Upgrade CSD File for the CICS Transaction Server

```
* $$ JOB JNM=SKCSDFIL,CLASS=0,DISP=D,PRI=3
// JOB SKCSDFIL  UPGRADE CICS CSD FILE
* ********************************************************************
*  ---------------- C I C S   CSD FILE UPGRADE ---------------------
*  THIS SKELETON MAY BE USED TO PERFORM AN UPGRADE OF THE
*  CICS CSD FILE
* ********************************************************************
*   CLOSE DFHCSD FILE FIRST
*   ISSUE FOLLOWING COMMANDS SEQUENCE ON THE CONSOLE AFTER  // PAUSE
*     MSG F2
*     XX CEMT SET FI(DFHCSD) CLOSE    (XX = REPLY-ID)
*     REPLY  "(END/ENTER)"  TO CONTINUE
* --------------------------------------------------------------------
// PAUSE
// EXEC DFHCSDUP,SIZE=600K     UPDATE CICS CSD VSAM FILE
  UPGRADE
  UPGRADE USING(DFHCURCF)
  DELETE GROUP(VSETYPE)
  DELETE GROUP(VSETERM)
  DELETE GROUP(VSETERM1)
  DELETE GROUP(VSEAI62)
* $$ SLI MEM=IESMODEL.Z
  DELETE GROUP(VSESPG)
  DELETE GROUP(EZA)
  DELETE GROUP(FCTSP)
* $$ SLI MEM=IESZPCT.Z
* $$ SLI MEM=IESZPCTI.Z
* $$ SLI MEM=IESWPCT.Z
* $$ SLI MEM=IESZPPT.Z
* $$ SLI MEM=IESZPPTI.Z
* $$ SLI MEM=IESZPPTL.Z
* $$ SLI MEM=IESWPPT.Z
* $$ SLI MEM=IESWPPTL.Z
* $$ SLI MEM=IESZTCT.Z
* $$ SLI MEM=IESZDOC.Z
* $$ SLI MEM=IESZFCTS.Z
* $$ SLI MEM=IESCSEZA.Z
  APPEND LIST(DFHLIST) TO(VSELIST)
  COPY GROUP(DFHAI62) TO(VSEAI62)
  ALTER SESSION(CBPS) GROUP(VSEAI62) MODENAME(SNALU62)
  ALTER SESSION(CBSS) GROUP(VSEAI62) MODENAME(SNALU62)
  ALTER SESSION(CCPS) GROUP(VSEAI62) MODENAME(SNALU62)
  ADD GROUP(VSEAI62) LIST(VSELIST)
  ADD GROUP(VSETYPE) LIST(VSELIST)
  ADD GROUP(VSETERM) LIST(VSELIST)
  ADD GROUP(VSETERM1) LIST(VSELIST)
  ADD GROUP(VSESPG) LIST(VSELIST)
  ADD GROUP(FCTSP) LIST(VSELIST)
  ADD GROUP(EZA) LIST(VSELIST)
  ADD GROUP(DFH$WBSN) LIST(VSELIST)
  COPY GROUP(DFHVTAM) TO(VSESPG)
  ALTER TRANS(CSNE) GROUP(VSESPG) TWASIZE(400)
```

```
  DELETE GROUP(CEE)
* $$ SLI MEM=CEECCSD.Z,S=(PRD2.SCEEBASE)
* $$ SLI MEM=IBMCCSD.Z,S=(PRD2.SCEEBASE)
* $$ SLI MEM=IGZCCSD.Z,S=(PRD2.SCEEBASE)
* $$ SLI MEM=EDCCCSD.Z,S=(PRD2.SCEEBASE)
* $$ SLI MEM=EDCUCSD.Z,S=(PRD2.SCEEBASE)
* $$ SLI MEM=CEETICSD.Z,S=(PRD2.SCEEBASE)
* $$ SLI MEM=EDCTICSD.Z,S=(PRD2.SCEEBASE)
  ADD GROUP(CEE) LIST(VSELIST)
  DELETE GROUP(TCPIP)
* $$ SLI MEM=IPNCSD.Z,S=(PRD1.BASE)
  ADD GROUP(TCPIP) LIST(VSELIST)
  LIST ALL
/*
*
*   OPEN  DFHCSD FILE
*
*   ISSUE FOLLOWING COMMANDS SEQUENCE ON THE CONSOLE AFTER  // PAUSE
*     MSG F2
*     XX CEMT SET FI(DFHCSD) OPEN     (XX = REPLY-ID)
*     REPLY  "(END/ENTER)"  TO CONTINUE
* ---------------------------------------------------------------------
// PAUSE
/*
/&
* $$ EOJ
```

The GRPLIST=VSELIST parameter is contained in the CICS/ICCF startup job. With this job the CSD file will become activated.

Because the GRPLIST=VSELIST parameter is contained in the CICS/ICCF startup job, you should no longer edit the PPT, PCT, or TCT and create new macro definitions. At system startup, these changes would be overwritten by the corresponding RDO definitions. To change the tables, therefore, use RDO only.

DEFINE TERMINAL Statements for Autoinstall Terminals

z/VSE uses the DEFINE TERMINAL statements listed in Figure 72 on page 124 and Figure 73 on page 125 to define autoinstall terminals and terminal printers. All of these devices are assigned to group **VSETERM**. The DEFINE TYPETERM statements that serve as models for local non-SNA terminals and terminal printers begin on "DEFINE TYPETERM Models for Non-SNA Devices" on page 126. The DEFINE TYPETERM statements for SNA terminals and terminal printers begin on "DEFINE TYPETERM Models for SNA Devices" on page 131.

Figure 72. DEFINE TERMINAL Statements for Local Non-SNA Terminals and Terminal Printers

```
*IBM 3178, 3277, 3278-2, 3279-S2A, 3279-2X, 3290
 DEFINE TERMINAL(D901) GROUP(VSETERM)        AUTINSTMODEL(ONLY)
  TYPETERM(VSE32782)   AUTINSTNAME(VSE32782)

*IBM 3278-3, 3279-S3A, 3279-3X
 DEFINE TERMINAL(D902) GROUP(VSETERM)        AUTINSTMODEL(ONLY)
  TYPETERM(VSE32783)   AUTINSTNAME(VSE32783)

*IBM 3278-4
 DEFINE TERMINAL(D903) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSE32784)   AUTINSTNAME(VSE32784)

*IBM 3278-5
 DEFINE TERMINAL(D904) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSE32785)   AUTINSTNAME(VSE32785)

*IBM 3179, 3279-S2B
 DEFINE TERMINAL(D905) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSE32792)   AUTINSTNAME(VSE32792)

*IBM 3279-S3B
 DEFINE TERMINAL(D906) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSE32793)   AUTINSTNAME(VSE32793)

*IBM 5555
 DEFINE TERMINAL(D907) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSE5555)    AUTINSTNAME(VSE5555)
```

```
*IBM 3262-3/13, 3268-2, 3287-1/2/1C/2C, 3289-1/2, 5210-G01/G02
 DEFINE TERMINAL(D908) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSEDSCP)    AUTINSTNAME(VSEDSCP)

*IBM 5553, 5557
 DEFINE TERMINAL(D909) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSE5557)    AUTINSTNAME(VSE5557)

*IBM 3270 with QUERY=YES
 DEFINE TERMINAL(D910) GROUP(VSETERM)        AUTINSTMODEL(ONLY)
  TYPETERM(VSE3278Q)   AUTINSTNAME(VSE3278Q)

*IBM 3270P with QUERY=YES
 DEFINE TERMINAL(D911) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSEDSCPQ)   AUTINSTNAME(VSEDSCPQ)

*IBM 3279-S3G
 DEFINE TERMINAL(D912) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSE3279G)   AUTINSTNAME(VSE3279G)

*IBM 3277
 DEFINE TERMINAL(D913) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSE3277)    AUTINSTNAME(VSE3277)

*IBM 3290 Screen 62x160
 DEFINE TERMINAL(D914) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSE3290)    AUTINSTNAME(VSE3290)
```

Figure 73. DEFINE TERMINAL Statements for Local and Remote SNA Terminals and Terminal Printers

```
*IBM 3178, 3277, 3278-2, 3279-S2A, 3279-2X, 3290
DEFINE TERMINAL(S001) GROUP(VSETERM) AUTINSTMODEL(ONLY)
 TYPETERM(VSELU2A)    AUTINSTNAME(VSELU2A)

*IBM 3278-3, 3279-S3A, 3279-3X
 DEFINE TERMINAL(S002) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSELU2B)    AUTINSTNAME(VSELU2B)

*IBM 3278-4
 DEFINE TERMINAL(S003) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSELU2C)    AUTINSTNAME(VSELU2C)

*IBM 3278-5
 DEFINE TERMINAL(S004) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSELU2D)    AUTINSTNAME(VSELU2D)

*IBM 3179, 3279-S2B
 DEFINE TERMINAL(S005) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSELU2E)    AUTINSTNAME(VSELU2E)

*IBM 3279-S3B
 DEFINE TERMINAL(S006) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSELU2F)    AUTINSTNAME(VSELU2F)

*IBM 3279-S3G
 DEFINE TERMINAL(S007) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSELU2G)    AUTINSTNAME(VSELU2G)

*IBM 5555
 DEFINE TERMINAL(S008) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSELU2H)    AUTINSTNAME(VSELU2H)

*IBM 3262-3/13, 3268-2, 5210-G01/G02
 DEFINE TERMINAL(S009) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSELU3A)    AUTINSTNAME(VSELU3A)

*IBM 3287-1/2, 3289-1/2
 DEFINE TERMINAL(S010) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSESCSPA)   AUTINSTNAME(VSESCSPA)

*IBM 3287-1C/2C
 DEFINE TERMINAL(S011) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSESCSPB)   AUTINSTNAME(VSESCSPB)
```

```
*IBM 5553/57 LUTYPE3 Printer - Local (attached at IBM 3274-x1A)
 DEFINE TERMINAL(S012) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSELU3B)    AUTINSTNAME(VSELU3B)

*IBM 5553/57 SCS Printer - Local (attached at IBM 3274-x1A)
and
*IBM 5553/57 SCS Printer - Remote (attached at IBM 3274-x1C or as single station
via SDLC line)

 DEFINE TERMINAL(S013) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSESCSPC)   AUTINSTNAME(VSESCSPC)

*IBM 5553/57 LUTYPE3 Printer - Remote (attached at IBM 3274-x1C or as single
station via SDLC line)
 DEFINE TERMINAL(S014) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSELU3C)    AUTINSTNAME(VSELU3C)

*LUTYPE2 Terminal with QUERY=YES
 DEFINE TERMINAL(S015) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSELU2Q)    AUTINSTNAME(VSELU2Q)

*LUTYPE3 Printer with QUERY=YES
 DEFINE TERMINAL(S016) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSELU3Q)    AUTINSTNAME(VSELU3Q)

*LUTYPE1 SCS Printer with QUERY=YES
 DEFINE TERMINAL(S017) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  OPERRSL(1)           SPOOLPRTRSL(1)
  TYPETERM(VSESCSPQ)   AUTINSTNAME(VSESCSPQ)

*IBM 3290 Screen 62x160
 DEFINE TERMINAL(S018) GROUP(VSETERM) AUTINSTMODEL(ONLY)
  TYPETERM(VSELU2I)    AUTINSTNAME(VSELU2I)
```

