

Set up an EC2 instance

Wensheng Wu

DSCI 351/551

click: Launch instances

The screenshot shows the AWS Management Console for the EC2 service in the us-west-1 region. The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, and Instances. The main content area displays the 'Instances (1)' page with a table of running instances. A blue arrow points from the 'Launch instances' button to the text 'click: Launch instances'.

Instances (1) Info

Buttons: Refresh, Connect, Instance state, Actions, **Launch instances**

Search:

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status
<input type="checkbox"/>	dsci	i-052925e24d54d1cce	Running	t2.micro	2,...

Select an instance

give it a name

Name

dsci

[Add additional tags](#)

▼ Application and OS Images (Amazon Machine Image) [Info](#)

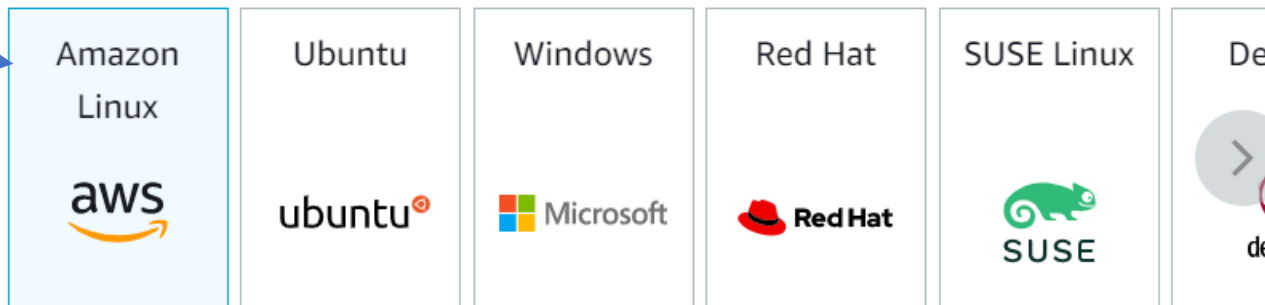
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

 Search our full catalog including 1000s of application and OS images

Recents

Quick Start

Select
Amazon Linux



[Browse more AMIs](#)

Including AMIs from
AWS, Marketplace and
the Community

Amazon Machine Image (AMI)

Instance type

t2.micro

Family: t2 1 vCPU 1 GiB Memory

On-Demand Linux pricing: 0.0138 USD per Hour

On-Demand Windows pricing: 0.0184 USD per Hour

Free tier eligible ▼

[Compare instance types](#)

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

Select ▼



[Create new key pair](#)


select this if you don't have one yet



▼ Network settings [Get guidance](#)

Edit

Key pairs allow you to connect to your instance securely.

Enter the name of the key pair below. When prompted, store the private key in a secure and accessible location on your computer. **You will need it later to connect to your instance.** [Learn more](#) 

give it a name

Key pair name

dsci

The name can include upto 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

☒ RSA

RSA encrypted private and public key pair

☐ ED25519

ED25519 encrypted private and public key pair (Not supported for Windows instances)

Private key file format

☒ .pem

For use with OpenSSH

☐ .ppk

For use with PuTTY

press this
save the key and remember where
you save it!
for example, say I save it under my
home directory

Cancel

Create key pair


can be up to 30 GB
unless you have a very big data set to explore, 10-15GB should be sufficient for class need

the default 8GB is very tight

▼ Configure storage [Info](#)

Advanced

1x GiB ▼ Root volume

 Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage



Add new volume

0 x File systems

Edit

Number of instances [Info](#)

1

t2.micro

[Firewall \(security group\)](#)

New security group

[Storage \(volumes\)](#)

1 volume(s) - 30 GiB



Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of bandwidth to the internet.



Cancel

press this!

