DuplexDr V1.5 Online Help manual

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1. About This Manual

This User's Manual provides a comprehensive description on how to install, configure and use the DuplexDr package on a 32-bit IBM PC or compatible personal computer running one of the following operating systems: MS Windows NT4/2000/2003/XP. A small volume of the manual reflects simplicity of using this software tool created nevertheless on the basis of up-to-date "high tech" information technologies.

The following items will be covered:

- Purpose and composition of DuplexDr
- Hardware & Software requirements for DuplexDr
- Installing the DuplexDr package
- Configuring DuplexDr
- Using DuplexDr.

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2. Introducing to DuplexDr

With DuplexDr, you can create a pair of virtual serial ports (VSP pair) "virtually connected to each other" in your system. A virtual serial port appears to application software as a "standard" MS Window's communications port (virtually identical to an RS-232 port). Data may be written to VSP by applications, and data may be read from VSP as though it were a standard COM port. Entering VSP pairs, you can create and use "a VSP pairs pool". The pool of VSP pairs can be used to supply any MS Windows application with serial ports as though they were standard serial ports and physically connected in pairs. This feature is available after installation of the corresponding driver included in the package. This allows MS Windows applications to generate or consume data to and from VSP as though the data were being processed by physical hardware.

DuplexDr can be used for sending and receiving data between two separate MS Windows applications running on your PC, thus connecting one application to another by using a VSP pair (e.g., SoftIce and VMWare support VSP as well as HyperTerminal). Also, you can use the tracing utility to document the virtual serial port traffic between your software applications that communicate with such a VSP pair channel (e.g., for application development testing).

Features:

- Full serial port software emulation (i.e. all RS-232 signal lines are emulated and supported as in real null-modem connection)

- Full VSP data transfer software emulation (flow control is fully implemented)

- Compatibility with any standard MS Windows application using standard serial port.

You can use DuplexDr under MS Windows NT4/2000/2003/XP.

What is in DuplexDr

The DuplexDr package is an integrated software tool consisting of the following functional parts:

- XVCINST.EXE – installs the DuplexDr driver
- XVCUNINS.EXE – uninstalls the DuplexDr driver
- XVCACTIV.EXE – checks the status of the DuplexDr driver
- XVCCONF.EXE – configures the DuplexDr package
- XVCTRC.EXE – sets up trace flags for the DuplexDr package
- XVCDW2K.W2K – the DuplexDr driver for MS Windows 2000
- XVCDW40.W40 – the DuplexDr driver for MS Windows NT4

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3. The DuplexDr Requirements

Your computer system must meet the following hardware and software requirements for you to install and use DuplexDr.

- A standard 32-bit IBM PC (e.g., i486, or Pentium) or 100% compatible
- 4 Mbytes RAM (at least)
- 9 Mbytes free hard disk space (at least)
- Color graphics controller supporting SVGA video modes
- Mouse Unit compatible with Microsoft Windows
- Operating system MS Windows NT4/2000/2003/XP

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4. Installing DuplexDr

This chapter describes how to install the DuplexDr software. The chapter assumes that you have one of the Microsoft Windows NT4/2000/2003/XP operating system installed as described in the corresponding user's guide for the product.

This chapter and the rest of the manual refer to the following two installation directories whose names you should specify at the installation steps:

- the home (or destination) directory (in which you install the package components files for all users)

- the configuration files directory (in which you store your particular configuration files, e.g. ini-files).

If you install DuplexDr in a directory different from the default, simply supply your directory name when appropriate directories are requested.

The installation of the package is carried out by running the Setup program.

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Running Setup

The software product comes normally as a self-extracting archive file that contains the package installation files.

The installation procedure consists of two steps:

1. Extracting the package installation files into a temporary distributive directory

2. Running Setup from the distributive directory.

You can run Setup manually in the default mode or use the "silent" installation mode of Setup to simplify multiple secondary installations.

Extracting Package Installation Files

This section describes how to extract the package installation files from the self-extracting file (compressed and created by WinZip).

