



**RELEASE 1.0
USER'S GUIDE**

1.0 OVERVIEW

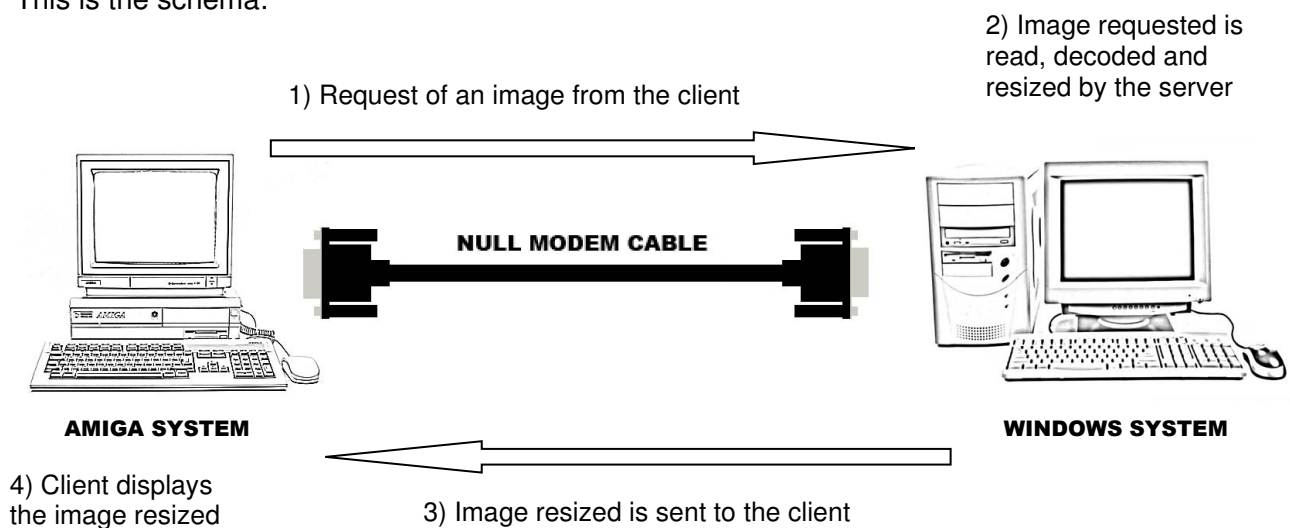
Falco is a tool to view, on an Amiga computer, images stored in a Windows host by using a client-server architecture. It is intended for use in situations where the images are stored on the server and the client cannot view them directly, or cannot do it in a satisfactory manner, for one or more of the following reasons:

- Insufficient RAM
- Resolution too high, allowing only a very small portion of the image to be displayed
- CPU too slow to decode the format in a reasonable time
- No datatype available for the picture's graphic format
- Files cannot be given to the Amiga system (images too big for floppy disks, not enough space on HDD, or no LAN connection available)

This program has been written to solve these problems. It consists of two parts:

- A server program, to be launched on a Windows system
- A client program, to be launched on an Amiga OS3 system

The two systems are connected through a null-modem serial cable, and through this connection the client requests to the server the images to be displayed. When the server receives a request, it loads the image and scales it down to a smallest size, then transmits it to the client, who display it. This is the schema:



The program implements a schema which use the biggest power of a remote system (in terms of CPU, RAM and software) to allow an operation that would otherwise be impractical (or impossible) on an older system.

Program's name is the italian translation of "Falcon", an animal known for its very acute eyesight, which enables it to see very far, and this program allows users to view images stored on a remote system ("far away").

1.1 RELEASE NOTES

Falco is released as freeware and can be distributed in every non-commercial form. Donations are accepted, at the address provided at paragraph "About the author".

THIS SOFTWARE IS PROVIDED "AS IS", WITH NO EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES INCLUDING BUT NOT LIMITED TO THE LOSS OF DATA, OR PROFITS; YOU USE IT AT YOUR OWN RISK. ANY FORM OF REVERSE-ENGINEERING OF THE PROGRAM IS PROHIBITED. IS FORBIDDEN TO USE THIS SOFTWARE, ANY PART OF IT, OR ITS DOCUMENTATION TO TRAIN GENERATIVE ARTIFICIAL INTELLIGENCE MODELS.

