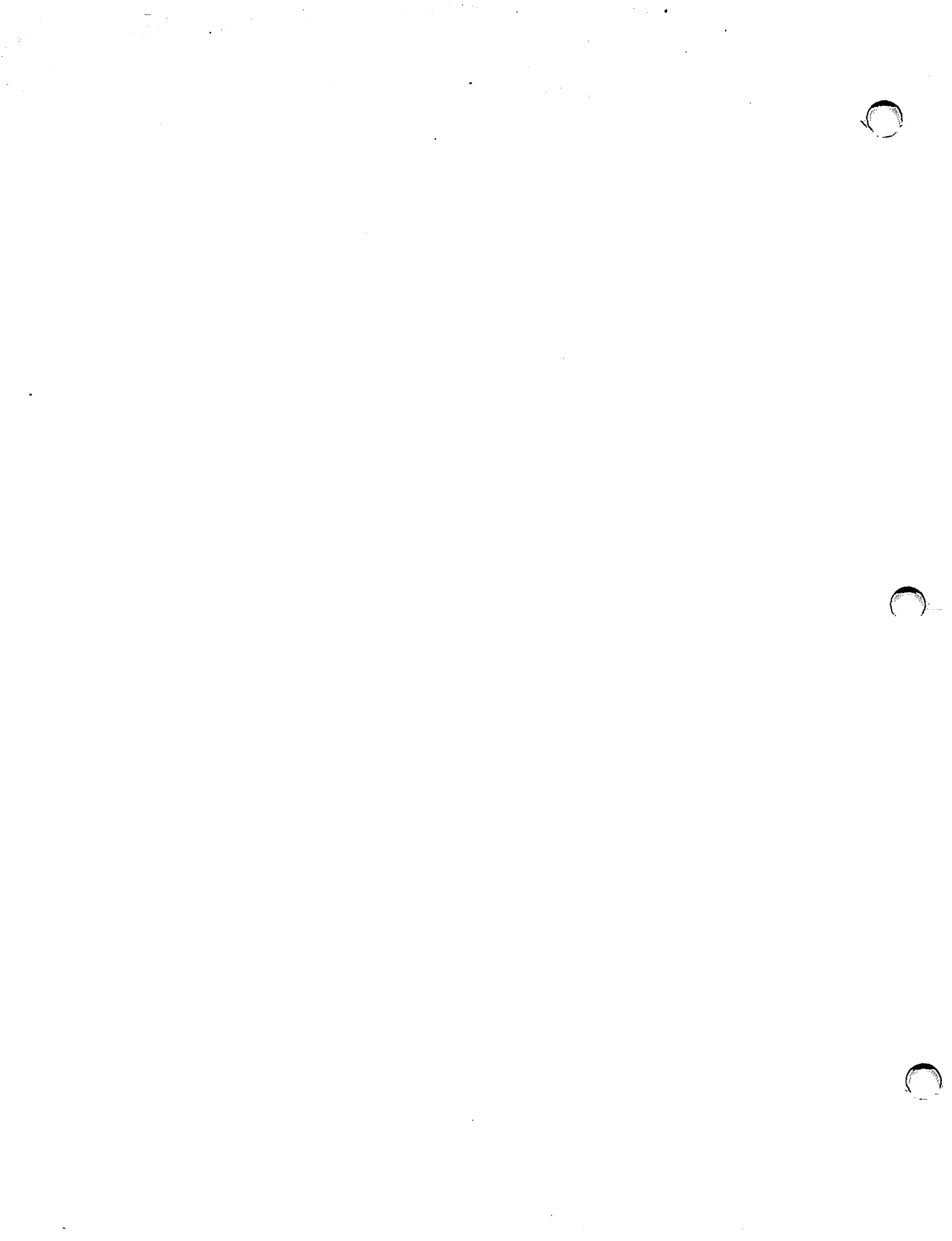# Wang Systems Networking

VS NETCORE
Release 8.32.03
Customer Software Release Notice

Wang Systems Networking

VS NETCORE
Release 8.32.03
Customer Software Release Notice

WANG

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PREFACE

This customer software release notice contains specific information for Release 8.32.03 of Wang Systems Networking (WSN) VS NETCORE. It provides an overview of Release 8.32.03 and describes hardware and software requirements, key enhancements, special considerations, and media contents.

This document is intended as an aid to network administrators who are responsible for overseeing this release of the WSN VS NETCORE software. It also serves as an information bulletin for those interested in upgrading their present WSN VS network software.

For additional information on WSN network configuration, control and monitoring, refer to the following documentation:

• *Wang Systems Networking VS Network Control and Monitoring Guide* (715-0164A)

• *Wang Systems Networking VS Network Configuration Guide* (715-0165A)

The following related documentation may also be useful:

• *VS OFFICE Administrator's Guide* (715-0850)
• *VS System Operator's Guide* (715-0418A)
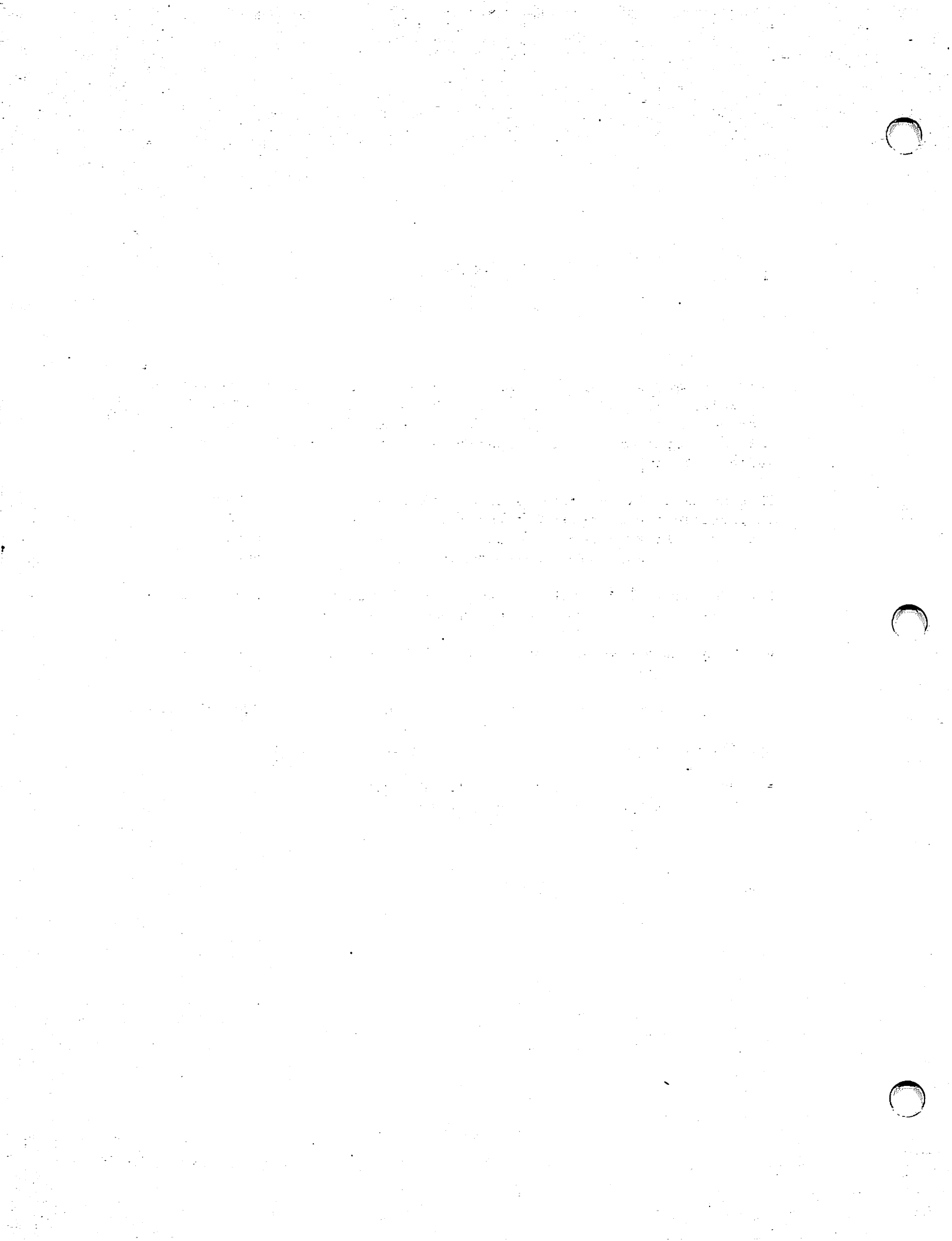
**CHAPTER 1
INTRODUCTION**

OVERVIEW

This chapter provides a brief description of the Wang Systems
Networking (WSN) VS NETCORE, Release 8.32.03, package, and discusses
the hardware and software requirements necessary to use the package.

SUMMARY OF FEATURES

WSN VS NETCORE is the software that enables multiple systems to
communicate over a wide variety of transports, independent of the
network topology in a WSN network. The software consists of programs
related to the following operations:

- Network operations and installation
- Network configuration
- Communications resource management of data links
- Communications Network Services (CNS)
- CNS management
- Task invocation and connection management
- Remote logon access
- Network event logging
- Problem diagnosis and correction

A major enhancement to WSN VS NETCORE, Release 8.32.03, is support for
the Wang Professional Computer (PC) 200/300 Series, IBM PC AT/XT, and
compatible PC systems to function as intelligent workstations
connected by an 802.3 Local Area Network (LAN). Also included, is
support for the new Wang VS 5000 Series.

Other key enhancements include

- CNS Manager (CNSMGR). CNSMGR is a new CNS network management tool
  that replaces the WSNMON utility used in previous WSN VS NETCORE
  releases. CNSMGR operates either independently or in conjunction
  with Wang Distributed Management Facility (DMF).

- The introduction of a new VS background task called Connection Manager (CNXMGR). CNXMGR provides connection services for intelligent workstation (IWS) systems on a local area network (LAN) that act as independent processors using the VS for resource sharing.

- The addition of the program @RATGATE to handle non-CNS logons from remote systems.

- The addition of a new program called WSN Applications Manager (WSNAPPS), which enables you to include user-written, NAI-based applications in the WSN Directory.

OPERATING PREREQUISITES

Wang Systems Networking requires at least one transport product, WSN VS NETCORE, and one or more services or applications.

WSN VS NETCORE software is installed by a Wang customer service representative at the customer site. Before you can use WSN VS NETCORE software, the hardware and software requirements discussed in the following sections must be met.

Hardware

The following hardware components are necessary to support WSN VS NETCORE, Release 8.32.03:

- Any Wang VS system, except VS50, VS60, and VS80 (CP3 family). (WSN VS Standard Components, Release 8.21, remains available for VS50, VS60, and VS80.)

