

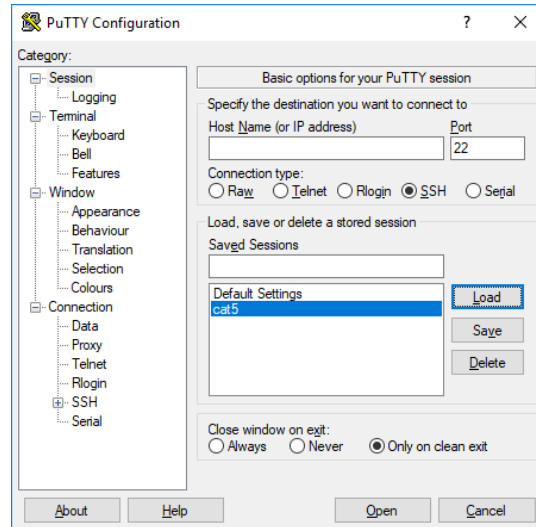
Connecting to Cat5 via SSH from Windows 10

If this is your first time to connect to Cat5 via SSH, jump to the **First-Time-Only Steps** on the next page.

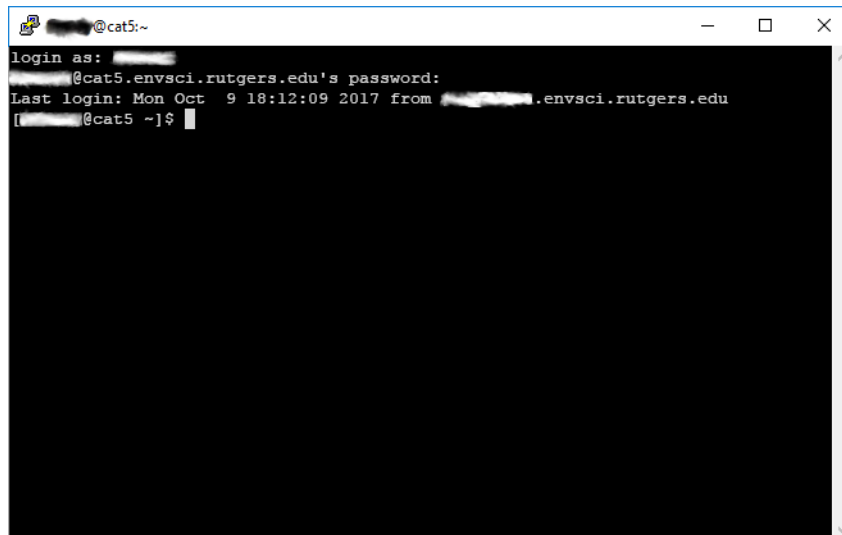
1. Launch Xming if it is not already running (i.e. if the “X” icon is not present in the system tray).



2. Launch PuTTY.



3. Double-click on the “cat5” session.



4. Type your username and password (they will not be visible). Press the **Enter** key after each.

You are connected!

When done, type “exit” and press **Enter** to logout. The PuTTY window will close automatically.

First-Time-Only Steps

To log into Cat5 you must have a [Secure Shell](#) (“SSH”) client installed. To use graphical (“X-Windows”) programs on Cat5, you must have an “X Server” installed, too. While there are other software packages you could choose from, these instructions explain how to install and configure the free **Xming** X-Server and the free **PuTTY** SSH client. If you want to use something else, you’re on your own!

Install Xming (not necessary on ICL computers)

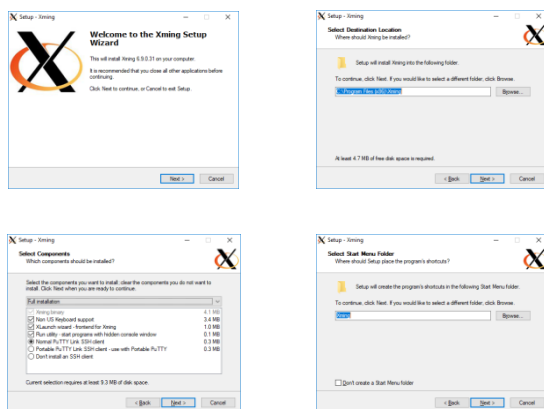
Xming allows the remote computer to draw graphical windows on your screen. If you only intend to run text-based software on the remote server, then you do not need Xming.