To extract the package installation files, you should do the following:

1. Download the self-extracting archive file to your hard disk

2. Execute the file and select **OK**.

In the dialog box that appears, you can enter a name for a temporary distributive directory in the **Unzip to folder** edit field or use the **Browse** button to select it. By default, the installation files will be extracted to the distributive directory shown in the field.

Later (after successful installation), you can remove the temporary distributive directory or use it to start Setup for multiple secondary installations.

3. Choose **Unzip** to start extracting the files and then installing the package automatically. The archive file will be uncompressed and the installation files will be placed in the specified distributive directory.

4. After extracting the package installation files, choose **OK** in the following box:

The installation procedure (i.e. running Setup) will start automatically from the temporary distributive directory if you enable the **When done unzipping open: .\setup.exe** check box.

Running Setup

As soon as you start the installation process, you will see a number of dialog boxes with instructions for each installation step. These boxes have three buttons. The **Cancel** button quits the installation process. The **Back** button returns you to the previous step. When you press the **Next** button, the Setup program proceeds to the next installation step.

At any step of installation, you can use the **Cancel** button. The **Exit Setup** window appears.
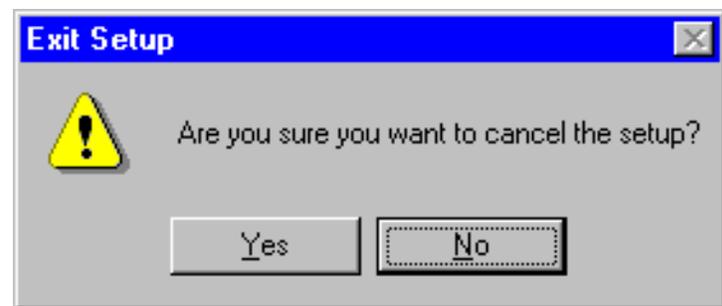
You can confirm exiting or choose to continue installing.

For the first installation of the package, the procedure steps are as follows (with the dialog's names):

* **Welcome**

At this step, it is strongly recommended that you exit all MS Windows programs before running Setup.

* **Software License Agreement**

At this step, you must choose whether you accept all the terms of the Software License Agreement shown within the window or not before running Setup.

