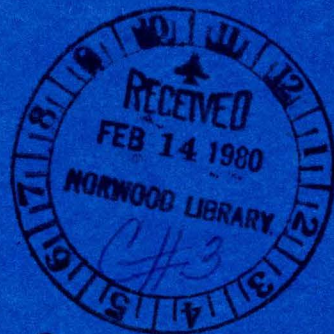


GC38-0251-1  
File No. S370-30

**Program Product**

**Network Operation  
Support Program  
General Information**

Program Number 5735-XX2 (DOS/VS, OS/VS)



*Includes 6131-0762*

**IBM**



GC38-0251-1  
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## Second Edition (July 1977)

This edition, as amended by Technical Newsletter GN31-0762, corresponds to the program product Network Operation Support Program and to all subsequent versions and modifications until otherwise indicated in new editions or technical newsletters. Refer to the Summary of Amendments for a description of the changes made by TNL GN31-0762.

Changes are continually made to the information in IBM program product publications. Before using this publication in connection with the operation of an IBM program product, consult the *IBM System/370 Bibliography*, GC20-0001, to find out which editions are applicable and current.

The program product described in this manual, and all licensed materials available for it, are provided by IBM under terms of the Agreement for IBM Licensed Programs. Your branch office can advise you on the ordering procedures.

A form for readers' comments appears at the back of this publication. Address any additional comments concerning the contents of this publication to IBM Corporation, Department 63T, Kingston, New York 12401. Comments become the property of IBM.

**Summary of Amendments (December 30, 1977) to  
GC38-0251-1 by TNL GN31-0762**

**Changed Documentation**

Information has been clarified concerning NOSP storage estimates and the minimum NOSP configuration.

## Preface

This publication provides an overview of the Network Operation Support Program. It is directed primarily to customer executives, system administrators, system analysts, system programmers, application programmers, and terminal operators who are operating with DOS/VS or OS/VS systems.

Readers should use this book to get a general understanding of the Network Operation Support Program concepts, and the requirements and options that must be considered in planning and installing the program. To perform specific steps, such as estimating storage requirements or writing Network Operation Support Program definition statements, readers should use the appropriate *Network Operation Support Program Installation and Maintenance* publication for their system.

Readers already familiar with VTAM should refer directly to *Introduction to Advanced Communications Function*, GC30-3033. Readers unfamiliar with VTAM should consult:

*Advanced Communications Function for VTAM (ACF/VTAM) General Information*, GC38-0254

*Advanced Communications Function for VTAM (ACF/VTAM) Concepts and Planning*, GC38-0282

For a description of the relationship between ACF/VTAM and ACF/NCP/VS (useful for an understanding of cross-domain communication), see *Introduction to Advanced Communications Function*, GC30-3033.

The first section of this publication serves as an overview of the Network Operation Support Program; the second section, "Functions and Facilities," outlines the manner in which the program is started and stopped and provides information on specific functions of the program at a high level. The remaining sections provide information on terminal and program support, storage, and compatibility considerations.

More detailed information is found in the following publications:

*Network Operation Support Program Installation and Maintenance*, SC38-0278 (OS/VS), SC38-0279 (DOS/VS)

*Network Operation Support Program Operator's Manual*, SC38-0281

*Network Operation Support Program Logic*, LY27-8026

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# Introduction

The Network Operation Support Program is a program product designed for use with the Advanced Communication Function for the Virtual Telecommunications Access Method (ACF/VTAM) in a complex data communication network. It provides a means of freeing the system console and allowing control to be tailored to the user's needs. Cross-domain communication is provided through the ACF/VTAM Multisystem Networking Facility and the Advanced Communication Function for Network Control Program/Virtual Storage (ACF/NCP/VS).\* The Network Operation Support Program:

- Provides for the routing of certain commands to the proper domain for execution, and the return of responses from those domains to the issuing operator station

- Provides for multiple network operators with individually assignable responsibilities (at display terminals throughout the network)

- Allows the user to limit the amount of control an operator can have over the network (See "Span of Control" later in this publication)

- Permits user-written exit routines at various exits throughout the program to screen and edit Network Operation Support Program traffic

- Permits addition of user-written command lists and ocommand processors to support additional function

- Allows for the automation of various operator tasks (through the use of user-written exit routines, command lists, and command processors) to reduce the probability of human error

- Supports ACF/VTAM's facility for the flexible location (both physical and logical) of devices within a network

The Network Operation Support Program operates with ACF/VTAM in the DOS/VS, OS/VS1, OS/VS2 SVS, and OS/VS2 MVS systems. It supports the IBM 3270 Information Display System. The IBM 3277 is supported as the operator station. Other IBM 3270 devices supported are listed under "Terminal and Program Support" later in this publication.

