BSCDEMO User's Guide

DC 900-1349B

Simpact, Inc.
9210 Sky Park Court
San Diego, CA 92123
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SIMPACT

Simpact, Inc.
9210 Sky Park Court
San Diego, CA 92123
(619) 565-1865

BSCDEMO User's Guide

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Contents

Preface

Purpose of Document

This document describes how to use the BSCDEMO interactive demonstration program for Simpact's bisynchronous protocols. Simpact's customer support staff uses BSCDEMO when diagnosing problems with your Freeway software. If you have problems with your Freeway software, call Simpact at the customer support number given on page 9. The staff might ask you to run BSCDEMO after giving you special instructions for adapting it to your Freeway's configuration.

Intended Audience

This document should be read by programmers using BSCDEMO to demonstrate various options of a bisynchronous protocol running on an ICP resident in Simpact's Freeway communications server. You should be familiar with the appropriate programmer's guide for your particular bisynchronous protocol.

Required Equipment

The BSCDEMO program requires the following two major hardware components to operate:

- a Freeway communications server that runs the communications software
- a client computer that runs the following:
  - TCP/IP
  - Freeway DLI

Organization of Document

Chapter 1 is an overview of the BSCDEMO interactive commands.

Appendix A is an example BSC 3270 output.

Appendix B is an example BSC 2780/3780 output.

Appendix C is an example FMP output.

Appendix D is an example SWIFT output.

Appendix E is an example CHIPS output.

Simpact References

The following documents provide useful supporting information, depending on the customer's particular hardware and software environments. Most documents are available on-line at Simpact's web site, www.simpact.com.

General Product Overviews

- *Freeway 1100 Technical Overview* 25-000-0419
- *Freeway 2000/4000/8800 Technical Overview* 25-000-0374
- *ICP2432 Technical Overview* 25-000-0420
- *ICP6000X Technical Overview* 25-000-0522

Hardware Support

- *Freeway 1100/1150 Hardware Installation Guide* DC 900-1370
- *Freeway 1200 Hardware Installation Guide* DC 900-1537
- *Freeway 1300 Hardware Installation Guide* DC 900-1539
- *Freeway 2000/4000 Hardware Installation Guide* DC 900-1331
- *Freeway 8800 Hardware Installation Guide* DC 900-1553
- *Freeway ICP6000R/ICP6000X Hardware Description* DC 900-1020
- *ICP6000(X)/ICP9000(X) Hardware Description and Theory of Operation* DC 900-0408

- *ICP2424 Hardware Description and Theory of Operation* DC 900-1328
- *ICP2432 Hardware Description and Theory of Operation* DC 900-1501
- *ICP2432 Hardware Installation Guide* DC 900-1502

Freeway Software Installation Support

- *Freeway Release Addendum: Client Platforms* DC 900-1555
- *Freeway User's Guide* DC 900-1333
- *Getting Started with Freeway 1100/1150* DC 900-1369
- *Getting Started with Freeway 1200* DC 900-1536
- *Getting Started with Freeway 1300* DC 900-1538
- *Getting Started with Freeway 2000/4000* DC 900-1330
- *Getting Started with Freeway 8800* DC 900-1552
- *Loopback Test Procedures* DC 900-1533

Embedded ICP Installation and Programming Support

- *ICP2432 User's Guide for Digital UNIX* DC 900-1513
- *ICP2432 User's Guide for OpenVMS Alpha* DC 900-1511
- *ICP2432 User's Guide for OpenVMS Alpha (DLITE Interface)* DC 900-1516
- *ICP2432 User's Guide for Solaris STREAMS* DC 900-1512
- *ICP2432 User's Guide for Windows NT* DC 900-1510
- *ICP2432 User's Guide for Windows NT (DLITE Interface)* DC 900-1514

Application Program Interface (API) Programming Support

- *Freeway Data Link Interface Reference Guide* DC 900-1385
- *Freeway Transport Subsystem Interface Reference Guide* DC 900-1386
- *QIO/SQIO API Reference Guide* DC 900-1355

Socket Interface Programming Support

- *Freeway Client-Server Interface Control Document* DC 900-1303

Toolkit Programming Support

- *Freeway Server-Resident Application and Server Toolkit Programmer's Guide* DC 900-1325
- *OS/Impact Programmer's Guide* DC 900-1030
- *Protocol Software Toolkit Programmer's Guide* DC 900-1338

Protocol Support

- *ADCCP NRM Programmer's Guide* DC 900-1317
- *Asynchronous Wire Service (AWS) Programmer's Guide* DC 900-1324
- *Addendum: Embedded ICP2432 AWS Programmer's Guide* DC 900-1557
- *AUTODIN Programmer's Guide* DC 908-1558
- *Bit-Stream Protocol Programmer's Guide* DC 900-1574
- *BSC Programmer's Guide* DC 900-1340
- *BSCDEMO User's Guide* DC 900-1349
- *BSCTRAN Programmer's Guide* DC 900-1406
- *DDCMP Programmer's Guide* DC 900-1343
- *FMP Programmer's Guide* DC 900-1339
- *Military/Government Protocols Programmer's Guide* DC 900-1602
- *SIO STD-1200A (Rev. 1) Programmer's Guide* DC 908-1359
- *SIO STD-1300 Programmer's Guide* DC 908-1559
- *X.25 Call Service API Guide* DC 900-1392
- *X.25/HDLC Configuration Guide* DC 900-1345
- *X.25 Low-Level Interface* DC 900-1307

Document Conventions

The term "Freeway" refers to any of the Freeway server models (for example, Freeway 1100/1150/1200/1300, Freeway 2000/4000, or Freeway 8800), or to the embedded ICP product (for example, the embedded ICP2432).

Physical "ports" on the ICPs are logically referred to as "links." However, since port and link numbers are usually identical (that is, port 0 is the same as link 0), this document uses the term "link."

Revision History

The revision history of the *BSCDEMO User's Guide*, Simpact document DC 900-1349, is recorded below:

Document Revision	Release Date	Description
DC 900-1349A	January 1996	Original release.
DC 900-1349B	September 1996	Updated when bscdemo files were moved to their own directory (`freeway/client/test/bscdemo`).

Customer Support

If you are having trouble with any Simpact product, call us at 1-800-275-3889 Monday through Friday between 8 a.m. and 5 p.m. Pacific time.

You can also fax your questions to us at (619)560-2838 or (619)560-2837 any time. Please include a cover sheet addressed to "Customer Service."

We are always interested in suggestions for improving our products. You can use the report form in the back of this manual to send us your recommendations.

Chapter

1

BSCDEMO Commands

BSCDEMO is an interactive demonstration program for use with all Simpact bisynchronous protocols. BSCDEMO is invoked at your terminal by one of the following commands:

`bscdemo` (UNIX platforms)

`run bscdemo` (VMS platforms)

The BSCDEMO command prompt is displayed:

```
bscdemo>
```

BSCDEMO commands have the following format:

```
COMMAND[/OPTION[=VALUE] [LINK#[,LINK#,...]] [!COMMENT]
```

where anything enclosed in brackets is optional. Anything that is not optional generates a prompt for more information. An exclamation mark (!) signifies the beginning of a comment. Comments are ignored by BSCDEMO.

Table 1–1 on page 13 lists the valid BSCDEMO commands and options. Only the minimum number of letters required to form a unique command or option must be entered. Commands are not case sensitive. Some commands and options have multiple spellings for compatibility with older versions of BSCDEMO. For example, you can exit BSCDEMO using any of the commands `EXIT`, `QUIT`, or `X`.

BSCDEMO can also be used to aid in debugging client applications. When registered as a *Control* session (available on the BSC 3270, BSC 2780/3780, FMP, SWIFT, and CHIPS protocols), you can check the link configuration, link statistics, link status and ICP message buffer size without affecting your client application. For more information about the *Control* session, see your particular programmer's guide.

