

# **LINKRIGHT**

# **USER MANUAL**

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## **What is LinkRight??**

LinkRight is a serial and parallel port file transfer utility for OS/2. It features DCF/2 compression for faster transfers and CRC checking for accurate transfers. It includes a PM version and a DOS version. Version 1.1 has LinkRight Cloner which can be used for cloning an entire OS/2 partition (including the OS/2 operating system) from one system to another (in accordance with your licensing agreement with IBM; no bootlegging please). LinkRight handles EAs and HPFS easily. LinkRight is multithreaded, so while you are transferring files in the background, you can continue to queue more files for transfer, change directories on either machine, delete files, etc.

LinkRight is not shareware. It is a commercial shrink wrapped product and version 1.1 is available at CompUSA, Egghead, Indelible Blue and other retailers. Street price is around \$69 without cables and \$89 with cables. Like Microsoft, we have no Manufacturers Suggested Retail Price (MSRP).

## **Sales Information**

LinkRight is available from Indelible Blue (919) 834-7005 or (800) 776-8284, The Corner Store 1-800-I BUY OS2. Egghead, and CompUSA.

For quantity discounts, you should contact:  
Rightware Inc.  
Susan Tremble, Vice President of Marketing.  
Voice (maybe voice mail) (301)762-1151  
Fax (301)762-1185.

# Differences Between Version 1.0 and 1.1

There are too many differences to mention. We suggest that users of LinkRight 1.0 read this manual all the way through. Although it will cover things you already know, it is the best way to get the new information.

\*\*\*\*\*Important\*\*\*\*\*

LinkRight 1.0 is incompatible with LinkRight 1.1. You should use LinkRight 1.1 on both the Local and Remote machines OR you should use LinkRight 1.0 on both the Local and Remote machines.

\*\*\*\*\*

## Installation

To install LinkRight, insert the LinkRight floppy into drive a: (or b:) and type a: (or b:). Then from the a:\> prompt (or b:\> prompt) type install.

If you choose Update CONFIG.SYS, drivers are installed automatically, and your CONFIG.SYS is updated. Backups are made of all files. Your backup CONFIG.SYS will be named CONFIG.BAK, backup of PRINT01.SYS will be named PRINT01.BAK, and the backup of PRINT02.SYS will be named PRINT02.BAK (if replacement is required).

The installation procedure will automatically determine whether you are using OS/2 2.0, OS/2 2.1, or OS/2 2.11 and take appropriate action (if you have selected Update CONFIG.SYS).

If you are running OS/2 2.0, no LPT drivers will be installed and for LPT connections, you should install and use LinkRight 1.0.

To install LinkRight 1.0, look in the directory where LinkRight 1.1 was installed or on the LinkRight 1.1 installation diskette for LINKRT10.ZIP. This is a zip file with the complete version 1.0 of LinkRight. Make a directory, copy this file to the directory, unzip it, and create a program icon for it. No drivers or CONFIG.SYS mods are necessary to run LinkRight 1.0.

If you have OS/2 2.1, you're PRINT0X.SYS will be replaced (if you selected Update CONFIG.SYS). If you have OS/2 2.11, the installation procedure will not update your PRINT0X.SYS.

If you selected Update CONFIG.SYS, you should read the next 3 sections but you do not have to do anything. All drivers, etc. will be installed for you (if necessary).

## **PRINT01.SYS and PRINT02.SYS**

LinkRight 1.1 has a replacement parallel port driver. This driver can only be used with OS/2 2.1 or higher. It also requires the use of PRINT0X.SYS from OS/2 2.11 (Service Pack) or higher. If your system is OS/2 2.1, you can use the 2.11 PRINT0X.SYS. PRINT0X.SYS from the OS/2 2.11 is distributed with LinkRight.

IBM, in it's infinite wisdom, has created an easy way for developers to grab the parallel port. But it requires replacing the standard IBM parallel port driver with a new and improved version. LinkRight 1.1 has this replacement driver included. If you have OS/2 version 2.11 you do not have to do this update. The service pack driver already has the new and improved PRINT01.SYS and PRINT02.SYS.



