

# MipsHelper369 Tutorial

## Supported Clients:

- PuTTY
- WinSCP

## Objective:

- This tutorial aims to familiarize the user with the College of Engineering compute server, `compute.engr.arizona.edu`. The supported programs are PuTTY for terminal interaction and WinSCP for file transfer. The process of preparing mipsHelper369 for use is also covered in this document.

## Packages:

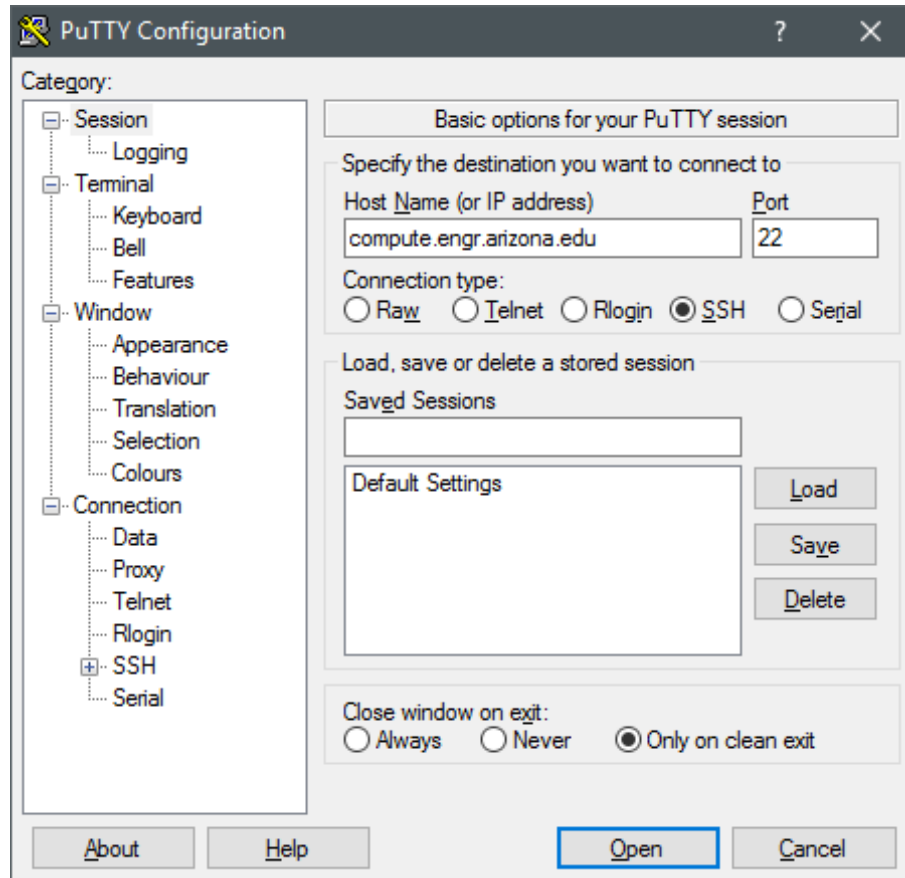
- PuTTY can be downloaded at:  
<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>
- WinSCP can be downloaded at:  
<https://winscp.net/eng/download.php>
- mipsHelper369.tgz will be available on D2L.

## Contacting ENGR-IT:

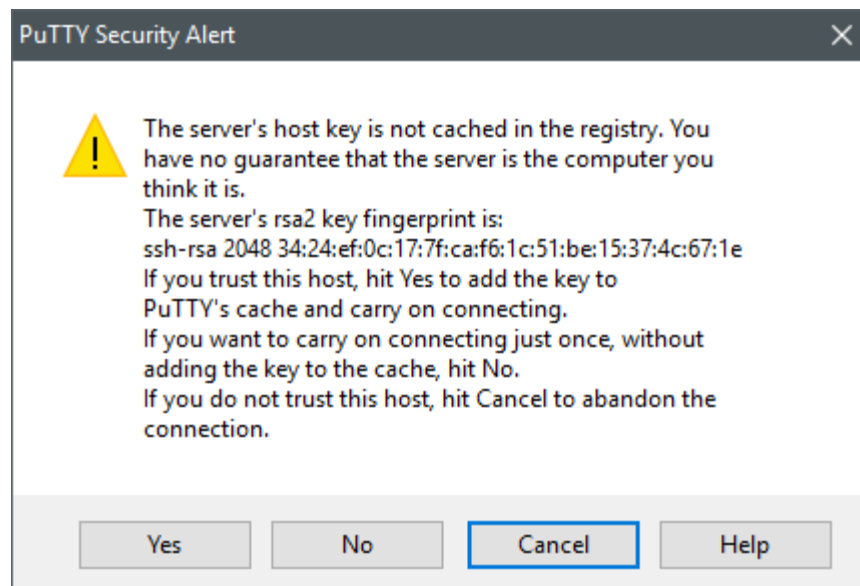
- If you are encountering strange errors when trying to use the server, or if you don't have access at all, please contact Engineering IT by sending an email to:  
[support@engr.arizona.edu](mailto:support@engr.arizona.edu)

