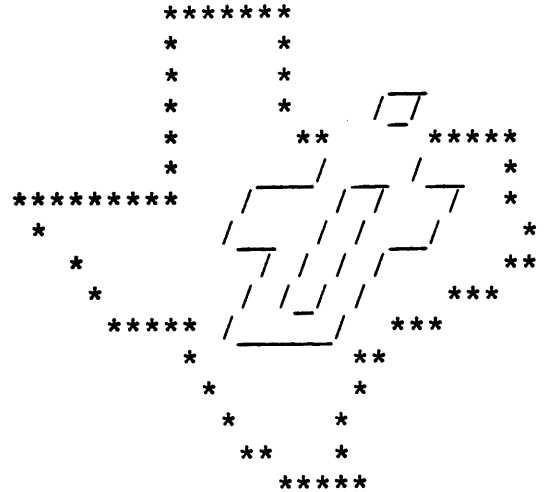


DATA SYSTEMS GROUP



D N O S
D N C S X . 2 5 R F T
R E L E A S E A N D U P D A T E
I N F O R M A T I O N

Release 1.3.0

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SECTION 1

GENERAL INFORMATION

1.1 INTRODUCTION

This document contains information about the DNCS X.25 RFT product, release 1.3.0, that is not contained in the standard documentation associated with the object installation kit.

The subjects that are discussed in this document are special features or considerations that may be important for the proper installation and operation of the object package.

1.2 UPDATE INFORMATION

Updates to the X.25 RFT package since the last release are as follows:

1. Gateway/client support. This release supports transparent RFT/X.25 gateway service to client systems that are connected on the same Ethernet LAN as the Gateway. All of the commands in the /RFT command group have been revised to operate in both gateway/client and single computer environments.
2. Change package to RFT User's Guide issued to include information on Gateway/client operation.
3. All patches from previous release incorporated into source.

1.3 DNOS BUFFER TABLE REQUIREMENTS

DNCS X.25 RFT initiates I/O to the DNCS IPC channel. To support this I/O, 2216 bytes of buffer table area are required. In a

gateway/client configuration, this buffer table area is required at the gateway.

1.4 SYSGEN CONSIDERATIONS

The DNCS SYSGEN considerations noted below are general rules based on experience with various configurations and will vary for each individual installation.

1. CIRCUIITS. A typical installation has one X.25 circuit, and may try to achieve maximum utilization of that circuit by specifying a large number of virtual circuits, or a large number of concurrent transfers. However, creating many virtual circuits or specifying a large number of concurrent transfers will not usually achieve greater throughput, although it will allow more transfers to be in progress. Experience has shown that more than three concurrent transfers over a 4800 baud physical line is not normally beneficial for increasing throughput. However, additional transfers may be desired so that more users may be served at once.
2. VIRTUAL CIRCUIITS. Each Virtual Circuit specified will allow at least one transfer to a network address over the physical circuit serving that network. Therefore, specifying 'n' Virtual Circuits will allow at least 'n' transfers to 'n' different addresses on the network. The number of transfers actually may be greater than the number of Virtual Circuits specified, as a multiplexing factor of 'm' will allow 'm' transfers to the same network address over a Virtual Circuit.
3. MULTIPLEXING. The multiplexing factor defines the maximum number of simultaneous transfers that may be handled by a Virtual Circuit to the same network address. If transfers to one site will predominate, then the required number of concurrent transfers may be accomplished by specifying a larger multiplexing factor to utilize the Virtual Circuits defined. A multiplexing value of 3 is recommended to best utilize resources, and to avoid virtual circuit setup overhead.
4. CONCURRENT TRANSFERS. For each installation, the number of concurrent transfers desired will normally depend upon the number of users, the number of physical circuits available, the number of virtual circuits present, and the multiplexing level desired for each

virtual circuit. The number of concurrent transfers specified must be less than or equal to the total number of virtual circuits multiplied by the multiplexing factor.

NOTE

The number of active RFT users can not exceed CONCURRENT XFERS. The error message (CAUSE/DIAG 0002 0000) is logged when this happens.

