Perl-FTP-Upload (Version 3) Installation for Callisto

A. Perl-FTP-Upload v3 is a script written by Christian Monstein to replace both FTP-WatchDog and Perl-FTP v1 and v2 as the FTP client for uploading Callisto data to FHNW. Perl-FTP-Upload requires Perl (a general purpose interpreted programming language) and a "helper" program called System Scheduler (both are free).

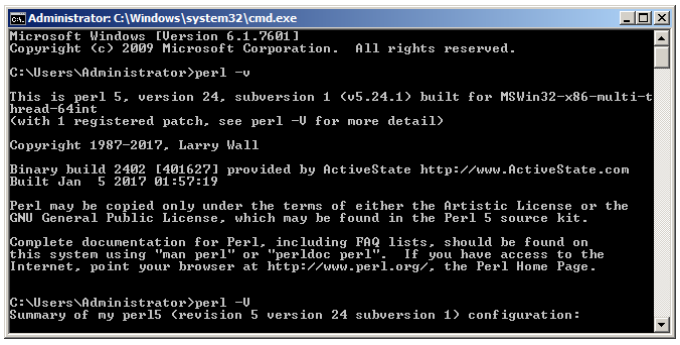
Note: PERL versions after early 2019 are not compatible with Windows XP or earlier. If Windows XP or earlier is still used, FTP-WatchDog is the recommended program. FTP-WatchDog may be downloaded at: https://www.heise.de/download/product/ftp-watchdog-47183

B. Perl-FTP-Upload does the following:

- ☼ Check the Callisto data directory for FITS files;
- ☼ If a new FITS file is available, copy it to the FTP-server at FHNW using File Transfer Protocol;
- ☼ Move the new FITS file to a predetermined location for backup such as another Windows folder, another drive on the same PC, a mapped drive, USB-stick, or USB-disk;
- ☼ Wait 15 minutes and repeat the whole process under control of the System Scheduler application.

C. Installation and operation:

1. Install the Splinterware System Scheduler from http://www.splinterware.com/. Do not install the application in the Program Files folder; suggested location is C:\Tools\. Do not run System Scheduler at this time; it will be setup in a later step
2. Install ActivePERL (PERL5 or higher) on your Windows-PC from http://www.ActiveState.com or http://www.activestate.com/activeperl. After installation, Restart the PC. Note: Perl loads and runs automatically after login when the PC is restarted.
3. Open the Windows console (command line interface) with Start - Run - cmd.exe
4. Type perl –v to confirm that Perl is running, see image right
5. Create new folders for the Perl script and Callisto data Backup location, for example, C:\Callisto\Perl and C:\Callisto\Backup

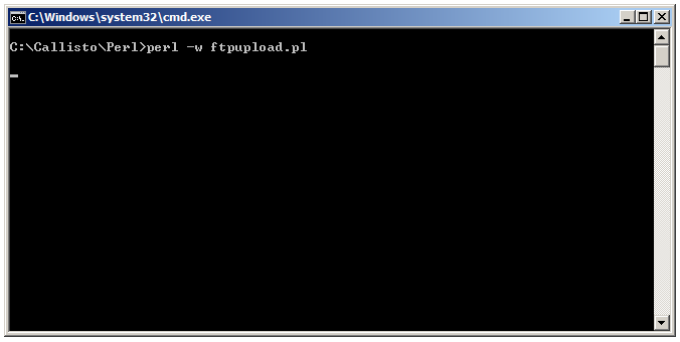


6. Download Perl-FTP-Upload from http://www.e-callisto.org/Software/ftpupload_V3.zip
7. Unzip ftpupload_V3.zip into the new Perl folder created above, for example, C:\Callisto\Perl
8. Use a text editor such as NotePad or NotePad++ to edit the file ftpupload.pl. Go to the new Perl folder, right-click ftpupload.pl and select Open with – Notepad or Choose program… and select your text editor. Change **my $sourcePath** and **my $DestinationPath** to your configuration. For example, if your Callisto data and backup folders are C:\Callisto\Data and C:\Callisto\Backup, then:

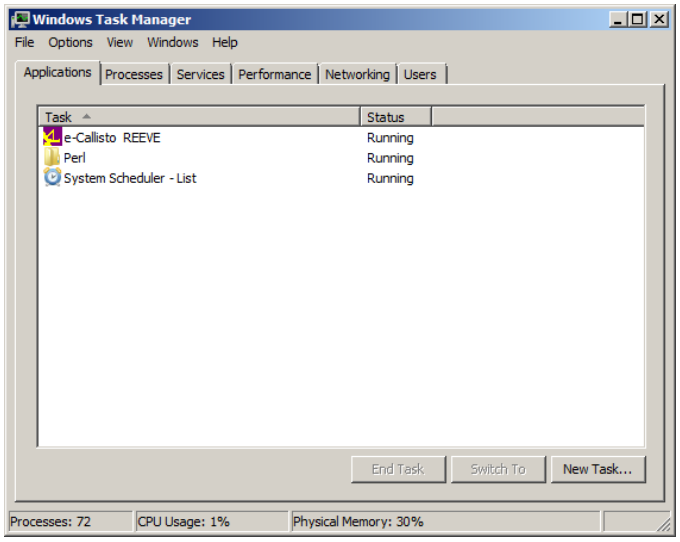
my $SourcePath = "C:/Callisto/Data";
my $DestinationPath = "C:/Callisto/Backup";

Note: The source and destination paths must use forward-slash / as shown; do not use backward-slash \

9. Edit **$filename** and replace the text **XXXXXXX** with your Instrument name. This is the [instrument] parameter in your Callisto configuration file, callisto.cfg. This entry must have the same capitalization as the Instrument name. For example, if [instrument]=ALASKA, then
   if ($filename =~ /^ALASKA_(\d\d\d\d)(\d\d)(\d\d)_.*\.fit?$/)
10. Obtain the FTP server password by email inquiry to Christian Monstein at ETH Zurich, monstein@astro.phys.ethz.ch. Replace the word "password" in the line below with the value received,
    $ftp->login("solarradio","password") or die "Cannot login ", $ftp->message;
    Note: The password is of the form xxxxx$xxx but it must be entered in the Perl script with a backward-slash before the "$" character, as in xxxxx\$xxx (substitute actual values for x)
11. After making above changes, Save ftpupload.pl
12. Open System Scheduler and setup as described in the **Appendix**. Note: System Scheduler is setup to load and run automatically after login when the PC is restarted.



13. When System Scheduler is running successfully, the console (command line interface) will open every 15 minutes (time interval determined by System Scheduler) and the window will remain open during the file upload as shown right
14. The Perl application can be ended by opening Windows Task Manager as shown right. Select Perl and then click on the End Task button at bottom-right. System Scheduler can be ended by selecting Exit in the Action menu



15. If Perl-FTP-Upload seems to be failing due to not being able to resolve the FTP server name, possibly due to timeouts on satellite links, enter the IP address in place of the FTP server name. The script line below shows the line to be changed. Note that it shows "ftpexchange.cs.technik.fhnw.ch" as the FTP server. It is this field that needs to be changed to show the IP address

Original showing server name:

my $ftp = Net::FTP->new("ftpexchange.cs.technik.fhnw.ch", Timeout => 500, Passive => 1, Debug => 0);

Modified showing server IP address:

my $ftp = Net::FTP->new("147.86.8.73", Timeout => 500, Passive => 1, Debug => 0);

16. For testing purposes, the Perl script may be manually started in a console window (command line interface) by typing ***perl -w ftpupload.pl*** or double clicking the batch file ***do.bat***. See Troubleshooting section if you have problems.

