Accessing Cadence Remotely

Installing PuTTY

Go to the PuTTY Download Page located at this URL: <u>http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html</u>

Download the file named putty.exe. It is the entire application and doesn't require installing. You could run it from your desktop, if you'd like.

Starting VNC Server

When you load PuTTY you will see the following screen. The PuTTY user interface can be confusing at first. The "Session" applies to all the configuration settings, not just the **HostName** and **Port**.

Type *uwasic@blade1.vlsi.uwaterloo.ca* into **Host Name** and choose *SSH* as the **Protocol**. The **Port** will automatically be set to 22. Then click *Save* to save this session.

🔀 PuTTY Configuration			
Category:			
🖃 Session	Basic options for your PuTTY session		
Logging	Specify your connection by host name or IP address		
Terminal	Host Name (or IP address) Port		
- Reyboard	uwasic@blade1.vlsi.uwaterloo.ca 22		
Features	Protocol:		
🚍 Window	○ <u>R</u> aw ○ <u>T</u> elnet ○ Rlogin ⊙ SSH		
Appearance Behaviour Translation Selection Colours Connection Proxy Telnet Rlogin SSH Auth Tunnels Bugs	Load, save or delete a stored session Saved Sessions UWASIC (Blade1)		
	Default Settings Engage@UW UW News UWASIC (Blade1) ecesun1		
	Close <u>w</u> indow on exit: Always Never Only on clean exit		
About	<u>O</u> pen <u>C</u> ancel		

Click *Open* to connect to *blade1.vlsi.uwaterloo.ca*. At the password prompt, enter the password for the uwasic account.



The next step is to start the VNC server itself. For information on the options available use the help parameter:

```
Blade1.vlsi% vncserver --help
usage: vncserver [:<number>] [-name <desktop-name>] [-depth <depth>]
[-geometry <width>x<height>]
[-pixelformat rgbNNN|bgrNNN]
<Xvnc-options>...
vncserver -kill <X-display>
```

The recommended default parameters are: vncserver -depth 24 -geometry 1280x1024



You have now started running vncserver on desktop number 13 on blade1.vlsi.

You may check to see who is using VNC on a machine by running: ps -ef \mid grep Xvnc

blade1.vlsi% ps -ef grep Xvnc
anour 14947 1 0 Feb 08 ? 16:42 Xvnc :6 -desktop X
-httpd /software/vnc-3.3.7ece/data/classes -auth /u6/anour/.
uwasic 16737 1 0 Mar 10 ? 0:00 Xvnc :14 -desktop
<pre>blade1.vlsi:14 (uwasic) -auth /u6/uwasic/.Xauthority -geometr</pre>
emirhadi 4003 1 0 Jan 23 ? 0:00 Xvnc :4 -desktop X
-httpd /software/vnc-3.3.7ece/data/classes -auth /u6/emirhad
mhassan 21729 1 0 Feb 19 ? 0:02 Xvnc :8 -desktop X
-httpd /software/vnc-3.3.7ece/data/classes -auth /u6/mhassan
uwasic 9271 1 0 12:08:04 pts/19 0:00 Xvnc :13 -desktop
blade1.vlsi:13 (uwasic) -auth /u6/uwasic/.Xauthority -geometr
yabdalla 15698 1 0 Feb 17 ? 28:01 Xvnc :1 -desktop X
-httpd /software/vnc-3.3.7ece/data/classes -auth /u6/yabdall
sarbishe 18963 1 0 Dec 30 ? 21:37 Xvnc :2 -desktop X
-httpd /software/vnc-3.3.7ece/data/classes -auth /u5/sarbish
emirhadi 4097 1 0 Jan 23 ? 0:04 Xvnc :5 -desktop X
-httpd /software/vnc-3.3.7ece/data/classes -auth /u6/emirhad
uwasic 9332 9219 0 12:21:52 pts/19 0:00 grep Xvnc
djrennie 23169 1 0 Feb 02 ? 28:32 Xvnc :3 -desktop X
-httpd /software/vnc-3.3.7ece/data/classes -auth /u5/djrenni
dafeldib 78 1 0 Mar 08 ? 0:16 Xvnc :7 -desktop X
-httpd /software/vnc-3.3.7ece/data/classes -auth /u6/dafeldi
mhassan 21790 1 0 Feb 19 pts/18 2:53 Xvnc :9 -desktop X
-httpd /software/vnc-3.3.7ece/data/classes -auth /u6/mhassan
blade1.vlsi%

You may now close PuTTY. The VNC server will continue to run on *blade1.vlsi.uwaterloo.ca*.

