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BNLDAG VAX Networks

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1.0 Networks Introduction

There are four major world-wide networks: TCP-IP network, Bitnet, DECnet and UUCP. They are used as local and wide area networks. They are confusingly known by many network names and network-application-program names.

- TCP-IP network: Internet, Arpanet, Milnet, NYSERNET, NSFnet, CSNET, X25net, EDUNET, telnet, ftp, rlogin, rsh, rcp
- Bitnet: RSCS, Netnorth, EARNnet, Asianet, VNET, KNET, JNET, netwrite, netcopy, netexec
- DECnet: Hepnet, Physnet, Span, CCNET, Easynet, MFENET
- UUCP: Usenet

2.0 Network Functions

There are many network functions such as task-to-task communication, remote job submittal, record-level file access, etc.; however, the main network functions are file transfer, mail and remote login. Remember, even though your computer may be connected to a particular network, it may have only one of the possible network functions. This is true of many networks where only mail is possible.

3.0 BNLDAG Network Connections

The BNLDAG VAX is directly connected to all major networks except UUCP, which is an Unix specific network. In order to link directly to

UUCP, a VAX/VMS computer must buy DEC/SHELL V2.0 from Digital Equipment Corporation; however, the BNLDAG has an indirect, mail function connection to UUCP and numerous minor networks.

3.1 Mail Network

Electronic mail is the sending of a message (mail) from one computer user to another computer user. The ability to leave a message for another user eliminates "telephone tag." The recipient's computer stores the message until he or she logs in and reads it.

With the advent of computer networks, mail can be sent over networks to a user on another computer.

The BNLDAG VAX is directly connected to 3 of the 4 major world-wide networks (TCP-IP) network, Bitnet, DECnet). Mail can be sent to any user on any node in the 3 networks using the standard VAX mail program, MAIL.

Mail can be sent to the remaining fourth world-wide network (UUCP) and numerous minor world-wide networks through a series of intervening computer nodes (gateways). This is done transparently by another special mail program, GMAIL.

4.0 GMAIL (Gateway Mail)

GMAIL is an intelligent mailing program on VAX computers. Its equivalent on IBM computers is SENDGATE. GMAIL is patterned closely after VMS MAIL, but it takes the worry and confusion away from a user on how and what network to use when sending mail to a friend on a remote computer.

GMAIL can reach just about every networked computer in the world, including UUCP nodes, local area nodes in England, Israel, Australia, USA, etc.

5.0 Network vs BNLDAG Network-Command Table

Each network has its own VMS command to initiate a network function. This table summarizes them all.

Network	BNLDAG Network Commands		
	Remote Login	File Transfer	Mail
DECnet	$SET HOST	$COPY	$MAIL >SEND TO:node::user
Bitnet	not available	$SEND/FILE *	$MAIL >SEND TO:JNET%"user@node"
TCP-IP	$TELNET	$FTP	$MAIL >SEND TO:EXOS%"user@node"
UUCP	not available	not available	$GMAIL >SEND TO:user@node.UUCP
Other World-Wide Networks	not available	not available	$GMAIL >SEND TO:

* Bitnet can transfer only one way, out.

6.0 BNL Node vs Network Table

Here is a table of all the computers at Brookhaven National Laboratory and the networks they are linked to.

BNL nodes		Network			
Node	Type	DECnet	Bitnet	TCP-IP	UUCP
BNLCL1	VAX/VMS	X		X	
BNLCL2	"	X		X	
BNLCL3	"	X		X	
BNLCL4	"	X		X	
BNLDAG	"	X	X	X	
All other BNL Vaxs		X			
BNLVMA	IBM3090		X	X	
BNL-GW	VAX/UNIX		X	X	X
BNL-APPOLLO	APPOLLO node			X	
SUNwork stations				X	X
NSLS VAX 8600 UNIX				X	
BNL-DAVICIN	ComputerVision			X	

X - node and network connected.

7.0 References

7.1 DECnet

BNLDAG::BNL$MANUAL:PHYSNET.MAN
EP&S Technical Note 124 - VAX/VMS MAIL
Mail Utility Manual
VMS Phone Utility Manual
VMS DCL Dictionary
Interactive help
    $HELP COPY
    $HELP MAIL
    $HELP SET HOST
    $HELP PHONE

7.2 Bitnet

BNLDAG::BNL$MANUAL:BITNET.MAN
JNET User's Guide
Interactive help
    $HELP SEND
    $HELP RECEIVE

7.3 TCP-IP Network

BNLDAG::BNL$MANUAL:TCPIP.MAN
EXOS TCP/IP Network Software Reference Manual

7.4 UUCP

See Applied Math Department

7.5 GMAIL

BNLDAG::BNL$MANUAL:GMAIL.MAN
EP&S Technical Note 125 -- BNLDAG VAX GMAIL