

# 3+Open LAN Manager Version 1.0

## Release Notes

### Contents

Hardware Requirements .....	1
Disk and RAM Requirements .....	1
Supported Adapter/Protocol Configurations.....	1
Supported Server and Netstation Platforms .....	2
Configuring an EtherLink Plus or TokenLink Plus Adapter Card .....	2
Before Installing 3+Open LAN Manager 1.0 .....	2
Pre-Release Software.....	2
Compaq DOS 3.31 Disk Format Incompatible With OS/2.....	3
Running Installation and Setup Under DOS.....	3
Upgrading from Entry System to Advanced System Software.....	3
Building 360K DOS Boot Diskettes.....	3
Disabling the DOS APPEND Command.....	3
Using NETSETUP to Modify a Remote Server .....	3
Running Installation and Setup in DOS Mode of OS/2.....	3
Installation and Setup Notes .....	4
Checking for Overlayed Drive IDs.....	4
PC Servers Using OS/2 DOS Compatibility Mode .....	4
Creating Generic DOS Netstation Diskettes .....	4
Logging on With a DOS Netstation Diskette .....	5
Performance Notes.....	5
OS/2 Disk Caching .....	5
OS/2 Filesystem Directory Caching .....	5
OS/2 Cache Program Requires LAN Manager Installation .....	5
3+ Compatibility Notes.....	6
3+MENUS Program .....	6
3F & 3P LINK /DIR .....	6
Token Ring Network Upgrade.....	6
3+Name Service .....	6
IBM Application Notes .....	7
IBM LAN Manager Program.....	7
IBM 3270 Emulation Program .....	7
IBM PC Network Program 1.3 .....	7
3Com DOS Maximizer/386 Notes.....	7
Programs Using High Memory .....	8
CONFIG.SYS Entry Format.....	8
Conflicts with Memory Mapped Devices .....	8
3Com TokenLink Adapter .....	8
IBM Token Ring Adapter.....	9
3Com EtherLink Plus Adapter .....	9
3Com EtherLink II Adapter Configured with Memory Mapping .....	9
Software Developer Notes .....	10
NetWkstaSetUid API Change.....	10
Named Pipes With Multiple Threads .....	10
Network Administration Notes .....	10
User Shares Ending in \$ .....	10

Logging of Server Out of Resources Errors.....	10
NET ADMIN Error Messages Missing .....	10
NET ADMIN Sharing of COMM devices .....	10
Remote NET ADMIN Adding Users.....	10
Remote Admin Function Disabled after Network Errors.....	10
NET ADMIN User Count .....	11
NET ADMIN Error Count.....	11
DOS Netstations Auto Reconnection .....	11
General Notes.....	11
IBM PS/2 Model 80 ESDI Controller Problem .....	11
OS/2 DOS Compatibility Mode .....	11
MS-DOS Net Popup Video Incompatibilities.....	11
DOS NET Command Failure When Invalid Drives in Path.....	11
Universal Name Convention (UNC) Names Invalid with Printer .....	11
Floppy Drive Access Problems Under OS/2 .....	12
Expanded Memory Not Supported .....	12

## Hardware Requirements

---

### Disk and RAM Requirements

The following table lists the disk and RAM requirements for installing 3+Open LAN Manager Advanced System:

Machine	Disk Drive	RAM
OS/2 Server	8 MB	4 MB
OS/2 Netstation	2 MB	2.5 MB
DOS Netstation	360K	640K
DOS Netstation with 3Com DOS Maximizer/386	1.2 MB	1 MB

### Supported Adapter/Protocol Configurations

The following table shows the adapter card/protocol combinations supported in this release.

