Using the Synergy Controller's FTP Server

Introduction

This Synergy Controller application note describes the operation of the controller's FTP server. With the FTP server, chamber profiles or recipes (VPL files) can be copied to and from the controller, deleted from the controller or renamed, using a network. In addition the history log file can be retrieved from the controller.

Tidal Engineering's Synergy Controllers, both the Synergy Micro and the ¼ DIN Synergy Nano provide state-of-the-art usability and connectivity for environmental test control and data acquisition and combine the functions of a chamber controller and a data logger and are designed to improve test efficiency by supporting both factory automation and test and measurement protocols and standards.

Synergy Controller feature highlights includes:
➔ Color touch screen
➔ Ethernet, RS-232 and GPIB communications
➔ Built in Data logger with USB drive support
➔ Data Acquisition, up to 64 T-type thermocouples (Optional)
➔ Built-in Web Server for remote control; WebTouch Remote ™ (Optional)
➔ Compatible with Synergy Manager for PC based control, monitoring and programming.
➔ Built-in FTP Server for factory automation and test and measurement applications

For more information regarding the controller please see the full Synergy Controller Technical Manual on our website at http://www.tidaleng.comsynergy.htm

File Transfer Protocol (FTP) is a protocol used to transfer files from one computer to another through a network, such as the Internet.

An FTP client can connect to the FTP server in the Synergy Controller to manipulate files on the it.

Note that the Synergy Controller FTP feature described here is not available on all controllers. Contact the factory to find out if your controller supports this feature. Controller upgrades may be available.

Accessing the Synergy Controllers' FTP Server

The FTP server can be accessed both with an FTP client such as Internet Explorer (IE) or programmatically. The examples below use the first method.

Accessing the controller's FTP server programmatically is beyond the scope of this application note however many application environments support this capability including .NET and LabVIEW. In Microsoft .NET 2.0 for example, you can programmatically access FTP servers using the FtpWebRequest and FtpWebResponse managed classes.

To access the Synergy Controllers FTP server using IE, first configure the controller network properties from the COMM Screen's Ethernet folder as shown below:
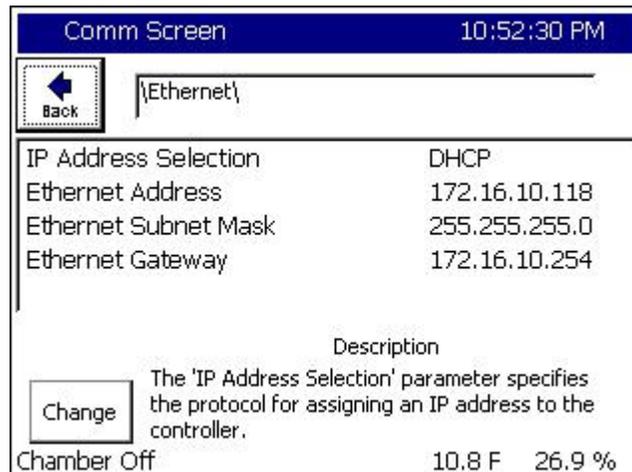
Then type the Controller's IP address in the format ftp://172.16.10.118 in the browser's address bar and press enter. The controller's public directory will be displayed as shown below.
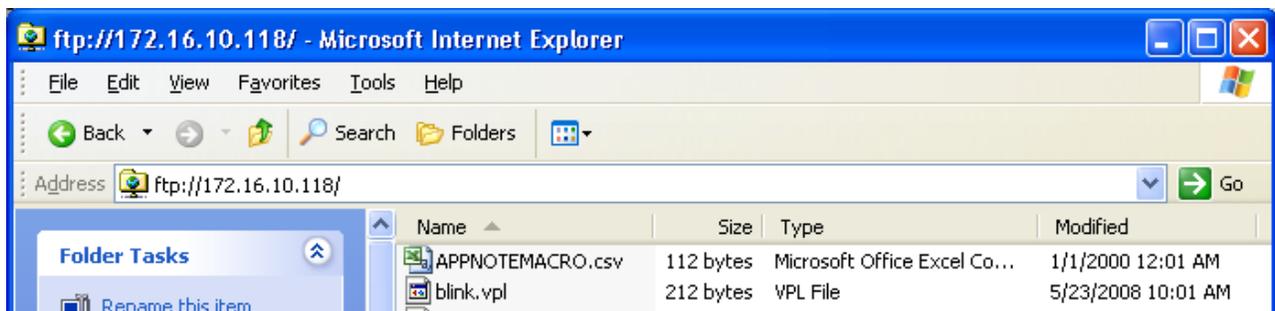
The public directory contains the following file types:

1. Controller Profiles. These use the .VPL file extension
   for example: product1.vpl

   The Controller Profiles are the programs or recipes that control the chamber's process variables such as temperature vs. time profile.

2. Configuration files. These use the .CFG filename extension.
   for example: sab.cfg

   A Configuration file is a database of the chamber's setup and calibration that can be backed-up and restored using the folders in MAINTenance screen.

3. History Log file. This uses the .TXT filename extension.
   for example: History.txt

   The History Log file is a CSV formatted ASCII file that contains the log data specified in the Log Setup folder as well as Alarm and Profile event history.

