WLPRSPL V3.0

An LPR based printer spooler for Windows 3.1

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Introduction

WLPRSPL is a program which allows transparent printing from Microsoft Windows 3.1 applications to printers which are reachable over a TCP/IP network using the LPD Protocol (RFC1179). The user installs the correct printer drivers that match the printers he wants to use, and connects them to a local spool file in the same way he would connect a driver to an LPTx port. When an application then prints to such a printer the Windows Print Manager writes the printer data to the corresponding spool file and sends WLPRSPL a special notification (a WM_SPOOLERSTATUS message). The spool file is then renamed by WLPRSPL, entered into its own queueing system, and then later sent to the remote printer. If the print job could be sent successfully the spool file is deleted, otherwise sending is retried. After a user-definable number of unsuccessful retries the user is notified and the local queue is disabled. The user may then enable this queue later when all problems are eliminated, and all files queued up to this time will be sent.

Requirements:

- Microsoft Windows 3.1 and TCP/IP networking software for the PC that offers a WinSock 1.1 compliant WINSOCK.DLL.
- WLPR.DLL Version 1.0 or later.
- WSOCKAID.DLL Version 1.0 or later. Users that run a TCP/IP stack other than FTP Software's should note the comment in the *"Installation"* section below.

Contents

This package contains the spooler (WLPRSPL.EXE) and the supporting libraries WLPR.DLL Version 1.0 pl 0 and WSOCKAID.DLL Version 1.0 pl 0 as well as this documentation in form of a Word for Windows 2.0 .DOC file and a plain ASCII version.

How does the spooler work?

Every printer used within Windows is connected to a so-called "port." Examples are LPT1, LPT2, COM1, COM2 etc. But also normal files can define such ports. When you enter the line

    C:\SPOOL\DRUCKER.DAT=

into the [ports] section of WIN.INI you may later connect a printer driver to this "port." Every print job sent to this port is written to the specified file by the Windows Print Manager. This is what WLPRSPL relies on. WLPRSPL uses a dedicated directory on the PCs hard disk for spooling (i.e. C:\SPOOL). This directory has to be specified the first time you start the program. For each network printer you want to print to you have to chose a unique file name (i.e. HP.PCL for a HP LaserJet in PCL mode). This file name together with the chosen spool directory makes the port (in this case C:\SPOOL\HP.PCL) to which an appropriate Windows Printer Driver can be connected. The filename without path represents the local queue.
The definitions of all local queues are kept in a queue definition file (which I will abbreviate as QDF from now). This is an ASCII file which might be edited using a normal editor. But I suggest that this file be maintained only by means of the configuration dialogs of WLPRSPL. The file contains lines of the form

    remote-queue remote-host spoolfile options

An example for such a line might be

    ich01a4 ich210.ich.kfa-juelich.de HP.PCL v

Each line in this file defines one remote printer. The individual fields of such a definition are separated by one or more spaces and have the following meaning:

remote-queue   Name of the printer queue on the remote print server

remote-host   Internet hostname or address of the remote print server

spoolfile   Unique spool file name (without path)

options   Printing options

If you have selected C:\SPOOL as the spool directory, the port C:\SPOOL\HP.PCL would be created by the example line above when the program starts and the port does not yet exist.

Then you could connect the HP LaserJet printer driver to this port using the control panel. When you later print to it from any windows application, the Print Manager writes the printer data to the file C:\SPOOL\HP.PCL. WLPRSPL then puts the file into its own queueing system and sends the data to the remote printer queue ich01a4 on host ich210.ich.kfa-juelich.de.

Installation

Choose a directory where you want to install WLPRSPL and create it. Move the archive WLPSP*nn*.ZIP to this directory and unzip it with PKUNZIP WLPSP*nn* or any compatible program. Move all *.DLL files to the Windows directory or to another directory that is in your PATH, or include the directory where you installed WLPRSPL into your PATH. Then either create a new Program Manager group or open an existing, and install WLPRSPL.EXE there (please refer to your Windows documentation on how to do this). After that you can start the program for the first time. For your convenience you should also install the spooler in your AUTOSTART group so that it gets launched automatically when you start Windows.

