Technical Training

Hebrew University Research Computing Services

http://hurcs.cs.huji.ac.il/

Created by: Yaron Weitz

Topics

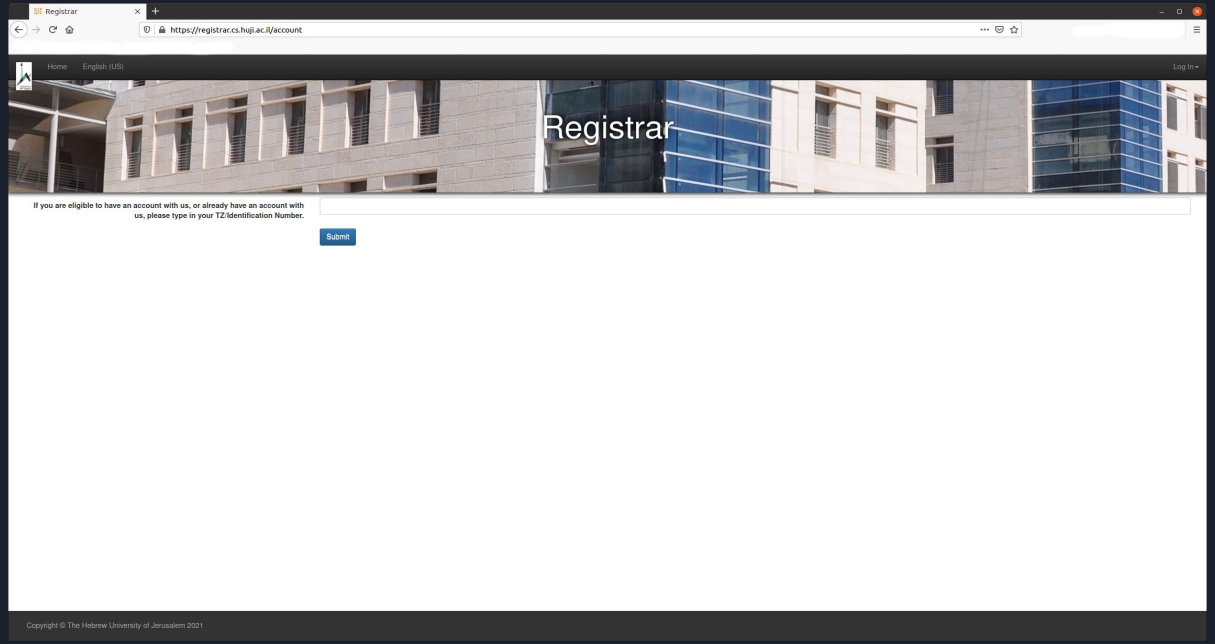
- Create Username and Password
- Change/Forgot Password
- Configure OTP
- Login
- Folder structure
- Transfer Data
- Modules

