



Technical Training

Hebrew University Research Computing Services

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

Created by: Yaron Weitz



Topics

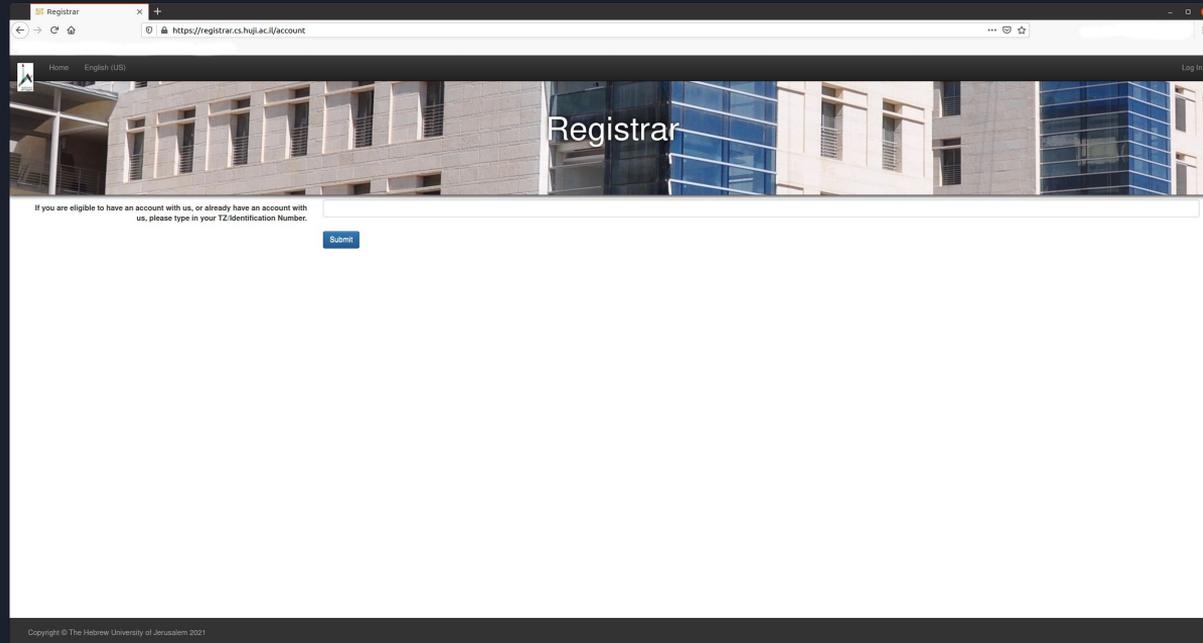
- Create Username and Password
- Change/Forgot Password
- Configure OTP
- Login
- Folder structure
- Transfer Data
- Modules

How to create a username and password

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

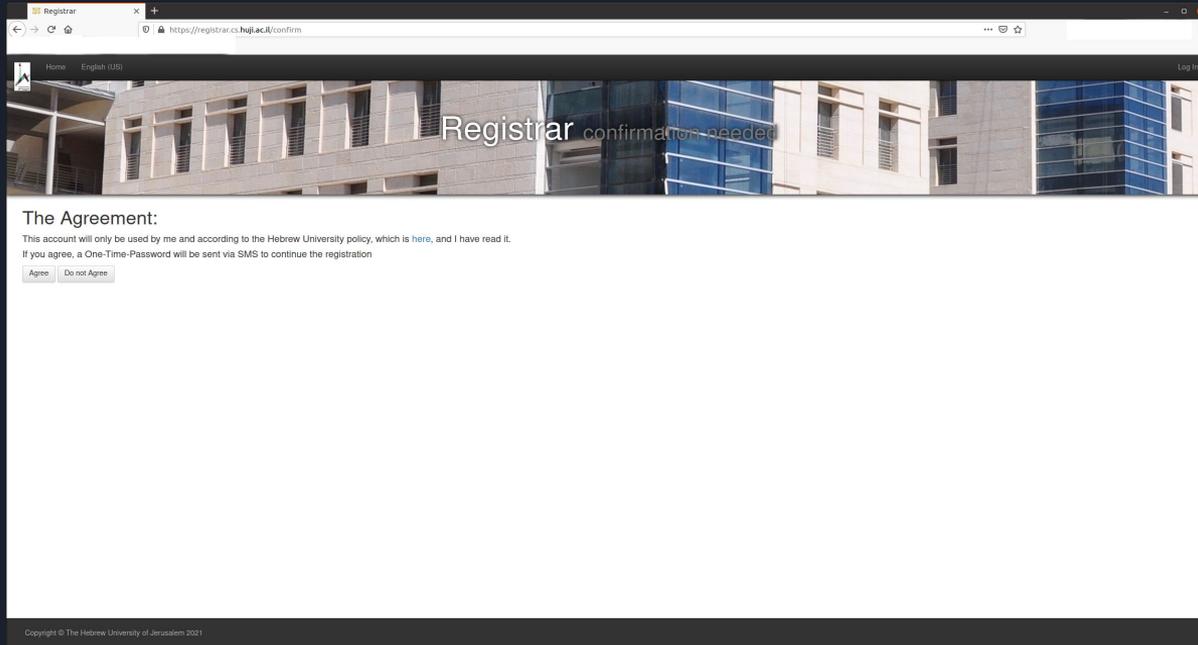
Create Username and Password Step 1

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



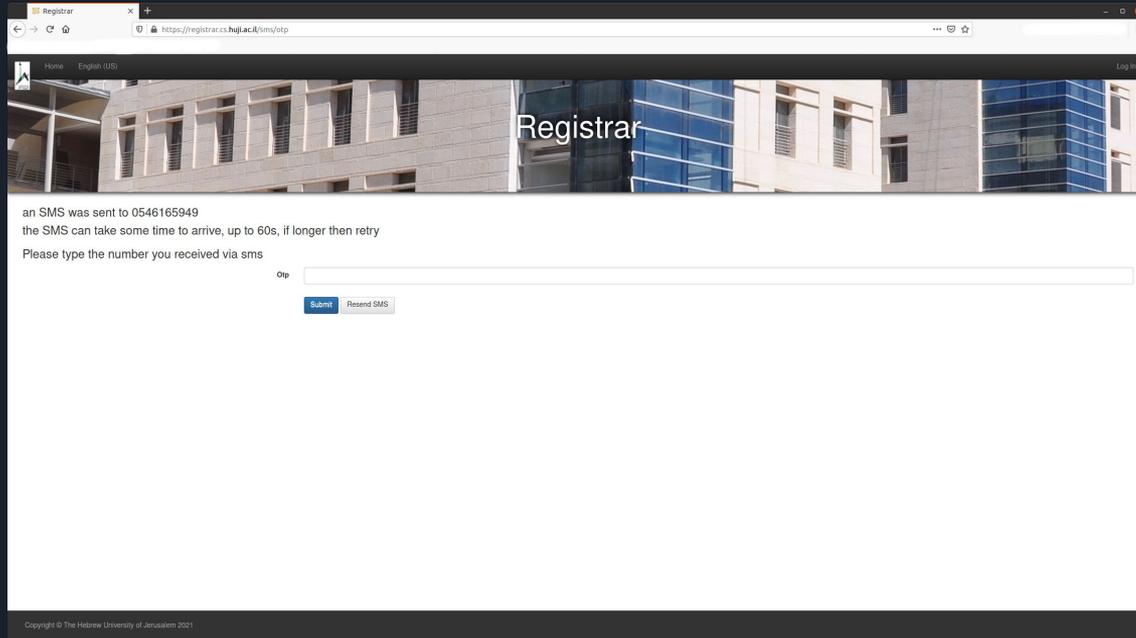
Create Username and Password Step 2

Accept the agreement



Create Username and Password Step 3

Enter code received by SMS from “HUJICSE”



The screenshot shows a web browser window with the URL <https://registrar.cs.huji.ac.il/sms/step>. The page features a header with a navigation menu (Home, English (US), Log In) and a banner image of a modern building with the word "Registrar" overlaid. The main content area contains the following text:

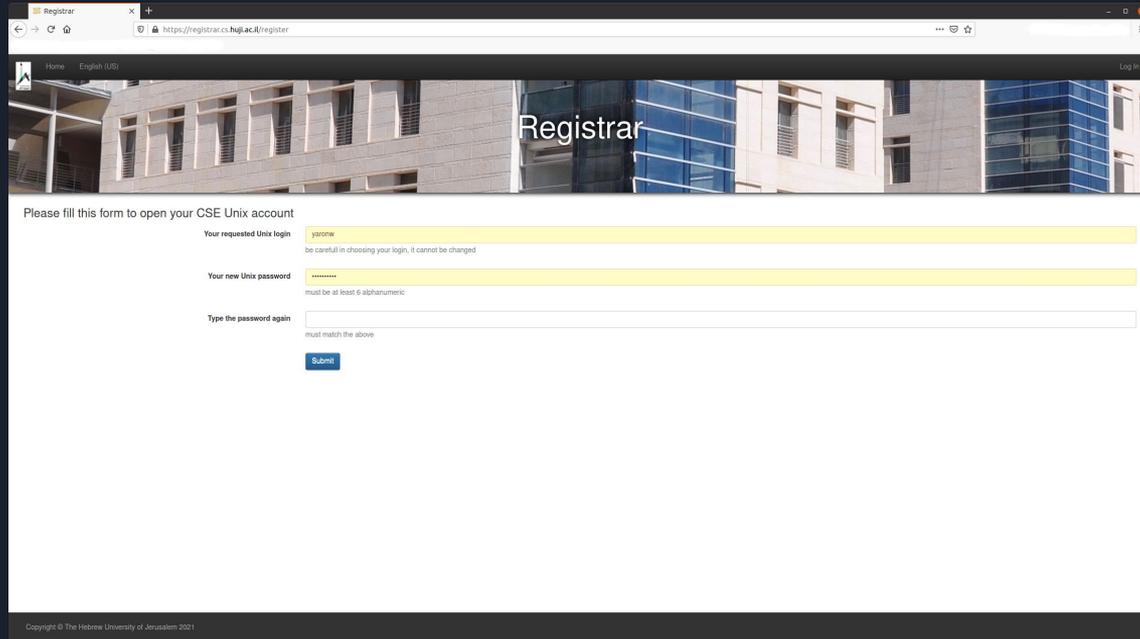
an SMS was sent to 0546165949
the SMS can take some time to arrive, up to 60s, if longer then retry
Please type the number you received via sms

Below the text is a text input field labeled "Otp" and two buttons: "Submit" and "Resend SMS".

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Create Username and Password Step 4

Set username and password



The screenshot shows a web browser window with the URL `https://registrar.cs.huji.ac.il/register`. The page features a header with a building image and the word "Registrar". Below the header, the main content area contains a registration form with the following fields and instructions:

- Please fill this form to open your CSE Unix account**
- Your requested Unix login:** A text input field containing "yaronr". Below it, a note states: "be careful in choosing your login, it cannot be changed".
- Your new Unix password:** A password input field with a strength indicator. Below it, a note states: "must be at least 6 alphanumeric".
- Type the password again:** A second password input field. Below it, a note states: "must match the above".
- A blue **Submit** button is located at the bottom of the form.

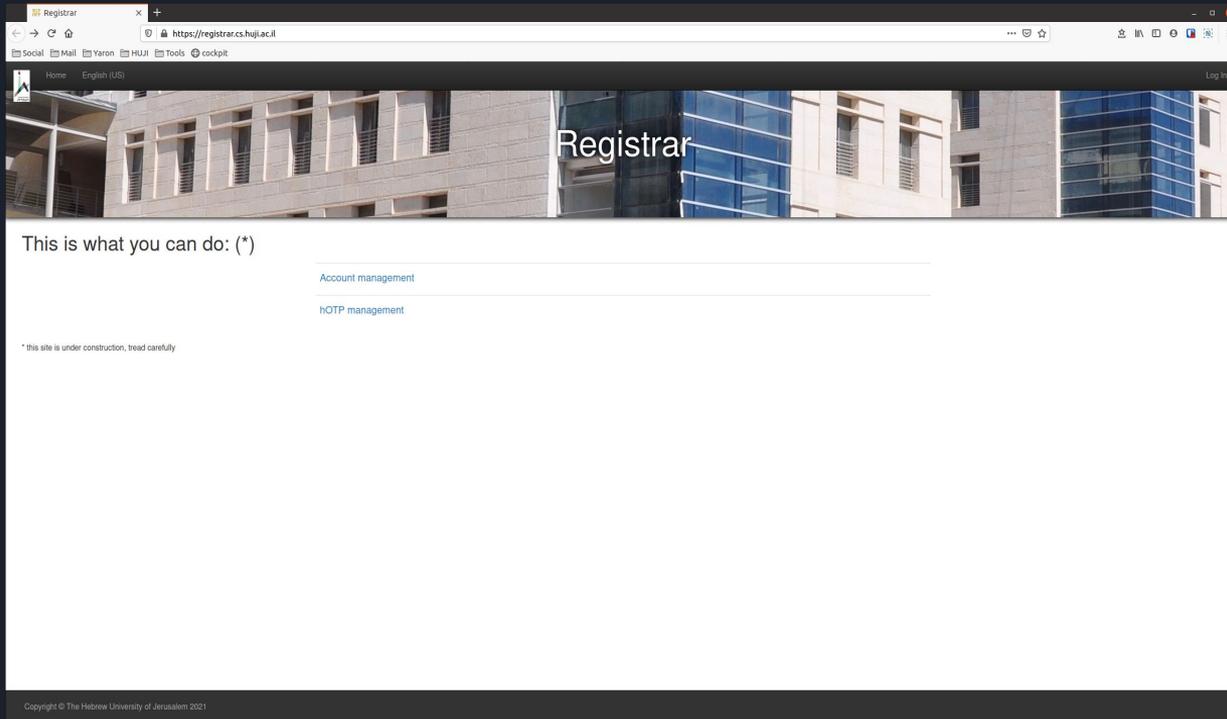
At the bottom of the page, a small copyright notice reads: "Copyright © The Hebrew University of Jerusalem 2021".

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

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

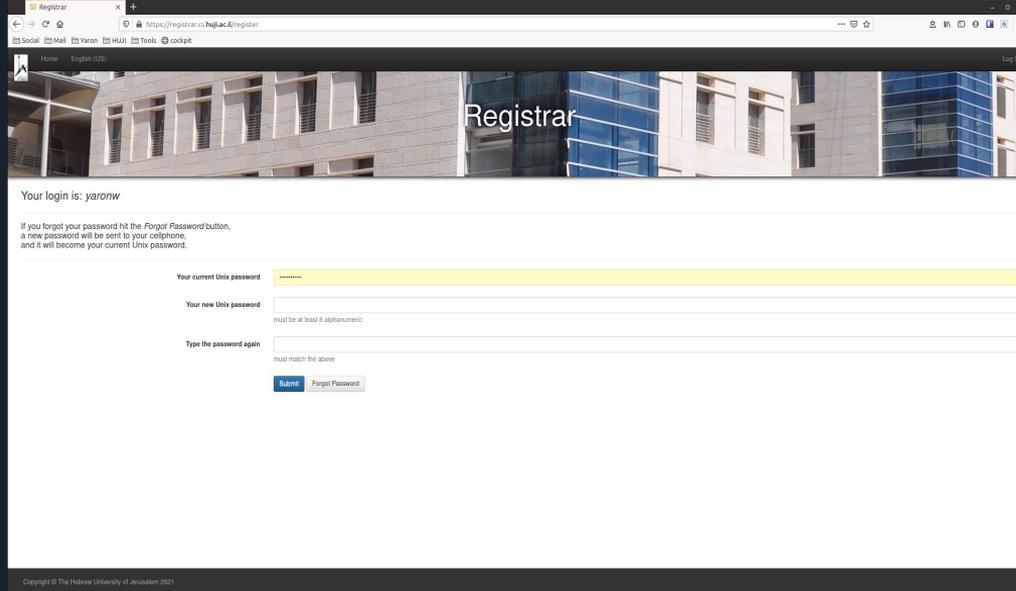
Change/Forgot Password

Go to [registrar](https://registrar.huji.ac.il) site and select “Account management”



Change Password

Enter current and new password. Press “Submit” button



The screenshot shows a web browser window with the URL <https://registrar.uva.hq.ac.il/registrar>. The page header features a banner image of a building with the word "Registrar" overlaid. Below the banner, the text "Your login is: yaroniv" is displayed. A note states: "If you forgot your password hit the [Forgot Password](#) button, a new password will be sent to your cellphone, and it will become your current Unix password." The form contains three input fields: "Your current Unix password" (highlighted in yellow), "Your new Unix password" (with a note "must be at least 6 alphanumeric"), and "Type the password again" (with a note "must match the above"). At the bottom of the form are two buttons: "Submit" and "Forgot Password". The footer of the page reads "Copyright © The Hebrew University of Jerusalem 2011".

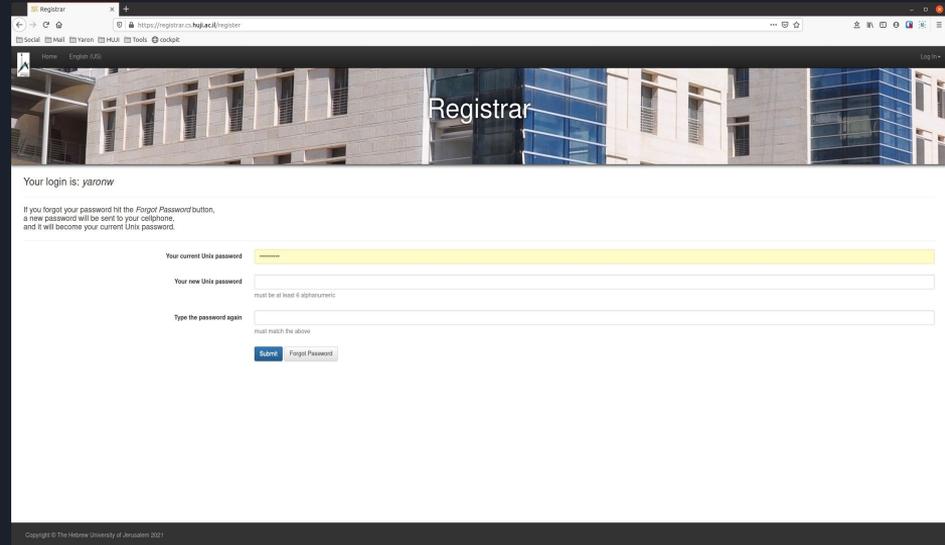
Forgot Password

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



The screenshot shows a web browser window displaying the Registrar website. The page title is "Registrar" and the URL is "https://registrarcs.hqj.ac.il/registrar". The page content includes a header with the Registrar logo and a navigation menu. Below the header, there is a section titled "Your login is: yarow". A message states: "If you forgot your password hit the Forgot Password button, a new password will be sent to your cellphone, and it will become your current Unix password." The form contains three input fields: "Your current Unix password" (highlighted in yellow), "Your new Unix password" (with a note "must be at least 6 alphanumeric"), and "Type the password again" (with a note "must match the above"). At the bottom of the form, there are two buttons: "Submit" and "Forgot Password".

