

# OPUS\_Upload

Date: 5 September 2018 Rev: 2018.9.5.2005  
By: Mark Silver, [ms@igage.com](mailto:ms@igage.com), +1-801-412-0011

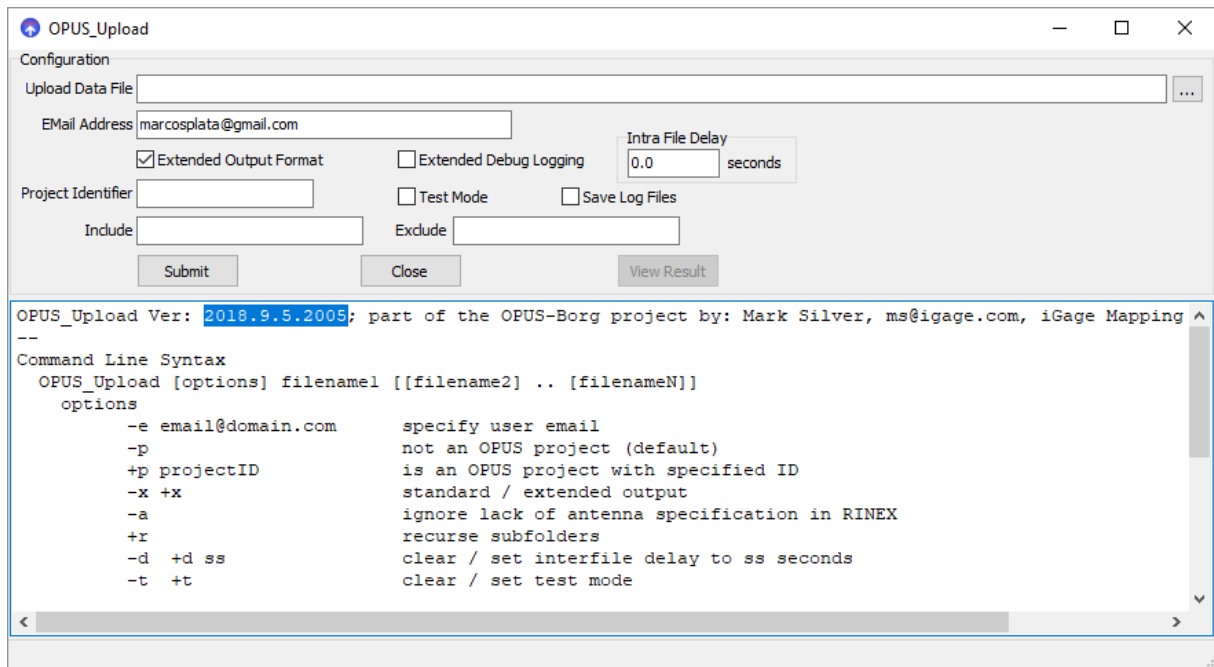
**PLEASE:** Carefully read this User Manual before using OPUS Upload. OU accepts wildcards and it is possible to submit every observation file on a computer with a single simple errant command. For example:

```
OPUS_Upload +r C:\*.1?o
```

Would submit every single observation file on the c: drive from 2010, 2011 ... 2019.

1

I highly recommend that you not run the OU tool from the command line until you have tried it on single files from the Windows interface first.



OPUS\_Upload (OU) is a small Win-32 application that automates the submission of GPS observation files to the online NGS processing system. OU now navigates the HTTPS NGS website using SSL encryption.

OU can be run many ways:

- As a command line tool with arguments
- As a windows program that is open on your screen
- By dragging and dropping files onto the desktop icon

OU simplifies the submission of large sets of files to NGS. With OU it is possible to automatically submit thousands of observation files with a single command. OU has been tested with over 15,000 observation files on a single submission.

NGS Update 1 September 2018

NGS changed the minimum acceptable TLS level for accessing OPUS. OPUS\_Upload was subsequently modified to use the machine SSL layer (instead of utilizing OpenSSL). This effectively means that Windows XP machines can no longer submit jobs to NGS.

There is no work-around for this issue. Purchase a modern computer.

## Distribution Limitations and Use Considerations

The OPUS interface is complicated and the slightest change on the NGS server side will require updating OU.

Like the OPUS Accumulator, if you need OPUS Uploader, you really need it. OU has the potential to save some users lots of time.

Finally OU is part of a much larger project. The OPUS Borg. The Borg uses OU, OU and a few other clients to orchestrate automated quality control on large networks using advanced statistical quality control. OU will be tweaked as needed to make the Borg more functional.

If you are using OU, you really should sign up for the newsletter so that I can advise you of updates: <http://ymlp.com/xguqjwsugmguu>

## Changes

Please send any changes that will make OU more useful for your application to [ms@igage.com](mailto:ms@igage.com).

## Installing OPUS Upload

Currently the OPUS Uploader is distributed with the OPUSAccumulator in a ZIP file with this User Manual. All of the program files and DLLs are code signed by 'I Gage Mapping Corporation'.

You can install the uploader anywhere you want. You can then manually create a shortcut for your desktop.