Figure 1 shows a sample network in which operators submit ACF/VTAM commands (except START VTAM and HALT VTAM) from operator stations to the Network Operation Support Program. The program determines the destination of the commands and then passes them to the appropriate ACF/VTAM through a Network Operation Support Program in another domain. Command responses and unsolicited messages generated by ACF/VTAM are returned to the appropriate Network Operation Support Program and returned by the program to the issuing operator station. Hard-copy log devices can be specified during system definition and used to maintain a record of commands and responses.

As shown in Figure 1, several operators can be in session with any Network Operation Support Program simultaneously. The program analyzes each command entered for the appropriate element identification (resource name) before passing it for execution. Using this facility, the user can assign groups of network resources to specific operators during system definition (see "Span of Control" later in this publication). This tailoring of network control makes the complex network more manageable. For example, an ACF/VTAM domain can be entirely controlled by one operator if required, or the domain can be divided into smaller elements, each controlled by a network operator. If properly authorized and defined in each domain, operators may control resources outside of the domain in which their operator station is physically located.

---

\*A *domain* is a set of network resources that are controlled by one ACF/VTAM host.

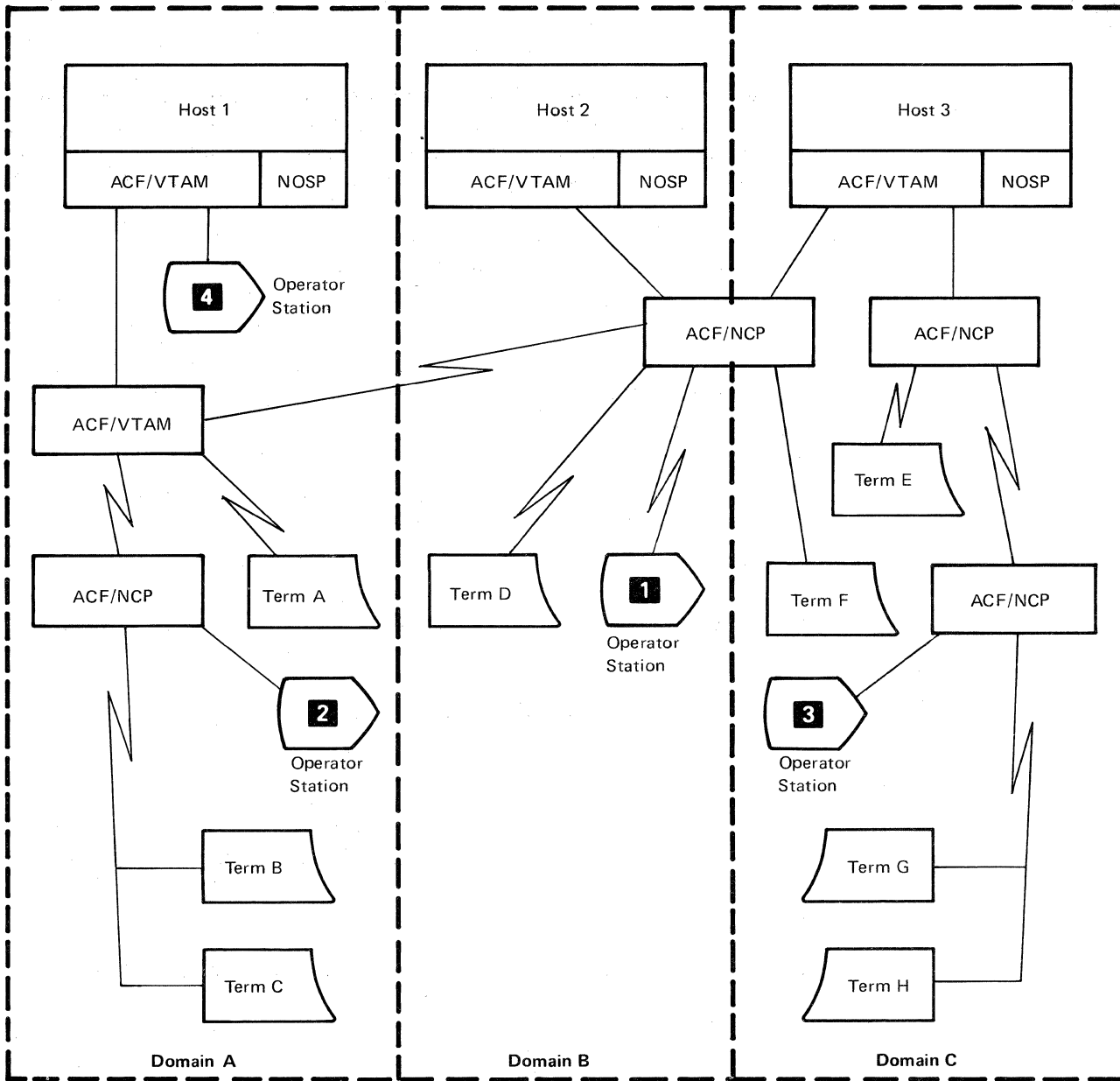


Figure 1. A Multiple-Domain Relationship Using the Network Operation Support Program