Connecting to `compute.engr.arizona.edu` with PuTTY:

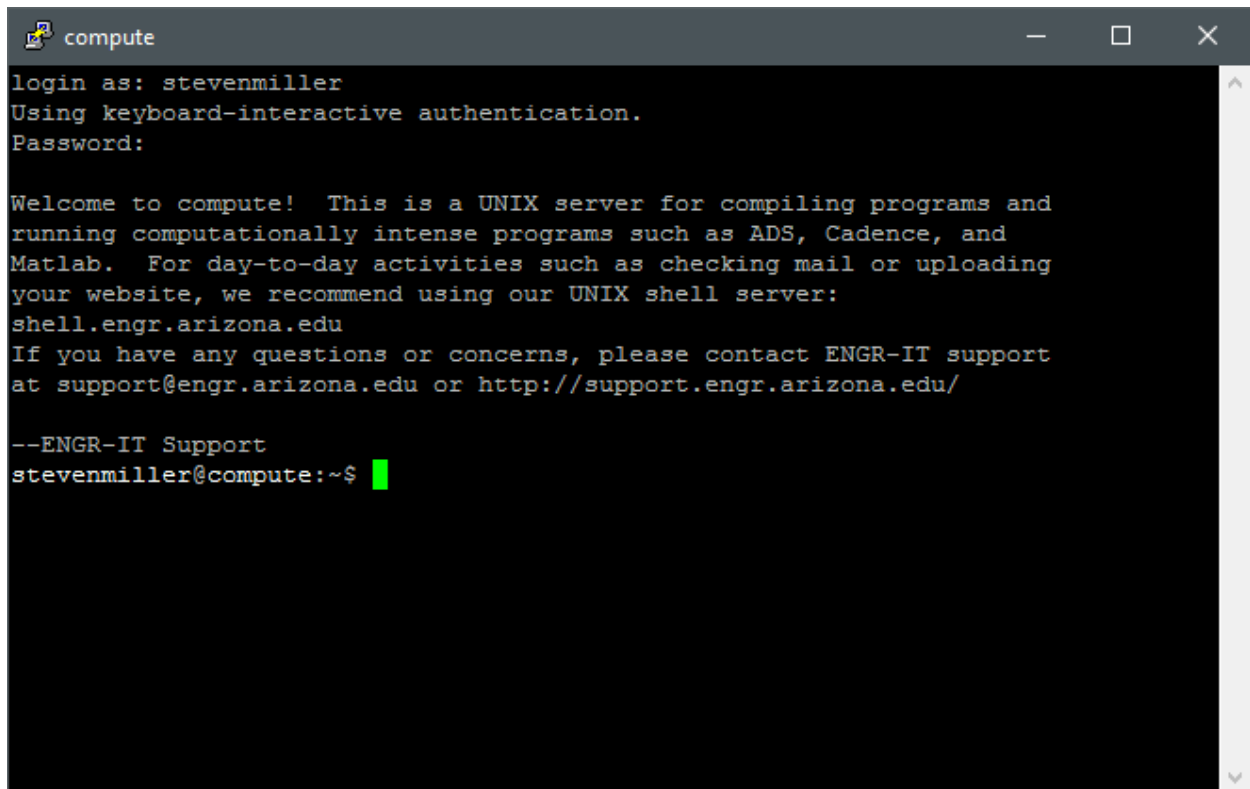
- Open PuTTY. In the Host Name field, type: `compute.engr.arizona.edu`.