4. Macro file. This file uses the .CSV extension.
   for example: APPNOTEMACRO.CSV

   The Macro file is a CSV formatted ASCII file that contains the controllers MACRO definitions which can be triggered using the controller's Bar Code Reader feature.
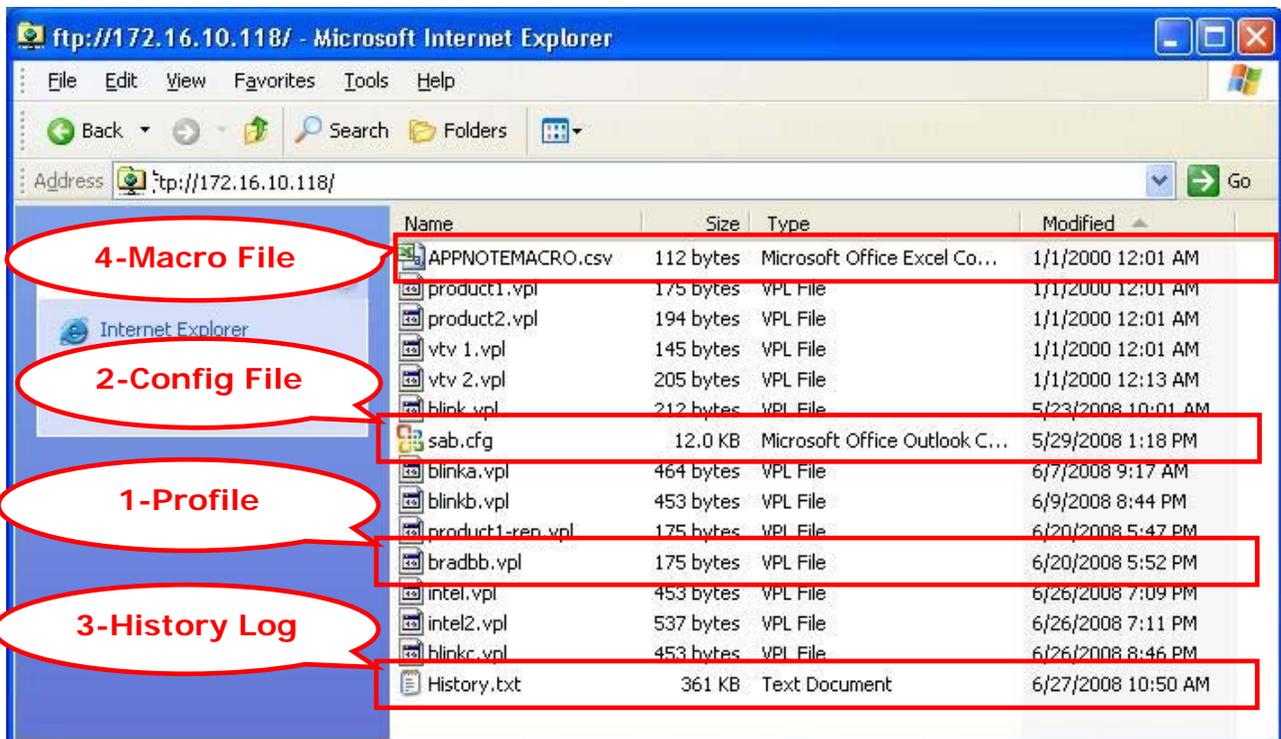
Using the FTP server to transfer VPL files from the controller to the PC