ACF/VTAM provides the necessary initial interconnection of terminals in one domain and applications in another. After a session has been established, the Network Operation Support Program provides its own cross-domain resource management. ACF/VTAM also supports application program-to-application program communication, which allows for communication between Network Operation Support Programs. The Network Operation Support Program uses the VTAM SENDCMD and RCVCMD macro instructions to send commands and receive responses (solicited messages) and unsolicited messages; it uses the VTAM SEND and RECEIVE macro instructions to communicate with operator stations and hard-copy logs.

The Network Operation Support Program's centralization of control can be seen in an example using Figure 1. Any of the resources (or all the resources) in Domain B or Domain C can be controlled from operator station 2 in Domain A, provided the Network Operation Support Program is resident in all three domains. Commands submitted from operator station 2, for example, to Terminal H in Domain C, would be routed to the Network Operation Support Program in Domain C over the application program-to-application program session between the two Network Operation Support Programs. The program in Domain C then submits the command to the ACF/VTAM in Domain C for execution. Messages and responses to commands are routed back to operator station 2 over the same path. As shown in the example, operator stations can be either locally or remotely attached, providing greater configuration flexibility.

The Network Operation Support Program provides for user-written exit routines at various locations, including the points of input or output to or from operator stations, ACF/VTAMs, Network Operation Support Programs, and the system console. Exits are also provided at input to command execution and in the stream of data flow to both disk log devices and hard-copy log devices.

Exit routines could be written to gather statistics on network traffic or to prevent certain messages from reaching particular operator stations. Exit routines could also be used to augment security by checking for span authorization or user-specific passwords.

Users may wish to write their own command processors to support any additional commands or operands. These command processors must be written in the assembler language and assembled and link-edited as load modules. The name of any processor must be defined to the Network Operation Support Program during definition. The specific interfaces provided are discussed in the appropriate *Network Operation Support Program Installation and Maintenance* publications. Service facilities are also provided by the Network Operation Support Program. These include the sending of commands to ACF/VTAM in any supported domain, and the handling of responses.

User command processors may be used in conjunction with user exit routines to automate certain repetitive operator tasks. For example, a procedure could be written to respond to certain ACF/VTAM error messages by deactivating failing links and activating others, or initiating the ACF/VTAM trace facility.

The Network Operation Support Program command list facility can be used to expand operator control as well. Users can code sequences of ACF/VTAM or Network Operation Support Program commands into command lists, which are stored in a file at definition and invoked by name for execution when required. See the section "The Command List Facility" later in this publication for further information.

# Functions and Facilities

## Starting the Network Operation Support Program

The Network Operation Support Program is executed as an ACF/VTAM application program in its own region or partition. When used with DOS/VS systems, the program can operate as a single task or as a subtask in the ACF/VTAM partition. The Network Operation Support Program is started by the system console operator, and for each initialization the program adopts the current configuration in the definition files.

## Stopping the Network Operation Support Program

The Network Operation Support Program can be halted using the Network Operation Support Program's CLOSE command with either the NORMAL or the IMMEDIATE option. The command defaults to a normal, orderly shutdown. The IMMEDIATE option results in an immediate end of the program's main task. The program can also be halted with an OS/VS or DOS/VS system CANCEL command, which results in a task cancellation.

### *Orderly Shutdown of the Network Operation Support Program*

When the CLOSE command with the NORMAL option is issued, no new operator logons are allowed. Current operator station sessions continue until each session is individually terminated. No new cross-domain connection requests are honored while a shutdown is in progress, but existing requests from other Network Operation Support Programs are completed before the CLSDST macro is issued to close the sessions. Hard-copy log devices are logged off when their associated operator stations have logged off (see "Logging Facilities" later in this publication), and no more messages are printed. The program completes any existing requests where possible, and a final message is sent to the system console. A final entry is made to the disk log, and it is closed. The Network Operation Support Program issues a CLOSE ACB, and its job step is terminated.

### *Immediate Shutdown of the Network Operation Support Program*

The CLOSE command with the IMMEDIATE option results in an immediate end in the Network Operation Support Program's main task; no warning messages are issued. A dump of the region or partition is produced, and cleanup is done by ACF/VTAM and the operating system. This form of the command may be issued at any time, even while a CLOSE NORMAL is in progress.