DEFINE TYPETERM Models for Non-SNA Devices

All of the DEFINE TYPETERM models in the following section are for *local* non-SNA terminals and terminal printers. These models are provided in member IESINCLM in library 59.

```
IBM 3277

DEFINE TYPETERM(VSE3277) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(0,0)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(0,0) ALTSCREEN(0,0) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(300,0)
 UCTRAN(TRANID)
```

```
IBM 3178, 3277, 3278-2, 3279-S2A, 3279-2X, 3290

DEFINE TYPETERM(VSE32782) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
```

```
 PAGESIZE(24,80) ALTPAGE(0,0)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(0,0) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(300,0)
 UCTRAN(TRANID)
```

IBM 3278-3, 3279-S3A, 3279-3X

```
DEFINE TYPETERM(VSE32783) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(32,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(32,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(300,0)
 UCTRAN(TRANID)
```

IBM 3278-4

```
DEFINE TYPETERM(VSE32784) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(43,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(43,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
```

```
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(300,0)
 UCTRAN(TRANID)
```

IBM 3278-5

```
DEFINE TYPETERM(VSE32785) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(27,132)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(27,132) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

IBM 3179, 3279-S2B

```
DEFINE TYPETERM(VSE32792) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(YES)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 HILIGHT(YES) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(300,0)
 UCTRAN(TRANID)
```

IBM 3279-S3B

```
DEFINE TYPETERM(VSE32793) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(32,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(32,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(YES)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 HILIGHT(YES) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
```

```
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(300,0)
 UCTRAN(TRANID)
```

IBM 3279-S3G

```
DEFINE TYPETERM(VSE3279G) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(32,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(32,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(YES)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 HILIGHT(YES) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(YES) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(300,0)
 UCTRAN(TRANID)
```

IBM 3290

```
DEFINE TYPETERM(VSE3290) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(0,0)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(62,160) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(300,0)
 UCTRAN(TRANID)
```

IBM 5555

```
DEFINE TYPETERM(VSE5555) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
```

```
 COPY(NO) DUALCASEKYBD(YES) EXTENDEDDS(YES)
 HILIGHT(NO) KATAKANA(YES) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(YES) PROGSYMBOLS(YES) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(YES) SOSI(YES) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(300,0)
 UCTRAN(TRANID)
```

IBM 3262-3/13, 3268-2, 3287-1/2/1C/2C, 3289-1/2, 5210-G01/G02

```
DEFINE TYPETERM(VSEDSCP) GROUP(VSETYPE)
 DEVICE(3270P) TERMMODEL(2)
 SHIPPABLE(NO)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(NO) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(256,0)
 UCTRAN(NO)
```

IBM 5553, 5557

```
DEFINE TYPETERM(VSE5557) GROUP(VSETYPE)
 DEVICE(3270P) TERMMODEL(2)
 SHIPPABLE(NO)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(NO) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(YES) VALIDATION(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(YES) SOSI(YES) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(256,0)
 UCTRAN(NO)
```

IBM 3270 with QUERY=YES

```
DEFINE TYPETERM(VSE3278Q) GROUP(VSETYPE)
 DEVICE(3270) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) APLKYBD(NO)
 AUDIBLEALARM(YES)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 KATAKANA(NO) LIGHTPEN(NO)
 PRINTADAPTER(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(ALL)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(0)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(300,0)
 UCTRAN(TRANID)
```

IBM 3270P with QUERY=YES

```
DEFINE TYPETERM(VSEDSCPQ) GROUP(VSETYPE)
 DEVICE(3270P) TERMMODEL(2)
 SHIPPABLE(NO)
 PAGESIZE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) APLKYBD(NO)
 AUDIBLEALARM(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 KATAKANA(NO) LIGHTPEN(NO)
 PRINTADAPTER(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(ALL)
 ASCII(NO) SENDSIZE(0) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(256,0)
 UCTRAN(NO)
```

DEFINE TYPETERM Models for SNA Devices

Unless otherwise noted, the DEFINE TYPETERM models in this section are for both local and remote SNA terminals and terminal printers.

IBM 3178, 3277, 3278-2, 3279-S2A, 3279-2X, 3290

```
DEFINE TYPETERM(VSELU2A) GROUP(VSETYPE)
 DEVICE(LUTYPE2) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(0,0)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(0,0) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(1536) RECEIVESIZE(1024)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
```

```
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

IBM 3278-3, 3279-S3A, 3279-3X

```
DEFINE TYPETERM(VSELU2B) GROUP(VSETYPE)
 DEVICE(LUTYPE2) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(32,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(32,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(1536) RECEIVESIZE(1024)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

IBM 3278-4

```
DEFINE TYPETERM(VSELU2C) GROUP(VSETYPE)
 DEVICE(LUTYPE2) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(43,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(43,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(1536) RECEIVESIZE(1024)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

IBM 3278-5

```
DEFINE TYPETERM(VSELU2D) GROUP(VSETYPE)
 DEVICE(LUTYPE2) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(27,132)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(27,132) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
```

```
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(1536) RECEIVESIZE(1024)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

IBM 3179, 3279-S2B

```
DEFINE TYPETERM(VSELU2E) GROUP(VSETYPE)
 DEVICE(LUTYPE2) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(YES)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 HILIGHT(YES) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(1536) RECEIVESIZE(1024)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

IBM 3279-S3B

```
DEFINE TYPETERM(VSELU2F) GROUP(VSETYPE)
 DEVICE(LUTYPE2) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(32,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(32,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(YES)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 HILIGHT(YES) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(1536) RECEIVESIZE(1024)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

IBM 3279-S3G

```
DEFINE TYPETERM(VSELU2G) GROUP(VSETYPE)
 DEVICE(LUTYPE2) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(32,80)
```

```
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(32,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(YES)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 HILIGHT(YES) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(YES) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(1536) RECEIVESIZE(1024)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

IBM 5555

```
DEFINE TYPETERM(VSELU2H) GROUP(VSETYPE)
 DEVICE(LUTYPE2) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(YES) EXTENDEDDS(YES)
 HILIGHT(NO) KATAKANA(YES) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(YES) PROGSYMBOLS(YES) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(YES) SOSI(YES) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(1536) RECEIVESIZE(1024)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

IBM 3262-3/13, 3268-2, 5210-G01/G02

```
DEFINE TYPETERM(VSELU3A) GROUP(VSETYPE)
 DEVICE(LUTYPE3) TERMMODEL(2)
 SHIPPABLE(NO)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(NO) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(256) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
```

```
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(NO)
```

IBM 3287-1/2, 3289-1/2

```
DEFINE TYPETERM(VSESCSPA) GROUP(VSETYPE)
 DEVICE(SCSPRINT) TERMMODEL(2)
 SHIPPABLE(NO)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(NO) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(256) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(NO)
```

IBM 3287-1C/2C

```
DEFINE TYPETERM(VSESCSPB) GROUP(VSETYPE)
 DEVICE(SCSPRINT) TERMMODEL(2)
 SHIPPABLE(NO)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(NO) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(256) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(NO)
```

IBM 3290 Screen 62x160

```
DEFINE TYPETERM(VSELU2I) GROUP(VSETYPE)
 DEVICE(LUTYPE2) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80) ALTPAGE(0,0)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) ALTSCREEN(62,160) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(YES) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(NO) VALIDATION(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(NO) SOSI(NO) BACKTRANS(NO)
 CGCSGID(0,0)
```

```
 ASCII(NO) SENDSIZE(1536) RECEIVESIZE(1024)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

Local IBM 5553/57 LUTYPE3 Printer (Attached via 3274-X1A)

```
DEFINE TYPETERM(VSELU3B) GROUP(VSETYPE)
 DEVICE(LUTYPE3) TERMMODEL(2)
 SHIPPABLE(NO)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(NO) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(NO)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(YES) VALIDATION(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(YES) SOSI(YES) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(256) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(NO)
```

Local IBM 5553/57 SCS Printer (Attached via 3274-X1A)

and

Remote IBM 5553/57 SCS Printer (Attached via 3274-X1C or as Single Station via SDLC Line)

```
DEFINE TYPETERM(VSESCSPC) GROUP(VSETYPE)
 DEVICE(SCSPRINT) TERMMODEL(2)
 SHIPPABLE(NO)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(NO) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(YES) VALIDATION(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(YES) SOSI(YES) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(256) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(NO)
```

Remote IBM 5553/57 LUTYPE3 Printer (Attached via 3274-X1C or as Single Station via SDLC Line)

```
DEFINE TYPETERM(VSELU3C) GROUP(VSETYPE)
 DEVICE(LUTYPE3) TERMMODEL(2)
```

```
 SHIPPABLE(NO)
 PAGESIZE(24,80) ALTPAGE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) ALTSCREEN(24,80) APLKYBD(NO)
 APLTEXT(NO) AUDIBLEALARM(NO) COLOR(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 HILIGHT(NO) KATAKANA(NO) LIGHTPEN(NO)
 MSRCONTROL(NO) OBFORMAT(NO) PARTITIONS(NO)
 PRINTADAPTER(NO) PROGSYMBOLS(YES) VALIDATION(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(NO)
 OUTLINE(YES) SOSI(YES) BACKTRANS(NO)
 CGCSGID(0,0)
 ASCII(NO) SENDSIZE(256) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(NO)
```

LUTYPE2 Terminals with QUERY=YES

```
DEFINE TYPETERM(VSELU2Q) GROUP(VSETYPE)
 DEVICE(LUTYPE2) TERMMODEL(2)
 SHIPPABLE(YES)
 PAGESIZE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(NO)
 DEFSCREEN(24,80) APLKYBD(NO)
 AUDIBLEALARM(YES)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 KATAKANA(NO) LIGHTPEN(NO)
 PRINTADAPTER(NO)
 FORMFEED(NO) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(ALL)
 ASCII(NO) SENDSIZE(1536) RECEIVESIZE(1024)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(NO) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(YES)
 BUILDCHAIN(YES) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(TRANID)
```

LUTYPE3 Printer with QUERY=YES

```
DEFINE TYPETERM(VSELU3Q) GROUP(VSETYPE)
 DEVICE(LUTYPE3) TERMMODEL(2)
 SHIPPABLE(NO)
 PAGESIZE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) APLKYBD(NO)
 AUDIBLEALARM(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 KATAKANA(NO) LIGHTPEN(NO)
 PRINTADAPTER(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(ALL)
 ASCII(NO) SENDSIZE(256) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(NO)
```

LUTYPE1 SCS Printer with QUERY=YES

```
DEFINE TYPETERM(VSESCSPQ) GROUP(VSETYPE)
 DEVICE(SCSPRINT) TERMMODEL(2)
 SHIPPABLE(NO)
 PAGESIZE(24,80)
 FMHPARM(NO) OBOPERID(NO)
 AUTOPAGE(YES)
 DEFSCREEN(24,80) APLKYBD(NO)
 AUDIBLEALARM(NO)
 COPY(NO) DUALCASEKYBD(NO) EXTENDEDDS(YES)
 KATAKANA(NO) LIGHTPEN(NO)
 PRINTADAPTER(NO)
 FORMFEED(YES) HORIZFORM(NO) VERTICALFORM(NO)
 TEXTKYBD(NO) TEXTPRINT(NO) QUERY(ALL)
 ASCII(NO) SENDSIZE(256) RECEIVESIZE(256)
 BRACKET(YES)
 ERRLASTLINE(NO) ERRINTENSIFY(NO) ERRCOLOR(NO)
 ERRHILIGHT(NO)
 AUTOCONNECT(NO) ATI(YES) TTI(YES)
 CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
 NEPCLASS(0) SIGNOFF(YES)
 ROUTEDMSGS(ALL) LOGONMSG(NO)
 BUILDCHAIN(NO) USERAREALEN(255) IOAREALEN(1024,4096)
 UCTRAN(NO)
```