As mentioned above, the FTP server can be used to copy VPL files from the controller to another computer on the network. To copy VPL files, click on the file of interest in the FTP client with the right mouse. The file menu will appear.   Select Copy as shown below.
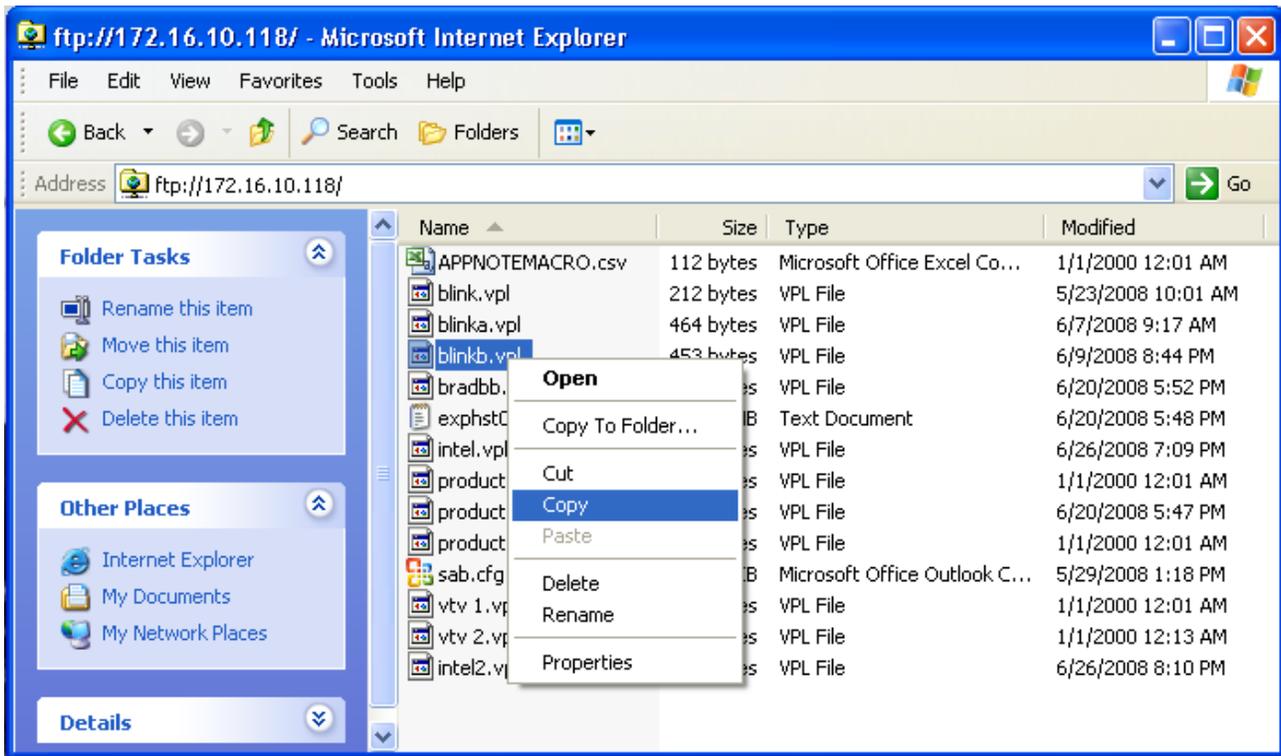
Then browse to the destination folder on the PC, Right Click and select Paste as shown below.
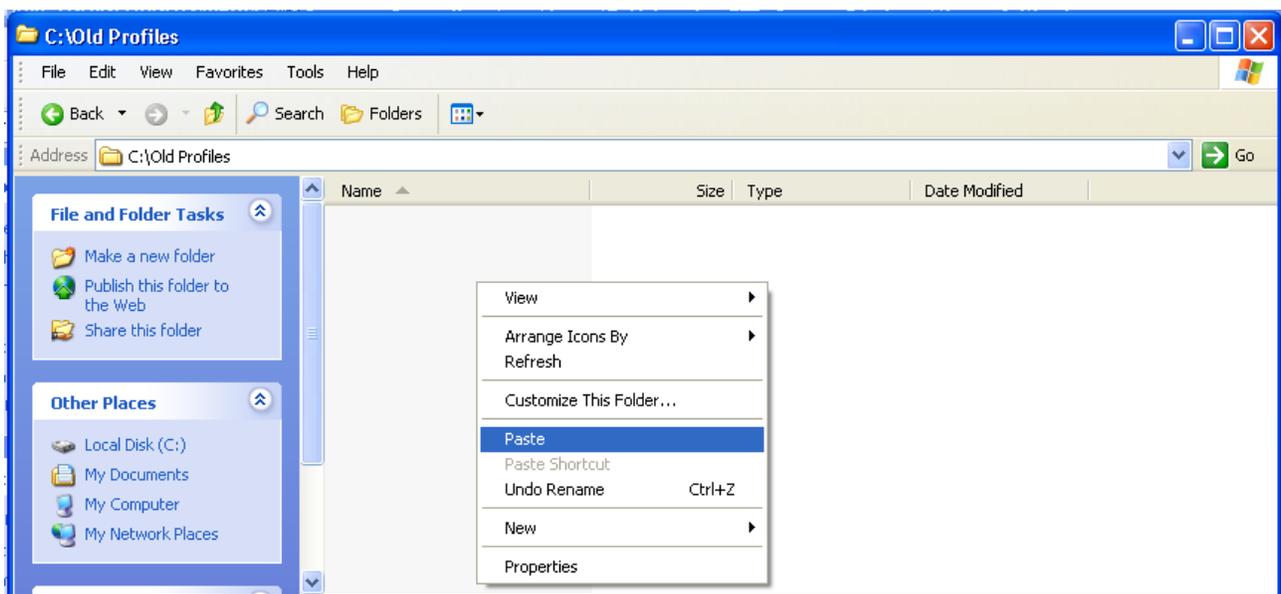
The copied file will appear in the folder on the PC as shown below.
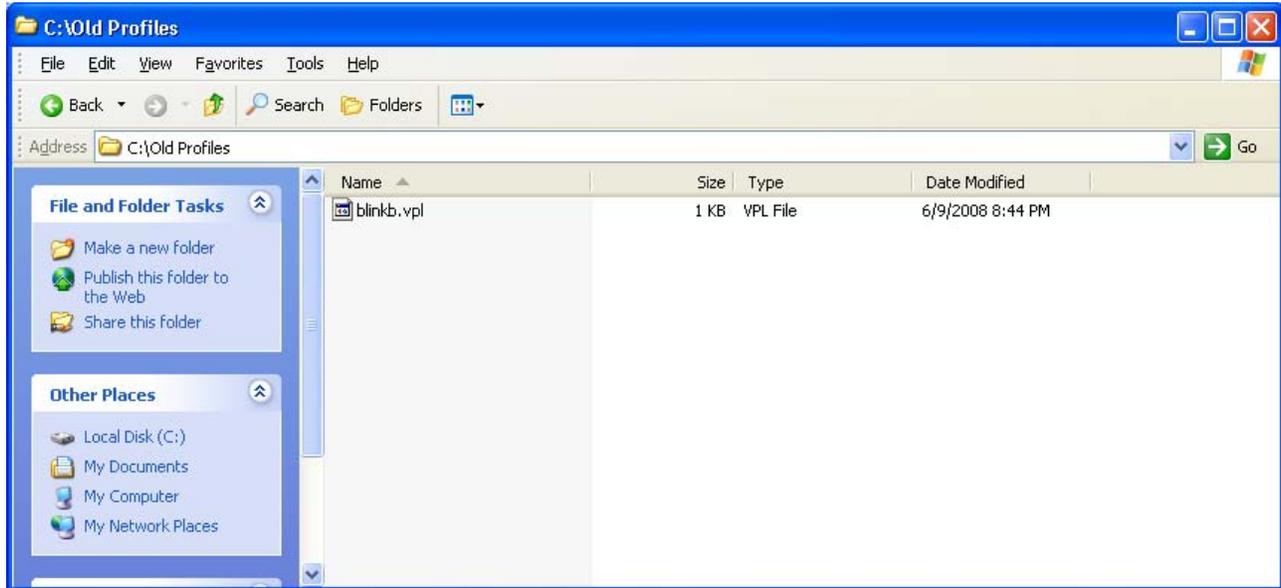
Using the FTP server to transfer VPL files from the PC to the Controller