## Logon and Logoff

To gain access to the Network Operation Support Program, an operator must log on through ACF/VTAM (see Figure 2). The APPLID name specified at logon must be the same name given on the DOMAINID parameter of the NOSPID definition statement used during system definition. The Network Operation Support Program returns with a request for an operator identification, a password, a profile name, a hard-copy log device name, and a request for the execution of an initial command, which may be answered YES or NO. *Network Operation Support Program Installation and Maintenance* contains a complete description of the NOSPID statement, as well as information concerning passwords and profiles. The program verifies that the logon came from a terminal authorized to issue the command; it also verifies that the operator

Multiple Network Operators

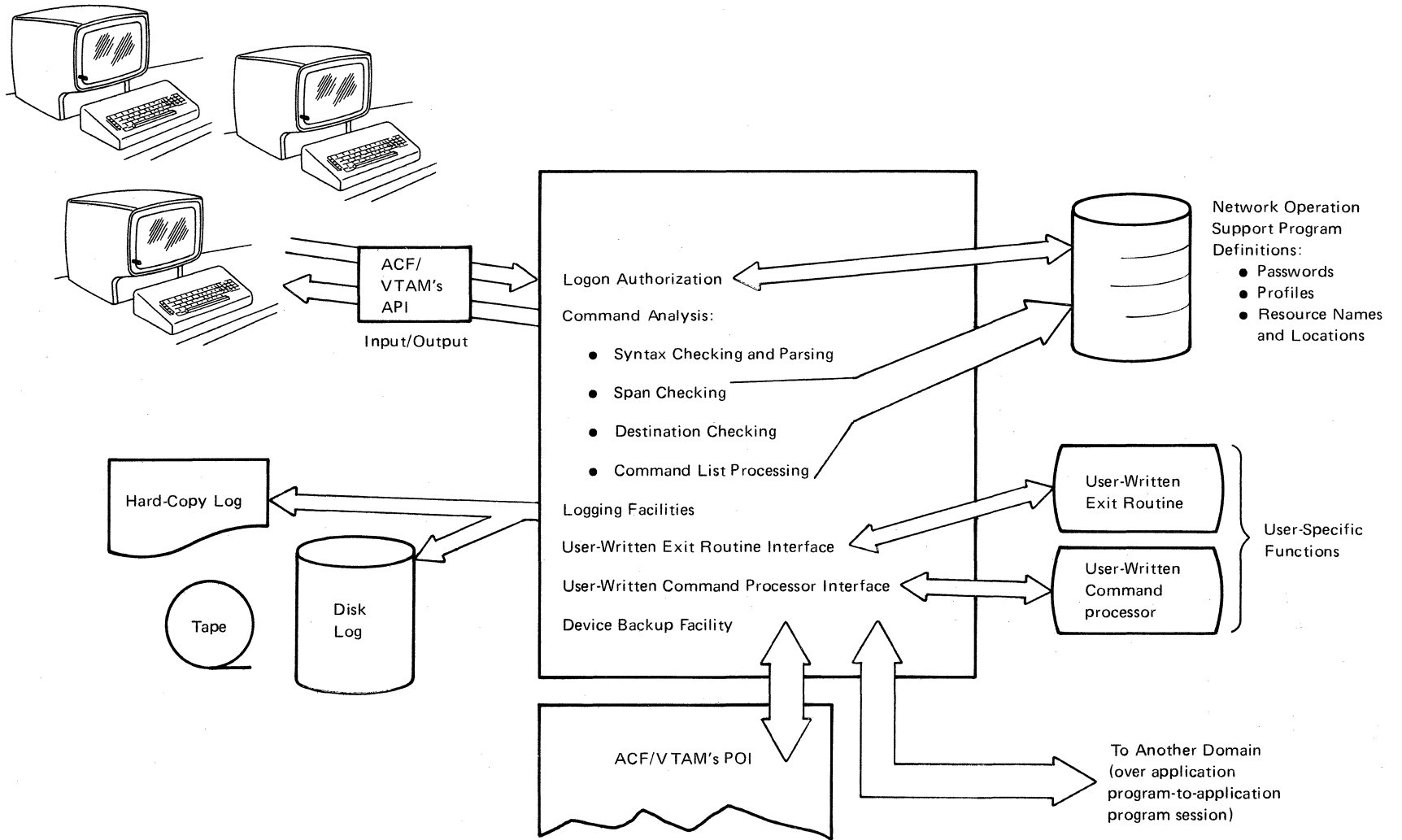


Figure 2. A Functional Overview of the Network Operation Support Program

identification and password are valid by comparing them with the information specified in the definition files. If no logon errors are found, the appropriate internal tables are adjusted to reflect the new operator station, and a session is started with the terminal.

When an operator logs off through the Network Operation Support Program facilities, the program ends the session with the operator station, and the operator is disconnected. Any Network Operation Support Program messages that cannot be sent to the operator station because of a disconnection are directed to the log device associated with that operator station. Any ACF/VTAM messages sent to an operator station that has been disconnected are sent to the system console.