- If you receive the “PuTTY Security Alert”, click Yes.



- Enter your University of Arizona NetID at the `login as` prompt, then press Enter. Enter your NetID password at the `Password` prompt. Note that you won't see anything show up as you type in your password; this is for security reasons. After entering your password, press Enter again.

A terminal window titled 'compute' with standard window controls (minimize, maximize, close). The terminal text shows a successful login for 'stevenmiller' using keyboard-interactive authentication. A welcome message follows, describing the server as a UNIX environment for compiling and running programs like ADS, Cadence, and Matlab. It recommends using the UNIX shell server at shell.engr.arizona.edu and provides contact information for ENGR-IT support. The session ends with the prompt 'stevenmiller@compute:~\$' and a green cursor.

```
compute
login as: stevenmiller
Using keyboard-interactive authentication.
Password:

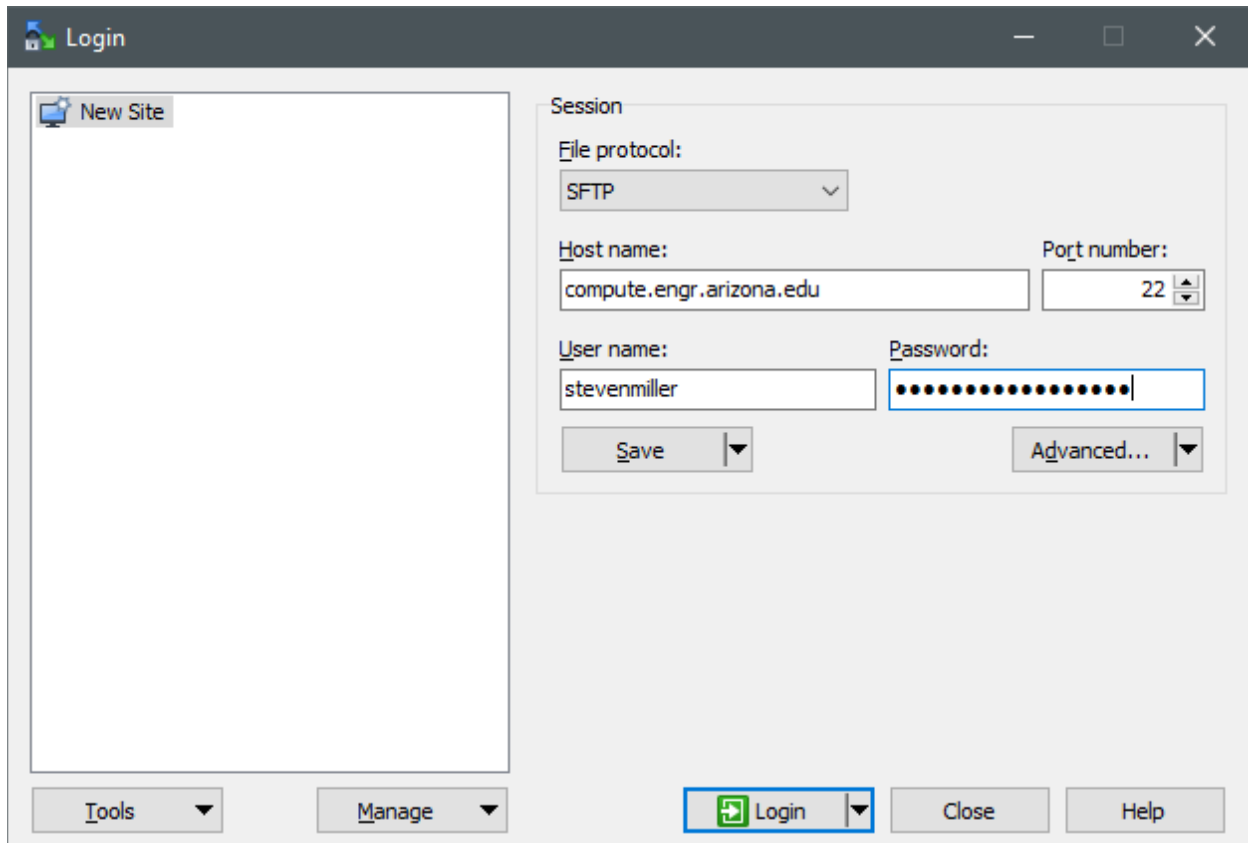
Welcome to compute!  This is a UNIX server for compiling programs and
running computationally intense programs such as ADS, Cadence, and
Matlab.  For day-to-day activities such as checking mail or uploading
your website, we recommend using our UNIX shell server:
shell.engr.arizona.edu
If you have any questions or concerns, please contact ENGR-IT support
at support@engr.arizona.edu or http://support.engr.arizona.edu/

--ENGR-IT Support
stevenmiller@compute:~$
```