#### DLC/NetBEUI Protocols

Adapter Cards	OS/2 Server	OS/2 Netstation	DOS Netstation
EtherLink (3C501)		√	√
EtherLink Plus (3C505)			
EtherLink Plus with LPO			
EtherLink II (3C503)	√	√	√
EtherLink/MC (3C523)	√	√	√
TokenLink (3C603)	√	√	√
TokenLink Plus (3C605)			
TokenLink Plus with LPO			
IBM Token Ring	√	√	√
IBM Token Ring 2	√	√	√
IBM Token Ring /A	√	√	√

#### XNS Protocols

Adapter Cards	OS/2 Server	OS/2 Netstation	DOS Netstation
EtherLink (3C501)		√	√
EtherLink Plus (3C505)	√	√	√
EtherLink Plus with LPO		√	√
EtherLink II (3C503)	√	√	√
EtherLink/MC (3C523)	√	√	√
TokenLink (3C603)	√	√	√
TokenLink Plus (3C605)			√
TokenLink Plus with LPO		√	√
IBM Token Ring	√	√	√
IBM Token Ring 2	√	√	√
IBM Token Ring /A	√	√	√

## **Supported Server and Netstation Platforms**

For information on supported PC and PS/2 server and netstation platforms, refer to the *3+Open LAN Manager Installation and Setup Guide*.

### **Configuring an EtherLink Plus or TokenLink Plus Adapter Card**

To support the Link Plus Optimizer (LPO) onboard protocol processing, EtherLink Plus and TokenLink Plus network cards require 256K of onboard memory. Currently, the cards come with 256K of memory soldered on the board. Revisions shipped prior to October 1987 came with 128K and require the addition of four (64K by 4) 18-pin, 150 nanosecond DRAM chips (120 nanosecond chips may be substituted). Memory upgrade kits are available through 3Com resellers as 3Com product number 3C505-B-128K.

These cards must be inserted into a 16-bit PC bus slot. This may require changing the interrupt, I/O base address, and DMA channel settings (especially if the card has previously been in an 8-bit slot). The recommended settings are listed here:

Setting	Value
Interrupt	3
I/O base address	300
DMA channel	5

Be sure to check that these settings do not interfere with other peripheral or memory cards that you may have installed in your machine.

Refer to the manual for your EtherLink Plus or TokenLink Plus for installation instructions and additional information.

## **Before Installing 3+Open LAN Manager 1.0**

Before you begin the installation process make backup copies of each of them (using the DISKCOPY utility), label each disk, and use the backups for the installation process. Write-protect all of the backup 3+Open installation disks except *OS/2 Installation* (this disk writes back to itself during the installation process.).

### **Pre-Release Software**

There have been a number of changes and additions to this product from various SDK and Beta versions of 3+Open LAN Manager from 3Com and OS/2 LAN Manager from Microsoft and other vendors. Due to these software changes, it is highly recommended that you perform a complete installation of the 3+Open LAN Manager 1.0, beginning with reformatting of the server hard disk drive.

**Compaq DOS 3.31 Disk Format Incompatible With OS/2**

The hard disk format created with the Compaq DOS 3.31 is not compatible with OS/2. If you have a disk formatted this way and you are installing OS/2, save the data on the disk, and then reformat under OS/2.

**Running Installation and Setup Under DOS**

The Installation and Setup program requires that the FILES= entry in CONFIG.SYS be at least 10 in order to execute under DOS. The default for many versions of DOS is 8. If your machine has less than 10, edit the files= line of CONFIG.SYS to be at least 10 and reboot:

```
FILES=20
```

**Upgrading from Entry System to Advanced System Software**

If you are upgrading your server from 3+Open LAN Manager Entry System to 3+Open LAN Manager Advanced System (or changing from Advanced to Entry System), you must remove the existing software on the server before installing the new software. Remove the software by selecting the Remove LAN Manager software option from the Installation and Setup program.

**Building 360K DOS Boot Diskettes**

Some DOS Netstation installations may fail due to disk size limitations of a 360K disk. If this problem is found, we recommend using a 720K or 1.2MB disk drive.

**Disabling the DOS APPEND Command**

Due to a problem in the DOS APPEND command (all versions prior to 4.0), APPEND should not be used while running the Installation and Setup program. If the APPEND command has already been invoked prior to an installation, disable before running the Installation and Setup program by typing:

```
APPEND;
```

**Using NETSETUP to Modify a Remote Server**

Use of the Installation and Setup program to modify server configuration settings remotely is not supported in this release. In particular, the "target" path cannot be a remote server.

**Running Installation and Setup in DOS Mode of OS/2**

In order to run in the DOS mode of OS/2 Installation and Setup Program requires that the ANSI.SYS and EGA.SYS drivers be specified in the CONFIG.SYS. If either of these files is missing, the program will not be able to display its output. These files are not required to run under DOS or under the protected mode of OS/2.