⚠ IMPORTANT: The files linked below will download automatically. **DO NOT CLICK** on “Download” or “Start Download” buttons on those pages. Those buttons are advertisements and will download other, possibly dangerous, software you do not want!

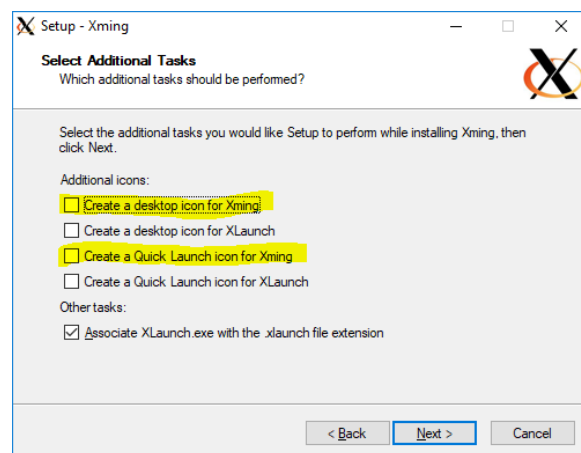
1. To install Xming, first download the two installer programs:

- <https://sourceforge.net/projects/xming/files/Xming/6.9.0.31/Xming-6-9-0-31-setup.exe/download>
- <https://sourceforge.net/projects/xming/files/Xming-fonts/7.7.0.10/Xming-fonts-7-7-0-10-setup.exe/download>

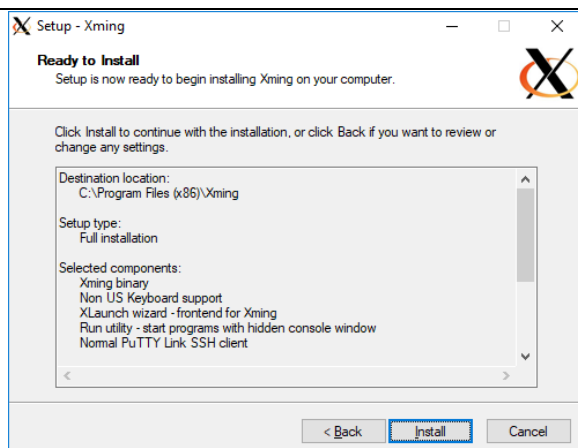
2. Start by running the downloaded Xming installer (Xming-6-9-0-31-setup.exe):



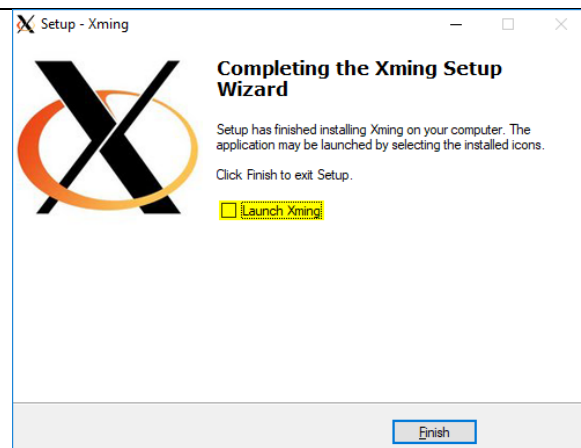
(a) Click “Next” on the first four screens.



(b) Choose any icon options you like, then click “Next.”



(c) Click “Install” to complete the installation.



(d) Uncheck “Launch Xming,” and click “Finish.”

3. Now, launch the Xming Fonts installer (Xming-fonts-7-7-0-10-setup.exe):

The image shows three sequential screenshots of the Xming Fonts installer. The central screenshot, labeled (b), is the 'Select Components' window. It features a list of font components with checkboxes and their respective sizes: Bitmap Fonts (6.9 MB), 75dpi Fonts (10.8 MB), 100dpi Fonts (12.4 MB), TrueType Fonts (1.0 MB), DejaVu TTFs (11.5 MB), and Cyrillic Fonts (0.4 MB). The first five options are checked, and the '100dpi Fonts' and 'DejaVu TTFs' rows are highlighted in yellow. Below the list, it states 'Current selection requires at least 19.8 MB of disk space.' and has '< Back', 'Next >', and 'Cancel' buttons. To the left, screenshot (a) shows the 'Select Destination Location' window with a 'Next >' button. To the right, screenshot (c) shows the 'Ready to Install' window with an 'Install' button.

