chapter 7

Using Your DOS Workstation on a Token-Ring Network

Chapter Overview

This section explains the use of the IBM Token-Ring Source Routing Driver with DOS ODI.

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How to Use the Token-Ring Source Routing Driver

The IBM Token-Ring Source Routing Driver enables communication across IBM Token-Ring network bridges. Any type of DOS ODI protocol stack can use this source routing feature to communicate across IBM Token-Ring network bridges.

All nodes that need to communicate across a source route bridge must be running the IBM Token-Ring Source Routing Driver.

Figure 7-1 shows an example network configuration using IBM source routing bridges.

Figure 7-1
Network configuration using IBM source routing bridges

Options / LAN Drivers	DMA	INT	MEM	PORT	NODE ADDRESS	SLOT	FRAME	PROTOCOL	SAPS	LINK STATIONS	ALTERNATE	MAX FRAME SIZE	DOUBLE BUFFER OFF
EXOS		I	I	I	■	M	■	■					
LANSUP							■	■	■	■	■	■	
NE2					■	■	■	■					
NE2_32					■	■	■	■					
NE1000		■		■	■		■	■					
NE2000		■		■	■		■	■					
NE2100	■	■		■	■		■	■					
NE3200						E	■	■					E
NTR2000					I		I	I			I	I	
PCN2L					■	M	■	■			■		
TOKEN					■	M	■	■			■	■	
TRXNET		I	I	I		M		■					

E = EISA, extended industry architecture
M = MCA, microchannel architecture
I = ISA, industry standard architecture

Installing the Source Routing Driver with DOS ODI

To install source routing on workstations, complete the following steps.

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1. Copy the ROUTE.COM file from the ***WSDOS_1*** diskette to the boot disk.

   The command to load ROUTE.COM should be added after LANSUP.COM or TOKEN.COM, but before the protocol stack (for example, IPXODI.COM) you are using.

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If you are using ROUTE.COM with remote boot, you must load ROUTE.COM before the LAN driver in the AUTOEXEC.BAT. See Appendix A for more information.

2. Set the parameters for ROUTE.COM.

   The default parameters for ROUTE.COM can be used with most network communications.

   For additional ROUTE.COM parameters, see "Setting Alternate Parameters" below. Add the parameters at the command line.

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The ROUTE.COM module can be removed from memory by specifying the u command line switch, as in the following example:

```
ROUTE /U
```

Setting Alternate Parameters for ROUTE.COM

The following parameters can be entered when ROUTE.COM is first loaded:

BOARD = *number*
CLEAR
DEF
GBR
MBR
NODES = *number*
REMOVE = *number*

The parameters can also be changed by loading ROUTE.COM a second time. For online help, type

ROUTE ? <Enter**>**

Most of the parameters have default values that should work with simple configurations for IBM bridges. If you have installed parallel IBM bridges, you can change some of the parameters to reduce traffic on some of the paths. Each parameter is described below.

For an example of a ROUTE file, see “Sample ROUTE.COM” on page 49.

BOARD = *number*

Specifies a board number for the network board.

If this parameter is not specified, the default of 1 is used.

If you have loaded more than one LAN driver in the workstation, the board number is determined by the order in which the LAN drivers are loaded (the first board is 1). See your batch file for the order you specified.

Load ROUTE for each logical board number (frame type) enabled by the Token-Ring LAN driver.

CLEAR

Clears the Source Routing table and force a dynamic rebuilding of the table by sending a default frame to each node in the network.

Use this parameter when an IBM bridge on the network has gone down and an alternate route is available.

DEF

Prevents frames that have unknown (default) destination addresses from being sent across Single Route IBM bridges.

- If this parameter is specified, these frames are forwarded as All Routes Broadcast frames.
- If this parameter is not specified, all frames that have addresses not in the workstation's Source Routing table are forwarded as Single Route Broadcast frames.
- If ROUTE.COM has already been loaded with the DEF parameter, reloading ROUTE.COM with this parameter broadcasts all subsequent Single Route Broadcast frames as All Routes Broadcast frames.

GBR

Specifies that all General BRoadcast frames are to be sent as All Routes Broadcast frames.

- If this parameter is not specified when ROUTE is loaded, all General Broadcast frames are broadcast as Single Route Broadcast frames.
- If ROUTE has already been loaded with the GBR parameter, reloading ROUTE with this parameter broadcasts all subsequent General Broadcast frames as All Routes Broadcast frames.

MBR

Specifies that all Multicast Broadcast frames are to be sent as All Routes Broadcast frames.

- If the parameter is not specified when ROUTE is loaded, all Multicast Broadcast frames are broadcast as Single Route Broadcast frames.
- If ROUTE has already been loaded with the MBR parameter, reloading ROUTE with this parameter broadcasts all subsequent Multicast Broadcast frames as All Routes Broadcast frames.

NODES = *number*

Specifies the number of table entries in the Source Routing table.

You must enter this parameter the first time ROUTE.COM is loaded.

- The parameter can't be changed by reloading ROUTE.COM.
- Replace *number* with a value from 8 to 255. The default is 16.

REMOVE = *number*

Removes a node address from the workstation's Source Routing table.

Use the parameter when a bridge has gone down.

- Removing the node from the Source Routing table forces the workstation to determine an alternate path.
- Replace *number* with a 12-digit (6-byte) hexadecimal number.

  If fewer than 9 digits are entered, ROUTE.COM prefixes the address with 4000h. For example, REMOVE=2 is interpreted as REMOVE=400000000002.

Sample ROUTE.COM

The following command shows one possible ROUTE setting:

```
ROUTE BOARD=3, DEF, GBR, MBR
```

If you set these parameters, ROUTE.COM would do the following:

- Send packets through logical board 3
- Send all frames that are not addressed in the workstation's source routing table as All Routes Broadcast
- Send General Broadcast frames as All Routes Broadcast
- Send Multicast Broadcast frames as All Routes Broadcast

When the NODES parameter is not set, ROUTE assumes the default of 16.

The CLEAR and REMOVE parameters are not needed for the initial load of ROUTE.COM. However, if a bridge goes down, you can reload ROUTE with these parameters to reconfigure the Source Routing table.

For more information on using source routing, see the *IBM Token-Ring Network Architecture Reference* manual.