\*\*\*\*\*NOTE\*\*\*\*\*

LinkRight 1.1 requires the updated driver to work through the parallel port.

Unfortunately, the updated versions of PRINT01.SYS and PRINT02.SYS WILL NOT work with OS/2 2.0. If you have OS/2 2.0, you should use LinkRight 1.1 with serial ports or LinkRight 1.0 for parallel port support. LinkRight 1.0 is included on your LinkRight diskette. See the installation instructions to install 1.0.

\*\*\*\*\*

## **LinkRight LPT Driver**

\*\*\*\*\*IMPORTANT\*\*\*\*\*

Be sure to have a recovery mechanism available before installing LRPAR.SYS and PRINT01.SYS or PRINT02.SYS. There was a report from one user who had OS/2 crash when installing these drivers with OS/2 2.0.

Luckily, he had bootable OS/2 diskettes available and was able to edit the config.sys file to remove the offending drivers.

\*\*\*\*\*

MicroChannel machines MUST use PRINT02.SYS and ISA/EISA machines MUST use PRINT01.SYS, so don't mix and match between these two types of drivers.

### **LinkRight Parallel Port Device Driver**

The following line in your CONFIG.SYS file installs the LinkRight Parallel Port Device Driver:

**DEVICE=C:\OS2\LRPAR.SYS**

The driver will attempt to locate the proper parallel ports, addresses and interrupts to use. This is the recommended installation.

Alternatively, you can specify the address and interrupt that the driver should use:

```
DEVICE=C:\OS2\LRPAR.SYS 3BC 7
```

This means use address 0x3BC and interrupt 7. You should not specify the address and interrupt unless you have problems with letting the driver find the address and interrupt to use.

You do not have to worry about this new parallel port driver affecting your print jobs. The OS/2 2.11 driver will relinquish the parallel port, if asked by another driver to do so. So the LinkRight par port driver asks the IBM driver for the parallel port. The IBM driver complies with the request. When the LinkRight driver finishes, it gives the parallel port back to the IBM driver. Obviously, the only restriction is you cannot do printing while running LinkRight. Before you start LinkRight, or after you exit LinkRight, your print jobs should proceed normally.

After you have installed the par port drivers, shutdown and reboot to get the new drivers running. You are now ready to run LinkRight version 1.1.

## **DCF/2 Compression**

LinkRight uses the DCF/2 compression driver. We found that it provided the best, fastest compression possible. It is SIGNIFICANTLY better than the compression algorithm used with LinkRight 1.0.

This will not compress your entire disk. Compression will only be used to compress packets that are sent through the parallel

port or serial port. For complete disk compression, contact the DCF/2 people.

The following line in your CONFIG.SYS file installs DCF/2 compression:

DEVICE=C:\OS2\DCF2CDE.SYS

## Cables

LinkRight requires LapLink type cables. Do not try to use a normal printer cable because it won't work. Some serial null modem cables work with LinkRight, some don't. LinkRight requires serial null modem cables with 7 pins wired through, while some cables only have 3 wires.

### Serial Pinouts

9 pin    25 pin    25 pin    9 pin

5	7	7	5	Ground to Ground
3	2	3	2	TX - RX
7	4	5	8	RTS - CTS
6	6	20	4	DSR - DTR
2	3	2	3	RX - TX
8	5	4	7	CTS - RTS
4	20	6	6	DTR - DSR

### Parallel Pinouts - Shielded low capacitance cable recommended

25 pin                      25 pin

2	15
3	13
4	12
5	10
6	11
15	2
13	3
12	4
10	5
11	6
25	25

## Quick Start

When you first start LinkRight, you are given a choice of whether you want to make the machine the Local machine or the Remote machine. You should make one machine the Local, and the other Remote. You will control all file transfers from the Local machine.

After making a machine the Remote machine, you should select which port to connect on the Remote machine. That should be the last selection you make on the Remote machine.

For the Local machine, you must also select a port to connect. If you have a box on BOTH machines that says "Establishing a connection Please Wait", there is a problem with the connection. Make sure you selected the proper ports, cables are connected, etc.