Registrar

Your login is: yarow

If you forgot your password hit the Forgot Password button, a new password will be sent to your cellphone, and it will become your current Unix password.

Your current Unix password

Your new Unix password
must be at least 6 alphanumeric

Type the password again
must match the above

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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



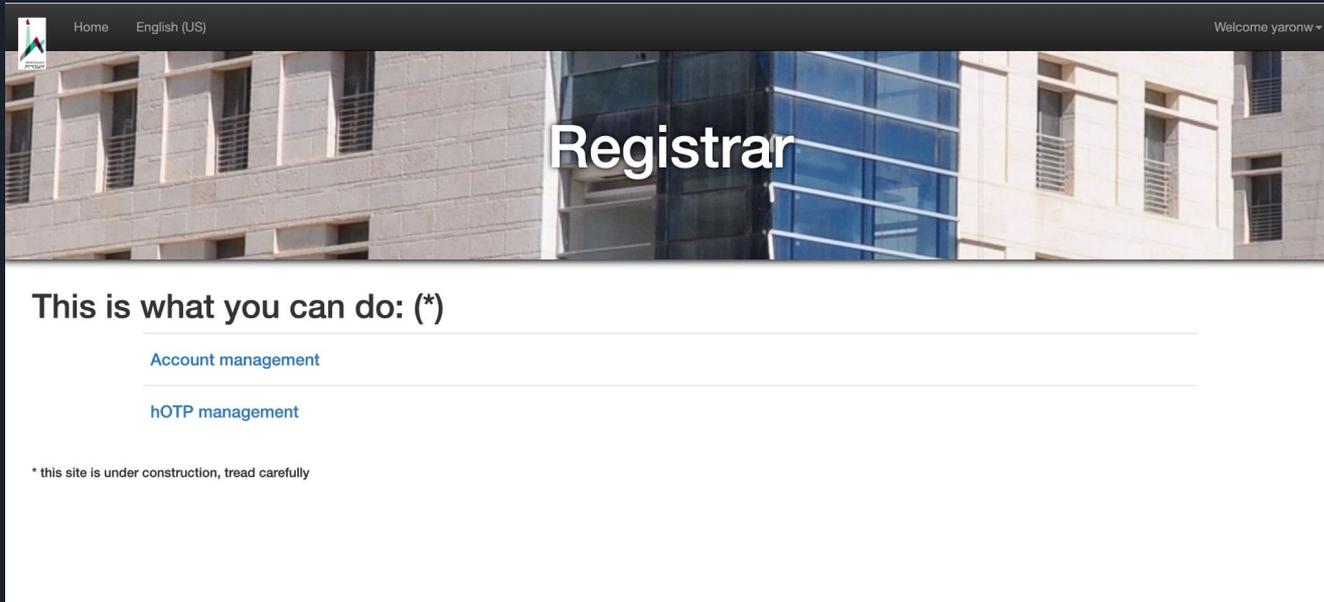
3 Options To Get OTP

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”

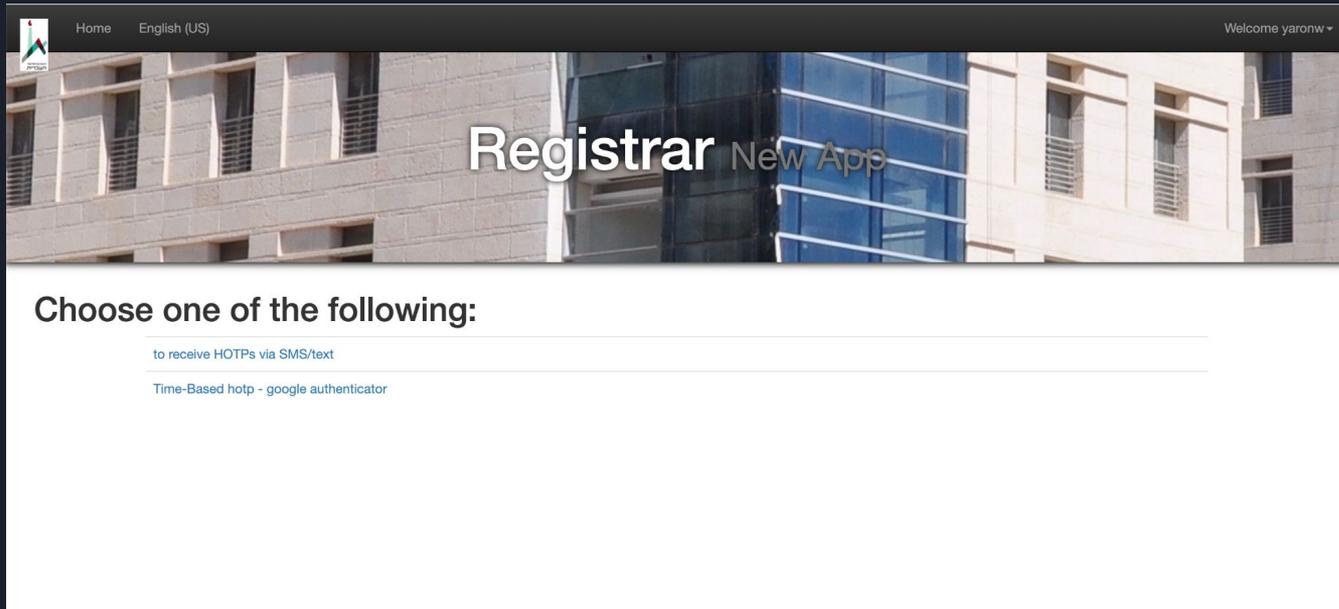


The screenshot shows the Registrar website interface. At the top, there is a navigation bar with a logo on the left, "Home" and "English (US)" in the center, and "Welcome yaronw" on the right. Below the navigation bar is a large banner image of a modern building with the word "Registrar" overlaid in white text. Underneath the banner, the text "This is what you can do: (*)" is displayed. Below this text are two horizontal lines, each with a link: "Account management" and "hOTP management". At the bottom of the page, there is a small disclaimer: "* this site is under construction, tread carefully".

Configure Mobile App or Browser Extension

Step 2

Select “Time-Based hotp - google authenticator”



The screenshot shows a web interface for configuring a mobile app. At the top, there is a navigation bar with a logo on the left, "Home" and "English (US)" in the center, and "Welcome yaronw" on the right. Below the navigation bar is a banner image of a modern building with the text "Registrar New App" overlaid. The main content area has the heading "Choose one of the following:" followed by two radio button options: "to receive HOTPs via SMS/text" and "Time-Based hotp - google authenticator".

Home English (US) Welcome yaronw

Registrar New App

Choose one of the following:

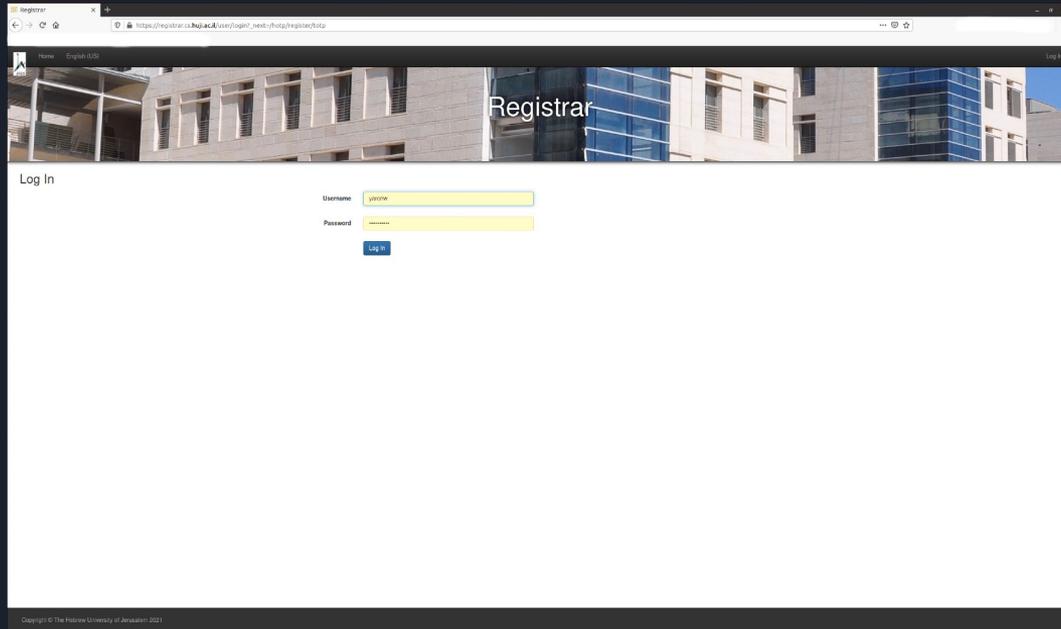
to receive HOTPs via SMS/text

Time-Based hotp - google authenticator

Configure Mobile App or Browser Extension

Step 3

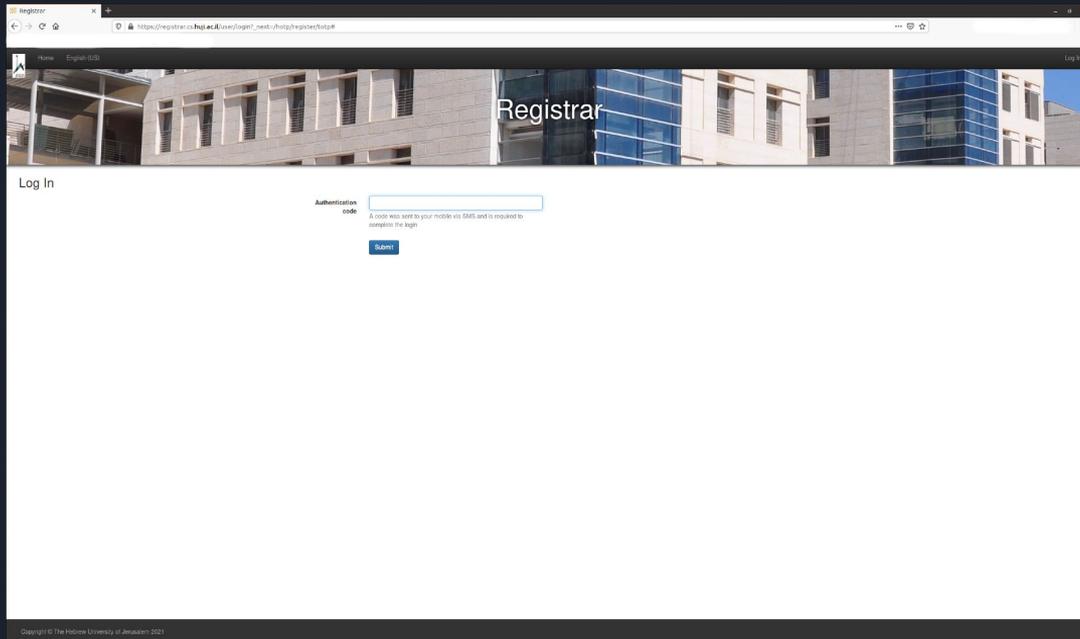
Enter Unix username and password



The screenshot shows a web browser window with the URL <https://registrar.ttu.edu/uxm/login.html>. The page features a header image of a building with the word "Registrar" overlaid. Below the header, there is a "Log In" section with two input fields: "Username" containing the text "yycow" and "Password" with masked characters. A blue "Log In" button is positioned below the password field. At the bottom of the page, a small copyright notice reads "Copyright © The Institute of Technology of Texas 2021".

Configure Mobile App or Browser Extension Step 4

Enter code received by SMS from “HUJICSE”



The screenshot shows a web browser window with the URL https://registrar.cs.huji.ac.il/next_next/choosepassword. The page features a header with a building image and the word "Registrar". Below the header, there is a "Log In" section. In the center, there is an "Authentication" form with a text input field and a "Submit" button. A message below the input field reads: "A code was sent to your mobile via SMS and is required to complete the login".