## Installation and Setup Notes

---

### Checking for Overlayed Drive IDs

After your 3+Open installation to an OS/2 server, OS/2 netstation, or DOS netstation is complete, check to be sure that no NET USE commands in the STARTUP.CMD (for OS/2) or AUTOEXEC.BAT (for DOS) file overlays a disk partition on your hard disk.

For example if you had an E: partition on your hard drive, the command:

```
NET USE E: \\SERVER\OS2APPS
```

would attempt to overlay it. To avoid this situation, edit to appropriate file to change the E: in the NET USE command to another letter (such as G: ).

### PC Servers Using OS/2 DOS Compatibility Mode

The 3+Open OS/2 Installation and Setup program sets up servers to operate in OS/2 protected mode only. Compatibility mode (also known as DOS environment and as 3.x box) is used to run DOS applications under OS/2. To turn the compatibility mode on, change the CONFIG.SYS file using the following steps:

1. **Change line 17 of the file to protectonly=no.**

The line currently reads protectonly=yes.

2. **Restart the server hardware.**

The server now restarts with the compatibility mode turned on.

### Creating Generic DOS Netstation Diskettes

The 3+Open Installation and Setup Program can create DOS netstation startup diskettes which can be customized for individual network users. In many network environments, it may be useful to generate generic netstation startup diskettes. These diskettes can be used in any netstation on the LAN because they prompt for required information. To create a generic DOS netstation startup diskette:

1. Follow the instructions in the *3+Open LAN Manager Installation and Setup Guide* creating a DOS netstation diskette.
2. To edit the AUTOEXEC.BAT file remove the (DOS environment variables) HOME\_SERVER= and HOME\_SERVER\_SECURITY. The resulting DOS netstation diskette provides a generic logon and network access. All necessary information will be prompted for by the logon process.

### **Logging on With a DOS Netstation Diskette**

When the NET LOGON command is issued from the AUTOEXEC.BAT file, a program called DLMLOGON is automatically started. This program validates the user name and password and initiates communication with the network. The DLMLOGON program does the following:

- Prompts for a user name.
- Looks for a DOS environment variable called HOME\_SERVER. If HOME\_SERVER does not exist, the DLMLOGON program prompts for the name of the home server and sets the HOME\_SERVER environment variable accordingly.
- Looks for the DOS environment variable called HOME\_SERVER\_SECURITY. If the HOME\_SERVER\_SECURITY environment variable is not set, the DLMLOGON program prompts the user for the type of security used at their home server. (Valid responses are U for User or S for Share.)
- If user security is specified, the DLMLOGON program also asks for the user's password. In user security mode a link to the user's home server is made using the user name and password to force a validation of the user name and password. If the user has provided valid information and the server to which they are linking has them listed with a valid account, drive H: on their local netstation is linked to the USERDIRS shared directory.

If the administrator has not created an account on the server for the user, the user logon is not allowed and an "Access denied" message displays at the user's netstation. If the user supplies an invalid password, an "Invalid password" message is displayed.

---

## **Performance Notes**

### **OS/2 Disk Caching**

The OS/2 supplied with this release includes disk caching as an option. The installation of OS/2 turns caching on as the default. The caching can be tuned to suit your network requirements. You should refer to the *Update to Microsoft OS/2 Setup Guide for LAN Manager Servers*.

### **OS/2 Filesystem Directory Caching**

Included with this release is a program which improves server performance by caching file system directory information. The program, FASTOPEN.SYS takes one parameter which is the size of the cache in number of directories. The program will operate only with the version of OS/2 provided with this release. To invoke this program, modify the CONFIG.SYS file for the server and add as the last entry to the file:

```
DEVICE=\3OPEN\SERVER\LANMAN\NETPROG\FASTOPEN.SYS 32
```

### **OS/2 Cache Program Requires LAN Manager Installation**

The cache program included with OS/2 in this release and installed by the OS/2 installation requires LAN Manager to be installed with the NETSETUP program before it will execute. If OS/2 is installed and restarted prior to the installation of LAN Manager, an error will occur when the cache program is invoked during startup. If this happens, ignore the error and install LAN Manager.