A common error is to select a port to connect from the Local machine without selecting a corresponding port on the Remote machine. You must select a connect port from BOTH the Local and Remote machine. If you cannot establish a connection using LPT ports, you should make sure you have the proper drivers installed.

## Navigating Directories

The left side of your screen displays drives, directories, and files in the current working directory of the Local machine. The right side of your screen displays the same information for the Remote machine. The current working directory and drive for the Local and Remote machine is shown on the line above the list of drives, directories, and files.



To change directories on either the Remote computer or the Local computer, double click on the directory you want to change to. The directory “..” is the parent directory. You can change the current working drive by double clicking on one of the drives.

## **Copying Files and Directories**

Use the Copy button to send files and directories from the Local computer to the Remote computer or to send files and directories from the Remote computer to the Local computer.

First, mark files and directories by single clicking the primary (left) mouse button. Then, hit the Copy button. If you have marked files from both the Remote side and the Local side, transfer order is Local to Remote first, then Remote to Local.

Marking and copying a drive is not supported. To copy a complete drive, individually mark all files and directories in the root directory of the drive to be copied. Do not mark the files EA DATA. SF or WP ROOT. SF, since they will not be copied.

The screen is not automatically refreshed after copying. Hit the Refresh Pushbutton to update the screen.

## **Hot Keys**

F10 Moves focus to the Menu

TAB Moves focus to the Local or Remote list of files

Return Selects an entry

Space marks an entry



Arrow Keys move the cursor within a group

## **Directory Synchronization**

To perform **Directory Synchronization**, select **Newer Files Only** from the Options Screen. Change directories on both the Local and Remote computer to the parent directory of the two directories you want to synchronize. Mark the two directories and hit the Copy pushbutton. Note: the directories must have the same name.

## **DOS Version**

The DOS version can only be used on the Remote computer. The DOS version uses command line parameters to select which port to use. At the DOS prompt, type LRDOS.EXE with no parameters for a list of valid parameters.

To install the DOS version, copy the file LRDOS.EXE to a subdirectory on your DOS machine.

## **OS/2 Command Line Version**

LinkRight Cloner can be used from an OS/2 command line and can be used in the Remote or Local mode. LRCLONER uses command line parameters to select the mode, which port to use, and the batch file to use. At the OS/2 command line prompt, type LRCLONER with no parameters for a list of valid parameters.

## **Verify Failures**

Some files may not verify properly. This may or may not be a critical error. LinkRight will not overwrite Read Only files, so if you

try to transfer a file over a Read Only file that already exists, it will not transfer and will therefore fail the CRC and Checksum tests.

## **Batch Mode**

When you select Batch Mode On, you can mark files and hit the Copy pushbutton. No files are sent or received. Instead, file information is saved into a list of files. Later, you can send/receive the files by selecting Run Batch File.

After selecting Batch Mode On and selecting files to send/receive, you should select Batch Mode Off to save the Batch file and return to Normal mode.

If file transfers fail for some reason, a special batch file is created called the Retry file. The file specification is <BASEDIR\RETRY.LRB> where BASEDIR is where you installed LinkRight. You can View the Retry file by selecting View\Retry. If you select Run Retry File, LinkRight will send/receive the files listed.

After creating a Batch file, you can run it by selecting Run Batch File.

The batch file is straight ASCII text. It can be edited with a text editor. Caution should be used when creating a batch file using a text editor. Spaces are significant.

## **Connections**

You can select which port to use for your connection from the Connect menu.

If you have a message box on BOTH machines that says "Establishing a Connection Please

Wait", there is a problem with the connection. Make sure you selected the proper ports, cables are connected, etc.

A common error is to select a port to connect on the Local machine without selecting a corresponding port on the Remote machine. You must select a connect port from BOTH the Local and Remote machine.

If you cannot establish a connection using LPT ports, you should make sure that the drivers LRPAR.SYS and PRINT0X.SYS are installed properly.

Upon completion of a successful LPT connection, LinkRight will negotiate the top speed that it can use between these two specific machines. LinkRight 1.1 takes about 15 seconds to negotiate the proper speed. Please don't do anything while this is going on. Don't even move the mouse. LinkRight wants all CPU time and all bus time so that it can calculate the maximum speed that these two machines can use.

