

NS/1000

Do you need to transmit data collected in automated test applications from one processor to another? Do you need to pass information between inventory and process control applications? Do you need to connect HP 1000 A-Series processors to HP 3000 or HP 9000 processors? If your answer to any of these questions is yes, NS/1000 is for you.

NS/1000 Offers

- Support for the 10 megabits per second IEEE 802.2/802.3 compatible LAN/1000 Link.
- Connections to HP 3000 and HP 9000 systems.
- Peer-to-Peer programmatic access to programs running on remote systems.
- Industry standards based.

NS/1000

Network Services for the HP 1000 (NS/1000) is the first networking product for the HP 1000 A-Series that supports the high-speed IEEE 802.3 LAN/1000 Link product. NS/1000 provides high-performance, user-friendly networking between HP 1000 A-Series computers and HP 3000 and HP 9000 systems. Users and programmers can easily transfer files between processors without worrying about all the technical details of error checking and message routing. NS/1000 implements peer-to-peer interprocess communication between HP 1000 A-Series and is backward-compatible with DS/1000-IV.

Typical Applications

NS/1000's powerful system-to-system communication services make a number of applications possible:

- **Factory floor applications.** NS/1000 with the LAN/1000 Link provides high speed communication between HP 1000's acting as manufacturing cell and floor controllers.
- **Automated test applications.** NS/1000 allows the transfer of data from one HP 1000 system to another for data consolidation or analysis.
- **Inventory and process control applications.** NS/1000 allows an HP 1000 system performing process control to share data with an HP 3000 system running an inventory control application.
- **Computer integrated manufacturing applications.** NS/1000 enables an HP 1000 system in a manufacturing environment to receive product design data directly from an HP 9000 engineering workstation.

Features and Benefits

NS/1000 offers you:

- **Support for the 10 Mbps IEEE 802.2/802.3 compatible LAN/1000 Link.** This allows higher throughput than the HDLC or BSC links. With a LAN connection you get lower connection costs and better connectivity because every system requires only one connection to the network.
- **Easy, reliable and cost-effective access to HP 3000 and HP 9000 systems.** You can copy files interactively or programmatically between HP 1000s, 3000s and 9000s.
- **Peer-to-peer programmatic access to programs running on remote systems.** Processes running on HP 1000 systems can exchange information without a master-slave relationship, freeing programmers from the need to manage such a relationship.
- **Industry standards based solutions.** Besides supporting the IEEE Standard 802.3 based LAN/1000 Link, NS/1000 has been designed in accordance with the International Standards Organization Open System Interconnect Model. In addition, the transport and network modules of NS/1000 are based on the Defense Advanced Research Projects Agency's Transport Control Protocol and Internet Protocol standards. (NS/1000 has not yet been *certified* DARPA compatible.)

Performance

NS/1000 can sustain a data rate of approximately 48 Kbytes per second in a Network Interprocess Communication application between two A900s over the LAN/1000 Link. Further performance data is available from your Hewlett-Packard sales office.

Backward Compatibility with DS/1000-IV

NS/1000 is backward-compatible with DS/1000-IV. Existing user programs written for DS/1000-IV do NOT need to be rewritten. Many of the features of DS/1000-IV are also available with NS/1000:

- **Ability to bypass a "down" system or communication link.** NS/1000 performs reliable, transparent and dynamic message rerouting between HP 1000 systems.
- **Network management and monitoring facilities.** Utilities allow you to retrieve diagnostic information and log and trace network activity.
- **Remote command processing between HP 1000s and between HP 3000 and HP 1000 systems.**
- **Distributed data base access.** Any IMAGE/1000 data base in the network can be accessed.

Note: NS/1000 cannot replace DS/1000-IV on an HP Data Link slave node.

Product Specifications

Operating System and Hardware Requirements

HP 1000 A-Series computers running NS/1000 must have RTE-A PCO 4.0 or later installed. NS/1000 requires 768 kilobytes of main memory and RTE-A requires 256 kilobytes of main memory. Thus, an NS/1000 system must have at least 1 megabyte of memory. All NS/1000 systems must also have at least one disk drive attached. Figure 1 shows the required software and hardware to connect an HP 1000 to an HP 3000 or HP 9000.