## **3+ Compatibility Notes**

---

3+ and 3+Open networks can operate and coexist together. The document *Managing Combined Networks: 3+Open and 3+* describes how to do this.

### **3+MENUS Program**

The 3+Menus program versions 1.3.1 and earlier require an update to ensure compatibility with 3+Open. If a DOS workstation has links open to a 3+Open server, 3+Menus hangs the netstation if run. An updated version of this program has been included with this release, and is located in the \APPS\DOSSAPPS directory on the server.

### **3F & 3P LINK /DIR**

The 3F and 3P programs included with 3+Share versions 1.3.1 and earlier will report an internal error in a directory listing if a link to a 3+Open server has been made with the NET USE command. Updated versions of these programs are available through your reseller or from 3Com Technical Support at (415) 969-2099. The 3F2 and 3P2 programs included with 3+ for OS/2 netstations do not have this problem.

### **Token Ring Network Upgrade**

The 3+Open Token Ring drivers follow an IEEE addressing standard which differs from 3+ drivers. Because of this, a combined 3+Open and 3+ Token Ring network will not interoperate unless 3+ netstations and servers upgrade to drivers which are compatible and conform to the IEEE standards. The 3+Open drivers do conform to the IEEE standard and are in the \3OPEN\DOSWKSTA\LANMANDRIVERS directory. These drivers will also work with 3+ and should be used to upgrade your 3+ netstations and servers. The drivers have a letter B at the end and are:

TOK603B.SYS  
TOK605B.SYS  
TOK1060B.SYS  
TOKIBMB.SYS

To upgrade your 3+ computers with the new drivers, copy the new driver to the appropriate directory of the computer's boot volume and then modify the CONFIG.SYS file to replace the old file name entry, such as:

TOK603.SYS

with a B version, such as:

TOK603B.SYS

### **3+Name Service**

3+Open Servers must have server names which are *not* registered as server names or aliases with the 3+Name service. If a server name conflict exists, then OS/2 and DOS netstations will be unable to log in or link to the 3+Open server. When selecting a name for a 3+Open server, use a name which is not already present in the 3+ Name service. If you are upgrading a 3+Share server to 3+Open, be sure to delete its 3+Name service entry.

## **IBM Application Notes**

---

Some of the following notes suggest changes to the file PROTOCOL.INI. This file is located on the DOS boot disk as follows:

\3OPEN\ DOSWKSTA\ LANMAN\ DRIVERS\ PROTOCOL.INI

### **IBM LAN Manager Program**

When using the 3Com DOS Netstation DLC protocol with the IBM LAN Manager Program, the SAPS parameter in the DLC section of the PROTOCOL.INI file must be set to 254:

```
[DLC]
SAPS = 254
```

### **IBM 3270 Emulation Program**

When using DOS DLC with the IBM 3270 Emulation Program the interrupt level used on any 3Com EtherLink and TokenLink adapter cards must be set to 2.

### **IBM PC Network Program 1.3**

IBM's PC Network Program 1.3 and the 3Com DOS DLC can run on a 640K machine with either Base or Extended services. DLC should be configured in the following way:

```
[DLC]
STATIONS = 32
SAPS = 32
```

The NET START command in AUTOEXEC.BAT of the PC Network Program 1.3 should contain the following parameters:

/CAC:0 /RQB:512 /REQ:2 /PC1:128 /PC2:128 /PC3:128 /USN:1

If Extended services is to provide Remote IPL support, then the machine should be dedicated due to memory limitations.

## **3Com DOS Maximizer/386 Notes**

---

The 3+Open LAN Manager Installation and Setup program installs the 3Com DOS Maximizer/386 using parameters which are designed to work for the widest range of combinations of hardware. The program is highly configurable, and a technical reference containing tuning information is provided in 4 text files included with this release. These files are installed on the server as

\3OPEN\ DOSDRV\3COMEMM\ README.LOD  
\3OPEN\ DOSDRV\3COMEMM\ README.EMM  
\3OPEN\ DOSDRV\3COMEMM\ XBIOS.DOC  
\3OPEN\ DOSDRV\3COMEMM\ MULTIMATE.DOC

Some of the following notes suggest changes to the files CONFIG.SYS or PROTOCOL.INI. These files are created by the Installation and Setup program on the DOS netstation boot disk as follows:

```
\CONFIG.SYS
\3OPEN\ DOSWKSTA\LANMAN\DRIVERS\PROTOCOL.INI
```

### **Programs Using High Memory**

The DOS Maximizer/386 program is incompatible with programs which use all of high memory themselves. This includes programs such as MS Windows 2.1 and MS Windows 386 1.0

### **CONFIG.SYS Entry Format**

The DOS Maximizer/386 program requires that there be exactly one space between each parameter entry in the CONFIG.SYS file. If there is more than one space, the remainder of the line will be ignored.