How to create a username and password

https://wiki.cs.huji.ac.il/hurcs/create_username

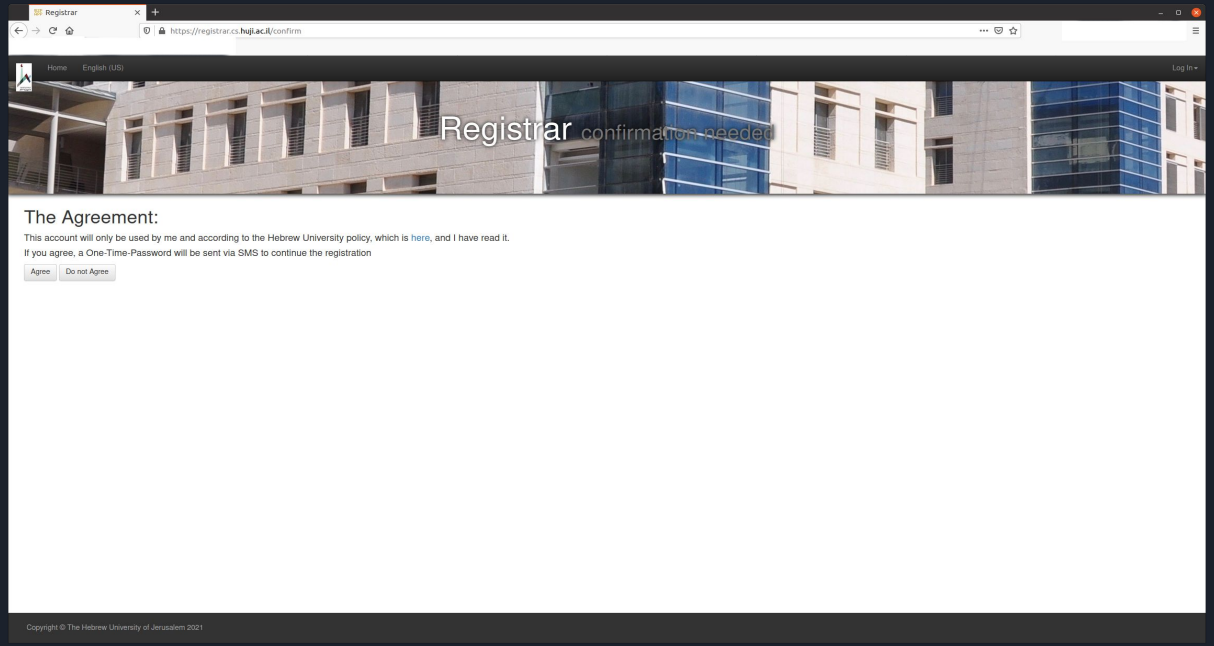
Create Username and Password Step 1

Go to Registrar site and enter full ID (9 digit) or passport number



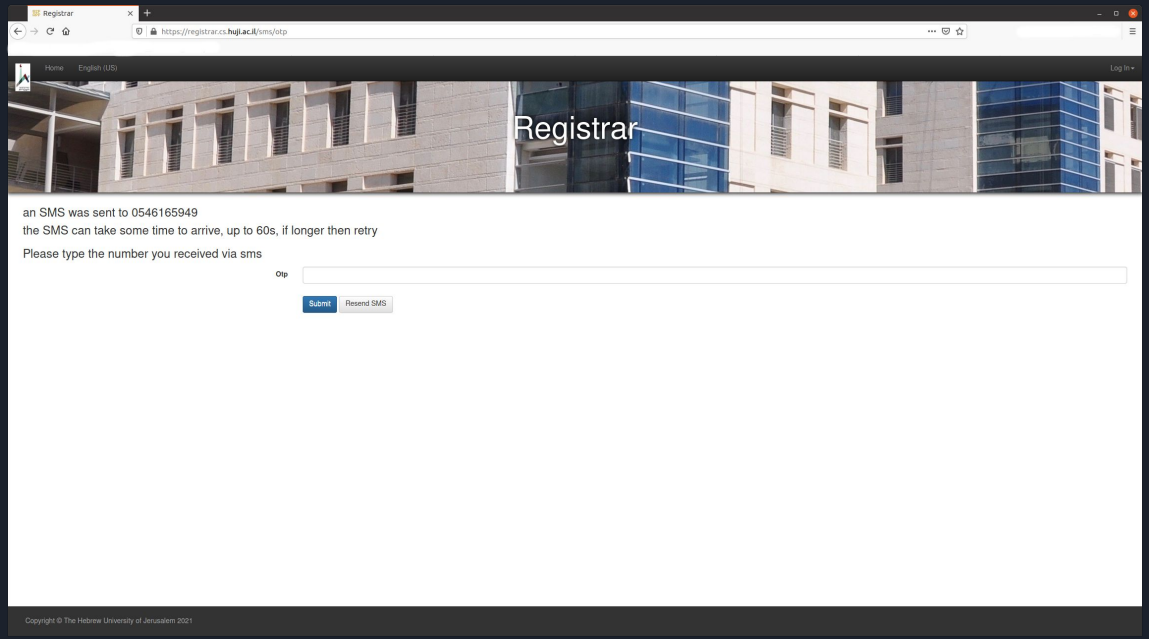
Create Username and Password Step 2

Accept the agreement



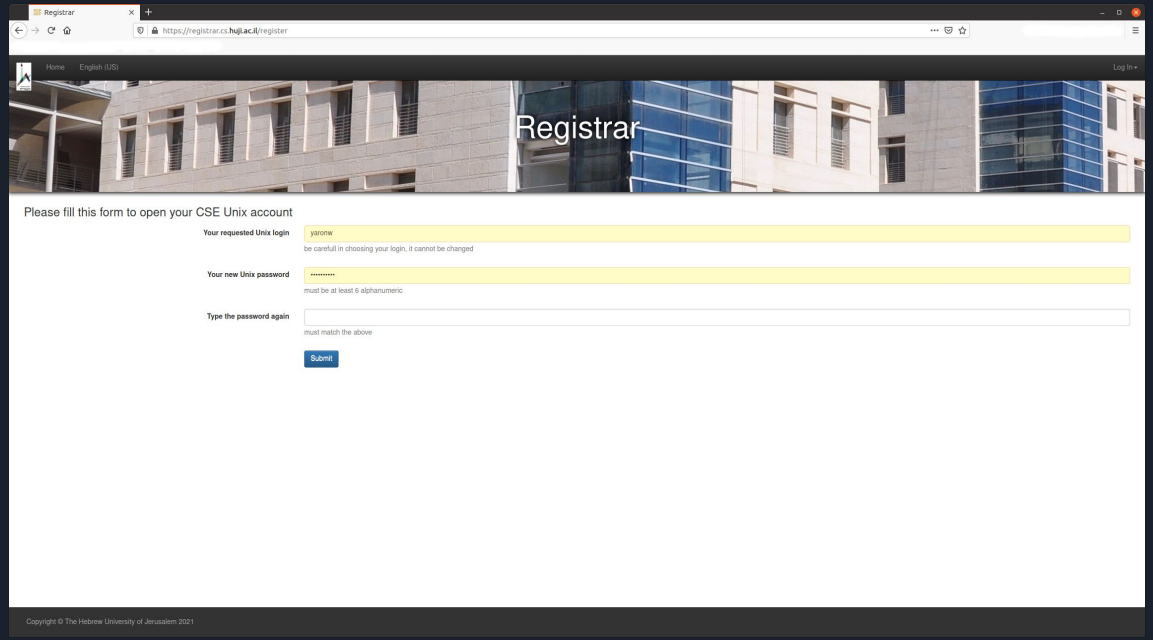
Create Username and Password Step 3

Enter code received by SMS from “HUJICSE”



Create Username and Password Step 4

Set username and password

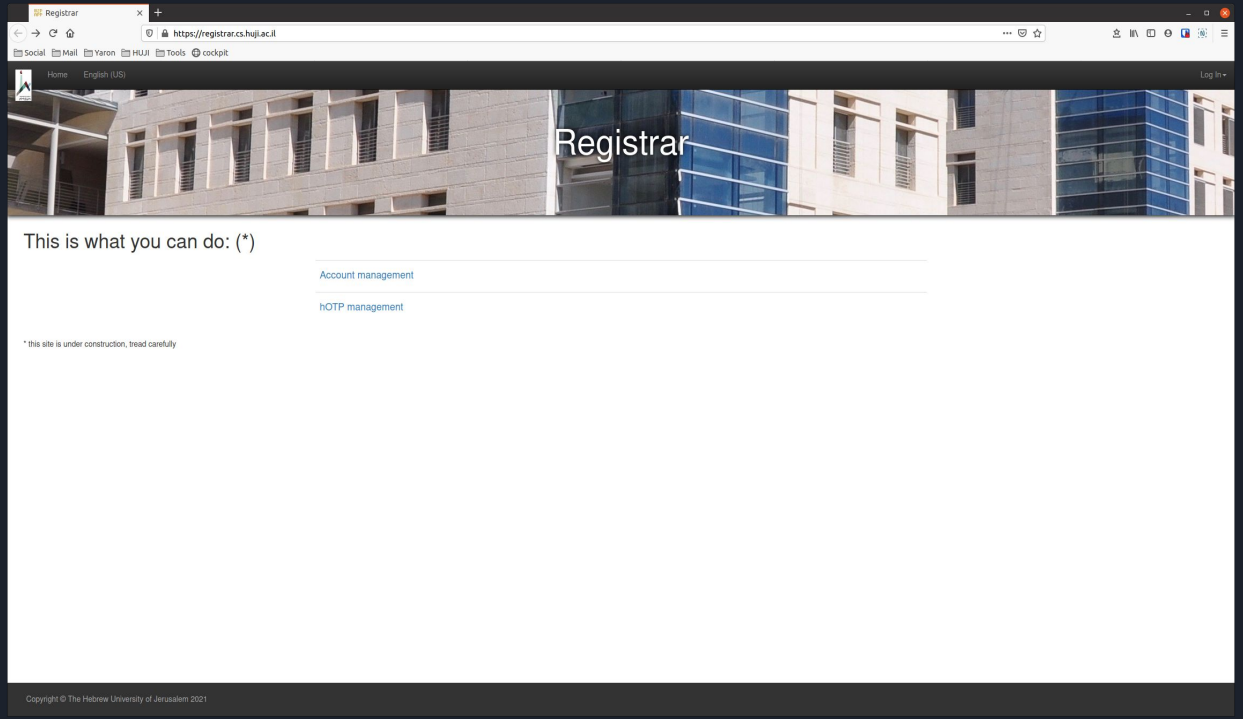


How to Change Your Password in Registrar Site & How to Reset Forgotten Password

https://wiki.cs.huji.ac.il/hurcs/create_username

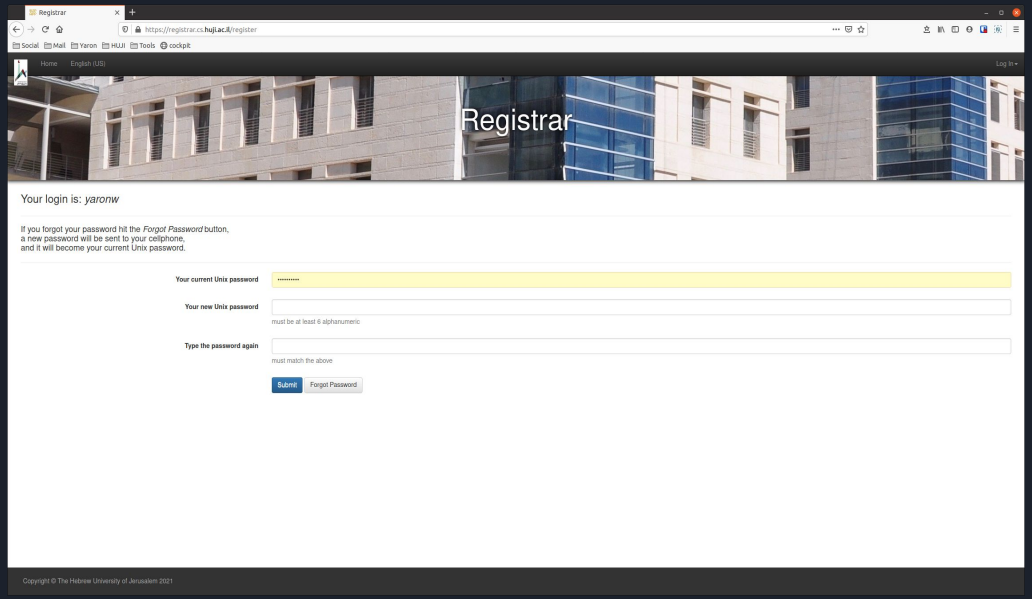
Change/Forgot Password

Go to registrar site and select “Account management”



