MacLAN Connect: How to Install It

Some users need to fuse Macintosh networks to OS/2 nets with Token Ring as unifying backbone. Primarily, Macintosh users create documents that need to be stored on the OS/2 servers and accessed from OS/2 workstations. To a lesser extent, the OS/2 stations share documents with Macintosh users.

This article has been archived and is no longer updated by Apple. MacLAN Connect from Miramar Systems is a solution. MacLAN Connect enables any PC/XT/AT/386 or compatible to function as an AppleShare-compatible server. All hard disks, LAN volumes, or other storage devices are available to AppleShare-connected Macintosh workstations.

MacLAN Connect is AppleShare Phase 2 compliant. It supports EtherTalk, TokenTalk, Internet Routers, and so on. AppleTalk Filing Protocol (AFP) Version 1.1 specifications are fully supported.

Basically, MacLAN turns a DOS system into an AFP server (which appears to Macintosh systems as any other AppleShare server). In addition, if you log on to PC server volumes before running MacLAN, these volumes can be mounted as logical volumes on the MacLAN AFP servers. Therefore, PC LAN volumes and OS/2 volumes can mount on the Macintosh desktop as AFP volumes.

Although, the process of installation is complex, once installed, it works well. Here's an installation process that worked for one site:

Basic Network

Our basic network setup looks like this:

```
--Macs on PhoneNet-----
|
Mac IIx, OS/2 Model 50
with Token Ring card, V1.2 running
running router LAN Server MacLAN
|||
-------------------------MAU------------------
(these are on 4Mb Token Ring)
```


Necessary Software

On the Model 50, you must install the IBM token-ring drivers, Apple token-ring drivers, and the DOS LAN Requester software. DLR is a separate software package that comes with LAN Server. You must install it on a workstation before the station can log on to the server. You also need the PC LAN Support disk to determine the address settings on the IBM Token Ring card. In short, you need:

- DXMAID disk from IBM for IBM Token Ring drivers.

- MacLAN Connect, for the AFP server software and the Apple drivers. Note: In several places in the documentation, you are told to use AppleShare PC as the source of the Apple drivers. This works if you only want to mount the MacLAN CPU's hard disk as an AFP server. This will not work if you want to attach PC LAN or OS/2 volumes as logical volumes, because the ASPC drivers trash the LAN Requester process. In addition, ANET is installed in the AUTOEXEC file by the ASPC installation, and this causes problems. If you follow the documentation here, it won't work.

Instead, use the drivers supplied with the MacLAN package. They're

based on the ASPC drivers. The TOKEN.COM file has been altered to permit the IBM code and Apple code to coexist better.

- IBM Support disk, to check addresses on Token Ring card.

- DOS LAN Requester installation disks (2 disk set)

- Because you want to see the PC server volume on your Macintosh desktop, you'll need to be a user on the PC server. Before beginning this installation, have the system administrator make you a user on the PC server volume. (Under OS/2, this need not mean an entire hard disk; you can designated individual directories as volumes. For our purposes, we designated one directory called COMMON as a shared volume on the OS/2 server.)

Installation Process

Here is the installation process:

1) Install the IBM Token Ring drivers with DXMAID. Check the Config.sys file. It should include:

Files=100
Buffers=50
DEVICE=DXMAOMOD.SYS 001
DEVICE=DXMCOMOD.SYS
DEVICE=DXMTOMOD.SYS

Adjust the files and buffers if your values don't match these. (Note: There is a complete CONFIG.SYS later in this article.)

2) Use the IBM Support Disk to find the ROM and Shared RAM address for the installed Token Ring card.

Typical addresses are:
ROM: DE000
Shared RAM: D8000

These addresses are very important -- you must edit your NET.CFG file later to adjust the MEM 1 and MEM 2 parameters to match these addresses. (If you've ever installed ASPC with Token Ring drivers, you get two screens asking you to set the "primary" and "secondary" memory addresses -- that's what these values are.)

3) Install the DOS LAN Requester software from the IBM disks included with OS/2 LAN Server.

During this process, a directory called DOSLAN is created, and it stores the LAN Requester files as they are unpacked. (Later these files are invoked by commands like "net start" to kick off the network link and "net logon user1" to log on to the server as user1.)

4) Create a directory on the DOS system called MACLAN.

5) Copy the file MACLAN.EXE from MacLAN Disk 1 to the directory and execute it. The file unpacks into the MacLAN executables, including MLCONFIG and MLSERVE.

6) From MacLAN Disk 2, execute the INSTALL.BAT file to install Apple drivers. This creates a DRIVERS directory that contains the appropriate code.

These files look like the usual ASPC code. After installation, check the AUTOEXEC file, and you'll see the familiar code for the ASPC driver installation. However, according to the MacLAN author, some of the

files have been altered, so they can work with LAN Requester.

7) Use a convenient editor to edit the NET.CFG file in the DRIVERS
directory. This file will look like this:

```
Link Support
Buffers 11 640
MemPool 16K

Protocol AppleTalk
DEFAULT TOKEN$ #1
AARP TOKEN$ #1 H(0002) L(6) B(C00040000000)

Link Driver TOKEN$
# IBM Token-Ring Network Adapter/A (MicroChannel)
INT #1 2
MEM #1 DE000 0200
MEM #2 D8000 0400
PORT #1 A20 8
PORT #2 2F0 8
PS/2 Slot?
Protocol AppleTalk AA080007809B
Protocol AARP AA00000080F3
```

8) Here are the important pieces:

* Change Buffers and Mempool to these figures.