Launch instance

There are several ways of connecting to instance

- you can use EC2 instance connect to talk to your EC2 instance
- but it can not do file transfer
 - for which, we will use sftp
 - see demo in class on this later

Connect to instance [Info](#)

Connect to your instance i-052925e24d54d1cce (dsci) using any of these options

EC2 Instance Connect

Session Manager

SSH client

EC2 serial console

Instance ID
i-052925e24d54d1cce (dsci)

Public IP address
3.101.108.68

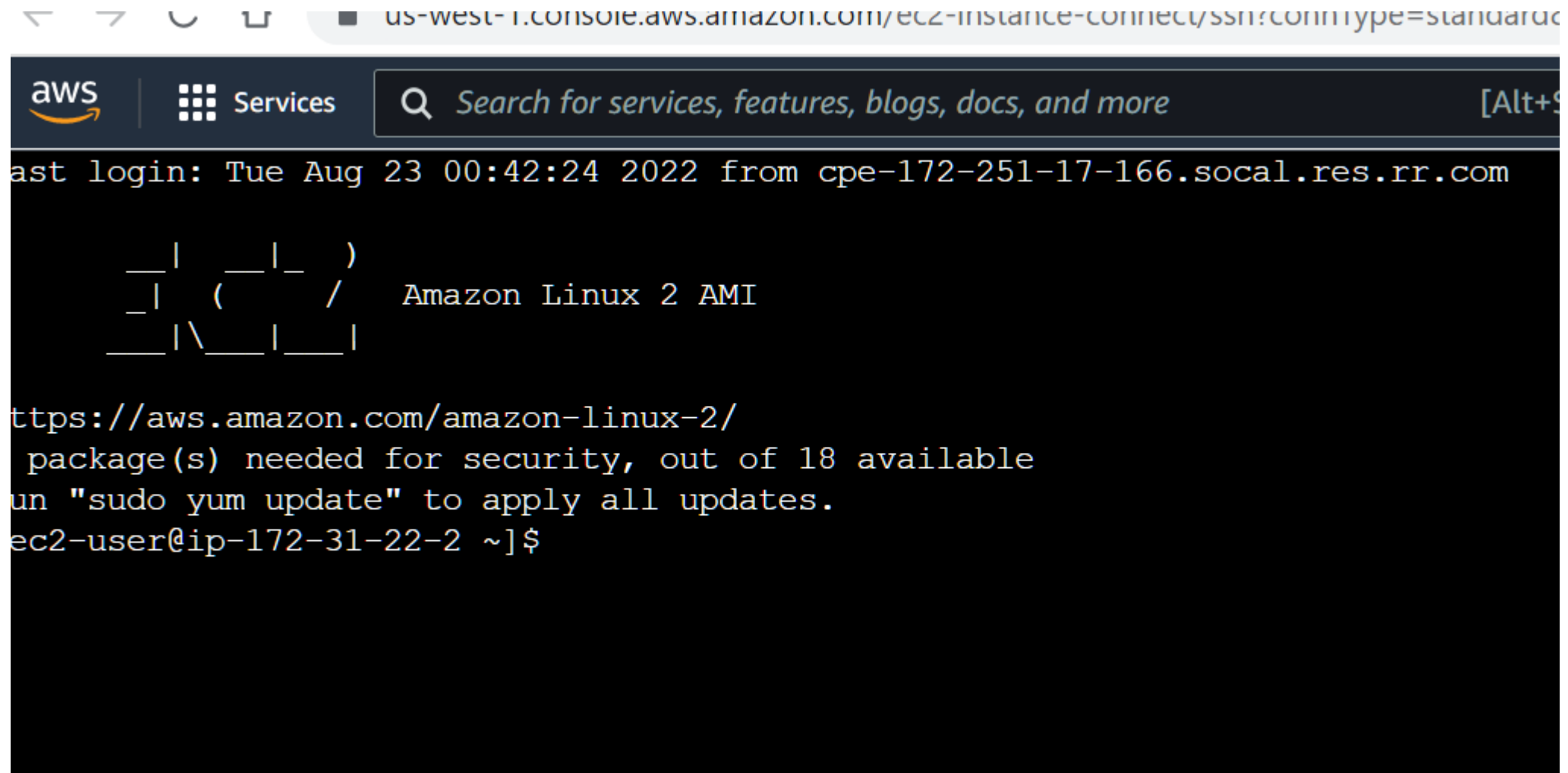
User name
ec2-user

Connect using a custom user name, or use the default user name ec2-user for the AMI used to launch the instance.

Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

Cancel **Connect**

but good idea to use this first, before the next option which is more involved



The screenshot shows a web browser window with the AWS console URL. The terminal displays a successful login message, a ASCII art logo for Amazon Linux 2 AMI, a link to the Amazon Linux 2 website, a security update notification, and the terminal prompt.

```
us-west-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard

aws | Services | Search for services, features, blogs, docs, and more [Alt+S]

Last login: Tue Aug 23 00:42:24 2022 from cpe-172-251-17-166.socal.res.rr.com

  _ | _ | _ )
 _ | ( _ /   Amazon Linux 2 AMI
 _ | \ _ | _ |

https://aws.amazon.com/amazon-linux-2/
  package(s) needed for security, out of 18 available
  run "sudo yum update" to apply all updates.
ec2-user@ip-172-31-22-2 ~]$
```

The remaining slides are for connecting to EC2 instance using ssh...

If you are using Macbook...

- open up a terminal
- change directory to the place where you save your key file /* use command `cd */`
 - e.g., `cd ~`
 - this will go to your home directory where I saved my pem file, called `dsci2022.pem`

then go back to AWS
console,
click on the instance and
then click Connect



Instances (1/1) [Info](#)

Connect

Instance state ▼

Actions ▼

Launch instances ▼

Search


< 1 >

<input checked="" type="checkbox"/>	Name ▼	Instance ID	Instance state ▼	Instance type ▼	Status check	Alarm status
<input checked="" type="checkbox"/>	dsci	i-052925e24d54d1cce	Running	t2.micro	2/2 checks passed	No alarms +


Instance ID

 i-052925e24d54d1cce (dsci)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is dsci2022.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.


 `chmod 400 dsci2022.pem`

4. Connect to your instance using its Public DNS:


 `ec2-3-101-108-68.us-west-1.compute.amazonaws.com`

→ copy this and execute on terminal

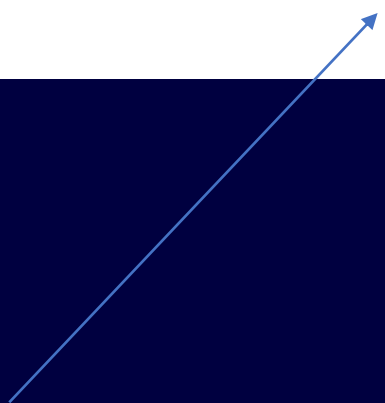
Example:

 `ssh -i "dsci2022.pem" ec2-user@ec2-3-101-108-68.us-west-1.compute.amazonaws.com`

