Data Archive
(Infrastructure and GUI Access)

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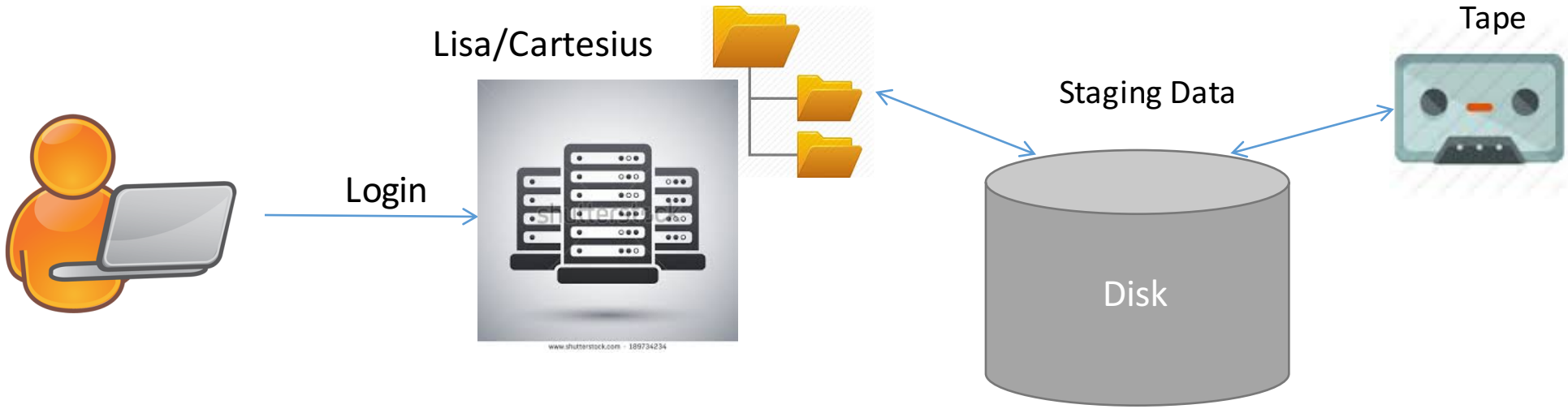
Data Archive - Long-term storage

- Long-term storage of data
- Storage medium: Tape → high latency
- Powerful transfer protocols (gridfTp, rsync, scp)
- Easy access from HPC services lisa and cartesius via NFS mounts → use archive as yet another directory

Data Archive Infrastructure

Workflow employing Archive from compute clusters at SURFsara:

- User logs in to Lisa/Cartesius
- Archive is mounted via NFS → User sees the archive as another folder
- Copy data to HPC (with which commands?)
- Do your computations on the data
- Copy data back to archive (tape)