## Things that OPUS Upload Requires

OPUS Upload automatically determines if a RINEX file should be submitted as a Rapid-Static or Static file by the length of the RINEX file. Files longer than 118 minutes are submitted as Static.

The Antenna Name and the HI in the RINEX file must be correct. This is non-negotiable. If your RINEX files have incorrect values, then they are not compatible with OU. [Note: in Build 2001 a command line switch '-a' was added to allow the submission of files without antenna designators. This likely results in OPUS choosing a NUL antenna.]

You might consider using TEQC to update the antenna name and HI. You might consider contacting the supplier of your RINEX generation tool and shaming them into making a better tool.

Here is a sample RINEX file header:

```

2.11      OBSERVATION DATA      M (MIXED)      RINEX VERSION / TYPE
teqc 2015Nov6      X90-B9427      20161211 18:29:36UTC PGM / RUN BY / DATE
Linux2.4.20-8|i386|gcc|Win32-MinGW32|=      COMMENT
2.10      OBSERVATION DATA      M (MIXED)      COMMENT
CHC RINEX 2.1.5      CHC      20161211 181717 UTC COMMENT
Format: NovAtel OEM4/V/6      COMMENT
039851      MARKER NAME
1008      MARKER NUMBER
MES      IMC      OBSERVER / AGENCY
039851      CHC X900+S      54.0      REC # / TYPE / VERS
039851      CHCX900B      NONE      ANT # / TYPE
-1983123.9906 -4681454.9566 3840366.7309      APPROX POSITION XYZ
2.0000      0.0000      0.0000      ANTENNA: DELTA H/E/N
HUACE ANT REFERENCEPOINT      COMMENT
1      1      WAVELENGTH FACT L1/2
9 C1 L1 D1 S1 P2 L2 D2 S2 C2# / TYPES OF OBSERV
30.0000      INTERVAL

```

I have highlighted the antenna name in yellow and the HI in green.

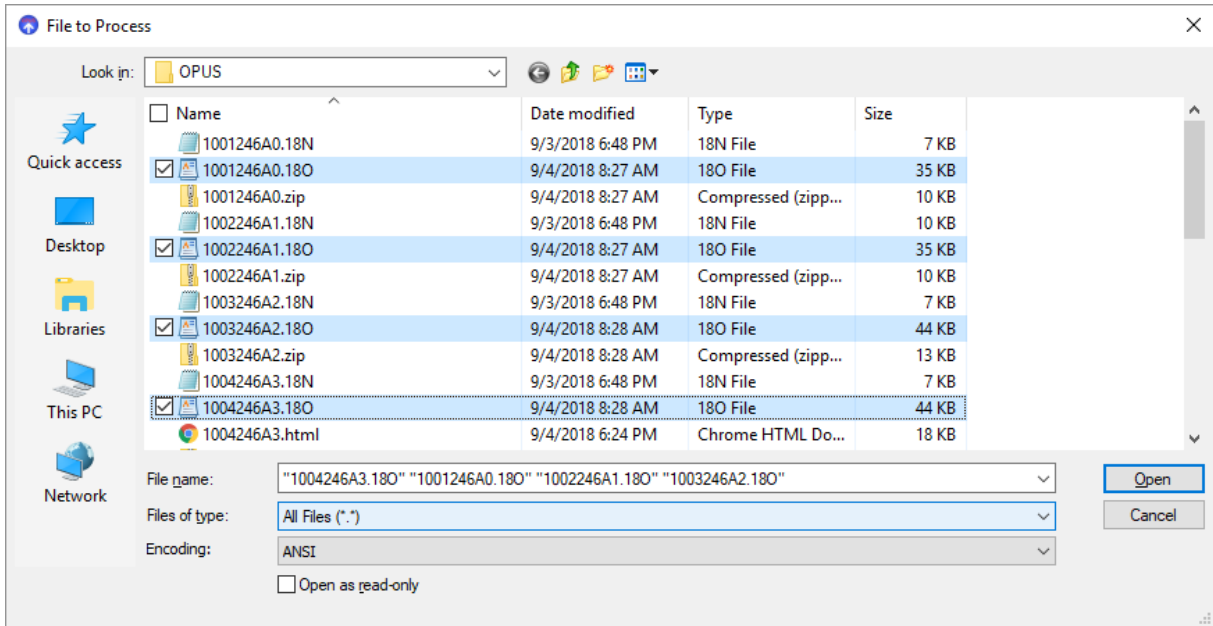
The antenna name must be an antenna supported by NGS.

## Running OPUS Upload as a Windows Program

You can double-click on the program or a shortcut to start OU. OU will start in the upper left corner of your screen. If you move or resize the window and then close OU, the next time it starts the same position and size will be remembered.

The first time you use OA OU you will need to enter your email address. You may want to change the options or add an OPUS-Projects ID. Your settings will be remembered.