Caution

Because BSCDEMO is a general-purpose tool for all Simpact bisynchronous protocols, keep in mind that not all the options shown in Table 1–1 are available for your protocol.

Table 1–1: BSCDEMO Commands and Options

Command	Option	Description
ATTACH		Attach a client to a link. Mode field values are: 0 = *Master* 1 = *Shared Master* (or *Read Session* for BSC 3270 or BSC 2780/3780) 2 = *Control* 3 = *Read Only* (FMP) or *Trace* (BSC 2780/3780)
BIND		*See the ENABLE command.*
BUFFER	/CONFIGURE = *n*	Configure the ICP message buffer size. BSCDEMO prompts for *n* if it is omitted. The command is sent to link 0. For some protocols, this must be the first BSCDEMO command after download. Other protocols have a default ICP message buffer size.
	/INPUT = *n*	Display BSCDEMO's internal input buffer from the most recent READ from the ICP, where *n* is the number of bytes to display. The entire buffer contents are displayed by default; *n* is an optional argument. Display is in hex.
	/OUTPUT = *n*	Display BSCDEMO's internal output buffer from the most recent WRITE from the ICP, where *n* is the number of bytes to display. The entire buffer contents are displayed by default; *n* is an optional argument. Display is in hex.
CONFIGURE		Set up link configuration options. BSCDEMO prompts for option values if they are omitted. For some options, the link must be disabled.
	/P1 = *n*	Data rate where valid values of *n* (in bits per second) are: 0 = 75 1 = 110 2 = 135 3 = 150 4 = 300 5 = 600 6 = 1200 7 = 2400 8 = 4800 9 = 9600 10 = 19200 11 = 38400 12 = 56000

Table 1–1: BSCDEMO Commands and Options *(Cont'd)*

Command	Option	Description
	/P2 = *n*	Clock source where valid values of *n* are: 0 = external 1 = internal 2 = bypass
	/P3 = *n*	Reply timer length where valid values are *n* = 0–1800 seconds.
	/P4 = *n*	Number of leading SYNCs where *n* = number of SYNCs sent out before a Bisync control or data sequence. Valid values are 2–8.
	/P5 = *n*	Protocol where valid values of *n* are: 0 = BSC 2780/3780 1 = BSC 3270 2 = FMP 3 = HASP 4 = SWIFT 5 = CHIPS ***Warning:*** SWIFT and CHIPS reset all default options upon receiving this option; therefore it should always be first in the command line list.
	/P6 = *n*	Parity where valid values of *n* are: 0 = no parity 1 = odd 2 = even
	/P7 = *n*	Character set where valid values of *n* are: 0 = ASCII/LRC-8 1 = EBCDIC/CRC-16 2 = ASCII/CRC-16 3 = ASCII/LRC-8/Bit7 4 = EBCDIC/CCITT-0 5 = ASCII/CCITT-0
	/P8 = *n*	Link transmission buffer size where valid values are *n* = 64–4096 bytes.
	/P9 = *n*	Record separator translation where valid values of *n* are: 0 = no translation 1 = NL = <CRLF> 2 = RS = <CRLF> 3 = US = <CRLF>

Table 1–1: BSCDEMO Commands and Options *(Cont'd)*

Command	Option	Description
	/P10 = *n*	Set data translation table where valid values of *n* are: 0 = off 1 = table 1 2 = table 2
	/P11 = *n*	Station status where valid values of *n* are: 0 = master 1 = slave
	/P12 = *n*	Space compression where valid values of *n* are: 0 = off 1 = on
	/P13 = *n*	Conversational mode where valid values of *n* are: 0 = off 1 = on
	/P14 = *n*	Retry limit where valid values are *n* = 1–127.
	/P15 = *n*	Poll list delay where valid values are *n* = 0–8192 tenths of seconds. Available only on BSC 3270.
	/P16 = *n*	Modem control where valid values of *n* are: 0 = HDX 1 = FDX (monitor DSR) 2 = HDX-2 3 = FDX-2 (ignore DSR/DCD) 4 = HDX-3 5 = FDX-3 (monitor DCD) 6 = HDX-4 (monitor DSR/DCD) 7 = FDX-4 (monitor DSR/DCD)
	/P17 = *n*	Safe store where valid values of *n* are: 0 = off 1 = on
	/P18 = *n*	Station ID where valid values are *n* = 0–32 for BSC 3270 and *n* = 0–999 for FMP sequence numbers.
	/P19 = *n*	Message blocking where valid values of *n* are: 0 = off 1 = data 2 = 2780 records 3 = 3780 records 4 = 3270 CMDS

Table 1–1: BSCDEMO Commands and Options *(Cont'd)*

Command	Option	Description
	/P20 = *n*	Block checking where valid values of *n* are: 0 = off 1 = exclude first character 2 = include first character 3 = SWIFT
	/P21 = *n*	Read queue limit where valid values are *n* = 0–4096 (0 = no limit).
	/P22 = *n*	EOM line control where valid values of *n* are: 0 = reverse line 1 = hold line 2 = permanent hold Available only on BSC 3780.
	/P23 = *n*	Data acknowledge node where valid values of *n* are: 0 = off 1 = on
	/P24 = *n*	Alternating acknowledgment where valid values of *n* are: 0 = off 1 = on
	/P25 = *n*	Inter-poll delay where valid values are *n* = 0–8192 tenths of seconds. Available only on BSC 3270.
	/P26 = *n*	TTD/WACK where valid values of *n* are: 0 = off 1 = on 2 = send TTD only (not WACK) 3 = send WACK only (not TTD) Available only on BSC 3780.
	/P27 = *n*	BSC 3270 addressing where valid values of *n* are: 0 = off 1 = on 2 = reserved 3 = automatic printer emulation 4 = device emulation Available only on BSC 3270.
	/P28 = *n*	RVI handling where valid values of *n* are: 0 = continue 1 = abort
	/P29 = *n*	Sync insertion every *n* characters where valid values are *n* = 0–4096 (0 = off).

Table 1–1: BSCDEMO Commands and Options *(Cont'd)*

Command	Option	Description
	/P30 = *n*	DSR/DCD delay where valid values are *n* = 0–127 seconds.
	/P31 = *n*	TTD/WACK limit where valid values are *n* = 1–8192 for SWIFT or 0-127 for BSC 3780.
	/P32 = *n*	Disconnect timer length where valid values are *n* = 0–1800 seconds.
	/P33 = *n*	Line mode where valid values of *n* are: 0 = Bisync 1 = Async/Bisync 2 = 8-bit Async 3 = 7-bit Async 4 = 6-bit Async (Baudot) 5 = 5-bit Async 6 = 8-bit Isochronous Available only on FMP.
	/P34 = *n*	Asynchronous terminating character where valid ASCII values are *n* = 0–255. Available only on FMP.
	/P40 = *n*	Electrical interface where valid values of *n* are: 0 = EIA-232 1 = EIA-485 2 = EIA-530/EIA-449 (balanced, EIA-422) 3 = V.35 4 = EIA-449 (unbalanced, EIA-423) 5 = EIA-562 Available only on Freeway 1000.
	/P41 = *n*	Line type where valid values of *n* are: 0 = leased 1 = dial up
	/X /ENABLE /START	Start link after configuration options on the same command line have been set. Not available on SWIFT or CHIPS.
DETACH		Detach a client from a link.
DEVICE		Notify BSC 3270 software of device status.
	/CREATE	Create BSC 3270 device.
	/REPORT	Generate device status report.
	/STATUS	Change device status.
DIAL MODEM		Perform modem autodial. BSCDEMO prompts for the dial string.