Registrar

Log In

Authentication
code

A code was sent to your mobile via SMS and is required to complete the login

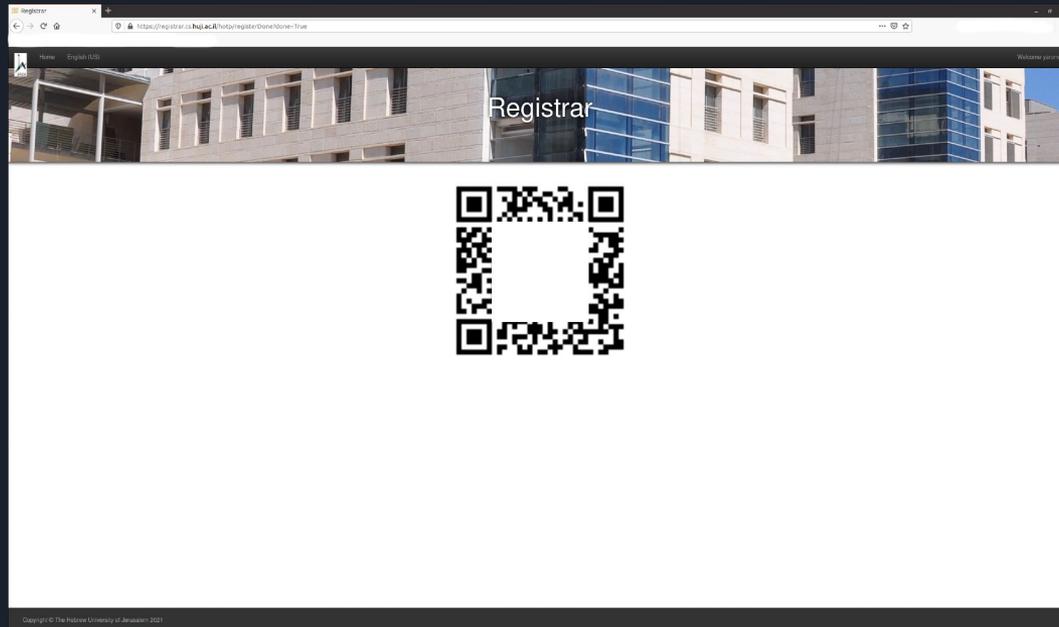
Submit

Copyright © The Hebrew University of Jerusalem 2021

Configure Mobile App or Browser Extension

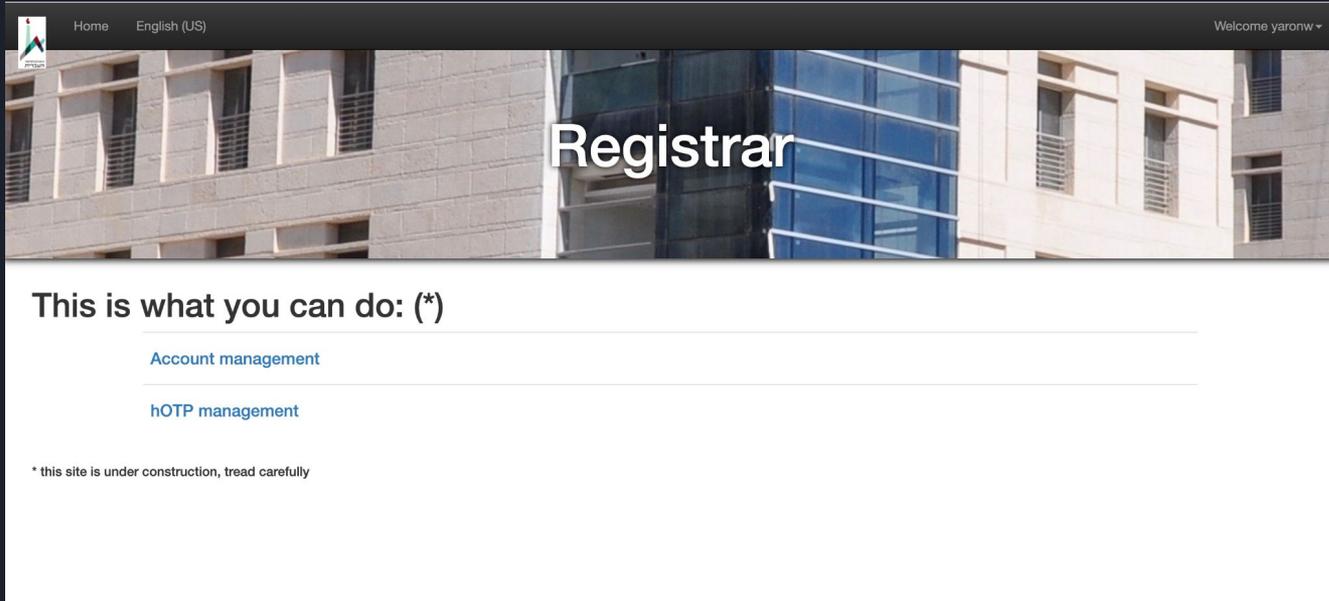
Step 5

Scan the QR code



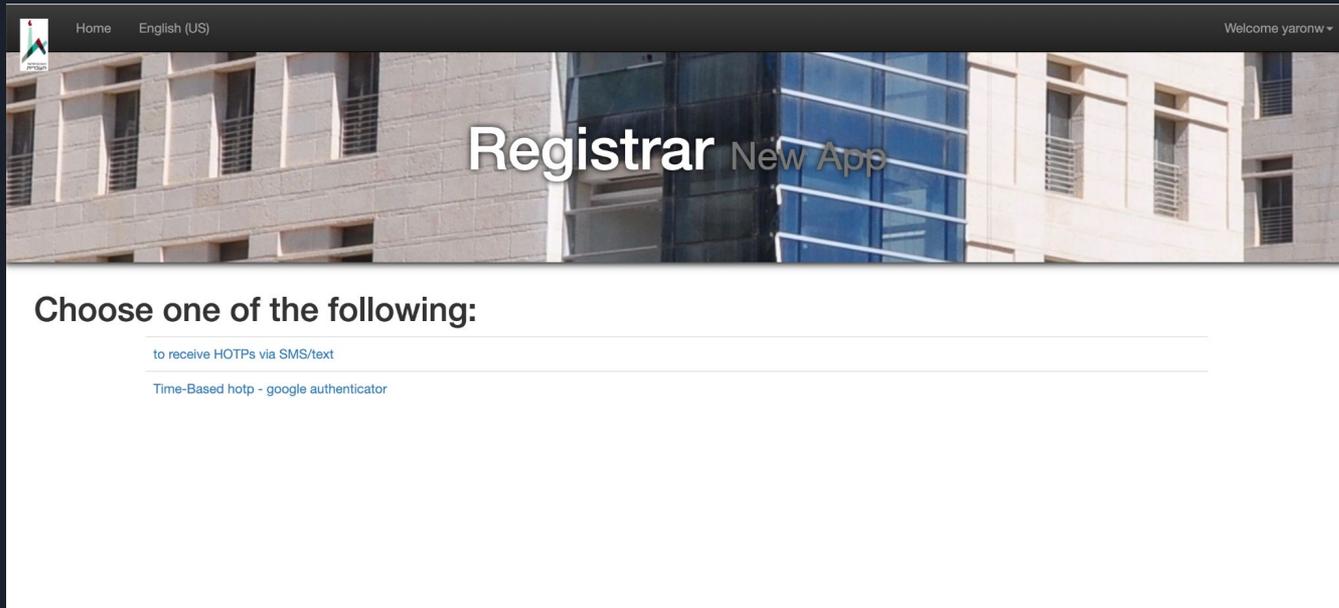
Get OTP by SMS Step 1

Go to [Registrar](#) site and select “hOTP management”



Get OTP by SMS Step 2

Select “to receive HOTPs via SMS/text”



The screenshot shows a web application interface for the Registrar New App. At the top left, there is a logo and navigation links for 'Home' and 'English (US)'. At the top right, it says 'Welcome yaronw'. The main header features a photograph of a modern building with the text 'Registrar New App' overlaid. Below the header, the instruction 'Choose one of the following:' is displayed. Two radio button options are listed: 'to receive HOTPs via SMS/text' and 'Time-Based hotp - google authenticator'. The first option is selected.

Home English (US) Welcome yaronw

Registrar New App

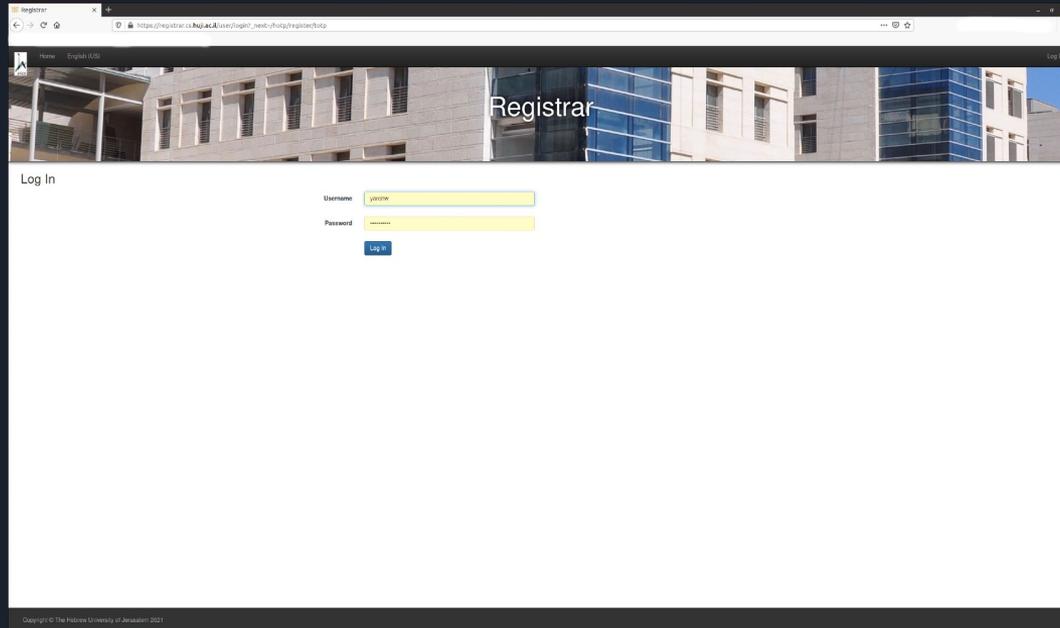
Choose one of the following:

to receive HOTPs via SMS/text

Time-Based hotp - google authenticator

Get OTP by SMS Step 3

Login with username and password



Registrar

Log In

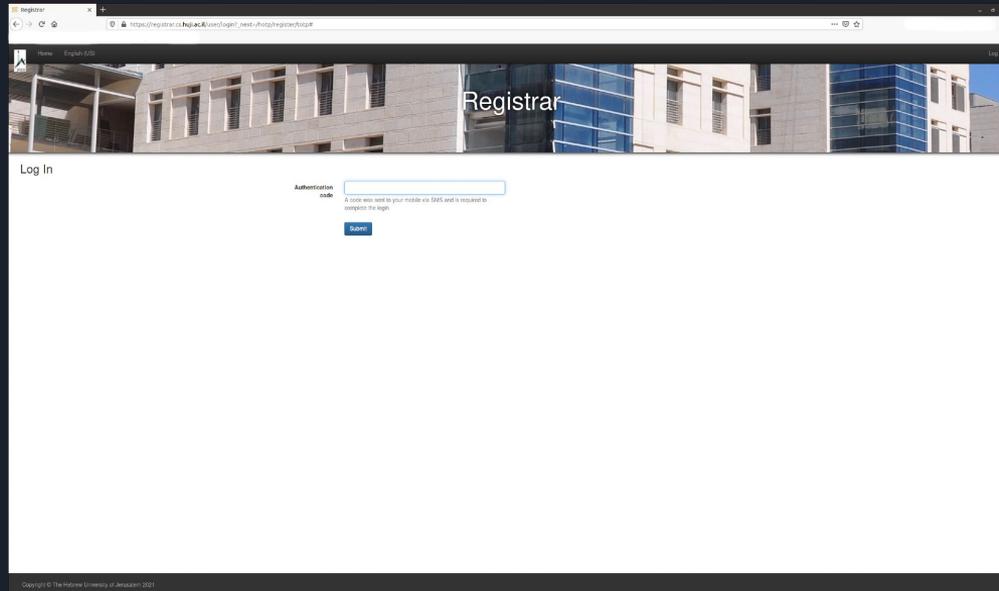
Username

Password

Copyright © The Hebrew University of Jerusalem 2021

Get OTP by SMS Step 4

Enter code received by SMS

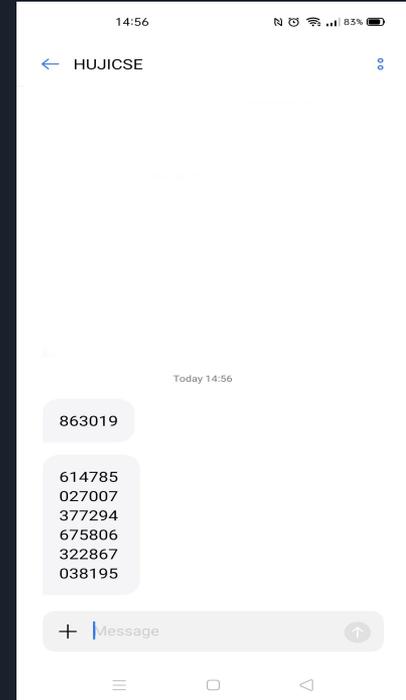


The screenshot shows a web browser window with the URL https://registrar.cu.edu.jo/users/login_step-photosigninotp.asp. The page features a header with a building image and the word "Registrar". Below the header, there is a "Log In" section. Underneath, there is an "Authentication code" label and a text input field. A small note below the field states: "A code was sent to your mobile via SMS and is required to complete the login." A blue "Submit" button is located below the input field. At the bottom of the page, there is a copyright notice: "Copyright © The Hashemite University of Jordan 2021".