→ then copy this and execute on terminal

 **Note:** In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

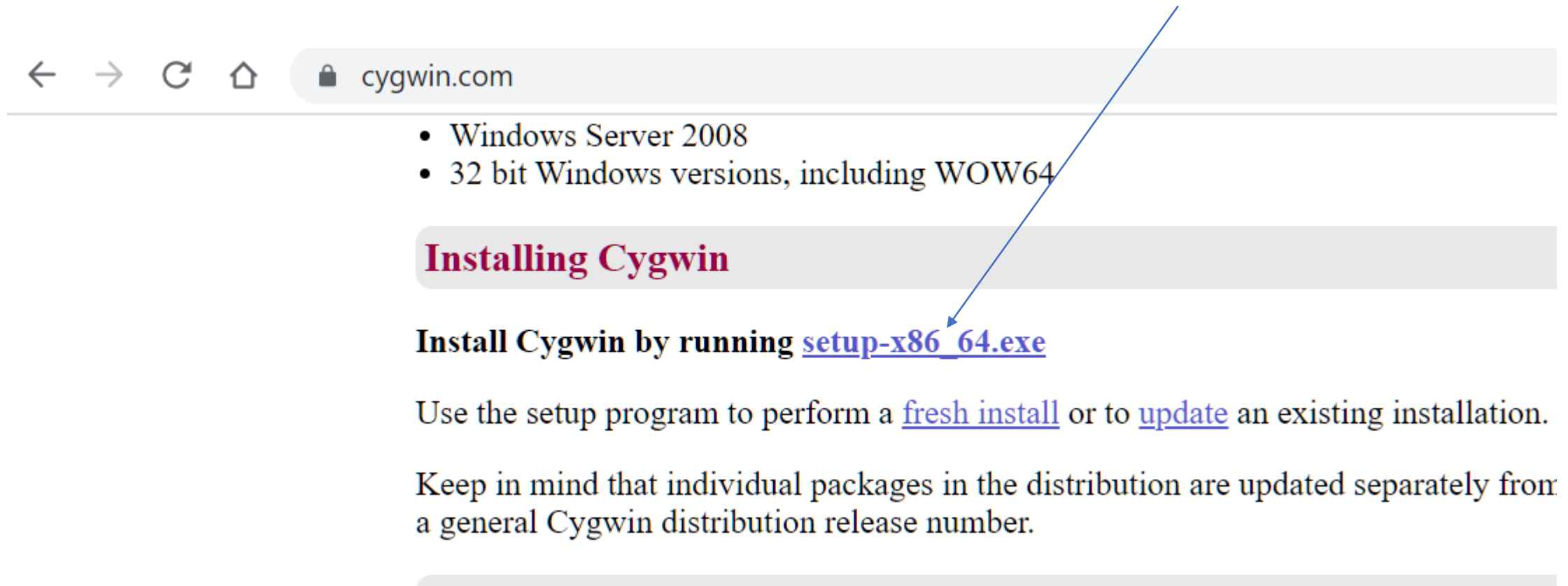
I use ls command to check the permission mode of my pem file
make sure it only has a r in 2nd position, and dash in all other places



```
Vincent@T450s ~  
$ ls dsci2022.pem  
dsci2022.pem  
  
Vincent@T450s ~  
$ chmod 400 dsci2022.pem  
  
Vincent@T450s ~  
$ ls dsci2022.pem -l  
-r----- 1 Vincent Vincent 1674 Aug 21 23:22 dsci2022.pem  
  
Vincent@T450s ~  
$ ssh -i "dsci2022.pem" ec2-user@ec2-3-101-108-68.us-west-1.compute.amazonaws.com  
Last login: Tue Aug 23 00:41:34 2022 from cpe-172-251-17-166.socal.res.rr.com  
  
  _|  _|_ )  
  _| (  /  Amazon Linux 2 AMI  
  _|\_|_|_|  
  
https://aws.amazon.com/amazon-linux-2/  
5 package(s) needed for security, out of 18 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-31-22-2 ~]$  
[ec2-user@ip-172-31-22-2 ~]$  
[ec2-user@ip-172-31-22-2 ~]$
```

If you are using Windows, good idea to use Cygwin... let's download and install it first

- go to cygwin.com, and then download and execute [setup-x86_64.exe](#)



Choose A Download Source

Choose whether to install or download from the internet, or install from files in a local directory.