(a) Click "Next"

(b) **Check all fonts** (except Cyrillic) and click "Next."

(c) Click "Next" then "Install"

Congratulations, you have installed Xming! Next, install PuTTY (see next page).

Install PuTTY (not necessary on ICL computers)

PuTTY is the SSH (Secure Shell) client for Windows. It allows you to securely log into Cat5 and other servers.

1. First, go here to download the PuTTY installer:

- <https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>

Package files

You probably want one of these. They include all the PuTTY utilities.
(Not sure whether you want the 32-bit or the 64-bit version? Read the [FAQ entry](#).)

MSI ("Windows Installer")

32-bit:	putty-0.70-installer.msi	(or by FTP)	(signature)
64-bit:	putty-64bit-0.70-installer.msi	(or by FTP)	(signature)

Unix source archive

.tar.gz:	putty-0.70.tar.gz	(or by FTP)	(signature)
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2. Look for the links under **"MSI ("Windows Installer")"**. Choose the link next to "32-bit" or "64-bit," whichever matches your Windows system type.

(a) To find out which system type you have, open File Explorer. Right click on "This PC" and click on Properties. You will a window with information like this:

[View basic information about your computer](#)

Windows edition

Windows 10 Enterprise
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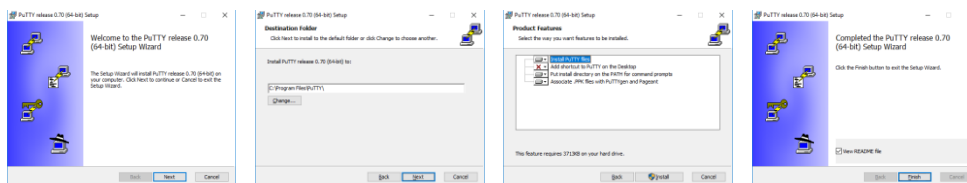


System

Processor:	AMD Opteron(tm) Processor 4386	3.10 GHz
Installed memory (RAM):	1.99 GB	
System type:	64-bit Operating System, x64-based processor	
Pen and Touch:	No Pen or Touch Input is available for this Display	

(b) Look for "System type" and note whether it says "32-bit Operating System" or "64-bit Operating System." Close this window and download the corresponding PuTTY installer.

3. Run the PuTTY installer you just downloaded:



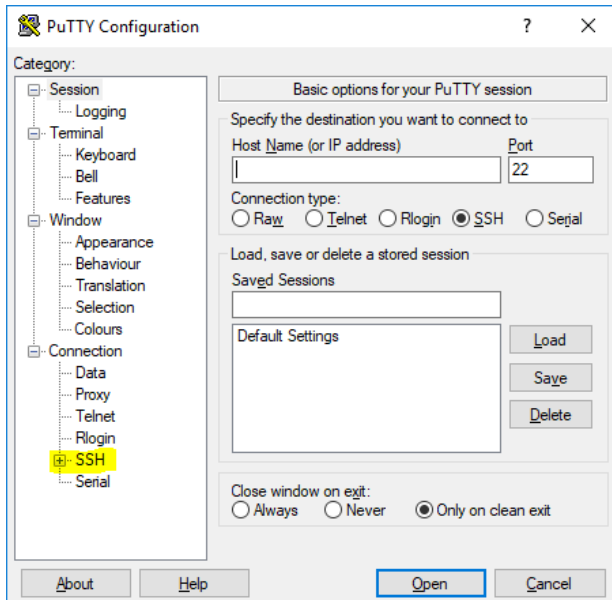
Click "Next" twice, then "Install" and "Finish." There are no real choices to make here.

Congratulations, you have installed PuTTY!