## **Log Options**

You can select options of append, overwrite, and disabled for the Logs. These options control handling of the Event Log, Error Log, and Retry file.

Two kinds of logging take place. Event logging and Error logging. A Retry batch file is also created if there is a file transfer error.

The Event log contains useful information for keeping track of what files have been transferred. You can view the Event log by selecting View\Event Log. The path and name of this file is <BASEDIR\EVENT.LOG> where



BASEDIR is where you installed LinkRight.

The Error log contains useful information for keeping track of any LinkRight errors. You can view the Error log by selecting View\Error Log. The path and name of this file is <BASEDIR\ERROR.LOG> where BASEDIR is where you installed LinkRight.

## **System Options**

### **Copy Subdirectories**

If this box is marked, subdirectories are copied. If this box is not marked, only individually marked files are copied.

### **Copy Newer Files Only**

If this box is marked, only newer files are copied. The date and time checked is the "Last Written" date and time.

### **Force Copy**

If this box is marked, all files are copied regardless of flags or dates.

### **Copy Archive Only**

If this box is marked, all files with the Archive bit set are copied. Other files are ignored. The Archive bit is reset for any files copied using this option.

### **Autostart**

Autostart allows LinkRight to start and attempt to establish a connection from the same port and speed as it used last time. It also uses the same negotiated LPT speed as it used last time. If you are always

connecting to the same exact machine using the same port, give this option a try. It can save you some startup time.

Disable Autostart before connecting to a different machine, even if you want to use the same port. Different machines run at

different speeds, so the LPT speed negotiation must occur for each machine.

## **Verify Options**

There are a few Verify Options you can use. These options are an afterthought and are not well integrated. For internal testing before release, there was debug code to do a verify after every file transfer. It helped to find errors. When this was mentioned to one of the beta testers, he suggested that it be left in the released version.

Verify performs a CRC check and Checksum test on a file by file basis. If you select "Transfer and Verify", it will transfer the file, do the check, and display the results. If you select "No Copy, Verify Only", it overrides the Force Copy options and does not transfer files, just does the Verify test. "No Verify" is self explanatory.

## **Max Packet Size**

Max Packet Size affects thruput and system responsiveness. If you have a serial mouse and are doing LPT port file transfers, you will find that your mouse is useless unless you set a low number for packet size. PS/2 style mice that use high interrupts should allow you to use the maximum packet size. Aren't you glad you got a PS/2 or ThinkPad??

If you are using LPT ports, you should use

caution in setting a high packet size. If both machines are 486s, you should be able to use 1024 as a packet size. If one of the machines is a 386, you are better off selecting 512 as a packet size. If one machine is a 286, you should use 256 as a packet size.

Turbomode implements a sliding window for packets and should result in higher thruput.

## **Retry Warning Delay**

Retry Warning Delay is the time that the Local system will wait for a reply from the Remote machine before displaying a Warning msg. If you are getting lots of warnings, set this value higher.

If you get a Retry Warning, select Retry, and if nothing happens with LinkRight not continuing to transfer files, try opening an OS/2 window and doing a dir command. Do this on both the Remote and Local machines. This should cause the machines to regain sync.

## **Pushbuttons**

### **Delete Pushbutton**

Use the Delete button to delete files and directories. Directories must be empty before they can be deleted.

### **Mkdir Pushbutton**

Use the Mkdir button to create directories on either the Remote computer or the Local computer.



## **Refresh Pushbutton**

The Refresh button will redisplay the file list for both the Local and Remote computer.

## **Cloning an OS/2 Partition with LinkRight Cloner**

LRCLONER.EXE can be used to copy an entire OS/2 partition, including the operating system, to another machine.

## **Initial Preparation**

To prepare to clone an entire OS/2 system, the first thing you should do is get LinkRight 1.1 working between two systems that already have OS/2 installed. Or even one OS/2 machine and one DOS machine. It is much easier to get LR.EXE working than LRCLONER.EXE. Consider it good practice. Doing this first will make sure that the drivers work on your machine. After you have successfully transferred a few files and small directories using LinkRight in PM mode, you can attempt to clone a system.