Table 1–1: BSCDEMO Commands and Options *(Cont'd)*

Command	Option	Description
DISABLE STOP		Disable a link. Turns off the DTR modem control signal and shuts down the link transmitter and receiver. Performs the UNBIND function for Freeway.
	/TRACE	Disable trace node.
ENABLE START		Enable a link. Turns on DTR modem control signal and prepares link to transmit and receive data according to the current configuration. Performs the BIND function for Freeway.
	/ID	BSCDEMO prompts for the enable ID (upper case only). Valid SWIFT ID = SWF*XX*, where *X* may be any upper-case character.
	/TRACE	Enable trace node.
EXIT QUIT X		Exit program (or use CTRL/Z).
FLUSH		Issue a flush queue command.
HELP	/COMMANDS	Display a summary of valid BSCDEMO commands.
	/PARAMETERS	Display a summary of all BSCDEMO link configuration parameters.
	/P*n*/P*n*…P*n*	Display a summary of specified BSCDEMO link configuration parameter(s), where *n* = parameter number(s).
INHIBIT TOGGLE		Enable/Inhibit: Works as a toggle switch. With no options specified, this command displays all current option settings.
	/ACK	Enable or inhibit automatic sending of a safe store acknowledgment after receipt of ETX. Should be enabled only if safe store option is configured *on*. See also SEND/ACK command.
	/CONTROL = *n*	Enable or inhibit control node where *n* = node number (for Freeway, *n* must = 17). While enabled, BSCDEMO uses the prompt: `CONTROL>`
	/DATA	Enable or inhibit data display.
	/READ	Enable or inhibit automatic reads. With read inhibited, a read command will read only one block. With reads enabled, any command will read all blocks currently queued for the link.
	/WRITE	Enable or inhibit delay between writing blocks to the client. If enabled, the delay time is the current value of the TIMEOUT command.

Table 1–1: BSCDEMO Commands and Options *(Cont'd)*

Command	Option	Description
KSIZE SIZE	= *n*	Display current size of input and output buffers where *n* is the new output buffer size in bytes. This value must be less than or equal to the client message buffer size or a fatal error will be returned by the DLI when a write is attempted. Maximum is 2048.
	/READ = *n*	Change input data size where *n* = size in bytes. This value must be greater than or equal to the amount of data in the message buffer or a fatal error will be returned by the DLI when a read is attempted. Maximum is 2048.
LINK		Link configuration report request. Read the current option settings for a link.
	/BUFFER	Read current buffer report.
	/STATISTICS, /X	Read current link statistics.
	/STATUS	Read current link status.
POLL		Poll line (BSC 3270 specific poll or BSC 3780 poll with no data). Command can be used while line is active. The link should be configured with station status as master for BSC 3270.
	/LIST	This command determines the list of BSC 3270 tributary stations (control units) that are to be included in the BSC 3270 general polling sequence. BSCDEMO prompts for the tributary stations. Only control unit numbers 0–31 are accepted (others are ignored). The CU numbers must match the station ID of the slave(s) (see the CONFIGURE/P18 command). –1 clears the poll list.
	/READ	Read the current control unit numbers in the BSC 3270 poll list.
READ		Read one or more blocks depending on the INHIBIT/READ flag (see INHIBIT command).
	/FILE	Read all input up to and including the first ETX block and write into a file rather than to the screen. BSCDEMO prompts for the filename.

Table 1–1: BSCDEMO Commands and Options *(Cont'd)*

Command	Option	Description
SEND		Send EOT on link.
	/ACK	Send a positive safe store acknowledge command (ACK0 or ACK1, size = 0). Used to accept a received data message when using the safe store option. See also INHIBIT/ACK command.
	/DISCONNECT	Send disconnect (DLE EOT).
	/NAK	Send a safe store negative acknowledgment command (size > 0). Used to reject a received data message when using the safe store option.
	/POLL	Send poll line with no data command. A data acknowledge response will be generated. Or issue a BSC 3270-specific poll to the control unit and device. There is no data-acknowledge response generated by a specific poll.
TABLE		Set or read an ASCII-to-EBCDIC translation table.
	/READ = *n*	Read table *n*.
	/SET = *n*	Set table *n*. A SET/READ = *n* command must be performed first to provide the database to be changed.
TIMEOUT	= *n*	Change the read timeout length where *n* = 1–59 seconds. Default value is 2 seconds.
UNBIND		*See the DISABLE command.*
UNIT		Display the current control unit and device number.
	/CU = *n*	Change control unit where *n* = new unit (BSC 3270 only, *n* = 0–31).
	/DU = *n*	Change device number where *n* = new device (BSC 3270 only).
VERSION		Read software version ID.

Table 1–1: BSCDEMO Commands and Options *(Cont'd)*

Command	Option	Description
WRITE		Write to the specified link. The /FILE option is the default.
	/ESC	Add simulated IBM 3780 print control sequences (<ESC>/) at the beginning of each line.
	/FILE	A text file on a disk is opened and its contents sent to the ICP. BSCDEMO prompts for the file name (maximum length of 80 characters). No special formatting is performed. Records are not split.
	/HEX	Allows you to formulate a message in hex at the terminal. BSCDEMO prompts for the message.
	/ID	SWIFT signon ID.
	/LAST	Send last block as ETX instead of ETB.
	/MESSAGE	Allows you to formulate a test message at the terminal. BSCDEMO prompts for the message.
	/PRIORITY	Send as priority data (BSC 3780 only). ***Note:*** The message will be received as normal data.
	/RECORDS	Send transparent BSC 2780 records.
	/RS	Uses record separators (RS) to terminate each line instead of <CR><LF>.
	/SIGNON	Send a signon bid/response/completion command. BSCDEMO prompts for the signon ID.
	/TEST	Send a prepared test message.
	/US	Uses unit separators (US) to terminate each line instead of <CR><LF>.
	/X	Send data transparently.
Z		Change the communications server's device name.

Appendix

A BSC 3270 Example

BSCDEMO is in the `freeway/client/test/bscdemo` directory. The following example was run immediately after the communications server was downloaded with the BSC 3270 image. Comments are ignored. Links 0 and 1 are connected with a Simpact loopback connector. The computer output is shown here in `typewriter type`; your typed input is shown in ***bold italic type***.

Note

BSCDEMO uses blocking I/O[1]; therefore, all data link interface (DLI) functions produce a response, including attach, enable (bind), disable (unbind), and detach.

```
hall% bscdemo (UNIX platforms) or run bscdemo (VMS platforms)

SIMPACT BSCDEMO PROGRAM [V03-10]:  Type 'HELP' for commands

Enter board number (0-3): 1

bscdemo>  attach  0,1      ! Attach as "Master" mode
     Mode =  (-1 to 64): 0
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4): 1
```

