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):

		🗙 Setup - Xming 🦳 — 🗌 🗙
🗙 Setup - Xming — 🗆 🗙	X Setup - Ximing - D Select Destination Location	
Welcome to the Xming Setup Wizard	Where should Jining be installed?	Select Additional Tasks
This will install Xining 6.9.0.31 on your computer.	Setup will install Xining into the following folder.	Which additional tasks should be performed?
It is recommended that you close all other applications before continuing.	To continue, click Next, Evou would like to select a different folder, click Browse,	
Click Next to continue, or Cancel to exit Setup.	Biorea Biornet Biornet Biornet Biornet Biornet Biornet	
		Select the additional tasks you would like Setup to perform while installing Xming, then click Next.
	At least 4.7 MB of free dais space to required.	Additional icons:
Next > Cancel	(jpck jet)	Create a desktop icon for Xming
		Create a desktop icon for XLaunch
		Create a Quick Launch icon for Xming
X Setup - Xming - X Select Cooponents With components shull be intaled?	X Setup - Ximing - Discovery Select Start Menu Folder	
Select Components Which components alreaded P	Where should Setup place the program's shortcuts?	Create a Quick Launch icon for XLaunch
Select the components you want to install clear the components you do not want to install. Click feed when you are ready to continue.	Setup will create the program's shortcuts in the following Statt Menu fuider	Other tasks:
Ful restalation	To continue, click Next. If you would like to select a different folder, click Browse.	Associate XLaunch.exe with the xlaunch file extension
Xeing brany A 1 MB No. US Report Support 3.4 MB Xeing brand - Instant for Xeing 10 MB	Bjowse	Associate ALaunch.exe with the Xiaunch file extension
Run utility -start programs with hidden console window 0.1 MB		
Normal PUTTY Lek SSH cleret 0.3 MB Orable PUTTY 0.3 MB Orable PUTTY Lek SSH cleret - use with Potable PUTTY 0.3 MB Orable as SSH cleret		
Current selection requires at least 9 3 MB of disk space.	Don't create a Stat Menu folder	
< Bok Hent> Canon	(jok jed)	< Back Next > Cancel
(a) Click "Novt" on the	first four seroons	(h) Change any icon antions you like
(a) Click "Next" on the	first four screens.	(b) Choose any icon options you like,
		there alight "Next"
		then click "Next."
🗙 Setup - Xming	_	X Setup - Xming — — X
Ready to Install		Completing the Xming Setup
Setup is now ready to begin installing Xming on yo	ur computer.	Wizard
		Setup has finished installing Xming on your computer. The
Click Install to continue with the installation, or clic change any settings.	k Back if you want to review or	application may be launched by selecting the installed icons.
change any settings.		approvalent may be reactioned by detecting the interaction for the
Destination location:	^	Click Finish to exit Setup.
C:\Program Files (x86)\Xming		
		Launch Xming
Setup type: Full installation		
Full Installation		
Selected components:		
Xming binary		
Non US Keyboard support		
XLaunch wizard - frontend for Xming	e u te de u	
Run utility - start programs with hidden console Normal PuTTY Link SSH client	ewindow	
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	(Pack Install Cons	Divisit
	< <u>B</u> ack <u>I</u> nstall Cano	<u> </u>
(c) Click "Install" to comp		

(c) Click "Install" to complete the installation.