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](https://wiki.cs.huji.ac.il/hurcs/login%20to%20cluster)



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

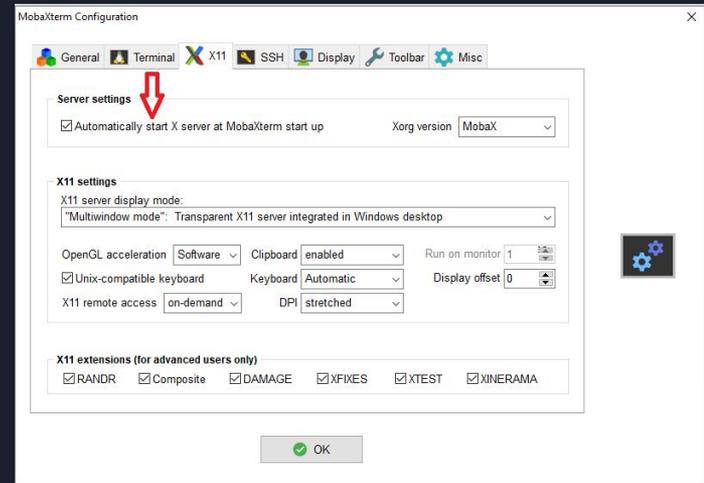
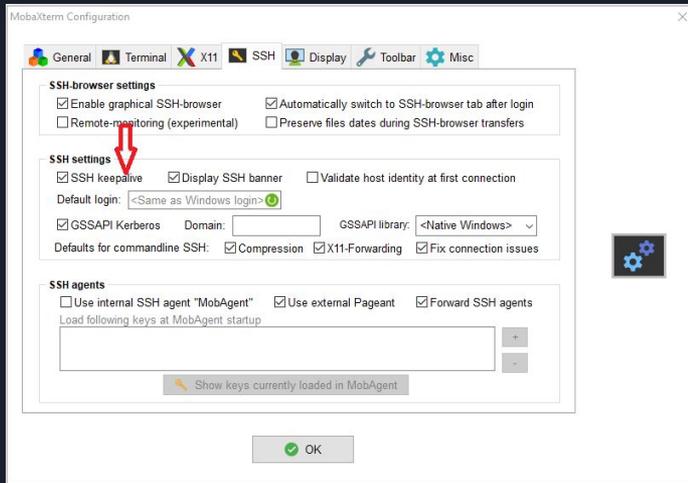
Then in terminal just enter:

`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

Session settings

SSH Telnet Rsh Xdmcp RDP VNC FTP SFTP Serial File Shell Browser Mosh Aws S3 WSL

Basic SSH settings

1 Remote host * moriah-gw.cs.huji.ac.il 4 Specify username [yaronw] Port 22

Advanced SSH settings Terminal settings Network settings Bookmark settings

2 X11-Forwarding Compression Remote environment: Interactive shell

Execute command: Do not exit after command ends

3 SSH-browser type: None Follow SSH path (experimental)

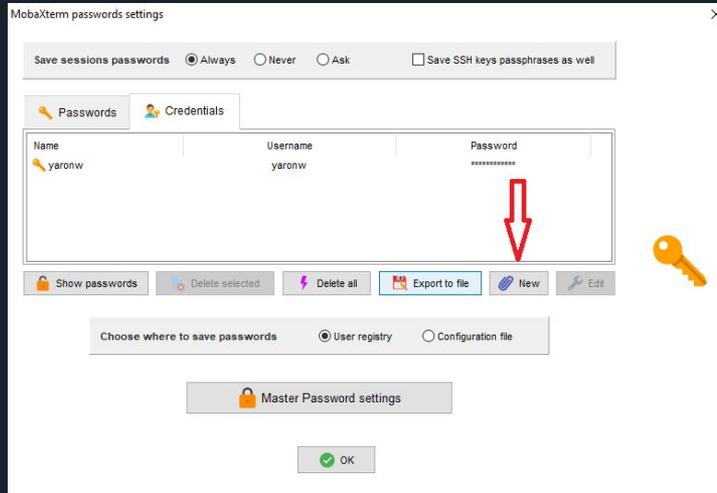
Use private key Adapt locales on remote server