17. After testing is completed, the console (command line interface) window can be hidden so that it does not "grab" the screen focus whenever System Scheduler runs the upload script.

    a. With the System Scheduler window open, select View menu and check Event Information.

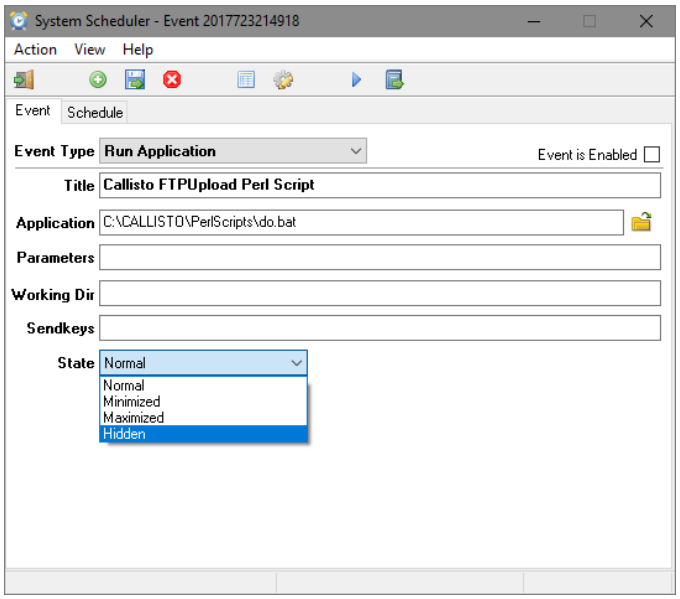
    b. Right-click the Event that is to be hidden. Select Edit.

    c. On the Event tab, select Hidden in the State drop-down list at the bottom (default state is Normal).

    d. On the Event window select Action menu – Save and then close the window.

    e. Repeat steps b. through d. for each Event.

    f. On the Main window select Action menu – Backup Events. Navigate to the desired backup folder for the System Scheduler Events.



    g. Close System Scheduler.

18. Troubleshooting:

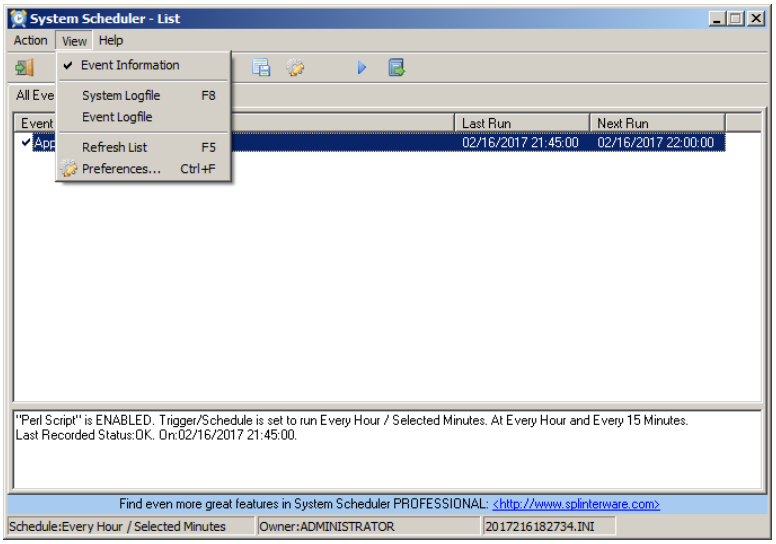
    a. If the do.bat file does not run properly, it is possible the operating system has not yet recognized the Perl installation. Open the do.bat file in a text editor such as NotePad and revise the string to explicitly call out the path to the Perl executable. The default path is C:\Perl\bin\ as shown below. Your path may be different and you should check it first:

    Before: `perl -w ftpupload.pl`
    After: `C:\Perl\bin\perl.exe -w ftpupload.pl`

Appendix

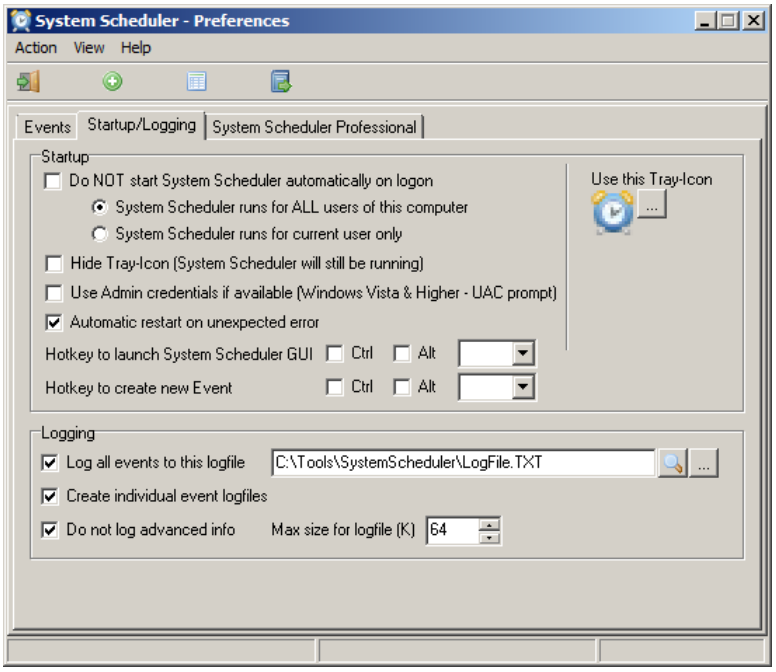
Open System Scheduler if it is not already running.

Select the **View** menu and click on **Preferences**.

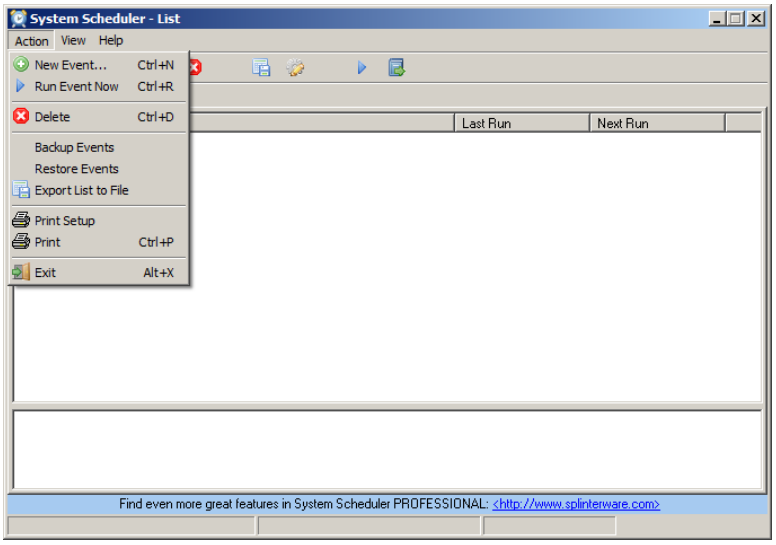


The **Preferences** window will open. The Default settings in the **Event** and **Startup/Logging** tabs do not need to be changed.

Be sure the Startup box **Do NOT start System Scheduler automatically on Login** is NOT checked.