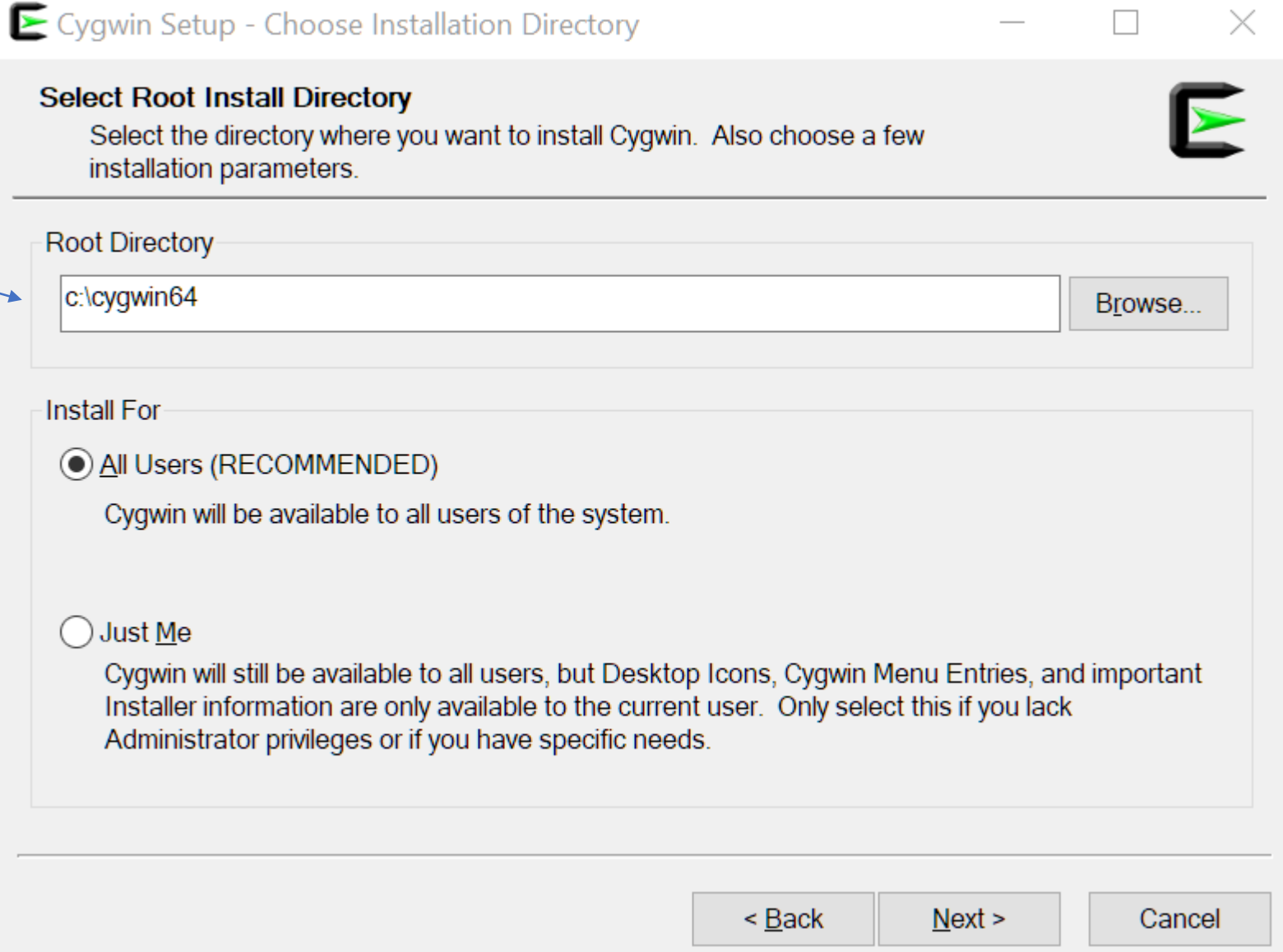
- ☒ Install from Internet
(downloaded files will be kept for future re-use)
- ☐ Download Without Installing
- ☐ Install from Local Directory

< Back

Next >

Cancel

remember where you install
the root directory
here, I am accepting the default
c:\cygwin64