\*\*\*\*\*Important Note\*\*\*\*\*

Make sure that all files and directories go where you want them to go before doing a complete clone. Users have transferred hundreds of Megs only to find that they transferred the files to a subdirectory rather than the root directory. They had to start over and we don't want to see this happen to you. It's another good reason to practice for a while first with the PM version of LinkRight.

\*\*\*\*\*

A good command to know about is `dir /n`. This will show the files in a directory and the

extended attributes associated with each file. Since cloning OS/2 doesn't work if EAs don't get transferred, you should make sure that EAs get transferred properly.

## **Bootable OS/2 Floppies**

You will need to build OS/2 bootable floppies. You will have to make minor modifications to the first two OS/2 disks, plus you may need the first two original OS/2 disks, depending on your system. You have two possible ways to create these disks. If OS/2 is on CDROM, use the utility on the CDROM to create the Installation Diskette and Diskette 1. If you have OS/2 on diskettes, use DISKCOPY to duplicate the diskettes. DISKCOPY help can be found by typing "help diskcopy" at an OS/2 command prompt.

\*\*\*\*\* IMPORTANT \*\*\*\*\*

DO NOT USE THE ORIGINAL DISKS. THEY MUST BE MODIFIED.

IF YOU HAVE OS/2 ON CDROM, DO NOT USE DISKCOPY. USE THE DISKIMAGE UTILITY ON THE CDROM.

\*\*\*\*\*

## **LPT Drivers**

LinkRight 1.1 has a replacement parallel port driver. This version of LinkRight requires some knowledge and skill from the user to properly install the drivers. We're open to suggestions on how to make this simpler to do.

The Installation Diskette (Diskette 0) can be used as is. Diskette 1 needs to be modified.



## Modifying The OS/2 Bootable Diskettes

Included with the LinkRight 1.1 package is a sample CONFIG.SYS file. You should copy this file to Diskette 1 to replace the CONFIG.SYS file that is there.

There are other differences in the standard OS/2 Bootable Diskettes CONFIG.SYS file and the sample that comes with LinkRight 1.1. If you examine it, you will see that the swapper is enabled, plus a few other minor differences. These differences are important for the successful operation of LinkRight Cloner.

\*\*\*\*\*Important\*\*\*\*\*

You must modify the sample CONFIG.SYS to use either PRINT01.SYS or PRINT02.SYS.

\*\*\*\*\*

Differences between OS/2 2.0, 2.1, and 2.11 apply to your bootable diskettes. If your diskettes were built from 2.11, you can skip the following step. If your diskettes were built from 2.1, you MUST do the following step. If your diskettes were built from 2.0, you cannot use LinkRight Cloner with parallel ports, so skip the following step and instead use serial ports or LinkRight 1.0. If you use LinkRight 1.0 for Cloning (not recommended), please contact Rightware for Technical Support before doing so, since there are some bugs and required workarounds.

Select which PRINT0X.SYS that was distributed with the LinkRight diskette that you want to use on your target machine. Micro Channel machines should use PRINT02.SYS while ISA/EISA machines should use PRINT01.SYS. Copy it to diskette 1.

Copy the file LRPAR.SYS Diskette 1. This is the LinkRight parallel port device driver. Also copy DCF2CDE.SYS to Diskette 1.

You may have to delete some files to make room. we would suggest deleting FDISK.COM and FORMAT.COM from the modified bootable floppies to make room. If you are not using HPFS, you can delete the HPFS specific files, also.

## **Preparing the Target System**

The target system must have a hard drive that is partitioned and formatted. If you have a virgin drive on the target system and wish to use HPFS, use the ORIGINAL OS/2 diskettes to boot, partition, and format the drive. If you have a virgin drive on the target system and wish to use FAT, you can probably boot from a DOS bootable diskette (faster than the ORIGINAL OS/2 diskettes) and partition and format the disk.

The target machine needs a directory for the swapper file. THIS DIRECTORY SHOULD BE CALLED TEMPSWAP. From an OS/2 command prompt type "md c:\tempswap".