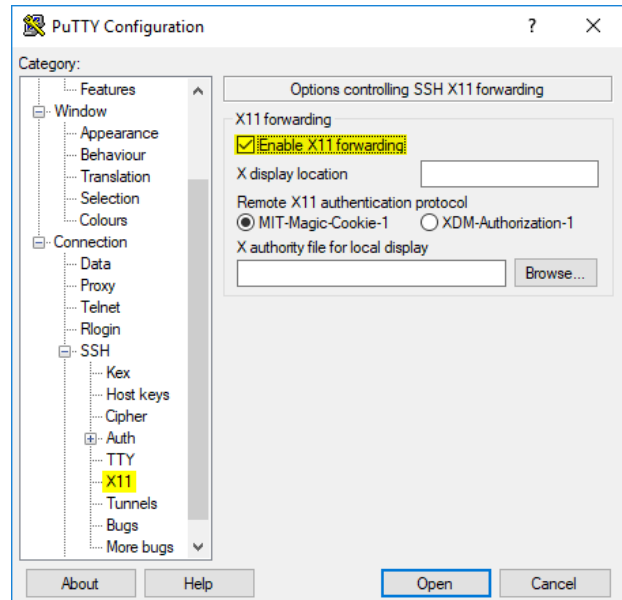
Next, create a PuTTY session for your connection (next page).

Create a PuTTY Session for Cat5 (do this on ICL and home computers)

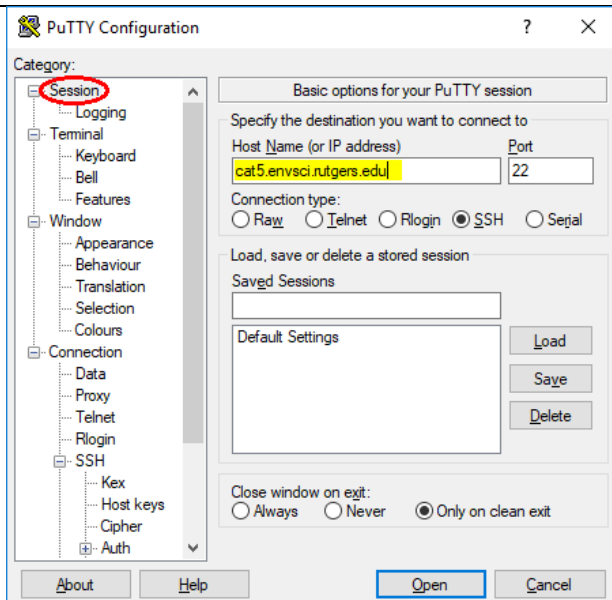
Launch PuTTY. Follow these steps to create your session:



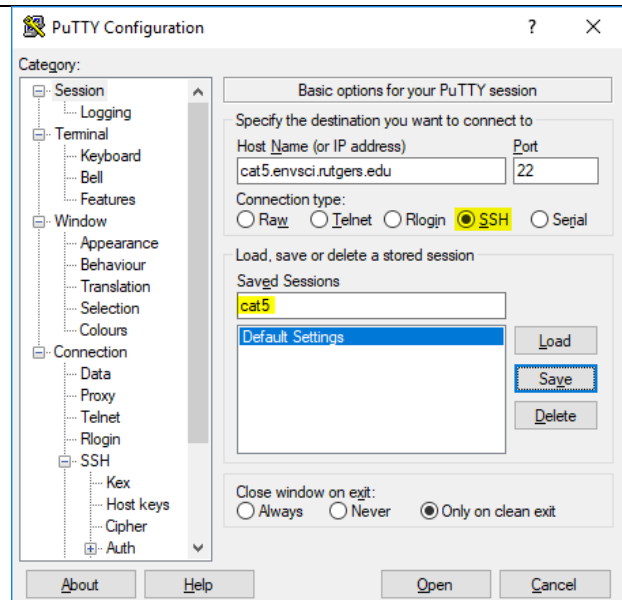
(a) In the tree on the left side, under “Connection”, click on the “+” next to “SSH” to expand it.



(b) Then click on “X11” under “SSH.”
Check the box next to “Enable X11 forwarding.”



(c) Now scroll the tree to the top and click on “Session.” Under “Host Name”, type “cat5.envsci.rutgers.edu” (without the quotes).



(d) Make sure “Connection type” is set to “SSH”. Under “Saved Sessions”, type “cat5” (without the quotes) and click “Save”. Click “Cancel” to exit.

Your session is now created!
Next, log in for the first time (see next page).

First Log In

The first time you log in, a few things will be different from subsequent connections.