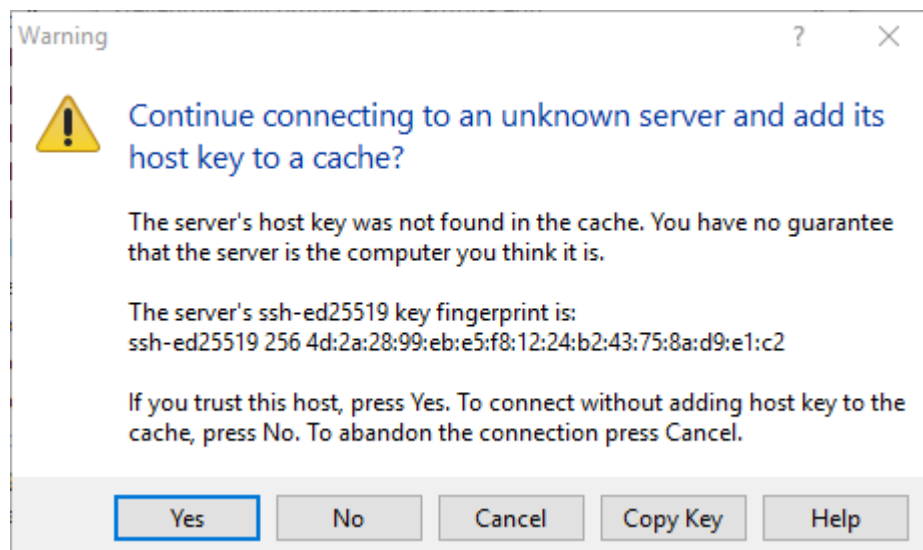
- That's it! You now have a session running on the Engineering compute server.