* **User Information**

In this box, you should enter the Person name, the Company name, and the product serial number (for registration purposes).
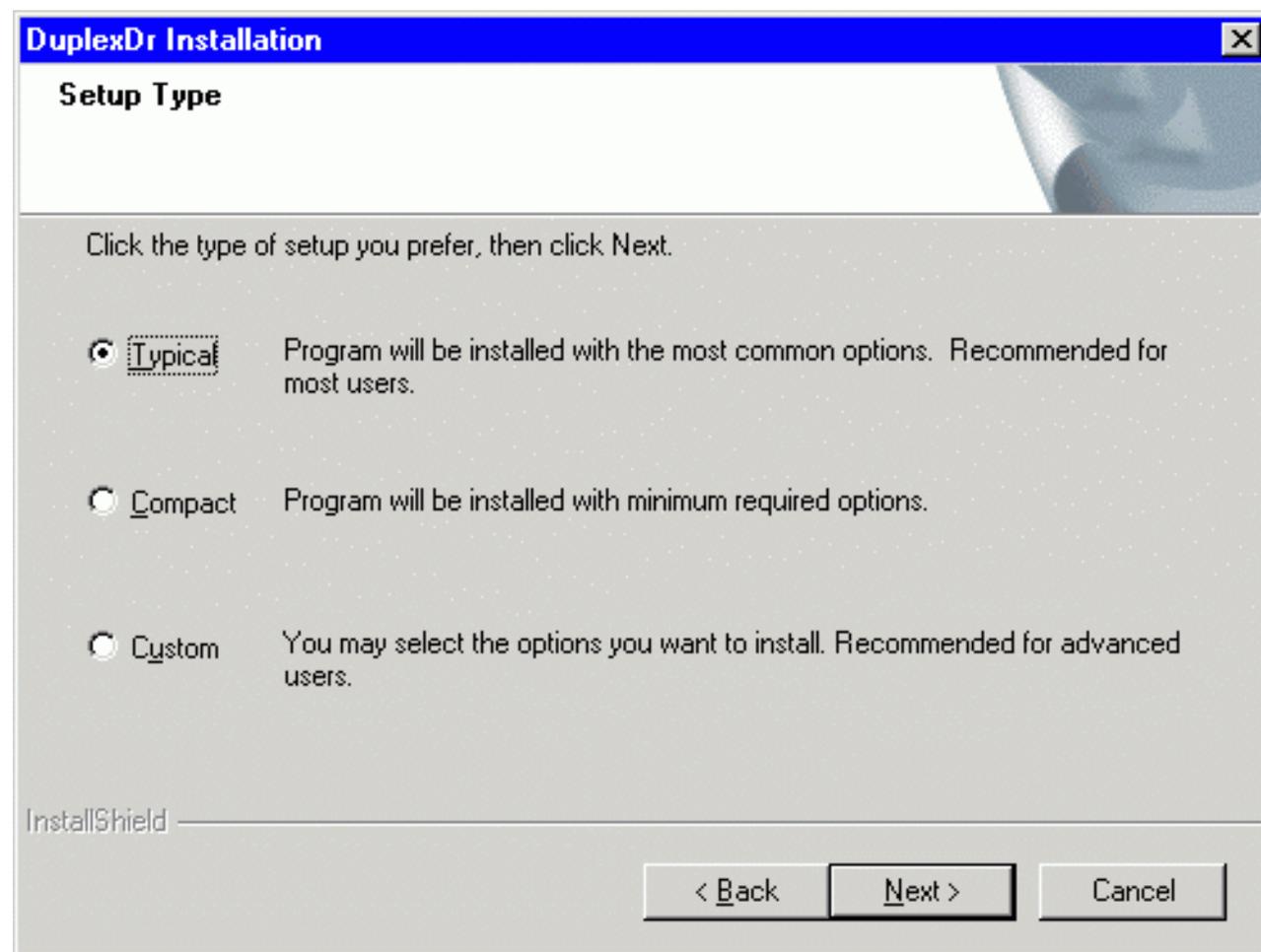
- **Choose Destination Location**

In this box, you should specify the folder where the package will be installed in (i.e. the home directory for the package). You can use the default folder name, enter your destination folder name, or select another folder using the **Browse** button.

To install to the specified folder, click **Next**. If the folder does not exist, Setup will create it. If Setup detects the package in the directory you specified, then it will prompt you to upgrade the package. (See section **Upgrading DuplexDr** below.)

- **Setup Type**

At this step, you can choose components of the package you want Setup to install.

DuplexDr Installation

Setup Type

Click the type of setup you prefer, then click Next.

- ⊙ **Typical**   Program will be installed with the most common options. Recommended for most users.

- ○ **Compact**   Program will be installed with minimum required options.

- ○ **Custom**   You may select the options you want to install. Recommended for advanced users.

InstallShield

< Back   Next >   Cancel

There are three Setup types: **Typical**, **Compact**, and **Custom**.

For the **Typical** type, Setup installs all the components of the package (the most common options).

For the **Compact** type, Setup installs the package without On-Line Help Files (the minimum required options).

For the **Custom** type, the **Select Components** dialog box appears on your display. Choose

