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Setting up vLab & GitLab

Instructions



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Introduction

- **vLab** (Virtual Laboratory) is a digital platform hosted on Amazon Web Services (AWS) and it is provided by the University of Birmingham to all the students in MSc in HDS, Bioinformatics and Bioinformatics Distance Learning (DL).
- vLab resources:
 - [JupyterLab](#) interface for working with Python
 - [Linux command line](#) interface
 - [RStudio](#) environment for working with the R programming language



Step by step guide for vLab activation

- Accessing the vLab
- Accessing the RStudio
- Accessing the JupyterLab
- Accessing the Command Line Interface (CLI)
- Extending your time limit
- Troubleshooting
- Setting up the GitLab



Accessing the vLab

- vLab can be accessed through the following link:

<https://vlab.oc1.aws.cs.bham.ac.uk/>

- If you are not already logged in, you might be asked to log in using your university Microsoft login.
- When you logged in, you will be able to launch either an R studio or Jupyter session

Environment Selection

[? Support](#)

	NAME	AVAILABLE FROM	ENDS ON	DEFAULT SESSION LENGTH	QUOTA LEFT	USED
<input type="radio"/>	RStudio - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	295h	1.6%
<input type="radio"/>	Jupyter - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	289h	3.5%



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Accessing the RStudio

Environment Selection

Support

NAME	AVAILABLE FROM	ENDS ON	DEFAULT SESSION LENGTH	QUOTA LEFT	USED
<input checked="" type="radio"/> RStudio - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	295h	1.6%
<input type="radio"/> Jupyter - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	289h	3.5%

Status:

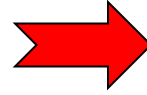
1 2 3 4 5

Request Submitted Session Created Session Starting Session Started Connect Ready

Action:

Start Session

1. Select RStudio from the list
2. Click the Start Session



3. Click to connect the session

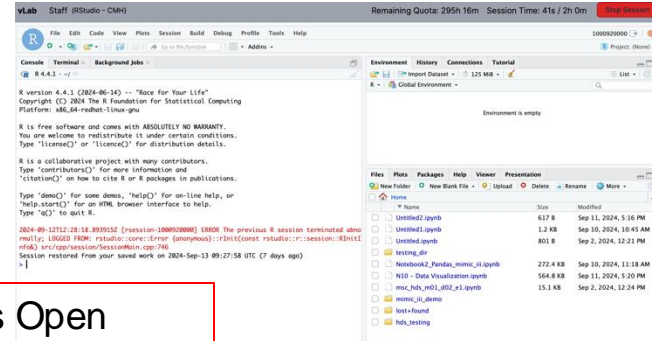


4. RStudio is Open

NAME	AVAILABLE FROM	ENDS ON	DEFAULT SESSION LENGTH	QUOTA LEFT	USED
<input checked="" type="radio"/> Active RStudio - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	295h	1.6%
<input type="radio"/> Jupyter - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	289h	3.5%



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Accessing the JupyterLab

NAME	AVAILABLE FROM	ENDS ON	DEFAULT SESSION LENGTH	QUOTA LEFT	USED
<input type="radio"/> RStudio - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	295h	1.6%
<input checked="" type="radio"/> Jupyter - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	289h	3.5%

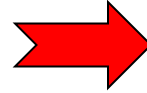
Status:

1 Request Submitted → 2 Session Created → 3 Session Starting → 4 Session Started → 5 Connect Ready

Action:

[Start Session](#)

1. Select JupyterLab from the list
2. Click the Start Session



NAME	AVAILABLE FROM	ENDS ON	DEFAULT SESSION LENGTH	QUOTA LEFT	USED
<input type="radio"/> RStudio - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	295h	1.6%
<input checked="" type="radio"/> Active Jupyter - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	289h	3.6%

Status:

1 Request Submitted → 2 Session Created → 3 Session Starting → 4 Session Started → 5 Connect Ready

Action:

[Stop Session](#) [Connect to Session](#)

3. Click to connect the session



Launcher

Notebook

☒ Python 3 (system)