Select **Action** menu and click **New Event...**



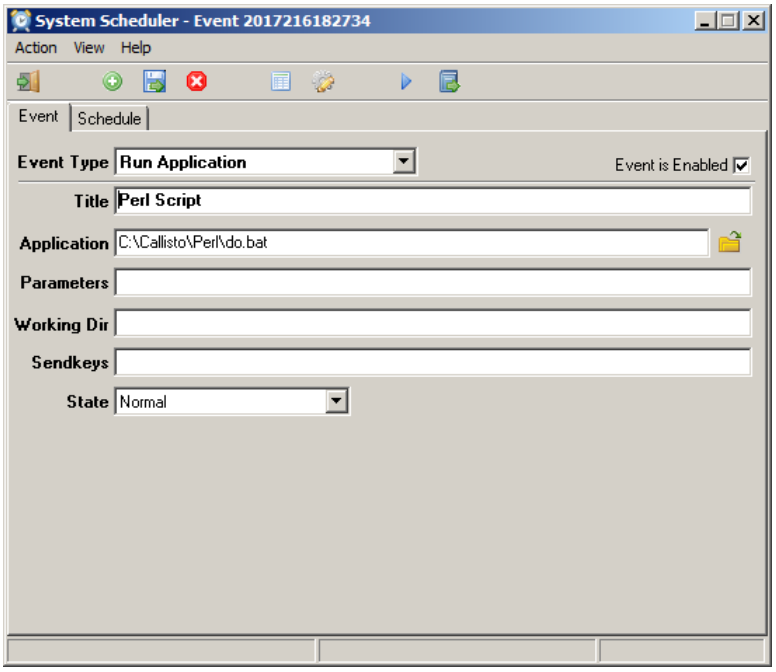
An **Event** setup window will open.

In the **Event** tab, select **Run Application** in the **Event Type** dropdown window.

Enter a title such as **Callisto Perl Script** in the **Title** field.

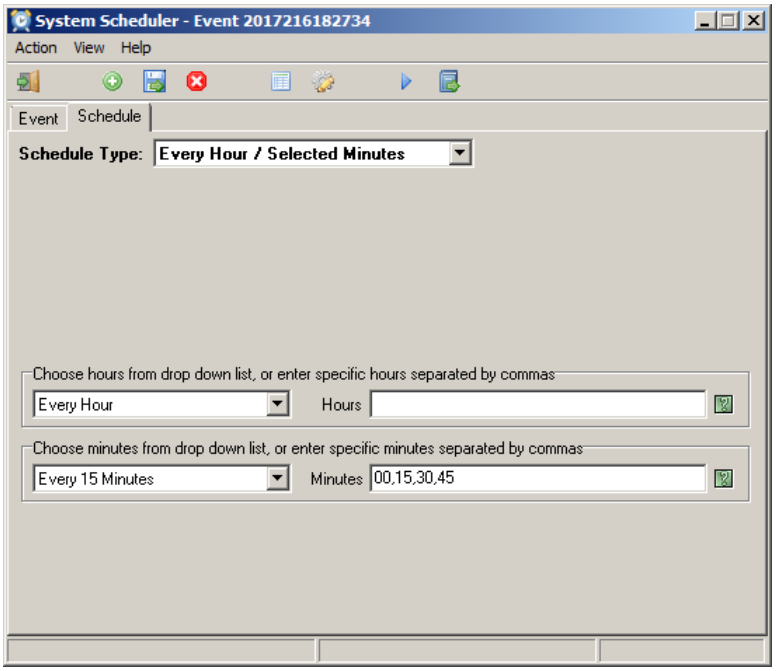
Click on the **Browse** button to the right of the **Application** field. Browse to the **do.bat** file in the folder setup previously (example, C:\Callisto\Perl) and select it.

Enable the Event by checking the **Event is Enabled** box in the upper-right corner.