1.2 SYSTEM REQUIREMENTS

Falco requires:

1) A Windows computer and an Amiga computer.
On Windows side, Falco requires an Operating system Windows XP or better.
On Amiga side, an operating system of OS3.X family, and a CPU 68020 or better.

2) The Hollywood RapaGUI plugin, who can be downloaded at this location:

<https://www.hollywood-mal.com/download.html>

3) A null-modem cable.

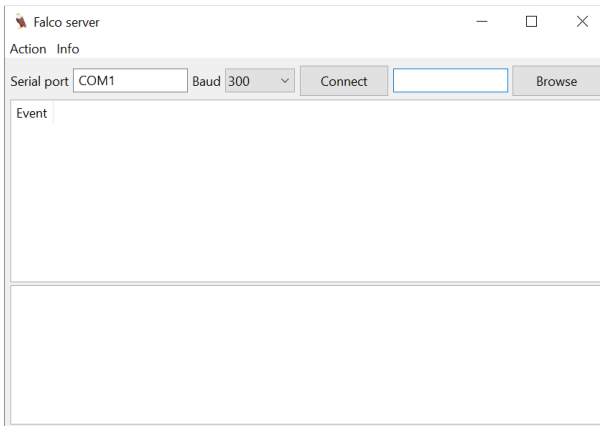
1.3 INSTALLATION

On Windows system, unpack directory "Falco server". On Amiga system, unpack directory "Falco client" with its icon. Copy RapaGUI plugin into both installation on both systems, each of the proper version suitable for the running OS. To uninstall Falco, simply delete its folder on both systems.

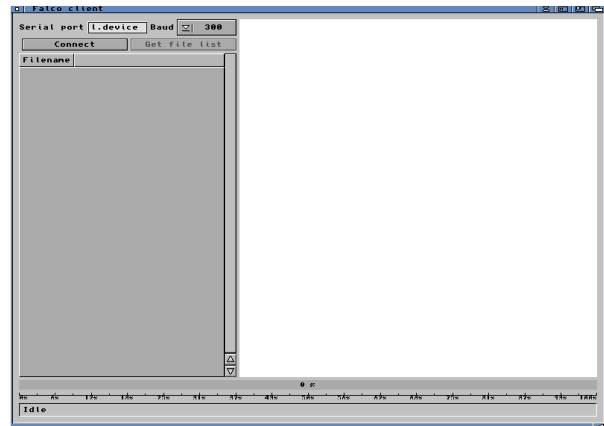
Operation described in this chapter must be executed only once. For the normal usage of the program, read next chapter.

2.0 SYSTEMS SETUP

Before the use, both systems must be connected. Turn on both computers and connect them with the null-modem cable. If there are problems to connect computers due to ports not suitable with the cable, look at paragraph 3.0, "Troubleshooting". On the Windows system, find the COM port where is connected the cable. That parameter must be entered server side. Launch "Falco" on both systems by double clicking its icon. The following windows will appear on server and client:



SERVER PROGRAM



CLIENT PROGRAM

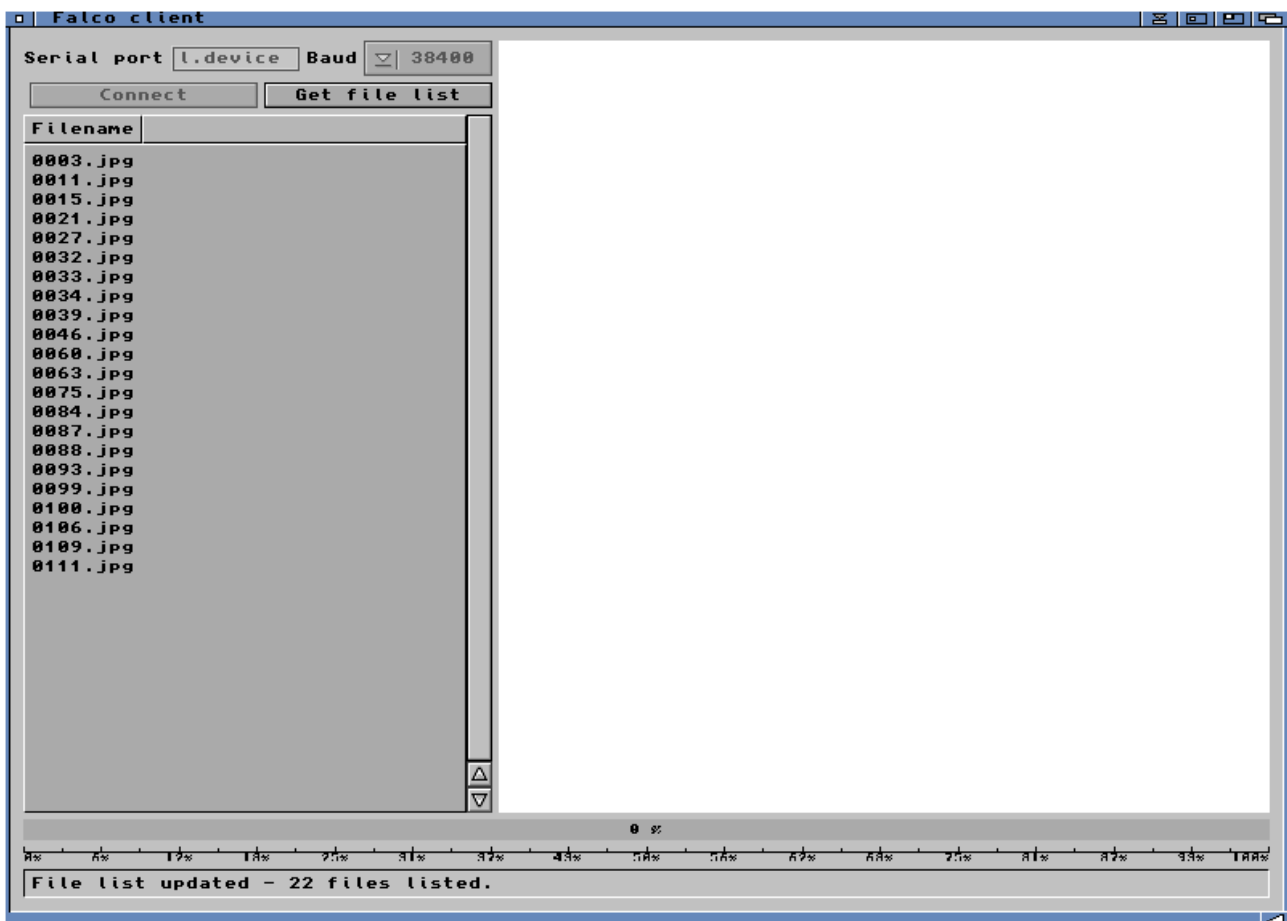
On the Windows system, enter the COM port to which the null-modem cable is connected in the 'Serial port' field, select the baud rate at which you wish to communicate, and press the 'Connect' button. If the port is detected, a confirmation message will appear. Otherwise, program will return an error.

On the Amiga system, similarly enter the port to which the null-modem cable is connected in the 'Serial port' field, select the baud rate at which you wish to communicate, and press the "Connect" button. **Be sure that the same baud rate is selected on both systems, otherwise communications problems may arise.** Generally, the correct port is the default 'serial.device'. After pressing 'Connect', a message will appear confirming that the connection to the port has been successfully established.