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

	X Setup - Xming-fonts - X	
	Select Components Which components should be installed?	N Sintag- Joning Funds — … _
X Stele - Joning-form — — X Select Declassion Long-form in malace	Select the components you want to install; dear the components you do not want to install. Click Next when you are ready to continue.	To contrue, did lens, If no weak like to whet a effecter blain, did Brown.
there shuld long forst be installed?	Full installation ✓ Ø Bitmap Fonts 6.9 MB Ø 75dpi Fonts 10.8 MB Ø 100døf Fonts 12.4 MB	Contravels a Sent New Vider
At least 1,2 High free did space is resured.	✓ 100dpi Fonts 12.4 MB ✓ Truetype Fonts 1.0 MB ✓ DejaVu TTFs 11.5 MB ○ Cyrillic Fonts 0.4 MB	X String - Noning Knots — … _ _ _ _
	Current selection requires at least 19.8 MB of disk space.	Certification broken Certification broken Marchan Count metalation Michael Mich
	< Back Next > Cancel	 tipot prost Conor
(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 a SSH (Secure Shell) client. It allows you to securely log in to 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 versions of all the PuTTY utilities. (Not sure whether you want the 32-bit or the 64-bit version? Read the <u>FAQ entry</u> .)					
MSI ('Window	s Installer')				
64-bit x86:	<pre>putty-64bit-0.76-installer.msi</pre>	(or by FTP)	(signature)		
64-bit Arm:	<u>putty-arm64-0.76-installer.msi</u>	<u>(or by FTP)</u>	(signature)		
32-bit x86:	<pre>putty-0.76-installer.msi</pre>	(or by FTP)	(signature)		
Unix source are	Unix source archive				
.tar.gz:	<u>putty-0.76.tar.gz</u>	<u>(or by FTP)</u>	<u>(signature)</u>		

2. Look for the links under "**MSI ('Windows Installer')**". Choose the link next to "64-bit x86," "64-bit Arm" or "32-bit x86," whichever one 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 see a window with a section of information like this:

Device specifications

Device name	
Processor	
Installed RAM	
Device ID	
Product ID	
System type	64-bit operating system, x64-based processor

(b) Look for "System type" and note whether it says "32-bit" or "64-bit" and if it says "x64" or "Arm." Close this window and download the corresponding PuTTY installer.

3. Run the PuTTY installer you just downloaded:

	Setup – O X Welcome to the PuTTY release 0.70 (64-bit) Setup Wizard	₽ PuTTY release 5/70 (64-bit) Smap - X Destination Folder Cick Next to install to the default fidler or cick. Change to choose another.	PuTTY release 0.20 (64-bit) Setup - X Product Features Select the way you want features to be installed.		- X mpleted the PuTTY release 0.70 t-bit) Setup Wizard
R.	(OH-DIT) Secup VII-Land The Serup VIII will an UTY release 0.70 (64-bit) on your computer. Glot Rest to continue or Cancel to exit the Serup Willard.	Instal PuttY release 0.76 ((Hel)) to: C Phage in Net/NTN \ Deep	Add doctors that for the Society		e only secure versaria
2 *			The Robust request \$71\$100 on your hard dive.	2	New REALTINE file
	Tack Next Cancel	god got Carol	gadi 🚱 jistal Canod		Back grah Carcel

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

Congratulations, you have installed PuTTY! Now create a PuTTY session for your connection (next page).

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

Launch PuTTY (under the "PuTTY" folder in your Start menu). Follow these steps to create your session:



"cat5.envsci.rutgers.edu" (without the quotes).

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.

🕵 PuTTY Configuration	? ×		
PuTTY Configuration Category: - Session - Logging - Terminal - Keyboard - Bell - Features - Window - Appearance - Behaviour - Translation	? × Basic options for your PuTTY session Specify the destination you want to connect to Host Name (or IP address) Port 22 Connection type: Raw Telnet Icoad, save or delete a stored session Savgd Sessions		
Selection 	Default Settings Load cat5 Save Delete		
	Close window on exit: Always Never Only on clean exit Qpen Cancel		

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." Examples:



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

- arMbmUfQI7livx/EmZT4Qyz85Pz3ND0JeMBhaNAH9x8
- 55:87:cd:ef:80:dc:9d:e8:1d:14:87:27:40:00:01:4a
- ee:05:33:ed:1e:5c:31:84:86:b9:8c:11:15:1a:9d:6f

If it matches one of those, then click "Yes" to connect. If it does **NOT** match any of them, then please check <u>Cat5 Host Key Fingerprints</u> 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.

P cat5.envsci.rutgers.edu - PuTTY	_	×
login as: 🗲 Your Username (NetID)		\sim

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 below** 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!

Setting a New Password

After entering your username you will see the password prompt:



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



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.



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.



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!