Required Software

NS/1000 requires that Virtual Code capability be available on the HP 1000. If you do not have Virtual Code on your system, you must purchase the RTE-A VC + System Enhancement Package. There are three versions of the System Enhancement Package, 92078A, 92078R, and 92078E. See the NS/1000 Data Sheet (P/N 5954-6330) for detailed order information.

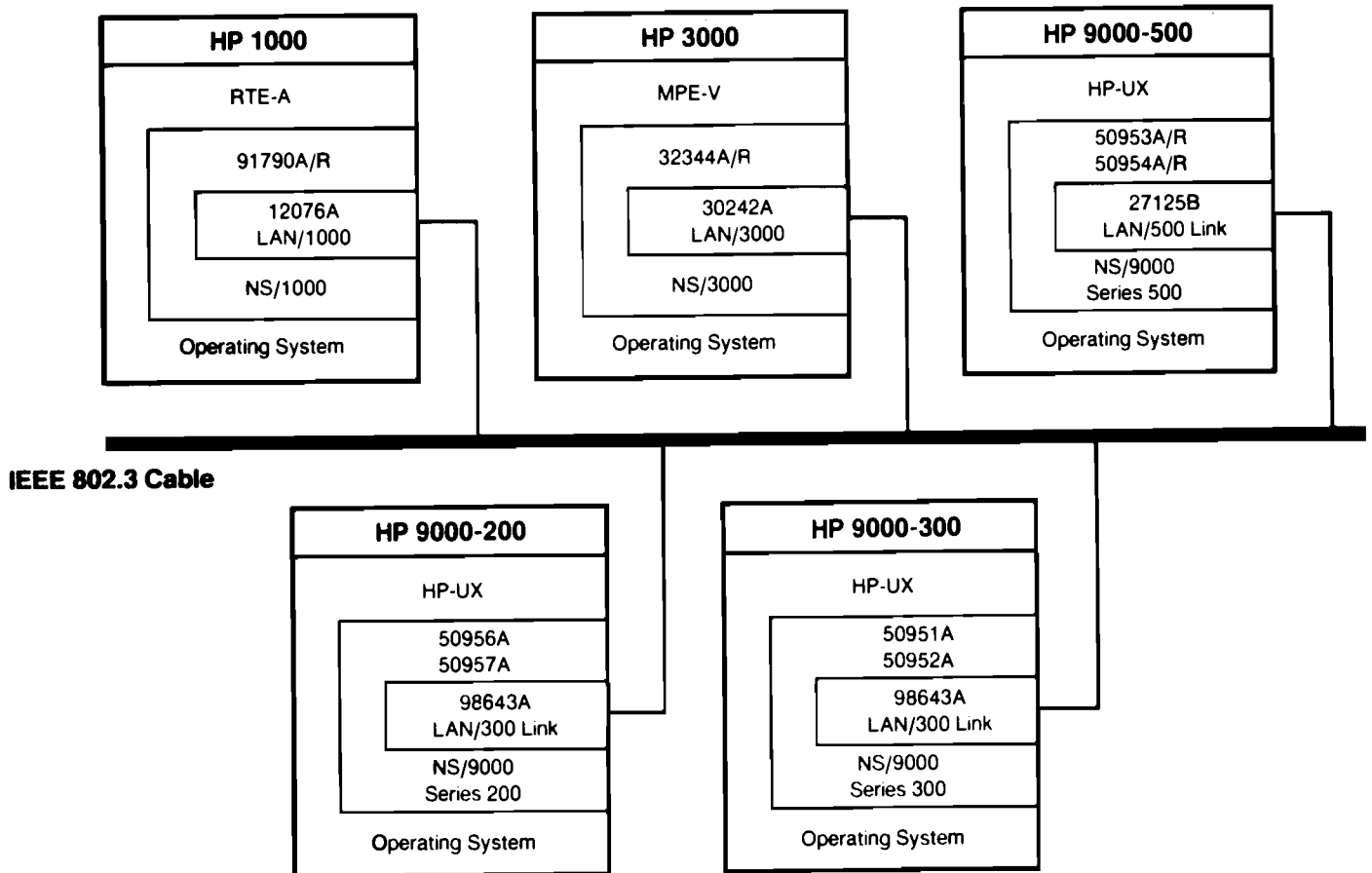


Figure 1. Local Area Network NS/1000 Connections



HP Computer Museum
www.hpmuseum.net

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Ordering Information

There are two order numbers for NS/1000:

For the first copy:

91790A HP Network Services/1000 Right to use on the HP 1000 A-Series

For additional copies:

91790R HP Network Services/1000 Right to copy and Sublicense

A processor option must be specified to indicate which processor (A600, A700 or A900). One media option (022 or 051) must also be specified to indicate cartridge tape or 1600 BPI 9 track tape. For more ordering information, see the NS/1000 data sheet (P/N 5954-6330).