## Transferring files to `compute.engr.arizona.edu` with WinSCP

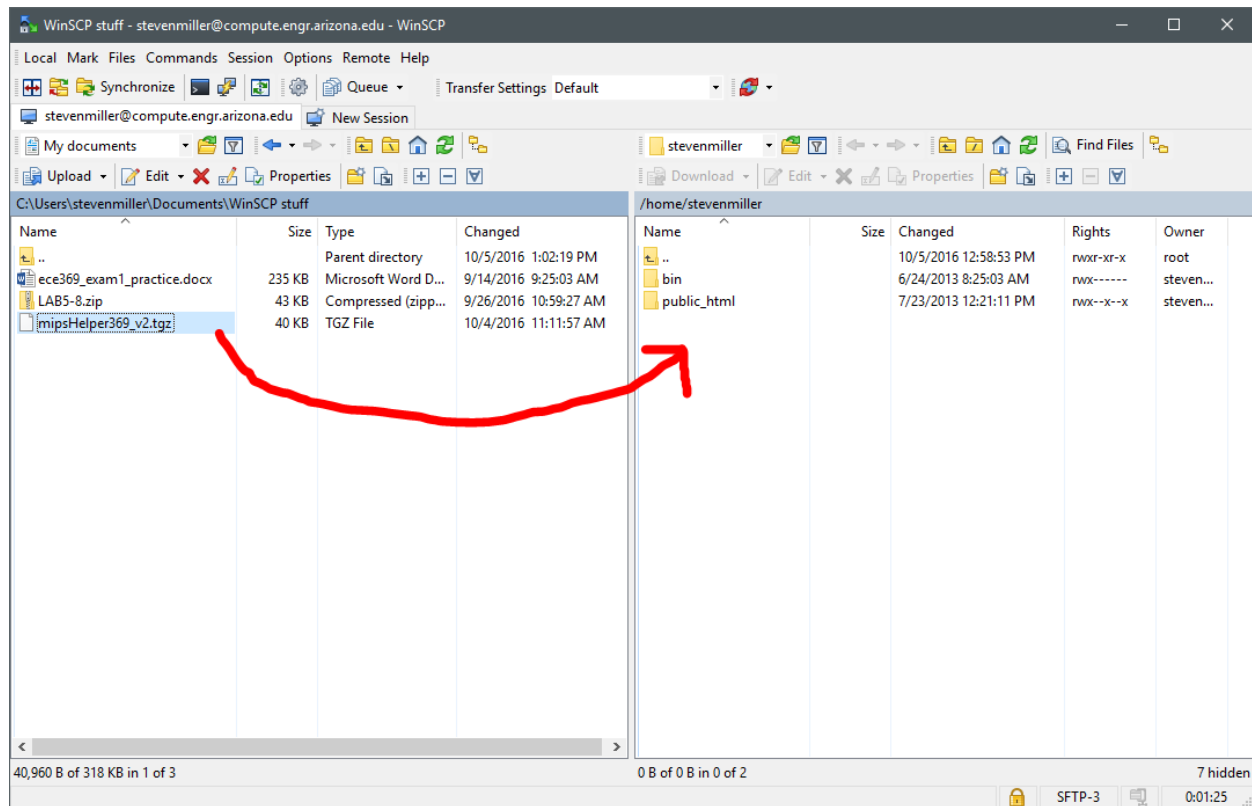
- Open WinSCP. In the Host name field, type: `compute.engr.arizona.edu`.  
In the User name field, type your NetID.  
In the Password field, type your NetID password.



- Click the Login button. If you receive a warning about an unknown server, click Yes.



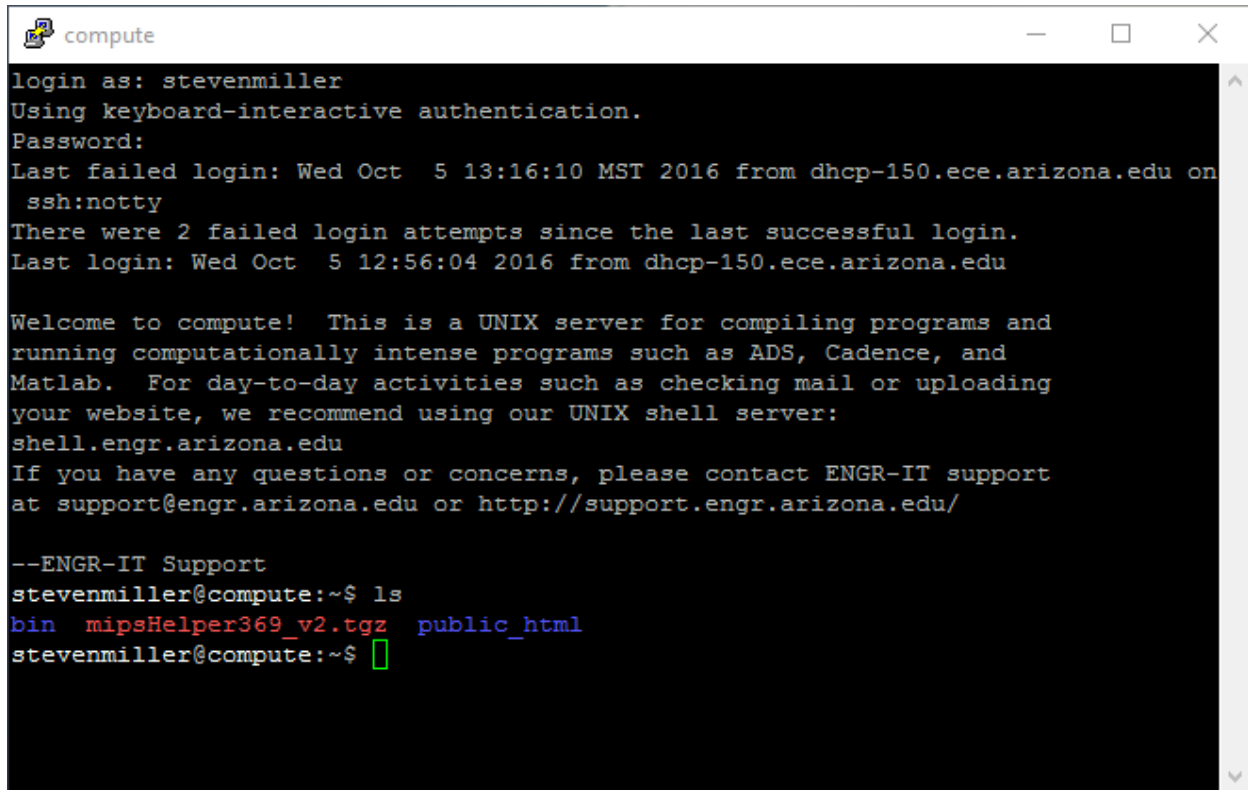
- Now, your UNIX home directory will be on the right, and your local computer's file system will be on the left. Find where you downloaded mipsHelper369.tgz on your computer, and drag it into the right pane to transfer it to the server.