The FTP server can copy controller profiles (VPL files) from the PC to the Controller thru the network as follows: Browse to the source folder on the PC, right click on the source file and select Copy from the menu as shown below.
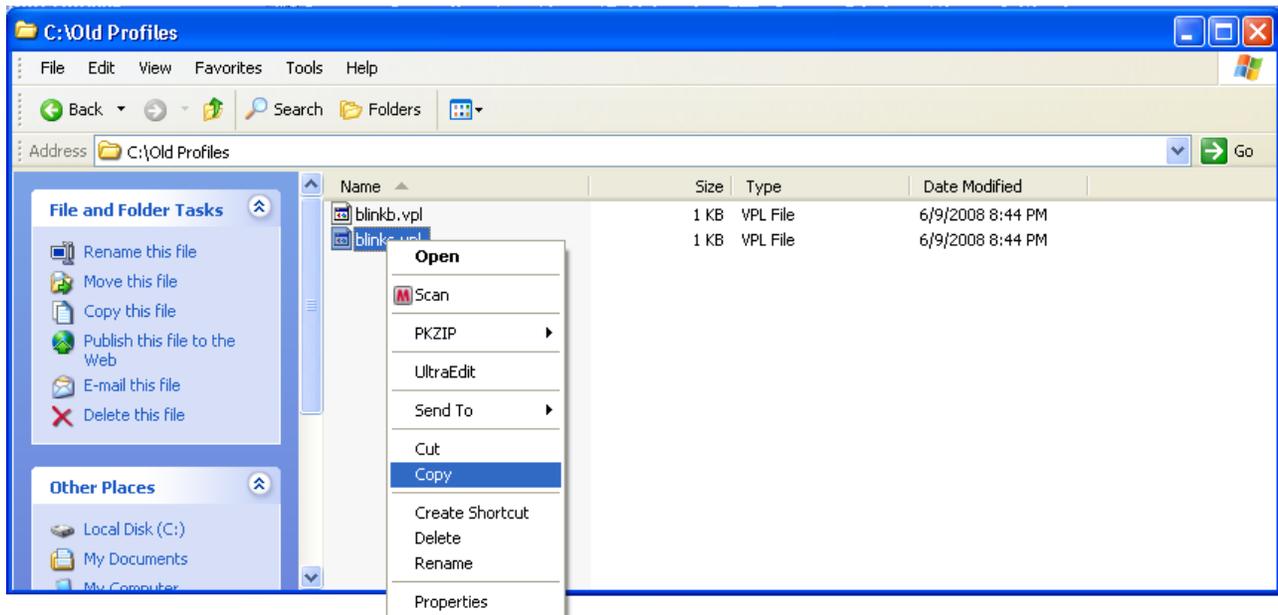
Then browse to the FTP client, Right Click in the file area and select Paste from the menu.
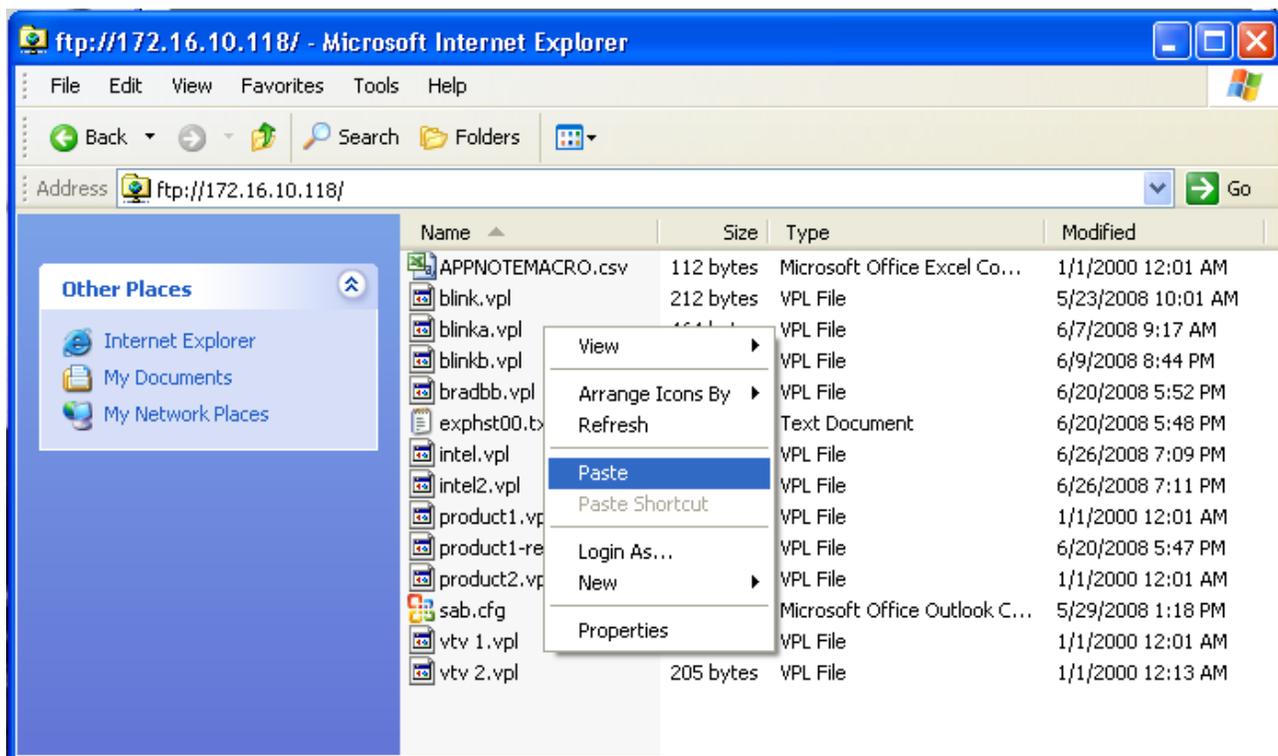
Now the new file can be seen in the FTP client window, the IE browser in this case, as shown below. Note that you will have to press F5 or select the View/Refresh menu to refresh the directory list to see the newly copied file.
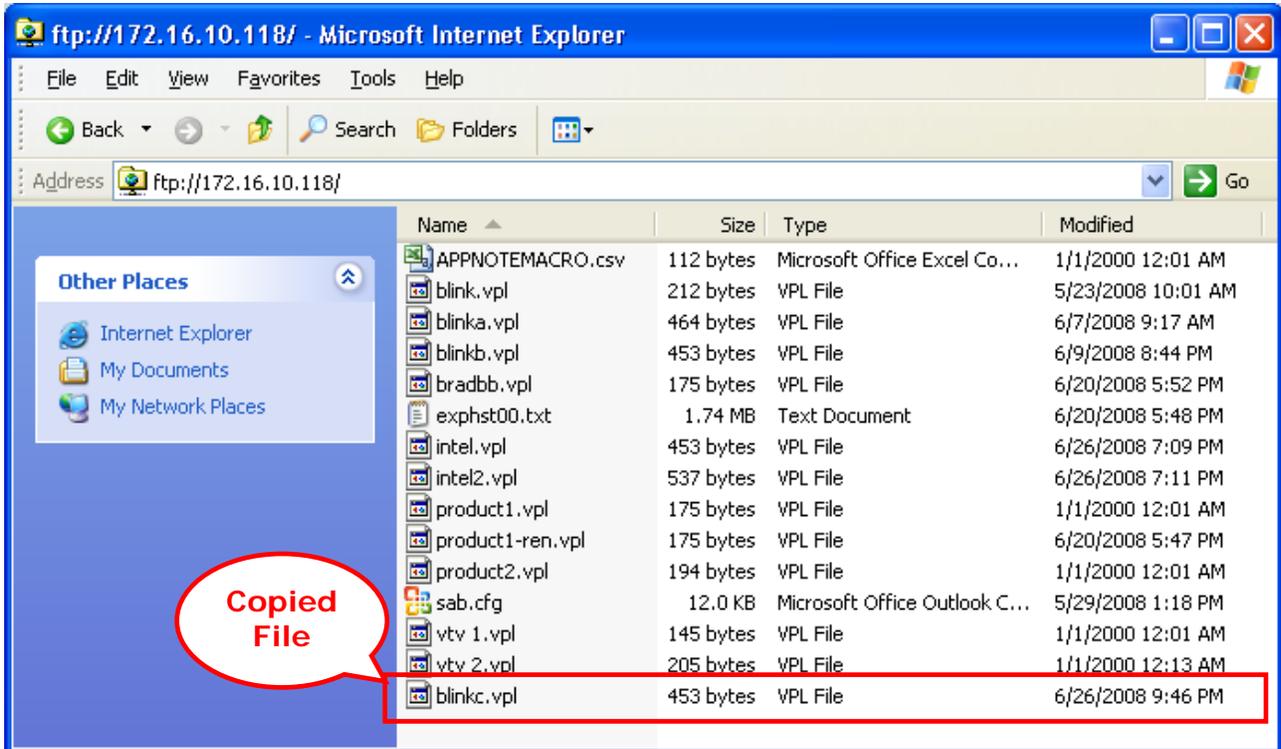
Retrieve the Controller's history log file using the FTP server