The target machine needs a directory to contain temporary files on the hard disk. THIS DIRECTORY **\*\*MUST\*\*** BE NAMED "TEMP". The reason why LinkRight is so strict about this is that LinkRight Cloner will not work if it tries to transfer files that it should not transfer. Therefore all files in the TEMP directory will be skipped.

The target machine must have a few files placed in the TEMP directory. EAUTIL.EXE, CMD.EXE, and LRCLONER.EXE must be in this directory. You can find EAUTIL.EXE and CMD.EXE in your C:\OS2 directory on a machine

that has OS/2 installed. Copy these files to the C:\TEMP directory on the target machines hard disk.

YOU MUST FINISH PREPPING THE TARGET MACHINE HARD DISK BEFORE BOOTING FROM THE MODIFIED OS/2 BOOTABLE FLOPPIES. The Bootable Floppies, with the CONFIG.SYS that comes with LinkRight will not boot unless CMD.EXE is in the C:\TEMP directory and the C:\TEMPSWAP directory exists.

## **Running LRCLONER.EXE**

Now comes the easy part. After you have booted the target machine from the modified bootable floppies, change the current working drive from A: to C:. Change directory to TEMP. Do a DIR command. You should see EAUTIL.EXE, CMD.EXE and LRCLONER.EXE. IT IS IMPORTANT THAT YOU BE LOCATED IN THE TEMP DIRECTORY WHEN YOU START LRCLONER.EXE.

For the Target system, type:

```
LRCLONER T LPT1
```

Alternatively, if you want to use serial ports, make sure you have COM.SYS and VCOM.SYS on the bootable floppies and are installed in the config.sys file. Then you can type LRCLONER T COM2 HI, or whatever to clone using serial ports.

Run the full PM version of LinkRight 1.1 from the Source system. This machine should already be tested to run LinkRight 1.1, so the drivers, etc. are already installed and working. Make it the Local machine. Select Connect/LPT1 and establish a connection between the systems. Now select the files and directories that you want transferred. Do not transfer EA DATA. SF or WP ROOT. SF.



You can transfer everything else. Allow about 20 seconds for them to negotiate speed. Then they should start making directories and a little later start sending and receiving files.

\*\*\*\*\*Hot Tip\*\*\*\*\*

Have your Source machine use a different partition for the swapper. If OS/2 is on C:, have your swap file located on D:. When you clone your Source machine, your swap file (which could be 2 to 12 Meg) won't get copied. This file is not needed on the Target (remember setting your swap file to C:\TEMP\_SWAP ??), so you're just wasting time transferring this file.

\*\*\*\*\*

Alternatively, rather than running the full PM version of LinkRight on the Source system, you can run LRCLONER.EXE from this machine also. It has been reported that to clone OS/2 2.0 you must use this method along with serial ports while using OS/2 bootable diskettes, but it has not been tested extensively. Supposedly, OS/2 2.0 locks certain files when booted with PM so these files won't get transferred. OS/2 2.1 does not lock these files.

## **Restarting a CLONING Operation**

If you have a problem and have to abort a cloning operation and want to restart from where you left off, it's easy to do. First note the file where LRCLONER stopped and retransfer that file. Then set the Newer Files Only option, mark everything and hit the copy pushbutton. It will grind a while, try to remake a bunch of directories that already exist, and then start transferring from where you left off. Check the Status Report to see how things are going.

## **The Final Step**

If the Source machine is idle and it looks like all of the files have been done, the transfer has completed successfully. Select Connect/Disconnect from the Source machine. This should cause the Target machine to exit LRCLONER.

Find an executable file called SYSINSTX.COM. It is on your ORIGINAL OS/2 Installation Diskette. Run SYSINSTX C: to get the OS/2 boot record installed on the Target system. Then comes the important step: reboot the target machine and run a few programs and make sure everything is fine.

## **Potential Problems**

Make sure you read this manual and carefully follow the instructions listed here. If your modified bootable floppies don't boot, read the instructions and try again. If you cannot establish a connection, it is probably a problem with the CONFIG.SYS and LPT address or interrupt.

The bootable floppies should be removed after booting. LinkRight Cloner should run completely off the hard drive and should not need any files that are on the floppies.