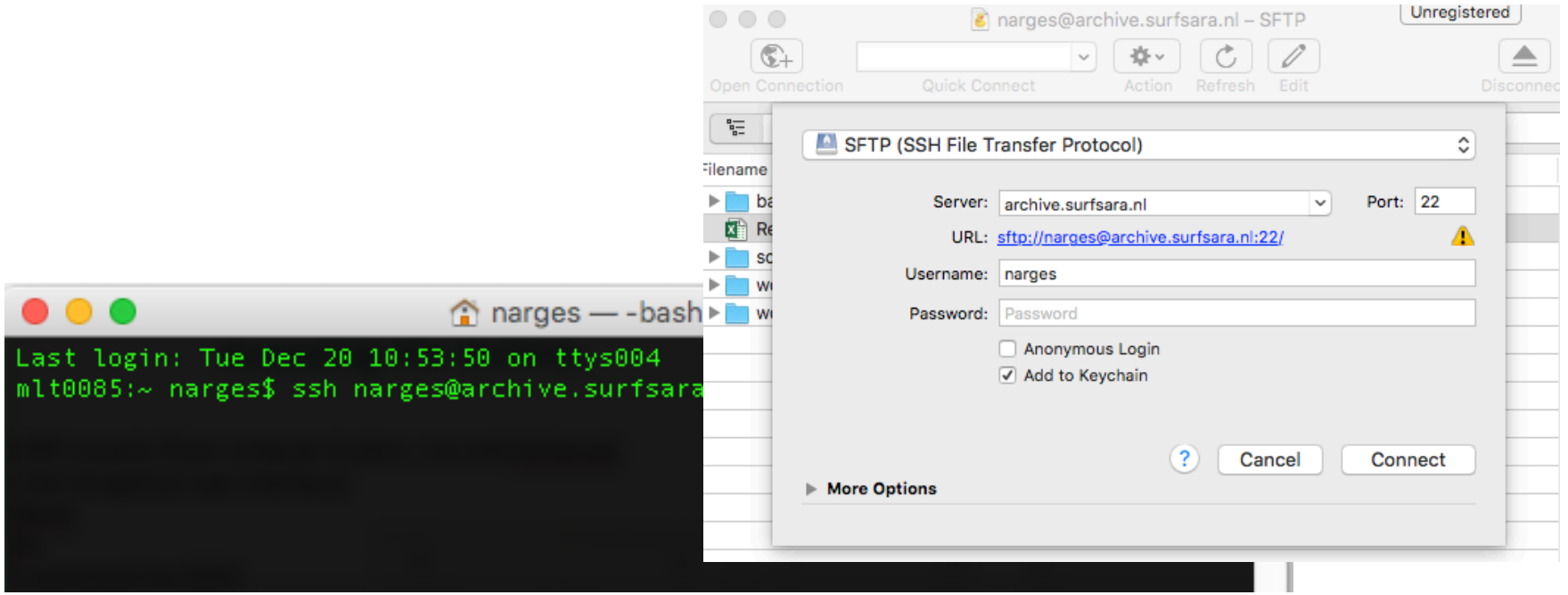


Archive Usage – Best practices

- Try to store files of significant size (> 1 GB) as much as possible. Smaller files will always be accepted, but will lower the performance of restoring your files from tape.
- If you have many small files, make sure to pack them using a file archiving tool like tar or dmftar.
- Try to pack your files before uploading them to the archive, possibly by using dmftar which allows remote tarring.
- Organise your files in such a way that in case the files are needed again only parts of the data set need to be restored from tape.
- Avoid storing unpacked software packages, these usually contain a lot of small files. Instead pack these as well, or refer to a specific software repository.

Accessing the Archive

- Access via GUI (Graphical User Interface)
- Access via command line Direct access
- Access via NFS mounts (from compute clusters, Lisa and Cartesius)