The image shows a Windows installer window titled "Cygwin Setup - Choose Installation Directory". The window has a standard Windows title bar with minimize, maximize, and close buttons. The main content area is divided into two sections. The first section, "Select Root Install Directory", contains a text box with "c:\cygwin64" and a "Browse..." button. The second section, "Install For", contains two radio button options: "All Users (RECOMMENDED)" and "Just Me". The "All Users" option is selected. Below these options is a descriptive paragraph. At the bottom of the window are three buttons: "< Back", "Next >", and "Cancel". A blue arrow points from the red text on the left to the text box in the "Root Directory" section.

Select Root Install Directory
Select the directory where you want to install Cygwin. Also choose a few installation parameters.

Root Directory

c:\cygwin64 Browse...

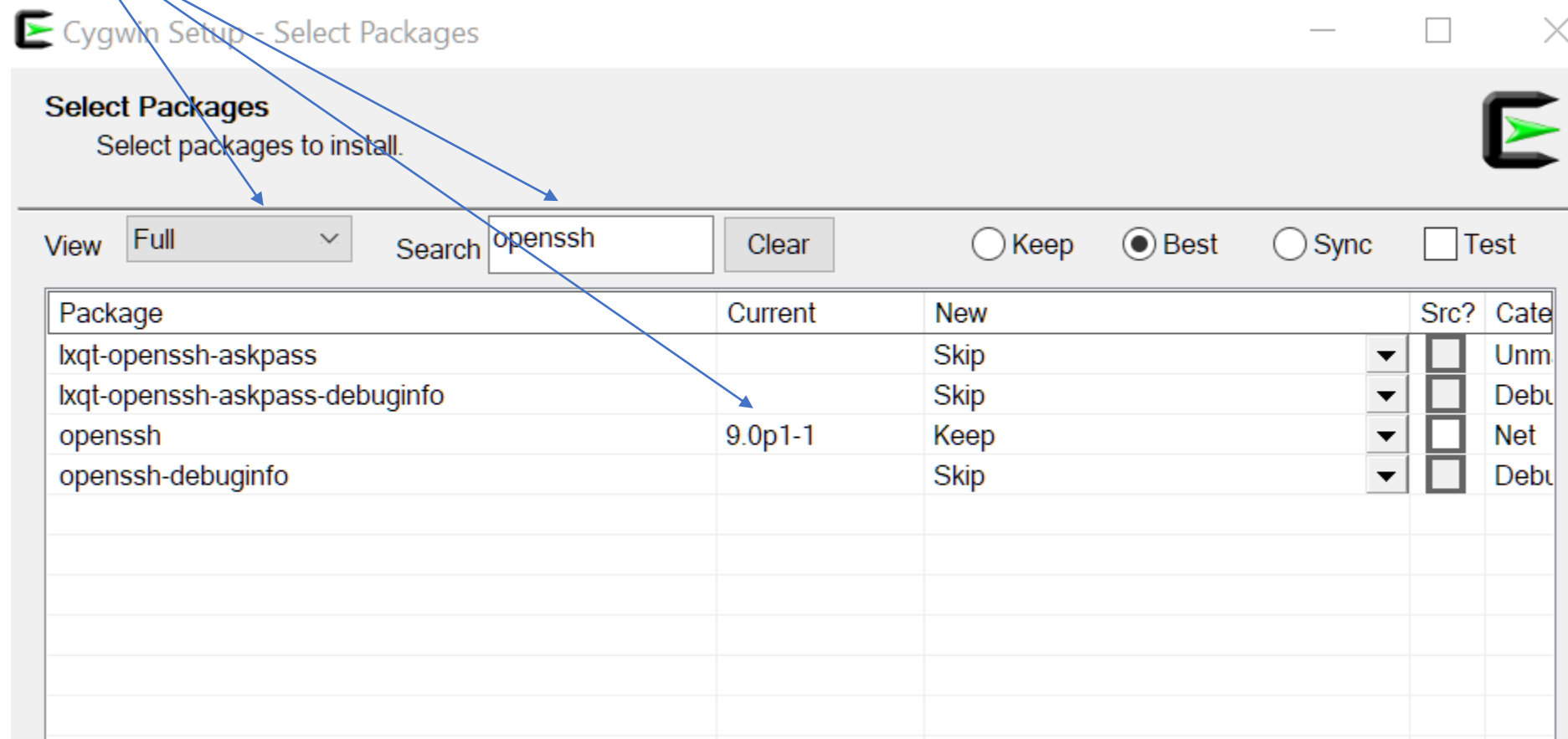
Install For

☒ **All Users (RECOMMENDED)**
Cygwin will be available to all users of the system.

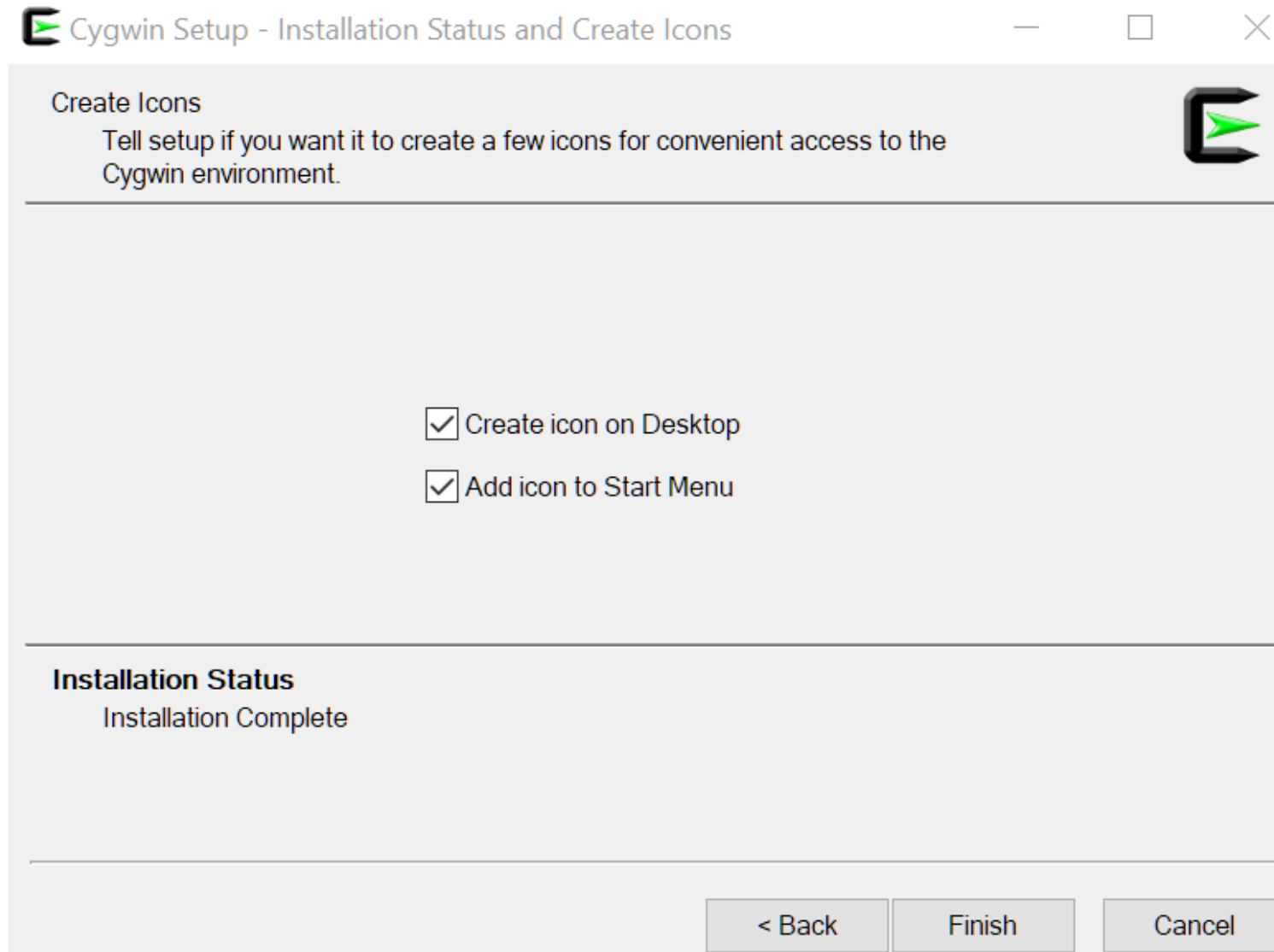
☐ **Just Me**
Cygwin will still be available to all users, but Desktop Icons, Cygwin Menu Entries, and important Installer information are only available to the current user. Only select this if you lack Administrator privileges or if you have specific needs.

