

COMS W4187 Security Architecture and Engineering

Fall 2013

VMware How To

1 Things you need to know before getting started

- Your VMware assignment;
an email has been sent to you with an assignment that looks like
`hostname.cs.columbia.edu`
For example, `sec-vm01.cs.columbia.edu` means that you have been assigned that virtual machine.
- There are two user accounts on your VM; one is privileged, so that you can use `sudo -s` from it to become `root`. The other is unprivileged; use this for testing. You will receive an email with the passwords for these two logins. Please change your login passwords for these two accounts **immediately**, if you do not want your homework tampered with.

2 Working with VMware machines

You can work at your assigned machine remotely, but you must be on the CS network to access your virtual machine. Therefore, SSH to `clic.cs.columbia.edu` machine, then SSH to your VM.

2.1 For Linux/Mac Users

Remote login from your own Linux/Mac machine is quite similar to using any machines in the CLIC lab. Make sure you have SSH installed for your Linux system. SSH is available by default on MacOS. Open a terminal and run SSH to log into the VMware machine assigned to you.

```
smb@delhi /home/smb $ ssh username@sec-vm01.cs.columbia.edu
```

2.2 For Windows Users

One of the free available SSH clients for Windows users is PuTTY, which can be downloaded from here: <http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>. (Other options are at <http://www.putty.org/>.)

Run the PuTTY client and enter the hostname of your machine in the “Host Name” field. You can also save your session, so as not to type everything each time you connect (see Figure 1). Next, supply the username and your password and a shell window should pop up.

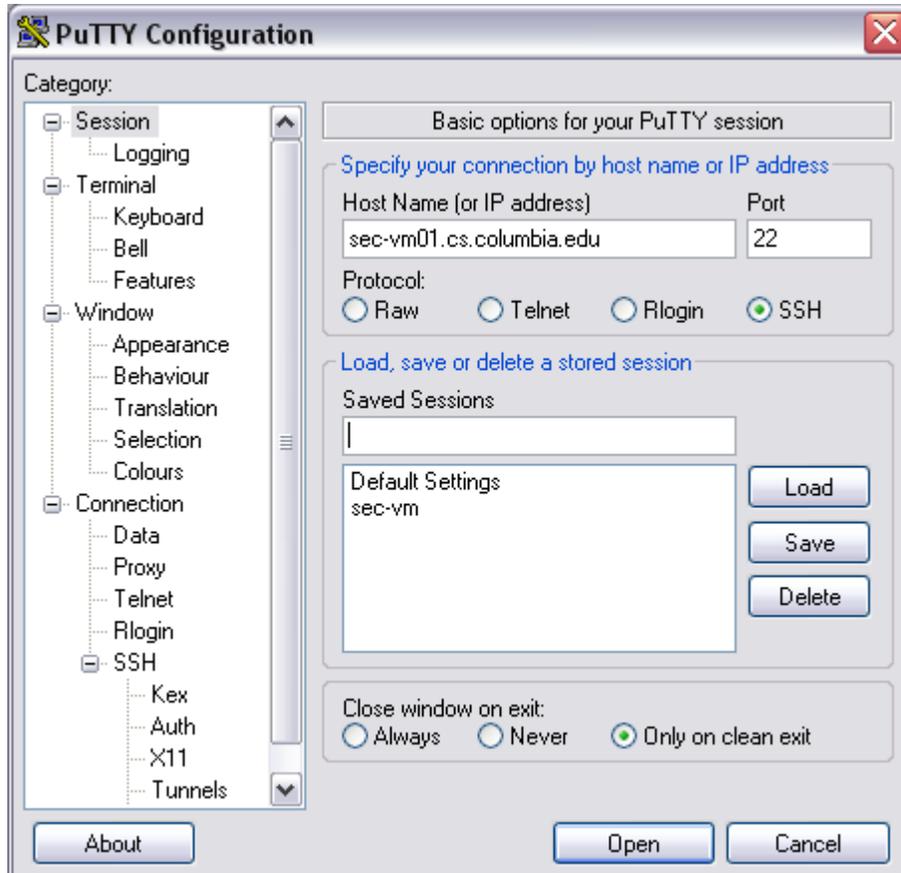
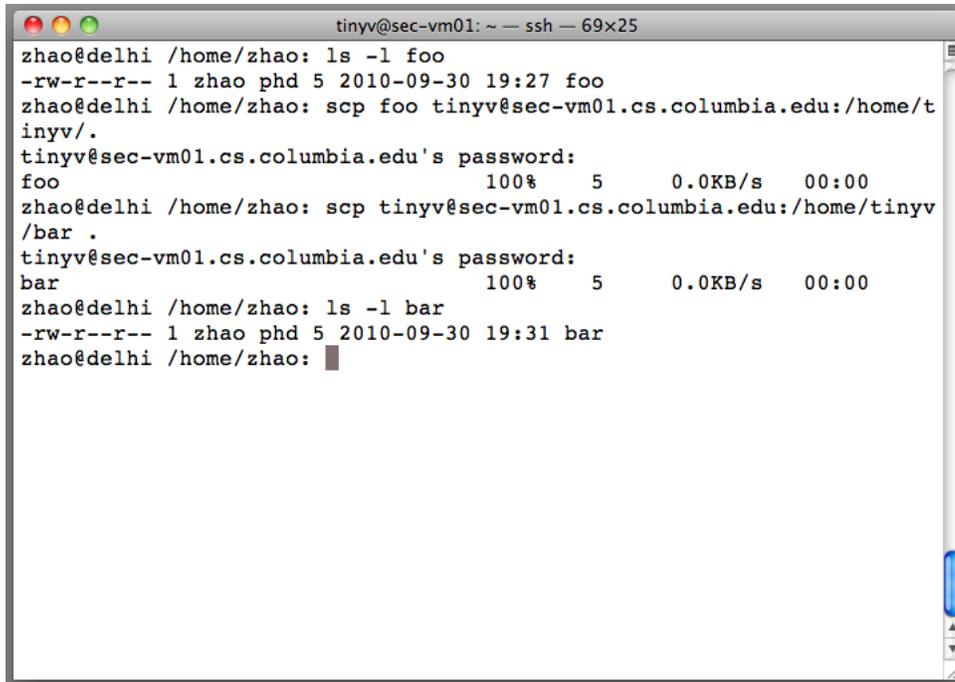