components that you wish to install (clicking on the checkmark positions).
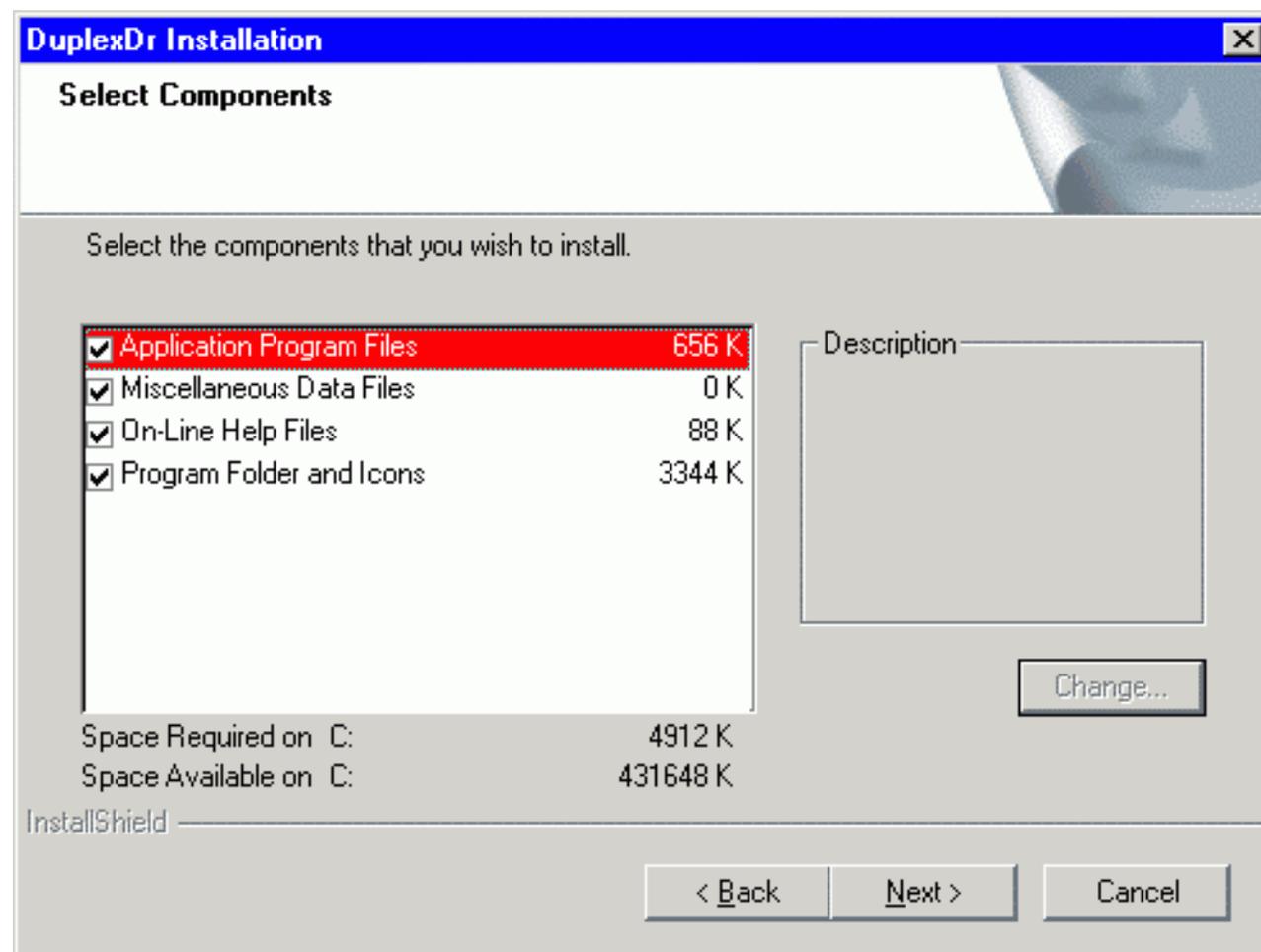
At the bottom of the window, you can see how much **Space Required** will be used to install the components you choose and **Space Available** on your disk.

* **Select Program Folder**

At this step, you should specify the Program Folder to contain shortcuts for the components being installed. In the **Select Program Folder** dialog box, you can use the default folder name, enter a new folder name, or select another folder from within the **Existing Folders** list.

Setup will add program icons to the Program Folder specified.

* **Setup**

With the data specified, Setup begins to install the package. It shows how files of the components are being installed into the destination directory. Finally, Setup creates the DuplexDr Program folder with shortcuts for the package components. It also adds the DuplexDr item to the Programs menu.

* **Setup complete**

At this step, Setup informs you that the package is ready to run. In the **Setup complete** dialog box,

click **Finish** to complete Setup.

You may run the installed programs by clicking program's icons from the DuplexDr Programs' folder.

The Silent Installation Mode

The "silent" installation mode of Setup may be used for multiple secondary installations on different computers working with similar package installation environment (i.e. drive letters, installation directory name, presence of the package, etc).