A note about WSOCKAID.DLL: This is a network software vendor specific DLL containing a few functions that WINSOCK.DLL does not offer. Currently.you will not get this DLL from your vendor. The version in this pack was written by me explicitly for FTP Software's PC/TCP stack. The function that WLPRSPL (or better WLPR.DLL) uses is retrieving the user's login name. If you have FTP Software's PC/TCP 2.1 or higher, this DLL will take the needed information from the PCTCP.INI file (or whatever your PCTCP environment variable is set to). If you use a different stack, you may create the following section in your WIN.INI in order to make this version of WSOCKAID.DLL work:

```
[WSockAid]
user=<your_userid>
lprserver=<your_default_lpr_server>
lprqueue=<your_default_queue_on_lprserver>
```

First Start

When you start WLPRSPL for the first time you have to specify the spool directory you want to use. In the dialog that appears you can also create new subdirectories. Once you have selected the spool directory, the place where the QDF shall be located must be defined. It is possible to use a shared QDF that resides on a network drive and which is maintained centrally. The file that you specify does not have to exist at this time. It will be created as soon as you define the first queue in WLPRSPL.
After this first time configuration you may define local queues for all remote printers you want to utilize. This is described in the next section. After this you should connect appropriate Windows printer drivers to those ports.

Defining Local Queues

In order to define local queues in WLPRSPL start the program if not yet running, restore the program window if the program is iconized, and go through the menu (Setup/Queues/Define new queue...) or press Alt-Insert. A dialog pops up where you can enter a new queue definition. The fields in this dialog have the following meaning:

Local Spool File Name:	Name of the spool file (without path) that shall be used for the local queue (required).
Remote Queue Name:	Name of the queue on the remote print server (required).
Remote Host Name:	Internet host name or address of the remote print server (required).
LPR Queue Type:	Type of the files which will be printed. This must be a one character code as defined by RFC 1179 (see Usage Notes). Default is type 'f'.
Banner Page:	Specifies if a banner page shall be printed for each print job (may be overridden by server setup).

When you press OK a new port is created. You can not use a spool file name that already exists. Now you can go to the Control Panel/Printer Setup, install a printer driver that matches the remote printer, and connect it to the previously created port. Take care that all printer characteristics you define match the remote printer. Normally a data stream from a Windows printer driver overrides settings of the remote printer defaults. If you select settings that the remote printer does not support it may hang.

After installing the printer driver you may print to the remote printer from any Windows application.

Adjusting WLPRSPL Parameters

Through the menu (Setup/Timing...) you can get to a dialog box where you can change the following operating parameters of WLPRSPL.

Timer Ticks in sec.   This entry defines the time steps used by WLPRSPL to periodically check for possible spool files. It can be 0 which means that this feature is disabled. When the Print Manager is used there is no need for this spool file polling because WLPRSPL is notified through a message when a spool file is written. But with this feature enabled it is possible to create spool files in DOS sessions and have them automatically entered into the WLPRSPL queueing system (see Usage Notes).

Time to wait for LPR   Time in seconds during which a print job should be completed.
to complete   If it takes longer the user is notified and may cancel the transfer.

Max # of tries to   Max. number of retries a print job is allowed to take before the
send file before   user is notified of the potential problem. If this number is
queue is disabled   reached during a transfer the local queue is disabled and the user gets a notification. All spool files in the queue stay there until the user re-enables the queue.

Normally you can leave the default values as they are. If you notice a performance degradation on slow PCs due to the spool file polling set the *Timer Ticks* to a higher value, or set it to 0 if this feature is not needed. If you often print large documents or you only have a slow link to your print server you may want to set the *Time to wait...* to a higher value.

WLPRSPL Running ...