2.1 VIEWING PICTURES

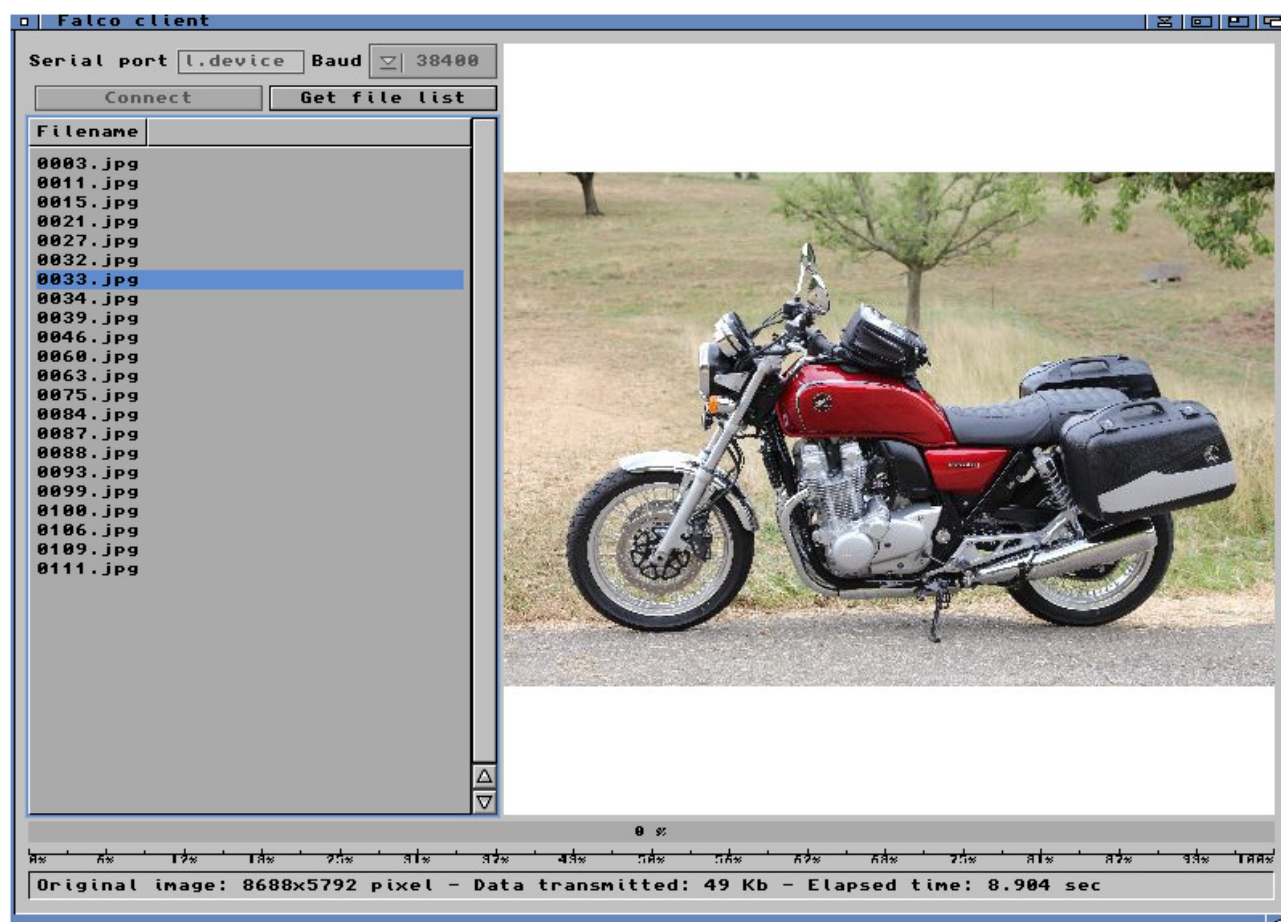
Once has been completed the setup described in the previous paragraph, is possible to display images.

1) On the Windows system, select the folder containing the images to be displayed by the Amiga by clicking the 'Browse' button and navigating through your file system. On the Amiga system, click the 'Get file list' button. The server will send the list of files contained in the selected folder to the client. If there are much many files in the directory, a progress bar will show the process and a message 'Receiving file list...' will appear on the client's status bar. These files will be listed on the client:



On the client side, the status bar will report the number of files with a message 'File list updated - X files listed.'. On server side, the event "Directory updated to [...]" will be added.