The FTP server can be used to retrieve the history log file from the controller. Retrieving the history log file from the controller uses the same procedure described previously for copying a controller profile from the controller. The only difference is that the log database is not stored on the public directory and is copied there using a controller command.

There are two communication commands that control the history log file and history database. These commands can be sent using Telnet as well as using GPIB and RS-232. The controller's Telnet interface is used in these examples. This interface is enabled from the COMM screen's TCP/IP Server folder as shown below.
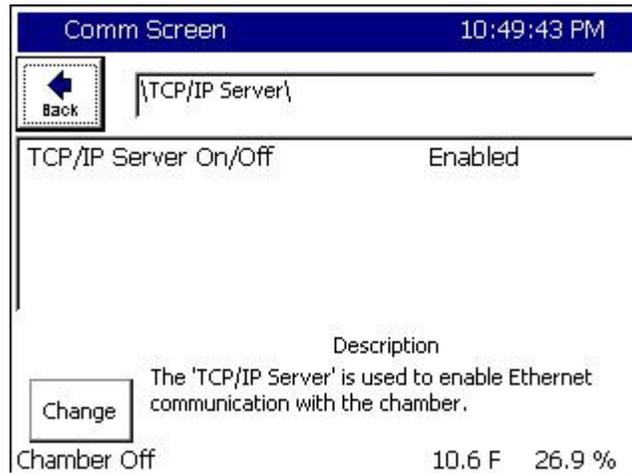
History commands are available to clear the history database and to copy the history log file to the VPL folder.

The Clear History command deletes all of the data in the history database on the controller. The command syntax is:

> = clearhist 1

The Copy History command copies the history database to a default file named History.txt in FTP server's public folder. Then the history.txt file can be downloaded via FTP. There are a some other ways to uses the copyhisttoftp command as described below.

The complete command syntax is = copyhisttoftp arg1 "File name"

Here are examples of the command usage.
Arg1 = 1, Gives the exported history file the default filename, "history.txt",
Arg1 = 3, Names the history file using the File Name parameter.
       For example: My_Test_Results.txt.
Arg1 = 7, names the history file "File Name" and adds the date
       For example: My_Test_Results_07-09-2009
Arg1 = 15, names the history file "File Name" + date + time.
       For example: My_Test_Results_07-09-2009_02.20.05

The following examples demonstrate the use of these commands. Note that the free SimpleComm terminal program available from www.TidalEng.com is used in these examples to send the History commands using Telnet.