- A minimum of two megabytes of physical memory to run CNS and related networking tasks. (Four megabytes or greater are generally recommended.)

Additional hardware components are required that depend on the VS transport(s) being used (see Table 1-1). WSN VS NETCORE requires at least one WSN VS transport. Supported WSN VS transports are

Information Distribution System BSC	X.25
Information Distribution System SNA	Local Communications Transport
Multipoint Primary	IEEE 802.3
Multipoint Secondary	Wang Band
Point-to-Point (Sync/Async)[1]	

[1]Available separately for use with single-line or multiline telecommunication controllers.

Table 1-1 summarizes the hardware requirements and minimum VS Operating System release for each of the WSN VS transports.

Table 1-1. Hardware, VS Operating System (OS), and Transport Support Matrix

HARDWARE		VS OS	WSN VS TRANSPORTS									
Device Number	Device Type	Minimum Release	Pt-Pt			MP-S	WB	IDS		X.25	IEEE	LCT
			Sync	Async	MP-P			SNA	BSC		802.3	
22V26-1	TC IOP	7.13		■					■			
22V26-2	TC IOP	7.13		■					■			
22V26-3	TC IOP	7.13		■					■			
25V96-8, -16	VS65 MLTC	7.13	■	■								
22V96-8, -16	VS85/100 MLTC	7.13	■	■								
23V96-8, -16	VS300/7000 MLTC	7.13	■	■								
25V66	VS5/6/15/65 LAN Contrl	7.13									■	
22V66	VS85/100 LAN Contrl	7.13									■	
23V66	VS300/7000 LAN Contrl	7.13									■	
25V76-1	TCDA	7.13	■	■	■	■		■	■	■		
25V76-2	TCDA	7.13	■	■	■	■		■	■			
25V76-1A	TCDA	7.13	■	■	■	■		■	■	■		
25V76-2A	TCDA	7.13	■	■	■	■		■	■			
25V76-1B	TCDA	7.13	■	■	■	■		■	■	■		
25V76-2B	TCDA	7.13	■	■	■	■		■	■			
CIU-A[a]	External CIU	7.13					■					
23V79	Internal CIU	7.13					■					
VS-TC[a]	TCB1	7.13	■	■	■	■		■	■			
VS-TC1[a]	TCB3	7.13	■	■	■	■		■	■	■		
VS-6550[a]	Inboard TCB	7.13	■	■	■	■		■	■	■		
PM141-VS[a]	LCO	7.13										■
50V76	VS5000 TC IOC	7.18.78	■	■	■	■		■	■	■		
50V56	VS5000 ILC	7.18.78									■	

[a] These devices may be connected to the following Input/Output Controllers (IOCs): 22V27, 22V47, 22V67, 23V67, 23V97A, 25V27, 25V67, 25V97, 28V01

Note: In addition to the hardware shown in Table 1-1, appropriate
communications lines and data communications equipment (for example,
modems and autodialers) are required for the type of transport(s) used
(both on the local and remote system).

Software

The following software components are necessary to support the WSN VS
NETCORE, Release 8.32.03, software:

- VS Operating System
- WSN VS Transport(s)
- WSN VS Service(s)

These components are described in the sections that follow.

VS Operating System Software

See Table 1-2 for the specific release(s) supported by your system. VS
Operating System, Release 7.13, is the minimum supported by WSN VS
NETCORE, Release 8.32.03.

Table 1-2.   VS Model/Operating System
Software Matrix

VS Model	Operating System Release	
	7.13	7.18.78
5	■	
6	■	
15	■	
25	■	
45	■	
65	■	
85	■	
90	■	
100	■	
7110	■	
7120	■	
7150	■	
300/7310	■	
5000 Series		■

WSN VS Transports and Services

At least one transport is required to provide a connection to the
network, and one or more services to provide WSN function. Transports
and services are ordered separately. See Table 1-3 and Table 1-4 for
a list of available packages.

Table 1-3. WSN VS Transport Software

WSN VS Transports	Recommended Minimum Release	Comments
Point-to-Point (Sync) Point-to-Point (Async)	3.00.01 3.00.01	Release 3.02.00 (for both Sync and Async) is required for VS 5000 Series.
MLTC Point-to-Point (Sync) MLTC Point-to-Point (Async)	1.00.02 1.00.02	Release 3.00.00 or later (for both Sync and Async) is required for line group and Hayes modem support (Async only).
Multipoint Primary Multipoint Secondary	3.00.01 3.00.01	Release 3.02.00 (for both Primary and Secondary) is required for VS 5000 Series.
Wang Band (External) Wang Band (Internal)	2.08.00 1.00.02	
X.25 (all types)	3.40.00	Release 3.40.30 is required for VS 5000 Series.
Local Communications Transport	3.00.00	

Information Distribution System (IDS):
  SNA
  BSC
	
	2.50.00
	2.50.00	

IEEE 802.3	1.01.01	Release 1.02.00 is required for VS 5000 Series.

Table 1-4. WSN VS Services Software

WSN VS Services	Recommended Minimum Release	Comments
File Transfer Service	9.06.11	
VS Terminal Emulation (VSTE)	7.15.08	
Virtual Terminal Interface (VTI)	7.11.00	Requires VS Terminal Emulation.
X.25 General Access Interface (GAI)	1.02.15	Requires an X.25 transport.
X.3 PAD Emulation Interface	1.03.29	Requires an X.25 transport and X.25 GAI.
Network Application Interface (NAI)	3.06.06	For writing CNS applications.
Package Distribution Services (PDS)	3.05.00	Recommended release is 3.06 or minimum release plus File Transfer, Release 9.06.11.

Note: Wang VS OFFICE, Release 2.00, is required if WSNAPPS is used to update application records in the WSN Directory.

CHAPTER 2
ENHANCEMENTS AND CORRECTED PROBLEMS

OVERVIEW

This chapter describes the key enhancements for Release 8.32.03 of WSN
VS NETCORE. It also describes problems discovered in previous WSN VS
NETCORE releases that have been corrected in Release 8.32.03.

RELEASE ENHANCEMENTS

The following sections describe enhancements for WSN VS NETCORE,
Release 8.32.03.

WSNEDIT Support for the MLTC

The Multi-Line Telecommunications Controller (MLTC) is a new VS TC
input/output controller (IOC) that supports point-to-point
communications between VS systems and between VS and PC systems
(see Table 1-1 for a list of specific models). The MLTC supports up
to 16 lines. In previous WSN VS NETCORE releases, each line on the
MLTC had to be configured as a separate data link processor (DLP),
requiring from 1 to 16 device numbers to serve as control paths (one
per line).

Release 8.32.03, in conjunction with MLTC Point-to-Point transport,
Release 3.00, provides support for "line groups." This capability
enables a group of lines on an MLTC to be assigned to a single
transport, and requires only a single control path for the line
group. A line group may consist of as few as two lines or as many as
16. This enhancement simplifies configuration and reduces the amount
of device numbers required for control paths to support point-to-point
communications over an MLTC.

IEEE 802.3 Transport Support

Release 8.32.03 expands 802.3 support to include the PC 200/300
Series, IBM PC AT/XT, and compatible PC systems connected to a VS.
This capability allows these systems to function as intelligent
workstations with access to enhanced file and print services on the
VS. (VS and PC integration requires VS IWSCORE.)

X.25 Transport Support

Session Manager includes support for X.25 subaddresses. Subaddresses
permit a DTE address for a system to be expanded to include an address
for a particular application on that system. Release 1.03.00 of WSN
VS X.25 GAI must be used in conjunction with Release 8.32.03 to
support X.25 subaddressing if GAI applications are being run.

Configuration Support for Asynchronous Transports

Previously, when configuring asynchronous communications between VS
and PC systems, the WSNEDIT utility permanently set the number of stop
bits on the VS to receive one and send two.

Changes to WSNEDIT in Release 8.32.03 enable you to set the number of
stop bits as 1, 1.5, or 2. By selecting the appropriate number of
stop bits, you can use asynchronous communications more efficiently as
well as configure for correction of poor line conditions and modem
errors.

WSN Configuration Reporter

WSNPRT is a new configuration reporter utility, which can generate six
different reports based upon information in the WSNEDIT configuration
file. These reports enable you to print a copy of your system's
local-view configuration, thus providing an accurate record to consult
when making adjustments to routing-, services-, and transport-related
aspects of your system's network configuration. The reports and the
information that they contain are summarized as follows:

  Network Routing -- Lists areas and systems to which paths have been
  defined. Includes next-hop systems, network addresses, Path costs,
  Base costs, and other related parameters.

  Service Summary -- Lists all systems and the services defined for
  each system. Includes CNS, File Transfer Service (CNS and non-CNS),
  Store and Forward, VSTE (logon), and the parameters associated with
  each.

  Transport Addresses -- Lists the transports and the systems
  configured on each transport.

Device Addresses -- Lists the transports, their IDs, type, DLP address, associated line speeds, and the devices assigned to that DLP.

Transport Details -- Lists the transports, their name, ID, CNS parameters, DLP address, type, and device numbers. Includes additional information specific to transport type (for example, Point-to-Point transports include dialing parameters).

Service Windows -- Lists the configuration of each service window on the system. Includes retries, time between retries, Immediate Priority Postponement time, and so forth.

Increased Attached Application Support

Release 8.32.03 increases the number of attached applications CNS supports from 128 to 249. (Refer to the "System Configuration" section in Chapter 3 for restrictions.)

Decreased Operator Intervention in Information Distribution System Environments

With previous releases of WSN VS NETCORE, the deactivation of an Information Distribution System (IDS) CICS Region on the IBM host system caused the VS to deactivate its IDS SNA links. Subsequent reactivation of the IDS CICS Region required network operators to manually reenable the link on the VS system.

Release 8.32.03 is enhanced so that the deactivation and subsequent reactivation of an IDS CICS Region requires no manual intervention on the VS in order to restore link connectivity between the VS and the IBM host.

CNS Information Distribution System SNA Performance Improvement

Release 8.32.03 contains enhancements affecting CNS/Information Distribution System (IDS) protocols that minimize VS-to-DLP input/output and improve data throughput, thus increasing communications performance in IDS environments. Dependencies for gaining this performance improvement include VS SNA Standard Components, Release 2.60.20, and VS IDS Standard Components, Release 2.5.

WSNEDIT Configuration Find Function

A "Find" function has been added to WSNEDIT that performs a search operation to simplify the process of configuring various network components such as systems, areas, transports, etc. In large networks, these components typically generate long lists, comprised of several screens. As an alternative to scrolling through these lists to locate a particular component, you can use the Find function (PF6) to go directly to the component that you have identified.

