

Aspera Shares Data Transfer Tool

PDS Geosciences Node

August 2018

Contents

Introduction	3
Request Access.....	3
Activate Account	4
Assign Password to Account	4
Preassigned Passwords	4
Aspera Shares Homepage	5
Installing the Aspera Shares Clients	6
System Requirements	6
Installation Instructions	6
Browser Plug-in	6
Command Line Interface (CLI).....	7
Transferring Files.....	8
Outgoing Firewall Port Requirements for Data Transfers	8
Uploading and Downloading Content.....	8
Browser Plug-in	8
Command Line Interface (CLI).....	9
Aspera Shares Preferences	11
File Manifest	12
Help	12

Introduction

Washington University in St. Louis recently completed a project to deploy the Washington University Research Network (WURN), which includes a 1 Gb/s onramp to the internet (Internet2).

It can be very difficult, if not impossible, to maximize network transfer speeds using traditional methods such as FTP or HTTP. Accordingly, Aspera was chosen as our data transfer tool because it was designed to transfer large files or directories at a high rate of speed – even under less than perfect network conditions.

Aspera users can initiate transfers of files or folders through the web interface using the Aspera Shares browser plug-in. Users also have the option to transfer data using the Aspera Shares Command Line Interface (CLI).

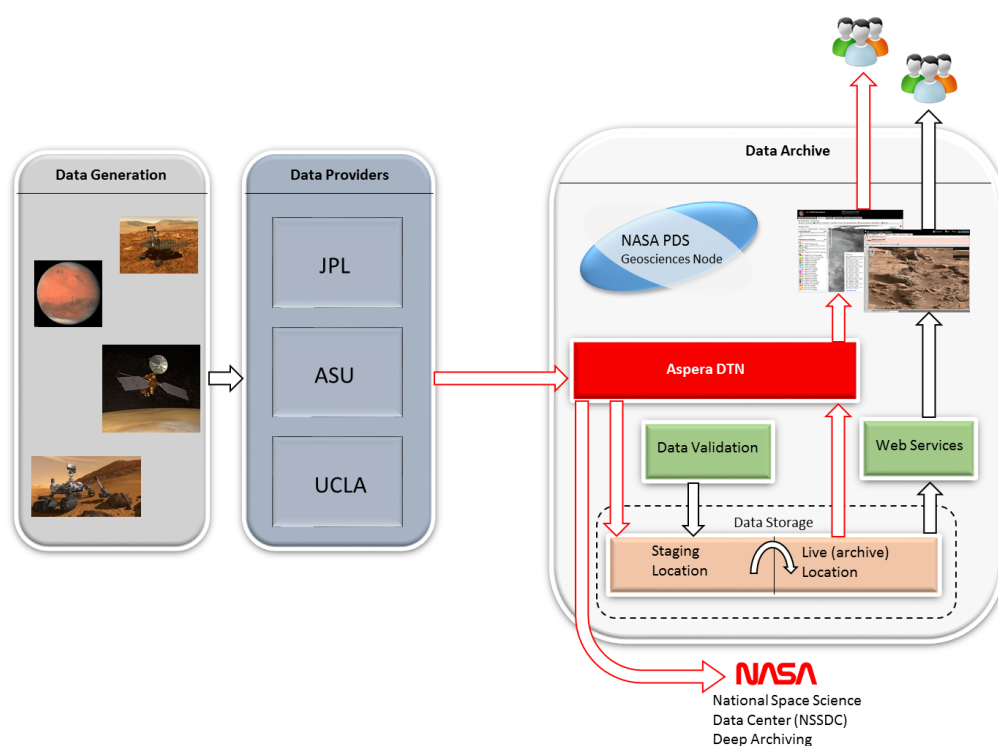


Figure 1. PDS Geosciences Data Workflow

Request Access

Access to the Aspera service is restricted to a list of IP addresses from approved institutions. To request access, send an email to aspera-admin@wunder.wustl.edu and include your name, institution name, email address, and public facing IP address. The new account review process usually takes one week. Once your request has been approved, you will receive an email invitation.

Activate Account

Accounts are required to use the Aspera data transfer service. In most cases, users will receive an email invitation to assign a password to their account.

Note that users who will only use the command line interface (CLI) are required to follow the link in the email to create an initial password for their account. Users must use the computer system with a preapproved IP address to log into the Aspera web interface to create a password. CLI users are not required to go back to the web interface once a password is created.