1. The `async10` parameter in the DLI configuration file must be set to "no." Refer to the *Freeway Data Link Interface Reference Guide* or the *BSC Programmer's Guide* for more information.

```
Received ATTACH COMPLETE   (46) from link 0
Received ATTACH COMPLETE   (46) from link 1

bscdemo> b/c=1000          ! Change buffer size

bscdemo> r 0

Received SET BUFFER SIZE   (5) from link 0

bscdemo> l/b   0           ! Request buffer report

Received BUFFER REPORT     (12) from link 0
MSG BUFFER SIZE = 1000,  464 BUFFERS FREE OUT OF  497
XMT BUFFER SIZE =  512,    1 BUFFERS FREE OUT OF    1
NUMBER OF LINKS =   16

HGQ     COQ     TCQ     FCQ     FXQ     HIQ     HOQ
  0       0       0       0       0       0       0
LOQ     LIQ     TIQ     DOQ     HFQ     HXQ
  0       0       0       0       0       0

bscdemo> c/p16=3   0,1         ! Set link configuration

bscdemo> c/p11=0 1

bscdemo> r 0,1

Received CONFIGURATION     (6) from link 0
Received CONFIGURATION     (6) from link 1

bscdemo> l   0,1               ! Request configuration report

Received CONFIG REPORT     (14) from link 0

 1 DATA RATE           = 9(9600)         2 CLOCK SOURCE       = 0(EXTERNAL)
 3 REPLY TIMEOUT       = 3               4 NUMBER SYNCS       = 3
 5 PROTOCOL            = 1(3270)         6 PARITY             = 1(ODD)
```

```
 7 CHARACTER SET       = 0(ASCII)        8 TRANSMIT BLOCK SIZE= 512
10 DATA TRANSLATION    = 1(TABLE 1)     11 STATION STATUS     = 1(MASTER)
13 CONVERSATION MODE   = 0(OFF)         14 RETRY LIMIT        = 3
15 POLL LIST DELAY     = 0              16 MODEM CONTROL      = 3(FDX-2)
17 SAFE STORE          = 0(OFF)         18 STATION ID         = 0
19 MESSAGE BLOCKING    = 1(DATA)        20 BLOCK CHECKING     = 1(EXCLUDE)
21 READ QUEUE LIMIT    = 0              25 INTERPOLL DELAY    = 0
27 3270 ADDRESSING     = 1(ON)          30 DSR DELAY          = 3

Received CONFIGURATION     (6) from link 1

bscdemo> r 1

Received CONFIG REPORT     (14) from link 1

 1 DATA RATE           = 9(9600)         2 CLOCK SOURCE       = 0(EXTERNAL)
 3 REPLY TIMEOUT       = 3               4 NUMBER SYNCS       = 3
 5 PROTOCOL            = 1(3270)         6 PARITY             = 1(ODD)
 7 CHARACTER SET       = 0(ASCII)        8 TRANSMIT BLOCK SIZE= 512
10 DATA TRANSLATION    = 1(TABLE 1)     11 STATION STATUS     = 0(SLAVE)
13 CONVERSATION MODE   = 0(OFF)         14 RETRY LIMIT        = 3
15 POLL LIST DELAY     = 0              16 MODEM CONTROL      = 3(FDX-2)
17 SAFE STORE          = 0(OFF)         18 STATION ID         = 0
19 MESSAGE BLOCKING    = 1(DATA)        20 BLOCK CHECKING     = 1(EXCLUDE)
21 READ QUEUE LIMIT    = 0              25 INTERPOLL DELAY    = 0
27 3270 ADDRESSING     = 1(ON)          30 DSR DELAY          = 3

bscdemo> k                ! Check current block sizes

Write block size = 1024
Read  block size = 2048

bscdemo> k=500            ! Change write block size
```

```
Write block size = 500
Read  block size = 2048

bscdemo>   e   0,1          ! Bind links

Received START LINK        (1) from link 0
Received START LINK        (1) from link 1

bscdemo> p/l   0            ! Set poll list

Enter CU numbers (-1 to 63) for poll list.  Enter 64 to terminate.
     CU =  (-1 to 64): 0
     CU =  (-1 to 64): 64

Received POLL LIST         (28) from link 0

Received ERROR REPORT      (0) from link 0
     with ERROR 14 -- Station up
**** Station 0 up on link 0 ****

bscdemo> r 1

Received ERROR REPORT      (0) from link 1
     with ERROR 14 -- Station up
**** Station 0 up on link 1 ****

bscdemo> l/s   0,1          ! Request link status report

Received STATUS REPORT     (13) from link 0
Link is ON                      Mode is POLL
DTR  is ON                      DCD  is ON
RTS  is ON                      CTS  is ON
RCV  is OFF                     XMT  is ON

Station up bits (in hex):  00000001
DSR   is ON
```

```
Received STATUS REPORT     (13) from link 1
Link is ON                      Mode is IDLE
DTR  is ON                      DCD  is ON
RTS  is ON                      CTS  is ON
RCV  is OFF                     XMT  is OFF

Station up bits (in hex):  00000001
DSR   is ON

bscdemo> w/t/l   0          ! Send test data
     Input number of test blocks to send:  (1 to 32767):  3

Received DATA ACK          (7) from link 0
     Unit:  0      Device:  0

Received DATA ACK          (7) from link 0
     Unit:  0      Device:  0

Received DATA ACK          (7) from link 0
     Unit:  0      Device:  0

bscdemo> r 1

Received NORMAL DATA-ETB   (16) from link 1
     Unit:  0      Device:  0      Size: 1000

 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456781
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
```

```
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456781
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR

Received NORMAL DATA-ETX   (17) from link 1
     Unit:  0      Device:  0      Size:  500

 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 1>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
*> END OF MESSAGE.

bscdemo> l/x   0,1          ! Request statistics report

Received STATISTICS RPT    (15) from link 0
BCC errors rcvd:     0
Parity errors rcvd:  0
RCV overrun errors:  0
Buffer errors:       0
Messages xmitted:    1
Messages received:   0

---------- Link: 0      CU: 0 ----------

NAKs transmitted:    0
NAKs received:       0
Poll timeouts:       0
Select timeouts:     0
```

```
Received STATISTICS RPT    (15) from link 1
BCC errors rcvd:     0
Parity errors rcvd:  0
RCV overrun errors:  0
Buffer errors:       0
Messages xmitted:    0
Messages received:   1

---------- Link: 1      CU: 0 ----------

NAKs transmitted:    0
NAKs received:       0
Poll timeouts:       0
Select timeouts:     0

bscdemo> i/c   17           ! Enable control session (must use node 17)
     Node number? (8 to 64): 17

CONTROL NODE ENABLED

CONTROL> attach   0,1       ! Attach using control mode
     Mode =  (-1 to 64): 2
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4): 1

Received ATTACH COMPLETE   (46) from link 0
Received ATTACH COMPLETE   (46) from link 1

CONTROL> d 0,1

Received STOP LINK         (2) from link 0
Received STOP LINK         (2) from link 1

CONTROL> e 0,1
```

```
Received START LINK        (1) from link 0
Received START LINK        (1) from link 1

CONTROL> detach 0,1        ! Detaching causes errors because the sessions
                           ! are already closed when the dlRead occurs.

Error reading data -1 error# -10503
Error reading data -1 error# -10503

CONTROL> i/c

CONTROL NODE DISABLED

bscdemo> r 0,1

Received ERROR REPORT      (0) from link 0
     with ERROR 14 -- Station up
**** Station 0 up on link 0 ****

Received ERROR REPORT      (0) from link 1
     with ERROR 14 -- Station up
**** Station 0 up on link 1 ****

bscdemo> w/h/l   1         ! Send hex data

Enter HEX characters without spaces.  End with <CR>.
(Example: 4AFF07) > 48454c4c4f2046524f4d2053494d5041435421

Received DATA ACK          (7) from link 1
     Unit:  0      Device:  0

bscdemo> r 0

Received NORMAL DATA-ETX   (17) from link 0
     Unit:  0      Device:  0      Size:   19
 0>HELLO FROM SIMPACT!
*> END OF MESSAGE.

bscdemo> d   0,1           ! Unbind links
```

```
Received STOP LINK         (2) from link 0
Received STOP LINK         (2) from link 1

bscdemo> detach 0,1        ! Detaching causes errors because the sessions
                           ! are already closed when the dlRead occurs.

Error reading data -1 error# -10503
Error reading data -1 error# -10503

bscdemo> quit

End of BSCDEMO
```

Appendix

B BSC 2780/3780 Example

BSCDEMO is in the `freeway/client/test/bscdemo` directory. The following example was run immediately after the communications server was downloaded with the BSC 2780/3780 image. Comments are ignored by BSCDEMO. Links 4 and 5 are connected with a Simpact loopback connector. The computer output is shown here in `typewriter type`; your typed input is shown in ***bold italic type***.

Note

BSCDEMO uses blocking I/O[1]; therefore, all data link interface (DLI) functions produce a response, including attach, enable (bind), disable (unbind), and detach.