Enhanced CNS Trace Facility

The new CNS manager (CNSMGR) utility, which replaces WSNMON, contains an enhancement that enables you to specify the size of the CNSLOG file that is used by the CNS Trace diagnostic utility. (Previously, the file size was restricted to 200 records.) In addition, with CNSMGR, activated trace points remain activated even when CNS is restarted so that you do not need to reenter these each time WSNSTOP and WSNSTART are run.

Connection Manager

Connection Manager provides connection services for intelligent workstation (IWS) systems on a local area network (LAN) that act as independent processors using the VS for resource sharing. The Connection Manager validates the IWS user ID and password with the VS userlist and invokes the Intelligent Workstation Server (IWSS). The IWSS is a component within the VS IWSCORE product.

WSN Applications (WSNAPPS) Utility

WSNAPPS is a new utility that enables you to manage certain user-written network applications for inclusion in the WSN directory. Applications that are added to the WSN directory can be automatically started on the local VS by remote users or applications that have access to the WSN network.

Currently, the WSNAPPS utility is only recommended for managing user-written, Network Application Interface (NAI)-based applications. In addition, the WSNAPPS utility includes functions that are reserved for Wang analyst use only.

Merge Facility for Starter Kit

A merge facility has been added to the import of a starter kit. This facility allows for the contents of the starter kit to

* Overwrite the existing directory.
* Merge only new definitions into an existing directory.
* Merge new definitions and replace existing definitions.

VADIC Automatic Call Unit Dialer Addresses

The range of VADIC Automatic Call Unit (ACU) Dialer Addresses have been extended to 0 through 7 in order to accommodate operation with the VADIC full-duplex modem.

Changes to LOGTSK

LOGTSK is the background task that is responsible for reading and writing the current day's log file. Release 8.32.03 contains the following enhancements to improve LOGTSK performance:

- Capability to run independently of CNS, thus supporting logging functions on systems using non-CNS communications, such as Transmission Control Protocol/Internet Protocol (TCP/IP).

- Automatic submission of the Distributed Management Facility (DMF) Logger Consolidation program (LOGCOM) when DMF is present, the CONSOLIDATION parameter for LOGCNTRL is ENABLED, and any messages are logged that DMF has designated for immediate or periodic consolidation to a remote node.

- Management of the TSLOG file size. LOGTSK now ensures that the TSLOG file does not exceed 13 extents. Prior to reaching this maximum, LOGTSK performs reorganizing operations to reduce the number of extents needed to store log records.

- Managing TSLOG file record counts. LOGTSK now ensures that the TSLOG file does not exceed the maximum record count that you set through the LOGCNTRL utility. When a maximum record count is reached, LOGTSK sends a message to the daily log file indicating that further messages will be lost until sufficient space in TSLOG is available.

  For information on what to do when the TSLOG is full, refer to the "Logger Considerations" section in Chapter 3.

Enhanced Multihop Routing

PC systems that are using Wang Professional Computer 802.3 Integrated Services to connect with VS systems over an 802.3 local area network (LAN) can take advantage of enhanced multihop routing capabilities. These capabilities minimize routing configuration on the PC and serve to identify appropriate gateway VS systems for routing multihop traffic. PC systems include Wang Professional Computer 200/300 Series, IBM PC AT/XT, and compatible systems. (For more information about this feature, refer to the "WSNEDIT: Transports/Services/Routing" section in Chapter 3.)

CORRECTED PROBLEMS

The following sections describe problems found in previous WSN VS NETCORE releases that have been corrected in Release 8.32.03.

31 or 32 Nonadjacent Systems

Previously, when either 31 or 32 nonadjacent systems were selected for File Transfer or VSTE Logon, the local system would occasionally fail on initial program load (IPL).

This problem has been eliminated in Release 8.32.03.

Deleting Systems From Store and Forward Windows

When Store and Forward systems are deleted from the directory without first being deleted from the WSN service window, a discrepancy occurs between the communications configuration file and the directory file, which results in the failure of subsequent Store and Forward operations.

To keep this discrepancy from happening, a message is displayed when you attempt to delete a service window, which notifies you to delete any destination systems first from the associated service window.

Configuring Multipoint Transports

WSNEDIT no longer allows the incorrect configuration of a multipoint transport with only secondary systems. WSNEDIT now prompts for the designation of the primary system when the primary system is missing from the Multipoint System Designation screen.

Exiting From CNFGAID

Previously, CNFGAID allowed you to select a program that was not installed on your system. When a noninstalled program was selected, CNFGAID would not allow you to exit from the screen.

The CNFGAID menu now displays selections only for programs that are currently installed on the system.

WSNSTOP Functions

WSNSTOP now runs a procedure that instructs CNS to close all active sessions with PC workstations. This corrects the problem relating to PC systems and intelligent workstations (IWSs) when CNS is terminated without first terminating all of their associated sessions.

WSNSTOP also terminates Wang OFFICE mail tasks (if executing) prior to stopping networking tasks.

CNS Recovery

In previous WSN VS NETCORE releases, CNS would occasionally not recover properly when it received an abnormal link termination from a DLP configured for WSN. This problem is corrected in Release 8.32.03.

Remote Interprocess Task Recovery

In the event of a CNS task failure or connection timeout, @RMTIPC@--the remote interprocess task for the VS Operating System--can now recover. Should a CNS task failure occur, @RMTIPC@ reinitializes and then reattaches to CNS when CNS activity resumes.
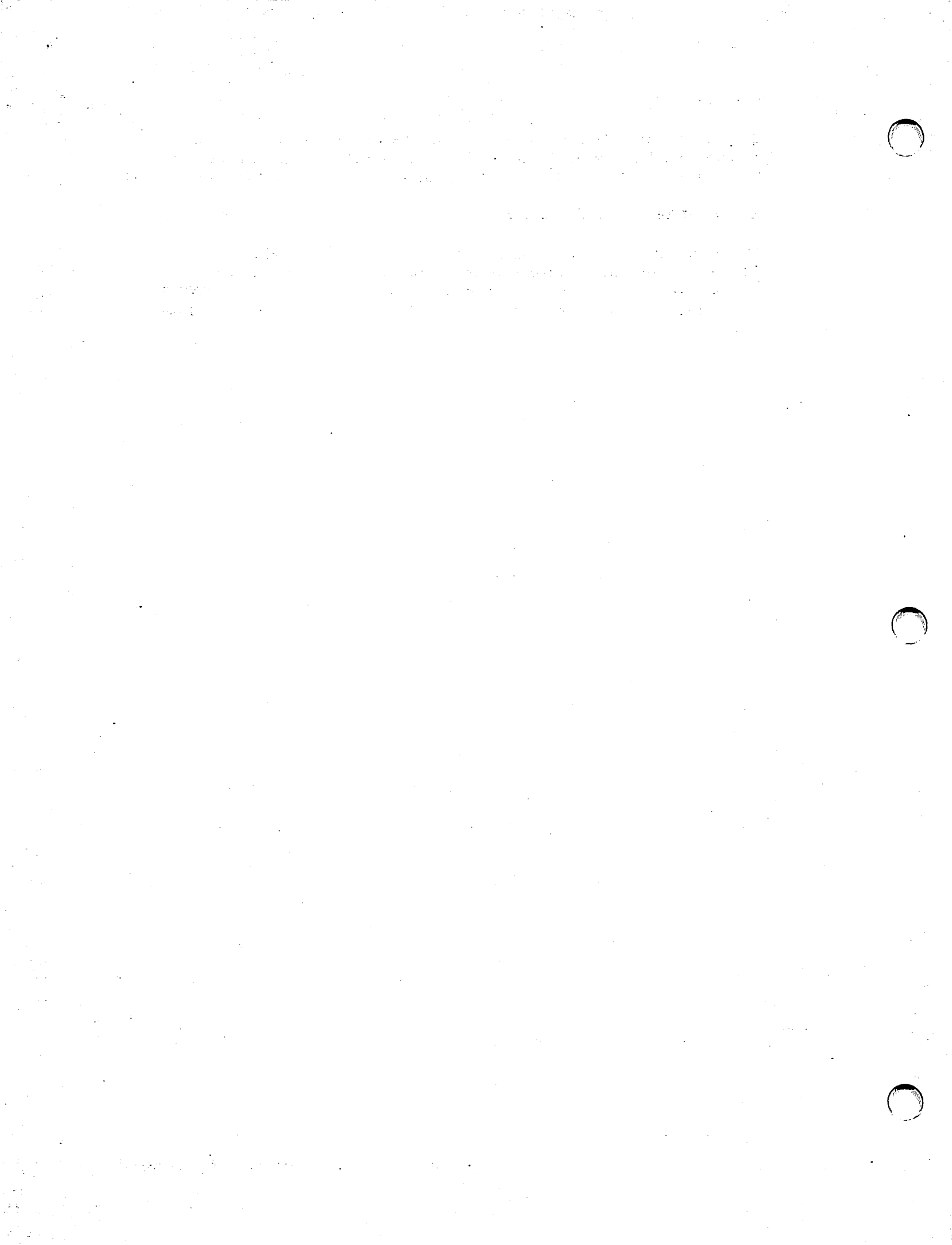
CHAPTER 3
SPECIAL CONSIDERATIONS

INTRODUCTION

This chapter provides a listing of the considerations, restrictions, and conditions that apply to the operation and administration of WSN VS NETCORE, Release 8.32.03 software.

CONSIDERATIONS AND RESTRICTIONS

This section describes considerations and restrictions for the configuration and operation of systems running WSN software. It is provided here as a reference for modifying certain system/network parameters that are normally affected by adjustments to routing-, services-, or other network-related aspects of a system's configuration.

System Configuration

The following considerations and restrictions apply to VS system configuration:

* Wang VS NETCORE requires four background tasks ($CNSTSK$, $LOGTSK$, @RATGATE[1], and @RMTIPC@) and two dedicated system tasks (@FTMTSK@ and @SESMGR@); @RATTSK@ comes up as a background task only if VSTE is installed. Additional background tasks are required for Wang OFFICE/Store and Forward ($WOAMGR$, $SFMGR$, $DSMGR$, and $SYNDIR$). If VS IWSCORE using an 802.3 link is installed at a later date, two additional background tasks are required for Netbios Datagram Server (NDS) and Connection Manager[2] ($CNXMGR$). NDS is submitted by WSNSTART if it has been installed by the IWSCORE install.

[1] Only necessary if non-CNS remote logons are allowed.
[2] Connection Manager is not required unless VS IWSCORE is installed. If you are not using VS IWSCORE, you can remove Connection Manager by deleting the file ($CNXMGR$) from library @SYSTEM@ on the IPL volume. If WSN VS NETCORE is reinstalled, Connection Manager is automatically replaced by the install procedure.

- Release 8.32.03 does not support $CNSTSK$ running as a foreground program.