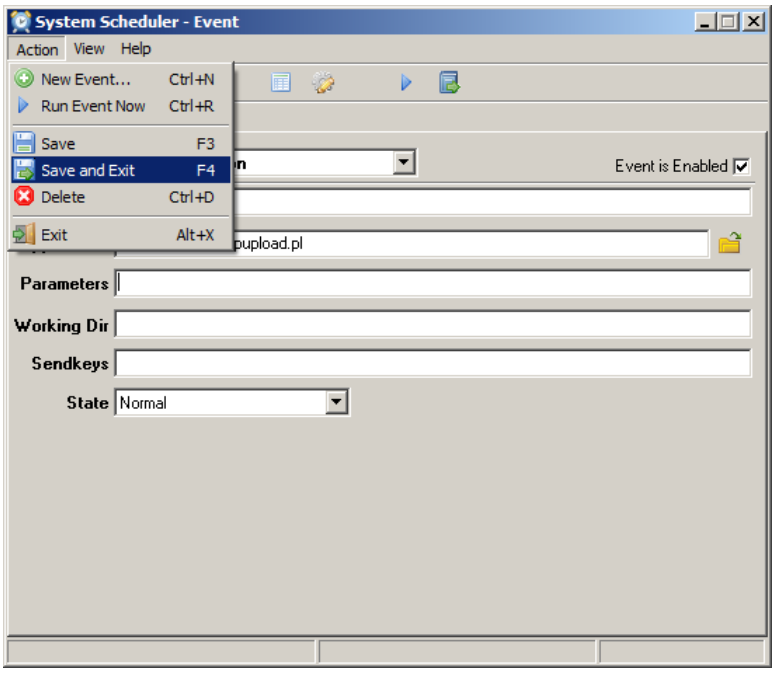


Select the **Schedule** tab. In the **Schedule Type** dropdown menu, select **Every Hour / Selected Minutes**.

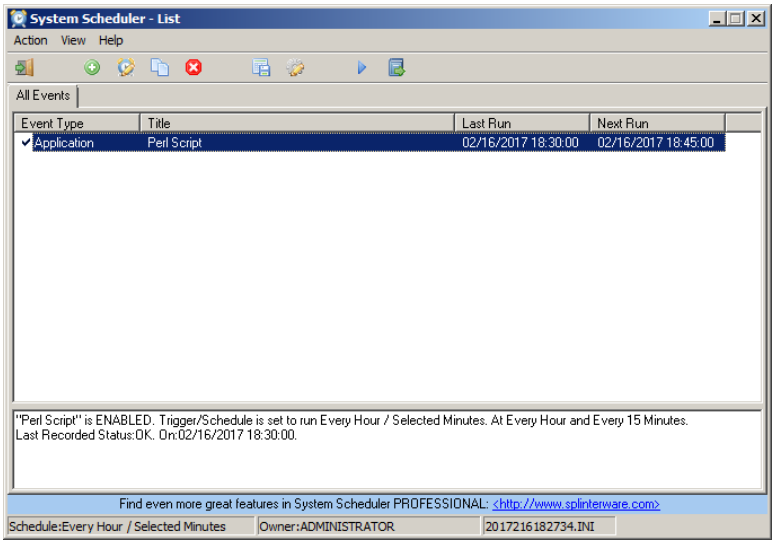
Four dropdown fields will appear below. Select **Every Hour** and **Every 15 Minutes** as shown right. The **Hours** field will be blank and the **Minutes** field will show the default values **00,15,30,45**. Edit/change the minutes to 01,16,31,46 to avoid upload as the files are being written. Other values may be used to suit specific site requirements but avoid using the default values.



To save the event and exit to the main window, select **Save and Exit** in the **Action** menu or press function key **F4**.



After the settings are saved, the System Scheduler main window will change to show the scheduled event with the status shown near the bottom. At this point, the schedule is running and will upload the FITS files every 15 minutes.



Document information

Author: Whitham D. Reeve

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Revision: 0.0 (Original draft started, 15 Feb 2017)
0.1 (Added System Scheduler, 16 Feb 2017)
0.2 (Minor text corrections, 17 Feb 2017)
0.3 (Replaced v2 with v3, 06 Apr 2017)
0.4 (Revised System Scheduler upload times per Monstein ECR, 28 Apr 2018)
0.5 (Added instructions to hide console window during upload, 27 Oct 2018)
0.6 (Added troubleshooting section to edit do.bat, 28 Oct 2018)
0.7 (Added note about PERL and Windows XP, 04 Apr 2019)