`hall%` ***bscdemo*** (UNIX platforms) or ***run bscdemo*** (VMS platforms)

```
SIMPACT BSCDEMO PROGRAM [V03-10]:  Type 'HELP' for commands

Enter board number (0-3): 2

bscdemo> attach    4,5      ! Attach as "Master" mode
     Mode =  (-1 to 64):  0
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4):  0
```

1. The `async10` parameter in the DLI configuration file must be set to "no." Refer to the *Freeway Data Link Interface Reference Guide* or the *BSC Programmer's Guide* for more information.

```
Received ATTACH COMPLETE   (46) from link 4
Received ATTACH COMPLETE   (46) from link 5

bscdemo> c/p11   4          ! Configure master station

P11 (STATION STATUS):   0=SLAVE      1=MASTER    (0 to 1): 1

bscdemo> r 4

Received CONFIGURATION     (6) from link 4

bscdemo> e   4,5            ! Bind links

Received START LINK        (1) from link 4
Received START LINK        (1) from link 5

bscdemo> k                  ! Check current block sizes

Write block size = 1024
Read  block size = 2048

bscdemo> k=500              ! Change write block size

Write block size = 500
Read  block size = 2048

bscdemo> l   4              ! Request link configuration report

Received CONFIG REPORT     (14) from link 4
 1 DATA RATE           = 9(9600)         2 CLOCK SOURCE       = 0(EXTERNAL)
 3 REPLY TIMEOUT       = 3               4 NUMBER SYNCS       = 3
 5 PROTOCOL            = 0(3780)         6 PARITY             = 1(ODD)
 7 CHARACTER SET       = 0(ASCII)        8 TRANSMIT BLOCK SIZE= 512
10 DATA TRANSLATION    = 1(TABLE 1)     11 STATION STATUS     = 1(MASTER)
12 SPACE COMPRESSION   = 0(OFF)         13 CONVERSATION MODE  = 0(OFF)
14 RETRY LIMIT         = 3              16 MODEM CONTROL      = 1(FDX)
```

```
17 SAFE STORE          = 0(OFF)          19 MESSAGE BLOCKING   = 1(DATA)
20 BLOCK CHECKING      = 1(EXCLUDE)      21 READ QUEUE LIMIT   = 0
22 EOM LINE CONTROL    = 0(REVERSE)      23 DATA ACK NODE      = 0(OFF)
24 ALTERNATING ACK     = 1(ON)           26 TTD/WACK           = 1(ON)
28 RVI HANDLING        = 0(CONTINUE)     30 DSR DELAY          = 3
31 TTD/WACK LIMIT      = 0               32 DISCONNECT TIMER   = 0
35 MODEM TYPE          = 1(SADL)         41 LINE TYPE          = 0(LEASED)

bscdemo> l  5              ! Request link configuration report

Received CONFIG REPORT     (14) from link 5
 1 DATA RATE           = 9(9600)          2 CLOCK SOURCE       = 0(EXTERNAL)
 3 REPLY TIMEOUT       = 3                4 NUMBER SYNCS       = 3
 5 PROTOCOL            = 0(3780)          6 PARITY             = 1(ODD)
 7 CHARACTER SET       = 0(ASCII)         8 TRANSMIT BLOCK SIZE= 512
10 DATA TRANSLATION    = 1(TABLE 1)      11 STATION STATUS     = 0(SLAVE)
12 SPACE COMPRESSION   = 0(OFF)          13 CONVERSATION MODE  = 0(OFF)
14 RETRY LIMIT         = 3               16 MODEM CONTROL      = 1(FDX)
17 SAFE STORE          = 0(OFF)          19 MESSAGE BLOCKING   = 1(DATA)
20 BLOCK CHECKING      = 1(EXCLUDE)      21 READ QUEUE LIMIT   = 0
22 EOM LINE CONTROL    = 0(REVERSE)      23 DATA ACK NODE      = 0(OFF)
24 ALTERNATING ACK     = 1(ON)           26 TTD/WACK           = 1(ON)
28 RVI HANDLING        = 0(CONTINUE)     30 DSR DELAY          = 3
31 TTD/WACK LIMIT      = 0               32 DISCONNECT TIMER   = 0
35 MODEM TYPE          = 1(SADL)         41 LINE TYPE          = 0(LEASED)

bscdemo> l/s  4,5                    ! Request link status report

Received STATUS REPORT     (13) from link 4
Link is ON                      Mode is IDLE
DTR  is ON                      DCD  is ON
RTS  is ON                      CTS  is ON
RCV  is OFF                     XMT  is OFF
```

```
Data state:  0                  Last DATA event:  Null
Last BSCISR event:  0

Received STATUS REPORT     (13) from link 5
Link is ON                      Mode is IDLE
DTR  is ON                      DCD  is ON
RTS  is ON                      CTS  is ON
RCV  is OFF                     XMT  is OFF
Data state:  0                  Last DATA event:  Null
Last BSCISR event:  0

bscdemo>  w/t/l  4          ! Send test data
     Input number of test blocks to send:  (1 to 32767):  3

Received DATA ACK          (7) from link 4
     Unit:  0      Device:  0

Received DATA ACK          (7) from link 4
     Unit:  0      Device:  0

Received DATA ACK          (7) from link 4
     Unit:  0      Device:  0

bscdemo> r 5

Received NORMAL DATA-ETX   (17) from link 5
     Unit:  0      Device:  0      Size: 1024

 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
```

```
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
 5>ABCDEFGHIJKLMNOPQRSTUVWX
*> END OF MESSAGE.

Received NORMAL DATA-ETX   (17) from link 5
     Unit:  0      Device:  0      Size:  476

 5>YZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
*> END OF MESSAGE.

bscdemo> i/c   17           ! Enable control session (must use node 17)
     Node number? (8 to 64): 17

CONTROL NODE ENABLED

CONTROL> attach   4,5       ! Attach using control mode
     Mode =  (-1 to 64): 2
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4): 0

Received ATTACH COMPLETE   (46) from link 4
Received ATTACH COMPLETE   (46) from link 5

CONTROL> d 4,5
```

```
Received STOP LINK         (2) from link 4
Received STOP LINK         (2) from link 5

CONTROL> e 4,5

Received START LINK        (1) from link 4
Received START LINK        (1) from link 5

CONTROL> detach 4,5        ! Detaching causes errors because the sessions
                           ! are already closed when the dlRead occurs.

Error reading data -1 error# -10503
Error reading data -1 error# -10503

CONTROL> i/c

CONTROL NODE DISABLED

bscdemo> w/h/l   5         ! Send hex data

Enter HEX characters without spaces.  End with <CR>.
(Example: 4AFF07) > 48454c4c4f2046524f4d2053494d5041435421

Received DATA ACK          (7) from link 5
     Unit:  0      Device:  0

bscdemo> r 4

Received NORMAL DATA-ETX   (17) from link 4
     Unit:  0      Device:  0      Size:   19

 4>HELLO FROM SIMPACT!
*> END OF MESSAGE.

bscdemo> d   4,5           ! Unbind links

Received STOP LINK         (2) from link 4
```

```
Received ERROR REPORT      (0) from link 5
     with ERROR 11 -- Data Set Ready (DSR) down
**** Data Set Ready (DSR) down on link 5 ****

bscdemo> r 5

Received STOP LINK         (2) from link 5

bscdemo> detach 4,5        ! Detaching causes errors because the sessions
                           ! are already closed when the dlRead occurs.

Error reading data -1 error# -10503
Error reading data -1 error# -10503

bscdemo> quit

End of BSCDEMO
```

Appendix

C FMP Example

BSCDEMO is in the `freeway/client/test/bscdemo` directory. The following example was run immediately after the communications server was downloaded with the FMP image. Comments are ignored by BSCDEMO. Links 2 and 3 are connected with a Simpact loopback connector. The computer output is shown here in `typewriter type`; your typed input is shown in ***bold italic type***.