- CNS MANAGER (CNSMGR), WSNEDIT, $CNXMGR$, and @EVTINQ@ must be run from user IDs with modifiable data areas of at least 1024K. $CNSTSK$ must be run from background task initiators that have at least 2048K of modifiable data area available. Under the following conditions CNS requires at least 3072K of modifiable data area (Segment 2):

  - Systems that are processing a large amount of traffic such as the Network Control Center of a very large network.

  - Systems that have between 100 and 150 simultaneously active CNS sessions. (For 150 to 256 active sessions, 4096K is required.)

  - Systems that have more than 100 attached CNS applications.

  - Systems that have over 200 adjacent system/transport pairs configured in their WSNEDIT file. For instance, 200 adjacent systems on one transport constitute 200 adjacent system/transport pairs; 100 systems on one primary transport and on one backup transport also constitute 200 adjacent system/transport pairs.

Note: *Modifiable data area requirements have increased in WSN VS NETCORE, Release 8.32.03. If you are upgrading from an earlier release of WSN VS NETCORE, you may need to increase the amount of modifiable data area that was previously configured to support Release 8.32.03.*

Modifiable data areas are configured when background task initiators are created from Non-Interactive Tasks in Operator Mode (refer to the VS *System Operator's Guide* for instructions).

If you want to create background task initiators having varying sizes of modifiable data area and ensure that a particular network task such as CNS is submitted to the appropriate initiator, you can do so by the Job Class associated with the initiator. For example, you can create most initiators having a modifiable data area size of 1024K and assign a procedure class of A to these initiators. Then you can create another initiator (for CNS) having a modifiable data area of 2048K and assign it a procedure class of B (or any other unused letter designation that you want to assign).

In the following example, a procedure class of "B" is used to designate the CNS initiator. This letter, and the letter that is used to submit CNS by the WSNSTART procedure, must match. (WSNSTART is the procedure that you run to submit network background tasks.)

To ensure that CNS is submitted to the "B" initiator by WSNSTART while the other network tasks are submitted to the default A class of initiators, the WSNSTART procedure in @SYSTEM@ on the IPL volume can be modified as follows (underlining represents modification to the standard WSNSTART):

Procedure WSNSTART version 01.00.19 - Submit Network background jobs.

```
[                (c) Copr. Wang Laboratories, Inc.  1986                    ]

         declare      &PROGVOL                        string(6)
         declare      &PROGLIB                        string(8)
         declare      &CHECK, &PFKEY                    integer
         extract      &PROGVOL=progvol,       PROGLIB=proglib

         submit @RMTIPC@ as @RMTIPC@              [ Remote IPC ]

   if not exists file $WSNEND  in &PROGLIB on &PROGVOL goto NOWSN
         submit $CNSTSK$ as $CNSTSK$, CLASS=B [ CNS itself ]
         submit $LOGTSK$ as $LOGTSK$   [ CNS ( & DMF ) Logger ]

   if not exists file CHECKNET in &PROGLIB on &PROGVOL goto LOGCOM

CHECKNET:
         run CHECKNET in &PROGLIB on &PROGVOL [check if CNS is up ]

LOGCOM:
         submit $LOGCOM$ as $LOGCOM$   [ For DMF, if installed. ]

NOWSN:
   if not exists file $CNXMGR$ in &PROGLIB on &PROGVOL goto NOCNMGR
         submit $CNXMGR$ as $CNXMGR$   [ Connection Manager ]

NOCNMGR:
   if not exists file RLGSTART in &PROGLIB on &PROGVOL goto NORLG
         run RLGSTART in &PROGLIB on &PROGVOL
                                    [ RLGSTART submits @RATTSK@ ]

NORLG:
   if not exists file $MAILEND in &PROGLIB on &PROGVOL goto NOMAIL
         submit $WOAMGR$ as $WOAMGR$    [ Wang Office Activity Mgr. ]
         submit $SFMGR$  as $SFMGR$     [ Store & Forward ]
         submit $TUSTRT$ as $TUSTRT$    [ WO Traveling User Facility]
         submit $DSMGR$  as $DSMGR$     [ Directory Queries (OFM,PC)]
         submit $SYNDIR$ as $SYNDIR$    [ In case of earlier crash. ]

NOMAIL:
   if not exists file $DISEND in &PROGLIB on &PROGVOL goto NODIS
         submit $DISOSI$ as $DISOSI$   [ Inbound gateway ]
         submit $DISOSO$  as $DISOSO$  [ Outbound gateway ]
```

```
NODIS:
    if not exists file $SUBPRF$ in &PROGLIB on &PROGVOL goto NOPROF
        run $SUBPRF$                    [ Submit all tasks]

NOPROF:
    if exists file OIDBM in &PROGLIB on &PROGVOL
    submit OIDBM as $OIDBM, CLASS=0   [ Office Indexer task ]

    if exists file $NDS$ in &PROGLIB on &PROGVOL
        submit $NDS$ as $NDS$      [NETBIOS DATAGRAM SERVER]

    return
```

If CNS abnormally terminates, it will resubmit itself (using the
procedure $CNSTSK$ in @SYSTEM@) in order to make sure that the
network becomes operational again as soon as possible. To ensure
that CNS resubmits itself to the appropriate initiator, the
$CNSTSK$ procedure in @SYSTEM@ on the IPL volume must be modified
as follows. (A procedure class of "B" is again used in this
example. You must use the same letter that you used to create the
initiator and submit CNS by WSNSTART.) (Underlining represents
modifications to the standard procedure.)

```
PROCEDURE:
    DECLARE &RCODE INTEGER
    SET PRNTMODE=H
    SET JOBCLASS=B

CNS:
    RUN CNS         IN @SYSCOM@ ON SYSTEM
    ENTER NOTCLOSE
    ENTER NOTCLOSE
    ENTER NOTCLOSE
    ASSIGN &RCODE = CNS
    RETURN CODE = &RCODE
```

To ensure that CNS is submitted to the correct background
initiator when started from CNSMGR, you must modify the CNSMGR
procedure in @SYSTEM@ in a similar manner.

*Note: If WSN VS NETCORE, Release 8.32.03, is reinstalled, the
modified WSNSTART, $CNSTSK$, and CNSMGR procedures in @SYSTEM@ on
the IPL volume are replaced with the standard procedures,
eliminating the changes made. For this reason, you are advised to
keep copies of these modified procedures on your system so that
they can be easily restored.*

- If network data files are put on a multivolume set, it is important to ensure that all volumes are permanently mounted. If the Directory file volume in a set is dismounted, many network applications can become suspended while waiting for the volume. If the CNS logger is assigned to a multivolume set, ensure that there is adequate space on the volumes in the set for the daily log files. Operational delay in responding to a mount may result in loss of log records.

- For systems with large numbers of TC devices (DLPs) configured in GENEDIT, it is important to increase the Maximum Open Files value found under Task Options in GENEDIT since each TC device in use by the CNS task for sessions is considered an open file by the Operating System. (The default value is 25.) Make sure that the Maximum Open Files value is at least 10 more than the total TC devices configured on DLPs used by transports that have CNS systems configured on them in the WSNEDIT file. If an inadequate number of Open Files is configured, CNS may abort and produce no dump file.

- The maximum number of applications that can attach to CNS is calculated as follows:

    249 - (# of transports enabled)

WSN Operations

The following considerations and restrictions apply to WSN VS system operation:

- *All* VS computers communicating via the 802.3 link *must* be upgraded to WSN VS NETCORE, Release 8.32.03 and WSN VS 802.3 Transport, Release 1.01.01 or later.

- Operation of WSN VS NETCORE requires certain security privileges, which you can set up through either one of the following ways:

    - Assign a user ID for starting the network with full security and file access privileges, and a subtask quota of 255. This is done by running the VS SECURITY program and assigning these rights to the selected user ID.

    or

    - Assign full security and file access privileges to the network programs that WSNSTART submits. Run the VS SECURITY program to assign rights to these programs. In addition, because a subtask quota can not be assigned to a program but only to a user ID, make sure that the user ID for starting the Connection Manager (@CNXMGR@) is assigned a subtask quota of 255.

- Use the following procedure when it is necessary to halt network operations for a period of time:

  1) Notify remote users that the network is being halted.

  2) If DMF is installed, run DMFSTOP.

  3) Run WSNSTOP to terminate CNS and any network applications that are currently running.

  4) If the system requires an IPL, you should wait about five minutes for any remaining background tasks to terminate. (Before you IPL, you should check to see if all tasks have stopped by using the Operator Console, Control Non-Interactive Tasks function and by checking the procedure queue.)

- The following procedure should be used to restart network operations:

  1) If an IPL was just completed on the system, it is recommended that you run WSNREORG to reorganize and backup the WSN directory file.

  2) Run WSNSTART to restart $CNSTSK$, $LOGTSK$, and other background CNS applications (including Wang OFFICE).

  3) If DMF is installed, run DMFSTART.

- The output file from WSNEDIT is the COMMFILE named during the IPL process. If you edit and replace the active file while the network is running, some information is read immediately, some becomes effective when $CNSTSK$ is stopped and restarted, and some takes effect only after the next IPL. New systems in other areas and changed area distribution points, for example, will take effect immediately[1]. Changed routing will take effect when WSNSTOP and WSNSTART are used to restart $CNSTSK$. Transport changes, new transport addresses for systems, or changes to service parameters will not take effect until the next IPL.

- Operation of the WSN software requires that the volume containing the directory file be mounted.

---

[1]Requires that the Store and Forward Manager (@SFMGR@) and the Wang OFFICE Manager (@WOAMGR@) be halted and then restarted. Refer to the *VS OFFICE Administrator's Guide* for details.

- With Wang OFFICE installed, the directory is permanently open by background tasks that frequently update the file. The directory is, therefore, subject to failures when the system fails during an update, also, it may be difficult to maintain a valid backup because of its frequent usage. Arranging to run WSNREORG after every IPL prior to WSNSTART helps to alleviate both problems. The file is immediately reorganized in case an update was in progress before the IPL, and a backup copy is made available. That copy cannot be opened by background tasks, and is, therefore, accessible to customary backup procedure.

  If WSNREORG does not run to completion for some reason, the directory may be damaged. The message presented by WSNREORG is

      Rename of backup copy was unsuccessful.
      File (Directory file name) in WSNREORG on (Directory volume)
      Return code from rename was 52.
      Press ENTER to acknowledge.

  Restore the backup copy ONEPRIOR in library WSNREORG to the directory file library and rename ONEPRIOR to the name of the directory.

- INSTALL, WSNEDIT, and WSNDIRM all fail when an IPL is performed on the VS with the "one workstation and one disk" IPL option. This failure occurs because the extracted WangNet system name on which they depend is blank.

- If TCB1 or TCB3 DLP dumps occur and the halt code displayed by the DUMPSCAN program shows the halt code to be "001B," it is possible that the RS-232 cable between the TCB1 or TCB3 and modem has been disconnected or is loose. Correct by reconnecting or tightening the connection.