If the machines are not identical, you could have problems. You've already noticed that ISA/EISA machines install PRINT01.SYS while Micro Channel machines use PRINT02.SYS. There are HUNDREDS more incompatibilities between Micro Channel and ISA, so don't even try cloning one to the other.

And there are lots of other potential incompatibilities. SCSI vs. IDE, different video cards, CDROMs, sound cards, etc. My

recommendations are to have the Source machine running VGA. After the system is cloned, you can add upgraded video drivers. Optional features like sound cards and CDROMs should also be added after cloning.

## **Hints and Tips**

Be sure to read the file README.TXT for late breaking bugs, tips, workarounds, etc.

DOS and Windows file transfer utilities are single task oriented. You start a transfer, then stare at a status report until it is done. You can do the same thing with LinkRight by starting a transfer, then selecting File / Status. Or you can do multitasking with LinkRight. Start a transfer, and while the transfer is going on in the background, change directories, delete files, queue more files for transfer, etc.

For higher thruput and easier use, you should make the faster of the two computers the Local computer, if possible.

Transfers from Local to Remote are faster due to better code optimization for this transfer direction. So, if you have a choice for which machine to make Local and which to make Remote, make the computer that will be sending the most files the Local system. This optimization is not a huge difference, maybe 10%, but it is something to keep in mind. This consideration overrides the faster computer consideration mentioned above.

The appearance of LinkRight can be easily customized. Open OS/2 System / System Setup / Color Palette and drag a color to a portion of the LinkRight screen. The new color will be preserved between sessions of



LinkRight. You can use the Scheme Palette and Font Palette to do similar customization.

If you are having problems getting reliable transfer completed, turn Turbomode off and select a packet size of 128. This will not help if you are having problems establishing connections, but it could help make transfers more reliable.

Serial port speed is tricky. If both machines have 16550 UARTs, there is a very good chance that you can use HI speed comm (57.2 KBPS) for your connections. If you have a 16550 UART on one machine and the other has a 16450 UART with a fast CPU (33 Mhz 486 or higher), you can probably use HI speed comm. Otherwise, you should probably use MED speed comm (19.2 KBPS). To test for a 16550, go to an OS/2 prompt, type `MODE COM1` (or whichever COM you want LinkRight to use). If you see the line "Buffer = ON", you have a 16550 UART. If the line says "Buffer = N/A" you have a 16450 or a slower 8250.

Strangely enough, a straight DOS machine is more likely to accept a higher speed for COMM. A 12 Mhz 286 class machine should work fine at Med speed.

If you have an original IBM PC, LPT port connections are probably out of the question. Your best chance of establishing a connection on this machine (4.77 Mhz 8088) is through serial ports at Low or Snail speed.

If you attempt to establish a connection and nothing happens, it could be because of a timing problem. Try this: grab the window that says "Establishing a Connection Please Wait" and move it around on the screen. Do this for both Local and Remote. If you still don't get a connection, try opening a

folder. If that doesn't do it, make sure you have drivers installed properly. If you still have problems, call Rightware for technical support.

LinkRight stores all configuration information in the file LINKRGHT.CFG. If you want to make sure that LinkRight performs an LPT speed negotiation on connection, delete this file and the next time you start LinkRight, it will start with the default parameters, which has Autostart disabled. LINKRGHT.CFG is also stored on the Remote machine, so you can also delete that and have Autostart disabled the next time you start LinkRight on this machine.

LinkRight for the Remote computer uses the Options from the Local machine. It gets these options once, at connection time, so be sure to set the options BEFORE establishing a connection.

LRCLONER, when used in the source mode, uses the Options from LINKRGHT.CFG. You can run the PM version of LinkRight, set the Options the way you want, then run LRCLONER in source mode.

For unattended transfers, set packet size low (256 or 128), Retry Warning level high (5 or 6), and Transfer and Verify On. If you set up a transfer like this and let it run overnight, it will have the best chance of completing successfully. Verify On will make it easier to find which files transferred correctly and which did not. Use the Error Log and Event Log to check after the transfer.