CLI Users: Once you assign a password to your account, you can jump ahead to the Command Line Interface (CLI) Transfers section.

Assign Password to Account

When new accounts are created, an email invitation is sent to the user from aspera-admin@wunder.wustl.edu. Included in the email is the user's username and a link to login to the Aspera web interface. Users should click on the "Please click here to login" link to assign a password to their account.

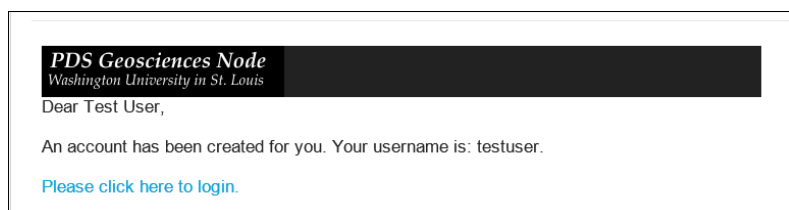


Figure 2. Email invitation to login

Passwords must meet the following complexity requirements.

- Six characters long
- At least one letter
- One number
- One symbol

Preassigned Passwords

We will assign a password to an account under special circumstances. Users who will only use the CLI and do not have access to a web browser on a preapproved IP address might request this type of account since passwords are managed through the Aspera website.

In this scenario, you will receive an automated email which includes your username. A separate email will be sent to you which will include your password. Once you have your username and password, you can start using the Aspera CLI.

Aspera Shares Homepage

Aspera Shares is the web front-end to the Aspera data transfer service. When you log into the Shares interface, either from following the link in your email or by going directly to <https://titan.rsl.wustl.edu>, you will see your homepage. Review the callouts on the image below to become familiar with the Shares homepage.

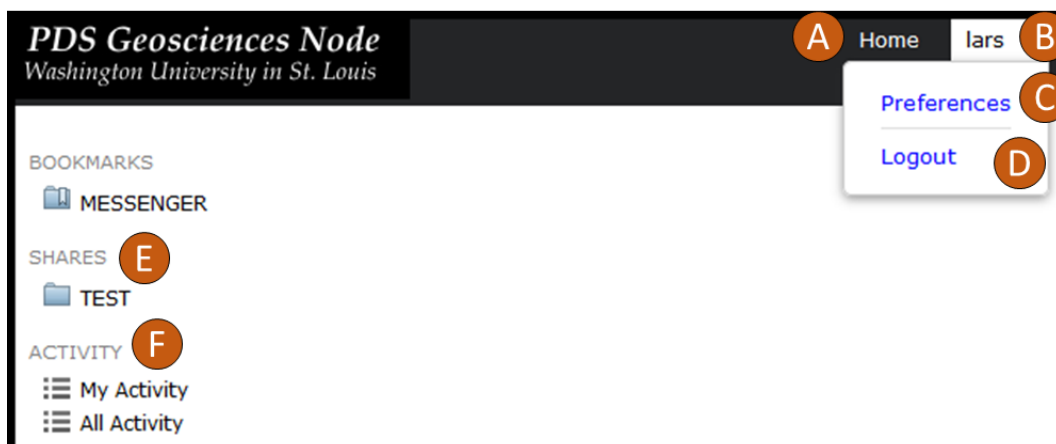


Figure 3. Aspera Shares Homepage

Callout	Link	Action
A	Home	Goes to your Shares home page
B	<username>	Open a drop-down menu with links to Preferences and Logout.
C	Preferences	Goes to the Preferences page where you can change your name, password, email address, notifications, etc.
D	Logout	Logs you out of Shares and goes to the Shares Log In screen.
E	Shares	Your Shares folders are listed below this heading. These are the folders which can be used to upload or download content.
F	Activity	Click My Activity to see and search your Shares activity. Click All Activity to see and search your Shares activity and activity related to your Shares.

Figure 4. Aspera Shares callout legend

Installing the Aspera Shares Clients

The Aspera Shares client is used to facilitate high-speed uploads and downloads with an Aspera Server.

System Requirements

- Windows 7, 8, 10, 2008r2, 2012, 2012r2
- OS X 10.6+, Intel Only
- Most Linux Distributions
- Firefox 27+, Google Chrome 32+, Safari 6+, Internet Explorer 8+ (required for browser plug-in)

Installation Instructions

Browser Plug-in

The plug-in is compatible with most operating systems and browsers. After logging into <https://titan.rsl.wustl.edu>, the first page you will see is your home page. In most cases, you will only have one Share. Click on your Share folder to enter your workspace.