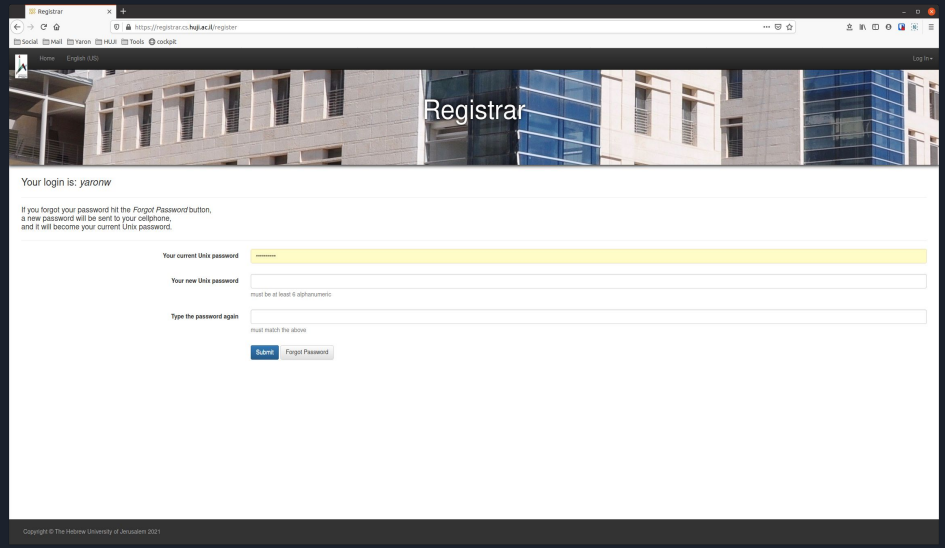
Change Password

Enter current and new password. Press “Submit” button



Forgot Password

Press “Forgot password” button (next to “Submit” button)
Enter the code received by SMS in “current Unix password”
Enter a new password
Press “Submit” button



OTP - One Time Password

https://wiki.cs.huji.ac.il/hurcs/otp

2FA - Two Factor Authentication

Connecting to the cluster requires a 2 step verification:

- One Time Password (OTP) - 6 digit password. Changes every minute.
- IDng password - The Unix password you created in registration process

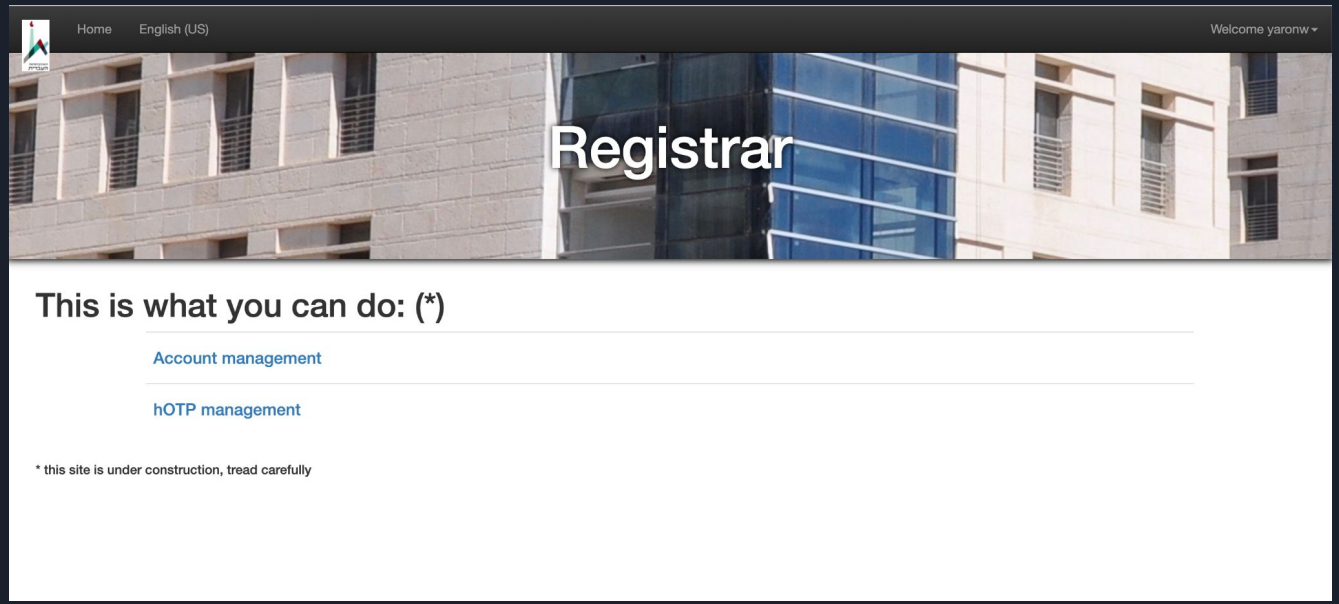
3 Options To Get OTP

You can use only one method to get the OTP!

- Mobile app (most recommended): Google Authenticator
- Web browser extension: Authenticator
- SMS

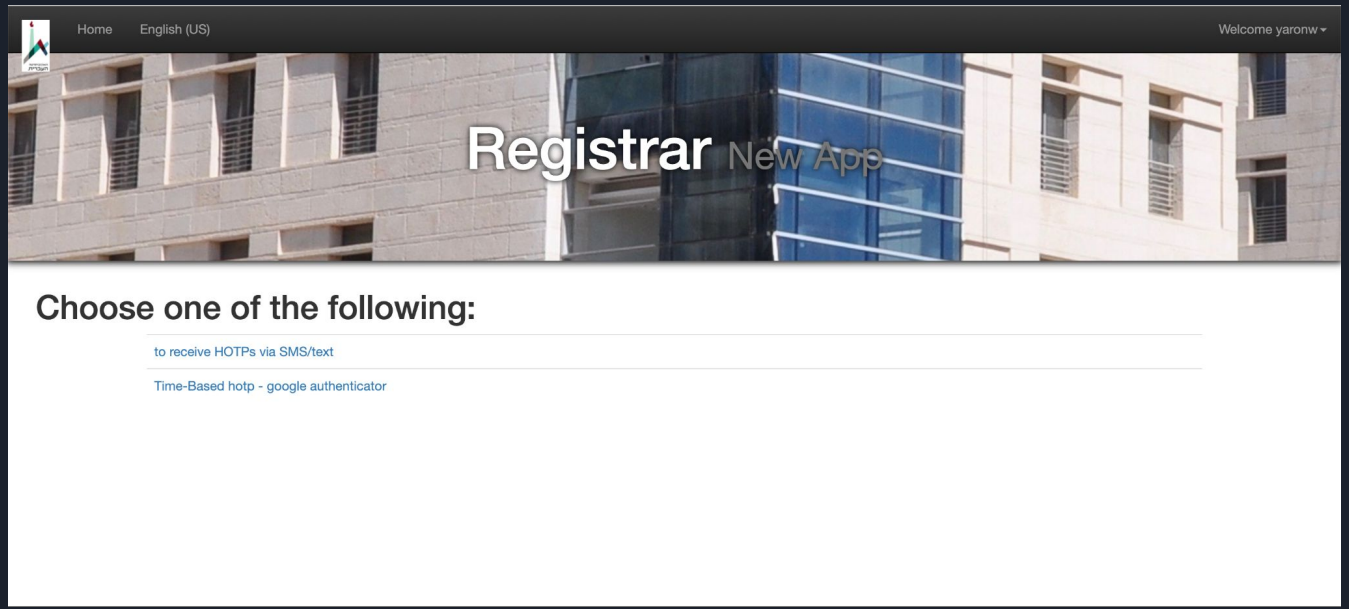
Configure Mobile App or Browser Extension
Step 1

Go to Registrar site and select “hOTP management”



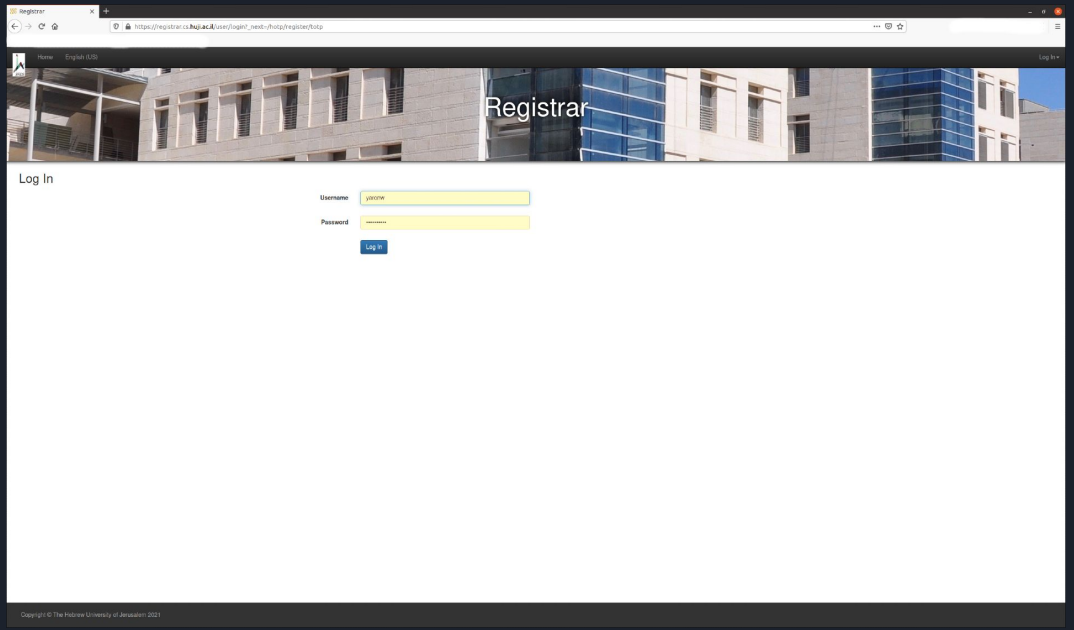
Configure Mobile App or Browser Extension Step 2