To create the history log file History.txt and copy it to the public directory, Type the command, "= copyhisttoftp 1" in the Command text box and press the Send button as shown below: Note that the Controller Responds with "OK".
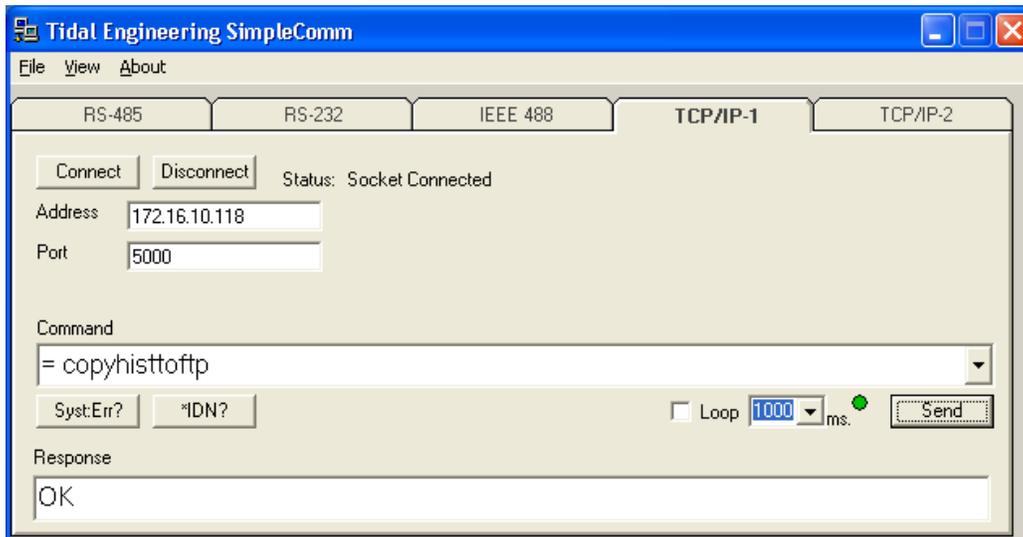
Now the file History.txt can be seen in the FTP client as shown below. Note that you will have to press F5 or select the View/Refresh menu in the FTP client to refresh the file list to see the new file.
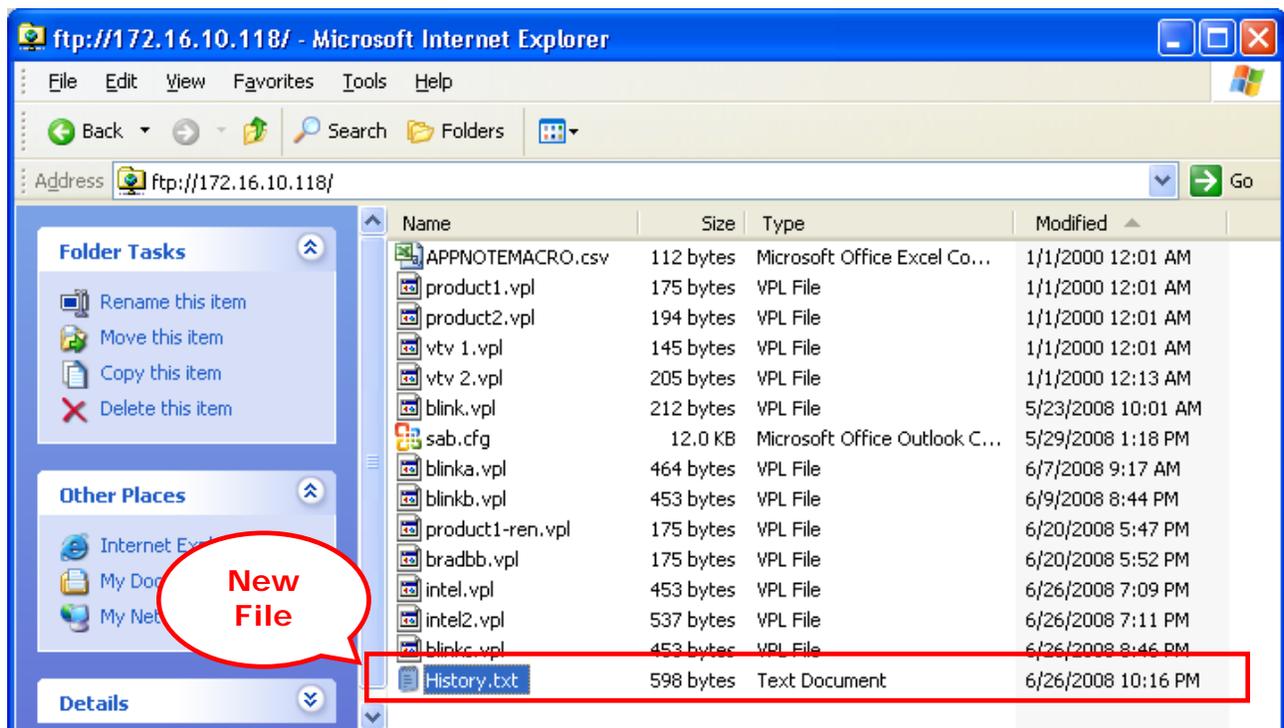
To clear the history database, type the command, "= clearhist 1" in the Command text box and press the Send button as shown below:
(Note that this command doesn't effect the History.txt file in the public directory)
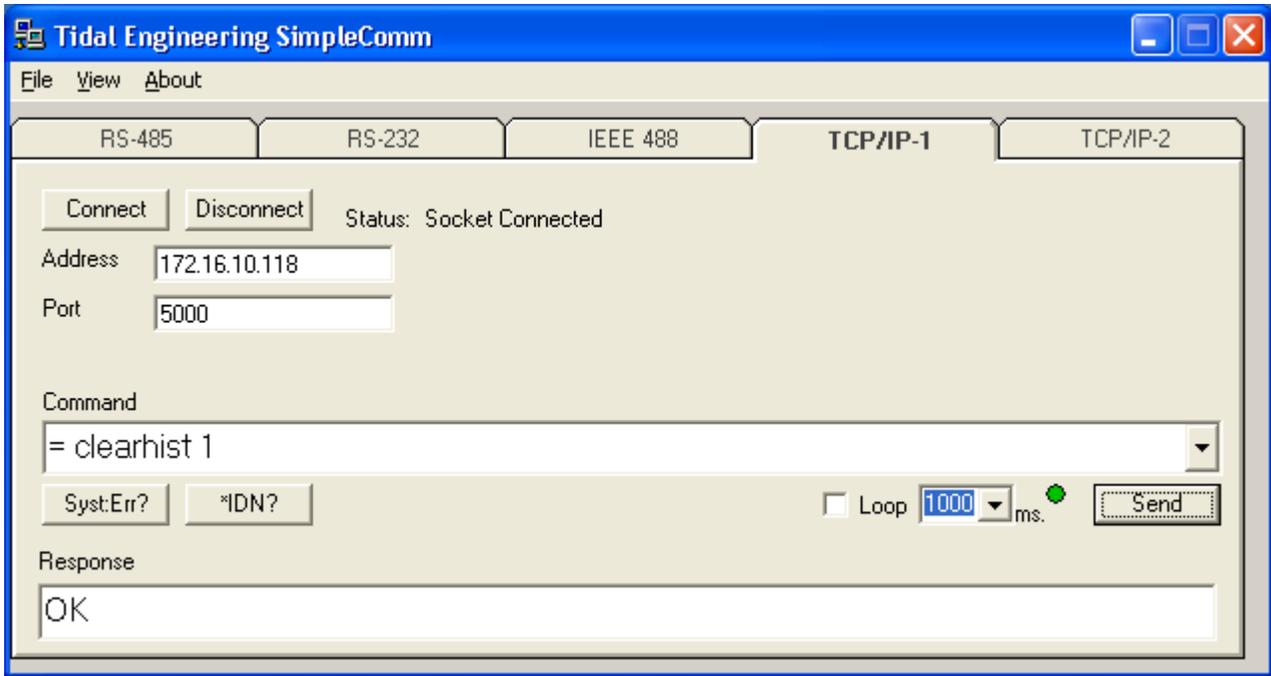