< Back Next > Cancel

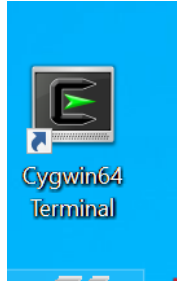
select full in View and search for openssh
make sure you install some version of it
here, my screen said I already have it, 9.0p1-1, from my
previous installation



you can select both if you want... then click finish



Look for icon like this on your desktop, double click it...



- then you should see a terminal like this, ~ means your home directory



```
Vincent@T450s ~  
$
```

I used these two commands to see what Windows directory that the home directory in Cygwin refers to. In my case, c:/cygwin64/home/Vincent



first / means root

```
Vincent@T450s ~  
$ pwd  
/home/Vincent
```

```
Vincent@T450s ~  
$ mount
```

this is telling me where is the root directory in Cygwin mounted

```
C:/cygwin64/bin on /usr/bin type ntfs (binary,auto)  
C:/cygwin64/lib on /usr/lib type ntfs (binary,auto)  
C:/cygwin64 on / type ntfs (binary,auto)  
C: on /cygdrive/c type ntfs (binary,posix=0,user,noumount,auto)  
D: on /cygdrive/d type ntfs (binary,posix=0,user,noumount,auto)  
E: on /cygdrive/e type ntfs (binary,posix=0,user,noumount,auto)
```

```
Vincent@T450s ~  
$
```

Next, follow the same steps as for Mac to connect to EC2

```
Vincent@T450s ~  
$ ls dsci2022.pem  
dsci2022.pem  
  
Vincent@T450s ~  
$ chmod 400 dsci2022.pem  
  
Vincent@T450s ~  
$ ls dsci2022.pem -l  
-r----- 1 Vincent Vincent 1674 Aug 21 23:22 dsci2022.pem  
  
Vincent@T450s ~  
$ ssh -i "dsci2022.pem" ec2-user@ec2-3-101-108-68.us-west-1.compute.amazonaws.com  
Last login: Tue Aug 23 00:41:34 2022 from cpe-172-251-17-166.socal.res.rr.com  
  
  _|  _|_ )  
  _| (  /  
  _|\_|_|  
Amazon Linux 2 AMI  
  
https://aws.amazon.com/amazon-linux-2/  
5 package(s) needed for security, out of 18 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-31-22-2 ~]$  
[ec2-user@ip-172-31-22-2 ~]$  
[ec2-user@ip-172-31-22-2 ~]$
```

Conclusion

- Cygwin is an app that gives you a Linux-like terminal on top of Windows, similar to that on Mac
 - note that you can also use Powershell on Win 10 or above, if you decide to adventure on that route
 - but keep in mind Powershell has more of Windows flavor than Linux
- Mac users are lucky, since you already have the Linux-like terminal app!