Execute macro at session start: <none>

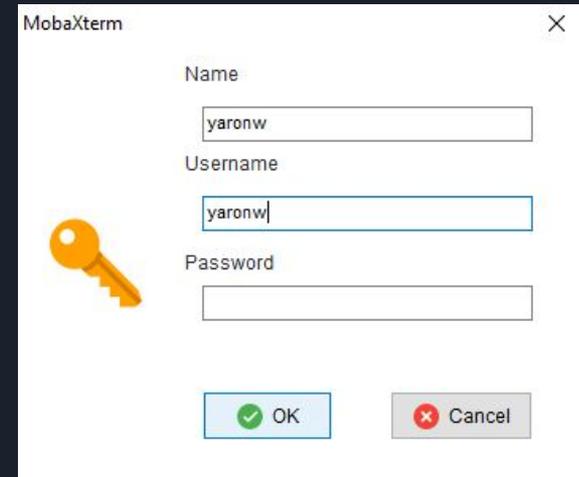
OK Cancel

Configure MobaXterm - Username

Press “New” button to create new username

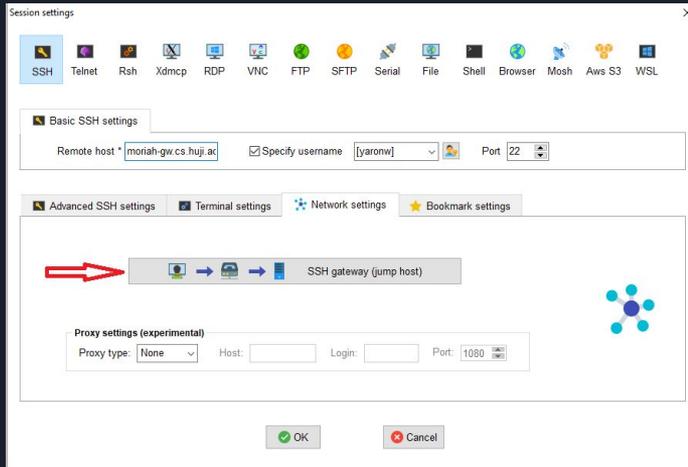


Enter username details



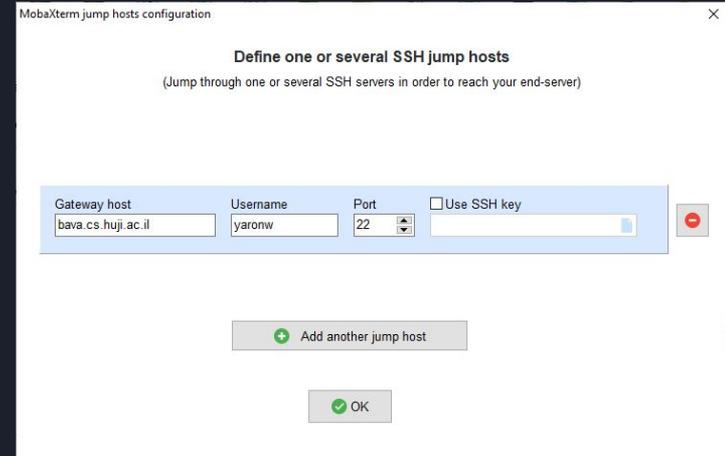
Configure MobaXterm - Jump Host

Press “SSH gateway” button to configure jump host



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

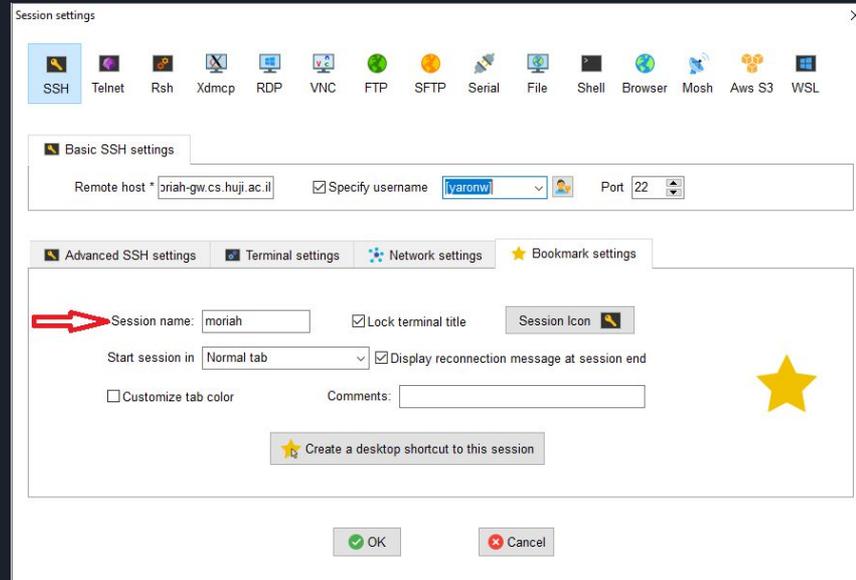
Username: your username in cluster



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

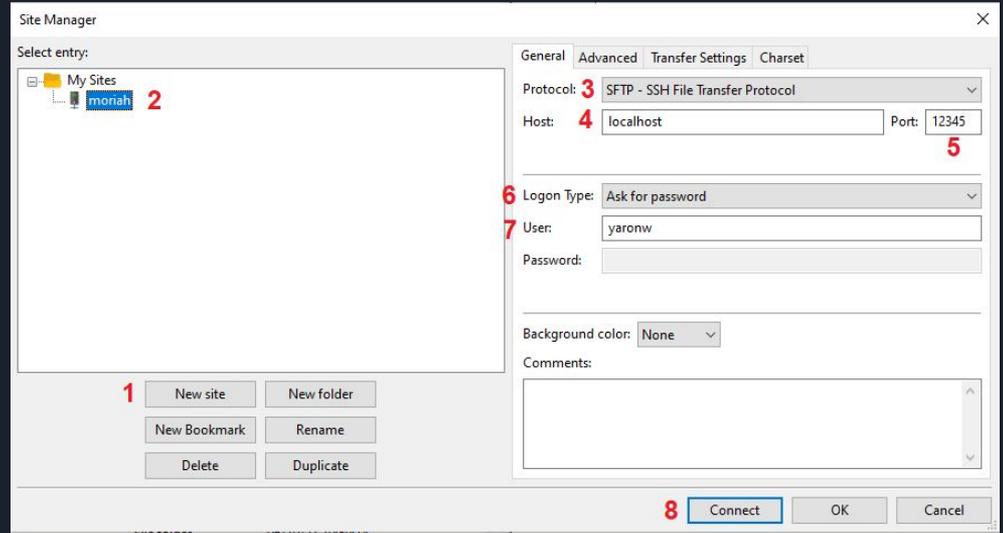
```
scp -P 12345 username@localhost:/path/on/cluster /path/on/local/machine
```

- 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:

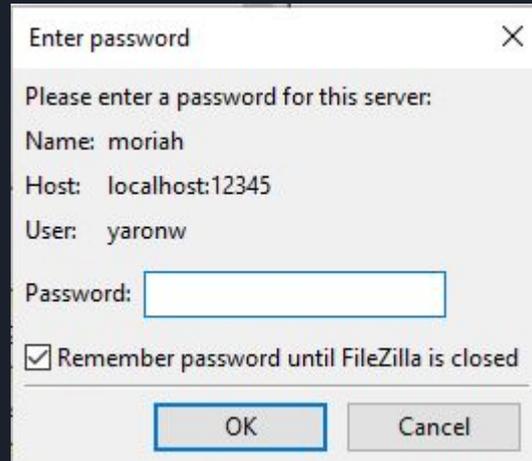
1. Click "New Site"
2. Name the site
3. Protocol - SFTP
4. Host - localhost
5. Port - as in tunnel (12345)
6. Logon Type - Ask for password
7. User - your username
8. Click "Connect"





Transferring Data - FileZilla Linux ,Mac and Windows

Enter password (IDng)



Enter password

Please enter a password for this server:

Name: moriah

Host: localhost:12345

User: yaronw

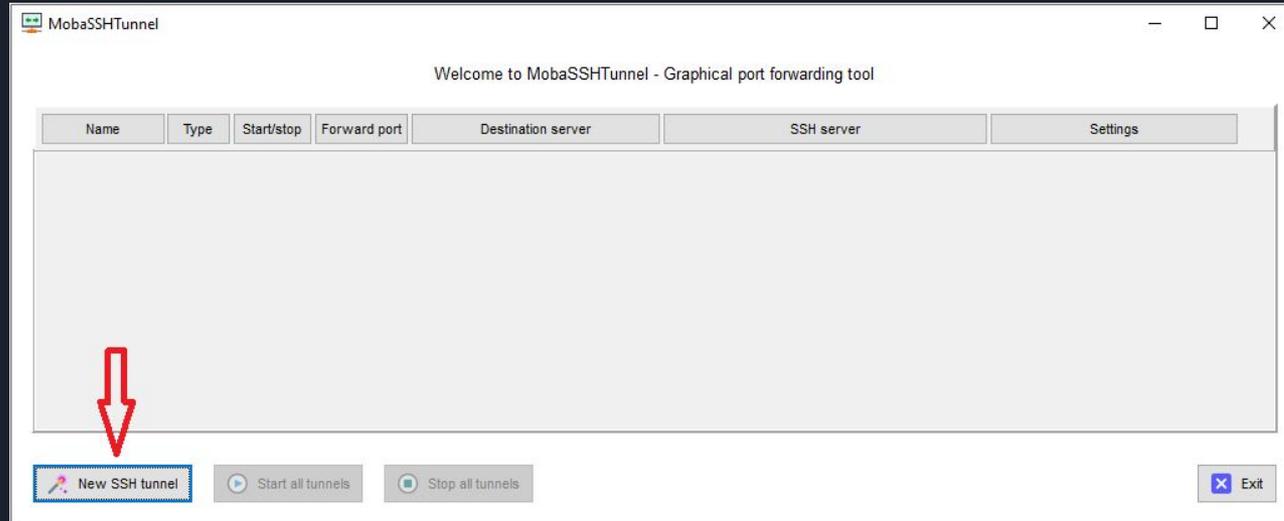
Password:

Remember password until FileZilla is closed

OK Cancel

Transferring Data - Create a Tunnel Windows MobaXterm

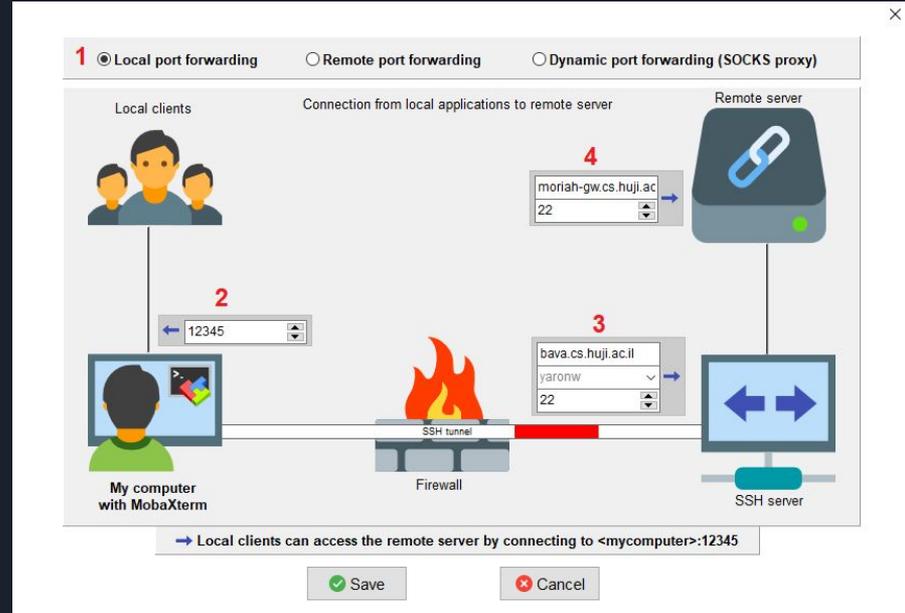
Press “Tunneling” and then “New SSH tunnel”



Transferring Data - Create a Tunnel Windows MobaXterm

Configure tunnel:

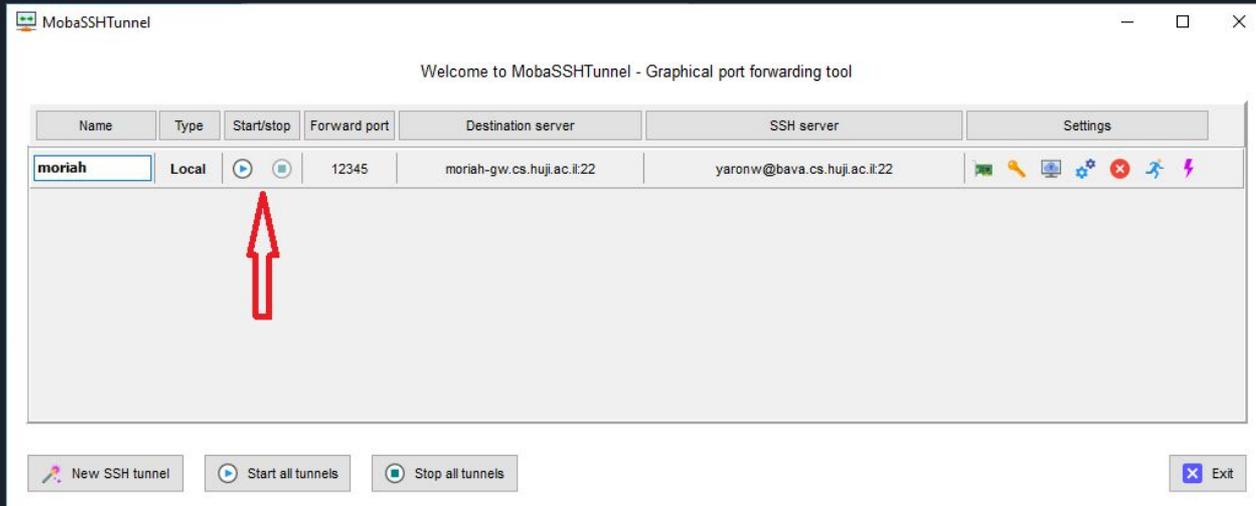
1. Select “Local port forwarding”
2. Enter local port number
3. Configure SSH server
4. Configure Remote server
5. Click Save