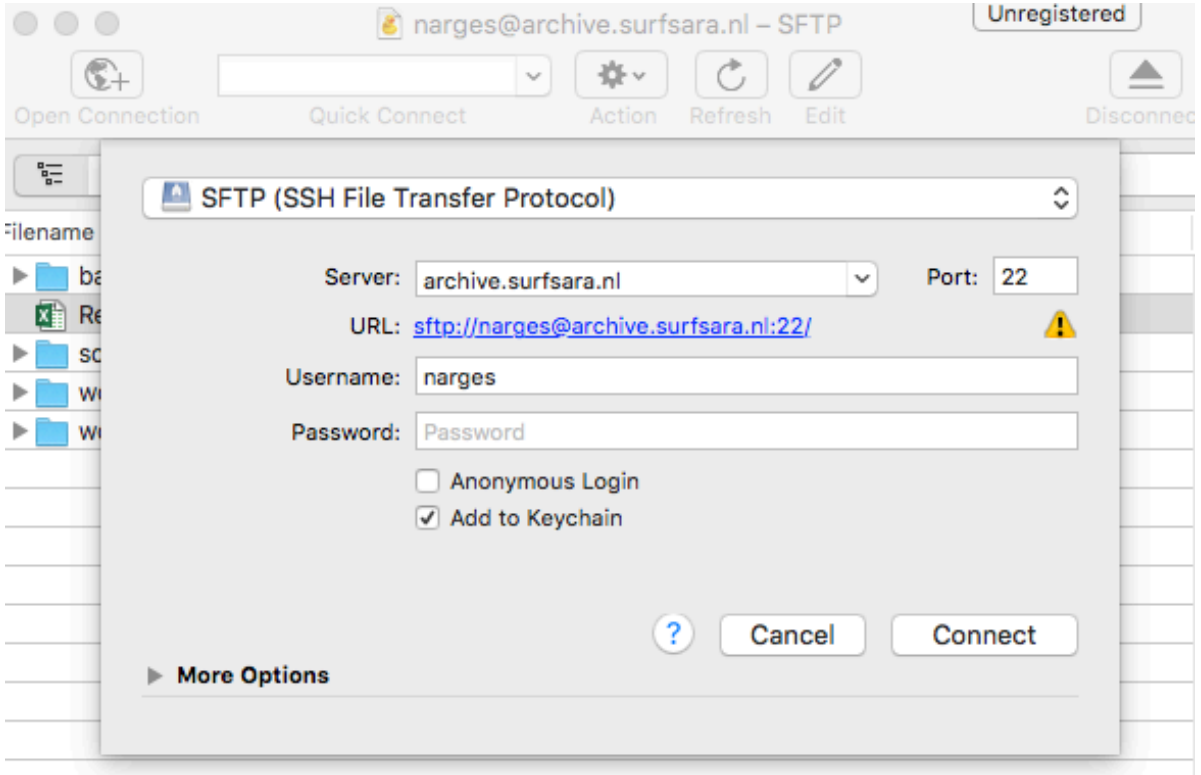


Access Archive via GUI

- Tools to access the Archive via GUI:
  - **Cyberduck** (Mac and Windows) →http://cyberduck.ch/
  - **MobaXterm** (Windows) → http://mobaxterm.mobatek.net/
  - **Filezilla** (Linux) → https://filezilla-project.org/

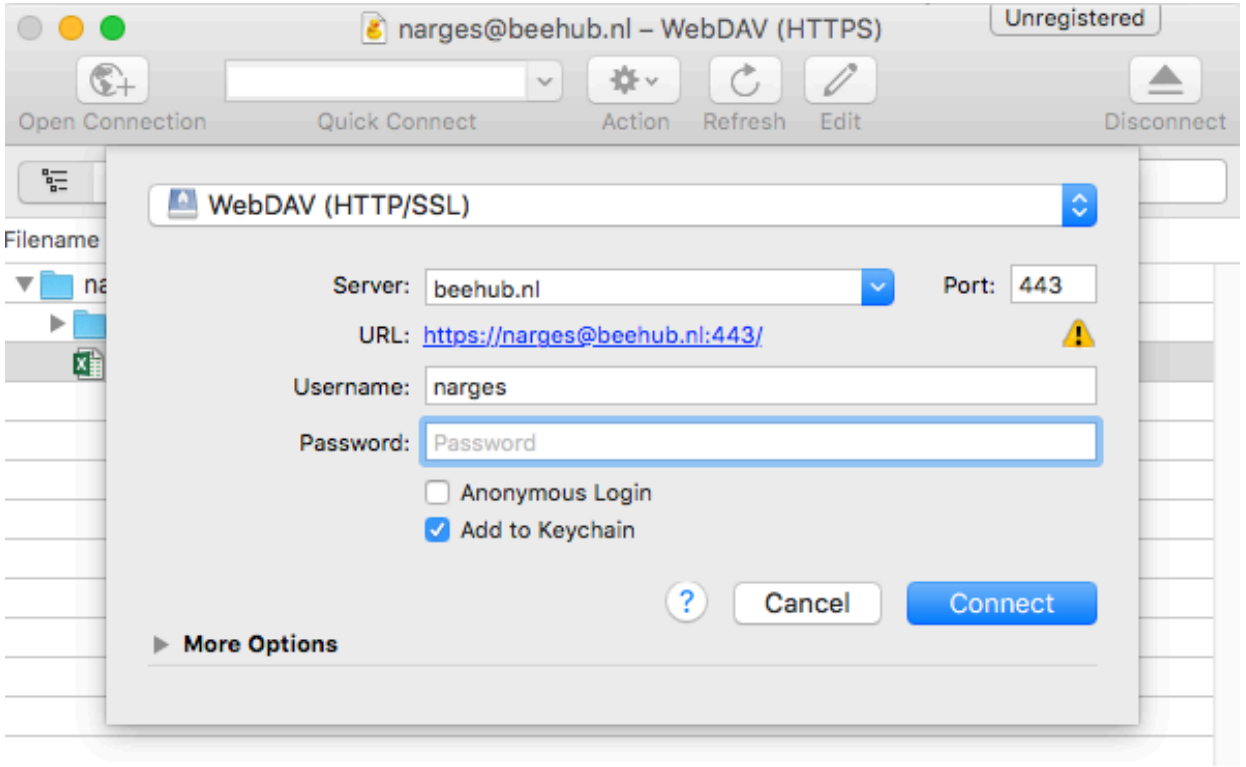
Access Archive via Cyberduck

- Cyberduck is a standalone client that runs on Windows and Mac OSX
  - Download and install: http://cyberduck.ch/
- To start an Archive session with Cyberduck:
  - Start Cyberduck
  - Click on 'Open connection'
  - You now see this screen
  - Choose the following options:
    - Connection type: SFTP (SSh File Transfer Protocol)
    - Server: archive.surfsara.nl
    - port: 22
    - Login with your credentials (sdemo<xxx>)