### **Conflicts with Memory Mapped Devices**

The 3Com DOS Maximizer/386 software does not know the location of the memory mapped I/O address space used by any add on devices, including 3Com network adapter cards. Because of this, the Installation and Setup program will always reserve the most frequently used memory mapped locations, C000 to C600, for memory mapped devices. If this is not the location used by your hardware, you must specify the address space to the 3Com memory saving software by editing the CONFIG.SYS file.

After installation, enter the proper start and length of the memory I/O addressing space of the adapter card in question using the RAM keyword. In the case of multiple cards conflicting with the memory saving software more than one RAM keyword should be used. The address parameter values should be entered in paragraph numbers.

The 3Com DOS Maximizer is designed to avoid conflicts with memory mapped devices by setting various parameters. The parameters are listed below for each adapter (the applicable protocol is specified to the right of the adapter name). For example, the IBM Token ring adapter requires one particular setting when run with XNS, and another setting when run with DLC. Take care that you are following the correct procedure listed for both your adapter card and the protocol running on your workstation.

The lines below identify which CONFIG.SYS/ lines must be modified. The line itself is installed by NETSETUP. Only the parameter changes indicated need to be made manually.

### **3Com TokenLink Adapter**

If this adapter is used in a 16 bit slot, the driver must be loaded so it uses DMACHANNEL 0. This is done by adding or changing the DMACHANNEL= entry in the TokenLink section of the PROTOCOL.INI file:

```
[TokenLink]
drivername=TLNK$
dmachannel=0
```

There is no change required if a TokenLink adapter is installed in an 8 bit slot.

### **IBM Token Ring Adapter**

If any IBM Token Ring adapter is used then the 3COMEMM.SYS RAM=, EMS=, and ROM=(PS/2 only) entries in CONFIG.SYS must be changed or added according to the following table:

	XNS Protocols	DLC Protocols
IBM Token Ring Adapter	ram=C800-D600 ems=0	ram=C800-D000 ems=0
IBM Token Ring Adapter 2	ram=C800-D600 ems=0	ram=C800-D000 ems=0
IBM Token Ring Adapter /A	ram=D800-DC00 ems=0 rom=CC00-CE00	ram=D800-DC00 ems=0 rom=CC00-CE00

For example, with an IBM Token Ring 2 adapter and the DLC protocols, the CONFIG.SYS entries would be:

```
DEVICE=\3OPEN\ DOSWKSTA\ LANMAN\ DRIVERS\ 3comemm.sys ram=C800-D000
ems=0
```

With an IBM Token Ring /A adapter and the DLC protocols, the CONFIG.SYS entries would be:

```
DEVICE=\3OPEN\ DOSWKSTA\ LANMAN\ DRIVERS\ 3comemm.sys ram=D800-DC00
ems=0 rom=CC00-CE00
```

If these values do not work correctly on PS/2 computers with the IBM Token Ring Adapter /A, you may have to boot the reference diskette for the PS/2, examine the ROM and RAM addresses, and round up those values to the nearest paragraph. For example if the ROM address is found to be CC000-CDFFF the value used in the CONFIG.SYS line for 3COMEMM.SYS becomes

```
DEVICE=\3OPEN\ DOSWKSTA\ LANMAN\ DRIVERS\ 3comemm.sys ram=D800-DC00
ems=0 rom=CC00-CE00
```

### **3Com EtherLink Plus Adapter**

The combination of 3COMEMM.SYS and adapter-based protocols is not supported in this release. However, this should not pose a memory space problem because the adapter-based protocols leave most of the workstation memory available.