To examine the history database contents, type the command, "= copyhisttoftp 1" in the Command text box and press the Send button. This will export the history database to the History.txt file. Note that this command can also executed using the touch screen.
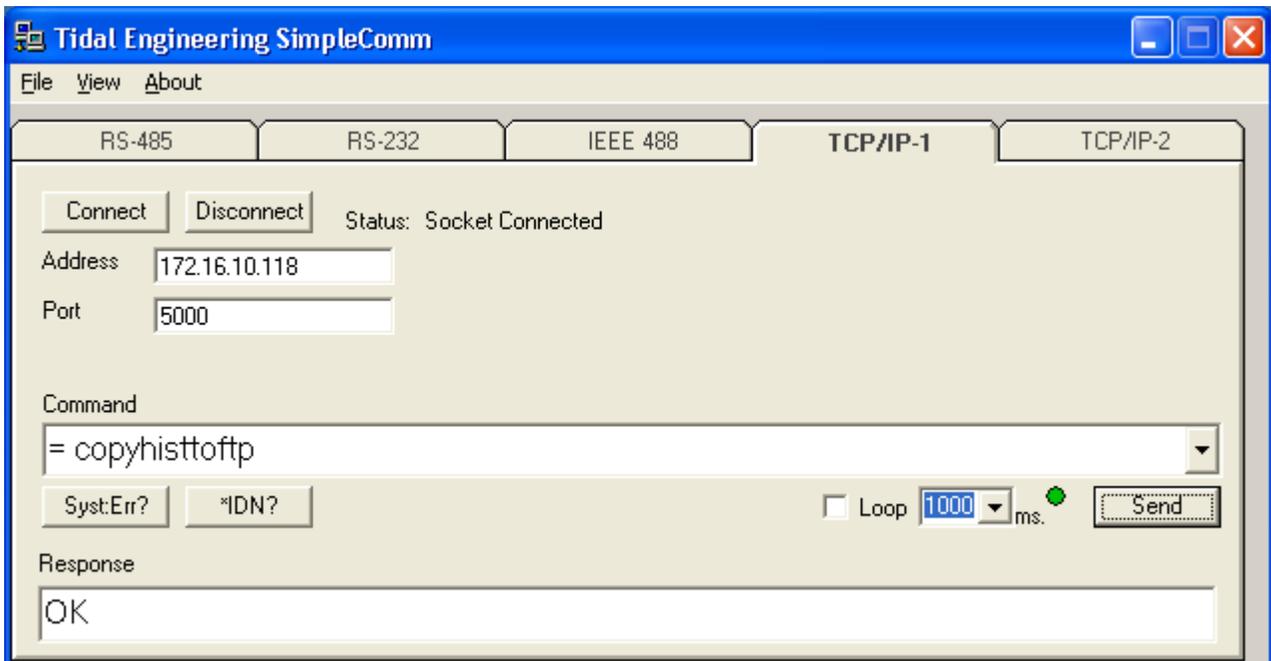
Now you can examine the History.txt file as shown below. Note that it only contains new records.

```
Date and Time,Record Type,CH1 Actual,CH2 Actual,CH1 Setpoint,CH2 Setpoint,RTD1,RTD 2,High
06/26/2008 23:09:00,I,10.7,26.9,80.0,100.0,95.3700,95.3700,1.3466,5.0076,0.2454,4.0000
06/26/2008 23:09:10,I,10.9,26.9,80.0,100.0,95.4000,95.4000,1.3466,5.0076,0.2466,4.0000
```
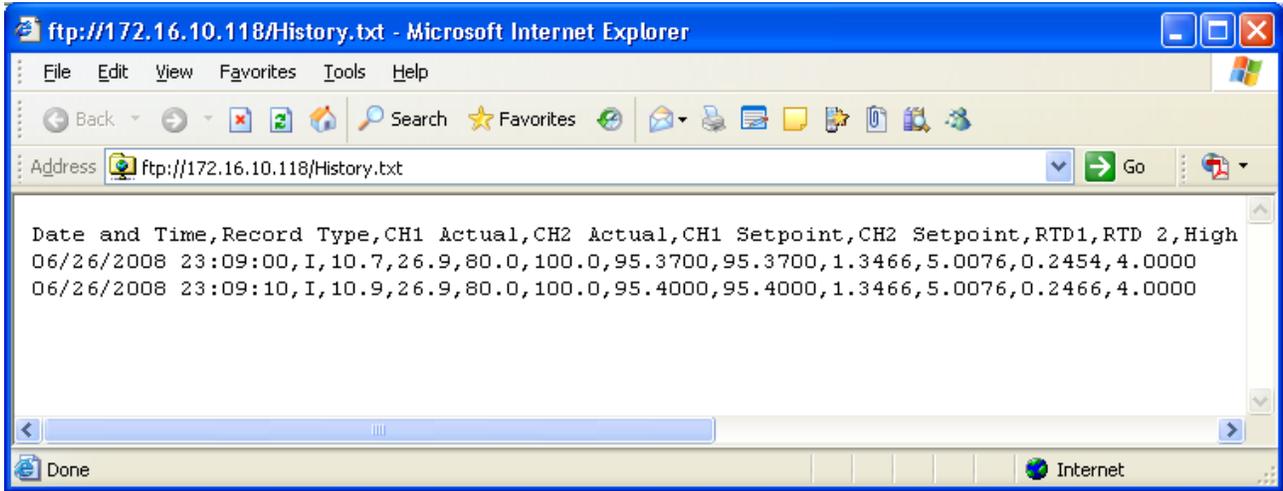
Using the Firefox client to connect to the Synergy Controller's FTP server.