5. RECORD LENGTH. The record length specified should be the length of the longest logical record that will be desired to be transferred. However, it must be noticed that a large record length will have an effect on the number of concurrent transfers that may be specified. Each concurrent transfer will require space in the RFT task equal to the record length plus 292 bytes for overhead. The maximum space available to be allocated is about 38000 bytes, so it may easily be seen that a large record length will not allow a very sizeable number of concurrent transfers. One way to allow a larger number of concurrent transfers when it is desired to transfer large records is to specify a smaller record length and do a backup of the directory or file, blocking it to a smaller logical record length.
6. PACKET LENGTH. The packet length which must be used will be specified by the network to which the circuit is connected in the case of connection to a public data network. In the case of a point to point line, the packet length may be specified at your discretion subject to the limitation that both end points must use the same packet length. The packet length may be 128, 256, 512, or 1024. In general, CPU usage goes down and throughput goes up with larger packet sizes. On the other hand, larger packet sizes require larger amounts of memory. In an extreme case, larger packet sizes could force undue roll-in/roll-out activity and, in fact, impact CPU usage and throughput negatively.
7. DISK RESIDENT TABLE. The site table information may be kept in memory or in a combination memory and disk resident table. If disk resident table is specified, only the local site and any sites associated with

permanent virtual circuits may be defined as part of DNCSGEN. Remote sites not associated with permanent virtual circuits should be entered later using ASITE and AROUTE. A disk resident table has the advantage that table updates are retained. If DNCS is stopped and restarted, updates made to a memory resident table will be lost. On the other hand, call initiation may be somewhat faster when using the memory resident table. If it becomes appropriate to completely rebuild a disk resident table, delete the file .S\$SIT while DNCS is not active. After DNCS is started, the new table may be built using ASITE and AROUTE.

8. DNOS SYSGEN CONSIDERATIONS. If using a CP503 board to operate an X.25 circuit, the CHANNEL PROTOCOL of the port should be COMA. If using a CP501 or CP502 board, the CHANNEL PROTOCOL should be LAP.

1.5 START UP PROCEDURES

Both the DNCS and RFT jobs must be started before RFT transfers can begin. If you wish to always start these jobs each time the computer system is initialized you will want to include the XDNCS and XRFT commands in the DNOS initialization batch stream, .S\$ISBTCH. If DNCS and RFT are not started during initialization, then you must enter the XDNCS and XRFT commands to begin execution of the jobs.

Use the DNCSLOG and RFTLOG commands to determine if the DNCS and RFT jobs have been started. You will need to verify that they have been restarted after the operating system was last initialized.

DNCSLOG output indicating DNCS has started is :

```
DNCS0803 1745 NAP STARTED
DNCS1103 1745 TRANSPORT STARTED
DNCS0103 1745 I DNCS INITIALIZATION COMPLETE
DNCS0078 1745 I * * * * * END OF DNCSLOG * * * * *
(note: other log messages will normally be mixed in with
these messages)
```

Messages of the form

```
DNCS0803 1745 DATA-LINK NUMBER: 0001 IS ACTIVE
```

will appear for each X.25 circuit.

RFTLOG output indicating RFT has started is:

```
356;1747 01  DNCS/X25/RFT<1.3> STARTED
```

1.6 DETERMINING IF THE NETWORK IS OPERATIONAL

Many networks (Transpac, Telenet, Tymnet, etc) will allow you to call your own network address, which may be used to determine if the network is operational. To do this you must have your own address defined as a remote site in your site table. For example, if your network address is 311051200027, then the following steps could be used:

[] ASITE

```
ADD OR MODIFY A SITE
      SITE NAME:MYSITE
      RCALLING(Y/N):NO
      DNCS PASSWORD:
```

[] AROUTE

```
ADD OR MODIFY A ROUTE
      ROUTE NAME:LOOP
      ASSOCIATED SITE NAME:MYSITE
      SUBSCRIBER ADDRESS:311021500027
      RCALLED(Y/N):NO
      CLOSED USER GROUP:>FF
      USER FACILITIES:
      NETWORK NAME:TELENET
      DNCS PASSWORD:
```

[] SMSG

```
SEND OPERATOR MESSAGE
      SITE:MYSITE
      MSG:HELLO
```

[]RFTLOG (Corresponding RFTLOG output follows)

```
01 F-ID=      4   LOCAL MSG-TRANSFER-REQUEST
01 F-ID=      4   MSG TO:MYSITE
01 F-ID=      5   CALL FROM:AUSTIN
01 17:13:29 WEDNESDAY, DEC 22, 1984.
01 AUSTIN: HELLO
01 F-ID=      5   TRANSFER COMPLETED, CAUSE/DIAG:0000 0000
01 F-ID=      4   TRANSFER COMPLETED, CAUSE/DIAG:0000 0000
```

