Essential Services on Minerva

Minerva Scientific Computing Environment

https://labs.icahn.mssm.edu/minervalab

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**Mount
Sinai**

Outlines

- **Posit Connect**

- **File Transfer - Globus**

- **Archiving Data: IBM Tivoli Storage Management (TSM)**

- **Web server**

Posit Connect (formerly Rstudio Connect) server
https://rstudio-connect.hpc.mssm.edu

- You can publish Shiny, R Markdown for collaborators or others
- If interested in publishing on Rstudio-connect, please check instruction at
  https://labs.icahn.mssm.edu/minervalab/documentation/r/#rstudioconnect
- To login to the web: rstudio-connect.hpc.mssm.edu, please use your minerva username and password joined with <6 digit vip token>, like ssh in to the login node.
- Shiny examples:
  https://github.com/rstudio/shiny-examples
- Posit connect user guide:
  https://docs.posit.co/connect/user/

File Transfer - Globus (Preferred)

- Globus is developed/maintained at the University of Chicago and used extensively at HPC centers
- Globus makes it easy to move/sync/share **large amounts of data**.
- Globus will **retry failures, recover from faults automatically when possible, and report the status of your data transfer**. [Globus website](#)

Globus on Minerva under HIPAA+BAA subscription

- *Be able to share data with their identity/email address. No Minerva account needed*
- *Can upgrade your Globus account to Plus, enabling file transfer between two personal Globus endpoints and data share from a Globus Connect Personal endpoint*

Data transfer with Globus on Minerva (see instructions [here](#)**)**

- *Login to Globus with Mount Sinai school email (eg, first.last@mssm.edu)*
- *Minerva collections: MSSM Minerva User Home Directories and MSSM Minerva Arion FileSystem*
- ***Use HTTPS for download/upload:** Now you can move data within your browser, without installing Globus Connect Personal; you'll see options for upload and download in the Globus web app.*
- *Users handling HIPAA/sensitive data on machines running Globus Connect Personal, please check High Assurance in the preference*

File Transfer - Con't

- **SCP, SFTP**

  - Good for relatively small files, not hundreds of TB's. Not recommended.
  - *Some scp apps for Windows/Mac use cached password. This feature must be <mark>turned off.</mark>*
  - *ftp is not supported on Minerva due to security risk*
  - *Note when you use VPN, data transfer between Minerva and your local computer may be pretty slow because the bandwidth is limited by school IT*

- **On Minerva**

  - minerva11/12/13/14 (33h) or interactive nodes (12h).
  - Please use a screen session so that you can return to your work after the drop of the connection.

Archiving Data: IBM Tivoli Storage Management (TSM)

- Keep for 6 years with two copies

- Can be accessed via either a GUI or the command line

```
$ module load java              or       $ dsmc -se= userid
$ dsmj -se=userid
```

- Large transfers can take a while. Use a *screen* session and disconnect to prevent time-outs

- Full more details here

Archiving Data: IBM Tivoli Storage Management (TSM)

- We have updated our Minerva Tivoli Storage Manager (TSM) archival policy:

  https://labs.icahn.mssm.edu/minervalab/wp-content/uploads/sites/342/2024/08/Minerva-TSM-PolicyV1_Aug2024.pdf

- 1 GB is the minimum file size to be transferred to TSM. Files <1 GB must be aggregated with tar/zip, resulting in a file size of 1 GB or larger.

- The maximum amount of data archived or retrieved from TSM is limited to 40 terabytes per week.

- TSM is for long-term file storage only, with each file stored once.

- Data archived in TSM has a retention time of six years. We will notify you by email three months in advance before your file will be deleted from TSM.

- Failure to adhere to this policy may result in your archival or retrieval processes being killed, and may ultimately result in removal of your access to TSM.

Web server

- As of October 1st 2022, there are two different Domain Name System for user website's landing point with different network access:
  - `https://userid.u.hpc.mssm.edu` for internal websites
  - `https://userid.dmz.hpc.mssm.edu` for public websites
- By default, each user's default web services landing point is `https://userid.u.hpc.mssm.edu,` with only internal access (campus network or VPN are needed for access).
- If you need public websites for your research, please fill out the form or at https://redcap.link/g08ytzki. Once the request is received, we will send your PI the policy form to sign: https://sc.u.hpc.mssm.edu/HPC/Comprehensive_Webserver_Security_Policy_for_DMZ_Server.pdf Then we will forward the request to the IT security team, who will scan the web application. If no critical/high vulnerabilities reported, we will move the webpage to userid.dmz.hpc.mssm.edu for public access. The time to complete this request will be depending on the vulnerability status of the website. A rough estimate is 1 week.

Web server

- The document root for a user's site is within home folder in a folder called ~/www
- **NO PHI/ sensitive/ CUI data may be shared via the webserver.**

Step 1: Create ~/www. `$ mkdir ~/www`

Step 2: Place content (eg. index.html) put files or create symlink (from arion) in the www folder

```
$ cat > ~/www/index.html <<EOF
Hello World from my website.
EOF
```

Step 3: Authentication (optional but strongly recommended)

If you use your website for file sharing, we strongly recommend you to set up password protection for your files.

Please refer to the "Authentication" part of the instructions, located here:

https://labs.icahn.mssm.edu/minervalab/documentation/web-services/

Web Server

The ***indexes* option** is turned off by default for security reasons. You will see an error message "Forbidden, You don't have permission to access this resource." if you don't have an **index.html/ index.php** file under the folder.

 You can enable this option in the htaccess file in order to list your files, for example:

[gail01@li04e03 ~]# cat /hpc/users/gail01/www/.htaccess
Options +Indexes

Web server https://users.hpc.mssm.edu/

Some demos on setting up your first python flask and dash app

https://yuj25.u.hpc.mssm.edu/flask_demo/

https://yuj25.u.hpc.mssm.edu/dash_demo/

Code is at https://yuj25.u.hpc.mssm.edu/code/

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Last but not Least

Got a problem? Send an email to:

hpchelp@hpc.mssm.edu