The Synergy Controller FTP server can be accessed usiung the Firefox FTP Client after the following setup.

1. Download FTP client for FireFox: https://addons.mozilla.org/en-US/firefox/addon/684/
2. Restart Firefox.
3. Start FireFTP (see screenshot below).
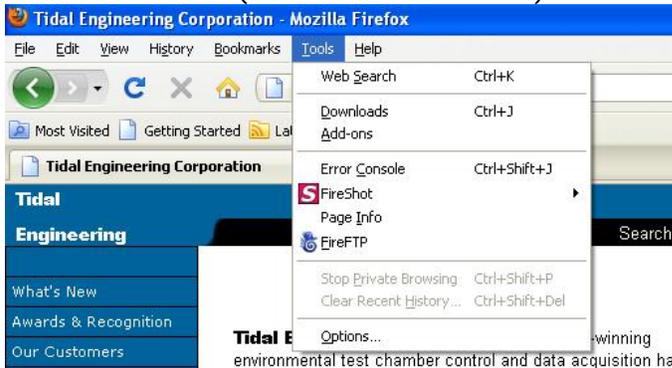
4. Connect to Synergy Controller.

Select "Create an

Enter Synergy Controller

Select Anonymous

Click "OK"

5. View files.

Click on "Connect"
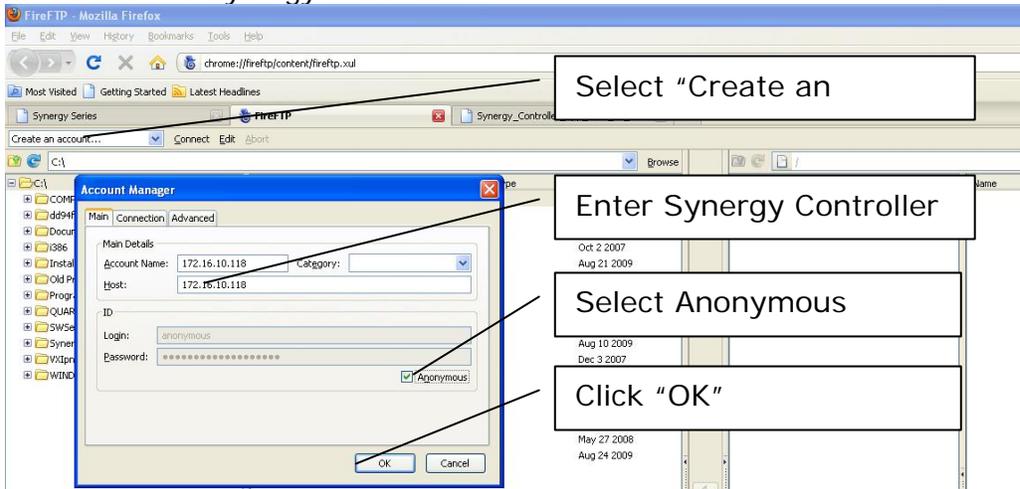
Synergy Controller Files
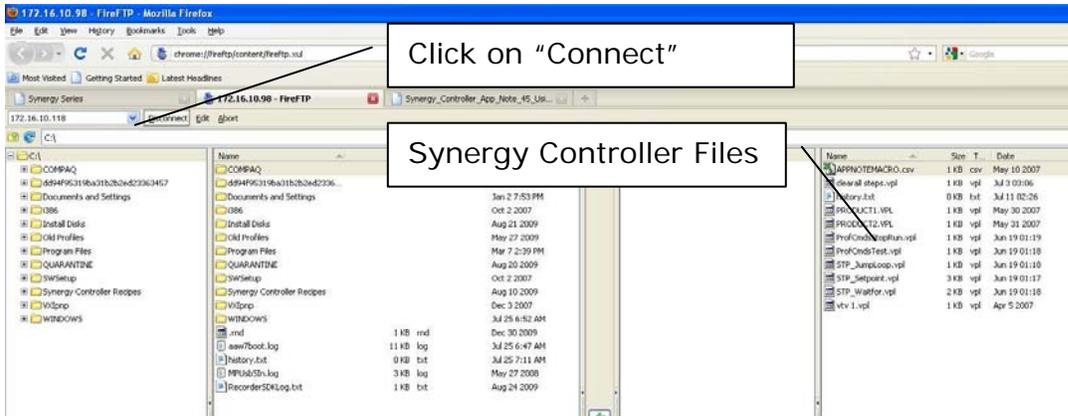
See the Firefox FTP Support page for more information: http://fireftp.mozdev.org/help.html.

For more Synergy Controller application notes, videos, technical manuals and free software and information concerning our other Synergy environmental test control and data acquisition products please visit our website at www.tidaleng.com

About Tidal Engineering
Headquartered in Randolph, NJ, Tidal Engineering Corporation has been designing and building award-winning embedded hardware and software for test and measurement and data acquisition applications since 1992. The company further provides product development services together with engineering support, and is recognized for technical expertise in such areas as Embedded IEEE 488, and turnkey SCADA (Supervisory Control and Data Acquisition) systems. Tidal's products are available exclusively through ADI American Distributors Inc., an ISO-9002 certified distributor of electronic and electromechanical components and assemblies.

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