If the lost terminal exit routine is driven, the action taken is the same as for a logoff sent to the Network Operation Support Program. If the lost terminal exit routine is driven because of a broken session, however, all queued messages and control blocks are retained in anticipation of a logon from the same or a new device or an action taken by a different operator. A message is routed to the operator station designated as the receiver of lost station messages; this would normally be controlled by an operator given supervisory authority by the user (during system definition).

## Device Backup

In order to maintain reliability, the Network Operation Support Program attempts to deliver every generated message. If a device becomes unavailable to the program, messages continue to be queued for that operator station or hard-copy log until one of the following occurs:

A network operator issues a command to transfer control, logically deactivating the device and moving its queued messages to another available device with the same device type. Messages are routed to the new device until another such transfer of control occurs.

A network operator issues a command to deactivate a device. In this case, any messages requiring responses are rerouted to the active operator with authority over the resource involved. See *Network Operation Support Program Installation and Maintenance* for details related to specifying authority.

No more storage is available.

Any message that cannot be delivered according to the above rules is routed to the operator station designated as the receiver of undeliverable messages.

## Screen Format and Command Entry

The operator station screen as formatted by the Network Operation Support Program is divided into two areas: a message area for the display of commands, messages, and responses, and (below it) a command entry area where commands are displayed while being entered from the keyboard. Figure 3 shows the screen format. The fields at the top of the screen give the name of the program as well as the date and time of the last screen update.

Section A of Figure 3 is used to display entries and responses as held and processed on input and output queues. The fields include a one-character code for the type of entry (command, response, or unsolicited message) and a domain name field (to clarify which domain the resource resides in), followed by the actual text of the message or command. Continuation lines have blanks in the first two fields. Wherever possible, words are not split when continuation occurs. A line of dashes follows the last entry.



Section B of Figure 3 has two fields followed by an immediate message area. The first field is a three-digit “ready” indicator. The field is filled with question marks (?) when the Network Operation Support Program is ready to receive regular commands from the keyboard. The second field is another three-digit indicator, which is filled with asterisks (\*\*\*) when operator action is required before the Network Operation Support Program begins overwriting a filled screen. (See the *Network Operation Support Program Operator’s Manual* for a discussion of the actual commands.)

The immediate message area of Section B is used to display asynchronous output, including acknowledgment or error messages issued from immediate command processors or those portions of the Network Operation Support Program that operate asynchronously to regular command processors.

Section C of Figure 3 is where commands are entered from the keyboard. The cursor is set by the program at the beginning of this line.

## Command Types

The commands available to an operator are separated into two types: ACF/VTAM commands and Network Operation Support Program commands.

**ACF/VTAM commands** are those commands recognized by ACF/VTAM, except START VTAM and HALT VTAM.

**Network Operation Support Program commands** are used by the operator to request the program to perform functions *within* the Network Operation Support Program environment. The LIST command, for example, could be used to display the configuration of all active operator stations or the status of the domain, and the MSG command could be issued from any operator station to send a message to any currently active operator station (or all operator stations) in this domain or any stations that have issued START commands to this domain.

Network Operation Support Program commands are classified as being *regular* or *immediate*. Regular commands are processed by standard command processors. Only one regular command may be issued at a time; regular commands issued while a preceding command is in process are rejected. Immediate commands are entered and processed immediately after entry and are processed while a regular command is executing. The Network Operation Support Program immediate commands are GO, CANCEL, CLOSE, RESET, AUTOWRAP, no-data-enter, and CLEAR key. Details of these commands are found in the *Network Operation Support Program Operator’s Manual*.

## The Command List Facility

Users can code sequences of ACF/VTAM, Network Operation Support Program commands, and user-written commands into command lists, which are stored in a file during system definition and invoked by name for execution when required. All regular commands may be used in a command list, and any of these commands may appear in a command list any number of times. (See the *Network Operation Support Program Operator’s Manual* for command details, and the appropriate *Network Operation Support Program Installation and Maintenance* for information on building and filing command lists.)



The Network Operation Support Program provides for parameter substitution in command list commands. Both positional and keyword parameters may be used in commands being generated, but only positional parameters (a maximum of 9) are allowed in the invoking command. For example, the command list definition

```
ALTER
      VARY NET,ACT,ID=&1
      VARY NET,INACT,ID=&2
```

when invoked by this entry:

```
ALTER ABLE,BAKER
```

results in:

```
VARY NET,ACT,ID=ABLE
VARY NET,INACT,ID=BAKER
```

The PAUSE command (a Network Operation Support Program command) may be coded within a command list during definition and may have an accompanying text. Using this pausing facility, an operator can either permit a command list to continue processing (by entering the GO command), or cancel the list's execution (by entering the CANCEL command). The GO and CANCEL commands are Network Operation Support Program immediate commands. Only immediate commands can be issued while in PAUSE status.