Transferring Data - Create a Tunnel Windows MobaXterm

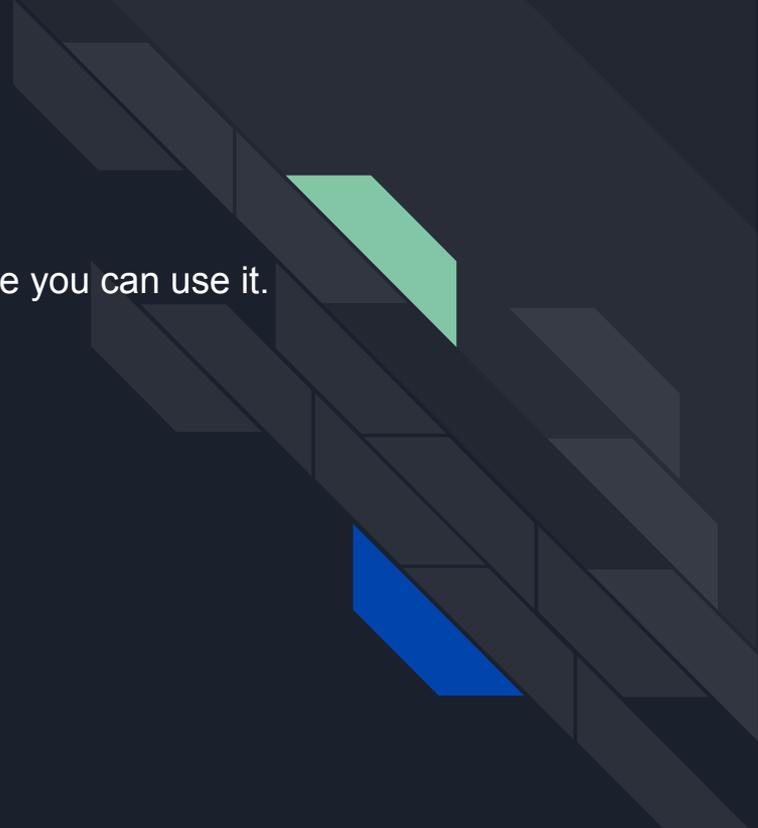
Name the tunnel.

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

```
----- /usr/local/hurcs/lmod/modulefiles -----
R4/4.1.0  athenapp/21.0-dev  chimeraX/1.1  chimeraX/1.2.5 (D)  hisat2/2.2.1  phyluce/1.7.1
----- /etc/lmod/modulefiles -----
astro      firefox/72.0.1  gurobi/9.0.0  (D)  nodejs/14.16.1  opencv/3.4.5  slurm/debug  slurm/version/17.11.12-1
bcl2fastq/2.20.0  firefox/74.0.1  hadoop/2.9.2  nvidia/390.115-beta  opencv/3.4.8  slurm/hm  slurm/version/19.05.1-2
bioinfo    firefox/78.5.0esr  hadoop/3.2.0  (D)  nvidia/410.93  opencv/4.4.0  slurm/mlxs  slurm/version/19.05.8-1 (D)
cuda/10.0  firefox/79.0  java/8  nvidia/418.43  openmpi/native (D)  slurm/moriah  (L)  spacy/2.1.8
cuda/10.1  ganache/2.0.1  java/11  (D)  nvidia/418.67-tesla  openmpi/2.1.6  slurm/moshp  tensorflow/1.14.0
cuda/10.2  ganache-cli/6.4.2  java-oracle/1.8.0_192  nvidia/430.40  openmpi/4.0.3  slurm/phoenix  tensorflow/2.0.0
cuda/11.0  (D)  gcc/7.4.0  java-oracle/11.0.2  (D)  nvidia/450.51.06-tesla  singularity/3.5.3  slurm/picasso  tensorflow/2.3.0 (D)
firefox/68.0.1  gcc/8.3.0  (D)  librosa/0.7.0  nvidia/450.66  singularity/3.6.2 (D)  slurm/rebug  tensorflow-all
firefox/68.4.1esr  go/native  (D)  mathematica/10.0  (L)  nvidia/460.39  slurm  slurm/sed  torch/1.3
firefox/68.0.1esr  go/1.14.4  nodejs/native  (D)  nvidia/460.73.01-tesla  slurm  slurm/astro  slurm/silico  torch/1.6 (D)
firefox/68.11.0esr (D)  gurobi/8.0.0  nodejs/12.22.1  nvidia/460.73.01  (D)  slurm/blaise  slurm/version/17.11.2-1
----- /usr/local/share/lmod/modulefiles -----
google-cloud-sdk/328.0.0  hurcs (L)  matlab/2018a  matlab/2018b  matlab/2019b (L,D)  matlab/2020a  matlab/2020b
----- /usr/share/lmod/lmod/modulefiles/Core -----
lmod/6.6  settarg/6.6

Where:
L: Module is loaded
D: Default Module

Use "module spider" to find all possible modules.
Use "module keyword key1 key2 ..." to search for all possible modules matching any of the "keys".
```



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  
-----
```

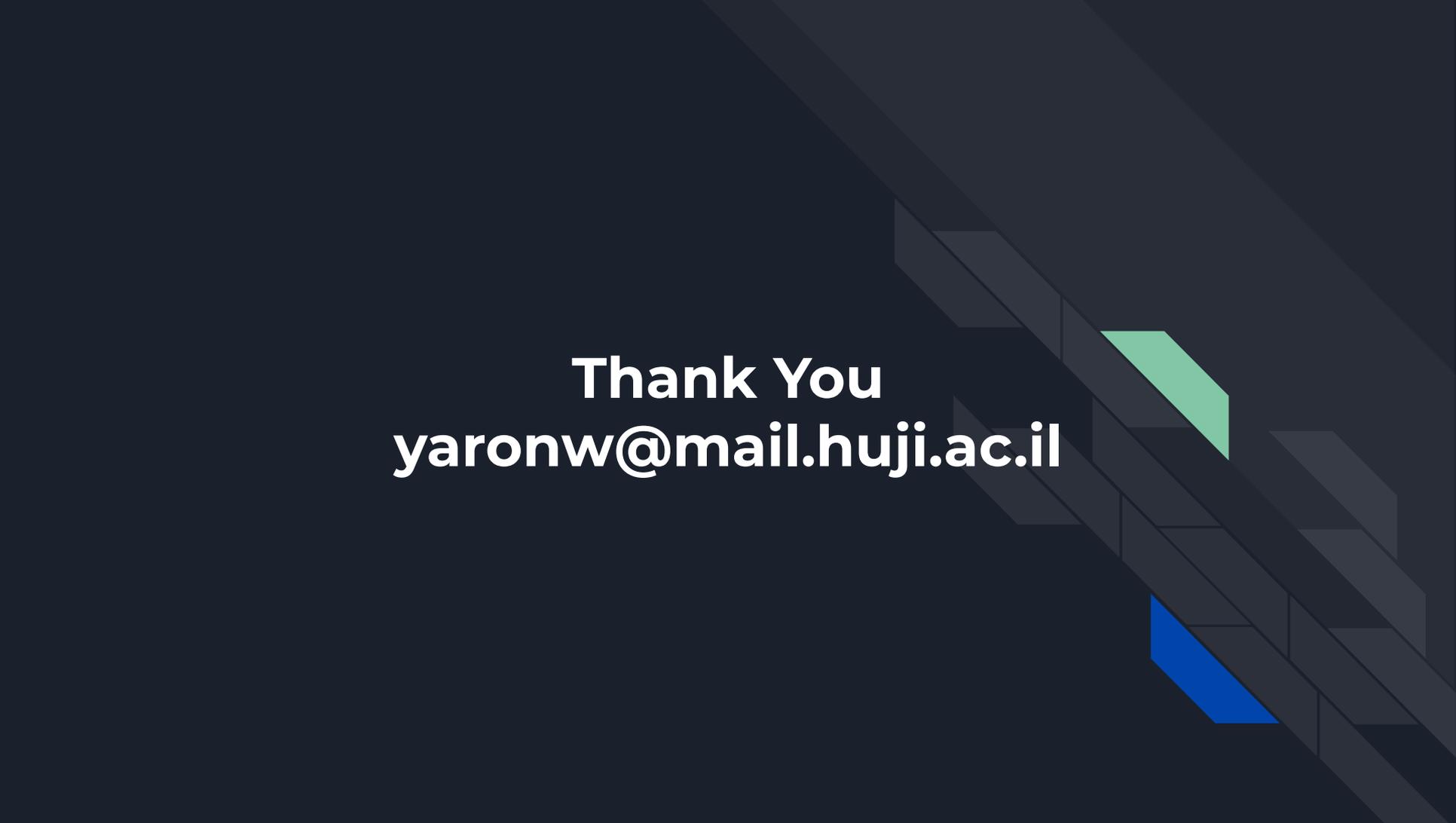
You will need to load all module(s) on any one of the lines below before the "hisat2/2.2.1" module is available to load.

```
hurcs
```

Help:

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

Thank You
yaroww@mail.huji.ac.il

The background features a series of dark grey, parallel lines that create a sense of depth and perspective, receding towards the right. A bright green parallelogram is positioned in the upper right area, and a bright blue parallelogram is located below it, further to the right.