

Contents

What is Star Gate?

Registration

Configuring Star Gate

Storage of Program Settings

Transferring Files

Error Handling

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Introduction.

Star Gate is a file transfer utility capable of moving files between two personal computers via a serial cable. It can be used with both Windows and Macintosh operating systems. I was prompted to write Star Gate when I needed to routinely move source files between a PC and a Macintosh. Star Gate provides this cross-platform service but can also be used to transfer files between two PCs, for example a desktop PC and a notebook.

Star Gate transfers data files and can perform text translation if desired. Hence text files coming from a Macintosh will always have the correct lines endings when they are received by your PC.

Hardware Requirements.

Star Gate requires a free serial port on each computer. Any PC COM port can be used, Macintoshes can use either the printer or modem port. You will also require a null modem cable to connect the serial ports of the computers. If you have difficulty in finding a null modem cable the following pinouts can be used to build your own cable.

DB 25	DB 25
-----	-----
1.....1	
2.....3	
3.....2	
4.....4, 5	
5.....4, 5	
6.....6, 8, 20	
7.....7	
8.....6, 8, 20	
9 (not connected)	
10 (not connected)	
11.....12	
12.....11	
13 (not connected)	
14 (not connected)	
15 (not connected)	
16 (not connected)	
17 (not connected)	

18 (not connected)
19 (not connected)
20.....6, 8, 20
21 (not connected)
22 (not connected)
23 (not connected)
24 (not connected)
25 (not connected)

Note the connectors usually have numbers moulded into the plastic, however they are pretty tiny. The diagrams below show the pin numbers. Note that this is the view you see as you solder onto the plug.

1 2 3 4 5 6 7 8 9 10 11 12 13
14 15 16 17 18 19 20 21 22 23 24 25
DB 25 (female)

Software Requirements.

The software package consists of three programs, 32- and 16-bit Windows executables and a Macintosh application. The 32-bit Windows executable runs under Windows 95 or Windows NT 3.5 or higher and the 16-bit executable runs under Windows 3.1 and Windows for Workgroups 3.11. The Macintosh application requires System 7.0 or higher.

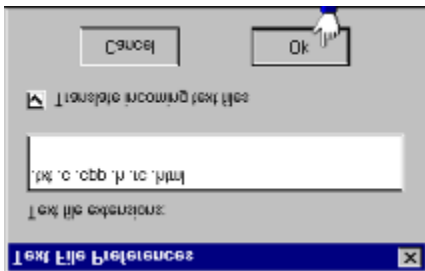
Configuring Star Gate.

The configuration procedure for Star Gate is the same for both the Windows and the Macintosh versions of the software. First create two folders, one for incoming files and one for outgoing files, on each computer. When the software is run for the first time it will display a dialog box asking you the location of the incoming folder. Next a dialog box will prompt you for the location of the outgoing folder.



If you later decide to use different directories you can modify the configuration by selecting **Set Incoming Folder...** or **Set Outgoing Folder...** from the **File** menu.

Next select **Text Files...** from the **File** menu to setup the handling of *incoming* text files.



In the dialog box you list the **file extensions** that should be recognized as text files. Set the check box if you wish **text translation** to be performed on incoming files. Macintosh text files use a carriage return character (ascii code 13) to indicate a line ending. UNIX uses a newline character (ascii code 10) and MS-DOS uses a carriage return-newline pair to indicate line endings. When text translation is activated on a PC running Windows, incoming text files with either UNIX or Macintosh line endings are translated into MS-DOS text files. On a Macintosh, text translation converts UNIX and MS-DOS line endings into Macintosh text files.

If the menu item **Delete Sent Files** is checked in the **File** menu then files will be deleted from the outgoing directory after being sent to the other computer. If this option is not checked then the files will be copied into a '!sent' directory within the outgoing directory.

Finally you need to configure the serial port. Select the desired port from the **Serial Port** submenu of the **File** menu. The default setting is **COM2** (Windows) or the **Modem Port** (Macintosh).

The **Baud Rate** submenu of the **File** menu lists the available transfer speeds. The available speeds are 19200, 57600 and 115200 bps. On some older Macintosh computers the 115200 bps baud rate may not be available.

Some older PCs have serial port controller chips that can only operate at low speeds. If you are having difficulties transferring files to a PC you should try using 19200 bps. If you are moving files between two

modern computers then you should use 115200 bps.