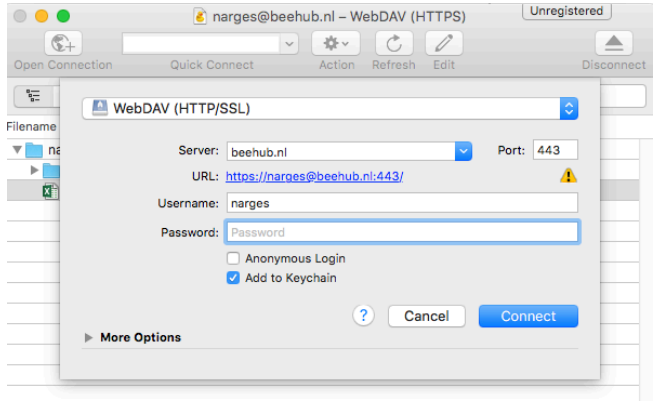
Access BeeHub via Cyberduck

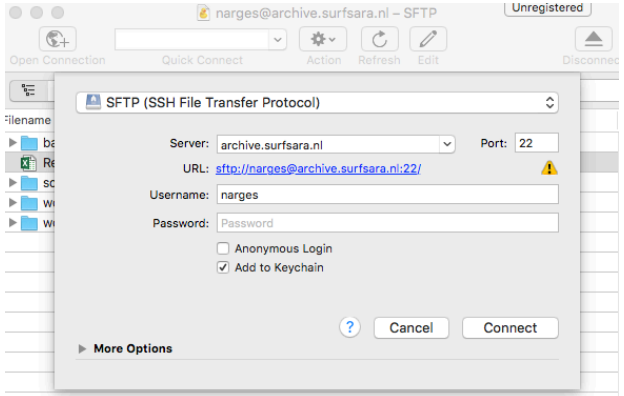
- To start a BeeHub session with Cyberduck:
  - Start Cyberduck
  - Click on 'Open connection'
  - You now see this screen
  - Choose the following options:
    - Connection type: WebDAV (HTTP/SSL)
    - Server: beehub.nl
    - port: 443
    - Enter your BeeHub username and password as you use them on the website (not your sdemo credentials!)