Documentation

The following documentation is available to further describe the NS/1000 product:

- *NS/1000 User/Programmer Reference Manual* (91790-90020)
- *NS/1000 Generation & Initialization Manual* (91790-90030)
- *NS/1000 Maintenance & Principles of Operation Manual* (91790-90031)
- *NS/1000 Quick Reference Manual* (91790-90040)
- *NS/1000 Error Message & Recovery Manual* (91790-90045)

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Product Line Positioning

NS/1000 provides several new capabilities, but there are still situations in which DS/1000-IV will meet the customer's requirements. Accordingly, DS/1000-IV will remain on the price list. Also, Direct Driver Access to the LAN/1000 Link may be appropriate for large OEM's creating special purpose applications or requiring exceptionally high throughput. The following chart illustrates when to recommend NS/1000, DS/1000-IV, or Direct Driver Access to LAN/1000.

Competitive Position

NS/1000 is a highly competitive offering that places HP on the forefront of the networking technology. The Network File Transfer and Network Interprocess Communication capability now being offered meet 80% of the HP 1000 customers' networking needs. With subsequent releases, NS/1000 will be the most competitive system-to-system communication tool in the industry. For further data on just exactly how NS/1000 stacks up against DEC, Data General and IBM, see the Competitive Analysis section in the NS/1000 Sales Guide (P/N 5954-6328).

Customer Purchase Decision Criteria		Customer Needs	
		Yes	No
Price Sensitive	NS/1000	DS/1000-IV	
Less Price Sensitive	NS/1000	1. Try to sell NS/1000 but 2. Fall back recommendation of DS/1000-IV	
Special Purpose Applications or Very High Performance	LAN/1000 Link with Direct Driver Access (12076A & 12079A)	Not Applicable	

Gotchas

While NS is a very powerful networking tool there are certain circumstances in which it should not be sold.

Customer Need	Alternative Solution
Virtual Terminal Capability from HP 1000 systems or HP 3000 systems	DS/1000-IV using point to point link
Very high performance or special purpose data transfer	LAN/1000 Link with Direct Driver Access (Part Numbers 12076A & 12079A)
Data communication to memory based HP 1000 systems	DS/1000-IV using an HDLC Link
Data communication to an HP 1000 system with limited memory (less than 1 Mbyte)	DS/1000-IV
Remote download or virtual control panel functionality	DS/1000-IV
HP 1000 to HP 3000 communication over an X.25 network	DS/1000-IV

Price

The following table lists NS/1000 prices as of February 1, 1985. The upgrade price applies to those customers currently using DS/1000-IV that wish to upgrade to NS/1000.

	A Copy	R Copy	Upgrade
91790-600 (for use on A600 systems)	\$2,700	\$1,900	\$ 600
91790-700 (for use on A700 systems)	\$4,900	\$3,400	\$1,200
91790-890 (for use on A900 systems)	\$7,000	\$4,900	\$1,700

Additional Information

Additional information about NS/1000 is available in the NS/1000 Sales Guide (P/N 5954-6328) and the NS/1000 data sheet (P/N 5954-6330). Information on the various network links over which NS/1000 runs may be found in the Roseville Networks Division Sales Guide (P/N 5953-5007)

Note: A Network Configuration Checkout Service questionnaire must be on file with the Network Marketing Center. Please see Appendix C of the NS/1000 Sales Guide for further information.

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AdvanceNet

March 7, 1986



TO: Technical SR's and Field Sales Management Worldwide

RE: Network Services/1000

NS/1000 Features

A new Local Area Networking product for the HP 1000 is here! The February 1 CPL will include NS/1000. This Network Services product offers:

- * Network File Transfer (NFT) between HP 1000 A-Series computers and HP 3000 and HP 9000 systems over the 802.3 LAN.
- * Peer-to-Peer communications between HP 1000 A-Series computers.
- * Backward compatibility with DS/1000-IV nodes.