- We're done transferring files. Disconnect your file transfer session by clicking Disconnect in the Session menu.

## Extracting mipsHelper369.tgz

- In your PuTTY session, navigate to the directory containing the mipsHelper369 file. If you uploaded it to your home directory, you're already there.

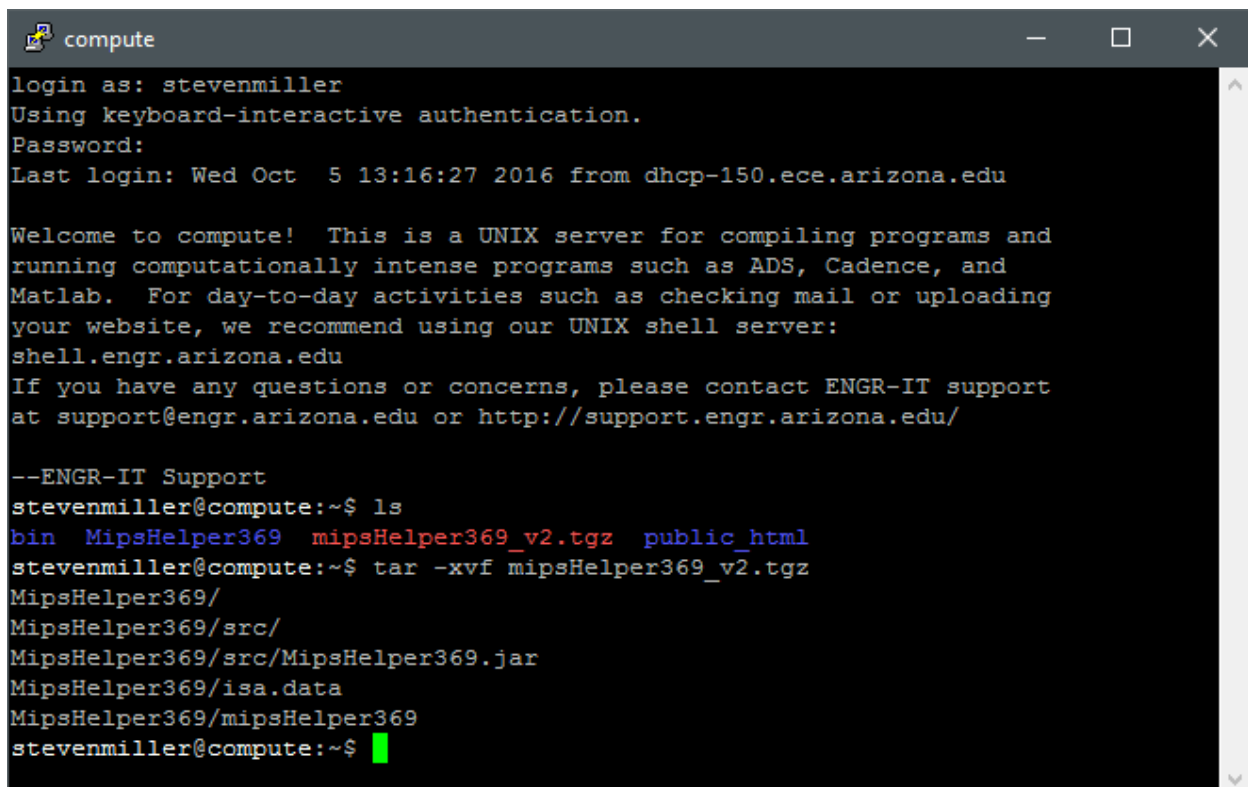
A terminal window titled 'compute' showing a successful login for 'stevenmiller'. The window displays login details, a welcome message, and the output of the 'ls' command, which lists 'mipsHelper369\_v2.tgz' and 'public\_html' in the current directory.

```
compute
login as: stevenmiller
Using keyboard-interactive authentication.
Password:
Last failed login: Wed Oct  5 13:16:10 MST 2016 from dhcp-150.ece.arizona.edu on
ssh:notty
There were 2 failed login attempts since the last successful login.
Last login: Wed Oct  5 12:56:04 2016 from dhcp-150.ece.arizona.edu

Welcome to compute!  This is a UNIX server for compiling programs and
running computationally intense programs such as ADS, Cadence, and
Matlab.  For day-to-day activities such as checking mail or uploading
your website, we recommend using our UNIX shell server:
shell.engr.arizona.edu
If you have any questions or concerns, please contact ENGR-IT support
at support@engr.arizona.edu or http://support.engr.arizona.edu/

--ENGR-IT Support
stevenmiller@compute:~$ ls
bin  mipsHelper369_v2.tgz  public_html
stevenmiller@compute:~$
```