Console

Python 3 (system)

Other

Terminal Text File Markdown File Python File Show Contextual Help

4. Choose Python notebook



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Accessing the CLI

NAME	AVAILABLE FROM	ENDS ON	DEFAULT SESSION LENGTH	QUOTA LEFT	USED
<input type="radio"/> RStudio - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	295h	1.6%
<input checked="" type="radio"/> Jupyter - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	289h	3.5%

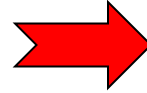
Status:

1 Request Submitted → 2 Session Created → 3 Session Starting → 4 Session Started → 5 Connect Ready

Action:

[Start Session](#)

1. Select JupyterLab from the list
2. Click the Start Session



NAME	AVAILABLE FROM	ENDS ON	DEFAULT SESSION LENGTH	QUOTA LEFT	USED
<input type="radio"/> RStudio - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	295h	1.6%
<input checked="" type="radio"/> Active Jupyter - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	289h	3.6%

Status:

1 Request Submitted → 2 Session Created → 3 Session Starting → 4 Session Started → 5 Connect Ready

Action:

[Stop Session](#) [Connect to Session](#)

3. Click to connect the session



Launcher

Notebook

Python 3 (system)

Console

Python 3 (system)

Other

☒ Terminal ☐ Text File ☐ Markdown File ☐ Python File ☐ Show Contextual Help

4. Choose the CLI



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QuickTime Player File Edit View Window Help

via.b.oc1.aws.cs.bham.ac.uk

VL Vasileios Panagiotis Lenis

Environment Selection

Support

	NAME	AVAILABLE FROM	ENDS ON	DEFAULT SESSION LENGTH	QUOTA LEFT	USED
<input type="radio"/>	RStudio - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	295h	1.6%
<input checked="" type="radio"/>	Jupyter - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	288h	3.8%

Status:

1 2 3 4 5

Request Submitted Session Created Session Starting Session Started Connect Ready

Action:

Start Session

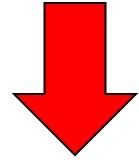
Mac OS Dock icons: Finder, Launchpad, Safari, VS Code, Word, Excel, Teams, OneDrive, Signal, JupyterLab, PowerPoint, Chrome, Mail, Trash



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Stopping the Session

- Each student has been provided with a quota for the total amount of time you can use vLab. To avoid using this quota unnecessarily, when you have finished your session, you should select the stop session option.



vLab Staff (Jupyter - CMH)

Remaining Quota: 289h 14m Session Time: 6m / 2h 0m

Stop Session



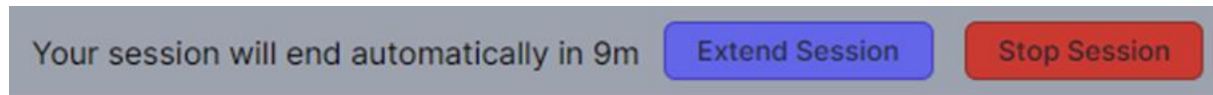
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Extending your time limit

- Each session is initially limited to **2 hours**. You can see how much of your session you have used in the grey bar at the top of the webpage




- When you have less than 10 minutes left on a session, you will be given the option to extend your time by a further two hours, which you can do by clicking the blue extend session button



Troubleshooting

- If you cannot log in to the Portal or see any Interactive Apps, please try the following steps in order:
 1. Make sure your internet connection is working.
 2. In vLab, if you can't see any apps or are having any issues, use the *Support* button for some quick help.

Environment Selection

 Support

	NAME	AVAILABLE FROM	ENDS ON	DEFAULT SESSION LENGTH	QUOTA LEFT	USED
<input type="radio"/>	RStudio - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	295h	<div>1.6%</div>
<input type="radio"/>	Jupyter - CMH (Staff)	2024-06-12 00:00:00	2029-06-30 00:00:00	2h 00m	289h	<div>3.5%</div>

vLab Documentation

×

Close

What is vLab?