Default Logon Mode Table IESINCLM

Figure 74. Default Logon Mode Table IESINCLM

```
* /* START OF SPECIFICATIONS ****
*
*01*  MODULE-NAME = IESINCLM
*
*01*  DESCRIPTIVE-NAME = DEFAULT LOGON MODE TABLE SUPPLIED FOR VSE/ESA
*
*01*  COPYRIGHT =  SEE ABOVE
*
*01*  STATUS = VERSION VSE/ESA 1.1.0
*
*01*  FUNCTION = THE PURPOSE OF THIS TABLE IS TO PROVIDE THE USER WITH
*     A DEFAULT TABLE PROVIDING SUPPORT FOR THE DEVICES LISTED BELOW:
*
*     3820 SNA PRINTER - REMOTELY ATTACHED
*     3820 SNA PRINTER - S/370 CHANNEL ATTACHED
*     3812/16 SNA PRINTER - REMOTELY ATTACHED
*     3812/16 SNA PRINTER - LOCALLY ATTACHED
*
*     3270 LOCAL NON-SNA DEVICES
*     3270 SNA DEVICES
*
*01*  NOTES = NONE
*
*02*    CHARACTER-CODE-DEPENDENCIES = NONE
*
*02*    DEPENDENCIES = NONE
*
*02*    RESTRICTIONS = NONE
*
*02*    REGISTER-CONVENTIONS = NONE
*
*02*    PATCH-LABEL = NONE
*
*01*  MODULE-TYPE = MODULE, NON EXECUTABLE
*
*02*    PROCESSOR = ASSEMBLER
*
*02*    MODULE-SIZE = RES: CHOOSE: (9) BYTES,
*                     COMMENTS: ENTER SIZE CONSTRAINTS IF KNOWN,
*                               OTHERWISE LEAVE;
*
*02*    ATTRIBUTES = REFRESHABLE, NO EXECUTABLE CODE
*
*03*      RELOCATE = PAGEABLE
*
*03*      MODE = PROBLEM-PROGRAM
*
*03*      PROTECTION = USER-KEY
*
*03*      SPECIAL-PSW-SETTING = NONE
```

```
*
*01*  ENTRY = IESINCLM
*
*02*    PURPOSE = SEE FUNCTION
*
*02*    LINKAGE = NOT APPLICABLE
*
*02*    INPUT = NONE
*
*03*      REGISTERS-SAVED-AND-RESTORED = NOT APPLICABLE
*
*03*      REGISTERS-INPUT = NOT APPLICABLE
*
*02*    OUTPUT = NONE
*
*03*      REGISTERS-OUTPUT = NOT APPLICABLE
*
*03*      REGISTERS-NOT-CORRUPTED = ALL
*
*01*  EXIT-NORMAL = NOT APPLICABLE
*
*01*  EXIT-ERROR = NOT APPLICABLE
*
*01*  EXTERNAL-REFERENCES = NONE
*
*02*    ROUTINES = NONE
*
*03*      LINKAGE = NOT APPLICABLE
*
*03*      REGISTERS-PASSED = NOT APPLICABLE
*
*03*      REGISTERS-RETURNED = NOT APPLICABLE
*
*02*    DATA-SETS = NONE
*
*02*    DATA-AREA = NONE
*
*02*    CONTROL-BLOCKS-SYSTEM = NONE
*
*02*    CONTROL-BLOCKS-VTAM = NONE
*
*01*  TABLES = NONE
*
*01*  MACROS = MODETAB,MODEENT,MODEEND
*
*01*  CHANGE-ACTIVITY =
*     11/19/90 SP3272ES,SP3273ES,SP3290ES,SP3272EN,SP3273EN,SP3290EN
*     CHANGED TO FIT WITH CORRESPONDING CICS TYPETERMS
*
**** END OF SPECIFICATIONS ***/
         EJECT
IESINCLM MODETAB
         EJECT
  TITLE 'SP3820'
*********************************************************************
*                                                                   *
*            3820 LOGICAL UNIT - REMOTELY ATTACHED                  *
*                                                                   *
*********************************************************************
SP3820   MODEENT LOGMODE=SP3820,FMPROF=X'13',TSPROF=X'07',             X
               PRIPROT=X'B0',SECPROT=X'B0',COMPROT=X'D0B1',            X
               RUSIZES=X'8585',PSERVIC=X'060200000000000000002000',   X
               PSNDPAC=X'03',SRCVPAC=X'03',SSNDPAC=X'00'
  TITLE 'SP3820C'
*********************************************************************
*                                                                   *
*            3820 LOGICAL UNIT - S/370 CHANNEL ATTACHED             *
*                                                                   *
*********************************************************************
SP3820C  MODEENT LOGMODE=SP3820C,FMPROF=X'13',TSPROF=X'07',            X
               PRIPROT=X'B0',SECPROT=X'B0',COMPROT=X'D0B1',            X
               RUSIZES=X'85C7',PSERVIC=X'060200000000000000002000',   X
               PSNDPAC=X'03',SRCVPAC=X'03',SSNDPAC=X'00'
  TITLE 'SP3812'
*********************************************************************
*                                                                   *
*            3812/16 LOGICAL UNIT - REMOTELY ATTACHED               *
*                                                                   *
*********************************************************************
SP3812   MODEENT LOGMODE=SP3812,FMPROF=X'03',TSPROF=X'03',             X
               PRIPROT=X'B1',SECPROT=X'B0',COMPROT=X'7080',            X
               RUSIZES=X'8585',PSERVIC=X'014000010000000001000000',   X
```

```
               PSNDPAC=X'03',SRCVPAC=X'03',SSNDPAC=X'00'
  TITLE 'SP3812C'
*********************************************************************
*                                                                   *
*           3812/16 LOGICAL UNIT - LOCALLY ATTACHED                 *
*                                                                   *
*********************************************************************
SP3812C  MODEENT LOGMODE=SP3812C,FMPROF=X'03',TSPROF=X'03',            X
               PRIPROT=X'B1',SECPROT=X'B0',COMPROT=X'7080',            X
               RUSIZES=X'85C7',PSERVIC=X'01400001000000000001000000',    X
               PSNDPAC=X'02',SRCVPAC=X'02',SSNDPAC=X'00'
         TITLE 'SP32702N'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR NON-SNA 3270 DEVICES          *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             NO ALTERNATE SCREEN SIZE DEFINED                      *
*                                                                   *
*********************************************************************
SP32702N MODEENT LOGMODE=SP32702N,FMPROF=X'02',TSPROF=X'02',PRIPROT=X'7*
               1',SECPROT=X'40',COMPROT=X'2000',RUSIZES=X'0000',PSERVIC*
               =X'000000000000185000007E00'
         TITLE 'SP32703N'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR NON-SNA 3270 DEVICES          *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             AND ALTERNATE SCREEN SIZE 32 X 80 (2560)              *
*                                                                   *
*********************************************************************
SP32703N MODEENT LOGMODE=SP32703N,FMPROF=X'02',TSPROF=X'02',PRIPROT=X'7*
               1',SECPROT=X'40',COMPROT=X'2000',RUSIZES=X'0000',PSERVIC*
               =X'000000000000185020507F00'
         TITLE 'SP32704N'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR NON-SNA 3270 DEVICES          *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             AND ALTERNATE SCREEN SIZE 43 X 80 (3440)              *
*                                                                   *
*********************************************************************
SP32704N MODEENT LOGMODE=SP32704N,FMPROF=X'02',TSPROF=X'02',PRIPROT=X'7*
               1',SECPROT=X'40',COMPROT=X'2000',RUSIZES=X'0000',PSERVIC*
               =X'00000000000018502B507F00'
         TITLE 'SP32705N'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR NON-SNA 3270 DEVICES          *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             AND ALTERNATE SCREEN SIZE 27 X 132 (3564)             *
*                                                                   *
*********************************************************************
SP32705N MODEENT LOGMODE=SP32705N,FMPROF=X'02',TSPROF=X'02',PRIPROT=X'7*
               1',SECPROT=X'40',COMPROT=X'2000',RUSIZES=X'0000',PSERVIC*
               =X'00000000000018501B847F00'
         TITLE 'SP3272QN'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR NON-SNA 3270 DEVICES          *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             ALTERNATE SCREEN SIZE WILL BE QUERIED                 *
*             WITH EXTENDED DATA STREAM                             *
*                                                                   *
*********************************************************************
SP3272QN MODEENT LOGMODE=SP3272QN,FMPROF=X'02',TSPROF=X'02',PRIPROT=X'7*
               1',SECPROT=X'40',COMPROT=X'2000',RUSIZES=X'0000',PSERVIC*
               =X'00800000000018500000300'
         TITLE 'SP3272EN'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR NON-SNA 3270 DEVICES          *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             NO ALTERNATE SCREEN SIZE DEFINED                      *
*             WITH EXTENDED DATA STREAM                             *
*                                                                   *
*********************************************************************
SP3272EN MODEENT LOGMODE=SP3272EN,FMPROF=X'02',TSPROF=X'02',PRIPROT=X'7*
               1',SECPROT=X'40',COMPROT=X'2000',RUSIZES=X'0000',PSERVIC*
               =X'00800000000018501850 7F00'
         TITLE 'SP3273EN'
*********************************************************************
*                                                                   *
```

```
*             LOGMODE TABLE ENTRY FOR NON-SNA 3270 DEVICES          *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             AND ALTERNATE SCREEN SIZE 32 X 80 (2560)              *
*             WITH EXTENDED DATA STREAM                             *
*                                                                   *
*********************************************************************
SP3273EN MODEENT LOGMODE=SP3273EN,FMPROF=X'02',TSPROF=X'02',PRIPROT=X'7*
               1',SECPROT=X'40',COMPROT=X'2000',RUSIZES=X'0000',PSERVIC*
               =X'00800000000185020507F00'
         TITLE 'SP3290EN'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR NON-SNA 3270 DEVICES          *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             AND ALTERNATE SCREEN SIZE 62 X 160 (9920)             *
*             WITH EXTENDED DATA STREAM                             *
*                                                                   *
*********************************************************************
SP3290EN MODEENT LOGMODE=SP3290EN,FMPROF=X'02',TSPROF=X'02',PRIPROT=X'7*
               1',SECPROT=X'40',COMPROT=X'2000',RUSIZES=X'0000',PSERVIC*
               =X'00800000000018503EA07F00'
         TITLE 'SPDSCPRT'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR NON-SNA 3270                  *
*             TERMINAL PRINTERS                                     *
*                                                                   *
*********************************************************************
SPDSCPRT MODEENT LOGMODE=SPDSCPRT,FMPROF=X'02',TSPROF=X'02',PRIPROT=X'7*
               1',SECPROT=X'40',COMPROT=X'2000',RUSIZES=X'0000',PSERVIC*
               =X'00000000000018501850020 0'
         TITLE 'SP32702S'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR SNA 3270 DEVICES              *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             NO ALTERNATE SCREEN SIZE DEFINED                      *
*                                                                   *
*********************************************************************
SP32702S MODEENT LOGMODE=SP32702S,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'85C7',PSERVIC*
               =X'02000000000018500000 7E00'
         TITLE 'SP32703S'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR SNA 3270 DEVICES              *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             AND ALTERNATE SCREEN SIZE 32 X 80 (2560)              *
*                                                                   *
*********************************************************************
SP32703S MODEENT LOGMODE=SP32703S,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'85C7',PSERVIC*
               =X'02000000000018502 0507F00'
         TITLE 'SP32704S'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR SNA 3270 DEVICES              *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             AND ALTERNATE SCREEN SIZE 43 X 80 (3440)              *
*                                                                   *
*********************************************************************
SP32704S MODEENT LOGMODE=SP32704S,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'85C7',PSERVIC*
               =X'02000000000018502B507F00'
         TITLE 'SP32705S'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR SNA 3270 DEVICES              *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             AND ALTERNATE SCREEN SIZE 27 X 132 (3564)             *
*                                                                   *
*********************************************************************
SP32705S MODEENT LOGMODE=SP32705S,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'85C7',PSERVIC*
               =X'02000000000018501B847F00'
         TITLE 'SP3272QS'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR SNA 3270 DEVICES              *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)               *
*             ALTERNATE SCREEN SIZE WILL BE QUERIED                 *
*             WITH EXTENDED DATA STREAM                             *
```

```
*                                                                     *
***********************************************************************
SP3272QS MODEENT LOGMODE=SP3272QS,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'85C7',PSERVIC*
               =X'02800000000185000000300'
         TITLE 'SP3272ES'
***********************************************************************
*                                                                     *
*             LOGMODE TABLE ENTRY FOR SNA 3270 DEVICES                *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)                 *
*             NO ALTERNATE SCREEN SIZE DEFINED                        *
*             WITH EXTENDED DATA STREAM                               *
*                                                                     *
***********************************************************************
SP3272ES MODEENT LOGMODE=SP3272ES,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'85C7',PSERVIC*
               =X'028000000000185018507F00'
         TITLE 'SP3273ES'
***********************************************************************
*                                                                     *
*             LOGMODE TABLE ENTRY FOR SNA 3270 DEVICES                *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)                 *
*             AND ALTERNATE SCREEN SIZE 32 X 80 (2560)                *
*             WITH EXTENDED DATA STREAM                               *
*                                                                     *
***********************************************************************
SP3273ES MODEENT LOGMODE=SP3273ES,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'85C7',PSERVIC*
               =X'028000000000185020507F00'
         TITLE 'SP3290ES'
***********************************************************************
*                                                                     *
*             LOGMODE TABLE ENTRY FOR SNA 3270 DEVICES                *
*             WITH PRIMARY SCREEN SIZE 24 X 80 (1920)                 *
*             AND ALTERNATE SCREEN SIZE 62 X 160 (9920)               *
*             WITH EXTENDED DATA STREAM                               *
*                                                                     *
***********************************************************************
SP3290ES MODEENT LOGMODE=SP3290ES,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'85C7',PSERVIC*
               =X'02800000000018503EA07F00'
         TITLE 'SPSCSPRT'
***********************************************************************
*                                                                     *
*             LOGMODE TABLE ENTRY FOR SNA 3270                        *
*             TERMINAL PRINTERS IN SCS-MODE                           *
*                                                                     *
***********************************************************************
SPSCSPRT MODEENT LOGMODE=SPSCSPRT,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'8585',PSERVIC*
               =X'01000000E100000000000000',                          *
               PSNDPAC=X'01',SRCVPAC=X'01'
         TITLE 'SPSCSPRQ'
***********************************************************************
*                                                                     *
*             LOGMODE TABLE ENTRY FOR SNA 3270                        *
*             TERMINAL PRINTERS IN SCS-MODE                           *
*             WITH QUERY SUPPORT                                      *
*                                                                     *
***********************************************************************
SPSCSPRQ MODEENT LOGMODE=SPSCSPRQ,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'8585',PSERVIC*
               =X'01000001E100000000000000',                          *
               PSNDPAC=X'01',SRCVPAC=X'01'
         TITLE 'SPLU3PRT'
***********************************************************************
*                                                                     *
*             LOGMODE TABLE ENTRY FOR SNA 3270                        *
*             TERMINAL PRINTERS IN LU3-MODE                           *
*                                                                     *
***********************************************************************
SPLU3PRT MODEENT LOGMODE=SPLU3PRT,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'8585',PSERVIC*
               =X'03000000000018502B507F00'
         TITLE 'SPLU3PRQ'
***********************************************************************
*                                                                     *
*             LOGMODE TABLE ENTRY FOR SNA 3270                        *
*             TERMINAL PRINTERS IN LU3-MODE                           *
*             WITH QUERY SUPPORT                                      *
*                                                                     *
***********************************************************************
```

```
SPLU3PRQ MODEENT LOGMODE=SPLU3PRQ,FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B*
               1',SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'8585',PSERVIC*
               =X'03800000000018502B500000'
         TITLE 'SNASVCMG'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR CICS ISC                      *
*             FOR LUTYPE 6.2 LINKS                                  *
*                                                                   *
*********************************************************************
SNASVCMG MODEENT LOGMODE=SNASVCMG
         TITLE 'SNALU62'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRY FOR CICS ISC                      *
*             FOR LUTYPE 6.2 LINKS                                  *
*             THE 2ND MODE-ENTRY HAS TO BE DEFINED IN MODESET RESP  *
*             THE SESSION DEFINITION FOR RDO (PARAMETER MODENAME=   *
*             SNALU62)                                              *
*                                                                   *
*********************************************************************
SNALU62  MODEENT LOGMODE=SNALU62
         TITLE 'RDTSLU62'
*********************************************************************
*                                                                   *
*             LOGMODE TABLE ENTRIES FOR RDTS                        *
*             FOR LUTYPE 6.2 LINKS                                  *
*                                                                   *
*********************************************************************
#BATCH   EQU *
    MODEENT LOGMODE=#BATCH,FMPROF=X'13',TSPROF=X'07',PRIPROT=X'B0',   *C
               SECPROT=X'B0',COMPROT=X'D0B1',RUSIZES=X'8787',         *C
               SSNDPAC=X'00',SRCVPAC=X'00',PSNDPAC=X'00',             *C
               TYPE=0,                                                *C
               PSERVIC=X'060200000000000000002F00'
#INTER   EQU *
    MODEENT LOGMODE=#INTER,FMPROF=X'13',TSPROF=X'07',PRIPROT=X'B0',   *C
               SECPROT=X'B0',COMPROT=X'D0B1',RUSIZES=X'8787',         *C
               SSNDPAC=X'00',SRCVPAC=X'00',PSNDPAC=X'00',             *C
               TYPE=0,                                                *C
               PSERVIC=X'060200000000000000002F00'
*
         MODEEND
         END                        , END OF IESINCLM
```