Select “Time-Based hotp - google authenticator”



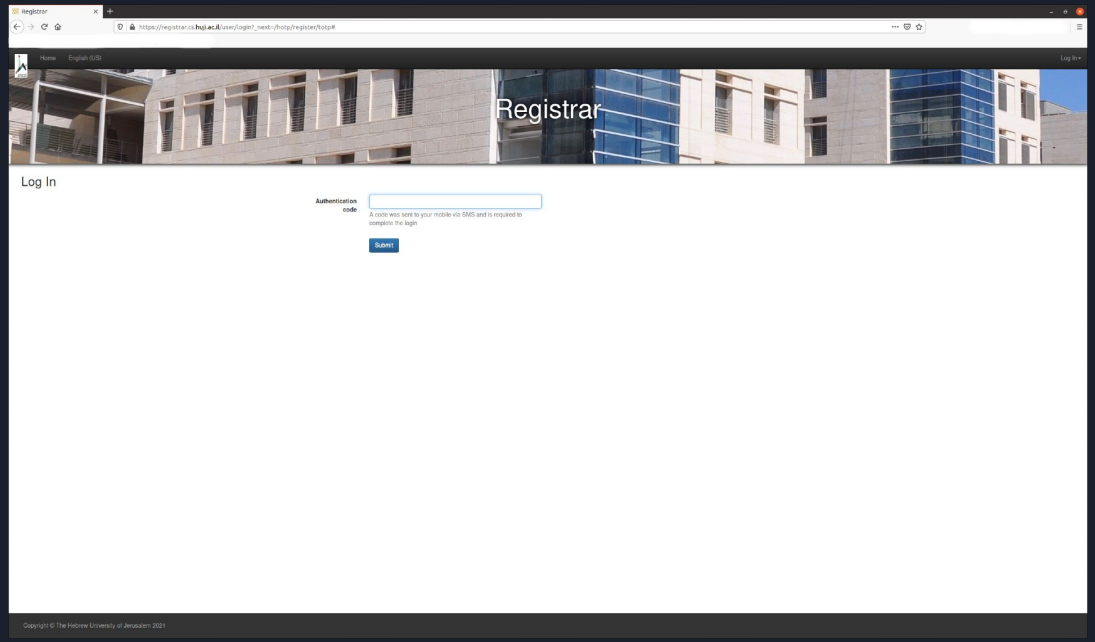
Configure Mobile App or Browser Extension Step 3

Enter Unix username and password



Configure Mobile App or Browser Extension Step 4

Enter code received by SMS from “HUJICSE”

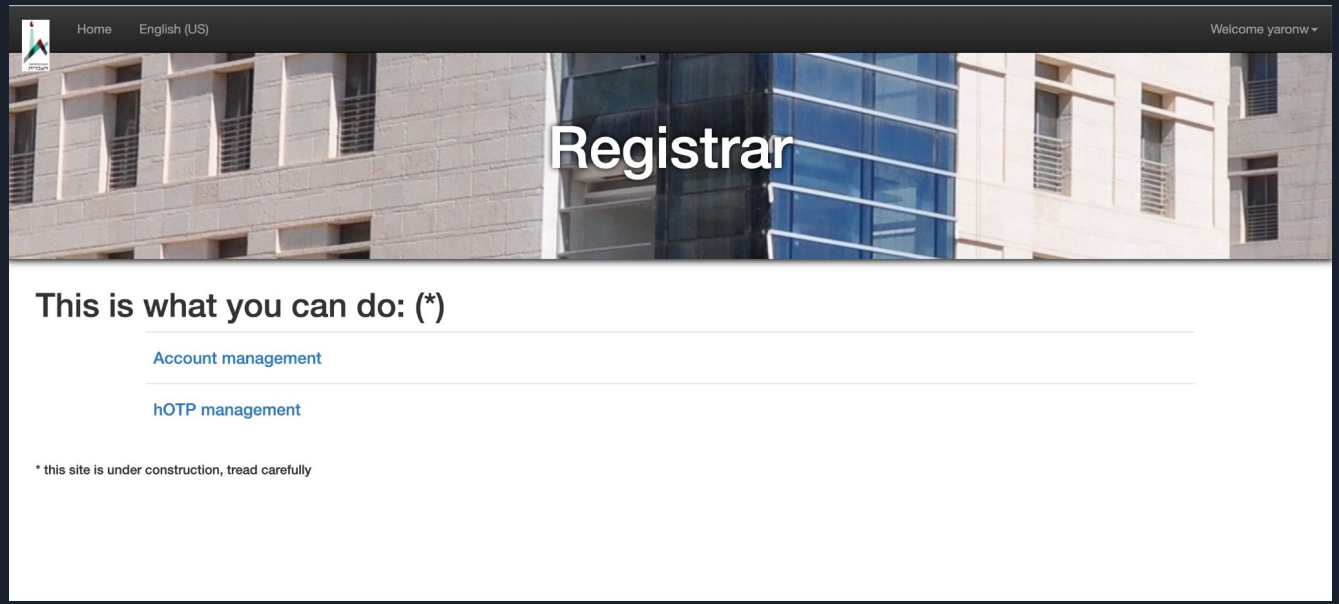


Configure Mobile App or Browser Extension
Step 5

Scan the QR code

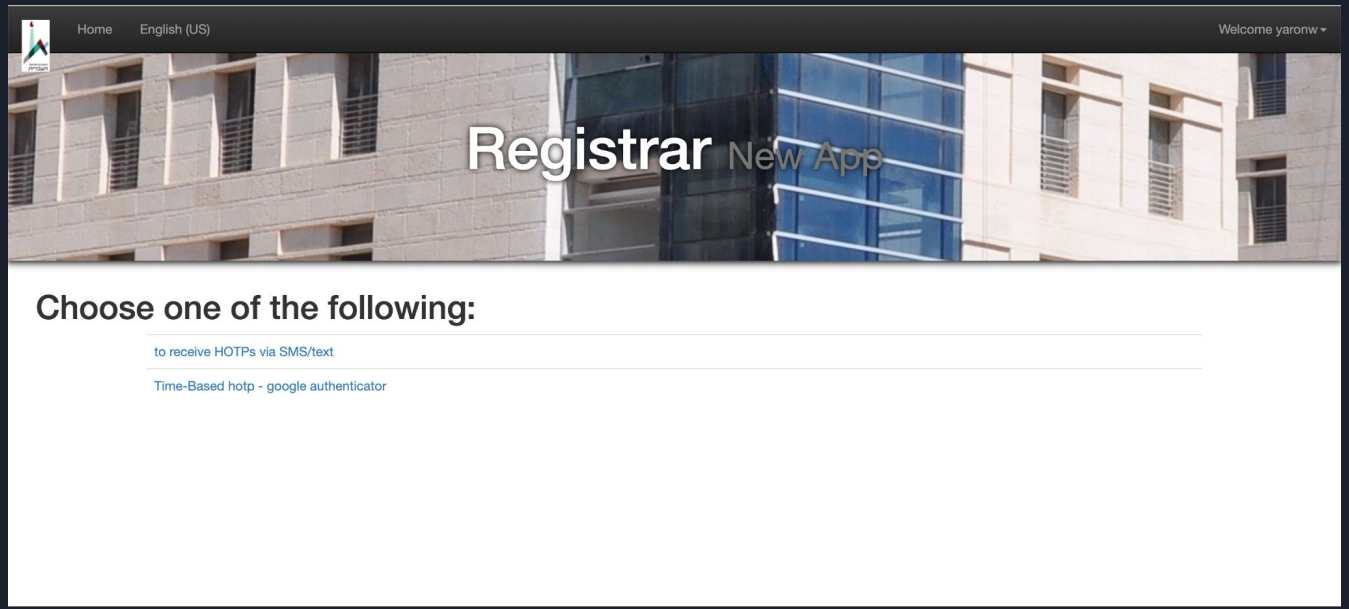
Get OTP by SMS Step 1

Go to Registrar site and select “hOTP management”