Note

BSCDEMO uses blocking I/O[1]; therefore, all data link interface (DLI) functions produce a response, including attach, enable (bind), disable (unbind), and detach.

```
hall% bscdemo (UNIX platforms) or run bscdemo (VMS platforms)

SIMPACT BSCDEMO PROGRAM [V03-10]: Type 'HELP' for commands

Enter board number (0-3): 0

bscdemo> attach 0          ! Attach Link 0 using shared master mode
     Mode = (-1 to 64): 1
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4): 2
```

1. The `async10` parameter in the DLI configuration file must be set to "no." Refer to the *Freeway Data Link Interface Reference Guide* or the *FMP Programmer's Guide* for more information.

```
Received ATTACH COMPLETE   (46) from link 0

bscdemo> b/c=512          ! Configure client Message Buffer Size (optional)
                          ! Note: only available in bscdemo from link 0

bscdemo> r 0

Received SET BUFFER SIZE (5) from link 0

bscdemo> l/b 0            ! Get a Buffer Report. It shows 512 byte buffers

Received BUFFER REPORT (12) from link 0
MSG BUFFER SIZE = 512, 889 BUFFERS FREE OUT OF 922
XMT BUFFER SIZE = 512, 1 BUFFERS FREE OUT OF 1
NUMBER OF LINKS = 16

HGQ   COQ   TCQ   FCQ   FXQ   HIQ   HOQ
  0     0     0     0     0     0     0
LOQ   LIQ   TIQ   DOQ   HFQ   HXQ
  0     0     0     0     0     0

bscdemo> attach 2,3       ! Attach link 2,3 shared master mode
     Mode = (-1 to 64): 1
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4): 2

Received ATTACH COMPLETE   (46) from link 2
Received ATTACH COMPLETE   (46) from link 3

bscdemo> c/p16=3 2,3      ! Set link configuration

bscdemo> r 2,3            ! Read status report from link configuration

Received CONFIGURATION (6) from link 2
Received CONFIGURATION (6) from link 3
```

```
bscdemo> l 2,3              ! Get a Link Configuration Report

Received CONFIG REPORT (14) from link 2
 1 DATA RATE             = 9(9600)      2 CLOCK SOURCE        = 0(EXTERNAL)
 4 NUMBER SYNCS          = 3            5 PROTOCOL            = 2(FMP)
 6 PARITY                = 1(ODD)       7 CHARACTER SET       = 0(ASCII)
 8 TRANSMIT BLOCK SIZE   = 512         10 DATA TRANSLATION    = 1(TABLE 1)
15 POLL LIST DELAY       = 0           16 MODEM CONTROL       = 3(FDX-2)
18 STATION ID            = 0           19 MESSAGE BLOCKING    = 1(DATA)
20 BLOCK CHECKING        = 1(EXCLUDE)  21 READ QUEUE LIMIT    = 0
24 ALTERNATING ACK       = 0(OFF)      30 DSR DELAY           = 3
33 LINE MODE             = 0(BISYNC)   34 ASYNC TERM CHAR     = 3
38 NUM OF TERM CHAR      = 1           39 USER DEF BAUD       = 0

Received CONFIG REPORT (14) from link 3
 1 DATA RATE             = 9(9600)      2 CLOCK SOURCE        = 0(EXTERNAL)
 4 NUMBER SYNCS          = 3            5 PROTOCOL            = 2(FMP)
 6 PARITY                = 1(ODD)       7 CHARACTER SET       = 0(ASCII)
 8 TRANSMIT BLOCK SIZE   = 512         10 DATA TRANSLATION    = 1(TABLE 1)
15 POLL LIST DELAY       = 0           16 MODEM CONTROL       = 3(FDX-2)
18 STATION ID            = 0           19 MESSAGE BLOCKING    = 1(DATA)
20 BLOCK CHECKING        = 1(EXCLUDE)  21 READ QUEUE LIMIT    = 0
24 ALTERNATING ACK       = 0(OFF)      30 DSR DELAY           = 3
33 LINE MODE             = 0(BISYNC)   34 ASYNC TERM CHAR     = 3
38 NUM OF TERM CHAR      = 1           39 USER DEF BAUD       = 0

bscdemo> e 2,3              ! Enable links 2,3

Received START LINK (1) from link 2
Received START LINK (1) from link 3

bscdemo> k                  ! Show default output and input buffer size
```

```
Write block size = 1024
Read block size = 2048

bscdemo> k=200            ! Change output buffer size

Write block size = 200
Read block size = 2048

bscdemo> l/s 2,3          ! Status Report shows ready for transmission

Received STATUS REPORT (13) from link 2
Link is ON              Mode is 0
DTR is ON               DCD is ON
RTS is ON               CTS is ON
RCV is OFF              XMT is OFF
Reserved : 0            Reserved : Null
Last DSR is : 1

Received STATUS REPORT (13) from link 3
Link is ON              Mode is 0
DTR is ON               DCD is ON
RTS is ON               CTS is ON
RCV is OFF              XMT is OFF
Reserved : 0            Reserved : Null
Last DSR is : 1

bscdemo> w/t/l 2
     Input number of test blocks to send: (1 to 32767): 3

Received DATA ACK (7) from link 2
     Unit: 0 Device: 0

Received DATA ACK (7) from link 2
     Unit: 0 Device: 0
```

```
Received DATA ACK (7) from link 2
     Unit: 0 Device: 0

bscdemo> r 3              ! To display data: Use r/i command, or
                          ! use read command, followed by b/i command.

Received TRNS REC DATA-ETX (23) from link 3
     Unit: 0 Device: 0 Size: 205
 3>
*> END OF MESSAGE.

Received TRNS REC DATA-ETX (23) from link 3
     Unit: 0 Device: 1 Size: 205
 3>
*> END OF MESSAGE.

Received TRNS REC DATA-ETX (23) from link 3
     Unit: 0 Device: 2 Size: 205
 3>
*> END OF MESSAGE.

bscdemo> w/h/l 3

Enter HEX characters without spaces. End with <CR>.
(Example: 4AFF07) > 202122232425262728293031323334353 6

Received DATA ACK (7) from link 3
     Unit: 0 Device: 0

bscdemo> r/i 2            ! An example of reading using r/i

Received TRNS REC DATA-ETX (23) from link 2
     Unit: 0 Device: 0 Size: 22
 2>
*> END OF MESSAGE.
```

```
INPUT BUFFER (HEX 16):
HEADER: 0 17 0 0 0 2 0 0 0 0 0 0 0 0 0 16
v-START OF DATA 0 14 0 0 0 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

bscdemo> i/c                ! Enable control node (must use node 17)
     Node number? (8 to 64): 17

CONTROL NODE ENABLED

! Show how control node can be used for any legal type of extra clients

CONTROL> attach 2           ! Attach a second Link 2 shared master client
     Mode = (-1 to 64): 1
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4): 2

Received ATTACH COMPLETE   (46) from link 2

CONTROL> attach 3           ! Attach a link 3 control mode client
     Mode = (-1 to 64): 2
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4): 2

Received ATTACH COMPLETE   (46) from link 3

CONTROL> w/t/l 3            ! Example: control session cannot send data
     Input number of test blocks to send: (1 to 32767): 1

Received NORMAL DATA-ETX (17) from link 3
     with ERROR 49 -- Incorrect Mode
     Unit: 0 Device: 0 Size: 0
 *> END OF MESSAGE.

CONTROL> detach 2,3         ! Detaching causes errors because the sessions
                            ! are already closed when the dlRead occurs.
```

```
Error reading data -1 error# -10503
Error reading data -1 error# -10503

CONTROL> i/c
CONTROL NODE DISABLED

bscdemo> d 2,3

Received STOP LINK (2) from link 2
Received STOP LINK (2) from link 3

bscdemo> detach 2,3,0       ! Detaching causes errors because the sessions
                            ! are already closed when the dlRead occurs.

Error reading data -1 error# -10503
Error reading data -1 error# -10503
Error reading data -1 error# -10503

bscdemo> exit

End of BSCDEMO
```

Appendix

D SWIFT Example

BSCDEMO is in the `freeway/client/test/bscdemo` directory. The following example was run immediately after the communications server was downloaded with the SWIFT and CHIPS software. Comments are ignored by BSCDEMO. Links 4 and 5 are connected with a Simpact loopback connector. The computer output is shown here in `typewriter type`; your typed input is shown in ***bold italic type***.