Short for *Virtual Labs*, vLab is a service provided by Computer Science that enables staff and students to access virtual scientific and development environments on-demand.

Quotas

Every environment that you have access to will have an associated time quota. Instead of being limited to accessing a lab during specific hours like you would be with a physical lab, with vLab you have a limit of the *total number of hours* you can run the environment for. You have the freedom to choose when (and from where) you access your environments.

You also have a responsibility to use your allocated time wisely. Students using vLab for taught modules and student projects will be allocated more than enough time to complete assignments and produce a high-quality project.

Data

It is your responsibility to backup any data stored in your environments. While vLab is designed to store your data carefully, it is possible that this data will be lost, or that you will accidentally delete it. It is important that you regularly take a copy of any data that you cannot easily reproduce, typically either by pushing it to a git repository, or downloading it and storing it in OneDrive.

Students using vLab will not be given extensions or mitigations relating to data-loss in their environments. Backup your work!



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Setting up the GitLab

- Many of your modules will provide data and code using the GitLab platform.
- To have access on this material you need to set up your GitLab following the steps:
 1. Login to the website
 2. Pair vLab and GitLab by setting an SSH key



1. Login to the website

- You can have access to GitLab by using the following link:

<https://git.cs.bham.ac.uk/>

- If you are not already logged in, you might be asked to log in using your university Microsoft login.



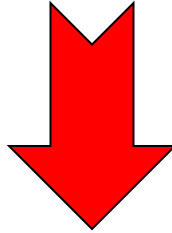
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2. Pair vLab and GitLab by setting an SSH key

1. Open a CLI using Jupyter Lab (as previously described)

```
1000920000@vlab-50033:~$  
[1000920000@vlab-50033333-60 work]$ setup-git
```

2. Type setup-git and click enter



3. Copy the SSH key which is generated (ctr/cmd + c)

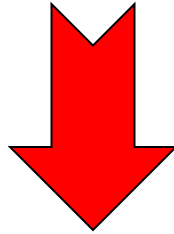
```
1000920000@vlab-50033:~$  
[1000920000@vlab-50033333-60 work]$ setup-git  
You should copy the public key below and paste it into the 'key' field at 'https://git.cs.bham.ac.uk/~profile/keys':  
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIERzpcIvoQw0XGdGHJGla4Twp3gvU4yAfnGrTZI8mDhs 1000920000@vlab-50033333-60
```



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4. Go to SSH Keys under your profile in the GitLab (Your will be empty)

5. Choose to “Add new Key”



6. Paste the SSH and click “Add Key”

Your access to GitLab is now set up!



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User Settings / SSH Keys

Search settings

SSH Keys

SSH keys allow you to establish a secure connection between your computer and GitLab. SSH fingerprints verify that the client is connecting to the correct host. Check the [current instance configuration](#).

Your SSH keys 1

Title	Key	Usage type	Created	Last used	Expires	Actions
1000920000@vlab-50033333-60	e5:cce:ce:7b:5b:95:8d:9b:87:8b:27:8e:eb:8a:df:94	Authentication & Signing	1 week ago	1 week ago	2025-09-10	Revoke

[Add new key](#)

SSH Keys

SSH keys allow you to establish a secure connection between your computer and GitLab. SSH fingerprints verify that the client is connecting to the correct host. Check the [current instance configuration](#).

Key

ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIERzpClvoQw0XGdGHJGla4Twp3gvU4yAfnGrIZl8mDhs 1000920000@vlab-50033333-6d

Begin with 'ssh-rsa', 'ecdsa-sha2-nistp256', 'ecdsa-sha2-nistp384', 'ecdsa-sha2-nistp521', 'ssh-ed25519', 'sk-ecdsa-sha2-nistp256@openssh.com', or 'sk-ssh-ed25519@openssh.com'.

Title

1000920000@vlab-50033333-60

Key titles are publicly visible.

Usage type

Authentication & Signing

Expiration date

2025-09-20

Optional but recommended. If set, key becomes invalid on the specified date.

[Add key](#) [Cancel](#)



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