[]DNCSLOG (Corresponding DNCSLOG output follows)

```
hhmm          VIRTUAL CIRCUIT OPEN          TYPE: B-W
hhmm 674C LC:0001 LINE:00 VCTYPE:02 FLG:0000 ST:03 ADRL:0C
hhmm 6754 ADDR:3110215000270000 CAUSE:00      DIAG:00
hhmm          VIRTUAL CIRCUIT OPEN          TYPE: B-W
hhmm 6904 LC:0006 LINE:00 VCTYPE:02 FLG:0000 ST:03 ADRL:0C
hhmm 690C ADDR:3110215000270000 CAUSE:00      DIAG:00
hhmm          VIRTUAL CIRCUIT CLOSED        TYPE: B-W
hhmm 674C LC:0001 LINE:00 VCTYPE:02 FLG:0000 ST:03 ADRL:0C
hhmm 6754 ADDR:3110215000270000 CAUSE:00      DIAG:00
hhmm          VIRTUAL CIRCUIT CLOSED        TYPE: B-W
hhmm 6904 LC:0006 LINE:00 VCTYPE:02 FLG:0000 ST:03 ADRL:0C
hhmm 690C ADDR:3110215000270000 CAUSE:02      DIAG:00
```

If the above procedure fails with a CAUSE code of 0D in the DNCSLOG, then the network does not allow you to call your own network address.

If the network does allow you to call your own address, then a form of a loopback check on the physical line between the DTE and the DCE switching node and a check of the operation of the DTE communication controller may be done by executing this procedure.

SECTION 2

KNOWN PROBLEMS

This section documents known problems that may be encountered in installing and operating the DNCS X.25 RFT object package.

2.1 SOFTWARE

No known problems

2.2 DOCUMENTATION

1. XFTR, BACKUP DIRECTORY. A Backup Directory output file will not restore after transfer if the backup was performed without blocking specified. Paragraph 2.5.1 of the RFT User's Guide documents the recommended procedure for doing this.
2. SITE NAME UNIQUENESS. Site names within a group of communicating sites must be unique and must be defined in a consistent fashion at all sites. For example, if a group of communicating sites consists of locations in Toronto, Montreal, and Vancouver, the site names chosen might be TOR, MONT, and VANC. At Toronto, TOR would be defined as the local site name and MONT and VANC entered as remote site names. At Montreal, MONT would be the local site name and TOR and VANC remote site names. At Vancouver, VANC would be the local site name and MONT and TOR remote site names.
3. CAUSE/DIAG CODE OF 0004/0003. An SMSG or XFTR terminating with a cause/diagnostic code of 0004/0003 indicates the site name uniqueness requirement described above has not been observed.
4. In general, most users will find the display from SFTR more beneficial than the display from SSTF although they are similar. Note the following differences.

- a. The SSTF display only includes transfers initiated locally. The SFTR display includes both locally and remotely initiated transfers.
 - b. The count of records transferred in the SSTF display is only accurate if the transfer is in a held state. The counts given in SFTR are accurate. However, note the comments below on SFTR if the transfer has been suspended or suspended and restarted.
5. The values given for number of records transferred in the SFTR display may be confusing in the following situations.
- a. If a file transfer is held, the record of its existence will disappear from the SFTR display at the remote site. When the transfer is restarted, it will again be noted in the SFTR display at the remote site but the count of records transferred will start again at zero. It will not include records transferred before the transfer was held.
 - b. If the transfer is held due to a crash at the initiating site, the transfer will be restarted when the initiating site is again operational (assuming AUTO RESTART was requested). However, the SFTR displays at both sites will start counting records transferred beginning at zero. Neither will include records transferred prior to the crash.
6. If a file transfer for which AUTO RESTART was specified was in progress when a crash occurs, the file transfer will be restarted when RFT is subsequently restarted. However, the file transfer report will not contain meaningful information at the completion of the transfer.

SECTION 3

PATCHES AND PATCH PROCEDURES

3.1 PATCH UPDATE PROCEDURE

Patches are maintained by Texas Instruments and are available to customers from two sources - Customer Support Line and Patch Update Service. The Customer Support Line is able to provide patches on an as needed basis over the telephone or by communications link. Call (512)-250-7407 to get the latest patch files. Periodically, Texas Instruments will ship all current patches for the DNOS system family software to customers on the subscription service. Refer to the DNOS Products Patch Update Service Release Information for a list of the latest patches. In both cases, a detailed explanation will be provided on how to apply the patches to your system.

It is recommended that you call the Customer Support Line to get the latest patches prior to installation of the product.