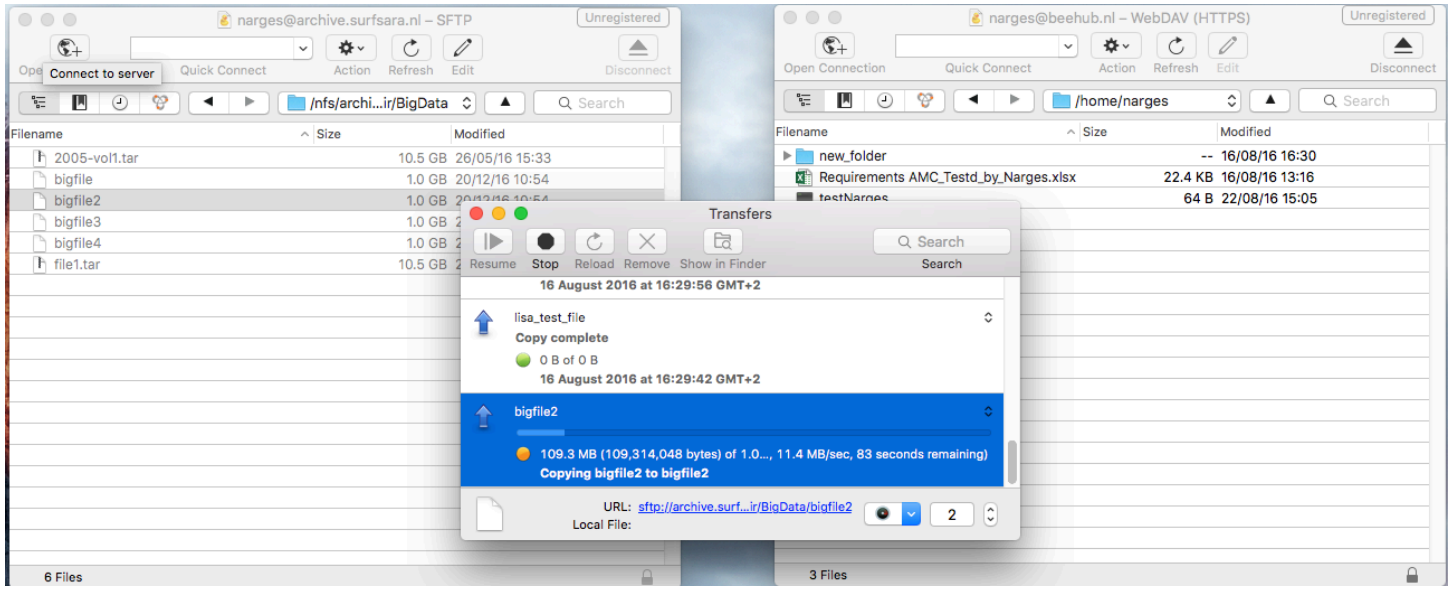


Transfer Data using Cyberduck

- To transfer data between services using Cyberduck:
  - Start Cyberduck
  - Establish a connection to the Archive
  - Establish another connection to BeeHub
  - Simply drag and drop files to transfer data

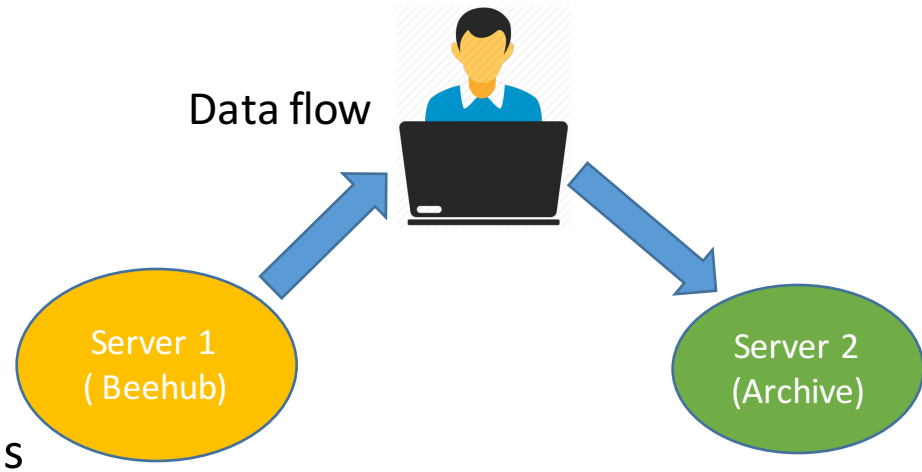






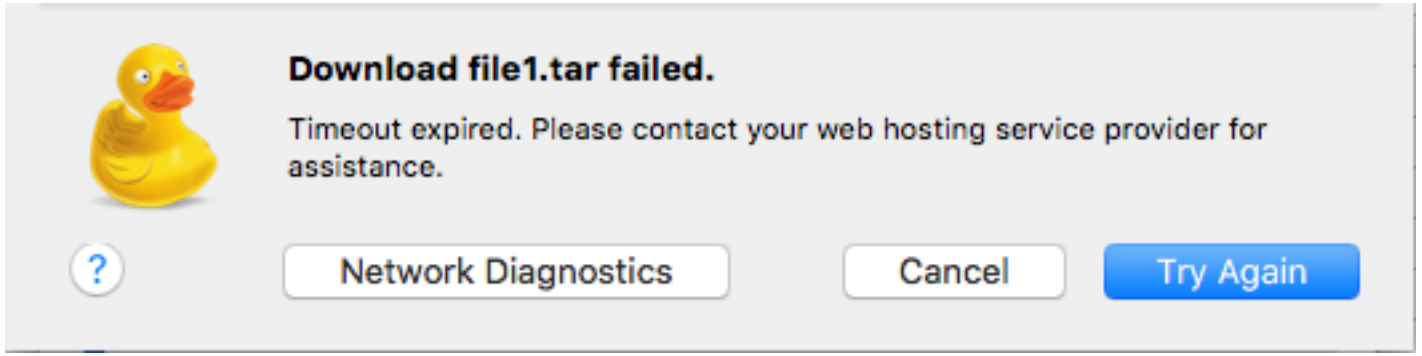
Advantages & Limitations

- Advantages:
  - Easy data transfer (to the archive)
  - Good for dumping data to the archive, and not fetching data
  - Transfer data between services (Only possible for small data)
  - Can be accessed from Windows, Mac and Linux machines
- Drawbacks
  - The data flows via the user laptop. Therefore the transfer depends on your local storage and connectivity (If the connection is lost, the transfer is lost).
  - Only for small data files
  - Does not always work for fetching data (data needs to be staged first)
  - You can't see the status of the data (i.e. weather the data is on disk or on tape).



Transfer Data using Cyberduck

- Error: If the file is on tape, and not on disk. The files needs to be stages first.



- Error: If the internet connection is lost.