

# Vital

## User Guide

New York University  
Tandon School of Engineering

### What is Vital?

Vital is a private cloud platform that provides students with hands-on learning experiences within a virtual lab environment. Courses at NYU Tandon make use of Vital by offering students the opportunity to experiment with their own virtual machines via lab-based assignments and projects.

This document serves as a general introductory guide for new Vital users. Contact information for issues and technical support is provided in the final section.

You can find the Vital homepage at: <https://vital.engineering.nyu.edu>

### Account Creation

First-time users are required to create a new account before they can access Vital. Click the ‘Signup for a new account’ link on the homepage.

Email:

Password:

---


[Can't access your account?](#)

New to Vital?

[Signup for a new account](#)

Clicking on this link will redirect you to a page where you may submit your student information and complete the registration process.

### Self Registration

Email address: *	<input type="text"/>
First name: *	<input type="text"/>
Last name: *	<input type="text"/>
Password: *	<input type="password"/>
	<ul style="list-style-type: none"><li>• Must be at least 8 characters</li><li>• Must include 1 uppercase and 1 number</li><li>• No special characters allowed</li></ul>
Confirm password: *	<input type="password"/>
Admitted on:	<input type="text" value="-----"/>
Department: *	<input type="text" value="-----"/>
Phone:	<input type="text"/>
Captcha: *	<div> <input type="text"/> <a href="#">Refresh</a></div>
	<div>Register</div>

When choosing a password, please be sure to meet the minimum complexity requirements. **We advise against reusing passwords that you have already registered for any other system.** Upon submitting this form, you will be redirected back to the login page where you may authenticate to Vital using your new login credentials.

## Course Registration

After you have created a Vital user account, you will need to supply a registration code in order to get access to your course-specific lab environment. This code will be provided to you by your instructor.

You will be presented a page which contains links to your course lab environments. This list will appear empty if this is your first time registering for a course. You may add a course by clicking the 'Add course' link and providing your course registration code which will be

provided by your instructor.

Registered Courses			<a href="#">Add course</a>
Course	Course Number	Start Date	
<a href="#">Network Security</a>	GY 6823	Aug. 1, 2018, 11:02 a.m.	<a href="#">Remove</a>
<a href="#">Computer Networks</a>	GY6843	Aug. 1, 2018, 6:06 a.m.	<a href="#">Remove</a>
<a href="#">Parallel and Distributed Systems</a>	CSUY 3254	Sept. 9, 2018, 7 a.m.	<a href="#">Remove</a>

## Vital Features

Now we are ready to get hands-on with some of the infrastructure provided by Vital. In this section, we will examine the features of the platform and offer best practices.

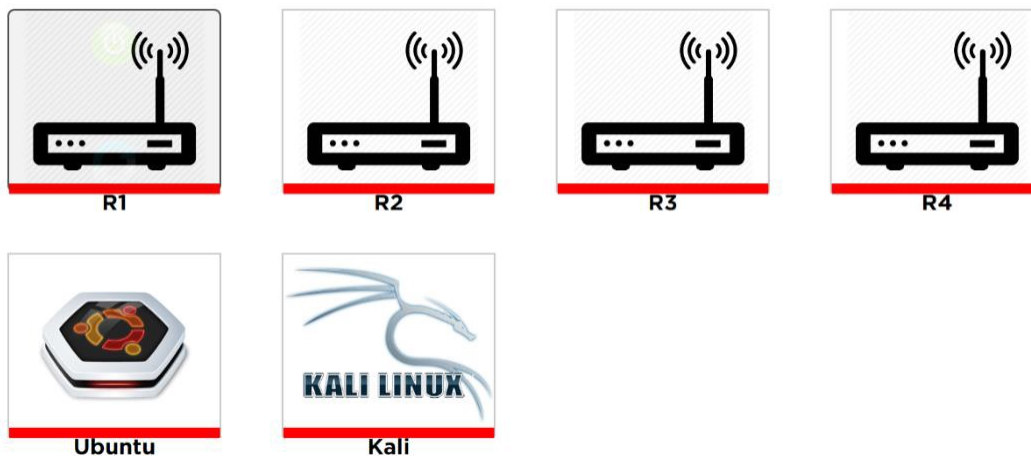
Vital infrastructure uses the same default login for VM.