The 'Upload Data File' is also remembered from the last time OU was run. You can click on the '...' button to choose one or more files to upload. The files should be GPS observation files, or ZIP files that contain GPS observation files. (In other words, the Open File browser will support multiple file selections.) Here is an example of manually choosing four ZIP files in a folder:



If you choose a ZIP file, the contents of the ZIP file will be assumed to be standard RINEX files and all RINEX files in the ZIP file will be processed individually. If you include a NAV file in the ZIP file, OU will know that it is not a RINEX observation file and will automatically skip the NAV file. Similarly if you choose a NAV file (for example by selecting all of the files in the directory above) OU will skip the .NAV files.

Once you have set the filename(s) and options, click the Submit button and each RINEX file will automatically be submitted to OPUS.

## Running OPUS Upload from the Command Line

OU accepts these arguments:

```
OPUS_Upload [options] filename1 [[filename2] .. [filenameN]]
```

### Options

```
-e email@domain.com    specify user email
-e email@domain.com    specify user email (same as -e)

-p                      not an OPUS project (default)
+p projectID           is an OPUS project with specified ID
-x                      standard output (clears checkbox)
+x                      extended output (sets checkbox)
[filename]             path and filename. May include wildcards
+r                      recurse path and subfolders looking for matches
-d +d ss               clear / set interfile delay to ss seconds
-t +t                  clear / set test mode
-inc                   clear included station list
+inc "abcd,efgh"       include stations
-exc                   clear excluded station list
+exc "ijkl,mnop"       exclude stations
+log -log              enable / disable html log of server results to folder with OBS file.
```



So this command:

```
OPUS_Upload -p +x -e ms@igage.com C:\tmp\2001213A0.obs
```

Will submit the single file without a project, requesting extended output, returning the result to the specified email address.

Once you set the email address on a computer, OU will remember it. Once you set a Project Name, it will be in use until it is cleared. So after you run OU once (perhaps as a Windows application), you can just invoke OU with a filename:

```
OPUS_Upload C:\tmp\2001213A0.obs
```

You might specify two or more files

```
OPUS_Upload C:\tmp\2001213A0.obs C:\tmp\2001213A1.obs
```

You may also use wildcards to specify a group of files. This command:

```
OPUS_Upload C:\tmp\*.obs
```

Will submit every file in the folder C:\tmp\ with an .OBS extension.

You may also use stack wildcards:

```
OPUS_Upload C:\tmp\002\*.obs C:\tmp\003\*.zip
```

Single letter wildcards are also supported:

```
OPUS_Upload C:\tmp\2001213A?.obs
```

It should be possible submit every single observation file on the C drive of your computer with this simple command:

```
OPUS_Upload +r C:\*.1?o
```

Is there really a need for this?

## Submitting With Drag and Drop

If you have a shortcut on your desktop you can drag observation files (or .ZIP files containing one or more observation files) and drop them on the desktop icon.

The files will be processed just as if they were manually selected.

There is no known limit to the number of files you can drop in one action.

## The 'Test Mode'

You may want to test an action before launching OU. Check the 'Test Mode' to see what the effects of your action might be without actually submitting files to NGS.

The Test Mode checkbox is saved when OU closes and reopens.

## Automatic Submission

If you start OU by the command line, with a filename; or if you start OU by dragging and dropping files onto the shortcut then OU will automatically run and then close 5 seconds after the last file is processed.

The Cancel button can be used to hold the form and the log open for viewing. During the 5 second end of run countdown, click on the Cancel button and OU will not automatically close. The form will also not close if Test Mode is enabled.

## Version Notes

### Build 2000: Added several command line switches

#### Command Line Syntax

```
OPUS_Upload [options] filename1 [[filename2] .. [filenameN]]
options
  -e email@domain.com      specify user email
  -p                        not an OPUS project (default)
  +p projectID              is an OPUS project with specified ID
  -x +x                     standard / extended output
  -a                        ignore lack of antenna specification in RINEX
  +r                        recurse subfolders
  -d +d ss                  clear / set interfile delay to ss seconds
  -t +t                     clear / set test mode
  -inc                      clear included station list
  +inc "abcd,efgh"          include stations
  -exc                      clear excluded station list
  +exc "ijkl,mnop"          excluded stations
```

However included and excluded stations don't appear to work quite yet.

### Build 2004: 25 May 2017

Added an error log instead of a message box for unattended operation. Note that you won't be able save the log for command line jobs because the program will exit when complete.

Added a test for valid file when adding from the command line. Modified the handling of files from the command line to include a test for valid-existing files.

Warning: there may some limit to the number of files you can specify on the command line. There should not be a limit to the number of files that you can include with wildcards (string space for filenames should extend to available memory, if there is an issue we can try to compile a 64-bit runtime.)

When specifying multiple files from the command line, the filename box is only loaded with the first file from the list.

Include and excluded stations now work. (And it is a trick...)

### Build 2005: 5 September 2018



Added the 'Save Log Files' checkbox. After submitting an observation file, all of the returned HTML code from the server can be stored in a like-named file in the same folder as the input observation file. The file extension is always .html and the location is always the same as the input file.

Support for TLS1 was suspended at the NGS. OPUS\_Upload now uses the SSL layer from the client machine and OpenSSL is no longer required. This effectively means that Windows XP machines are no longer viable for use with OPUS.