When WLPRSPL is active you normally don't notice anything of its existance because the spooling is done in the background. So WLPRSPL generally runs as an icon on the desktop. If you want to change something in the settings, restore the WLPRSPL window. In this window you see the following information being displayed:

- the time the spooler was started
- the currently used spool directory
- the currently used Queue Definition File
- a listbox displaying the states of all local queues (more detailed description below)
- the Windows printer driver used for the currently selected (and therefore highlighted) queue

The individual columns in the listbox have the following meaning:

Symbol   If blank the local queue is currently not connected to a printer
                        driver, if ">" it is connected, if "*" it is connected and is
                        currently selected as default printer.

Loc. Queue   Name of the local queue (and of the spool file).

Rem. Queue   Name of the queue on remote print server.

Host   Name of remote print server.

Files spooled   Number of print jobs sent over this queue since WLPRSPL
unsucc./succ.   was started or since the queue statistics were reset.

Files queued   Number of unsent print jobs.

Spool retries   Number of times the current print job was tried to be sent.

Disabled queues are shown with red text. A queue that is active sending a print job is shown
in green, and the statistics are replaced with a progress message.

WLPRSPL Menu Options

In the following list all commands are enumerated that can be executed through the menu. On the right hand side the keyboard short cut is shown.

<u>F</u>iles

<u>D</u>elete next spool file   (Delete)

 Delete next spool file in selected local queue.

Delete all spool files in <u>q</u>ueue

 Delete all spool files in selected local queue.

Delete <u>a</u>ll spool files

 Delete all spool files in *all* local queues.

<u>K</u>ill LPR Task

 A currently running transfer is cancelled.

<u>C</u>ontrol Panel

 Call the control panel.

E<u>x</u>it   (Ctrl-X or Alt-F4)

 Exit WLPRSPL.

<u>Q</u>ueues

<u>S</u>how remote queue status   (Ctrl-Q)

 Shows the state of the remote queue that corresponds to the selected local queue by executing an LPQ request. The dialog box showing the remote queue status then allows refreshing the display and cancelling one or more remote print jobs.

<u>E</u>nable/D<u>i</u>sable queue   (Doubleclick on queue in listbox)

 The selected local queue is enabled/disabled.

S<u>c</u>an queues immediately   (Click right mouse button on WLPRSPL symbol)

 The spool directory is scanned for new spool files immediately.

<u>R</u>eset selected queue   (Ctrl-R)

 The statistics of the selected local queue are reset.

Reset <u>a</u>ll queues

 The statistics of all local queues are reset.

<u>S</u>etup

<u>T</u>iming...

 Activates the dialog described in ***"Adjusting WLPRSPL Parameters"***

<u>S</u>pool-Directory...

 Activates the dialog for selection of the spool directory described in ***"First Start"***.

<u>Q</u>ueues >

 Define <u>n</u>ew queue   (Alt-Insert)

  Activates the dialog for defining a new queue described in ***"Defining Local Queues"***.

 Edi<u>t</u> queue data   (Alt-Enter)

  Activates the dialog for defining a new queue described in ***"Defining Local Queues"***. The dialog is filled with the data defining the currently selected local queue.

 <u>D</u>elete queue   (Alt-Delete)

  Deletes the currently selected local queue.

Reload queue definitions
>   Reloads the queue definitions from the currently active QDF.

Load queue definitions...
>   Activates the dialog for selecting a QDF described in **"First Start"**.

Save queue definitions
>   Saves changes made to a queue definition in the currently active QDF.

Save queue definitions as...
>   Saves the current queue definitions to a QDF which must first be selected. If wanted, this new QDF can be made the currently active QDF, which will then be used the next time WLPRSPL starts.

Changes to queues are not automatically saved. This has to be done either through Setup/Queues/Save queue definitions, or by accepting the automatic saving when WLPRSPL (or Windows) is terminated.

Usage Notes

- When the spool directory is changed after the first installation, new ports are automatically generated for all local queues in WIN.INIs [ports] section. The user then has to manually connect all printer drivers to those new ports. This is currently *not* done automatically.