Note

BSCDEMO uses blocking I/O[1]; therefore, all data link interface (DLI) functions produce a response, including attach, enable (bind), disable (unbind), and detach.

`hall%` ***bscdemo*** (UNIX platforms) or ***run bscdemo*** (VMS platforms)

```
SIMPACT BSCDEMO PROGRAM [V03-10]:  Type 'HELP' for commands

Enter board number (0-3): 2

bscdemo> attach    4,5      ! Attach as "Master" mode
     Mode =  (-1 to 64):  0
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4):  3
```

1. The `async10` parameter in the DLI configuration file must be set to "no." Refer to the *Freeway Data Link Interface Reference Guide* or the *Freeway SWIFT and CHIPS Programmer's Guide* for information.

```
Received ATTACH COMPLETE   (46) from link 4
Received ATTACH COMPLETE   (46) from link 5

bscdemo> c/p11   4          ! Configure master station

P11 (STATION STATUS):   0=SLAVE      1=MASTER    (0 to 1): 1

bscdemo> r 4

Received CONFIGURATION     (6) from link 4

bscdemo> k                  ! Check current block sizes

Write block size = 1024
Read  block size = 2048

bscdemo> k=500              ! Change write block size

Write block size = 500
Read  block size = 2048

bscdemo> e   4,5            ! Bind links

Received START LINK        (1) from link 4
Received START LINK        (1) from link 5

bscdemo> l   4           ! Request link configuration report
                         ! note: option 40 is only present on the FW1000.)

Received CONFIG REPORT     (14) from link 4
 1 DATA RATE           = 9(9600)         2 CLOCK SOURCE        = 0(EXTERNAL)
 3 REPLY TIMEOUT       = 3               4 NUMBER SYNCS        = 4
 5 PROTOCOL            = 4(SWIFT)        6 PARITY              = 1(ODD)
 7 CHARACTER SET       = 1(EBCDIC)       8 TRANSMIT BLOCK SIZE = 386
10 DATA TRANSLATION    = 1(TABLE 1)     11 STATION STATUS      = 1(MASTER)
12 SPACE COMPRESSION   = 0(OFF)         13 CONVERSATION MODE   = 0(OFF)
```

```
14 RETRY LIMIT         = 2              16 MODEM CONTROL       = 1(FDX)
17 SAFE STORE          = 0(OFF)         19 MESSAGE BLOCKING    = 1(DATA)
20 BLOCK CHECKING      = 3(SWIFT)       21 READ QUEUE LIMIT    = 0
23 DATA ACK NODE       = 0(OFF)         24 ALTERNATING ACK     = 1(ON)
28 RVI HANDLING        = 1(ABORT)       30 DSR DELAY           = 3
31 TTD/WACK LIMIT      = 30             32 DISCONNECT TIMER    = 24
40 ELECTRIC INTERFACE  = 0(EIA232)      41 LINE TYPE           = 0(LEASED)

bscdemo> l  5              ! Request link configuration report

Received CONFIG REPORT     (14) from link 5
 1 DATA RATE           = 9(9600)         2 CLOCK SOURCE        = 0(EXTERNAL)
 3 REPLY TIMEOUT       = 3               4 NUMBER SYNCS        = 4
 5 PROTOCOL            = 4(SWIFT)        6 PARITY              = 1(ODD)
 7 CHARACTER SET       = 1(EBCDIC)       8 TRANSMIT BLOCK SIZE = 386
10 DATA TRANSLATION    = 1(TABLE 1)     11 STATION STATUS      = 0(SLAVE)
12 SPACE COMPRESSION   = 0(OFF)         13 CONVERSATION MODE   = 0(OFF)
14 RETRY LIMIT         = 2              16 MODEM CONTROL       = 1(FDX)
17 SAFE STORE          = 0(OFF)         19 MESSAGE BLOCKING    = 1(DATA)
20 BLOCK CHECKING      = 3(SWIFT)       21 READ QUEUE LIMIT    = 0
23 DATA ACK NODE       = 0(OFF)         24 ALTERNATING ACK     = 1(ON)
28 RVI HANDLING        = 1(ABORT)       30 DSR DELAY           = 3
31 TTD/WACK LIMIT      = 30             32 DISCONNECT TIMER    = 24
40 ELECTRIC INTERFACE  = 0(EIA232)      41 LINE TYPE           = 0(LEASED)

bscdemo> l/s  4,5          ! Request link status report

Received STATUS REPORT     (13) from link 4
Link is ON                      Mode is IDLE
DTR  is ON                      DCD  is ON
RTS  is ON                      CTS  is ON
RCV  is OFF                     XMT  is OFF
Last event: Timer expired
```

```
Reserved :  0                 Reserved :  Null
DSR  is ON

Received STATUS REPORT     (13) from link 5
Link is ON                       Mode is IDLE
DTR  is ON                       DCD  is ON
RTS  is ON                       CTS  is ON
RCV  is OFF                      XMT  is OFF
Last event: Timer expired
Reserved :  0                 Reserved :  Null
DSR  is ON
```

bscdemo> ***w/t/l 4*** `! Send test data`

```
     Input number of test blocks to send:  (1 to 32767):  3

Received DATA ACK          (7) from link 4
     Unit:  0      Device:  0

Received DATA ACK          (7) from link 4
     Unit:  0      Device:  0

Received DATA ACK          (7) from link 4
     Unit:  0      Device:  0
```

bscdemo> ***r 5***

```
Received NORMAL DATA-ETX   (17) from link 5
     Unit:  0      Device:  0      Size: 1024

 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
```

```
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
 5>ABCDEFGHIJKLMNOPQRSTUVWX
*> END OF MESSAGE.

Received NORMAL DATA-ETX   (17) from link 5
     Unit:  0      Device:  0      Size:  476

 5>YZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
*> END OF MESSAGE.

bscdemo> i/c                ! Enable control session (must use node 17)
     Node number? (8 to 64):  17

CONTROL NODE ENABLED

CONTROL> attach   4,5       ! Attach using control mode
     Mode =  (-1 to 64):  2
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4): 3
```

```
Received ATTACH COMPLETE   (46) from link 4
Received ATTACH COMPLETE   (46) from link 5

CONTROL> d 4,5

Received STOP LINK         (2) from link 4
Received STOP LINK         (2) from link 5

CONTROL> e 4,5

Received START LINK        (1) from link 4
Received START LINK        (1) from link 5

CONTROL> detach 4,5        ! Detaching causes errors because the sessions
                           ! are already closed when the dlRead occurs.

Error reading data -1 error# -10503
Error reading data -1 error# -10503

CONTROL> i/c

CONTROL NODE DISABLED

bscdemo> w/h/l   5         ! Send hex data

Enter HEX characters without spaces.  End with <CR>.
(Example: 4AFF07) > 48454c4c4f2046524f4d2053494d5041435421

Received DATA ACK          (7) from link 5
     Unit:  0      Device:  0

bscdemo> r 4

Received NORMAL DATA-ETX   (17) from link 4
     Unit:  0      Device:  0      Size:   19

 4>HELLO FROM SIMPACT!
*> END OF MESSAGE.
```

```
bscdemo> d   4,5          ! Unbind links

Received STOP LINK         (2) from link 4
Received STOP LINK         (2) from link 5

bscdemo> detach 4,5       ! Detaching causes errors because the sessions
                          ! are already closed when the dlRead occurs.

Error reading data -1 error# -10503
Error reading data -1 error# -10503

bscdemo> quit

End of BSCDEMO
```

Appendix

E CHIPS Example

BSCDEMO is in the `freeway/client/test/bscdemo` directory. The following example was run immediately after the communications server was downloaded with the CHIPS software. Comments are ignored by BSCDEMO. Links 4 and 5 are connected with a Simpact loopback connector. The computer output is shown here in `typewriter type`; your typed input is shown in ***bold italic type***.