The "silent" installation process consists of the following two steps:

1. Normal first installing of the package and creating a script file

2. Using the script file for multiple secondary installations.

To create a "silent installation" script file, run Setup with the two options:

setup -r -f1PATH\setup.iss

PATH specifies the path to a directory that will contain the **setup.iss** file (e.g., **C:\aaa\bbb** or **C:** or simply **.**).

With these arguments, Setup performs normal installation of the package and creates the **setup.iss** script file (i.e. the file you specified in the command) in the directory according to the specified path. The file contains data you specified for Setup to install the package. (See section **Running Setup** above.)

Setup performs secondary installations using the **setup.iss** script file, so you have to specify no input data (you only watch "silently" how Setup works automatically).

To perform secondary installation, make sure that the **setup.iss** file you have created at the first step is in the distributive directory (where the **setup.exe** file exists; if not, then copy the **setup.iss** file to the distributive directory) and run Setup with the following command line:

setup -s -wauto

With this argument, Setup will install the package according to the **setup.iss** script file (Setup will search for the file in the distributive directory).

Also, you can use the following command line to perform secondary installation:

setup -s

This is the same as the "-wauto" option with the only difference: the Finish dialog message is suppressed in this case.

After Setup has finished (successfully or not) you can find the ASCII tracing file, **mkltrace.out**, in the distributive directory and look it through for error messages. Note that the "silent" installation may require interactive actions if Setup detects serious problems.

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Running UNINSTALL

You can uninstall the package by choosing the **Uninstall DuplexDr** item from the DuplexDr Programs' folder. The program will prompt you to confirm removing the package from your computer.

When **Uninstall DuplexDr** completed, some elements might not be removed. You should manually remove items related to the application.

Note that all the virtual serial ports created with the virtual serial port driver of **DuplexDr** will be removed from your system.

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Upgrading DuplexDr

If you specify the home directory that contains the package installation files, the Setup program will detect it and prompt you to upgrade or configure it.

If you choose **YES**, i.e. to upgrade the installed package, Setup brings up the **Upgrade Type** window. You can choose **Typical**, **Compact**, or **Custom** installation type (like you do it at step **Setup Type** of the normal installation sequence). This allows you to upgrade the package or to reconfigure it without reinstalling binary programs.

If you choose **NO**, Setup returns you to the **Software License Agreement** step of the normal installation sequence. This allows you to completely reinstall the package.

If you specify the destination directory that exists, Setup brings up the **Choose Installation Type** window.

In this box, if you choose **Reinstall**, Setup will return you to the **Setup Type** step.

If you choose **Upgrade/configure**, Setup returns you to the **Upgrade Type** step. If you choose **Only Configure**, Setup goes to the **Select Components** step. Then, in both cases, the **Choose Configuration Location** window appears.

In this box, you should specify the configuration directory (i.e. configuration path) in which you store your particular configuration files (e.g. ini-files) and the configuration components you selected. Then, Setup prompts you to **Select Program Folder**.

Note that if you choose **Only Configure,** then Setup will make no changes in the home directory of DuplexDr detected.

This page is a part of DuplexDr online Help Manual.
DuplexDr is "Virtual Serial Port Pairs" Utility by Labtam.
DuplexDr creates a pair of virtual serial ports (VSP pair) "virtually connected to each other" in your system.
Visit **Home of DuplexDr** for more information.

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Multi-user Installation

Multi-user installation is intended for installing a single copy of DuplexDr on a disk that will be shared by multiple users. DuplexDr must be configured for each user on each PC it will be used on. Corresponding files that define user's local DuplexDr configuration will be created in a specified directory (see **Choose Configuration Location**).

Multi-user installation is carried out as follows:

1. By running the Setup program, install the package on a disk that will be used for storing the shared copy (i.e. under the home directory of DuplexDr).

The next step must be done by every user of the shared copy.

2. Run the Setup program. In the installation dialogs, you must specify the home directory of DuplexDr for the shared copy (step **Choose Destination Location**), and a local directory where files defining a particular package configuration will be resident (step **Choose Configuration Location**).

