

Technical Data  
HP-UX SNAplusLink

For HP 9000 Series 700 and  
800 Computer Systems  
Product Numbers  
J2226A, J2220A

HP-UX SNAplusLink provides communications between an HP 9000 Series 700 or 800 and an IBM mainframe or an IBM peer system such as the AS/400. The SNAplusLink manages the SDLC, QLLC and Token Ring line to the host and emulates the major features of an IBM 3274 cluster control unit using the lower four layers of SNA. Node Type 2.0 (T2.0) for hierarchical connectivity and

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Node Type 2.1 (T2.1) for peer-to-peer connectivity are supported. Logical Unit Types 0, 1, 2, 3, and 6.2 (LU0, LU1, LU2, LU3, LU 6.2) are supported.

The HP-UX SNAplusLink can be configured as either stand-alone or as a client/server. The stand-alone environment provides access to IBM mainframes or IBM peer systems for a single HP-UX computer which has its own HP-UX SNAplusLink. Running in the client/server environment permits access to the IBM systems from multiple HP-UX computers on either an Ethernet or Token Ring LAN. These computers generally use a single HP 9000 computer with a SNAplusLink as a gateway to the IBM system.

The HP-UX SNAplusLink product is used in conjunction with a service product (HP-UX SNAplus3270, SNAplusAPI, SNAplusRJE, or SNAplus3179G. Please refer to the appropriate data sheets for more information.) A copy of a service product must reside on each HP-UX computer which is to communicate with the IBM system through the server system.

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## Features

- † SNAPplusLink allows the HP 9000 to emulate the major features of a 3174 and 3274 cluster controller using SNA protocols.
- † SNAPplusLink supports a maximum of 254 Logical Session Units (LUs) as terminals and printers concurrently per link card with a maximum of 2,000 LUs per system.
- † Supports PU 2.1 primary to initiate connections with peer systems including other HP 9000s.
- † The HP-UX SNAPplusLink running on the HP 9000 Series 700 and 800 systems acts as a server for SNAPplus clients running SNAPplus3270, SNAPplusAPI, SNAPplusRJE, and SNAPplus3179G on an HP 9000 Series 300, 400, 700, and 800 and can communicate simultaneously to the mainframe using any or all of these services.
- † An HP 9000 Series 700, or 800 with HP-UX SNAPplusLink can function as a non-dedicated gateway. Depending on the customer's specific application requirements, SNAPplusLink easily operates on a Series 700 or 800 while running other HP-UX applications.
- † BSD Sockets is the defacto industry standard interface used between the SNAPplusLink and the SNAPplus service products in a client/server environment.
- † SNA and TCP/IP can run concurrently over the same Token Ring card.
- † SNA and OSI can run concurrently over the same X.25 link card.
- † The SNAPplusLink product supports line speeds up to 64 Kbps over switched or leased lines for SDLC or QLLC connections, and 4Mb and 16Mb for Token Ring connections.

## Functional Specifications

- † All printers and terminals supported by the HP 9000 Series 700 or 800 running HP-UX are supported by HP-UX SNAPplusLink.
- † SNAPplusLink allows communication with an IBM 370 or compatible mainframe running VM, VM/XA, MVS/SP, MVS/XA, MVS/ESA, or DOS/VSE operating systems and ACF/VTAM through an IBM 3705, 3725 or 3745 communications controller running ACF/NCP. SNAPplusLink also allows communication with IBM midrange systems such as the AS/400, S/36 or S/38 as peers.
- † Up to ten SDLC link cards may be supported in a single Series 700 or 800 depending on the number of card slots available. This allows links to multiple IBM systems.
- † Up to five Token Ring cards may be supported in a single Series 700 or 800 depending on the number of card slots available.

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NetView alarms and alerts are sent to the NetView console.

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The SNAplusLink supports synchronous modem speeds up to 64Kbps as described below. SNAplusLink requires synchronous modems that support the following handshake signals: DTR, DSR, RTS, CTS, CD, RI. Modems must also provide transmit and receive clocks for the SDLC interface and ensure ground isolation between the communication systems. The following modems are supported for HP-UX SNAplusLink:

AT&T 201C  
AT&T 208 BR  
AT&T 209A  
AT&T 500B  
AT&T 2024A  
AT&T 2048A  
AT&T 2096A  
AT&T 2248A  
AT&T 2556 DSU  
AT&T 2596 DSU

CODEX 2640  
CODEX 2660  
CODEX 2680  
CODEX 2260

GTE LENKURT 56K

DYNATECH LDM 22  
Datatel DCP3080

Message encoding: NRZ (Non Return to Zero) or NRZI (Non Return to Zero Inverted) is supported on the Series 700 and 800 systems.

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## Product Requirements

<b>Environment</b>	<b>SNAPplusLink S/700</b>	<b>SNAPplusLink S/800</b>
Models	720, 730, 750 715, 725, 735, 755	8X7, 890/1-2, 890/3-4
Operating System	HP-UX 9.0 or later	
STREAMS/UX	J2232A	J2237A
Services Supported	SNAPplus3270 SNAPplusAPI SNAPplusRJE SNAPplus3179G	
LAN 9000 Token Ring/9000	J2165A	Bundled with HP 9000 system J2166A
X.25/9000 (for QLLC)	J2159A	36960A
Disk Space	7.2 MBytes	5.2 MBytes
Memory Space	2.1 MBytes	2.1 MBytes

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IBM Host → IBM System/370 or compatible mainframe (Series 30xx or 43xx) in an SNA environment, ACF/VTAM and ACF/NCP

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IBM Midrange → Examples of systems supported are AS/400, S/36, S/38 or IBM systems that can be supported in IBM's APPN environment. IBM systems must be running the latest operating system version.