- Although WSN VS NETCORE, Release 8.32.03, can allow larger configurations, for performance-related reasons, only configurations that conform to the following restrictions are supported:

  - Maximum hop count = 6
  - Maximum number of paths to any one destination system = 3
  - Maximum number of transports between adjacent systems = 2

  Care should be taken when creating each VS system's local-view file with WSNEDIT to be sure that the resulting configuration meets the above restrictions.

- If the system being configured has more than three adjacent systems in another area, only three of those systems can be configured as possible next hops to that area. By default, the first three in alphabetical order will be given Path costs by WSNEDIT. Deleting the Path cost from one of the first three does not cause automatic addition of the fourth adjacent system as a next-hop system to the area. To configure another adjacent system as a next hop to that area, delete one of the three defaults and assign a Path cost for the desired system.

- The following are the limits that WSN VS NETCORE, Release 8.32.03, supports:

  - 150 areas in a network

  - 300 systems per area

  - 2000 total systems in the network (800 total systems is the generally recommended maximum for acceptable performance)

  - 50 transports per system (29 transports is the maximum that can be enabled concurrently)

  - 512 total systems for File Transfer Service using CNS

  - 512 adjacent systems, which can be CNS[1], non-CNS, or a combination of both.

- When utilizing a communications file that was created by WSNEDIT on a system other than the local system or by a previous version of WSNEDIT, that communications file should be input to WSNEDIT and then replaced when WSNEDIT is exited. This procedure ensures that the correct local system name and features are added to the communications file. Perform this procedure by running WSNEDIT, selecting Manage Transports and entering the name of the communications file. Exit this function and name the communications file with the same name as the input file. Press PF3 to replace the file.

- When installing a new version of a transport that has default parameters under the control of a "CERTIFICATION" file (such as, 802.3 or X.25), and the certification file has changed in the new release, the transport must be deleted and then recreated using WSNEDIT in order for any changes in the default parameters to take effect. (Refer to the particular transport customer software release notice to determine if this is a requirement.)

---

[1] This requires three megabytes of Modifiable Data Area Size (segment 2 memory) or greater on the VS. For CNS, a system is defined as a system-transport pair (for example, a single system defined on two transports counts as two systems).

WSNEDIT: Directory

The following considerations and restrictions apply to WSNEDIT
network-view configuration:

* The System WangNet ID that was defined in the GENEDIT file used at
  the last IPL is the network name of the VS. This name must be
  defined in the WSN directory before network configuration can
  proceed. Also, if the System WangNet ID defined in GENEDIT does
  not match the local system name in the directory file, a
  correction is required before network configuration can proceed.

  If the network name in the WSN directory is incorrect, you must
  correct it by running WSNDIRM. (WSNDIRM can be run from CNFGAID,
  or it is called automatically by WSNEDIT if the problem is
  discovered during configuration.)

  If the System WangNet ID in the GENEDIT file is incorrect, you
  must IPL the system using a corrected GENEDIT file.

* The Administrative system (also called the Area Control Center
  (ACC) for DMF), must be configured for each area defined in
  WSNEDIT if Wang OFFICE, Directory Synchronization, DMF
  notification, or log consolidation is to occur within that area.
  A Network Center (called the Network Control Center (NCC) for DMF)
  must also be identified for the network and it *must* be the
  Administrative system for its area. These systems must be
  configured as CNS systems.

* Every system in the network, including the local VS, must be
  configured as either a CNS or a non-CNS system. Every system with
  CNS installed must also be configured to specify whether it uses
  CNS for File Transfer and whether it has Store and Forward
  installed. These options are defined by running WSNEDIT,
  selecting MANAGE AREAS, and then selecting the desired area and
  system record to create/modify. You describe your configuration
  by responding to the following queries:

Has WSN with CNS been installed?	YES/NO
Shall File Transfer use WSN with CNS?	YES/NO
Has Store & Forward been installed?	YES/NO

  The rules for responding to these queries are

  - If WSN with CNS is not installed, all answers must be NO. OIS,
    Alliance®, and 2200 do not support CNS. VS and Wang PC/APC
    systems may have CNS installed. PC 200/300 Series, IBM PC
    AT/XT, and compatible systems do not support CNS until Wang
    Professional Computer 802.3 Integrated Services is available
    and running on these systems. IDS systems must have CNS.

- If WSN with CNS is installed

  -- File Transfer is YES for any CNS VS, unless you do not want
     File Transfer to use CNS (that is, to multihop). YES is
     recommended for CNS VS systems since session recovery is
     enhanced with CNS; YES is required for IDS systems.

  -- File Transfer must be NO on a Wang PC/APC, even though CNS
     is installed to support PC Wang OFFICE, unless the Wang
     Professional Computer WSN Basic Support Services (BSS),
     Release 3.0, is installed on the PC/APC.

  -- Store and Forward is YES on any system with Package
     Distribution Services (PDS) installed.

- A Primary Distribution Point must be configured in each Area for
  PDS to operate correctly. The system defined as the distribution
  point must be configured as a CNS system with Store and Forward
  installed (that is, Package Distribution Services).

- For PC Wang OFFICE to work correctly, PC LIO networks must reside
  in a separate area from VS systems. Single remote PC systems may
  belong to an area with VS systems as long as a VS is the area
  Administration system and the Primary Distribution Point for PDS
  Store and Forward.

- The program DIRPTR, which is used to set the location of the WSN
  Directory, should not be run to change the current directory while
  communications are enabled or any network utility is being run
  (such as WSNEDIT). This creates discrepancies between the
  Directory and the WSNEDIT configuration file, which produce
  unpredictable results.

WSNEDIT: Transports/Services/Routing

The following considerations and restrictions apply to WSNEDIT
local-view configuration:

- WSN VS Point-to-Point switched transports operate best with
  autodialers. If manual dialing is configured, $CNSTSK$ will try
  to use the transport, but there will be no notification of a
  pending required manual call. If necessary, a manual-dial line
  can be configured as point-to-point half duplex, which would force
  it to stay connected for WSN use once it is dialed.

  *Note: Manual dialing is not supported on MLTC-configured
  transports.*

- For call group support, multiple Point-to-Point switched transports can each be configured with a group of destination systems. With rotary hunt equipment, any configured system can dial in and use any of those transports. Thus, all 50 transports (the maximum number allowed) can be Point-to-Point switched, although only 29 can be enabled for CNS at any given time.

- When using WSNEDIT to configure Point-to-Point switched transports with autocall units, make sure that the value for "Dial Retry Count" multiplied by "Dial Delay Time" is less than 2 minutes. Failure to configure these parameters correctly will result in $CNSTSK$ timing out before the DLP does, and may produce WSN log messages that appear to be out of sequence. Also, the CNS task may take long periods to cancel when WSNSTOP is run or $CNSTSK$ is cancelled through CNSMGR.

  Recommended values for Point-to-Point switched links that are part of a backup group used by CNS for alternate routing to a destination system are

  Disconnect Timer -- 10 seconds
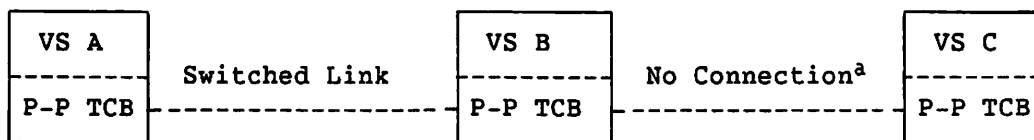 *Dial retry* -- 1 second
  Dial delay -- 10 seconds

  These values should be kept low so that when a line outage occurs, the link level recovery is exhausted in a relatively short period and CNS can quickly switch to an available backup link.

- When configuring the dial sequence for a Hayes modem/autodialer, the "W" command (wait for dial tone) may be entered. If this sequence is subsequently displayed, a colon (:) appears in place of the "W." Both characters represent the same modem command.

- When configuring a Multi-Line Telecommunications Controller (MLTC), for WSN point-to-point communications, the following configuration guidelines should be observed:

  - Using VS GENEDIT, configure the MLTC as a single DLP for each line group (i.e., two or more lines sharing the same transport) so that only one device number per line group is needed for the control path.

  Note: Line group support for MLTCs is not available until MLTC Point-to-Point Transport, Release 3.00. Prior to using Release 3.00, the MLTC must be configured as multiple DLPs, one per line.

  - Using WSNEDIT, assign a transport to each DLP address.

- Using WSNEDIT, associate the transport with the physical line(s) using the Define Line Group Definition screen.

● On congested systems (that is, systems with extensive communications demands), autostarted applications such as DIRSYNC or DIAG1 may not start within the time allowed by the defaulted value of the transport inactivity timer. When configuring transports in WSNEDIT that are used for establishing sessions to these applications, it may be necessary to increase the values displayed as defaults for "Inactivity Timeout" and "Reactivation Timer" to ensure that CNSMGR diagnostics and DIRSYNC operate correctly.

● When defining a DLP in GENEDIT, the DLP must be defined on the lowest device number that you intend to assign to that DLP. If any cluster device has a lower device number than the DLP address, the microcode will not load and initialize properly.

● When defining your local communications configuration in WSNEDIT, any system with WSN VS NETCORE installed can be added to WSN VS File Transfer and Logon Services whether or not the system is connected by a transport. However, if a system that is connected by one or more transports to your local system is subsequently deleted from all transports, the system is also deleted from any services that are configured. If that system is not on a transport but can be reached through an intermediate system, you can restore it by adding the system to the services after it has been deleted from all transports.

● If two paths defined for a destination have the same Path cost, the first path defined (that is, the path listed first on the Transport List menu) is selected.

● When configuring a network in which the path between source and destination systems requires multihopping, some transport combinations may cause the software to fail. This happens when the path is required to use the same switched transport twice, as shown in the following example:

```
+----------+                      +----------+                        +----------+
|  VS A    |                      |  VS B    |                        |  VS C    |
|----------|  Switched Link       |----------|  No Connection[a]      |----------|
|  P-P TCB |----------------------|  P-P TCB |------------------------|  P-P TCB |
+----------+                      +----------+                        +----------+
```

[a] The VS B TCB cannot be used to communicate with VS C since it is already being used to communicate with VS A.

For example, if a route is defined from VS A to VS C through intermediate VS B, and the intermediate VS system uses the same switched transport (that is, the same DLP, modem, and line) to reach both the VS A and VS C, a session from VS A to VS C or vice versa cannot be established on behalf of any CNS application. Both the modem and line will already be in use when the intermediate system attempts to establish the second leg of the path required for the session. Also, if VS A is the Primary Distribution Point and VS C the Network Center, directory synchronization can never take place since the end-to-end session must be from VS A to VS C.