Note

BSCDEMO uses blocking I/O[1]; therefore, all data link interface (DLI) functions produce a response, including attach, enable (bind), disable (unbind), and detach.

```
hall% bscdemo (UNIX platforms) or run bscdemo (VMS platforms)

SIMPACT BSCDEMO PROGRAM [V03-10]:  Type 'HELP' for commands

Enter board number (0-3): 0

bscdemo> attach    4,5      ! Attach as "Master" mode
     Mode =  (-1 to 64):  0
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4):  4
```

1. The `async10` parameter in the DLI configuration file must be set to "no." Refer to the *Freeway Data Link Interface Reference Guide* or the *Freeway SWIFT and CHIPS Programmer's Guide* for information.

```
Received ATTACH COMPLETE   (46) from link 4
Received ATTACH COMPLETE   (46) from link 5

bscdemo> c/p11   4          ! Configure master station

P11 (STATION STATUS):   0=SLAVE      1=MASTER    (0 to 1): 1

bscdemo> r 4

Received CONFIGURATION     (6) from link 4

bscdemo> e   4,5            ! Bind links

Received START LINK        (1) from link 4
Received START LINK        (1) from link 5

bscdemo> k                  ! Check current block sizes

Write block size = 1024
Read  block size = 2048

bscdemo> k=500              ! Change write block size

Write block size = 500
Read  block size = 2048

bscdemo> l   4          ! Request link configuration report
                        ! note: option 40 is only present on the FW1000.)

Received CONFIG REPORT     (14) from link 4
 1 DATA RATE           = 9(9600)         2 CLOCK SOURCE        = 0(EXTERNAL)
 3 REPLY TIMEOUT       = 3               4 NUMBER SYNCS        = 4
 5 PROTOCOL            = 5(CHIPS)        6 PARITY              = 1(ODD)
 7 CHARACTER SET       = 0(ASCII)        8 TRANSMIT BLOCK SIZE = 802
10 DATA TRANSLATION    = 1(TABLE 1)     11 STATION STATUS      = 1(MASTER)
12 SPACE COMPRESSION   = 0(OFF)         13 CONVERSATION MODE   = 0(OFF)
```

```
14 RETRY LIMIT         = 6              16 MODEM CONTROL       = 1(FDX)
17 SAFE STORE          = 0(OFF)         19 MESSAGE BLOCKING    = 0(OFF)
20 BLOCK CHECKING      = 1(EXCLUDE)     21 READ QUEUE LIMIT    = 0
23 DATA ACK NODE       = 0(OFF)         24 ALTERNATING ACK     = 1(ON)
28 RVI HANDLING        = 1(ABORT)       30 DSR DELAY           = 3
40 ELECTRIC INTERFACE  = 0(EIA232)      41 LINE TYPE          = 0(LEASED)

bscdemo> l  5              ! Request link configuration report

Received CONFIG REPORT     (14) from link 5
 1 DATA RATE           = 9(9600)         2 CLOCK SOURCE        = 0(EXTERNAL)
 3 REPLY TIMEOUT       = 3               4 NUMBER SYNCS        = 4
 5 PROTOCOL            = 5(CHIPS)        6 PARITY              = 1(ODD)
 7 CHARACTER SET       = 0(ASCII)        8 TRANSMIT BLOCK SIZE = 802
10 DATA TRANSLATION    = 1(TABLE 1)     11 STATION STATUS      = 0(SLAVE)
12 SPACE COMPRESSION   = 0(OFF)         13 CONVERSATION MODE   = 0(OFF)
14 RETRY LIMIT         = 6              16 MODEM CONTROL       = 1(FDX)
17 SAFE STORE          = 0(OFF)         19 MESSAGE BLOCKING    = 0(OFF)
20 BLOCK CHECKING      = 1(EXCLUDE)     21 READ QUEUE LIMIT    = 0
23 DATA ACK NODE       = 0(OFF)         24 ALTERNATING ACK     = 1(ON)
28 RVI HANDLING        = 1(ABORT)       30 DSR DELAY           = 3
40 ELECTRIC INTERFACE  = 0(EIA232)      41 LINE TYPE           = 0(LEASED)

bscdemo> l/s  4,5          ! Request link status report

Received STATUS REPORT     (13) from link 4
Link is ON                      Mode is IDLE
DTR  is ON                      DCD  is ON
RTS  is ON                      CTS  is ON
RCV  is OFF                     XMT  is OFF
Last event: Timer expired
Reserved :  0                  Reserved :  Null
DSR  is ON
```

```
Received STATUS REPORT     (13) from link 5
Link is ON                          Mode is IDLE
DTR  is ON                          DCD  is ON
RTS  is ON                          CTS  is ON
RCV  is OFF                         XMT  is OFF
Last event: Timer expired
Reserved :  0                      Reserved :  Null
DSR  is ON

bscdemo>  w/t/l  4          ! Send test data
     Input number of test blocks to send:  (1 to 32767):  3

Received DATA ACK          (7) from link 4
     Unit:  0      Device:  0

Received DATA ACK          (7) from link 4
     Unit:  0      Device:  0

Received DATA ACK          (7) from link 4
     Unit:  0      Device:  0

bscdemo> r 5

Received NORMAL DATA-ETX   (17) from link 5
     Unit:  0      Device:  0      Size: 500

 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
*> END OF MESSAGE.
```

```
Received NORMAL DATA-ETX   (17) from link 5
     Unit:  0      Device:  0      Size: 500

 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
*> END OF MESSAGE.

Received NORMAL DATA-ETX   (17) from link 5
     Unit:  0      Device:  0      Size:  500

 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
 5>ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQR
*> END OF MESSAGE.

bscdemo> i/c                ! Enable control session (must use node 17)
     Node number? (8 to 64): 17

CONTROL NODE ENABLED

CONTROL> attach  4,5        ! Attach using control mode
     Mode =  (-1 to 64): 2
     2780/3780 = 0, 3270 = 1, FMP = 2, SWIFT = 3, CHIPS = 4
     Protocol Type (0 to 4): 4
```

```
Received ATTACH COMPLETE   (46) from link 4
Received ATTACH COMPLETE   (46) from link 5

CONTROL> d 4,5

Received STOP LINK         (2) from link 4
Received STOP LINK         (2) from link 5

CONTROL> e 4,5

Received START LINK        (1) from link 4
Received START LINK        (1) from link 5

CONTROL> detach 4,5        ! Detaching causes errors because the sessions
                           ! are already closed when the dlRead occurs.

Error reading data -1 error# -10503
Error reading data -1 error# -10503

CONTROL> i/c

CONTROL NODE DISABLED

bscdemo> w/h/l   5         ! Send hex data

Enter HEX characters without spaces.  End with <CR>.
(Example: 4AFF07) > 48454c4c4f2046524f4d2053494d5041435421

Received DATA ACK          (7) from link 5
     Unit:  0      Device:  0

bscdemo> r 4

Received NORMAL DATA-ETX   (17) from link 4
     Unit:  0      Device:  0      Size:   19

 4>HELLO FROM SIMPACT!
*> END OF MESSAGE.
```

```
bscdemo> d   4,5          ! Unbind links

Received STOP LINK         (2) from link 4
Received STOP LINK         (2) from link 5

bscdemo> detach 4,5       ! Detaching causes errors because the sessions
                          ! are already closed when the dlRead occurs.

Error reading data -1 error# -10503
Error reading data -1 error# -10503

bscdemo> quit

End of BSCDEMO
```

Customer Report Form

We are constantly improving our products. If you have suggestions or problems you would like to report regarding the hardware, software or documentation, please complete this form and mail it to Simpact at 9210 Sky Park Court, San Diego, CA 92123, or fax it to (619) 560-2838.

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Address: _____

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Phone Number: _____

Product: _____

Problem or
Suggestion: _____

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Simpact, Inc.
Customer Service
9210 Sky Park Court
San Diego, CA 92123