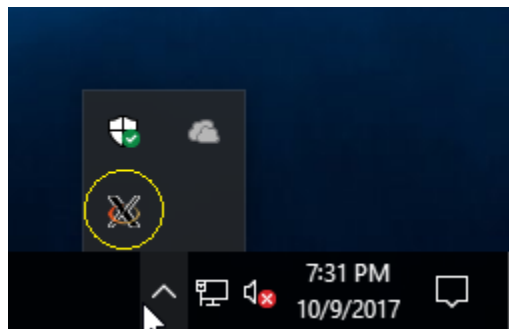
Launch Xming

First launch Xming. The first time you run it, you may see a Firewall alert like this:



You can click “Cancel” to continue blocking this feature. It is not needed for general use.

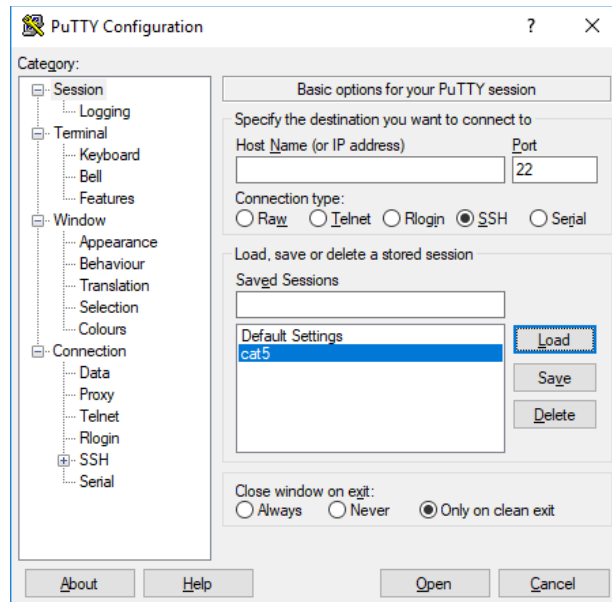
Xming does not bring up any windows. You can tell it is running by the “X” icon in the system tray (the set of icons in the lower-right of the desktop):



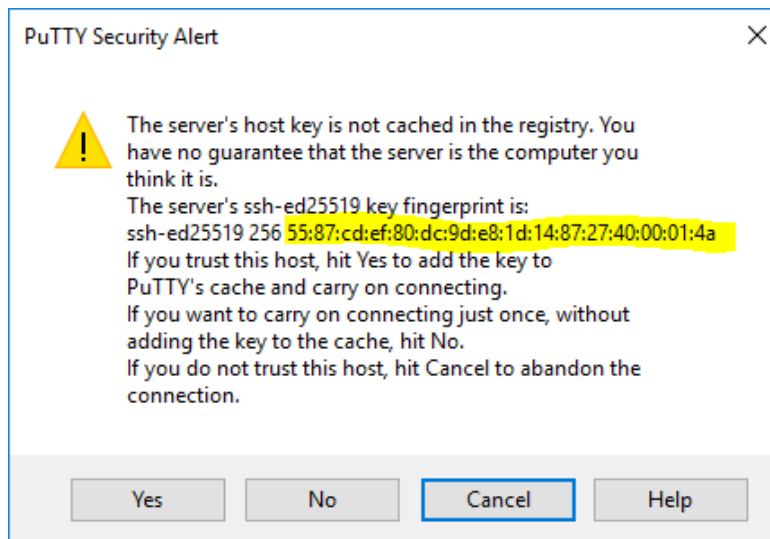
⚠ IMPORTANT: Always make sure Xming is running **before** launching PuTTY. Otherwise, graphics will not work!

Launch PuTTY

Now launch PuTTY. You will see the configuration screen as before.



Double-click on the “cat5” session to start it. The first time you connect to Cat5 you will see a security alert from PuTTY saying it does not recognize the server, asking if you trust the “host key.”



To verify the secure connection, check that the provided fingerprint (highlighted in yellow in the screenshot; it may differ on your screen) **exactly** matches one of the following three valid fingerprints:

- ee:05:33:ed:1e:5c:31:84:86:b9:8c:11:15:1a:9d:6f
- 25:ea:b6:1d:75:17:9e:ea:48:61:50:09:4d:80:57:17
- 55:87:cd:ef:80:dc:9d:e8:1d:14:87:27:40:00:01:4a

If it matches one of those, then click “Yes” to connect. If it does **NOT** match any of them, then please check [Cat5 Host Key Fingerprints](#) on the DES website for more possible values.