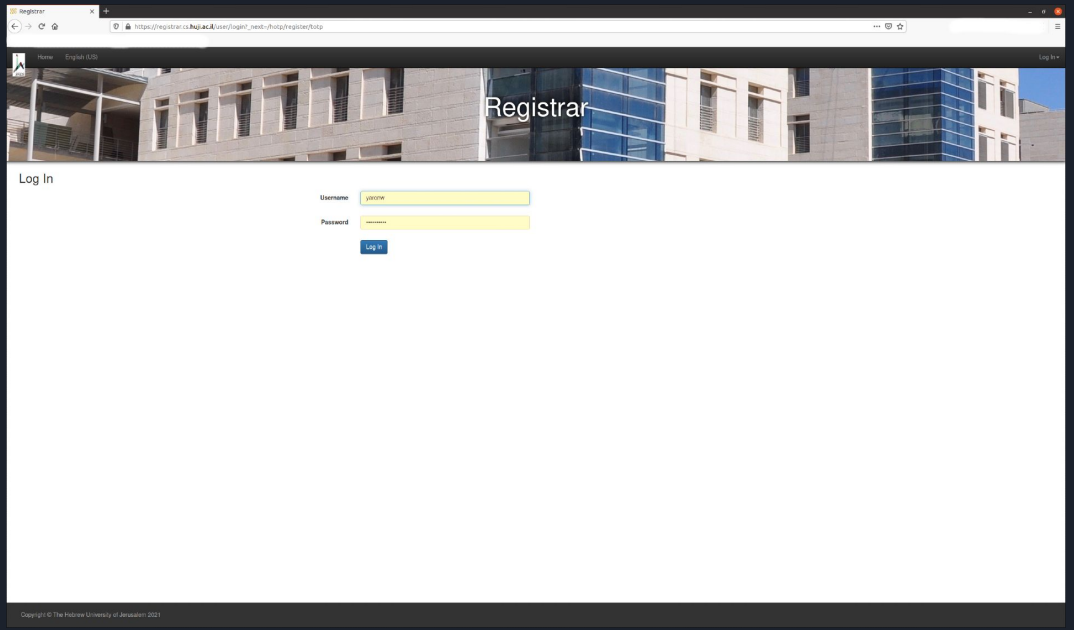
Get OTP by SMS Step 2

Select “to receive HOTPs via SMS/text”



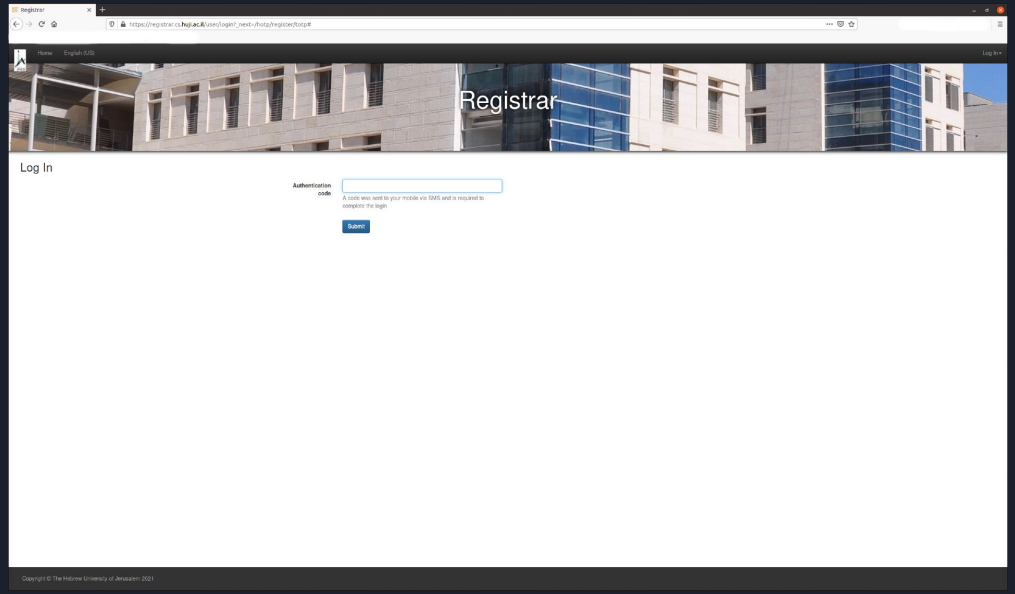
Get OTP by SMS Step 3

Login with username and password



Get OTP by SMS Step 4

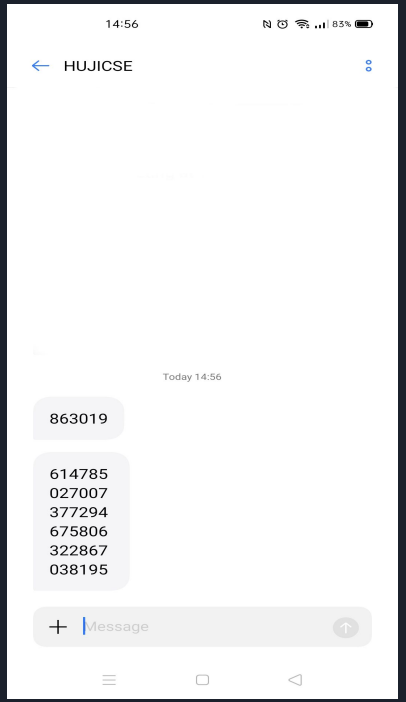
Enter code received by SMS



Get OTP by SMS Step 5

OTPs will be sent by SMS from “HUJICSE”

Use one of the received OTPs



Login To Cluster

https://wiki.cs.huji.ac.il/hurcs/login_to_cluster

Login in Linux or Mac - Shell Command

Use a terminal app that is installed in your PC.

We use a jump server to connect to the cluster so you need to add -J option as follows:

ssh -J username@bava.cs.huji.ac.il username@moriah-gw.cs.huji.ac.il

Passwords order:

1. **(OTP) Password:** Enter 6 digit number from mobile app, browser extension, SMS
2. **(IDng) Password:** Enter Unix password. No dots or cursor movement will be seen!

Login in Linux or Mac - Config File

Create file ~/.ssh/config

```
Host hurcs-proxy
        User username
        HostName bava.cs.huji.ac.il
        Port 22

Host moriah
        User username
        HostName moriah-gw.cs.huji.ac.il
        Port 22
        ProxyJump hurcs-proxy
```

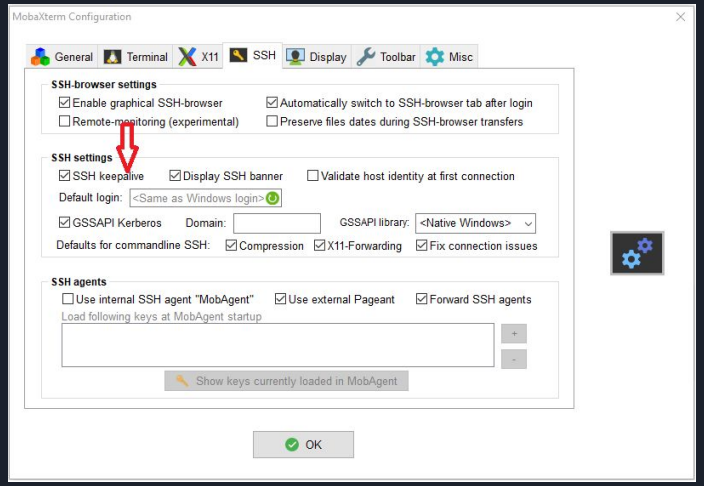
Then in terminal just enter:

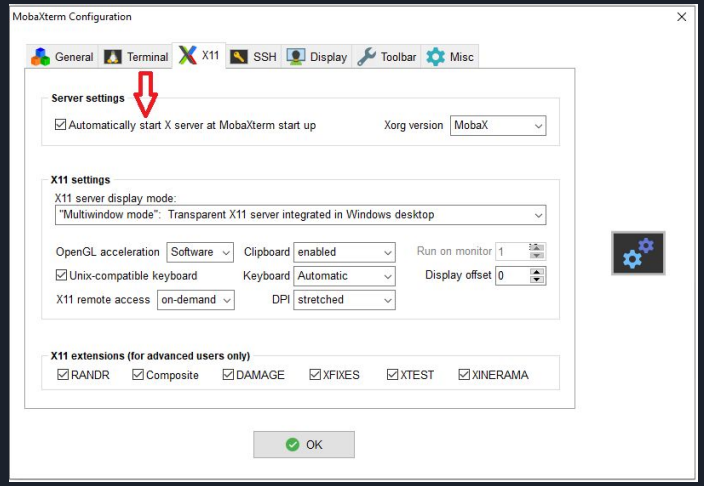
```
ssh moriah
```

Login in Windows

Recommended software for Windows: Mobaxterm
Wiki on configuring Mobaxterm

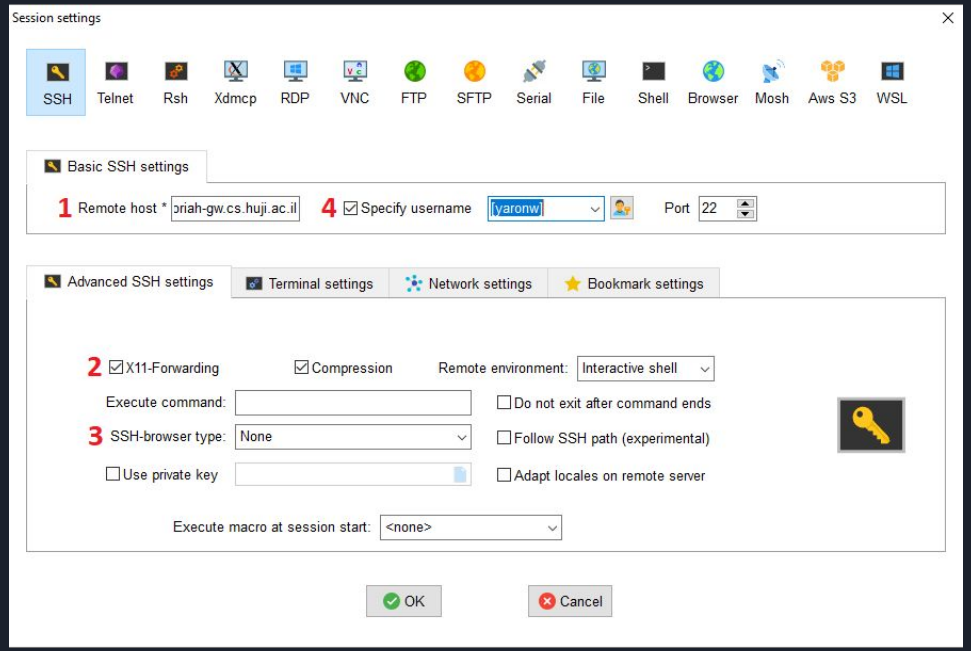
Before configuring sessions check “keepalive” and “X server” in settings.





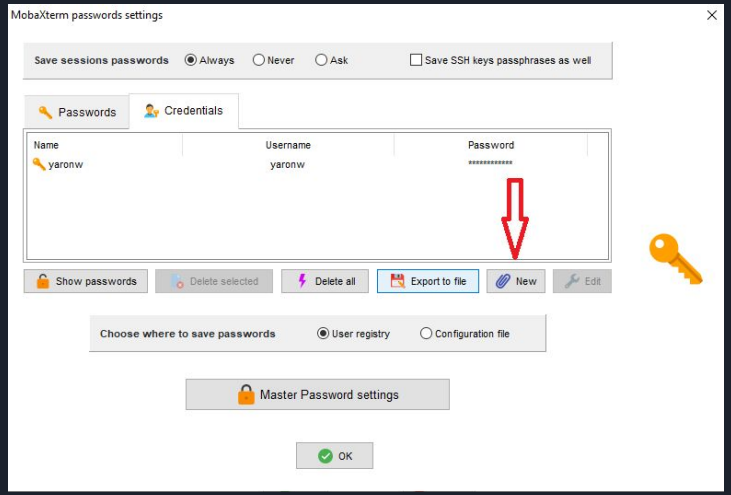
Configure Mobaxterm - Basic and Advanced

1. Remote host: moriah-gw.cs.huji.ac.il
2. X11 forwarding
3. SSH browser type: None
4. Specify username
5. Press icon to create username
6. Select username from drop down list
7. Leave port number 22