If this is your first time connecting, or your plug-in is out of date, you should see an option at the top of the screen to “**Download latest version**” (see Figure 5). Click on the “**Download latest version**” link to download and install the Aspera Browser plug-in.

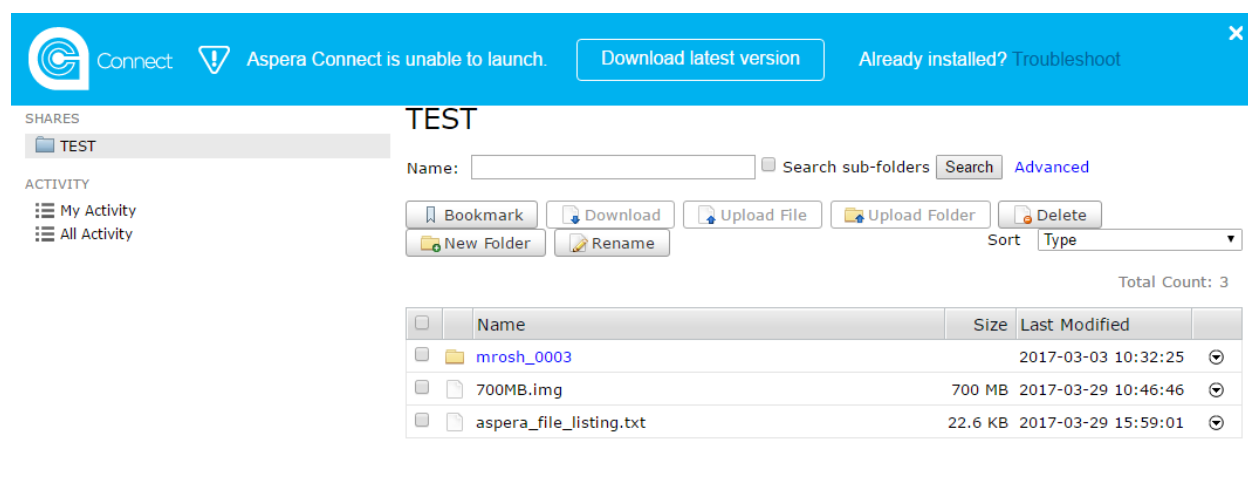


Figure 5. Aspera Connect prompting to download browser plug-in

Once downloaded, choose the Typical install in the installation wizard.

When the installation is complete, open your browser and you should automatically redirect to the Aspera interface. If not, navigate to <https://titan.rsl.wustl.edu>. Log in with your credentials and you should be ready to start transferring.

Note: Depending on your browser, you might be required to allow the plug-in to run for the first time. For example, in Firefox you have to Click **Allow** and **Allow and Remember**.

Command Line Interface (CLI)

Note that before you can use the CLI interface, you must first have an Aspera account. Review the [Activate Account](#) section above if you do not already have an account.

The Aspera CLI client is a useful tool for users who would like to automate data transfer jobs. The latest versions of the client for Windows, Mac, and Linux can be downloaded from <https://downloads.asperasoft.com/en/downloads/62>.

Linux Installation

Run the installation script below. The script places the Aspera CLI in the ~/.aspera/cli directory.

```
sh ./aspera-cli-x.x.x.xxx.xxxxxxxx-linux-64-release.sh
```

(Optional) To install the Aspera CLI in your PATH, run the following command:

```
# export PATH=~/.aspera/cli/bin:$PATH
```

(Optional) To install the man pages, run the following command:

```
# export MANPATH=~/.aspera/cli/share/man:$MANPATH
```

(Optional) To set an environment variable with the value of your password, to be used with all aspera client commands, run the following command:

```
# export ASPERA_PASS=<password>
```

Windows Installation

Unzip the installation file:

```
aspera-cli-x.x.x.xxx.xxxxxxxx-win-xxxx-32-release.zip
```

Add the Aspera CLI to your Path system variable:

- a) Select Start > Control Panel > System and Security > System > Advanced System Settings. The System Properties dialog appears.
- b) On the Advanced tab, click Environment Variables.
- c) In the System variables area, select the Path variable in the list and click Edit.
- d) In the Variable value field, add the path to the bin directory of your new Aspera CLI installation.