Do not accept an unverified host key!

A window will appear that lets you communicate with the Cat5 server by typing.



Type your Cat5 username, as previously given to you (usually your NetID), then press the **Enter** key.

At this point, you will be asked to enter your password. If you are using a temporary password provided to you, then **follow the steps on the next page** to choose a new password. Otherwise, enter your usual Cat5 password and you will be connected.

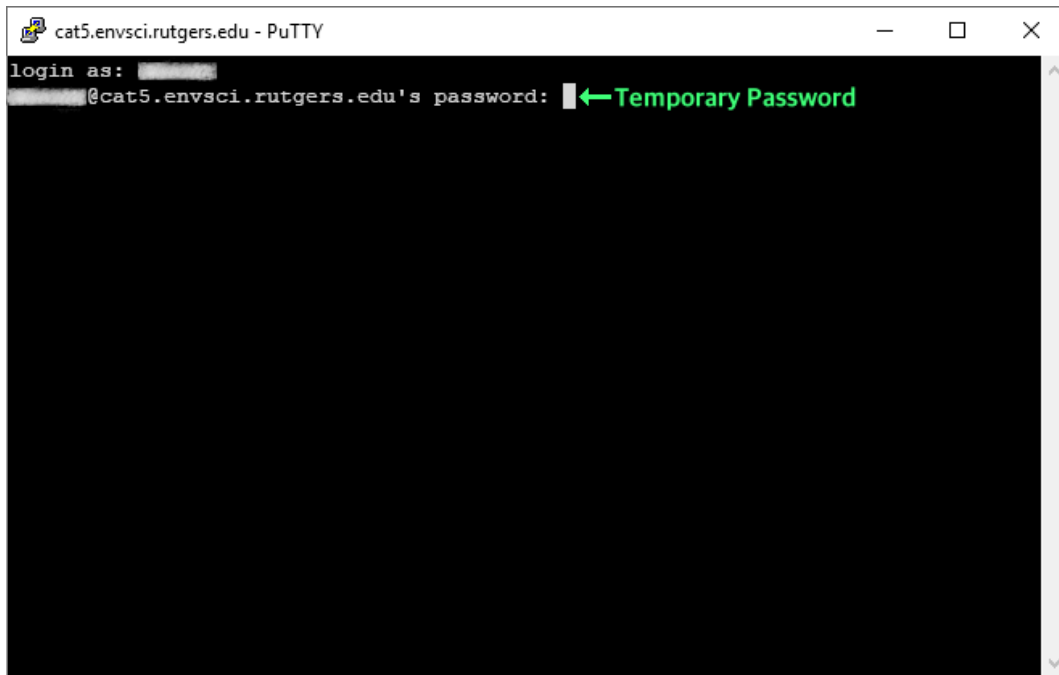
⚠ Important: Passwords **will not be visible** on the screen while you type them.

Congratulations, you are now completely setup to use Cat5 via PuTTY and Xming. Enjoy!

⚠ Important: Passwords **will not be visible** on the screen while you type them.