\*\*\*\*\*Important\*\*\*\*\*

If you are doing a transfer and want to



cancel it, you must exit LinkRight. (We know, this is an oversight and will be fixed.) DO NOT DOUBLE CLICK on the upper left LinkRight icon to close LinkRight on the Local machine while a file transfer is in progress. This could LOCK UP YOUR OS/2 SYSTEM. Instead, hit ctrl-esc to bring up the task list, select LinkRight from this list, and select close. This will close LinkRight gracefully.

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Some files may not verify properly. This may or may not be a critical error. LinkRight will not overwrite Read Only files, so if you try to transfer a file over a Read Only file that already exists, it will not transfer and will therefore fail the CRC and Checksum tests. Obviously, there are better ways to handle this situation and you will see this improved in a future release.

## **Bugs and Missing Features**

There is a bug in marking a directory to transfer if the directory has a space in the name. It is not a problem if the directory is a subdirectory of another directory that was marked. The work around is to manually create a directory and manually mark the files in the directory that you want to transfer.

Overwriting the Retry file is disabled. You should manually Clear the Retry file.

Unimplemented features are Idle Time Transfers Only and Copy EAs To/From DOS.

Transferring a file from HPFS to FAT causes the filename to be truncated to 8.3 (XXXXXXXXX.XXX). Transferring the file back to HPFS you will get the truncated name.

If you attempt to establish a connection, but decide you want to cancel this connection attempt, wait at least 5 seconds before selecting "Cancel". LinkRight has been known to lockup your OS/2 machine if you try to cancel the connection attempt too quickly. This bug will be corrected in a patch as soon as possible. However, since there is an easy workaround, it was decided to release this version as is.

LRCLONER in source mode when connecting to a DOS machine cannot use compression. Make sure this option is turned off before starting LRCLONER. LRCLONER connections to an OS/2 machine can use compression as long as DCF2CDE.SYS is installed on both machines. The PM version of LinkRight (LR.EXE) will automatically not use compression when connecting to a DOS machine.

You should select Connect / Disconnect from the Local machine to disconnect before exiting LinkRight. Not doing this could cause the Remote machine to lock up.

If you find any other bugs, please let us know so we can fix them.

## **Future Enhancements**

Do not make any important business decisions based on these vague promises.

Planned features for future versions include:

Bug fixes for any bugs found in version 1.1.

Missing features in version 1.1 (Idle time only transfers, EAs to DOS).

Display EA size along with the usual information about each file.

Speed Improvements. Although this version is significantly faster than 1.0, there is still room for improvement.

Local File Manager.

Mini-peer network, ala DOS Interlnk / Intersrv.

Masking of files for display or transfer.

DOS compression.

Network Support. LinkRight will obviously support LanServer nets first and maybe others later.

There is no date set any of these future features. We'll let you know when they're done.

You can assist us by telling us which features you would like to see and which features you do not care about. If you have a feature that is not listed that you would like to have, please let us know. Customer feedback is very important to us.

## **Technical Support**

For technical support, please contact Jeff Tremble, Chief Developer of LinkRight. Compuserve: 71033,3517, OS2AVEN/Other Vendors, or OS2USER/App quest Internet: 71033.3517@compuserve.com Direct BBS: Jeff Tremble, Local Area OS/2 Shareware, (703) 385 4325. Rightware does not have it's own BBS. We use Pete Norloff's OS/2 Shareware BBS.

I also watch comp.os.os2.apps and can answer questions there.

Voice answering machine (301)762-1151, Fax (301)762-1185.

Bug fixes are top priority. It is easy and simple to create a patch and distribute it via CIS and BBSs. Any bug fixes will probably be distributed like this.

If you find bugs that have an easy workaround, we'll make them low priority. If you find bugs that we can duplicate (big IF there, since we do NOT have every type of computer ever made) and there is no easy workaround, we'll fix them as quickly as possible and post a patch.

Phone technical support will be minimal. We prefer a CompuServe msg or FAX with a written description of the problem, please include the following information: Type of machines; speed of machines; Version of OS/2; Version of LinkRight; circumstances of the error; actual error and any error messages displayed. We'll try to get you up and running as soon as possible.