Note that these secondary steps make no changes in the home directory of DuplexDr created at the first step.

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5. Configuring DuplexDr

To configure the DuplexDr package, you should launch the XVCCONF utility and then specify a number of virtual serial port pairs with or without the Restore property. You can do this by double-clicking on the **XVCConf** icon in the DuplexDr Programs' folder:

When you start up XVCCONF (with the DuplexDr driver installed), the following dialog box brings up:
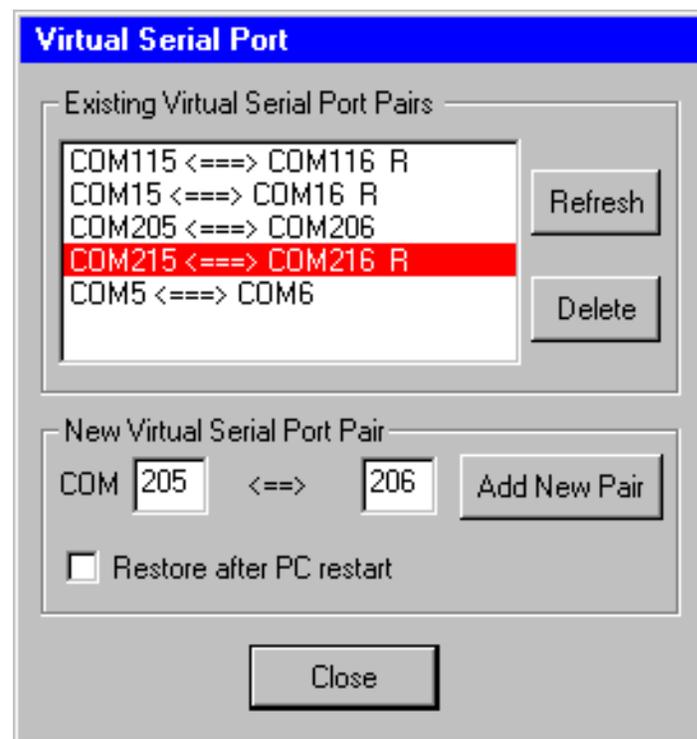
You can create a new virtual serial port pair in the pool by entering port numbers in the **COM** edit fields and pressing the **Add New Pair** button in the **New Port Pair** box. As a result, you will see a new string with serial ports entered. The string means that DuplexDr will create the two virtual serial ports in your system and virtually "connect" them to each other (as though physical ports via null-modem cable), so serial data (in RS-232 protocol) can transfer through such a connection (DuplexDr will emulate the ports and the process).

With the **Restore after PC restart** check box enabled, the added pair is marked with the **R** suffix. This denotes that the pairs will be stored and loaded next session (so you will then see them in the list).

To remove a virtual serial port pair from the list, highlight it and press the **Delete** button in the **Existing Virtual Serial Port Pairs** box.

The **Refresh** button allows you to restore the virtual serial port list to its initial (when beginning the session) state (after you have made some Add/Delete operations on the list).

Close saves your settings and applies them immediately.

The greatest value for the port number is 254, so the maximal number of VSP pairs you can have in your system is 127.

The standard version of DuplexDr allows you to enter up to 10 virtual serial port pairs and the advanced one – up to 127 (according to your order).

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6. Using DuplexDr

With DuplexDr, you can create a pair of virtual serial ports (VSP pair) "virtually connected to each other" in your system. A virtual serial port appears to application software as a "standard" MS Window's communications port (virtually identical to an RS-232 port). Data may be written to VSP by applications, and data may be read from VSP as though it were a standard COM port. Entering VSP pairs, you can create and use "a VSP pairs pool". The pool of VSP pairs can be used to supply any MS Windows application with serial ports as though they were standard serial ports and physically connected in pairs. This feature is available after installation of the corresponding driver included in the package. This allows MS Windows applications to generate or consume data to and from VSP as though the data were being processed by physical hardware.