2) Double-click on the file you wish to view. The client will send a request to the server, which will load the image and resize it (maintaining the aspect ratio) to the longest resolution matching the width/height of the client's display area (480 pixels). If the image is smaller than 480 pixels, on both sides, then will not be resized and will be shown as is. During this phase (which normally takes about 1 second), the client's status bar will display the message "Requested image to remote system...". Then, resized image will be sent to the client, whose status bar will display the message "Receiving image from remote system...". A progress bar will show the percentage of data transferred during the operation. Once the transfer is complete, the image will be displayed in the client's display area:



Then, the status bar will display a summary of the operation performed. In the example shown in the picture, a 50-megapixel image (8688x5792 pixel) has been requested to the server and displayed, the size of resized image is 49 Kb. The total time required for the entire operation is 8,904 seconds, at a speed of 38400 baud.

If image is smaller than 480x480 pixels, then "Image not resized" will be wrote for the resized resolution, and the picture will be shown as is. Repeat the step 2) for each file to view. To select another folder from which to view images, return to step 1).

2.2 SERVER LOG

Server logs every action and every steps of any action made by the user, so to catch and manage problems occurred during computation or trasmission. Maybe useful to measure performance, also, because are logged also the time when happened an event, and the time elapsed between them can be measured.

Every event is reported with the hour (in HH:MM:SS) when them happened. For each image requested, three events will be added to the list:

Request to process file [...] received: Server has received the client's request, and is loading and resizing image in a format useful for the client.

Image [...] processed. Now sending image: Server is transmitting the resized image to the client.

Image [...] sent: Server has finished to send resized image to the client.

Request failed: [...]: An error is occurred with the file requested, who isn't an image, or is an image in an unsupported format. In this case, a requester with the error occurred will appear client side.

Moreover, statistics are made with all data computed, relative to the current working session:

Total files processed: The number of files requested by the client.

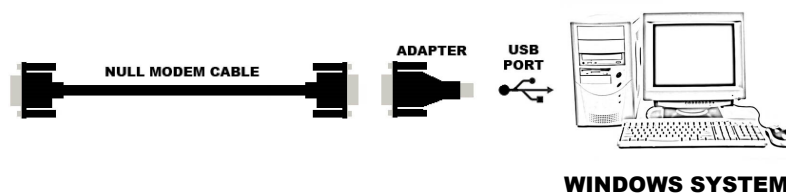
Total Kb processed: The sum of file sizes of all original files requested by the client.

Total Kb transmitted: The sum of file sizes of all resized images sent to the client.

3.0 TROUBLESHOOTING

Q: My Windows computer hasn't an RS-232 port, but only USB ports. How I can connect it to the Amiga?

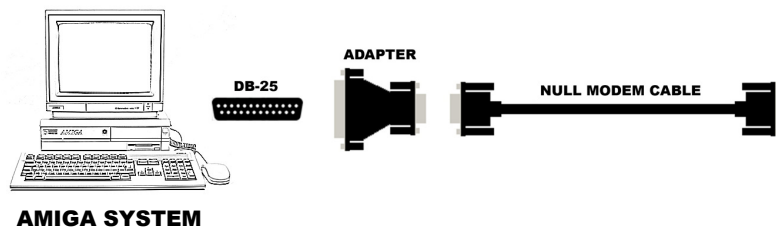
A: A serial to usb adapter is needed. So, the schema server side become this:



Another solution can be a PCI or PCI express controller who give serial ports to your system. Such controller is suitable only for desktop computers, not for laptop computers.

Q: My Amiga computer has a serial port DB25, while null modem cable has only DB9 connectors. How I can connect it to the Amiga?