**username:** student

**password:** student

## Course Environment

Each course within Vital is unique. Certain course networks enable access to the Internet while others may be private. The virtual machines found within each course environment are preconfigured with the applications you need to build and test your solutions.



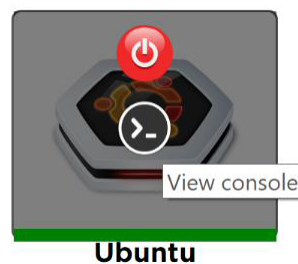
As you can see in the image above, we are given access to six virtual machines in this particular course Ubuntu, Kali Linux, and four routers.

## Starting & Stopping Virtual Machines

Virtual machines (VM) with an underlying red status bar are in an “off state. If you hover your mouse pointer over any of the machines found within this course page, a green power icon will appear. Clicking this icon will start the VM.

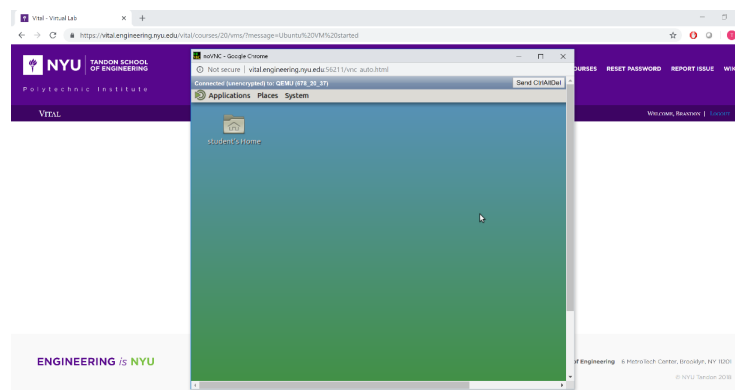


After you have started the machine, the status bar will change to green to indicate that the VM is now running. The View console icon will now appear as a new mouseover option. Clicking the View console icon will launch the VMs interface.



Notice that after starting the VM, the green power icon has changed to red. Clicking the red power icon will turn the machine off.

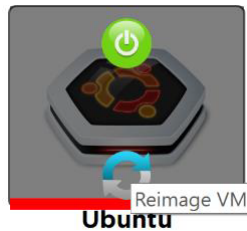
After clicking View console and logging in using the default username and password, you will be presented the following interface (Ubuntu):



**Do not forget to shut down all machines and log off Vital after completing your lab session.** Clicking the Logout link in the upper-right corner will automatically send the shutdown signal to all active machines. Leaving machines online for an extended period of time will result in a warning email.

## Reimaging Virtual Machines

While working on labs there may be situations in which you may need to restore a machine to its initial state. To accomplish this, Vital gives students the option to reimage a virtual machine. **Please be aware that this process will completely erase all user-specific data on the machine and restore it to its initial default settings.** Data deleted in this way **cannot be recovered**. Make sure you have saved your work elsewhere before initiating this process. You can reimage a machine by selecting the blue arrow mouseover option.



## Git

Vital machines come preinstalled with Git. If Git is required for your course, your instructor will provide you with additional instructions.

## SFTP File Transfers

SSH File Transfer Protocol (SFTP) enables you to move files from one computer to another. You may need to do this for certain assignments. **Note that this service is only available to NYU students and faculty.** You must either be on the NYU network or connected to the NYU VPN to resolve the domain name of the SFTP server ([sftp.engineering.nyu.edu](https://sftp.engineering.nyu.edu)). If you are not presently on the NYU network, [click here](#) for information on how to setup a VPN connection to NYU.

Most operating systems come equipped with SFTP software which is accessible via the command line. You can authenticate to the SFTP server using your Vital username and password.