Figure 1: PuTTY Session Setup

3 A Few Hints

1. Your VM comes with the essential build utilities that you might need (*e.g.*, `gcc`, `make`) installed. If for some reason you want to install additional software you can use `apt-get` or `aptitude` to add packages from the Ubuntu repository. In case you are not familiar with a Debian-based Linux distribution, you can find more information about the APT package manager in the following links:
<http://www.debian.org/doc/manuals/apt-howto/>
<https://help.ubuntu.com/9.04/serverguide/C/apt-get.html>
2. You can write your code directly on your supplied machine, or on a CLIC host machine, and upload files onto your VM using the `scp` command (see Figure 2), or `pscp` if you are a Windows user — you can find this utility in along with PuTTY.

The image shows a terminal window titled 'tinyv@sec-vm01: ~ — ssh — 69x25'. The terminal output is as follows:

```
zhao@delhi /home/zhao: ls -l foo
-rw-r--r-- 1 zhao phd 5 2010-09-30 19:27 foo
zhao@delhi /home/zhao: scp foo tinyv@sec-vm01.cs.columbia.edu:/home/t
tinyv/.
tinyv@sec-vm01.cs.columbia.edu's password:
foo          100%  5      0.0KB/s  00:00
zhao@delhi /home/zhao: scp tinyv@sec-vm01.cs.columbia.edu:/home/tinyv
/bar .
tinyv@sec-vm01.cs.columbia.edu's password:
bar          100%  5      0.0KB/s  00:00
zhao@delhi /home/zhao: ls -l bar
-rw-r--r-- 1 zhao phd 5 2010-09-30 19:31 bar
zhao@delhi /home/zhao: █
```

Figure 2: Two examples of scp command: (1)push the file `foo` from host machine to your VM; (2)pull the file `bar` from your VM to host machine

3. Once you are done with your homework, please kill all process initiated by you.
4. In your homework submission, you need to include the passwords of your both VM user accounts for the TAs to grade your homework.
5. Test your VM as soon as possible and don't wait until the last minute. Contact your TAs for any problems regarding the VM before dropping trouble tickets to CRF (please don't send email to CRF staff directly). VMs can crash.
6. **Important** notice: Your VMs are not backed-up automatically. Therefore, make sure that you save frequent snapshots of your code wherever you prefer (*e.g.*, code repository, manually created `.tar.gz` file). In case you mess-up the VM there is always the possibility of reverting it into its initial state (email the TAs).