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## Customer Installation Responsibility

Installation of these products requires knowledge in several overlapping areas. The staff engineer responsible for this task must have strong knowledge of (or have direct contact with staff with strong knowledge of): hardware configuration and HP-UX system administration.

Installation requires basic SNA knowledge. This includes knowledge of interface nodes, network routers, NAUs, PUs, LUs, link types, IBM hardware and software.

Installation of SNAPplus requires a thorough user-level knowledge of HP-UX commands. In addition, the installer must be familiar with:

- running update on an HP-UX system
- running SAM (in order to add users)
- the HP-UX file system, privilege groups, and real-time features
- running LAN and PSI diagnostics on an HP-UX system
- HP-UX kernel configuration

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The installer must be familiar with HP 9000 Series 300, 400, 700, and 800 systems, be able to install interface cards, shut down and restart the system and have the ability to configure a modem for QLLC and SDLC, and perform token ring link setup. The installer should also know peripheral hardware capabilities.

Hardware configuration also includes an understanding of client/server topologies, and what products will be on the client or the server.

Customers who cannot compose a team with this skill set should purchase HP Installation and Network Startup services.

#### Additional Implementation Assistance

For implementation needs that go beyond installation, the customer can either provide self-support, or can purchase additional services from HP. These services include Network Startup and HP ConsultLine. In addition, the customer can also purchase service from HP on a time-and-materials basis.

Network Startup includes implementation scheduling and coordination assistance, network configuration and verification testing, and network documentation.

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## Ordering Information

HP-UX SNAplusLink includes right-to-use license, software, and hardware. For Series 700, customer may specify software version option, media option, hardware option, and for the Series 800, a processor option.

HP-UX SNAplusLink requires HP STREAMS/UX for Series 700 and 800 running HP-UX 9.0.

### J2226A HP-UX SNAplusLink Series 700

- UG3** EISA card and RS232-C cable (28606-63006)
- 1AU** V.35 Cable (64 Kbps) (28606-63008)
- AAH** DAT
- AHN** Right to Use License and software
- APF** HP-UX 8.07
- APH** HP-UX 9.0
- OBD** HP-UX SNAplus Migration Guide for HP-UX 8.0 (J2220-61000)
- OBG** HP-UX SNAplus Migration Guide for HP-UX 9.0 (J2220-61020)
- OBO** Delete Manuals

*Note:* Token Ring requires Token Ring/9000 for Series 700 (J2165A)

*Note:* QLLC requires X.25/9000 Link (J2159A)

### J2220A SNAplusLink for Series 800

#### Media options

- AA0** 1/2-inch cartridge tape
- AA1** 1600 bpi magnetic tape
- AAH** Digital Audio Tape (DAT)
- AA4** QIC Cartridge Tape
- APB** HP-UX 8.0
- APH** HP-UX 9.0
- OBD** HP-UX SNAplus Migration Guide (J2220-61000)
- OBG** HP-UX SNAplus Migration Guide for HP-UX 9.0 (J2220-61020)
- OBO** Delete Manuals
- 004** Central Bus PSI Card (30263-60003) (825, 835, 840, 845, 850, 855, 860, 865, 635, and 645) and RS232-C cable (28606-63006)
- 005** Precision Bus PSI Card (28606-60001) (807, 808, 817, 815, 822, 827, 832, 837, 842, 847, 852, 857, 867, and 877) and RS232-C cable (28606-63006)
- 1AU** V.35 Cable (64 Kbps) (28606-63008)

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Processor options

**AH0** 807/817

**AEL** 827/837

**AE5** 847/857

**AE6** 867/877

**AEN** 887/897

**AEP** 890/1–2

**AH1** 890/3–4

*Note:* Token Ring requires Token Ring/9000 for Series 800 (J2166A opt. 20N)

*Note:* QLLC requires X.25/9000 Link (36960A)

Upgrade options are available for Series 800 SNAplus products. Please consult the HP 9000 price guide for details.



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## Documentation for HP-UX 9.0

- J2220-61021** HP-UX SNAplus Installation Guide
- J2220-61022** HP-UX SNAplus Diagnostics Guide
- J2220-61023** HP-UX SNAplusLink Administrator's Guide
- J2220-61024** HP-UX SNAplusLink Network Management Administrator's Guide
- J2220-61025** HP SNA Products Remote System Configuration Guide

## Documentation for HP-UX 8.0

- J2220-61001** HP-UX SNAplus Installation Guide
- J2220-61002** Getting to Know SNAP-IX
- J2220-61003** SNAP-IX User Interface Guide
- J2220-61004** SNAP-IX Management Guide
- J2220-61005** SNAP-IX Configuration Guide
- J2220-61006** SNAP-IX Glossary
- J2220-61007** SNAP-IX Diagnostics Guide
- J2220-61025** HP SNA Products Remote System Configuration Guide

## Support Products

HP offers a spectrum of support service products to help plan, implement, operate, and manage your multivendor network throughout the network lifecycle.

For more information, contact your HP Representative, or refer to the HP data sheets for specific support services.

Customers with hardware support agreements must add the appropriate level of coverage for the link product to their support agreements.