For example:

```
> sftp <username>@sftp.engineering.nyu.edu
> <password>
```

After authenticating we can upload a file by executing:

```
sftp> put <path to file>
sftp> exit
```

```

10-18-239-239:virtual_lab tedhades$ sftp th2313@sftp.engineering.nyu.edu
th2313@sftp.engineering.nyu.edu's password:
Connected to th2313@sftp.engineering.nyu.edu.
sftp> put /Users/tedhades/Desktop/myfile.txt
Uploading /Users/tedhades/Desktop/myfile.txt to /th2313/myfile.txt
/Users/tedhades/Desktop/myfile.txt          100%   6    2.4KB/s   00:00
sftp>
10-18-239-239:virtual_lab tedhades$ █

```

Once you have uploaded your files to the SFTP server, you can retrieve them from within the lab environment by executing the following commands:

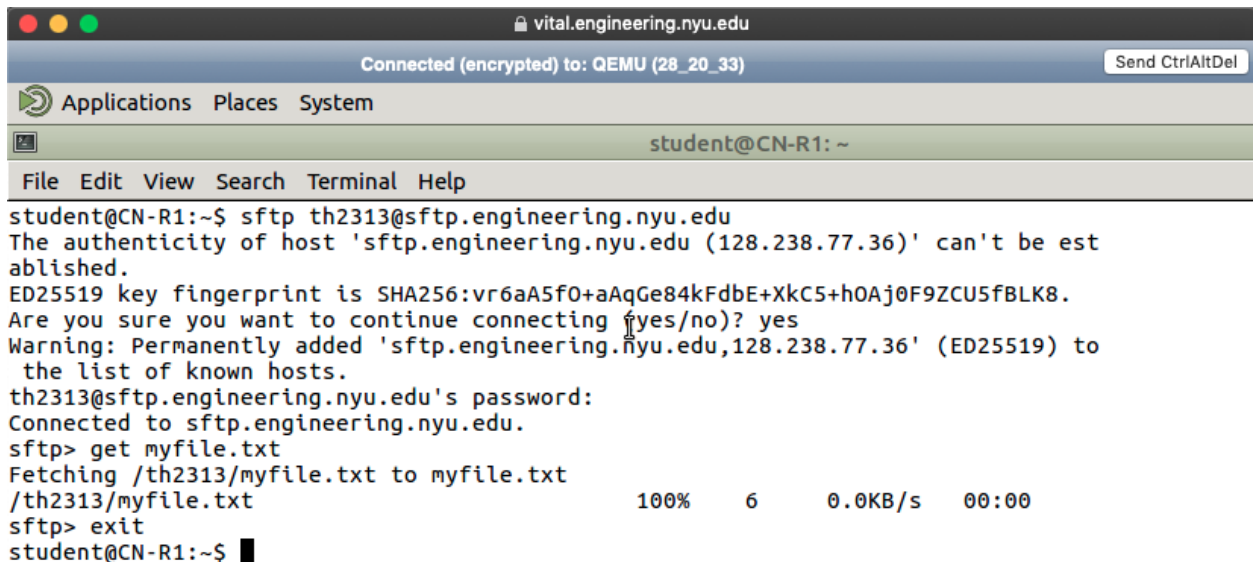
```

> sftp <username>@sftp.engineering.nyu.edu

sftp> get <filename>

sftp> exit

```



The screenshot shows the Vital application window titled "vital.engineering.nyu.edu". The status bar indicates "Connected (encrypted) to: QEMU (28\_20\_33)" with a "Send CtrlAltDel" button. The main window has a menu bar (File, Edit, View, Search, Terminal, Help) and a title bar "student@CN-R1: ~". The terminal content shows a successful SFTP session where a file named "myfile.txt" was retrieved from the server. The session details include the host "sftp.engineering.nyu.edu (128.238.77.36)", a warning about the host's fingerprint, and the file transfer progress showing 100% completion at 0.0KB/s.

```

student@CN-R1:~$ sftp th2313@sftp.engineering.nyu.edu
The authenticity of host 'sftp.engineering.nyu.edu (128.238.77.36)' can't be est
ablished.
ED25519 key fingerprint is SHA256:vr6aA5f0+aAqGe84kFdbE+XkC5+h0Aj0F9ZCU5fBLK8.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'sftp.engineering.nyu.edu,128.238.77.36' (ED25519) to
the list of known hosts.
th2313@sftp.engineering.nyu.edu's password:
Connected to sftp.engineering.nyu.edu.
sftp> get myfile.txt
Fetching /th2313/myfile.txt to myfile.txt
/th2313/myfile.txt          100%   6    0.0KB/s   00:00
sftp> exit
student@CN-R1:~$ █

```

Once logged in to the SFTP server you can use the following command to see all options:

```
sftp> ?
```

## Troubleshooting and Reporting Issues

Please report any issues you may encounter while using Vital to our admin team at [vital@nyu.edu](mailto:vital@nyu.edu).