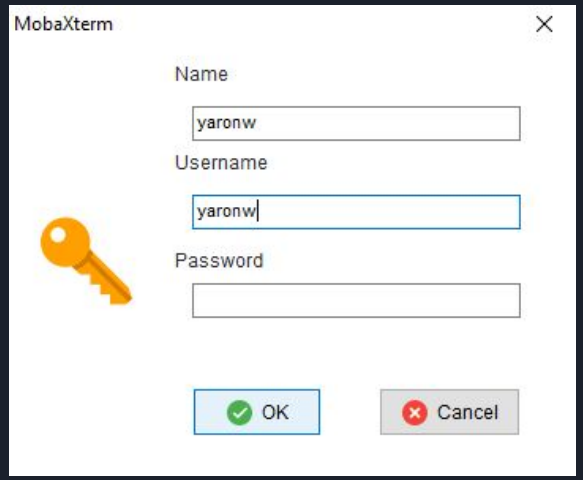


Configure Mobaxterm - Username

Press “New” button to create new username

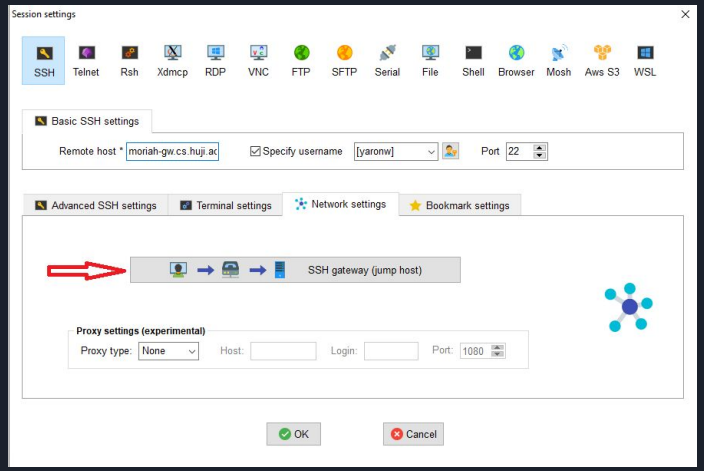


Enter username details



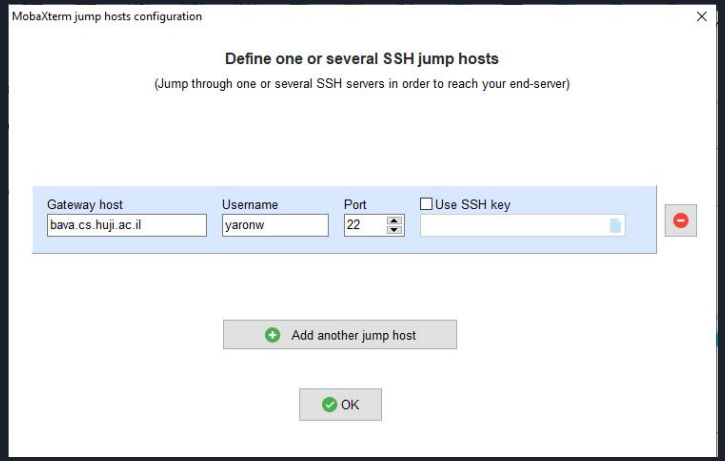
Configure Mobaxterm - Jump Host

Press “SSH gateway” button to configure jump host



Gateway host: bava.cs.huji.ac.il

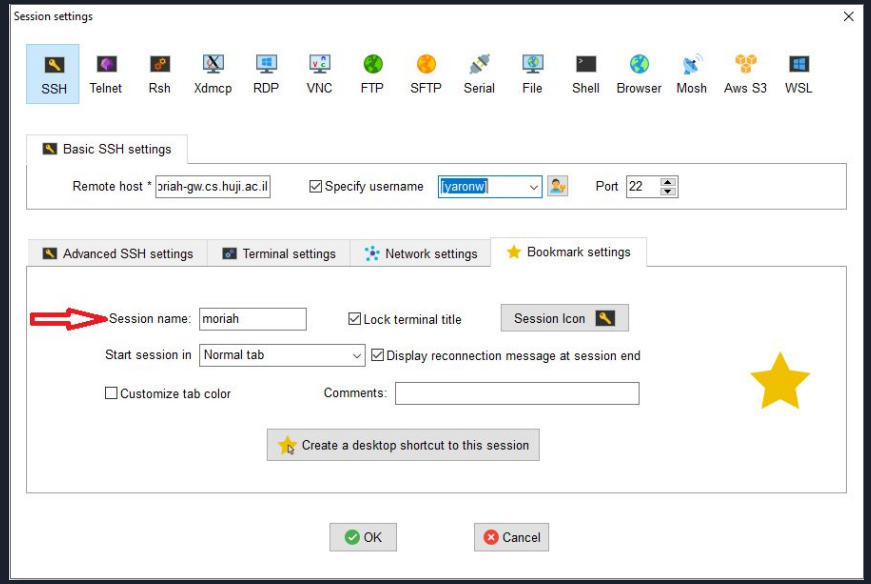
Username: your username in cluster



Configure Mobaxterm - Bookmark

Select a name for the session

You can also create a desktop shortcut for the session.



Folder Structure

https://wiki.cs.huji.ac.il/hurcs/folders

Backup vs Snapshots

Backup

Copy of data in another location with version history. Need IT support to recover.

Snapshots

Copy of data in current storage. User can recover data without support.

Home Folders

- Path of home folder: /sci/home/username
- Home folder quota: 5GB (free)
- Has backup and snapshots
- Users of existing clusters (astro, hm) - for now, home folder at current location

Group Folders

- Each PI has a group folder - /sci/labs/pi_username
- PI and students have folders under PI group folder
- PI folder - /sci/labs/pi_username/pi_username
- Student folder - /sci/labs/pi_username/student_username
- Backup symlink - all data under this folder **IS** backed up and **HAS** snapshots
  - /sci/labs/pi_username/student_username/backup
- Nosnap symlink - all data under this folder **HAS NO** backup or snapshots
  - /sci/labs/pi_username/student_username/nosnap
- Other - only snapshots

Transferring Data

Creating Tunnels and Using Command Line or GUI

https://wiki.cs.huji.ac.il/hurcs/data_transfer

Transferring Data - Create a Tunnel Linux and Mac

Open a terminal window to create a tunnel with this command

ssh -J username@bava.cs.huji.ac.il -L 12345:moriah-gw:22 username@moriah-gw.cs.huji.ac.il

Or if you have a config file (~/.ssh/config)

ssh -L 12345:moriah-gw:22 moriah

12345 - local port on your PC. Enter any number as long as your operating system is not using it for something else

Transferring Data - Add Host in Config Linux and Mac

You can add a host to the config file - ~/.ssh/config

```
Host moriah-tunnel
  User username
  HostName moriah-gw.cs.huji.ac.il
  Port 22
  ProxyJump hurcs-proxy
  LocalForward 12345 moriah-gw:22
```

Then in terminal

```
ssh moriah-tunnel
```

Transferring Data - Command Line rsync Linux and Mac

To the cluster from your PC

rsync -ave "ssh -p 12345" /path/on/local/machine username@localhost:/path/on/cluster

From the cluster to your PC

rsync -ave "ssh -p 12345" username@localhost:/path/on/cluster /path/on/local/machine

- ➔ Don’t change the word “localhost” in the commands.
- ➔ Use same port number as when you created the tunnel to the cluster.
- ➔ rsync can resume if disconnected or stopped

Transferring Data - Command Line scp Linux and Mac

To the cluster from your PC

scp -P 12345 /path/on/local/machine username@localhost:/path/on/cluster

From the cluster to your PC

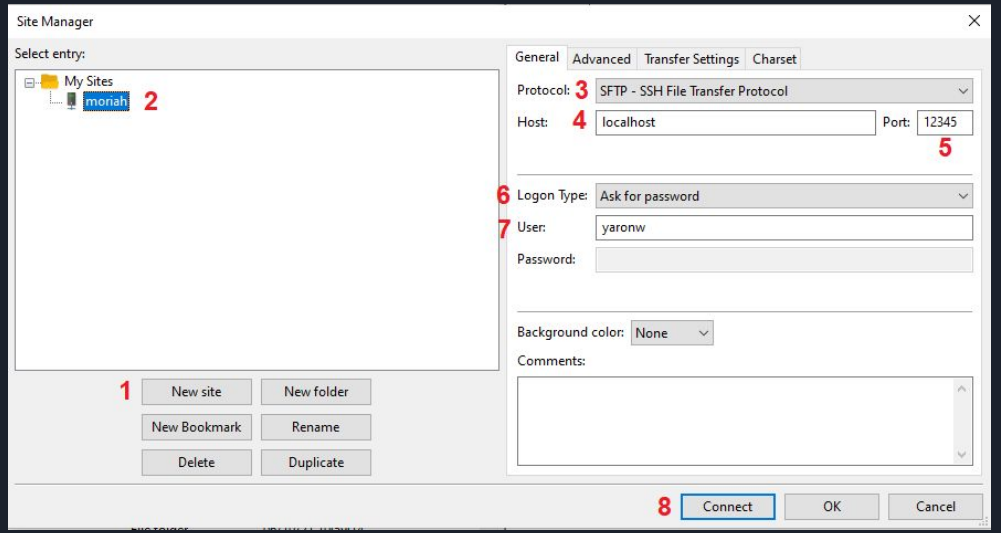
scp -P 12345 username@localhost:/path/on/cluster /path/on/local/machine

- ➔ Don’t change the word “localhost” in the commands.
- ➔ Use same port number as when you created the tunnel to the cluster.

Transferring Data - FileZilla Linux ,Mac and Windows

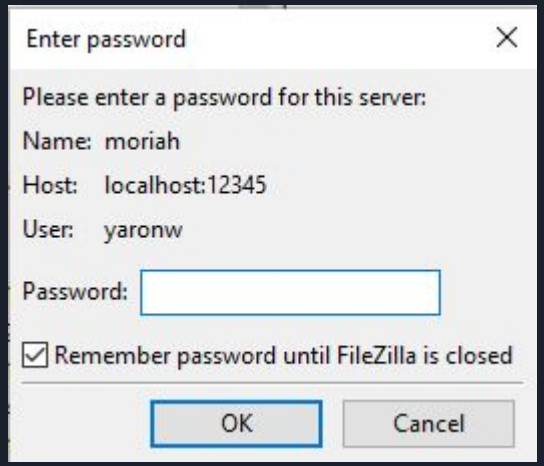
Open Site Manager:

1. Click “New Site”
2. Name the site
3. Protocol - SFTP
4. Host - localhost
5. Port - as in tunnel (12345)
6. Logon Type - Ask for password
7. User - your username
8. Click “Connect”



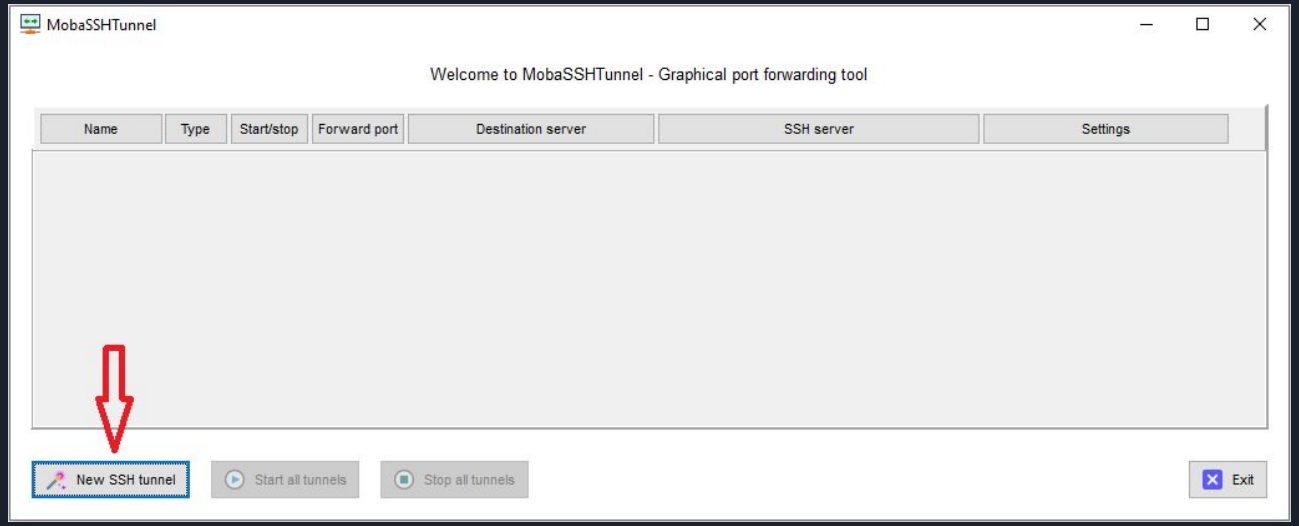
Transferring Data - FileZilla Linux ,Mac and Windows