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Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in z/VSE enable users to:

- Use assistive technologies such as screen readers and screen magnifier software
- Operate specific or equivalent features using only the keyboard
- Customize display attributes such as color, contrast, and font size

Using Assistive Technologies

Assistive technology products, such as screen readers, function with the user interfaces found in z/VSE. Consult the assistive technology documentation for specific information when using such products to access z/VSE interfaces.

Documentation Format

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Glossary

This glossary includes terms and definitions for IBM z/VSE.

The following cross-references are used in this glossary:

1. See refers the reader from a term to a preferred synonym, or from an acronym or abbreviation to the defined full form.
2. See also refers the reader to a related or contrasting term.

A

Access Control Logging and Reporting

An IBM licensed program to log all attempts of access to protected data and to print selected formatted reports on such attempts.

access control table (DTSECTAB)

A table that is used by the system to verify a user's right to access a certain resource.

access list

A table in which each entry specifies an address space or data space that a program can reference.

access method

A program, that is, a set of commands (macros) to define files or addresses and to move data to and from them; for example VSE/VSAM or VTAM.

account file

A disk file that is maintained by VSE/POWER containing accounting information that is generated by VSE/POWER and the programs running under VSE/POWER.

addressing mode (AMODE)

A program attribute that refers to the address length that a program is prepared to handle on entry. Addresses can be either 24 bits, 31 bits, or 64 bits in length. In 24 bit addressing mode, the processor treats all virtual addresses as 24-bit values; in 31 bit addressing mode, the processor treats all virtual addresses as 31-bit values and in 64-bit addressing mode, the processor treats all virtual addresses as 64-bit values. Programs with an addressing mode of ANY can receive control in either 24 bit or 31 bit addressing mode. 64 bit addressing mode cannot be used as program attribute.

administration console

In z/VSE, one or more consoles that receive all system messages, except for those that are directed to one particular console. Contrast this with the user console, which receives only those messages that are directed to it, for example messages that are issued from a job that was submitted with the request to echo its messages to that console. The operator of an administration console can reply to all outstanding messages and enter all system commands.

alternate block

On an FBA disk, a block that is designated to contain data in place of a defective block.

alternate index

In systems with VSE/VSAM, the index entries of a given base cluster that is organized by an alternate key, that is, a key other than the prime key of the base cluster. For example, a personnel file preliminary ordered by names can be indexed also by department number.

alternate library

An interactively accessible library that can be accessed from a terminal when the user of that terminal issues a connect or switch library request.

alternate track

A library, which becomes accessible from a terminal when the user of that terminal issues a connect or switch (library) request.

AMODE

Addressing mode.

APA

All points addressable.

APAR

Authorized Program Analysis Report.

appendage routine

A piece of code that is physically located in a program or subsystem, but logically and extension of a supervisor routine.

application profile

A control block in which the system stores the characteristics of one or more application programs.

application program

A program that is written for or by a user that applies directly to the user's work, such as a program that does inventory control or payroll. See also batch program and online application program.

AR/GPR

Access register and general-purpose register pair.

ASC mode

Address space control mode.

ASI (automated system initialization) procedure

A set of control statements, which specifies values for an automatic system initialization.

attention routine (AR)

A routine of the system that receives control when the operator presses the Attention key. The routine sets up the console for the input of a command, reads the command, and initiates the system service that is requested by the command.

automated system initialization (ASI)

A function that allows control information for system startup to be cataloged for automatic retrieval during system startup.

autostart

A facility that starts VSE/POWER with little or no operator involvement.

auxiliary storage

Addressable storage that is not part of the processor, for example storage on a disk unit. Synonymous with external storage.

B

B-transient

A phase with a name beginning with $$B and running in the Logical Transient Area (LTA). Such a phase is activated by special supervisor calls.

bar

2 GigyByte (GB) line

basic telecommunications access method (BTAM)

An access method that permits read and write communication with remote devices. BTAM is not supported on z/VSE.

BIG-DASD

A subtype of Large DASD that has a capacity of more than 64 K tracks and uses up to 10017 cylinders of the disk.

block

Usually, a block consists of several records of a file that are transmitted as a unit. But if records are very large, a block can also be part of a record only. On an FBA disk, a block is a string of 512 bytes of data. See also a control block.

block group

In VSE/POWER, the basic organizational unit for fixed-block architecture (FBA) devices. Each block group consists of a number of 'units of transfer' or blocks.

