WLPR2.DLL
Version 2.0b

User's Guide

September 29, 1994

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This document was created with Microsoft Word for Windows 6.0

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Table of Contents

Table of Contents 3
Introduction 5
Copyright: 5
Author: 5
New Features in Version 2.0 6
Setting Properties for Remote Queues 6
DLL Settings 9
Section *Miscellaneous:* 9
Section *Timeouts:* 9
Known problems: 9
Troubleshooting: 10
Change Log: 10

Introduction

WLPR2.DLL contains a set of API functions that allow an application to print to remote printers, query their queues, and remove print jobs from their queues. These printers must understand the LPR/LPD protocol which is defined in RFC 1179. An application that calls this DLL does not need to have any knowledge about the implementation details. It may call functions in this DLL to set/modify properties for individual queues, such as number of copies to print, whether a banner page shall be generated, etc.

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If you want to write a similar DLL that implements the WLPR2 API for another protocol, please feel free to contact me for implementation details.

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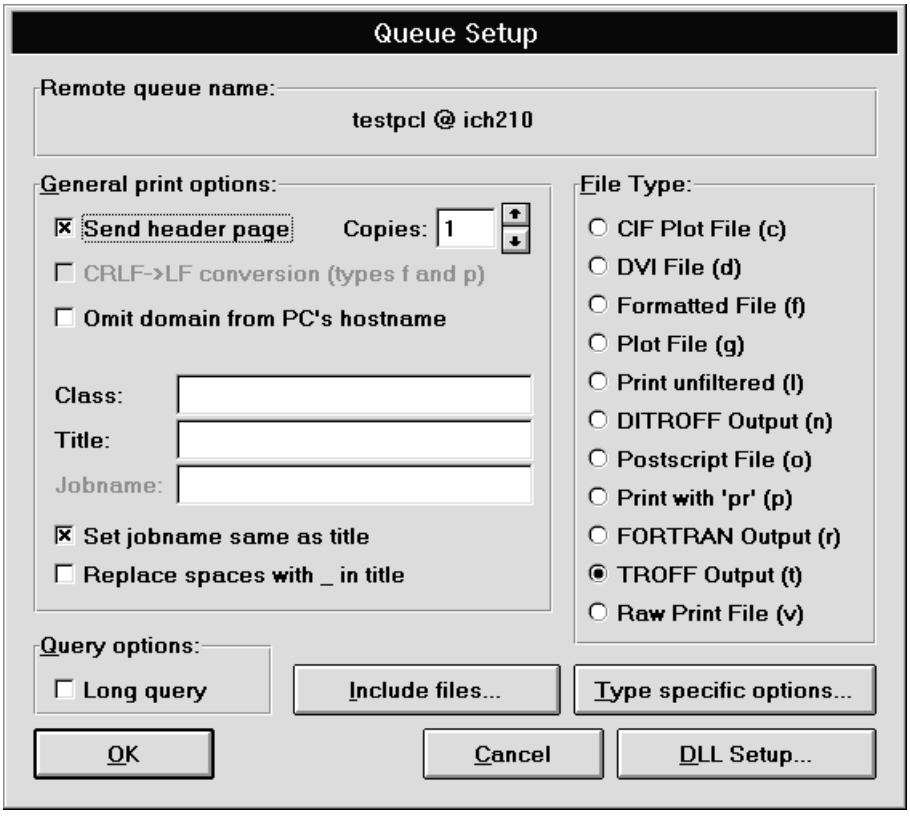
New Features in Version 2.0

The DLL was totally restructured. Now all protocol relevant stuff is totally included in the DLL. E.g. with version 1.x an application had to have an own dialog for setting the queue properties. Now that is all handled by the DLL itself which exports an appropriate function. This makes the calling application independant of the implementation specifics of the transport protocol, and allows it to use several different Protocol DLLs that offer the WLPR2 API side by side.

This DLL is not compatible with WLPR.DLL Version 1.x.

Setting Properties for Remote Queues

If your application allows you to view/change the properties of a remote queue, you get a dialog that looks like this:



In this dialog, the following settings can be made:

Send header page:	If checked, a header page is generated with each print job. If not checked, no header page is printed. Note that this might be overridden by the settings of the remote print server (default: on).
Copies:	Set the number of copies that a print job generates (default: 1).
CRLF->LF conversion	Normally, files going to a queue of type "Formatted File (f)" and "Print with 'pr' (p)" run through a filter that translates CRLF sequences to single LineFeeds. This can be switched off with this check box (default: Filtering is on).
Omit domain from PC's hostname:	If you have long Internet names for your PC's which are too long for your server to be accepted (as can happen with some Macintosh based LPD implementations) you can have the PC's hostname truncated to just the non-domain part.
Class:	Sets the job class of print jobs that go to this queue to a fixed value. This class name might be interpreted by the print server in some way. Check with your local print server administration for classes that have some relevance. (Default: The PC's hostname is passed as class to the server).
Title:	Sets the document title of print jobs that go to this queue to a fixed value. (Default: The title that the printing application passes to the DLL is taken).
Jobname:	Sets the jobname of print jobs that go to this queue to a fixed value. This jobname might be interpreted by the print server in some way. Check with your local print server administration for jobnames that have some relevance. If the next option is checked though, the job title is used as jobname (Default: The name of the file being printed is taken as the jobname).
Set jobname same as title:	If checked, the jobname is set to what the job title is.
Replace spaces with _ in title:	All space characters in the job title are replaced with underscore characters in order to make it one token.