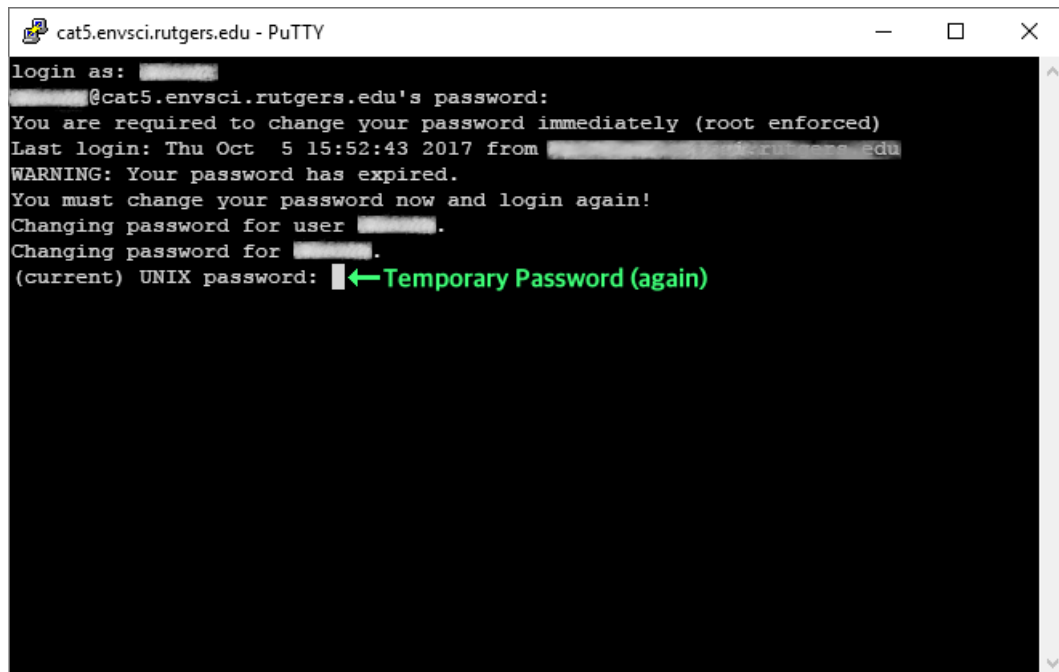
Setting a New Password

After entering your username you will see the password prompt:



```
cat5.envsci.rutgers.edu - PuTTY
login as: [redacted]
[redacted]@cat5.envsci.rutgers.edu's password: █ ← Temporary Password
```

Type the Temporary Password previously given to you, and then press the **Enter** key.

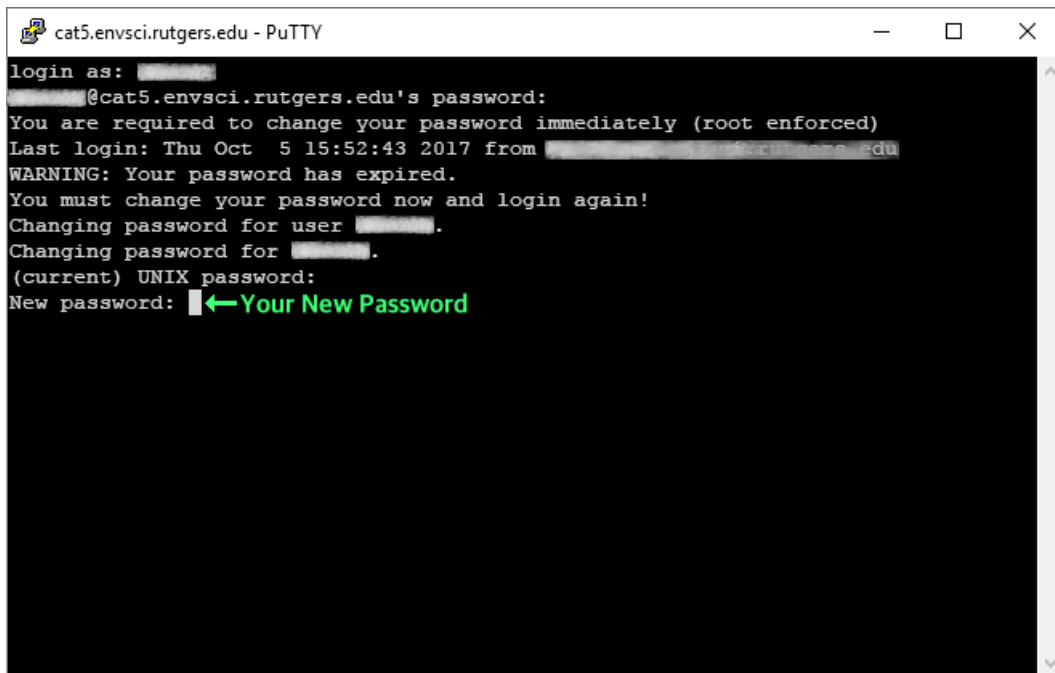


```
cat5.envsci.rutgers.edu - PuTTY
login as: [redacted]
[redacted]@cat5.envsci.rutgers.edu's password:
You are required to change your password immediately (root enforced)
Last login: Thu Oct  5 15:52:43 2017 from [redacted].envsci.rutgers.edu
WARNING: Your password has expired.
You must change your password now and login again!
Changing password for user [redacted].
Changing password for [redacted].
(current) UNIX password: █ ← Temporary Password (again)
```

Type the Temporary Password **again**, and then press the **Enter** key.