C

CA splitting

Is the host part of the VSE JavaBeans, and is started using the job STARTVCS, which is placed in the reader queue during installation of z/VSE. Runs by default in dynamic class R. In VSE/VSAM, to double a control area dynamically and distribute its CIs evenly when the specified minimum of free space get used up by more data.

carriage control character

The fist character of an output record (line) that is to be printed; it determines how many lines should be skipped before the next line is printed.

catalog

A directory of files and libraries, with reference to their locations. A catalog may contain other information such as the types of devices in which the files are stored, passwords, blocking factors. To store a library member such as a phase, module, or book in a sublibrary. See also VSE/VSAM catalog.

cell pool

An area of virtual storage that is obtained by an application program and managed by the callable cell pool services. A cell pool is located in an address space or a data space and contains an anchor, at least one extent, and any number of cells of the same size.

central location

The place at which a computer system's control device, normally the systems console in the computer room, is installed.

chained sublibraries

A facility that allows sublibraries to be chained by specifying the sequence in which they must be searched for a certain library member.

chaining

A logical connection of sublibraries to be searched by the system for members of the same type (phases or object modules, for example).

channel command word (CCW)

A doubleword at the location in main storage that is specified by the channel address word. One or more CCWs make up the channel program that directs data channel operations.

channel program

One or more channel command words that control a sequence of data channel operations. Execution of this sequence is initiated by a start subchannel instruction.

channel scheduler

The part of the supervisor that controls all input/output operations.

channel subsystem

A feature of z/Architecture that provides extensive additional channel (I/O) capabilities to IBM Z.

channel to channel attachment (CTCA)

A function that allows data to be exchanged

1. Under the control of VSE/POWER between two virtual VSE machines running under VM or
2. Under the control of VTAM between two processors.

character-coded request

A request that is encoded and transmitted as a character string. Contrast with *field-formatted request*.

checkpoint

1. A point at which information about the status of a job and the system can be recorded so that the job step can be restarted later.
2. To record such information.

CICS (Customer Information Control System)

An IBM program that controls online communication between terminal users and a database. Transactions that are entered at remote terminals are processed concurrently by user-written application programs. The program includes facilities for building, using, and servicing databases.

CICS ECI

The CICS External Call Interface (ECI) is one possible requester type of the *CICS business logic interface* that is provided by the CICS Transaction Server for z/VSE. It is part of the CICS client and allows workstation programs to CICS function on the z/VSE host.

CICS EXCI

The EXternal CICS Interface (EXCI) is one possible requester type of the *CICS business logic interface* that is provided by the CICS Transaction Server for z/VSE. It allows any BSE batch application to call CICS functions.

CICS system definition data set (CSD)

A VSAM KSDS cluster that contains a resource definition record for every record defined to CICS using resource definition online (RDO).

CICS Transaction Server for z/VSE

A z/VSE base program that controls online communication between terminal users and a database. This is the successor system to CICS/VSE.

CICS TS

CICS Transaction Server

CICS/VSE

Customer Information Control System/VSE. No longer shipped on the Extended Base Tape and no longer supported, cannot run on z/VSE 5.1 or later.

class

In VSE/POWER, a group of jobs that either come from the same input device or go to the same output device.

CMS

Conversational monitor system running on z/VM.

common library

A library that can be interactively accessed by any user of the (sub)system that owns the library.

communication adapter

A circuit card with associated software that enables a processor, controller, or other device to be connected to a network.

communication region

An area of the supervisor that is set aside for transfer of information within and between programs.

component

1. Hardware or software that is part of a computer system.
2. A functional part of a product, which is identified by a component identifier.
3. In z/VSE, a component program such as VSE/POWER or VTAM.
4. In VSE/VSAM, a named, cataloged group of stored records, such as the data component or index component of a key-sequenced file or alternate index.

component identifier

A 12-byte alphanumeric string, uniquely defining a component to MSHP.

conditional job control

The capability of the job control program to process or to skip one or more statements that are based on a condition that is tested by the program.

connect

To authorize library access on the lowest level. A modifier such as "read" or "write" is required for the specified use of a sublibrary.

connection pooling

Introduced with an z/VSE 5.1 update to manage (reuse) connections of the z/VSE database connector in CICS TS.

connector

In the context of z/VSE, a connector provides the middleware to connect two platforms: Web Client and z/VSE host, middle-tier and z/VSE host, or Web Client and middle-tier.

connector (e-business connector)

A piece of software that is provided to connect to heterogeneous environments. Most connectors communicate to non-z/VSE Java-capable platforms.

container

Is part of the JVM of application servers such as the IBM WebSphere Application Server, and facilitates the implementation of servlets, EJBs, and JSPs, by providing resource and transaction management resources. For example, an EJB developer must not code against the JVM of the application server, but instead against the interface that is provided by the container. The main role of a container is to act as an intermediary between EJBs and clients, Is the host part of the VSE JavaBeans, and is started using the job STARTVCS, which is placed in the reader queue during the installation of z/VSE. Runs by default in dynamic class R. and also to manage multiple EJB instances. After EJBs have been written, they must be stored in a container residing on an application server. The container then manages all threading and client-interactions with the EJBs, and co-ordinate connection- and instance pooling.

control interval (CI)

A fixed-length area of disk storage where VSE/VSAM stores records and distributes free space. It is the unit of information that VSE/VSAM transfers to or from disk storage. For FBA it must be an integral multiple to be defined at cluster definition, of the block size.

control program

A program to schedule and supervise the running of programs in a system.

conversational monitor system (CMS)

A virtual machine operating system that provides general interactive time sharing, problem solving, and program development capabilities and operates under the control of z/VM.

count-key-data (CKD) device

A disk device that store data in the record format: count field, key field, data field. The count field contains, among others, the address of the record in the format: cylinder, head (track), record number, and the length of the data field. The key field, if present, contains the record's key or search argument. CKD disk space is allocated by tracks and cylinders. Contrast with *FBA disk device. See also extended count-key-data device.*

cross-partition communication control

A facility that enables VSE subsystems and user programs to communicate with each other; for example, with VSE/POWER.

cryptographic token

Usually referred to simply as a *token*, this is a device, which provides an interface for performing cryptographic functions like generating digital signatures or encrypting data.

cryptography

1. A method for protecting information by transforming it (encrypting it) into an unreadable format, called ciphertext. Only users who possess a secret key can decipher (or decrypt) the message into plaintext.
2. The transformation of data to conceal its information content and to prevent its unauthorized use or undetected modification .

D

data block group

The smallest unit of space that can be allocated to a VSE/POWER job on the data file. This allocation is independent of any device characteristics.

data conversion descriptor file (DCDF)

With a DCDF, you can convert individual fields within a record during data transfer between a PC and its host. The DCDF defines the record fields of a particular file for both, the PC and the host environment.

data import

The process of reformatting data that was used under one operating system such that it can subsequently be used under a different operating system.

Data Interfile Transfer, Testing, and Operations (DITTO) utility

An IBM program that provides file-to-file services for card I/O, tape, and disk devices. The latest version is called DITTO/ESA for VSE.

Data Language/I (DL/I)

A database access language that is used with CICS.

data link

In SNA, the combination of the link connection and the link stations joining network noes, for example, a z/Architecture channel and its associated protocols. A link is both logical and physical.

data security

The protection of data against unauthorized disclosure, transfer, modification, or destruction, whether accidental or intentional .

data set header record

In VSE/POWER abbreviated as DSHR, alias NDH or DSH. An NJE control record either preceding output data or, in the middle of input data, indicating a change in the data format.

data space

A range of up to 2 gigabytes of contiguous virtual storage addresses that a program can directly manipulate through z/Architecture instructions. Unlike an address space, a data space can hold only user data; it does not contain shared areas, or programs. Instructions do not execute in a data space. Contrast with address space.

data terminal equipment (DTE)

In SNA, the part of a data station that serves a data source, data sink, or both.

database connector

Is a function introduced with z/VSE 5.1.1, which consists of a client and server part. The client provides an API (CBCLI) to be used by applications on z/VSE, the server on any Java capable platform connects a JDBC driver that is provided by the database. Both client and server communicate via TCP/IP.

Database 2 (Db2)

An IBM rational database management system.

Db2-based connector

Is a feature introduced with VSE/ESA 2.5, which includes a customized Db2 version, together with VSAM and DL/I functionality, to provide access to Db2, VSAM, and DL/I data, using Db2 Stored Procedures.

Db2 Runtime only Client edition

The Client Edition for z/VSE comes with some enhanced features and improved performance to integrate z/VSE and Linux on z Systems.

Db2 Stored Procedure

In the context of z/VSE, a Db2 Stored Procedure is a Language Environment (LE) program that accesses Db2 data. However, from VSE/ESA 2.5 onwards you can also access VSAM and DL/I data using a Db2 Stored Procedure. In this way, it is possible to exchange data between VSAM and Db2.

DBLK

Data block.

DCDF

Data conversion descriptor file.

deblocking

The process of making each record of a block available for processing.

dedicated (disk) device

A device that cannot be shared among users.

device address

1. The identification of an input/output device by its device number.
2. In data communication, the identification of any device to which data can be sent or from which data can be received.

device driving system (DDS)

A software system external to VSE/POWER, such as a CICS spooler or PSF, that writes spooled output to a destination device.

Device Support Facilities (DSF)

An IBM supplied system control program for performing operations on disk volumes so that they can be accessed by IBM and user programs. Examples of these operations are initializing a disk volume and assigning an alternative track.

device type code

The four- or five-digit code that is used for defining an I/O device to a computer system. See also ICKDSF

dialog

In an interactive system, a series of related inquiries and responses similar to a conversation between two people. For z/VSE, a set of panels that can be used to complete a specific task; for example, defining a file.

dialog manager

The program component of z/VSE that provides for ease of communication between user and system.

digital signature

In computer security, encrypted data, which is appended to or part of a message, that enables a recipient to prove the identity of the sender.

Digital Signature Algorithm (DSA)

The Digital Signature Algorithm is the US government-defined standard for digital signatures. The DSA digital signature is a pair of large numbers, computed using a set of rules (that is, the DSA) and a set of parameters such that the identity of the signatory and integrity of the data can be verified. The DSA provides the capability to generate and verify signatures.

directory

In z/VSE the index for the program libraries.

direct access

Accessing data on a storage device using their address and not their sequence. This is the typical access on disk devices as opposed to magnetic tapes. Contrast with *sequential access*.

disk operating system residence volume (DOSRES)

The disk volume on which the system sublibrary IJSYSRS.SYSLIB is located including the programs and procedures that are required for system startup.

disk sharing

An option that lets independent computer systems uses common data on shared disk devices.

disposition

A means of indicating to VSE/POWER how a job input or output entry is to be handled: according to its local disposition in the RDR/LST/PUN queue or its transmission disposition when residing in the XMT queue. A job might, for example, be deleted or kept after processing.

distribution tape

A magnetic tape that contains, for example, a preconfigured operating system like z/VSE. This tape is shipped to the customer for program installation.

DITTO/ESA for VSE

Data Interfile Transfer, Testing, and Operations utility. An IBM program that provides file-to-file services for disk, tape, and card devices.

DSF

Device Support Facilities.

DSH (R)

Data set header record.

dummy device

A device address with no real I/O device behind it. Input and output for that device address are spooled on disk.

duplex

Pertaining to communication in which data can be sent and received at the same time.

DU-AL (dispatchable unit - access list)

The access list that is associated with a z/VSE main task or subtask. A program uses the DU-AL associated with its task and the PASN-AL associated with its partition. See also “PASN-AL (primary address space number - access list)” on page 172.

dynamic class table

Defines the characteristics of dynamic partitions.

dynamic partition

A partition that is created and activated on an 'as needed' basis that does not use fixed static allocations. After processing, the occupied space is released. Dynamic partitions are grouped by class, and jobs are scheduled by class. Contrast with *static partition*.

dynamic space reclamation

A librarian function that provides for space that is freed by the deletion of a library member to become reusable automatically.

E

ECI

See “CICS ECI” on page 155.

emulation

The use of programming techniques and special machine features that permit a computer system to execute programs that are written for another system or for the use of I/O devices different from those that are available.

emulation program (EP)

An IBM control program that allows a channel-attached 3705 or 3725 communication controller to emulate the functions of an IBM 2701 Data Adapter Unit, or an IBM 2703 Transmission Control.

end user

1. A person who makes use of an application program.
2. In SNA, the ultimate source or destination of user data flowing through an SNA network. Might be an application program or a terminal operator.