File Type: The given file types are those that RFC 1179 defines, although normally just a small subset is really needed. The problem is that not every server accepts all types, so you might have to try a bit around. You should take the following approach: If PostScript files or plain ASCII files are sent to this queue, you should select "Formatted File". If you send binary printer data (e.g. output from a Windows printer driver) to this queue, you should select "Raw Print File". Note that the type "Postscript File" is not accepted by a lot of LPD implementations.
Plain ASCII files can also be sent with the setting "Print with 'pr'". This normally means that the file is sent through some formatting filter on the print server which allows header lines to be written on the output. If you select this type you can specify the desired page header line as "Document Title", and also modify margin and line width settings.
If you select TROFF/DITROFF output you can specify which fonts shall be used for output.
The file types "Formatted File" and "Print with 'pr'" cause the print file to run through a filter that converts CarriageReturn/LineFeed sequences to a single LineFeed.

Long query If checked, the user gets a more verbose listing when querying the remote queue. Otherwise he gets a standard listing.

There are additional options available when you select one of the document types 'p', 'n', or 't'. In this case the button "Type specific options..." is enabled. If you click on this button, you get another dialog. For the type 'p' you may set the indention and document width in terms of characters. For the types 'n' and 't' you may set different font names for the nroff/troff document to be printed.

The user may specify a specific file to be prepended to the print data as well as one that is appended by clicking on the „Include files...“ button and selecting appropriate files in the next dialog. This allows initialization data or reset sequences to be passed to the printer before or after the actual print job. Note that even for queues of type ‘f’ or ‘p’ for which filtering is enabled, the contents of the prepend or append files are never filtered.

When the dialog contains just an "Ok" button, the settings are saved when this button is pressed. When the dialog contains an additional "OK / Save" button and the user just presses the "Ok" button, the settings apply only to the action that the calling application is about to perform, but they are not permanently changed. If, in this case, you want to make your changes permanent, press the "Ok / Save" button.

The last button "DLL Setup..." allows the user to influence how the DLL operates in general. These settings are described below in the section ***"DLL Settings"***.

DLL Settings

The following settings that influence the behaviour of the DLL can be made in the "DLL Setup..." dialog. Don't change them unless you think there is a reason to do so (e.g. connection problems).

Section *Miscellaneous:*

Debug mode — If checked, the DLL operates in debug mode. See the section ***"Troubleshooting"*** below for details on this mode. Default is *true*.

Reset connection after LPQ — If checked, the socket connection is reset after an LPQ or LPRM request. This was necessary for some older versions of a few TCP/IP stacks in order to reuse TCP port numbers. Default is *true*.

Linger time — If 0, the "linger" socket option for connections is explicitly set to SO_DONTLINGER.
If >0, the "linger" option is set to SO_LINGER (enabled), and the number specified determines the timeout in seconds.
If -1, the socket's linger setting remains the same as it was when WINSOCK.DLL created the socket.
Default is -1 (linger setting remains unchanged). If you have problems with connections that sometimes work and sometimes not (or fail every other time) set this value to something different than -1.

Section *Timeouts:*

Connect timeout — Time (in seconds) after which a not yet established connection to a server fails. Default is 30.

Send/receive timeout — Time (in seconds) after which a send or receive operation to/from a server fails if there is no progress.

Close timeout — Time (in seconds) allowed for a server to react on a connection closed by the DLL (by closing the connection, too) before the connection is reset.

Known problems:

- Some WINSOCK implementations create problems when a program tries to close a non-blocking socket gracefully. The problem can be circumvented by setting the TCP linger option for the socket connection to a non-zero timeout value in the "DLL Setup..." dialog.
- If queries for a remote queue status hang after a few attempts (or every other try) make sure that the item *"Reset connection after LPQ"* in the "DLL Setup..." dialog is checked.

Troubleshooting:

If you have problems with an application that prints by use of this DLL, please don't hesitate to contact me. But please do one thing before that so that I get some information about what is happening: Switch the DLL into debug mode in the "DLL Setup..." dialog. After this WLPR2.DLL writes a debug log to the file C:\WLPRDEB.LST. (Note that you have to stop all programs using WLPR2.DLL and restart them to get this effective because this INI entry is checked at DLL load time). This file is overwritten with each LPR/LPQ/LPRM request. When you did one of those requests and you got an error, immediately rename the above file to some other name before you execute another request. Then mail me this file. When all problems are resolved you can disable debug mode again.

Change Log:

Version 2.0a:

- WSACleanup() was not called when the WINSOCK.DLL was unloaded.
- Default for the "Reset after LPQ" DLL setting changed to "yes".
- Now the user may explicitly define whether files in queues of type "Formatted file (f)" and "Print with 'pr' (p)" shall run through a CRLF->LF filter.
- If the networking software (or WSOCKAID.DLL, respectively) cannot return a username to WLPR2.DLL (because the networking software does not have something like this and the user did not set one with the WSAIDCNF.CPL Control Panel applet coming with WSOCKAID.DLL), a default username *"pcuser"* is used by WLPR2.DLL. The user is notified of this fact with a message box the first time he tries to print. Later prints use this default without further notification.
- Removed a bug which caused an LPQ request to hang on some WINSOCK implementations.
- All timeout parameters for a connection can now be user-defined in the "DLL Setup..." dialog.

Version 2.0b:

- When trying to remove a print job and WSOCKAID.DLL did not return a valid username, the default username "pcuser" was not used.
- Now the user can specify class name, job name and job title as fixed values for a queue.
- New options "Omit domain from PC's hostname", "Set jobname same as title", and "Replace spaces with _ in title".
- Moved document type specific options to sub-dialog.
- Now the query results from Lantronix print server boxes are shown correctly.
- The user now can specify a file to be prepended to each print job as well as one to be appended. This allows to pass personal banner pages or printer initialization data to the printer before or after the actual print data.
- If a PC does not have a hostname assigned, the IP address of the PC will be used. The user is notified of this once.