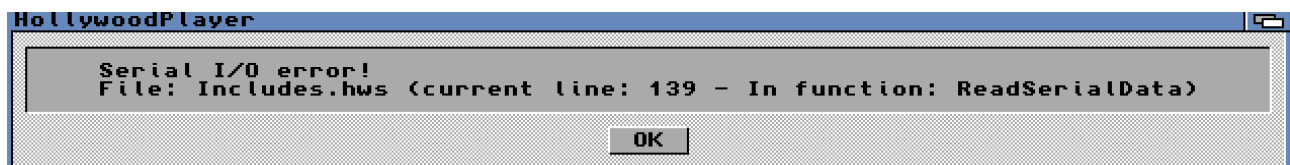
A: An adapter DB9 to DB25 is needed. So, the schema client side become this:



Q: An "Error loading plugin 'RapaGUI.hwp'!" appears on Windows side.

A: Correct version of RapaGUI plugin must be copied into program's directory, or installed onto system. Windows x86 version is the correct version, if Windows x64 version is installed the program raise this error.

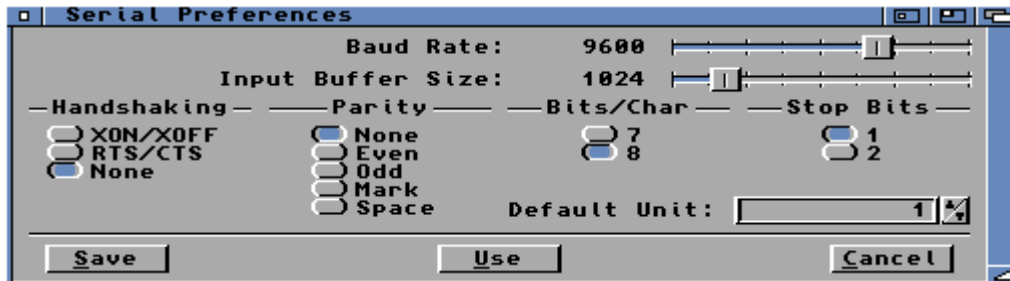
Q: During a transfer, this error appears on Amiga side:



A: This error pops up when baud speed chosen is too high. Try again with a lower speed.

Q: Is possible to act at low-level on serial transmission, to improve performance or to solve some problem with the program?

A: Yes, is possible client side to try by opening Workbench's "Prefs", then "Serial":



Falco, at its inner mechanism, adopt Handshaking "None", Parity "None", 8 bits, 1 stop bit as parameters. So, these settings must be setted in the same manner. Leave "1" as "Default Unit" parameter. Parameters who is possible to vary are "Baud Rate" and "Input Buffer Size".

For each problem not covered by this paragraph, please write to the email address provided at paragraph "About the author".

3.1 TECHNICAL ASPECTS

When server resizes an image, its resolution become at maximum 480 pixel on the longest side, JPEG compressed with quality 80. Normally, size of a rescaled image is about 30 Kb. Trasmission time for such file, at 9600 baud speed, is 25 seconds.

During tests, there was often a long delay between server computation and the start of trasmission. During this time both Falco instances are blocked, for tens of seconds. When this happens, is sufficient to wait. The cause of this delay is unknown.

Falco has been tested only under emulated systems. User's feedback is appreciated to know performance on real Amiga systems.

No artificial intelligence has been involved during project's creation.

3.2 FUTURE DEVELOPMENTS

This is a first experimental version of a server-client system to support Amiga systems with low resources by using another system who have much more resources. Only the main functionalities has been implemented, but other ideas may be implemented. The system has been developed exclusively for Amiga OS3 client systems. There are no plans to develop versions for other Amiga-like systems (OS4, MorphOS, AROS), because these systems often have sufficient resources for displaying images and therefore do not require such support.

Is possible to donate money to support this project, this will encourage the author to add more functionalities and create other programs who follows the same schema.

3.3 HISTORY RELEASES

1.0 VERSION:

- Viewing images hosted on Windows side
- Communication via RS-232
- Support for image formats BMP, JPEG, PNG, GIF, PCX, TIFF.

3.4 ABOUT THE AUTHOR

Domenico Lattanzi is an IT engineer, graduated at Rome's university "La Sapienza".

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