(Optional) To set an environment variable with the value of your password, to be used with all aspera client commands, run the following command:

```
> set ASPERA_PASS=<password>
```

Transferring Files

Outgoing Firewall Port Requirements for Data Transfers

You might check with your IT department to verify that the outgoing ports below are allowed to access the Shares server IP address.

- Shares server IP: 65.254.104.1
- TCP 443
- TCP 33001
- UDP 33001-33050

Uploading and Downloading Content

Browser Plug-in

Once you get the browser plug-in installed, navigate back to your Shares folder. You have the option to either upload or download single or multiple files simultaneously or upload or download folder structures. To initiate an upload of a directory structure, click on Upload Folder and browse your local computer for a folder to upload.

A confirmation prompt will appear asking if you want to allow a connection with the Aspera Server. Click Allow.

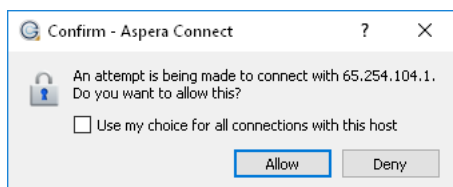


Figure 6. Confirmation prompt

After initiating a transfer, Aspera opens the Transfer Window where you can monitor the progress of your transfer job.

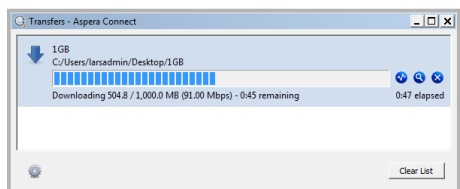


Figure 7. Aspera Transfer window

Command Line Interface (CLI)

Aspera Shares command syntax is as follows:

aspera shares (subcommand) (option)

Aspera shares subcommands:

Browse	Browse a directory of a Shares server
Delete	Delete a file, directory, or share
Download	Download files or directories from a Shares server
Rename	Rename a file or directory
Upload	Upload files or directories to a Shares server

Below are examples of common Aspera Shares CLI commands:

Upload

```
aspera shares upload --host=titan.rsl.wustl.edu -u testuser --source=C:\local\folder --
destination=/destination/folder
```

Note that users can view the name of their Aspera Shares folder name when they log into the web interface. So, if the user's folder name is MARK, the above command would look like this:

```
aspera shares upload --host=titan.rsl.wustl.edu -u testuser --source=C:\local\folder --destination=/MARK
```

Download

```
aspera shares download --host=titan.rsl.wustl.edu -u testuser --source=/remote/folder --destination=
C:\local\folder
```

Browse

```
aspera shares browse --host=titan.rsl.wustl.edu -u testuser --path= /TEST
```

Aspera shares options:

-b path --base-ca-path=path	The base path for your CA certificates. If your certificates are in the default location, this argument is not required. The default path is ~/.aspera/cli/etc .
-c num --count=num	List only up to <i>num</i> items.
-H host --host=host	The Shares host name.

-i --insecure	Accept the certificate, even if it's invalid.
-j --json	Output raw JSON.
-k num --skip=num	Skip the first <i>num</i> items.
-o order --sort=order	Sort by <i>order</i> . The options for <i>order</i> are as follows: <ul style="list-style-type: none"> • type = sort directories first, then files • size_a = sort by file size (ascending) • size_d = sort by file size (descending) • mtime_a = sort by file modification time (ascending) • mtime_d = sort by file modification time (descending)
-p [password] --password=[password]	<p>The Shares user password.</p> <p>If you specify -p but omit the <i>password</i> value, the Aspera CLI assumes an empty string for this value.</p> <p>If you do not specify -p, the Aspera CLI prompts you for a non-echoing password.</p> <p>Alternatively, you can set the ASPERA_PASS environment variable. For instructions, see Installing the Aspera CLI.</p>
-P path --path=path	The Shares remote path (the default is <i>/</i> ; or use the format <i>/shareName/relativePathTo/fileOrFolder</i>).
-T port_number --port=port_number	The listening port on the Shares server.
-u username --username=username	The Shares username.

--user=username	The username of the Aspera transfer user.
-v --verbose	Show more verbose output, for debugging.

The links below outline in detail how to install the client and also cover all of the available command line options. Be sure to follow the instructions for “aspera shares”.

