

PACKAGE ID - 000635IBMPC00 LPDSERVICES

KWIC TITLE - An RFC 1179 Compatible Remote Print Server for
Windows 3.1

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LIMITATION CODE -COPY **AUDIENCE CODE** - LIM

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DESCRIPTION - Internet RFC 1179 describes the protocol to be used for printing files on a remote printer in a TCP/IP network. The protocol is client/server, meaning that the client initiates the print request, and the server receives the request and performs the actual printing locally. This protocol has been in long use on Unix systems derived from the Berkeley Software Distribution, such as DEC's Ultrix and Sun's SunOS. LPD Services implements the server portion of this protocol. It handles both the network communication and conformance with the protocol, and printing using the Microsoft Windows device independent printing interface.

PACKAGE CONTENTS - Software Abstract; Media Directory; Media Includes Executable Module, Auxiliary Material, User's Instructions;

SOURCE CODE INCLUDED? - No

MEDIA QUANTITY - 1 3.5 Diskette

METHOD OF SOLUTION - LPD Services consists of two programs running under Microsoft Windows, known as the print manager and the spooler. The print manager uses TCP/IP networking API provided by Windows Socket (aka WinSock). When a print request results in one or more files being transferred to the PC, then the print manager uses the Windows API to send a message to the spooler. The spooler then looks in a certain directory on the hard disk for control files. Each of these files is transmitted as part of the print protocol, and contains information on the print request as specified in the RFC. The spooler reads each of these files and prints data files as specified. The files are deleted if and when the spooler completes a print request successfully.

COMPUTER - IBM PC

OPERATING SYSTEMS - Microsoft or IBM DOS that supports Windows 3.1

PROGRAMMING LANGUAGES - Microsoft C/C++ Version 7.0

SOFTWARE LIMITATIONS - The software currently can accept only one print request at a time. The software can only print text files.

SOURCE CODE AVAILABLE (Y/N) - N

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UNIQUE FEATURES - The software provides features under Microsoft Windows 3.1 that are normally seen on Unix workstations and larger computers.

RELATED SOFTWARE - This software depends on Microsoft Windows 3.1 and Windows Sockets 1.1 being installed.

OTHER PROG/OPER SYS INFO - The print manager and spooler use the directory 'spool nlpd' for storage of files. The print manager uses the file 'seqno' to store a unique sequence number. The print manager and spooler use the file 'translat' to associate remote filenames with local DOS filenames. Files that start with 'CF*' are control files. They are transmitted as part of the protocol, and written by the print manager. The spooler reads the control file, uses information in it to print data files, and then deletes the control file. Files that start with 'DF*' are data files. They are also transmitted as part of the protocol, and written by the print manager. These files are identified in the control file. The spooler prints the data file then deletes it.

HARDWARE REQS - IBM PC or compatible, equipped to support Microsoft Windows 3.1 and network communications via Windows Sockets (aka WinSock) version 1.1. As noted above, the network hardware could be a typical network adapter, such as an Ethernet card, or a modem.

TIME REQUIREMENTS - Time required to print documents depends greatly on the size of the document, the efficiency of the Windows print driver, and the speed of the printer. Let's say that the network throughput is in the order of 10K to 40K bytes per second, which is typical for some LANs. Let's also use an HP LaserJet Series II printer rated as 8 ppm. The LPD Services software supports only plain text so no fancy formatting will be performed. Here a series of rough estimates for printing a single page. Unix LPR client to connect to our print manager 1 sec, protocol exchanges 1 sec, print manager writes files to disk 0.5 sec, spooler reads files from disk 0.5, spooler prints one page using Windows commands 1 sec, Windows print manager invokes device driver 2 sec, printer comes on line, prints one page 4 sec. Total 10 sec. This estimate is within a factor of two of actual experience.

REFERENCES - User's instructions on media.

ABSTRACT STATUS - Submitted December 1993. Released AS-IS December 16, 1993. Contains no source code.

SUBJECT CLASS CODE - PM

KEYWORDS -
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SOFTWARE ABSTRACT

PAGE 3
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COMPUTER OUTPUT DEVICES

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