User-written command processors may also call command lists, but lists initiated in this manner are queued until any currently executing command lists have completed processing. Command lists called within other command lists are processed before the calling list is allowed to continue processing. An example of a command list's use might be the automatic logging on of a certain set of terminals immediately after the Network Operation Support Program has been started.

## Logging Facilities

A log of operator station activity can be routed to a communication terminal for an online hard-copy record. The routing function permits hard-copy logs on an individual operator station basis, or several operator stations may share the same terminal printer. Each entry on the hard-copy log is similar in format to that of the entry on the screen, but with additional information including operator station identification and a time stamp.

Operator station activity may also be sent to a disk log. The disk log is a sequential file that contains all operator station activity related to a particular Network Operation Support Program, including commands, responses, and unsolicited messages. All messages are time stamped and identified by origin. Standard operating system utilities or user-written programs may be used to print the log offline. When the end of an allotted disk extent is reached, the program automatically begins overwriting data. The contents of the log should be periodically printed to avoid loss of data.

## Span of Control

The Network Operation Support Program provides the capability of restricting a network operator's control to a subset of network resources. ACF/VTAM commands can then be issued only against resources defined within an operator's *span of control*, and only messages related to those resources are received. Span authorization is defined during system definition and filed for use by the program when commands are entered. (Span checking is done only on ACF/VTAM commands with ID=appended or with a Network Operation Support Program-qualified name.) Details of the span definition procedure can be found in *Network Operation Support Program Installation and Maintenance*.

Span of control can extend across domain boundaries, allowing an authorized operator to control resources that are in domains other than the one in which the issuing operator station is located. In Figure 4, for example, all of the network resources in the shaded areas could be within one operator's span of control, and the operator may be logged on to any of the Network Operation Support Programs. A network resource is any named entity known to ACF/VTAM, including NCPs, local and remote devices, lines, application programs, and cross-domain resource tables and managers.

Spans of control may overlap, since resource names may appear in lists associated with more than one operator. Under such a condition, either operator may control the network resource, and the resulting status of that resource is the cumulative result of all the commands entered depending upon the sequence in which they were received by ACF/VTAM.

Care should be taken when assigning resource names to avoid conflicts, which may occur when a name appears more than once in the program's internal tables.