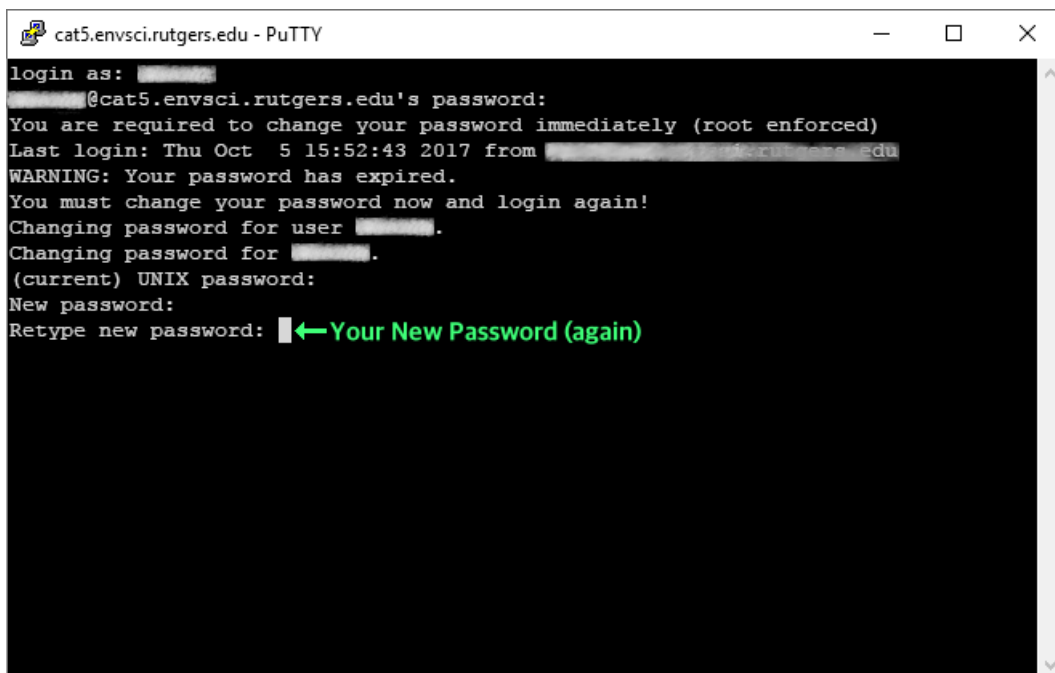
⚠ Repeating: Passwords **will not be visible** on the screen while you type them.

Next you will see prompts to enter your new password.



```
cat5.envsci.rutgers.edu - PuTTY
login as: [REDACTED]
[REDACTED]@cat5.envsci.rutgers.edu's password:
You are required to change your password immediately (root enforced)
Last login: Thu Oct  5 15:52:43 2017 from [REDACTED]
WARNING: Your password has expired.
You must change your password now and login again!
Changing password for user [REDACTED].
Changing password for [REDACTED].
(current) UNIX password:
New password: █ ←Your New Password
```

Now type your new, made-up password. No one else will know this, so you should be able to remember it, but people should not be able to easily guess what it is. **Don't use a dumb password such as "password" or someone's name or birthday.** Press the **Enter** key when done.



```
cat5.envsci.rutgers.edu - PuTTY
login as: [REDACTED]
[REDACTED]@cat5.envsci.rutgers.edu's password:
You are required to change your password immediately (root enforced)
Last login: Thu Oct  5 15:52:43 2017 from [REDACTED]
WARNING: Your password has expired.
You must change your password now and login again!
Changing password for user [REDACTED].
Changing password for [REDACTED].
(current) UNIX password:
New password:
Retype new password: █ ←Your New Password (again)
```

Finally, type your new, made-up password **again** to confirm it, and then press the **Enter** key.

If you type in the wrong temporary password, or if your new passwords do not match, then this process will abort and you will have to start over by connecting to Cat5 again.

Once you have successfully changed your password, Cat5 will disconnect, and the PuTTY window will close automatically. The next time you connect to Cat5, you will log in normally (as shown on page 1), and enter your new password only. You do not need your Temporary Password any longer.

Congratulations, you are now completely setup to use Cat5 via PuTTY and Xming. Enjoy!