- Wang Professional Computer 200/300 Series, IBM Personal Computer AT/XT, and compatible systems that are connected to a VS over an 802.3 LAN can use enhanced CNS multihop routing capabilities, which require only minimal routing configuration at the PC.

  Using an algorithm applied to the WSNEDIT configuration file, VS systems on the 802.3 LAN determine whether they are a gateway or end-point system and broadcast this gateway capability on the LAN. PC systems with multihopping data traffic choose the VS with the lowest Area ID and System ID from the available gateways active on the LAN and route multihop traffic through that VS. The VS that receives the PC traffic then routes the traffic using CNS to the destination system. If another VS has a more direct route to the destination system than the one selected, the PC acquires this information from returning data messages and uses it to select that VS for future routing to the destination system.

  Traffic to systems that are directly connected to the 802.3 LAN does not use this routing method but is routed directly from the source PC to the destination system.

- PDS Store and Forward service windows can only be defined for Store and Forward systems at this time. In addition, Wang OFFICE and Software Manager are the only WSN products that can currently take advantage of service window capabilities.

- An IDS host that is being used as a pass-through system by PDS, must be configured as having File Transfer Service installed.

- The initial transport status "ENABLED/DISABLED," which is set in WSNEDIT on the General Transport Definition screen, applies only to CNS use of the transport. Non-CNS use is still under control of the Operator Communications Control functions "inhibit/allow" (refer to the *WSN VS Network Control and Monitoring Guide* for details). If only non-CNS systems are defined on a transport, set the initial status to "DISABLE" when configuring the transport.

- WSNEDIT does not allow duplicate DTE addresses to be assigned to systems on X.25 data links (transports). If you have several systems, such as PCs, that are sharing the same X.25 access line via a multiplexor, you can use any one of the following procedures to configure these systems in WSNEDIT.

  - Use the subaddress portion of the X.25 address to distinguish between systems. In this case, the PCs each have the same DTE address except for the subaddress portion. Assign a unique subaddress value for each system that you are configuring.

  - If the PCs are intended to only initiate the connect request with a VS, they can each be given a unique, valid, dummy DTE address to assign them to the X.25 transport. This causes no conflict since the addresses will not be used by the X.25 network for routing.

  - If the PCs are intended to receive calls that are initiated by the VS, then assign each PC the same WSN system name (WangNet ID), Area ID, and System ID, and configure one of the PCs on the X.25 transport with the appropriate DTE address. Since only one of the PCs can be active at any time, there should be no conflict.

WSN Logger

The following considerations and restrictions apply to WSN VS logging functions:

- If Logger data files are put on a multivolume set, ensure that all volumes are permanently mounted. If the Logger file volume in a set is dismounted, Logger activity is suspended while waiting for the volume, resulting in a loss of log records. Furthermore, check to be sure that there is adequate space on the volumes in the set for the daily log files. Operational delay in responding to a volume mount can result in a loss of log records.

- You can reconfigure logging (initially set during WSN VS NETCORE installation) by running the LOGCNTRL program from CNFGAID, and selecting a volume for logging. The library @LOG@ is created on that volume with a file named "Lyymmdd" (year, month, day) for every day the logger is running. Files will build up in that library and should be archived or scratched regularly to save disk space and to improve the performance of Event Inquiry. LOGCNTRL creates the file @LOGCTL@ in @SYSTEM@ on the system volume.

- If logging parameters in LOGCNTRL need to be modified, proceed as follows:

  1) Halt all currently active foreground programs that log to the logger.

  2) If DMF is present, run the procedure DMFSTOP to halt LOGCOM in background.

  3) Run the procedure WSNSTOP to halt CNS and LOGTSK in background.

  4) Run the configuration procedure LOGCNTRL from CNFGAID or from DMF (Control Logging) to reset logging parameters.

  5) Run WSNSTART to resubmit to background CNS, LOGTSK, and any other installed applications dependent upon CNS.

- Prior to performing an IPL of the VS system, the procedure DMFSTOP must be run to halt LOGCOM in the background if DMF is present, and all background and foreground applications that write log messages to the logger must be stopped or cancelled. Next, the procedure WSNSTOP must be run to halt CNS and LOGTSK in background. Since the procedure WSNSTOP will end prior to the actual halting of LOGTSK in background (due to a processing response time lag from use of an ITMU port to signal cancelling), *care should be taken to ensure that LOGTSK has actually halted before starting the IPL.* Failure to do so may cause the (post-IPLed) background task LOGTSK to dump with DMS message "File Not Closed," as well as cause loss of data in the logfiles open during the IPL. This occurs because the partially halted (pre-IPLed) LOGTSK (still in procedure queue) still has files open, though it may be without an ITMU port.

- After an unexpected system failure, or after performing an IPL of the VS without having first run WSNSTOP as described above, it may be necessary to reorganize either one or all of the files listed as follows:

  - @LOGCTL@ in system library on system volume
  - TRLOG in @LOG@ on logger volume
  - TSLOG in @LOG@ on logger volume
  - Lyymmdd in @LOG@ on logger volume

  To reorganize each file, first rename it and then run COPY to copy the file to its original filename with option REORG=YES.

- When the send log (TSLOG) file is full (i.e., the 13 extents maximum is reached) and logging is halted, perform the following operations to reduce the TSLOG file size and continue logging operations:

    - Rename TSLOG and copy with reorganize back to TSLOG
    - Compress the disk pack that TSLOG uses

    Once you reduce the size of the TSLOG file, follow the procedure given previously for modifying LOGCNTRL parameters to reset CONSOLIDATION = YES.

- Managing TSLOG file record counts. When a maximum record count is reached, LOGTSK sends a message to the daily log file indicating that further messages will be lost until sufficient space in TSLOG is available. At this point, in order to log new messages, you can either increase the number of records allocated to TSLOG or delete the existing records. Once space is available in the TSLOG file, logging operations automatically resume. To avoid overuse of the logger and resultant maximum record count, check to ensure that the logger is not being overburdened by unnecessarily large numbers of outbound consolidating log messages. Note that local alerts in conjunction with DMF will still perform under the above conditions.

- When the daily log file (Lyymmdd) is full (i.e., maximum record count is reached), LOGTSK will automatically reduce the size of the file Lyymmdd by reorganizing the records. When this fails to produce sufficient space for logging to continue, LOGTSK will halt, causing any new messages to be lost. When this situation occurs, you can try one or more of the following options to increase disk space:

    - Reorganize the volume
    - Delete files
    - Increase the maximum number of extents for the volume

    Once space is available for Lyymmdd, logging operations automatically resume.

Event Inquiry

The following considerations and restrictions apply to the WSN Event Inquiry (EVENTINQ) function:

- When the WSN VS NETCORE software is installed, the Event Inquiry runtime executable module @EVTINQ@ and its associated forms file EVTFORMS are moved to library @SYSTEM@ on the system volume, where they must reside in order for standalone managers, such as CNSMGR, to function properly. The procedure EVENTINQ, which calls @EVTINQ@, remains in library @SYSCOM@ on the installation volume. A second procedure EVENTINQ is created in @SYSTEM@ on the system volume at installation. This procedure calls EVENTINQ in @SYSCOM@ and can be moved or copied to any library.

- Care should always be taken to IPL the VS with the correct date and time of day. Failure to do so may cause log records to appear out of sequence and to give the appearance of lost records while running Event Inquiry.

- Event Inquiry defaults to display all subsystem messages (assuming that they were intended to be logged as Event messages), and thus displays some unreadable messages intended to be statistics messages. These unreadable messages can be ignored.

- The Event Inquiry response time can increase when the Respecify option (PF9) is pressed. The response time is proportional to the sum total of log records present in *all* the daily log files. Even though a logger subsystem may be specified for which there is relatively few logged messages, all log records must nevertheless still be reread upon entering the Respecify option to be certain of this. Response time can be improved by deleting "old" daily log files.

Connection Manager

The following considerations and restrictions apply to the WSN Connection Manager (CNXMGR) function:

- The user who starts the Connection Manager should be a security administrator and allowed to have subtasks. This is accomplished by setting the subtasks field in the Security program to a nonzero number. (A value of 255 is recommended.) If the subtask quota is zero or is met, the Connection Manager is unable to verify user IDs or invoke any more tasks.

- During startup, the Connection Manager automatically attempts to start the applications: LST928, LST8208, BSV, and TRMGR. The inability to start these applications causes messages to appear in the logfile. This is a normal condition. These applications have no effect on the operation of WSN VS NETCORE, Release 8.32.03.

The following considerations and restrictions apply to the WSN CNS Manager (CNSMGR) function:

- CNSMGR contains a hidden function for printing the screen. This function is accessed by pressing PF31 while viewing the screen.

- On the Control/Monitor CNS Transport screen, the "Total Cost" value that is displayed is only significant in cases where you are monitoring a transport that is limited to communication between your system and one other system, such as with point-to-point or IDS links. This is due to the Congestion level factor, which is derived from the last congestion level received by the link driver. In all other cases, you should examine the "Relative cost" value, which appears on the Monitor Alternate Routes screen, since this value is given on a system basis.

- The Messages Sent and Messages Received fields that appear on the CNSMGR Summary screen display slightly different information than what is displayed by summing these same fields on the detailed Transport screen for all transports. The Messages Sent field on the Summary screen does not include rejected messages while the Messages Sent field on the Transport screen does. In addition, the Messages Received field on the Summary screen does not include pass-through messages while the Messages Received field on the Transport screen does.

- Any Event Inquiry log message that is posted when an application detaches or a session completes contains byte and message counts that might not match the values given on the CNSMGR Monitor Application screen. Although CNS passes this information to both Event Inquiry and CNSMGR while an application or session is active, after an application has detached or a session completes, Event Inquiry automatically receives the totals for byte and message counts, while CNSMGR does not. Following is a comparison of the byte and message counts that are given by Event Inquiry and CNSMGR.

  There are two Event Inquiry messages that display "Bytes Received/Sent" and "Messages Received/Sent:"

  - Application Detached, Appl = XXX, User = XXX, Sessions In = nnn, Sessions Out = nnn, Messages In = nnn, Messages Out = nnn, Bytes In = nnn, Bytes Out = nnn, Subtask ID = nnn

  - Session Terminated Normally, SID = nnn, User = XXX, Msgs In = nnn, Msgs Out = nnn, Bytes In = nnn, Bytes out = nnn, Rexmits Outs = nnn, Rexmits In = nnn, Rcvd out of seq = nnn

The values that Event Inquiry provides for byte and message counts are explained as follows:

Bytes Received (Bytes In) -- Equals the final total of bytes received by the application or session at application detach or session termination time.

Bytes Sent (Bytes Out) -- Equals the final total of bytes sent by the application or session at application detach or session termination time.

Messages Received (Msgs In) -- Equals the final total of messages received by the application or session at application detach or session termination time.