### **3Com EtherLink II Adapter Configured with Memory Mapping**

Some combinations of video display cards and the EtherLink II can produce address conflicts. These will be observed by getting the messages Locator not responding (XNS) and network name not found (DLC) after NETLOGON To fix this problem, change the memory address jumper on the EtherLink II to the DISABLE position. Note that other circumstances may also produce the same messages.

## Software Developer Notes

---

### **NetWkstaSetUid API Change**

The netwkstasetuid API was changed to not allow a servername parameter. The value must be NULL.

### **Named Pipes With Multiple Threads**

If a process does a DosBufReset in one thread and a DosAsyncRead in another thread on named pipes it could get blocked in the file system forever. The process must assure that the DosBufReset is serialized across the threads if the DosBufReset is being issued on a named pipe.

## Network Administration Notes

---

### **User Shares Ending in \$**

Net Profile or NetProfileSave() will not save user shares that end in a \$. Therefore, you should not create shares that end in a \$.

### **Logging of Server Out of Resources Errors**

When the server runs out resources (i.e. NUMBIGBUF) it will log the error only once. If you stop and restart the server this does not get reset. You must stop and restart the workstation to get the logging reset.

### **NET ADMIN Error Messages Missing**

If you use NET ADMIN program prior to starting the workstation, the help (F1 key) will fail with a cannot find help file message. You need to do a NET START WORKSTATION before entering NET ADMIN to get the help commands to work.

### **NET ADMIN Sharing of COMM devices**

The NET ADMIN program does not share COMM devices correctly. It creates the share without permissions, where in fact it should create it with all permissions. The workaround is to create the share from the command line, or to use NET ADMIN to set the permissions on the share after creating the share.

### **Remote NET ADMIN Adding Users**

If the NET ADMIN program is used remotely to add users it will remove access rights previously granted for the user home directory root, causing subsequent netstation logins to fail. If you do this, you should restore the group USERS read and execute (RX) access rights to the user home directory root, \3OPENUSERS.

### **Remote Admin Function Disabled after Network Errors**

The OS/2 LAN Manager Remote Admin function may be disabled if there are excessive network errors, usually occurring under heavy network load.

### **NET ADMIN User Count**

The NET ADMIN program does not include administrators in its user count.

### **NET ADMIN Error Count**

When a log file is reset, the error count is not reset to 0, causing the error count not to agree with the number of entries in the log file.

### **DOS Netstations Auto Reconnection**

If the administrator deletes a session or removes a share name, and then restores the share, DOS netstations may be unable to reconnect automatically. In this case the user will have to do a NET USE to restore the link.

## **General Notes**

---

### **IBM PS/2 Model 80 ESDI Controller Problem**

Some older versions of the PS/2 Model 80 computers with ESDI disk controllers have a data corruption problem which occurs under heavy load. The problem is fixed by updating the firmware on the board. If you are having problems with a PS/2 which has an ESDI controller, contact your dealer or IBM support (1-800-IBM-PROD) for a firmware upgrade.

### **OS/2 DOS Compatibility Mode**

Some versions of vendor OS/2 have stability problems while running in the DOS compatibility mode. This may occur while running some applications.

### **MS-DOS Net Popup Video Incompatibilities**

The MS-DOS Net Popup program included with this release does not work with some video boards.

### **DOS NET Command Failure When Invalid Drives in Path**

The NET command will not operate correctly under DOS if invalid drives in its search path are encountered before it finds its configuration control file, LANMAN.INI.

### **Universal Name Convention (UNC) Names Invalid with Printer**

Use of UNC names for redirected printers is not supported in this release. Use the NET USE command and the device name:

```
NET USE LPT1: \\Server\Printername  
COPY file.txt LPT1:
```

instead of

```
COPY file.txt \\Server\Printername
```

### **Floppy Drive Access Problems Under OS/2**

Some floppy drives have hardware problems under OS/2, especially when network adapter cards are used with burst mode DMA. If you are having problems with the floppy drive on an OS/2 server or netstation, check the DMA mode of the network adapter and make sure it is not using burst mode. Refer to the *3+Open Network System Guide* for information on changing parameters of the supported network adapters.

### **Expanded Memory Not Supported**

The OS/2 supplied with this release does not recognize expanded memory.