NS/1000 Phased Release

IND plans the following three releases of NS/1000:

- * Release 1 includes support of NFT, peer-to-peer communications, and DS/1000-IV Backward Compatible Services over the LAN. It also includes "Full Connectivity" which allows an NS/1000 node on a LAN to communicate with a DS/1000-IV node over an HDLC link configured as a Router. This will allow configurations such as the one depicted in Figure 1 to be implemented. Release 1 will also support X.25 for Backward Compatible Services (i.e., DS/1000-IV to DS/1000-IV and DS/3000). HP plans to begin customer shipments of Release 1 on March 30, 1986.

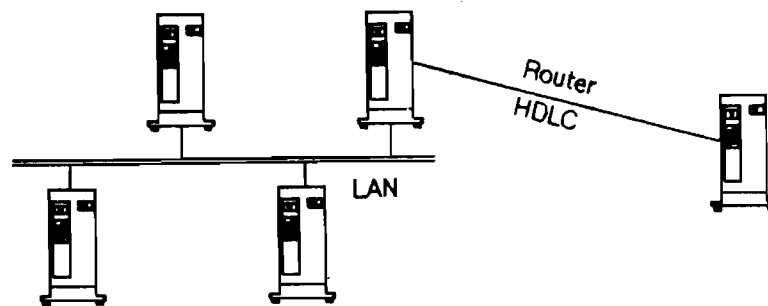


Figure 1

- * Release 2 will include full support of HDLC Links configured as Routers or Gateways. A Gateway is a new type of connection for the HP 1000 based on the HDLC interface card. A Gateway allows users to connect several large networks together into a supernet or "catenet". A typical network using both Routers and Gateways is depicted in Figure 2. Release 2 will also support NS Common Services (Network File Transfer and Network Interprocess Communication) over X.25 Links. HP plans to begin customer shipments of Release 2 in the late Spring of 1986.

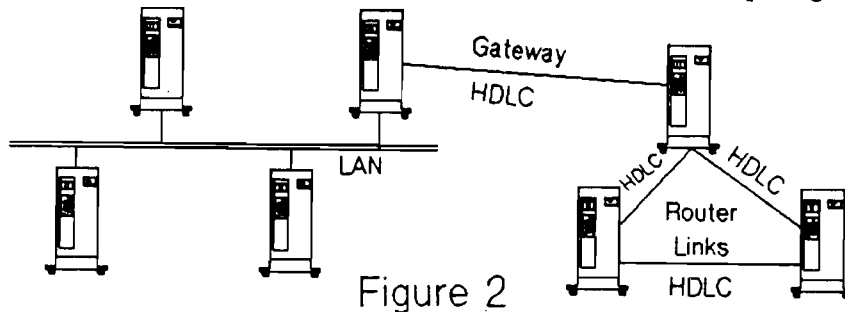


Figure 2

- * Release 3 adds Network File Transfer (NFT) between HP 1000 A-Series computers and HP 3000 and HP 9000 systems over a LAN. HP plans to begin customer shipments of Release 3 in the second half of calendar 1986.

Customers that take delivery of Release 1 or 2 software will receive Releases 2 and/or 3 free of charge.

NS/1000 Field Literature

As a result of surveys conducted during the summer of 1985, IND has changed the format and structure of its field networking literature. IND will develop a Data Sheet, a Sales Brief, and a Sales Guide for each of its new offerings. The last two documents represent significant improvements to our field networking literature. Each Sales Brief contains sections that you can distribute directly to your customers; each Sales Guide contains a table of contents, a detailed index, and headings that you can use to find the information you need quickly and easily.

Attached you will find the NS/1000 Sales Brief. For more information, refer to the NS/1000 Sales Guide (P/N 5954-6328) and the NS/1000 Data Sheet (P/N 5954-6330), which were included in IND's Mailer #10.

It is important to note that DS/1000-IV remains on the CPL. Therefore, you should keep your literature on that product as well as the enclosed NS/1000 documents.

Good luck and good selling!

Sincerely,

Rick Ellinger
Marketing Manager
Information Networks Division