Enterprise Java Bean

An EJB is a distributed bean. "Distributed" means, that one part of an EJB runs inside the JVM of a web application server, while the other part runs inside the JVM of a web browser. An EJB either represents one data row in a database (entity bean), or a connection to a remote database (session bean). Normally, both types of an EJB work together. This allows to represent and access data in a standardized way in heterogeneous environments with relational and non-relational data. See also *JavaBean*.

entry-sequenced file

A VSE/VSAM file whose records are loaded without respect to their contents and whose relative byte addresses cannot change. Records are retrieved and stored by addressed access, and new records are added to the end of the file.

Environmental Record Editing and Printing (EREP) program

A z/VSE base program that makes the data that is contained in the system record file available for further analysis.

EPI

See *CICS EPI.*

ESCON Channel (Enterprise Systems Connection Channel)

A serial channel, using fiber optic cabling, that provides a high-speed connection between host and control units for I/O devices. It complies with the ESA/390 and IBM Z I/O Interface until z114. The zEC12 processors do not support ESCON channels.

exit routine

1. Either of two types of routines: installation exit routines or user exit routines. Synonymous with exit program.
2. See *user exit routine*.

extended addressability

The ability of a program to use 31 bit or 64 bit virtual storage in its address space or outside the address space.

extended recovery facility (XRF)

In z/VSE, a feature of CICS that provides for enhanced availability of CICS by offering one CICS system as a backup of another.

External Security Manager (ESM)

A priced vendor product that can provide extended functionality and flexibility that is compared to that of the Basic Security Manager (BSM), which is part of z/VSE.

F

FASTCOPY

See "VSE/Fast Copy" on page 183.

fast copy data set program (VSE/Fast Copy)

See "VSE/Fast Copy" on page 183.

fast service upgrade (FSU)

A service function of z/VSE for the installation of a refresh release without regenerating control information such as library control tables.

FAT-DASD

A subtype of Large DASD, it supports a device with more than 4369 cylinders (64 K tracks) up to 64 K cylinders.

FCOPY

See *VSE/Fast Copy.*

fence

A separation of one or more components or elements from the remainder of a processor complex. The separation is by logical boundaries. It allows simultaneous user operations and maintenance procedures.

fetch

1. To locate and load a quantity of data from storage.

2. To bring a program phase into virtual storage from a sublibrary and pass control to this phase.
3. The name of the macro instruction (FETCH) used to accomplish 2. See also *loader.*

Fibre Channel Protocol (FCP)

A combination of hardware and software conforming to the Fibre Channel standards and allowing system and peripheral connections via FICON and FICON Express feature cards on IBM zSeries processors. In z/VSE, zSeries FCP is employed to access industry-standard SCSI disk devices.

fragmentation (of storage)

Inability to allocate unused sections (fragments) of storage in the real or virtual address range of virtual storage.

FSU

Fast service upgrade.

FULIST (FUnction LIST)

A type of selection panel that displays a set of files and/or functions for the choice of the user.

G

generation

See *macro generation.*

generation feature

An IBM licensed program order option that is used to tailer the object code of a program to user requirements.

GETVIS space

Storage space within partition or the shared virtual area, available for dynamic allocation to programs.

guest system

A data processing system that runs under control of another (host) system. On the mainframe z/VSE can run as a guest of z/VM.

H

hard wait

The condition of a processor when all operations are suspended. System recovery from a hard wait is impossible without performing a new system startup.

hash function

A hash function is a transformation that takes a variable-size input and returns a fixed-size string, which is called the hash value. In cryptography, the hash functions should have some additional properties:

- The hash function should be easy to compute.
- The hash function is one way; that is, it is impossible to calculate the 'inverse' function.

- The hash function is collision-free; that is, it is impossible that different input leads to the same hash value.

hash value

The fixed-sized string resulting after applying a *hash function* to a text.

High-Level Assembler for VSE

A programming language providing enhanced assembler programming support. It is a base program of z/VSE.

home interface

Provides the methods to instantiate a new EJB object, introspect an EJB, and remove an EJB instantiation., as for the remote interface is needed because the deployment tool generates the implementation class. Every Session bean's home interface must supply at least one *create()* method.

host mode

In this operating mode, a PC can access a VSE host. For programmable workstation (PWS) functions, the Move Utilities of VSE can be used.

host system

The controlling or highest level system in a data communication configuration.

host transfer file (HTF)

Used by the Workstation File Transfer Support of z/VSE as an intermediate storage area for files that are sent to and from IBM personal computers.

HTTP Session

In the context of z/VSE, identifies the web-browser client that calls a servlet (in other words, identifies the connection between the client and the middle-tier platform).

I

ICCF

See *VSE/ICCF.*

ICKDSF (Device Support Facilities)

A z/VSE base program that supports the installation, use, and maintenance of IBM disk devices.

include function

Retrieves a library member for inclusion in program input.

index

1. A table that is used to locate records in an indexed sequential data set or on indexed file.
2. In, an ordered collection of pairs, each consisting of a key and a pointer, used by to sequence and locate the records of a key-sequenced data set or file; it is organized in levels of index records. See also *alternate index.*

input/output control system (IOCS)

A group of IBM supplied routines that handle the transfer of data between main storage and auxiliary storage devices.

integrated communication adapter (ICA)

The part of a processor where multiple lines can be connected.

integrated console

In z/VSE, the service processor console available on IBM Z that operates as the z/VSE system console. The integrated console is typically used during IPL and for recovery purposes when no other console is available.

Interactive Computing and Control Facility (ICCF)

An IBM licensed program that serves as interface, on a time-slice basis, to authorized users of terminals that are linked to the system's processor.

interactive partition

An area of virtual storage for the purpose of processing a job that was submitted interactively via VSE/ICCF.

Interactive User Communication Vehicle (IUCV)

Programming support available in a VSE supervisor for operation under z/VM. The support allows users to communicate with other users or with CP in the same way they would with a non-preferred guest.

intermediate storage

Any storage device that is used to hold data temporarily before it is processed.

IOCS

Input/output control system.

IPL

Initial program load.

irrecoverable error

An error for which recovery is impossible without the use of recovery techniques external to the computer program or run.

IUCV

Interactive User Communication Vehicle.

J

JAR

Is a platform-independent file format that aggregates many files into one. Multiple applets and their requisite components (.class files, images, and sounds) can be bundled in a JAR file, and then downloaded to a web browser using a single HTTP transaction (much improving the download speed). The JAR format also supports compression, which reduces the files size (and further improves the

download speed). The compression algorithm that is used is fully compatible with the ZIP algorithm. The owner of an applet can also digitally sign individual entries in a JAR file to authenticate their origin.

Java application

A Java program that runs inside the JVM of your web browser. The program's code resides on a local hard disk or on the LAN. Java applications might be large programs using graphical interfaces. Java applications have unlimited access to all your local resources.

Java bytecode

Bytecode is created when a file containing Java source language statements is compiled. The compiled Java code or "bytecode" is similar to any program module or file that is ready to be executed (run on a computer so that instructions are performed one at a time). However, the instructions in the bytecode are really instructions to the *Java Virtual Machine*. Instead of being interpreted one instruction at a time, bytecode is instead recompiled for each operating-system platform using a just-in-time (JIT) compiler. Usually, this enables the Java program to run faster. Bytecode is contained in binary files that have the suffix**.CLASS**

Java servlet

See *servlet.*

JHR

Job header record.

job accounting interface

A function that accumulates accounting information for each job step, to be used for charging the users of the system, for planning new applications, and for supervising system operation more efficiently.

job accounting table

An area in the supervisor where accounting information is accumulated for the user.

job catalog

A catalog made available for a job by means of the file name IJSYSUC in the respective DLBL statement.

job entry control language (JECL)

A control language that allows the programmer to specify how VSE/POWER should handle a job.

job step

In 1 of a group of related programs complete with the JCL statements necessary for a particular run. Every job step is identified in the job stream by an EXEC statement under one JOB statement for the whole job.

job trailer record (JTR)

As VSE/POWER parameter JTR, alias NJT. An NJE control record terminating a job entry in the input or output queue and providing accounting information.

K

key

In VSE/VSAM, one or several characters that are taken from a certain field (key field) in data records for identification and sequence of index entries or of the records themselves.

key sequence

The collating sequence either of records themselves or of their keys in the index or both. The key sequence is alphanumeric.

key-sequenced file

A VSE/VSAM file whose records are loaded in key sequence and controlled by an index. Records are retrieved and stored by keyed access or by addressed access, and new records are inserted in the file in key sequence.

KSDS

Key-sequenced data sets. See *key-sequenced file.*

L

label

1. An identification record for a tape, disk, or diskette volume or for a file on such a volume.
2. In assembly language programming, a named instruction that is generally used for branching.

label information area

An area on a disk to store label information that is read from job control statements or commands. Synonymous with *label area*.

Language Environment for z/VSE

An IBM software product that is the implementation of Language Environment on the VSE platform.

language translator

A general term for any assembler, compiler, or other routine that accepts statements in one language and produces equivalent statements in another language.

Large DASD

A DASD device that

1. Has a capacity exceeding 64 K tracks and
2. Does not have VSAM space created prior to VSE/ESA 2.6 that is owned by a catalog.

LE/VSE

Short form of Language Environment for z/VSE.

librarian

The set of programs that maintains, services, and organizes the system and private libraries.

library block

A block of data that is stored in a sublibrary.

library directory

The index that enables the system to locate a certain sublibrary of the accessed library.

library member

The smallest unit of a data that can be stored in and retrieved from a sublibrary.

line commands

In VSE/ICCF, special commands to change the declaration of individual lines on your screen. You can copy, move, or delete a line declaration, for example.

linkage editor

A program that is used to create a phase (executable code) from one or more independently translated object modules, from one or more existing phases, or from both. In creating the phase, the linkage editor resolves cross-references among the modules and phases available as input. The program can catalog the newly built phases.

linkage stack

An area of protected storage that the system gives to a program to save status information for a branch and stack or a stacking program call.

link station

In SNA, the combination of hardware and software that allows a node to attach to and provide control for a link.

loader

A routine, commonly a computer program, that reads data or a program into processor storage. See also *relocating loader*.

local shared resources (LSR)

A VSE/VSAM option that is activated by three extra macros to share control blocks among files.

lock file

In a shared disk environment under VSE, a system file on disk that is used by the sharing systems to control their access to shared data.

logical partition

In LPAR mode, a subset of the server unit hardware that is defined to support the operation of a system control program.

logical record

A user record, normally pertaining to a single subject and processed by data management as a unit. Contrast with *physical* record, which may be larger or smaller.

logical unit (LU)

1. A name that is used in programming to represent an I/O device address. *physical unit (PU), system services control point (SSCP), primary logical unit (PLU), and secondary logical unit (SLU).*
2. In SNA, a port through which a user accesses the SNA network,
   a. To communicate with another user and
   b. To access the functions of the SSCP. An LU can support at least two sessions. One with an SSCP and one with another LU and might be capable of supporting many sessions with other LUs.

logical unit name

In programming, a name that is used to represent the address of an input/output unit.

logical unit 6.2

A SNA/SDLC protocol for communication between programs in a distributed processing environment. LU 6.2 is characterized by

1. A peer relationship between session partners,
2. Efficient utilization of a session for multiple transactions,
3. Comprehensive end-to-end error processing, and
4. A generic Application Programming Interface (API) consisting of structured verbs that are mapped into a product implementation.

logons interpret interpret routine

In VTAM, an installation exit routine, which is associated with an interpret table entry, that translates logon information. It also verifies the logon.