DuplexDr can be used for sending and receiving data between two separate MS Windows applications running on your PC, thus connecting one application to another by using a VSP pair (e.g., SoftIce and VMWare support VSP as well as HyperTerminal). Also, you can use the tracing utility, XVCTRC, to document the virtual serial port traffic between your software applications that communicate with such a VSP pair channel (e.g., for application development testing).

After you configured DuplexDr, you can launch your software VSP applications to use the settings. For example, you could configure one HyperTerminal as "connected" to COM6 and another HyperTerminal as "connected" to COM17 respectively, and configure DuplexDr with the COM6<==>COM17 pair. Because the DuplexDr driver considers virtual serial ports in pairs as "physically connected", these settings would get both HyperTerminals "connected" to each other (through DuplexDr), so all you type in the first terminal will appear at the second one and vice-versa.

You can transfer files with any data or control commands through such a virtual serial flow connection (i.e. all RS-232 signal lines are emulated and supported as in real null-modem connection, and flow control is fully implemented).

You can configure the virtual serial ports to the maximum speed value MS Windows allows.

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7. Tracing DuplexDr

The XVCTRC utility is designed for setting a number of trace flags (by toggling related check boxes to filter out data of your interest) and passing them to the DuplexDr driver. According to the Trace Flags set, utilities of the package will filter out and save related information into corresponding trace files you can analyse later. The tracing could be used to document the virtual serial port traffic between your software applications that communicate using a VSP pair channel.
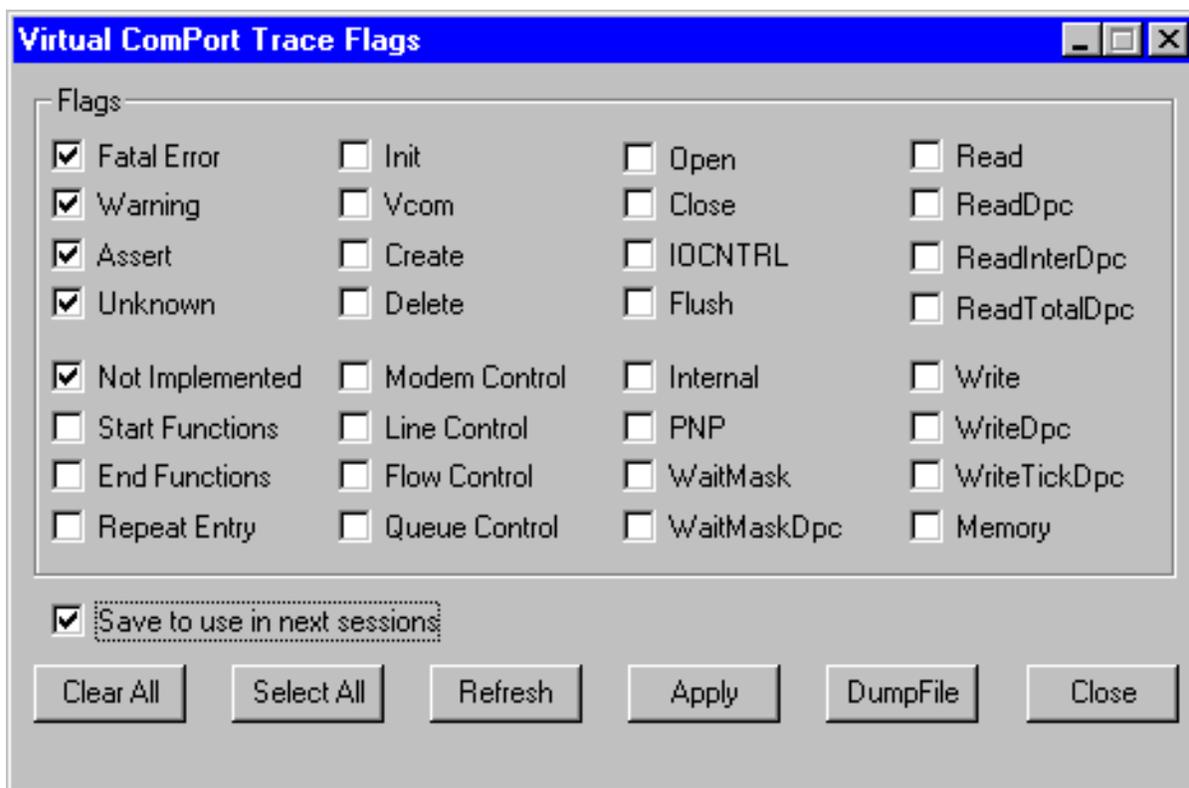
Normally, users should not arbitrarily turn on/off Trace Flags. The flags can noticeably slow down the traffic and can generate a great amount of data. The XVCTRC utility is primarily meant for testing and analysing how your software VSP applications interface to each other while using serial port communication features.