- If you have a DOS application that can print to a file in addition to printing to a real LPTx or COMx, you can use WLPRSPL to spool those files. Just let the application print to the file that defines the port for the desired network printer (i.e. C:\SPOOL\ HP.PCL). Then there are two possibilities to initiate the transfer: Either you have set the *Timer Ticks* to a non-zero value. In this case you only have to wait for the specified number of seconds, and WLPRSPL inserts the file into its queueing system. Or you switch back to Windows with Alt-Tab and select Queues/Scan queues from the menu.

- The state of all queues (enabled/disabled, number and names of spool files) is saved in the spool directory as file *filename*.SPL when WLPRSPL is terminated, where *filename* corresponds to the name of the QDF. When, for example, the name of the QDF is WLPRSPL.QS, then the name of the queue state file is WLPRSPL.SPL. This file should not be deleted because it is needed to determine to which local queue any unsent spoolfiles belong.

- When querying the status of a remote queue with the "Queues/Show remote queue status" menu option you can also remove one or more remote print jobs by pressing the "Remove remote jobs" button. Then you get a new dialog box where you have to fill in the job numbers of all print jobs you want to cancel, all separated with blanks. You can also first select the lines in the list box that show the print jobs you want to cancel. When you then press the "Remove remote jobs" button, the first whole number found in each selected line (which in most cases is the job number) is put as default into the following dialog.

- The following file types are defined by the LPD specification (RFC 1179) and can be specified in the queue definition dialog. These types inform the server on how to process (or filter) the print data. Normally, since a Windows printer driver generates raw printer data, the type 'v' should be appropriate for all queues. But note that not every print server allows this type for all queues. The LPD that belongs to IBM's AIX

3.2 for example does not like any other type than 'f' for data sent to a PostScript queue; even 'o' (PostScript format) is not accepted. What type you have to select for a given queue depends on the server. A general rule might be: "First try 'v', if this doesn't work try 'l', if this still doesn't work try 'f'." This should cover 99% of all cases (correct me if I'm wrong, that's just my experience with the printers/servers I tested the program with).

v   Raster or binary format
Data is sent to printer 'as is'.
f   Formatted file
All ASCII control characters except HT, CR, LF, FF, and BS are discarded.
l   Print leaving control characters
Like 'f', but control characters are not removed.
o   PostScript file
c   CIF format
Data is treated as CalTech Intermediate Form graphics language.
d   DVI format
Data is treated as T_EX output.
g   Plot file
Data is treated as output from the Berkeley Unix plot library.
n   ditroff output
t   troff output
p   Print with 'pr' command
r   FORTRAN file
1st column of file is interpreted as FORTRAN carriage control.

Licensing and Registration

This software is not free. It is shareware. You are granted the right to test this software for a period of 30 days. After this you have to register the product (see registration form at the end of this document) and, if this applies to you, pay the required registration fee. Again, even if you do *not* have to pay the fee please register the program in order to keep you informed of program updates and to give me a feedback on how much the program is used.

You may redistribute this program to other persons as long as you keep the package complete with all the files that are listed in the *"Contents"* section at the beginning of this document.

If you cannot print the Word for Windows 2.0 version of this documentation and find the plain ASCII version too ugly, and are reachable via e-mail, I can send you this documentation as a PostScript file.

Registration Fee

Individual private users do not have to pay any fee. Educational institutions belong to Category I, all others fall to Category II. Please refer to the following table for pricing according to the number of licenses. A site license allows you to make an unlimited number of copies for your site/company.

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Change Log

Version 3.0 Final Release:

• Added the possibility of removing remote print jobs.

Version 3.0 Beta 2:

- Fixed a bug in the Spool Directory dialog.

One final word ...

Tell me everything you like or dislike about this program in order to let me make it better. Tell me about functions that you would like to see added. Tell me about problems you have encountered.

You can reach me under the following E-mail addresses (first in the list preferred):

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Registration Form

(Please register WinLPR when you decide to use it beyond the trial period of 30 days.)

Name:	
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I would like to register _____ WinLPR 1.0 licenses

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