LPAR mode

Logically partitioned mode. The CP mode that is available on the Configuration (CONFIG) frame when the PR/SM feature is installed. LPAR mode allows the operator to allocate the hardware resources of the processor unit among several logical partitions.

M

macro definition

A set of statements and instructions that defines the name of, format of, and conditions for generating a sequence of assembler statements and machine instructions from a single source statement.

macro expansion

See *macro generation*

macro generation

An assembler operation by which a macro instruction gets replaced in the program by the statements of its definition. It takes place before assembly. Synonymous with *macro expansion*.

macro (instruction)

1. In assembler programming, a user-invented assembler statement that causes the assembler to process a set of statements that are defined previously in the macro definition.

2. A sequence of VSE/ICCF commands that are defined to cause a sequence of certain actions to be performed in response to one request.

maintain system history program (MSHP)

A program that is used for automating and controlling various installation, tailoring, and service activities for a VSE system.

main task

The main program within a partition in a multiprogramming environment.

master console

In z/VSE, one or more consoles that receive all system messages, except for those that are directed to one particular console. Contrast this with the *user* console, which receives only those messages that are specifically directed to it, for example messages that are issued from a job that was submitted with the request to echo its messages to that console. The operator of a master console can reply to all outstanding messages and enter all system commands.

maximum (max) CA

A unit of allocation equivalent to the maximum control area size on a count-key-data or fixed-block device. On a CKD device, the max CA is equal to one cylinder.

memory object

Chunk of virtual storage that is allocated above the bar (2 GB) to be created with the IARV64 macro.

message

In VSE, a communication that is sent from a program to the operator or user. It can appear on a console, a display terminal or on a printout.

MSHP

See maintain system history program.

multitasking

Concurrent running of one main task and one or several subtasks in the same partition.

MVS

Multiple Virtual Storage. Implies MVS/390, MVS/XA, MVS/ESA, and the MVS element of the z/OS (OS/390) operating system.

N

NetView

A z/VSE optional program that is used to monitor a network, manage it, and diagnose its problems.

network address

In SNA, an address, consisting of subarea and element fields, that identifies a link, link station, or NAU. Subarea nodes use network addresses; peripheral nodes use local addresses. The boundary function in the subarea node to which a peripheral node is attached transforms local addresses to network addresses and vice versa. See also *network name*.

network addressable unit (NAU)

In SNA, a logical unit, a physical unit, or a system services control point. It is the origin or the destination of information that is transmitted by the path control network. Each NAU has a network address that represents it to the path control network. See also *network name, network address*.

Network Control Program (NCP)

An IBM licensed program that provides communication controller support for single-domain, multiple-domain, and interconnected network capability. Its full name is ACF/NCP.

network definition table (NDT)

In VSE/POWER networking, the table where every node in the network is listed.

network name

1. In SNA, the symbolic identifier by which users refer to a NAU, link, or link station. See also *network address*.
2. In a multiple-domain network, the name of the APPL statement defining a VTAM application program. This is its network name, which must be unique across domains.

node

1. In SNA, an end point of a link or junction common to several links in a network. Nodes can be distributed to host processors, communication controllers, cluster controllers, or terminals. Nodes can vary in routing and other functional capabilities.
2. In VTAM, a point in a network that is defined by a symbolic name. Synonymous with *network node*. See *major node and minor node*.

node type

In SNA, a designation of a node according to the protocols it supports and the network addressable units (NAUs) it can contain.

O

object module (program)

A program unit that is the output of an assembler or compiler and is input to a linkage editor.

online application program

An interactive program that is used at display stations. When active, it waits for data. Once input arrives, it processes it and send a response to the display station or to another device.

operator command

A statement to a control program, issued via a console or terminal. It causes the control program to provide requested information, alter normal operations, initiate new operations, or end existing operations.

optional licensed program

An IBM licensed program that a user can install on VSE by way of available installation-assist support.

output parameter text block (OPTB)

in VSE/POWER's spool-access support, information that is contained in an output queue record if a * $$ LST or * $$ PUN statement includes any user-defined keywords that have been defined for autostart.

P

page data set (PDS)

One or more extents of disk storage in which pages are stored when they are not needed in processor storage.

page fixing

Marking a page so that it is held in processor storage until explicitly released. Until then, it cannot be paged out.

page I/O

Page-in and page-out operations.

page pool

The set of page frames available for paging virtual-mode programs.

panel

The complete set of information that is shown in a single display on terminal screen. Scrolling back and forth through panels like turning manual pages. See also *selection panel*.

partition balancing

A z/VSE facility that allows the user to specify that two or more or all partitions of the system should receive about the same amount of time on the processor.

PASN-AL (primary address space number - access list)

The access list that is associated with a partition. A program uses the PASN-AL associated with its partition and the DU-AL associated with its task (work unit). See also *DU-AL*.

Each partition has its own unique PASN-AL. All programs running in this partition can access data spaces through the PASN-AL. Thus a program can create a data space, add an entry for it in the PASN-AL, and obtain the ALET that indexes the entry. By passing the ALET to other programs in the partition, the program can share the data space with other programs running in the same partition.

PDS

Page data sets.

phase

The smallest complete unit of executable code that can be loaded into virtual storage.

physical record

The amount of data that is transferred to or from auxiliary storage. Synonymous with *block*.

PNET

Programming support available with VSE/POWER; it provides for the transmission of selected jobs, operator commands, messages, and program output between the nodes of a network.

POWER

See *VSE/POWER*.

pregenerated operating system

An operating system such as z/VSE that is shipped by IBM mainly in object code. IBM defines such key characteristics as the size of the main control program, the organization, and size of libraries, and required system areas on disk. The customer does not have to generate an operating system.

preventive service

The installation of one or more PTFs on a VSE system to avoid the occurrence of anticipated problems.

primary address space

In z/VSE, the address space where a partition is executed. A program in primary mode fetches data from the primary address space.

primary library

A VSE library owned and directly accessible by a certain terminal user.

printer/keyboard mode

Refers to 1050 or 3215 console mode (device dependent).

Print Services Facility (PSF)/VSE

An access method that provides support for the advanced function printers.

private area

The virtual space between the shared area (24 bit) and shared area (31 bit), where (private) partitions are allocated. Its maximum size can be defined during IPL. See also *shared area*.

private memory object

Memory object (chunk of virtual storage) that is allocated above the 2 GB line (bar) only accessible by the partition that created it.

private partition

Any of the system's partitions that are not defined as shared. See also *shared partition*.

production library

1. In a pre-generated operating system (or product), the program library that contains the object code for this system (or product).
2. A library that contains data that is needed for normal processing. Contrast with *test library*.

programmer logical unit

A logical unit available primarily for user-written programs. See also *logical unit name*.

program temporary fix (PTF)

A solution or by-pass of one or more problems that are documented in APARs. PTFs are distributed to IBM customers for preventive service to a current release of a program.

PSF/VSE

Print Services Facility/VSE.

PTF

See *Program temporary fix*.

Q

Queue Control Area (QCA)

In VSE/POWER, an area of the data file, which might contain:

- Extended checkpoint information
- Control information for a shared environment.

queue file

A direct-access file that is maintained by VSE/POWER that holds control information for the spooling of job input and job output.

R

random processing

The treatment of data without respect to its location on disk storage, and in an arbitrary sequence that is governed by the input against which it is to be processed.

real address area

In z/VSE, processor storage to be accessed with dynamic address translation (DAT) off

real address space

The address space whose addresses map one-to-one to the addresses in processor storage.

real mode

In VSE, a processing mode in which a program might not be paged. Contrast with *virtual mode*.

recovery management support (RMS)

System routines that gather information about hardware failures and that initiate a retry of an operation that failed because of processor, I/O device, or channel errors.

refresh release

An upgraded VSE system with the latest level of maintenance for a release.

relative-record file

A VSE/VSAM file whose records are loaded into fixed-length slots and accessed by the relative-record numbers of these slots.

release upgrade

Use of the FSU functions to install a new release of z/VSE.

relocatable module

A library member of the type object. It consists of one or more control sections cataloged as one member.

relocating loader

A function that modifies addresses of a phase, if necessary, and loads the phase for running into the partition that is selected by the user.

remote interface

In the context of z/VSE, the remote interface allows a client to make method calls to an EJB although the EJB is on a remote z/VSE host. The container uses the remote interface to create client-side stubs and server-side proxy objects to handle incoming method calls from a client to an EJB.

remote procedure call (RPC)

1. A facility that a client uses to request the execution of a procedure call from a server. This facility includes a library of procedures and an external data representation.
2. A client request to service provider in another node.

residency mode (RMODE)

A program attribute that refers to the location where a program is expected to reside in virtual storage. RMODE 24 indicates that the program must reside in the 24-bit addressable area (below 16 megabytes), RMODE ANY indicates that the program can reside anywhere in 31-bit addressable storage (above or below 16 megabytes).

REXX/VSE

A general-purpose programming language, which is particularly suitable for command procedures, rapid batch program development, prototyping, and personal utilities.

RMS

Recovery management support.

RPG II

A commercially oriented programming language that is specifically designed for writing application programs that are intended for business data processing.

S

SAM ESDS file

A SAM file that is managed in VSE/VSAM space, so it can be accessed by both SAM and VSE/VSAM macros.

SCP

System control programming.

SDL

System directory list.

search chain

The order in which chained sublibraries are searched for the retrieval of a certain library member of a specified type.

second-level directory

A table in the SVA containing the highest phase names that are found on the directory tracks of the system sublibrary.

Secure Sockets Layer (SSL)

A security protocol that allows the client to authenticate the server and all data and requests to be encrypted. SSL was developed by Netscape Communications Corp. and RSA Data Security, Inc..

segmentation

In VSE/POWER, a facility that breaks list or punch output of a program into segments so that printing or punching can start before this program has finished generating such output.

selection panel

A displayed list of items from which a user can make a selection. Synonymous with *menu*.

sense

Determine, on request or automatically, the status or the characteristics of a certain I/O or communication device.

sequential access method (SAM)

A data access method that writes to and reads from an I/O device record after record (or block after block). On request, the support performs device control operations such as line spacing or page ejects on a printer or skip some tape marks on a tape drive.

service node

Within the VSE unattended node support, a processor that is used to install and test a master VSE system, which is copied for distribution to the unattended nodes. Also, program fixes are first applied at the service node and then sent to the unattended nodes.

service program

A computer program that performs function in support of the system. See with *utility program*.

service refresh

A form of service containing the current version of all software. Also referred to as a *system refresh*.

service unit

One or more PTFs on disk or tape (cartridge).

shared area

In z/VSE, shared areas (24 bit) contain the Supervisor areas and SVA (24 bit) and shared areas (31 bit) the SVA (31 bit). Shared areas (24 bit) are at the beginning of the address space (below 16 MB), shared area (31 bit) at the end (below 2 GB).

shared disk option

An option that lets independent computer systems use common data on shared disk devices.

shared memory objects

Chunks of virtual storage allocated above the 2 GB line (bar), that can be shared among partitions.

shared partition

In z/VSE, a partition that is allocated for a program (VSE/POWER, for example) that provides services and communicates with programs in other partitions of the system's virtual address spaces. In most cases shared partitions are no longer required.

shared spooling

A function that permits the VSE/POWER account file, data file, and queue file to be shared among several computer systems with VSE/POWER.

shared virtual area (SVA)

In z/VSE, a high address area that contains a list system directory list (SDL) of frequently used phases, resident programs that are shared between partitions, and an area for system support.

