Alternative means of uploading large data files to Box

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Background
The College has implemented Box to provide offsite storage, initially for research staff but now for all staff, as a means of allowing these users and their colleagues to collaborate on these files/documents from inside and outside College.

On implementation, access to Box was:

  - via the Box Portal website (https://imperialcollegelondon.app.box.com/login), which allows users to upload, manipulate and share data files with whoever they wish.
  - Box Sync, which if enabled by the user keeps selected folders/files on the Box site synchronized with a local cache on the user’s workstation thus allowing offline access to these folders/files.

The Box Sync process is intended to keep folders/files on the Box Portal site synchronized with the user’s local cache and to do so it works on a ‘drip feed’ basis determining when the user’s workstation/ network connection is only lightly used thus reducing the impact of the synchronization process on the user’s work. Unfortunately, this process is not well understood by the users and they have been complaining that the Box Sync process is slow. It turns out in most cases that they are trying to upload large files and/or large numbers of folder files via the Box Sync process, which is not designed or intended to do.

Alternatives to Box Sync
Box provide FTPS and WebDAV utilities as alternatives to upload large files and/or large numbers of folders/files. These are detailed below.

As the FTPS and WebDAV utilities do not support the Box SSO login capabilities, before you can use any of these alternatives for the first time you will need to create a Box-specific password to supplement your SSO login. You can do so by logging in to your Box account from a browser and
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going to your Account Settings. On the Account tab you will find the section Create External Password, as shown below:

The password you choose should comply with College policy on secure and strong password as outlined at:

http://www.imperial.ac.uk/admin-services/ict/self-service/be-secure/protect-college-personal-information/strong-passwords/

FTPS access to Box

FTPS is available to Box Business and Enterprise accounts, the tool is designed to be used for bulk uploading and occasional bulk downloading of files from your account.

FTPS is FTP with support for the Transport Layer Security (TLS) and the Secure Sockets Layer (SSL) cryptographic protocols.

FTPS has two modes of operation:

- Implicit: Port 990 is implicit. No handshake.
- Explicit: Port 21. Also known as FTPES.
Whilst Box generically supports both FTP and FTPS, the Imperial College Box account is configured to ONLY support FTPS which is a more secure implementation of FTP. If you try to connect using FTP rather than FTPS you will get an error message similar to this:

C:\Users\chrisman>ftp ftp.box.com
Connected to ftp.box.com.
220 Service ready for new user.
530 Access denied.
User (ftp.box.com:(none)): c.metcalfe@imperial.ac.uk
331 User name okay, need password for c.metcalfe@imperial.ac.uk.
Password:
530 Box: Imperial College London does not allow regular FTP; use FTPS instead. (Both "explicit" and "implicit" FTPS are supported.)
Login failed.
ftp>

To connect to the Box FTP server you will need an FTP client of your choosing (WinSCP, Filezilla, Cyberduck, SmartFTP etc.).

Please Note:

- It is recommended that no more than 150,000 files or 250GB of total data should be included in each FTP batch
- Resumable uploads/downloads are NOT supported on Box for FTP. Failed uploads or downloads will need to be retried.

To access the Box FTP server, please use the following:

- Server: ftp.box.com
- Username: Your Box account email address
- Password: Your Box External password
- Port: 990 for implicit encrypted connection (FTPS) or 21 for explicit encrypted connection (FTPES).

An example, using WinSCP to connect to Box FTP is shown below:
To Connect to Box via FTPS from the Command Line (Mac/Linux)

Open a terminal session

To connect to Box via **ftps over Port 21**:

```shell
shell> curl -1 -v --disable-epsv --ftp-skip-pasv-ip -u username@example.com --ftp-ssl ftp://ftp.box.com
```

To connect to Box via **ftps over Port 990**:

```shell
shell> curl -1 -v --disable-epsv --ftp-skip-pasv-ip -u username@example.com --ftp-ssl ftps://ftp.box.com:990
```

To upload a file:

Open a terminal session:

```shell
shell> curl -1 -v --disable-epsv --ftp-skip-pasv-ip -u username@example.com --ftp-ssl --upload-file filename ftp://ftp.box.com/<dir>/
```

Without the trailing "/" in "ftp://ftp.box.com/<dir>/", a "551 Box: Not Found" error will be generated.

**Note**: Curl doesn't actually stay connected like a typical connect command. For further help, type either command in your terminal: man curl or curl --help
WebDAV access to Box

connecting via iOS, Windows 7 or a WebDAV client, use the following URL in your WebDAV client:
https://dav.box.com/dav

Box recommends using third-party clients for mapping a drive to Mac OS X.

**Note:** Web browser access is not supported. You must use a WebDAV client.

**Windows**

Windows provides a WebDAV client as part of Windows Explorer where an external location can be referred to as Network Location or as a Mapped Network Drive, the following instructions can be used to Add a Network Location (to Map a Network Drive follows similar lines):

From Windows Explorer, right click on My PC / This Computer

**Welcome to the Add Network Location Wizard**

This wizard helps you sign up for a service that offers online storage space. You can use this space to store, organise and share your documents and pictures using only a web browser and internet connection.

You can also use this wizard to create a shortcut to a website, an FTP site or other network location.

**Click Next**

**Where do you want to create this network location?**

![Choose a custom network location](Choose a custom network location)

Specify the address of a website, network location or FTP site.

**Click Next**

**Specify the location of your website**

Type the address of the website, FTP site or network location that this shortcut will open.

- Internet or network address:

  ![Input field for Internet or network address](Input field for Internet or network address)

  ![Browse button](Browse button)

  ![View examples](View examples)

- Enter: [https://dav.box.com/dav](https://dav.box.com/dav)

**Click Next**
Enter your Box email address and your External password.

Click OK

What do you want to name this location?

Create a name for this shortcut that will help you easily identify this network location:

https://dav.box.com/dav

Type a name for this network location:

Box WebDAV Connection

Enter a name for this connection eg ‘Box WebDAV Connection’

Click Next

Completing the Add Network Location Wizard

You have successfully created this network location:

Box WebDAV Connection

A shortcut for this location will appear in Computer.

Open this network location when I click Finish.

Click Finish

The WebDAV connection you created above should now be available for use like any other folder in Windows Explorer.

The WinSCP utility also supports WebDAV and can be included in Windows scripts if required.

WebDAV for Mac / Linux

There are various WebDAV clients available for Mac (Finder, AppleScript, autofs and others) and Linux (curl, cadaver, davfs2 and others) please search for a suitable client for your operating system and use the following information to setup a WebDAV connection:
• Server: [https://dav.box.com/dav](https://dav.box.com/dav)
• User Account: Your Box Email address
• Password: Your Box External password

Known Issues

1. Because uploads through WebDAV are accomplished in two stages, zero-byte files will be uploaded as placeholders before the final file contents are uploaded. This will make a newly created or uploaded file have two versions and include two upload events in reporting.
2. Single Sign-On (SSO) is not supported via WebDAV. If SSO is required for account logins, you may use the Create External Password (noted above) for WebDAV logins. The external password may be created in the Account Settings > Account tab > Create External Password
3. Opening Office and Adobe files (doc, docx, xlsx, pptx, pdf, etc.) may continually prompt for login credentials if the programs are not currently open when downloading a file from Box via a mapped drive. This is a known Microsoft issue that is unrelated to Box’s WebDAV implementation. The password will be saved, so choosing OK will open the file. Additionally, keeping these programs open will avoid the prompt when opening another file with that extension.