LaserWriter Printers: TCP/IP Solutions Guide (7/96)

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TOPIC ---

This article provides solutions for printing to an Apple LaserWriter printer
using TCP/IP.

DISCUSSION ---

Although UNIX workstations are the traditional source of LPR printing, LPR is
defined in Internet RFC 1179, and can be implemented on any computer using
TCP/IP networking. The growth of Internet, intranet and Open Systems
environments means Apple customers will see increasing need to support TCP/IP
printing from all computer systems, including mainframes, mini computers,
DOS/Windows, and Mac OS systems.

Since most Apple LaserWriter printers accept print jobs transmitted only by
AppleTalk, customers often need solutions for getting their print job from a
TCP/IP based computer to an AppleTalk-only printer.

There are three possible solutions for printing to an Apple LaserWriter printer
using TCP/IP:

1 - Configure the LaserWriter for TCP/IP printing (LPR)
2 - TCP/IP - AppleTalk conversion (LPR-PAP)
3 - Direct Serial or parallel connections

This article also contains a list of LaserWriter printers which cannot be used
with a TCP/IP connection.

Solution: Configure the LaserWriter for TCP/IP Printing (LPR)
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Apple has provided TCP/IP support in recent, high-end printers. The following
models are designed to support TCP/IP printing:

LaserWriter Pro 810
LaserWriter 16/600 PS
Color LaserWriter 12/600 PS
LaserWriter 12/640 PS

TCP/IP jobs are received through the Ethernet port. These printers support
PostScript, PCL and/or text. Your LaserWriter User's Guide contains complete
configuration information.

Some TCP/IP software requires you to enter a socket number. Apple
LaserWriters use 515, which is the default number specified by RFC 1179.

The LaserWriter Pro 810 also accepts jobs to arbitrarily defined port
numbers.

Solution: TCP/IP - AppleTalk Conversion (LPR-PAP)
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If you have a non-TCP/IP LaserWriter, you can translate LPR print jobs to PAP
sessions in AppleTalk. This allows you to print with a TCP/IP based system and
the printer to receive an AppleTalk print job.

Translation of TCP/IP to AppleTalk is available in several types of products:

Network Hardware

Several vendors have made network hardware products that accept LPR jobs using
TCP/IP and forward them as PAP jobs using AppleTalk. Most of these products are
no longer manufactured, although you may find them installed in established
sites. The only shipping product that Apple is aware of is GatorPrint by Cayman
Systems. This package is software that is installed on Cayman routers.

AppleTalk for UNIX Systems

Most AppleTalk software for UNIX systems include print spooling and conversion
utilities. Here is a partial list of products:

- Helios Ethershare
- K-Spool from Mt. Xinu.
- uShare from Information Presentation Technologies, Inc.
- CAP (Columbia AppleTalk Package) from Columbia University.
- netatalk from the University of Michigan

AppleTalk on Other Advanced Server Operating Systems

In theory, multi-protocol operating systems such as Novell NetWare, Windows NT,
and OS/2 can receive jobs with a TCP/IP spooler and forward them to an AppleTalk
based print spooler. We have seen few customers sites with this configuration.

This solution works for the following LaserWriter models:

Begin_Table

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| LaserWriter Model | Port | Notes |

LaserWriter (original)	LocalTalk	Must be connected to Ethernet using a LocalTalk-Ethernet bridge
LaserWriter Plus	LocalTalk	Must be connected to Ethernet using a LocalTalk-Ethernet bridge
LaserWriter IINT	LocalTalk	Must be connected to Ethernet using a LocalTalk-Ethernet bridge
LaserWriter IINTX	LocalTalk	Must be connected to Ethernet using a LocalTalk-Ethernet bridge
LaserWriter IIf	LocalTalk	Must be connected to Ethernet using a LocalTalk-Ethernet bridge
LaserWriter IIg	Ethernet	
Personal LaserWriter NT	LocalTalk	Must be connected to Ethernet using a LocalTalk-Ethernet bridge
Personal LaserWriter NTR	LocalTalk	Must be connected to Ethernet using a LocalTalk-Ethernet bridge
Personal LaserWriter 320	LocalTalk	Must be connected to Ethernet using a LocalTalk-Ethernet bridge
LaserWriter Select 360	LocalTalk	Must be connected to Ethernet using a LocalTalk-Ethernet bridge
LaserWriter Pro 600	Ethernet	
LaserWriter Pro 630	Ethernet	
LaserWriter 4/600	LocalTalk	Must be connected to Ethernet using a LocalTalk-Ethernet bridge

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Note:
AppleTalk printing is traditionally define as PostScript only, Apple

recommends sending only PostScript over AppleTalk to printers.

Solution: Direct Serial or Parallel Connections
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Most Apple LaserWriter models have serial and parallel ports for Windows
printing. UNIX (and to a lesser degree Windows NT and Novell NetWare) servers
can be configured to receive TCP/IP jobs and spool using a direct connection to
the printer.

Connection configuration (serial and parallel) and page description language
(text, PostScript, and PCL) vary by LaserWriter model.

Although Apple serial and parallel ports conform to industry standards, these
configurations are not supported by Apple Computer, Inc. Apple Technical support
may include articles that describe sample configurations for illustrative
purposes only.

This class of solutions applies to all the LaserWriters listed in the previous
table, as well as the LaserWriter Select 310 printer.

No Solution Available
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The following Apple LaserWriter printers do not have a TCP/IP printing solution,
due to lack of PostScript and/PCL support.

LaserWriter IISC
Personal LaserWriter LS
Personal LaserWriter SC
Personal LaserWriter 300
LaserWriter Select 300

This article provides information about a non-Apple product. Apple Computer,
Inc. is not responsible for its content. Please contact the vendor for
additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you
search for a particular vendor's address and phone number.

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