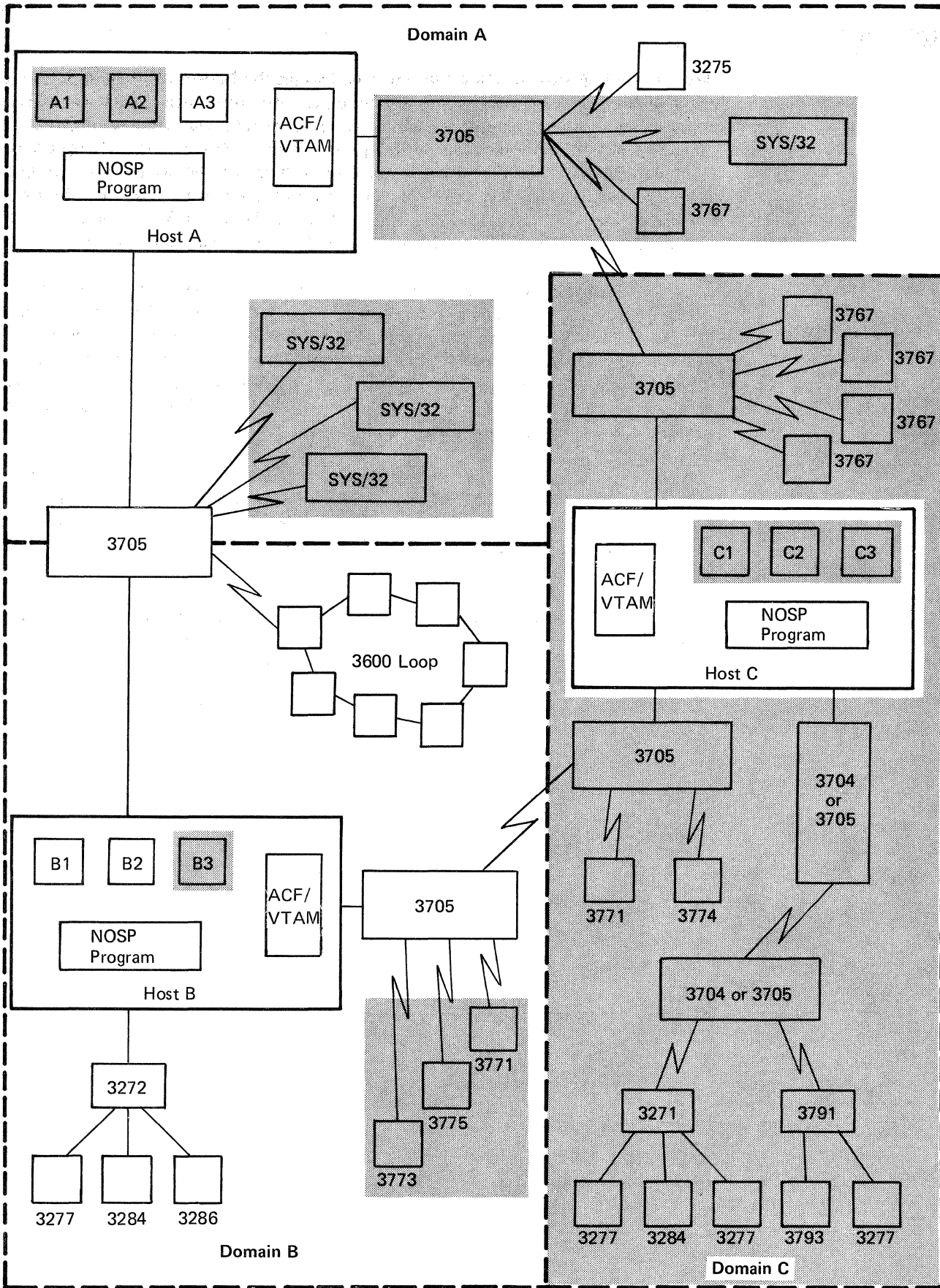


Figure 4. Span of Control

## Storage

The minimum amount of storage required to operate the Network Operation Support Program with one host computer, one operator station, one hard-copy device, and fewer than 1,000 defined ACF/VTAM resources, with no cross-domain sessions, is 200K bytes of virtual storage. Each additional operator station requires approximately 8K bytes of virtual storage, although estimates may vary slightly depending upon the span of control defined for each operator. Additional storage calculations are found in the *Network Operation Support Program Installation and Maintenance* publication for the system in which the program is to operate.

## Terminal and Program Support

The Network Operation Support Program runs on all IBM CPUs that are capable of supporting DOS/VS, OS/VS1, OS/VS2 SVS, or OS/VS2 MVS.

The terminals supported by the Network Operation Support Program are:

Controllers: IBM 3272 Model 2 (local)  
IBM 3271 Model 2 (BSC remote)  
IBM 3274 Models 1A and 1B (local)  
IBM 3274 Model 1C (BSC or SDLC remote)  
IBM 3275 Model 2 (BSC remote)  
IBM 3271 Model 12 (SDLC remote)  
IBM 3275 Model 12 (SDLC remote)  
IBM 3276 Model 2 (BSC remote)  
IBM 3276 Model 12 (SDLC remote)  
IBM 3791\*

Display Units: IBM 3275 Model 2 (BSC remote)  
IBM 3275 Model 12 (SDLC remote)  
IBM 3276 Model 2 (BSC remote)  
IBM 3276 Model 12 (SDLC remote)  
IBM 3277 Model 2  
IBM 3278 Model 2

Printers: IBM 3284 Model 2  
IBM 3286 Model 2  
IBM 3287 Models 1 and 2  
IBM 3288 Model 2  
IBM 3289 Models 1 and 2

Any additional hardware required is determined by the user's choice of the quantity of terminals and the connection arrangement (local or remote). This may be determined as a part of normal system configuration. The Network Operation Support Program has no unique requirements.

The Network Operation Support Program requires ACF/VTAM in the various operating systems. Use is made of the various facilities of ACF/VTAM, including application program-to-application program sessions, cross-domain sessions, and support for the hardware listed above. Cross-domain support also requires the installation of ACF/NCP/VS. (If the proper definitions are made for the Network Operation Support Program, it can run in a single domain network; in this case cross-domain and application program-to-application program sessions are not used, and support for those sessions, including ACF/NCP/VS is not needed.)

To support maintenance and user tailoring of the Network Operation Support Program, the utilities and support programs associated with any ACF/VTAM application program are needed.

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\*IBM 3791 support of the Network Operation Support Program is scheduled to be available June 1978 for all four operating systems.

## Compatibility Considerations

In some cases, ACF/VTAM commands issued at an operator station must have additional routing parameters appended to them in order to accommodate cross-domain command execution. For example, a MODIFY command involving the network solicitor requires a domain routing parameter in addition to the basic command format if the command is to be executed for a network solicitor in another ACF/VTAM domain. These parameters are used by the Network Operation Support Program for routing purposes and are removed before the command is passed to the proper ACF/VTAM.

For systems operating with NCP Version 5, two copies of the major node data set are required. One copy, *without* the SPAN= parameter, must be filed for the NCP; another copy *with* the SPAN= parameter must be filed for the Network Operation Support Program. For a discussion of the SPAN= parameter, see *Network Operation Support Program Installation and Maintenance*, SC38-0279.