The **Handshaking** submenu of the **File** Menu sets the flow control method used by the serial ports. Most serial cables support hardware (CTS) flow control. This method prevents one computer sending data when the receiver is not ready. If you have trouble transferring files then select **none** from the **Handshaking** submenu. Star Gate's file transfer protocol is robust enough that CTS handshaking is not necessary. CTS handshaking is provided simply as an extra safeguard.

Storage of Star Gate Settings.

Under Windows 95 or Windows NT the settings are stored in the Win32 registry. They are located under the key `HKEY_CURRENT_USER\Software\KRS\StarGate\`. The shareware registration information is stored under the key `HKEY_LOCAL_MACHINE\SOFTWARE\KRS\Registration\StarGate`. The registry values should not be modified directly. If you wish to uninstall Star Gate then you should select **Clean Registry and Exit** from the **File** menu. This action will safely remove the registry entries.

For Windows 3.1 or Windows for Workgroups 3.1 the settings are stored in the file `stogat16.prf` residing in the same directory as the 16-bit executable file. The settings file is a binary file and should not be edited directly.

On a Macintosh the settings are stored between program restarts in the `Star Gate Preferences` file in the `Preferences Folder` (in the `System Folder`).

Using Star Gate to Transfer Files.

Once you have the null modem cable connected and Star Gate configured on each computer you can begin to transfer files. For convenience set up the software so that the incoming and outgoing folders (or shortcuts to them) are visible on the desktop.

To send a file from one computer to another simply drag the file into the nominated outgoing directory. Star Gate is written to be as robust as possible but to be absolutely safe it is wise to get into the habit of dragging a *copy* of the file into the outgoing directory. To drag a copy of the file hold down the control key (Windows) or option key (Macintosh) while clicking and dragging. You can select multiple files and folders in the Explorer (or Finder) and drag these to the outgoing folder.

Every 10 seconds Star Gate scans its outgoing directory and when it detects files it automatically initiates a transfer of the files to the receiving computer. On arriving on the other computer the files are placed in the incoming folder, when whole directory trees are transferred the tree is recreated on the receiving computer.

During the file transfer both sending and receiving computers display a transfer progress window.



Error Handling in Star Gate.

Star Gate is designed to be as robust as possible. If you encounter any problems please contact Kevin Raner Software so the problem can be rectified.

The file transfer protocol has been thoroughly tested and file transfers can recover even when the serial cable has been broken and rejoined a few seconds later.

Sometimes a file transfer may be terminated either by pressing the cancel button or by an unforeseen event such as the receiving computer running out of disk space. When such conditions occur any unsent files are transferred to a folder named '!unsent' located in the outgoing folder. The files that were acknowledged as correctly received are deleted from the outgoing directory. If you do not receive all your files on the receiving computer the should check the !unsent folder on the sending computer. (Of course you'll have dragged a copy of your files to the outgoing folder so you will never lose files.)

When Star Gate receives files it may need to rename them if the filename is invalid for the receiver's file system. For example '/' is a valid filename on the Macintosh but is not allowed under Windows. Any invalid characters found in the name of an incoming file will be replaced with an underscore '_' character.

Files are also renamed if the incoming folder already contains a file with the same name. For example if a file named 'ReadMe.txt' is sent and the receiver's incoming folder already contains a file of that name, then the new file will be renamed 'ReadMe2.txt'. Files are renamed in such a way that the file extensions are preserved.

Sometimes filenames will appear different on the receiving computer even if the file wasn't renamed by Star Gate. This can arise if filenames include extended ascii characters (ascii codes 128-255). For example a Macintosh folder named 'My Folder f' will arrive on a PC running Windows 95 as 'My Folder Ä'. This is because the character with acsii code 196 has a different glyph under the Macintosh and Windows system fonts.

Registration.

Star Gate as a built trial period allowing you to adequately evaluate the software before paying the shareware fee. At the end of the trial period then software will cease to run. Registered users will receive a license key to re-enable the software.

To register your copy of Star Gate you should print the registration form by selecting **Print Registration Form** from the **Help** menu (or **Apple** menu on the Macintosh). You can pay the registration fee by sending a bank cheque in Australian Dollars drawn on an Australian bank or by VISA or MasterCard. Please note that I cannot accept payment by postal money orders or Eurocheques.

The shareware fees are:

Single User	35 AUD
Student	25 AUD
Retiree	25 AUD

(AUD refers to Australian Dollars.)

To register your copy of Star Gate, select **Register** from the **Help** menu (or **Apple** menu on the Macintosh) and enter your registration name and key into the dialog box. You will need to do this on both computers to be able to use the software once it has expired.

