# FTP lab guide

We're going to be setting up and testing our very own FTP server! There are anonymous and non-anonymous servers, so we're going to just non-anonymous.

For this exercise, we will do everything using 2 VMs: 1 server and 1 client. We will set up vsftpd on the server VM and do some testing through the client VM.

Note: make sure you know the answer to each question before moving on! If you need help, don't be afraid to ask! We don't bite (often).
Also, do not use sudo su! Stick with your normal user and just use sudo before the commands

## Installation

1. Do the following on your **server VM:**
2. Install the latest version of vsftpd
    a. How do you make sure that you have the newest one?
    b. Why is it important to have an updated version of the server?
3. Allow ftp through the firewall

## Setup

1. Do the following on your **server VM:**
2. Create a new local user named ftpuser. Set the password to "password".
3. In /home/ftpuser/, create a new directory named project_folder
    a. Make sure the owner and group are both ftpuser
4. In project_folder, create a new file called download_file. In it, write "wow you have successfully downloaded a file!"

## Configuring Access (non-anonymous)

1. Do the following on your **server VM:**
2. Edit /etc/vsftpd.conf
    a. Pro tip: much of this file has documentation in comments(#). Try reading this before jumping to google!
3. Do not allow anonymous ftp. However, DO allow local users to log in
    a. What would happen if you didn't allow anonymous access and you ALSO didn't allow local users to log in?

4. For this example, we're going to allow ftp write commands.
    a. Note: different scenarios call for different configurations. Sometimes, you will need to turn this option off.
    b. What are ftp write commands?
5. Make sure that vsftpd will chroot the local user
6. Specify the chroot directory as /home/ftpuser/project_folder
    a. Your default vsftpd conf probably doesn't have this option. Have fun figuring this one out:D
7. Allow for writeable chroot
    a. Why?
8. Restart the service!
    a. Why is this always necessary after config? What happens if you don't?

## Putting it in action!

1. Do the following on your **client VM:**
    a. Why is it important that we test everything with a client?
2. In your home directory, create a new file called upload_file
3. In upload_file, write "wow you have successfully uploaded a file!"
4. Set **both VMs** to bridged mode
5. On your **server VM**, find out what your IP address is
    a. What command do you need?
6. On your **client VM**, establish an ftp connection to your **server VM**
    a. Login as ftpuser
7. Set the local ftp file download directory to your home directory
    a. Pro tip: look up the lcd command!
8. List all of the files available
9. Download download_file. It will go to your home directory
10. Upload upload_file to the server
    a. Pro tip: always verify your results! Check that the file now exists on the server and still says "wow you have successfully uploaded a file!"
    b. Hint: When you ftp into a server, you don't get a text editor. You also don't get commands such as cat or less. What you CAN do is: get upload_file -
    c. In this example, we allowed for writeable chroot. What would have happened if we didn't allow for writeable chroot?
11. Exit out of your ftp connection
12. Verify that you successfully downloaded download_file

## Anonymous FTP

1. Reconfigure your FTP server to use anonymous logins
2. Keep the chroot directory as /home/ftpuser/project_folder