WINDOWS:

https://download.asperasoft.com/download/docs/cli/3.7.7/user_win/webhelp/index.html#dita/cli_intro.html

LINUX:

https://download.asperasoft.com/download/docs/cli/3.7.7/user_linux/webhelp/index.html#dita/cli_intro.html

MAC:

https://download.asperasoft.com/download/docs/cli/3.7.7/user_osx/webhelp/index.html

Aspera Shares Preferences

Users have the option to change their Aspera Browser Plug-in client behavior by opening the Aspera Connect preferences. In Windows, find the Aspera icon in the tool tray, right-click, and select Preferences.

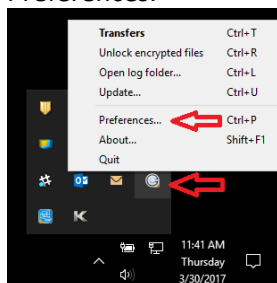


Figure 8. Change Aspera Connect Client preferences from task bar

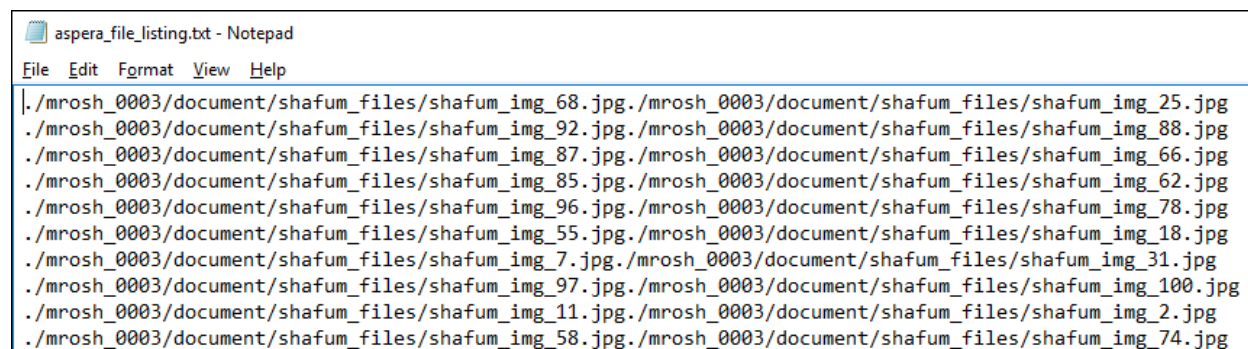
Users are generally interested in adjusting the following settings:

- Change default download location
- Proxy settings
- Bandwidth limitations

File Manifest

Past users have requested the ability to view a listing of files that have already been uploaded. Although the search tool within the Aspera Shares interface will output a listing of files within your directory, there isn't currently an option to export this list from the web interface.

To solve this problem, a manifest file called `aspera_file_listing.txt` is located in each user's default Share folder and is updated every minute.



```

aspera_file_listing.txt - Notepad
File Edit Format View Help
|./mrosh_0003/document/shafum_files/shafum_img_68.jpg./mrosh_0003/document/shafum_files/shafum_img_25.jpg
./mrosh_0003/document/shafum_files/shafum_img_92.jpg./mrosh_0003/document/shafum_files/shafum_img_88.jpg
./mrosh_0003/document/shafum_files/shafum_img_87.jpg./mrosh_0003/document/shafum_files/shafum_img_66.jpg
./mrosh_0003/document/shafum_files/shafum_img_85.jpg./mrosh_0003/document/shafum_files/shafum_img_62.jpg
./mrosh_0003/document/shafum_files/shafum_img_96.jpg./mrosh_0003/document/shafum_files/shafum_img_78.jpg
./mrosh_0003/document/shafum_files/shafum_img_55.jpg./mrosh_0003/document/shafum_files/shafum_img_18.jpg
./mrosh_0003/document/shafum_files/shafum_img_7.jpg./mrosh_0003/document/shafum_files/shafum_img_31.jpg
./mrosh_0003/document/shafum_files/shafum_img_97.jpg./mrosh_0003/document/shafum_files/shafum_img_100.jpg
./mrosh_0003/document/shafum_files/shafum_img_11.jpg./mrosh_0003/document/shafum_files/shafum_img_2.jpg
./mrosh_0003/document/shafum_files/shafum_img_58.jpg./mrosh_0003/document/shafum_files/shafum_img_74.jpg

```

Figure 9. Sample of `aspera_file_listing.txt` contents

Help

All questions related to installing or using Aspera should be directed to the email address:

aspera-admin@wunder.wustl.edu.