- Run the command to extract the zipped tar file:  
`tar -xvf mipsHelper369_v2.tgz`

A terminal window titled 'compute' showing the same login sequence as the previous window, followed by the execution of the 'tar -xvf mipsHelper369\_v2.tgz' command. The output shows the directory structure of the extracted files, including 'MipsHelper369.jar' and 'MipsHelper369/isa.data'.

```
compute
login as: stevenmiller
Using keyboard-interactive authentication.
Password:
Last login: Wed Oct  5 13:16:27 2016 from dhcp-150.ece.arizona.edu

Welcome to compute!  This is a UNIX server for compiling programs and
running computationally intense programs such as ADS, Cadence, and
Matlab.  For day-to-day activities such as checking mail or uploading
your website, we recommend using our UNIX shell server:
shell.engr.arizona.edu
If you have any questions or concerns, please contact ENGR-IT support
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--ENGR-IT Support
stevenmiller@compute:~$ ls
bin  MipsHelper369  mipsHelper369_v2.tgz  public_html
stevenmiller@compute:~$ tar -xvf mipsHelper369_v2.tgz
MipsHelper369/
MipsHelper369/src/
MipsHelper369/src/MipsHelper369.jar
MipsHelper369/isa.data
MipsHelper369/mipsHelper369
stevenmiller@compute:~$
```

- Change to the MipsHelper369 directory, and run `./mipsHelper369 -help` for usage information. That's it! When you're done, you can disconnect by closing the PuTTY window, or by typing `exit` at the terminal.

```
compute
stevenmiller@compute:~$ cd MipsHelper369/
stevenmiller@compute:~/MipsHelper369$ ./mipsHelper369 -help
*****
***** mipsHelper369 *****
*****
** Assembler: **
** Convert all given MIPS instructions into 32-bit instruction memory. **
** ./mipsHelper369 -am {"instruction"} **
** **
** Convert any given MIPS program into 32-bit instruction memory. **
** ./mipsHelper369 -ai "inputFile" **
** ./mipsHelper369 -aio "inputFile" "outputFile" **
** **
** Additional flag commands. **
** -d : output data memory for verilog. **
** -h : output data/instruction memory in hex. **
** -v : output 32-bit instruction memory for verilog. **
** -x : output 32-bit instruction memory with the assembled MIPS code **
** as comments. **
*****
** Registers, Fields & Values: **
** Displays information for a valid MIPS register. **
** ./mipsHelper369 -r {'register'} **
** **
```