Messages Sent (Msgs Out) -- Equals the final total of messages sent by the application or session at application detach or session termination time.

The corresponding values for byte and message counts that appear on the CNSMGR Monitor Application Status screen are as follows:

Bytes Received -- Equals the sum of the bytes received by the application or session at the time that the request for the statistic information was made.

Bytes Sent -- Equals the sum of bytes sent by the application or session at the time that the request for statistic information was made.

Messages Received -- Equals the sum of the messages received by the application or session at the time that the request for statistic information was made.

Messages Sent -- Equals the sum of the messages sent by the application or session at the time that the request for statistic information was made.

- Occasionally, under heavy load, CNS Manager operations will halt so that resources can be diverted to more critical network operations. When sufficient resources are available, CNS Manager operations will resume.

CONDITIONS

The following conditions describe potential problems or situations that can occur with the operation and administration of WSN VS networking software. You should be aware of these conditions in order to avoid or minimize their effects.

General

- When using Release 1.01.01 of the WSN 802.3 transport, the 802.3 protocol stack can detect errors (e.g., lost packets) but it cannot correct them. This is not a problem for applications using CNS because of the error recovery function. However, for this reason, non-CNS applications (such as, @ATTACH@) are not supported over Release 1.01.01 of the 802.3 transport.

- Only one WSN 802.3 transport can be configured per DLP address. Configuration of two, even if one or both are disabled, will cause errors when enabling of the transport is attempted and prohibit CNS use of the transport.

- You cannot reinitialize and reload transport microcode to a data link processor (DLP) by inhibiting and then reallowing services on a transport. In past releases, this operation was supported through a combination of Operator Communications functions and disabling the transport and then reallowing services on the transport by reversing these steps.

  A future release of the VS operating system will eliminate this condition. Until you have this release installed on your system, if you need to reinitialize and reload a DLP, you can either initial program load (reset) the DLP or initial program load the VS. If you need to perform this operation on a frequent basis, consult a Wang analyst for a program that can be used to circumvent this condition.

- When 80 to 100 simultaneous remote logons are initiated to one local VS while there are 20 to 30 local workstations active on that VS, @RMTIPC@ can become detached from CNS, causing these remote logons to fail. When this occurs, @RMTIPC@ will reattach to CNS but the logon will have to be reinitiated by the remote user.

- When communicating with an IDS host over an IDS 3271 BSC or 3274 SNA transport, if the IDS host issues a link disable, the VS subtask for this transport remains active. The status appears as "Enable Fail" at the VS, and results in a maximum of 27, not 28, other transports that can be enabled at the VS. Similarly, if the disabling of the transport at the VS does not complete successfully, the VS subtask remains active, reducing the maximum allowed number of enabled transports by one.

Event Inquiry

- Event Inquiry displays some unreadable status messages from Wang OFFICE and PDS Store and Forward managers, which should be ignored.

- On a moderately- to heavily-loaded system, Event Inquiry may report "084-TIMEOUT FROM LOGTSK" intermittently. During this time, some of the messages that should be written to the log file are lost. CNS discards log messages during these periods but will log this occurrence the next time it is able to communicate with LOGTSK.

  These incidences can be reduced by limiting all foreground and background tasks that log messages to the logger, or that read from the log files, to only those that are necessary. If running Event Inquiry, increase the update period to a minimum of 15 seconds and ensure that the most recent screen is displayed by respecifying system and subsystem parameters.

- When another task (such as a user running DISPLAY) is accessing the log file at the same time that LOGTSK is submitted, a LOGTSK dump occurs with the message

  019 Unable to Access Today's Logfile: Possession Conflict.

  No action is required when this conflict occurs since LOGTSK is automatically resubmitted immediately, and again every ten (10) minutes until normal functioning resumes.

- Log messages sometimes appear truncated in Event Inquiry.

CNS Manager

- Occasionally, the CNS Manager (CNSMGR) displays a partial screen. When this occurs, exit and then return to the screen.

- For performance reasons, CNS status is only checked when screen transitions occur. Also, statistics are updated only when the update interval expires. If CNS goes from inactive to active while a lower level screen (e.g., Monitor Applications) is displayed, CNSMGR will not immediately update statistics upon returning to the higher level screen (e.g., Select Application or Session to Monitor). At this point if you want to view current statistics you can either press ENTER or wait till the update interval expires.

- Occasionally, the screens file causes loss of user-entered characters (i.e., nonblank characters used to select operations). Reenter the missing characters when this occurs.

- After reaching a maximum of 100 trace files, CNS starts to reuse these trace files by appending them rather than by creating new files. Thus, to insure that new files have the correct assigned attributes, it is recommended that you delete old files before they reach the maximum limit of 100.

- Occasionally, the Find function (PF8) for the Monitor Adjacent System screen does not locate the specified system.

- The Detailed Transports screen may occasionally show an undefined CNS code 48 or 49 under the Status Reason field for 802.3 or WangPac transports. This condition requires no action.

- The Path Trace Result screen incorrectly shows transport failure reason "Unknown System" when path trace is directly issued from one multipoint secondary to another. This condition requires no action.

- If a CNS timeout occurs, the first application that appears on the Applications or Sessions screen may be scrambled. If this occurs, exit and then rerun CNSMGR.

- CNS Start time is not displayed correctly if CNS becomes active while the user is running Alerts, Event Inquiry, or the Diagnostic tests. To view the correct Start time, exit and then rerun CNSMGR.

- When creating a new CNSLOG file from the CNS Trace facility, the previous, not current, selected block allocation is used. Thus, at times, it may appear that there is insufficient space to create a file. To check this, rerun the CNS Trace facility using the same parameters.

- The CNS Trace message, "FAILURE: Could not open log file on selected volume," is displayed when the volume contains insufficient space for the file size specified. When this occurs, you can reduce the file size to continue operations.

- Occasionally, the Select CNS Transports for Management screen displays scrambled names of the first and last transports listed. When this occurs, exit and then rerun CNSMGR.

- On the Path Trace Results screen, the Local CNS Version Number is incorrectly listed as the Destination CNS Version Number.

- Following each restart of CNS, Path Trace reports success to a system over 802.3 that is not configured on the 802.3 link. Subsequent path traces report correctly.

CHAPTER 4
MEDIA CONTENTS

INTRODUCTION

This chapter provides a list and brief description of the files
contained in Release 8.32.03 of WSN VS NETCORE. Although WSN VS
NETCORE is installed by Wang customer support personnel, the media
contents are described here as an aid for network administrators.

The WSN VS NETCORE package can be ordered in a variety of media types
to accommodate your particular disk drive requirements. The media
type designations for each of the media types supported are listed as
follows:

    (-3) -- An 8-inch, single-sided, single-density diskette
    (-5) -- An 8-inch, double-sided, double-density diskette
    (-9) -- A 5 1/4-inch, double-sided, double-density diskette

MEDIA CONTENTS

Table 4-1 lists the files contained in WSN VS NETCORE, Release
8.32.03. Once installed, these files reside in the NETCORE output
library called @SYSCOM@. (Refer to the note that appears in the
section called "Displaying NETCORE Version Numbers.")

*Note: Use the following legend to determine which files in Table 4-1
are mandatory, and which files are optional, for installation on the
VS. Files listed as optional or as not mandatory for your system can
be stored off-line to free up system disk space and consequently ease
memory restrictions on your system.*

Code	Meaning
M	Mandatory file
MC	Mandatory file when CNS is installed
MX	Mandatory file if remote logon (VSTE) or File Transfer is used
MI	Mandatory file when networked PC systems (Intelligent Workstations) are installed
O	Optional file
ORC	Optional recommended file when CNS is installed
S	Installation or configuration file that can be stored off-line

Table 4-1. WSN VS NETCORE Program Files

File	Protect. Class	Version	Blocks Alloc.	Code	Description
$CMCNSUB		01.00.00	1	MI	Procedure for CNS to use to start @CNXMGR@.
$CMSTART		01.00.00	1	MI	Procedure to run CMSTART.
$CMSTOP$		01.00.00	1	MI	Procedure to run CMSTOP.
$MCPSAMP	$	01.00.00	1	S	Sample procedure for IDS Bisync transports, used by CNFGAID.
$CNXMGR$		01.00.00	1	MI	Procedure to submit Connection Manager.
@CNXMGR@	@	01.00.19	491	MI	Connection Manager.
@EVTINQ@	@	02.02.01	172	M	Program to monitor log entries in log file. Entries are written by LOGTSK.
@RATGATE	@	07.15.08	122	M	Remote VS Logon access task.
@RMTIPC@	@	02.19.09	168	M	Remote interprocess task.
@SESMGR7	@	08.00.35	147	M	Session Manager.
APPSCRN	$	01.00.00	25	M	Screen file associated with WSNAPPS.
CMSTART	@	01.00.03	·157	MI	Startup program for Connection Manager.

(continued)

Table 4-1. WSN VS NETCORE Program Files (continued)

File	Protect. Class	Version	Blocks Alloc.	Code	Description
CMSTOP	@	01.00.02	2	MI	Halt program for Connection Manager.
CNFGAID	@	01.03.06	10	S	Procedure to lead administrator through configuration.
CNS	@	04.01.04	429	MC	CNS Network Access Task (NAT).
CNS#AFP		01.00.14	192	MC	CNS Manager foreground program.
CNS#INST		01.00.01	1	S	CNS Manager installation procedure.
CNS#MSG2		01.00.08	52	MC	CNS Manager screen file.
CNSMGR		01.00.01	40	MC	CNS Manager program to run CNS#AFP in standalone mode.
CNSEND	@	01.00.00	13	MC	Program to terminate CNS task.
CONECTST	@	01.04.06	233	ORC	Network connectivity diagnostic.
DIRPTR	@	02.00.04	22	S	Utility to display/set location of the directory.
DTFORMS	@	01.03.00	21	ORC	Diagnostic tools forms file.
EVENTINQ	@	02.02.00	1	M	Procedure that runs @EVTINQ@ in foreground.
EVTFORMS	$	000042	29	M	Forms file for @EVTINQ@ program.
IDTEST	@	01.00.00	1	MI	Password validation routine for Connection Manager.
INSREML	@	01.00.09	2	S	Procedure to install remote access files.