To set up Trace Flags, you should launch the XVCTRC utility. You can do this by double-clicking on the **XVCTrc** icon in the DuplexDr Programs' folder:

xvctrc

When you start up XVCTRC (with the DuplexDr driver installed), the **Virtual ComPort Trace Flags** window appears:

Virtual ComPort Trace Flags

Flags

☑ Fatal Error	☐ Init	☐ Open	☐ Read
☑ Warning	☐ Vcom	☐ Close	☐ ReadDpc
☑ Assert	☐ Create	☐ IOCNTRL	☐ ReadInterDpc
☑ Unknown	☐ Delete	☐ Flush	☐ ReadTotalDpc
☑ Not Implemented	☐ Modem Control	☐ Internal	☐ Write
☐ Start Functions	☐ Line Control	☐ PNP	☐ WriteDpc
☐ End Functions	☐ Flow Control	☐ WaitMask	☐ WriteTickDpc
☐ Repeat Entry	☐ Queue Control	☐ WaitMaskDpc	☐ Memory

☑ Save to use in next sessions

[Clear All] [Select All] [Refresh] [Apply] [DumpFile] [Close]

If you click the **Close** button, XVCTRC closes the window with no changes.

Pressing the **Apply** button passes the Trace Flags set to the DuplexDr driver and closes the window. The Trace Flags will take effect immediately.

Select All makes all the Trace Flags enabled. **Clear All** makes all the Trace Flags disabled.

Refresh restores all Trace Flags to their initial states (when loaded the XVCTRC utility or after the latest **Apply**).

With the **Save to use in next sessions** check box enabled, you can store the current settings (by pressing **Apply**) and load them later (when loading the XVCTRC utility).

Note: with L=1, the **Tracing=L** entry line in the ini-file specifies DuplexDr to save tracing information into corresponding tracing files. With L=0, DuplexDr will not write tracing data into the files.

The DumpFile Box

The **DumpFile** button in the **Virtual ComPort Trace Flags** window brings up the dialog box:

Dump File

Dump File: C:\WINNT\Memory.dmp

Log File: c:\halfvcom.log

OK   Cancel
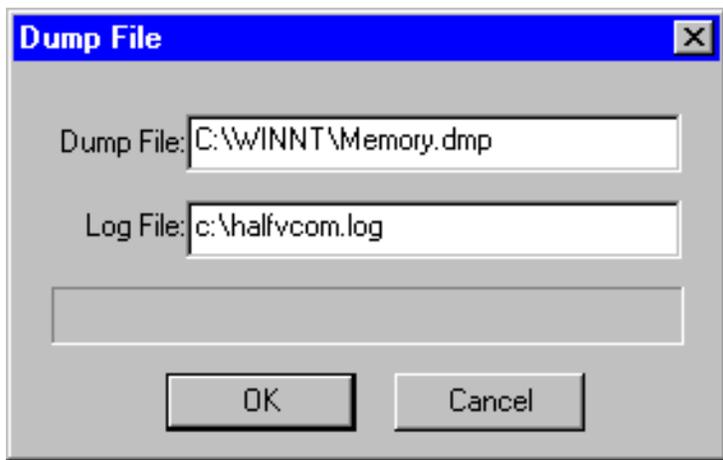
You can specify a full path name for one of system dump files to be read (when system crash) and a log file name to store the driver tracing information extracted from that dump file that you can analyse later. Normally, you can use the default file names shown.

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