SIT (System Initialization Table)

A table in CICS that contains data used the system initialization process. In particular, the SIT can identify (by suffix characters) the version of CICS system control programs and CICS tables that you have specified and that are to be loaded.

skeleton

A set of control statements, instructions, or both, that requires user-specific information to be inserted before it can be submitted for processing.

socksified

See *socks-enabled*.

Socks-enabled

Pertaining to TCP/IP software, or to a specific TCP/IP application, that understands the *socks protocol*. "Socksified" is a slang term for socks-enabled.

socks protocol

A protocol that enables an application in a secure network to communicate through a firewall via a *socks server*.

socks server

A circuit-level gateway that provides a secure one-way connection through a firewall to server applications in a nonsecure network.

source member

A library member containing source statements in any of the programming languages that are supported by VSE.

split

To double a specific unit of storage space (CI or CA) dynamically when the specified minimum of free space gets used up by new records.

spooling

The use of disk storage as buffer storage to reduce processing delays when transferring data between peripheral equipment and the processor of a computer. In z/VSE, this is done under the control of VSE/POWER.

Spool Access Protection

An optional feature of VSE/POWER that restricts individual spool file entry access to user IDs that have been authenticated by having performed a security logon.

spool file

1. A file that contains output data that is saved for later processing.
2. One of three VSE/POWER files on disk: queue file, data file, and account file.

SSL

See Secure Sockets Layer.

stacked tape

An IBM supplied product-shipment tape containing the code of several licensed programs.

standard label

A fixed-format record that identifies a volume of data such as a tape reel or a file that is part of a volume of data.

stand-alone program

A program that runs independently of (not controlled by) the VSE system.

startup

The process of performing IPL of the operating system and of getting all subsystems and applications programs ready for operation.

start option

In VTAM, a user-specified or IBM specified option that determines conditions for the time a VTAM system is operating. Start options can be predefined or specified when VTAM is started.

static partition

A partition, which is defined at IPL time and occupying a defined amount of virtual storage that remains constant. See also *dynamic partition*.

storage director

An independent component of a storage control unit; it performs all of the functions of a storage control unit and thus provides one access path to the disk devices that are attached to it. A storage control unit has two storage directors.

storage fragmentation

Inability to allocate unused sections (fragments) of storage in the real or virtual address range of virtual storage.

suballocated file

A VSE/VSAM file that occupies a portion of an already defined data space. The data space might contain other files. See also *unique file*.

sublibrary

In VSE, a subdivision of a library. Members can only be accessed in a sublibrary.

sublibrary directory

An index for the system to locate a member in the accessed sublibrary.

submit

A VSE/POWER function that passes a job to the system for processing.

SVA

See shared virtual area.

Synchronous DataLink Control (SDLC)

A discipline for managing synchronous, code-transparent, serial-by-bit information transfer over a link connection. Transmission exchanges might be duplex or half-duplex over switched or non-switched links. The configuration of the link connection might be point-to-point, multipoint, or loop.

SYSRES

See system residence volume.

system control programming (SCP)

IBM supplied, non-licensed program fundamental to the operation of a system or to its service or both.

system directory list (SDL)

A list containing directory entries of frequently used phases and of all phases resident in the SVA. The list resides in the SVA.

system file

In z/VSE, a file that is used by the operating system, for example, the hardcopy file, the recorder file, the page data set.

System Initialization Table (SIT)

A table in CICS that contains data that is used by the system initialization process. In particular, the SIT can identify (by suffix characters) the version of CICS system control programs and CICS tables that you have specified and that are to be loaded.

system recorder file

The file that is used to record hardware reliability data. Synonymous with *recorder file*.

system refresh

See *service refresh*.

system refresh release

See *refresh release*.

system residence file (SYSRES)

The z/VSE system sublibrary IJSYSRS.SYSLIB that contains the operating system. It is stored on the system residence volume DORSES.

system residence volume (SYSRES)

The disk volume on which the system sublibrary is stored and from which the hardware retrieves the initial program load routine for system startup.

system sublibrary

The sublibrary that contains the operating system. It is stored on the system residence volume (SYSRES).

T

task management

The functions of a control program that control the use, by tasks, of the processor and other resources (except for input/output devices).

time event scheduling support

In VSE/POWER, the time event scheduling support offers the possibility to schedule jobs for processing in a partition at a predefined time once repetitively. The time event scheduling operands of the * $$ JOB statement are used to specify the wanted scheduling time.

TLS

See Transport Layer Security.

track group

In VSE/POWER, the basic organizational unit of a file for CKD devices.

track hold

A function that protects a track that is being updated by one program from being accessed by another program.

transaction

1. In a batch or remote batch entry, a job or job step. 2. In CICS TS, one or more application programs that can be used by a display station operator. A given transaction can be used concurrently from one or more display stations. The execution of a transaction for a certain operator is also referred to as a task.
2. A given task can relate only to one operator.

transient area

An area within the control program that is used to provide high-priority system services on demand.

Transport Layer Security

The newest SSL cryptographic protocol. It provides additional strength to privacy and data integrity.

Turbo Dispatcher

A facility of z/VSE that allows to use multiprocessor systems (also called CEC: Central Electronic Complexes). Each CPU within such a CEC has accesses to be shared virtual areas of z/VSE: supervisor, shared areas (24 bit), and shared areas (31 bit). The CPUs have equal rights, which means that any CPU might receive interrupts and work units are not dedicated to any specific CPU.

U

UCB

Universal character set buffer.

universal character set buffer (UCB)

A buffer to hold UCS information.

UCS

Universal character set.

user console

In z/VSE, a console that receives only those system messages that are specifically directed to it. These are, for example, messages that are issued from a job that was submitted with the request to echo its messages to that console. Contrast with *master console*.

user exit

A programming service that is provided by an IBM software product that can be requested during the execution of an application program for the service of transferring control back to the application program upon the later occurrence of a user-specified event.

V

variable-length relative-record data set (VRDS)

A relative-record data set with variable-length records. See also *relative-record data set*.

variable-length relative-record file

A VSE/VSAM relative-record file with variable-length records. See also *relative-record file*.

VIO

See virtual I/O area.

virtual address

An address that refers to a location in virtual storage. It is translated by the system to a processor storage address when the information stored at the virtual address is to be used.

virtual addressability extension (VAE)

A storage management support that allows to use multiple virtual address spaces.

virtual address space

A subdivision of the virtual address area (virtual storage) available to the user for the allocation of private, nonshared partitions.

virtual disk

A range of up to 2 gigabytes of contiguous virtual storage addresses that a program can use as workspace. Although the virtual disk exists in storage, it appears as a real FBA disk device to the user program. All I/O operations that are directed to a virtual disk are intercepted and the data to be written to, or read from, the disk is moved to or from a data space.

Like a data space, a virtual disk can hold only user data; it does not contain shared areas, system data, or programs. Unlike an address space or a data space, data is not directly addressable on a virtual disk. To manipulate data on a virtual disk, the program must perform I/O operations.

Starting with z/VSE 5.2, a virtual disk may be defined in a shared memory object.

virtual I/O area (VIO)

An extension of the page data set; used by the system as intermediate storage, primarily for control data.

virtual mode

The operating mode of a program, where the virtual storage of the program can be paged, if not enough processor (real) storage is available to back the virtual storage.

virtual partition

In VSE, a division of the dynamic area of virtual storage.

virtual storage

Addressable space image for the user from which instructions and data are mapped into processor storage locations.

virtual tape

In z/VSE, a virtual tape is a file (or data set) containing a tape image. You can read from or write to a virtual tape in the same way as if it were a physical tape. A virtual tape can be:

- A VSE/VSAM ESDS file on the z/VSE local system.
- A remote file on the server side; for example, a Linux, UNIX, or Windows file. To access such a remote virtual tape, a TCP/IP connection is required between z/VSE and the remote system.

volume ID

The volume serial number, which is a number in a volume label that is assigned when a volume is prepared for use by the system.

VRDS

Variable-length relative-record data sets. See *variable-length relative record file*.

VSAM

See *VSE/VSAM*.

VSE (Virtual Storage Extended)

A system that consists of a basic operating system and any IBM supplied and user-written programs that are required to meet the data processing needs of a user. VSE and hardware it controls form a complete computing system. Its current version is called z/VSE.

VSE/Advanced Functions

A program that provides basic system control and includes the supervisor and system programs such as the Librarian and the Linkage Editor.

VSE Connector Server

Is the host part of the VSE JavaBeans, and is started using the job STARTVCS, which is placed in the reader queue during installation of z/VSE. Runs by default in dynamic class R.

VSE/DITTO (VSE/Data Interfile Transfer, Testing, and Operations Utility)

An IBM licensed program that provides file-to-file services for disk, tape, and card devices.

VSE/ESA (Virtual Storage Extended/Enterprise Systems Architecture)

The predecessor system of z/VSE.

VSE/Fast Copy

A utility program for fast copy data operations from disk to disk and dump/restore operations via an intermediate dump file on magnetic tape or disk.

VSE/FCOPY (VSE/Fast Copy Data Set program)

An IBM licensed program for fast copy data operations from disk to disk and dump/restore operations via an intermediate dump file on magnetic tape or disk. There is also a stand-alone version: the FASTCOPY utility.

VSE/ICCF (VSE/Interactive Computing and Control Facility)

An IBM licensed program that serves as interface, on a time-slice basis, to authorized users of terminals that are linked to the system's processor.

VSE/ICCF library

A file that is composed of smaller files (libraries) including system and user data, which can be accessed under the control of VSE/ICCF.

VSE JavaBeans

Are JavaBeans that allow access to all VSE-based file systems (VSE/VSAM, Librarian, and VSE/ICCF), submit jobs, and access the z/VSE operator console. The class library is contained in the *VSEConnector.jar* archive. See also *JavaBeans*.

VSE library

A collection of programs in various forms and storage dumps stored on disk. The form of a program is indicated by its member type such as source code, object module, phase, or procedure. A VSE library consists of at least one sublibrary, which can contain any type of member.

VSE/POWER

An IBM licensed program that is primarily used to spool input and output. The program's networking functions enable a VSE system to exchange files with or run jobs on another remote processor.

VSE/VSAM (VSE/Virtual Storage Access Method)

An IBM access method for direct or sequential processing of fixed and variable length records on disk devices.

VSE/VSAM catalog

A file containing extensive file and volume information that VSE/VSAM requires to locate files, to allocate and deallocate storage space, to verify the authorization of a program or an operator to gain access to a file, and to accumulate use statistics for files.

VSE/VSAM managed space

A user-defined space on disk that is placed under the control of VSE/VSAM.

W

wait for run subqueue

In VSE/POWER, a subqueue of the reader queue with dispatchable jobs ordered in execution start time sequence.

wait state

The condition of a processor when all operations are suspended. System recovery from a hard wait is impossible without performing a new system startup. See *hard wait*.

Workstation File Transfer Support

Enables the exchange of data between IBM Personal Computers (PCs) linked to a z/VSE host system where the data is kept in intermediate storage. PC users can retrieve that data and work with it independently of z/VSE.

work file

A file that is used for temporary storage of data being processed.

Numerics

24-bit addressing

Provides addressability for address spaces up to 16 megabytes.

31-bit addressing

Provides addressability for address spaces up to 2 gigabytes.

64-bit addressing

Provides addressability for address spaces up to 2 gigabytes and above.

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Special Characters

Numerics

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Product Number: 5609-ZV5

SC34-2626-01