* INT specifies the interrupt for the card. 2 is OK for Mod 50.

* Remember those ROM and RAM addresses from the IBM Support
disk? Set MEM 1 to the ROM address for the Token Ring card.
Set MEM 2 to the shared RAM address for the card.

9) Do a warm reboot with Ctrl-Alt-Del. You should see messages indicating
that the IBM drivers are loading, followed by the Apple drivers loading.

10) Run DOS LAN Requester and log on to the PC server. This establishes
a logical connection between the MacLAN DOS CPU and the remote server
volume. In this case, you have designated a directory called COMMON on
the OS/2 server as logical volume X. Once you establish the
connection, you can log on to the X volume and directory as usual.

11) Run MLCONFIG. This is the MacLAN configuration program, similar to
AppleShare Admin program. You set up Macintosh users and groups as
usual. The key piece is that you specify the volumes (including the
logical attached volumes) that you want to appear as AFP volumes to
Macintosh users. To specify the local Mod50 hard drive as an AFP
volume, you specify the C drive. In this case, to specify the OS/2
directory that is mounted as the logical X drive, we specified the X
drive and the C drive.

This is a nice feature; each volume can be assigned a volume password,
in addition to the generic server password. Many people need the
additional layer of security.

12) Run MLSERVE. (Be sure to run this from the MacLAN directory, or it
can't find the files that it needs.) This kicks off the AFP server
process.

When the AFP server is mounted, Macintosh systems on the LAN can see
the MacLAN server from the Chooser. After logging onto the server, in
our case the C drive and the logical X drive that we had mounted (which
is actually a directory on the OS/2 server) appear in the Chooser
volume list. After users log onto these volumes in the usual

Macintosh way, the volumes mount on the desktop and you're all set.

You can set up an AUTOEXEC file that automates this, but you'll have to
do it manually the first time to set up MLCONFIG files.

Recommendation: MacLAN Connect is a bit harder than the typical Macintosh
application to set up and configure, but once it's up and running, it's a
seamless solution to this problem. The only real problems are on the OS/2
administrator's side, where they have to administer privileges, and the
like, on their server. OS/2 is very much like UNIX in one way: it's very
powerful, with lots of features and matching complexity.

The CONFIG.SYS File

This is final version of our CONFIG.SYS file. We adjusted Buffers and
Files to MacLAN's recommended values.

```
DEVICE=C:\\DOS\\DXMA0MOD.SYS
DEVICE=C:\\DOS\\DXMC0MOD.SYS
DEVICE=C:\\DOS\\DXMT0MOD.SYS
SHELL=C:\\DOS\\COMMAND.COM /E:2000 /P
BUFFERS=60
FILES=100
FCBS=16,8
LASTDRIVE=Z
BREAK=ON
```


The NET.CFG File

This is final version of NET.CFG file in DRIVERS directory created by
MacLAN driver installation. Adjust the Buffers and MemPool settings, if
necessary. The crucial changes to make are in Link Driver TOKEN$. Change
MEM#1 to match the ROM addresses of your Token Ring card and MEM #2 to
match the shared RAM address of your card. You can find these by running
the IBM Support disk for your system.

```
Link Support
Buffers 11 640
MemPool 16K

Protocol AppleTalk
DEFAULT TOKEN$ #1
AARP TOKEN$ #1 H(0002) L(6) B(C00040000000)

Link Driver TOKEN$
# IBM Token-Ring Network Adapter/A (MicroChannel)
INT #1 2
MEM #1 DE000 0200
MEM #2 D8000 0400
PORT #1 A20 8
PORT #2 2F0 8
PS/2 Slot?
Protocol AppleTalk AA080007809B
Protocol AARP AA00000080F3
```


The AUTOEXEC.BAT File

This is a copy of our final AUTOEXEC file. It loads Apple drivers, uses
"net start" command, and "net logon test1" command to log on to OS/2 server
volume as user test1 automatically and launch MacLAN AFP server with
MLSERVE command.

```
echo off
C:\\drivers\\LSL
if errorlevel 1 goto aspc_err
C:\\drivers\\TOKNRING /NAME=TOKEN$
if errorlevel 1 goto aspc_err
C:\\drivers\\Atalk
if errorlevel 1 goto aspc_err
C:\\drivers\\compat
if errorlevel 1 goto aspc_err
C:\\drivers\\aarp
if errorlevel 1 goto aspc_err
REM *** Memory usage for the above programs is approximately 66K bytes.
goto skip_aspc
:aspc_err
echo *** A fatal error has occurred while loading AppleShare PC. ***
pause *ASPC*
:skip_aspc
@echo on
PATH=C:\\DOS;C:\\DOSLAN;C:\\DRIVERS;C:\\MACLAN;C:\\TOOLS;C:\\;
SET PMDIR=C:\\TOOLS REM**This is PathMinder directory--ignore
IF ERRORLEVEL 1 GOTO NODLR
NET START REM ** This kicks off network connection
IF ERRORLEVEL 1 GOTO NODLR
net logon test1 REM ** This logs onto specified server vol as test1
:NODLR
mlserve REM*** This kicks off the server
```

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