(continued)

Table 4-1. WSN VS NETCORE Program Files (continued)

File	Protect. Class	Version	Blocks Alloc.	Code	Description
INSTALL	@	08.32.03	5	S	Procedure to install the software, used initially or after the library has been moved to another volume.
LOG#INST	@	01.00.14	3	S	Procedure initially used to install the logger files.
LOGCNTRL	@	03.02.08	10	M	Program to set the location of the log file, required during installation and reinstallation.
LOGEND	@	02.02.01	2	M	Program to terminate log background tasks.
LOGMSGFL	@	00.02	13	M	Logger message and operator message file used by Session Manager.
LOGTSK	@	03.03.31	38	M	Background task to read and write the current day's log file.
PASSBKGD	@	01.00.00	1	ORC	Procedure to run PASSTEST in the background.
PASSTEST		01.01.05	75	ORC	Passive counterpart for all diagnostics.
PROCRUN	@	01.00.01	4	S	Generates procedures in @SYSTEM@ to run programs in @SYSCOM@.
PROPTEST		01.04.04	184	O	Propagation delay diagnostic.
RGSUBMIT	@	07.15.08	8	M	Procedure to submit @RATGATE.
RIPCEND	@	02.11.00	1	MC	Program to terminate @RMTIPC@.
RLGSTART	@	03.00.00	1	M	Procedure to submit @RATTSK@ and @RATGATE.

Table 4-1. WSN VS NETCORE Program Files (continued)

File	Protect. Class	Version	Blocks Alloc.	Code	Description
RLGSTOP	@	02.00.00	1	M	Procedure to terminate @RATTSK@ and @RATGATE.
RTGCALC	@	01.00.00	1	S	Procedure to change number of remote users supported.
RTGEND	@	07.15.08	1	M	Program to terminate @RATGATE.
RTGSTART	@	02.00.00	1	M	Procedure to submit @RATGATE.
RTGSTOP	@	01.00.00	1	M	Procedure to terminate @RATGATE.
SYNCTEST		01.04.06	188	O	Synchronous pattern diagnostic.
THRUTEST		01.03.05	185	O	Throughput diagnostic.
WSNAPPS	@	01.00.00	63	O	Application record maintenance.
WSNDIRI	@	02.02.03	176	S	Directory maintenance utility.
WSNDIRM	@	01.00.01	1	S	Procedure to run WSNDIRI.
WSNEDIT	@	08.10.20	301	S	Configuration editor.
WSNEDT2	@	08.10.20	282	S	Configuration editor.
WSNINPT	@	08.10.20	95	S	Configuration file input and conversion used during installation/reinstallation.
WSNPRT	@	01.00.17	167	O	WSN Configuration Reporter.

(continued)

Table 4-1. WSN VS NETCORE Program Files (continued)

File	Protect. Class	Version	Blocks Alloc.	Code	Description
WSNREORG	@	01.01.01	14	M	Procedure used to reorganize the network and Wang OFFICE directory.
WSNSTART	@	01.00.20	2	M	Procedure used to submit background tasks for all installed networking software.
WSNSTOP	@	01.00.16	2	M	Procedure used to terminate background tasks for installed networking software.

DISPLAYING WSN VS NETCORE VERSION NUMBERS

This section gives the procedures for finding the version number of any of the files that are released with WSN VS NETCORE. Following installation, the libraries containing these files are @SYSCOM@ and @SYSTEM@.

Note: the name given to the output library (represented here as @SYSCOM@) can be modified. @SYSCOM@ is generally used to designate the NETCORE output library; however, if you specified another name for the output library during WSN VS NETCORE installation, you must enter this name for the output library and specify the correct volume when using the DISPLAY utility.

The filenames and associated display procedures are listed as follows:

Library @SYSCOM@

INSTALL -- Run procedure and look at first screen.

PROCRUN -- Run DISPLAY and display the fourth record.

WSNREORG -- Run DISPLAY and display the first record.

WSNSTART -- Run DISPLAY and display the first record.

WSNSTOP -- Run DISPLAY and display the first record.

CNS   -- Run DISPLAY and display the first record.

@CNXMGR@ -- Run DISPLAY and display the first record.

@SESMGR7 -- Run DISPLAY and display the first record.

CMSTART -- Run DISPLAY and display the first record.

CMSTOP   -- Run DISPLAY and display the first record.

IDTEST   -- Run DISPLAY and display the first record.

CNSEND   -- Run DISPLAY and display the first record.

IDTEST   -- Run DISPLAY and display the first record.

CONECTST -- Run the program. The version number is on the first screen

DTFORMS -- Run DISPLAY and search for record "ZZZZ."

PASSBKGD -- Run DISPLAY and display the first record.

PASSTEST -- Run DISPLAY and find the text string "PASSTEST REV."

PROPTEST -- Run the program. The version number is on the first screen.

SYNCTEST -- Run the program. The version number is on the first screen

THRUTEST -- Run the program. The version number is on the first screen

$MCPSAMP -- Run DISPLAY and display the first record.

APPSCRN -- Run DISPLAY and display the first record.

CNFGAID -- Run procedure and look at first screen.

DIRPTR   -- Run the program. The version number is on the first screen.

WSNAPPS -- Run the program. The version number is on the first screen.

WSNDIRI -- Run DISPLAY and display the first record.

WSNDIRM -- Run DISPLAY and display the first record.

WSNEDIT -- Run program and look at first screen.

WSNEDT2 -- Run DISPLAY and display the first record.

WSNINPT -- Run DISPLAY and display the first record.

WSNPRT   -- Run the program and look at the first screen.

Library @SYSTEM@

$CNXMGR$ -- Run DISPLAY and display first record.

$CMSTART -- Run DISPLAY and display first record.

$CMSTOP$ -- Run DISPLAY and display first record.

$CMCNSUB -- Run DISPLAY and display first record.

CNS#INST -- Run DISPLAY and search for "##CNS#INST."

CNS#MSG2 -- Run DISPLAY and search for "##CNS#MSG2."

CNSMGR   -- Run DISPLAY and search for "##CNSMGR."

CNS#AFP -- Run DISPLAY and search for "##CNS#AFP."

@RATGATE -- Run DISPLAY and display first record.

@RMTIPC@ -- Run DISPLAY and display first record.

INSREML -- Run DISPLAY and display first record.

RGSUBMIT -- Run DISPLAY and display first record.

RIPCEND -- Run DISPLAY and display first record.

RLGSTART -- Run DISPLAY and display first record.

RLGSTOP -- Run DISPLAY and display first record.

RTGCALC -- Run DISPLAY and display first record.

RTGEND   -- Run DISPLAY and display first record.

RTGSTART -- Run DISPLAY and display first record.

RTGSTOP -- Run DISPLAY and display first record

Note: *The following files are generally located in both library*
@SYSTEM@ on the System volume and library @SYSCOM@ on the WSN VS
NETCORE installation volume. Unless otherwise specified, you can find
the version numbers in either of these libraries.

@EVTINQ@ -- Run EVENTINQ in @SYSCOM@ on install volume and look at top
            of first screen. Or, run DISPLAY and find the text string
            "##@EVTINQ."

EVTFORMS -- Run DISPLAY and search for record "ZZZZ." The first six
            (6) numbers (positions 15 through 20, inclusive) are the
            version number.

LOG#INST -- Run DISPLAY and look at the first screen (top of procedure).

LOGCNTRL -- Run DISPLAY and find the text string "##LOGCNTRL."

LOGEND   -- Run DISPLAY and find the text string "##LOGEND."

EVENTINQ -- Run DISPLAY and look at the first screen (top of procedure).

LOGTSK   -- Run DISPLAY and find the text string "##LOGTSK."
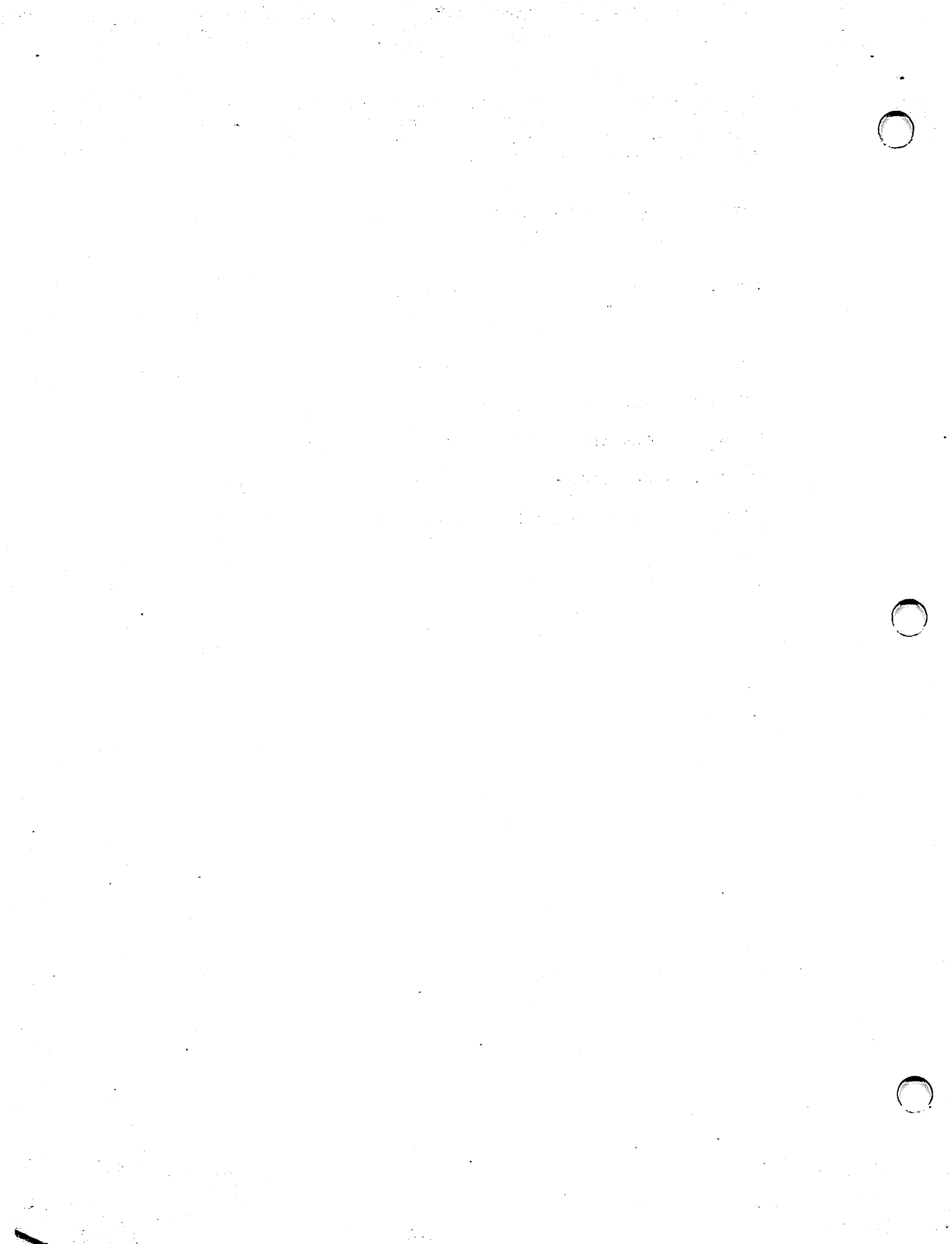
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