Enter password (IDng)



Transferring Data - Create a Tunnel Windows MobaXterm

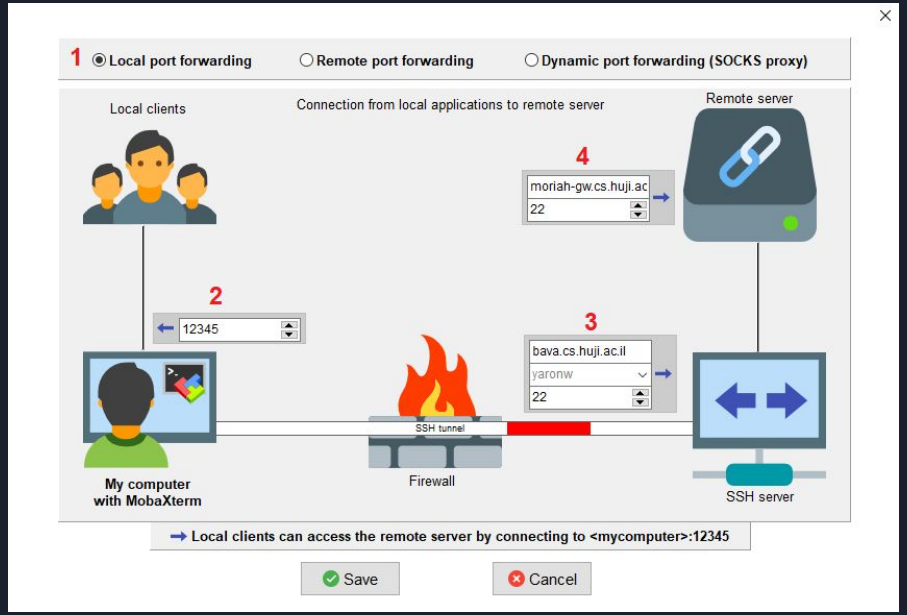
Press “Tunneling” and then “New SSH tunnel”



Transferring Data - Create a Tunnel Windows MobaXterm

Configure tunnel:

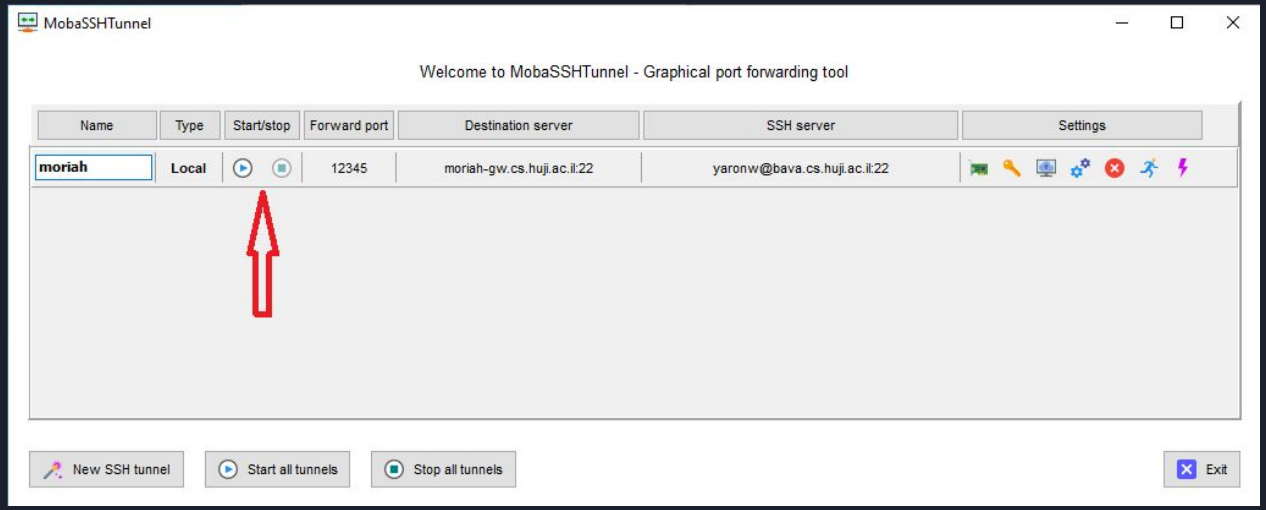
1. Select “Local port forwarding”
2. Enter local port number
3. Configure SSH server
4. Configure Remote server
5. Click Save



Transferring Data - Create a Tunnel Windows MobaXterm

Name the tunnel.

Start/Stop with buttons



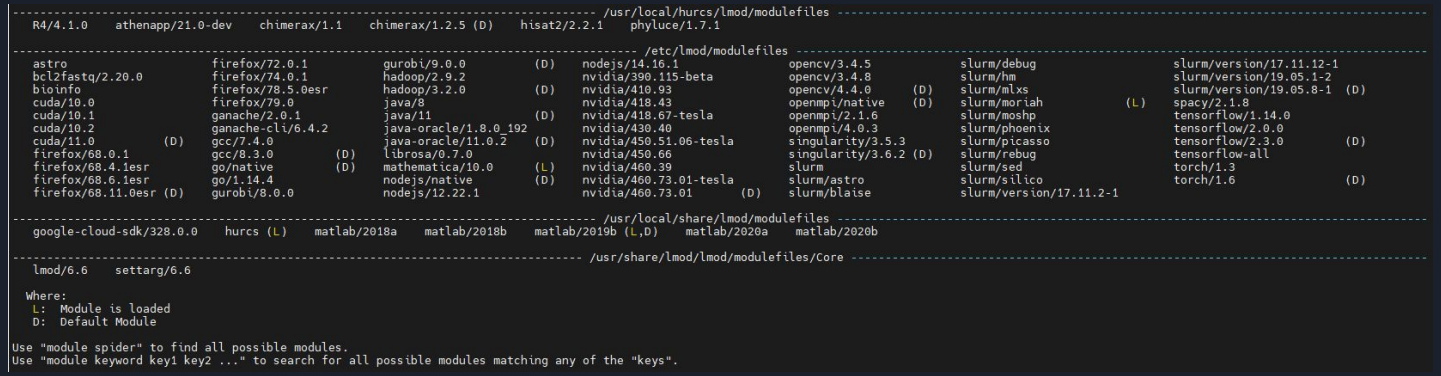
Modules

Some software need to be “loaded” before you can use it.

Module - avail command

module avail - shows available software that can be loaded with module command

Format - module_name/software_version
(L) - module is loaded
(D) - default module to load when only module name used



Module - load command

Load a module

module load module_name/software_version

To load default software version of module (D)

module load module_name

Load multiple modules

module load module_name1 module_name1

Module - list and spider command

Show currently loaded modules

module list

```
Currently Loaded Modules:
  1) mathematica/10.0   2) matlab/2019b   3) slurm/moriah   4) hurcs
```

Search a module or multiple modules

module spider module_name

```
----------------------------------------------------------------------------------------------------------------------
  hisat2: hisat2/2.2.1
----------------------------------------------------------------------------------------------------------------------

    You will need to load all module(s) on any one of the lines below before the "hisat2/2.2.1" module is available to load.

      hurcs

    Help:
      Hisat2 - Graph-based alignment of next generation sequencing reads to a population of genomes
```

Thank You

yaronw@mail.huji.ac.il