## Glossary

**authorization message.** Network Operation Support Program messages about successful logons, repeated unsuccessful logons, logons rejected because of invalid passwords, and logoffs. Authorization messages are sent only to authorized terminals.

**authorized operator.** An operator who has been authorized to receive undeliverable messages, authorization messages, and lost terminal messages. Authorization is specified on the AUTH statement during system definition.

**command.** (1) A request from a terminal for the performance of an operation or the execution of a particular program. (2) In SNA, a request unit initiating an action or beginning a protocol; it is used in contrast with reply, which is a request unit (not a response) that is sent in reaction to a command. For example: Quiesce (a data flow control request), is a command, while Quiesce Complete is the reply. (3) In SNA, a data flow control or session control request that may be sent or received by an application program using record mode.

**command list.** A sequential list of commands that is assigned a name. When the name is invoked (as a command) the commands in the list are executed.

**command processor.** A program that executes a NOSP command or a user-written command.

**cross-domain communication.** Communication between terminals or application programs in one domain and application programs in another domain.

**domain.** In a data communication system, the portion of the total network that is controlled by the SSCP in one telecommunication access method.

**exit routine.** Any of several types of special-purpose routines that handle processing for certain conditions in a program. NOSP provides for user-written exit routines and has its own ACF/VTAM exit routines and a system ETRX exit routine.

**hard-copy log.** A file written on a hard-copy device (such as an IBM 3288 printer) that contains a record of all messages passing through NOSP and associated with a specific operator or operators.

**immediate command.** A NOSP command (such as RESET, GO, or CANCEL) that can be executed while a regular command is being processed.

**immediate message.** The message that appears on the display screen in an area just above the command entry area. Immediate messages include warnings of syntax errors and incorrect parameters for the command most recently entered.

**logon exit routine.** A NOSP exit routine that controls access to the operator station task (OST).

**lost terminal exit routine.** A NOSP exit routine that handles the condition in which a terminal is lost to a subtask.

**network operator.** (1) A person responsible for controlling the operation of a communication network. (2) An ACF/VTAM application program authorized to issue network operator commands.

**network resource.** Any named entry known to ACF/VTAM. Network resources include network control programs (NCPs), local and remote terminals, lines, application programs, cross-domain resource tables, and cross-domain resource managers.

**NOSP log.** A file that contains records of all messages that pass through NOSP. The log is normally maintained on disk storage but may also be on a tape or printer (OS/VIS only).

**operator.** See *network operator*.

**operator station.** A display station, such as an IBM 3270 device.

**overlapped span of control.** A condition that exists when a network resource name appears in a span or spans associated with more than one active network operator. Under such a condition, either operator may control the resource. The status of the device depends on the cumulative effect of commands entered and the sequence in which the commands are received by ACF/VTAM.

**password.** From one-to-eight user-specified alphanumeric characters that must be entered when logging on to NOSP. The operator identification and password entered are checked against the definition filed for that user after logon has taken place.

**profile.** A record that describes the work that a particular network operator may perform. The profile includes the operator's span of control, the name of the terminal to be used as a hard-copy device, whether the operator is authorized, and (optionally) the name of a command or command list that is executed immediately after logon is successfully completed.

**regular command.** Any ACF/VTAM or NOSP command that is not an immediate command and is processed by a regular command processor. Only one regular command may be issued at one time; regular commands issued while other regular commands are being processed are rejected.

**resource.** See *network resource*.

**response.** (1) An answer to an inquiry. (2) The unit of information that is exchanged between ACF/VTAM or an ACF/VTAM application program and an SNA terminal to describe how a request arrived. (3) In SNA, synonym for *response unit*.

**routing qualifier.** An additional explicit parameter added to ACF/VTAM commands in NOSP to accommodate cross-domain execution. NOSP removes the routing qualifier before the command is passed to the appropriate ACF/VTAM.

**span.** A user-defined group of network resources within a single ACF/VTAM domain. Each major or minor node is defined as belonging to one or more spans. See also *span of control*.

**span of control.** The total network resources over which a particular network operator has control. All the network resources listed in spans associated through profile definition with a particular network operator are within that operator's span of control.

**user.** In NOSP, the person who has responsibility for installing and tailoring NOSP to suit the installation's needs.

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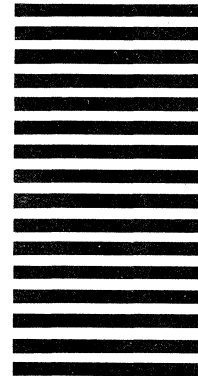
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This Technical Newsletter provides replacement pages for the subject publication. These replacement pages remain in effect for subsequent releases unless specifically altered. Pages to be inserted or removed are:

Cover  
Summary of Amendments  
13-14

A change to the text is indicated by a vertical line to the left of the changes.

## Summary of Amendments

The summary of amendments page describes the changes that have been made by this Technical Newsletter.

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