Create a SSH Tunnel

The next step is to create an SSH Tunnel. We could VNC directly to *blade1.vlsi.uwaterloo.ca*, however by using SSH tunneling we can get around restrictive firewalls and prevent others from listening in on our VNC connection.

🞇 PuTTY Configuration × Category: 🖃 Session Basic options for your PuTTY session - Logging Specify your connection by host name or IP address 😑 Terminal Host Name (or IP address) Port Keyboard uwasic@blade1.vlsi.uwaterloo.ca 22 Bell Features Protocol: O Raw O<u>T</u>elnet O Riogin <u>
 SSH</u> Window Appearance Load, save or delete a stored session-Behaviour Saved Sessions Translation UWASIC (Blade1) Selection Colours **Default Settings** Load Connection Engage@UW UW News Proxy Save UWASIC (Blade1) Telnet ecesun1 <u>D</u>elete Rlogin 😑 SSH Auth Tunnels Close window on exit: Bugs Always O Never 💿 Only on clean exit About <u>O</u>pen <u>Cancel</u>

Run PuTTY again to start a new connection.

Select the session you created last time from the list and click Load.

Under the Category frame on the left side choose *Connection* \rightarrow *SSH* \rightarrow *Tunnels*.

🔀 PuTTY Configuration 🛛 🛛 🔀					
Category:					
Session Logging Logging Creminal Keyboard Bell Features Window Appearance Behaviour Translation Selection Colours Connection Proxy Telnet Rlogin SSH Auth Tunnels Bugs	Options controlling SSH tunnelling X11 forwarding Enable X11 forwarding X display location Remote X11 authentication protocol MIT-Magic-Cookie-1 NIT-Magic-Cookie-1 XDM-Authorization-1 Port forwarding Local ports accept connections from other hosts Remote ports do the same (SSH v2 only) Forwarded ports: Remove Add new forwarded port: Source port 5913 Add Destination blade1.vlsi.uwaterloo.ca:5913 Ocal Remote				
About	<u>Open</u> <u>Cancel</u>				

In *Destination* enter the desktop number of the VNC server we started in the last section plus 5900. In this example, we are using *blade1.vlsi.uwaterloo.ca:5913*. Select *Local*.

In *Source port* you may enter any number greater than 1024, however for simplicity, we shall use 5913. Then click *Add* to add the new forwarded port.

Click *Session* in the *Category* frame to return to the previous screen. Then save your session as we did before. Click the *Open* button to create this connection and enter your password to log in.

We will be using PuTTY while we work, so leave it running in the background.

Connect with VNC Viewer

The last and final step is to connect using a VNC viewer. You may use any VNC viewer program. In this document we will be demonstrating UltraVNC, which you may download for free from: <u>http://ultravnc.sourceforge.net/</u>.

Once you have downloaded and installed the program, you will see the following window when you start it:

UltraVNC Win32 Viewer 1.0.1 Release			
VNC Server: localhost::5913			
Quick Options • AUTO • ULTRA • ULTRA • LAN • MEDIUM • MODEM • SLOW	Connect Cancel		
View Univ Auto Scaling Use DSMPlugin No Plugin detected	Options		
Save connection settings as default Delete saved settings			

In *VNC Server* enter localhost followed by two colons and the number you used for the *Source Port* of the VNC tunnel. We used 5913 in our example, so we entered: localhost::5913

In the window that appears, enter the password for the uwasic account:

VNC Authentication		
	Password:	
) On Cancel

You now have access to your VNC desktop:



To get started, left click on the desktop and the *System* menu will appear. Choose *Apps* to see the *Applications* menu and select *rxvt black*.





In the window that appears, enter: *startCds* -*t cmosp18*

Cadence will then begin and you are set to go.

One benefit of VNC is that the VNC server will continue to run even after you close your VNC viewer application. You may then return to your desktop to pick up where you left off. Be careful to always save any important work when you leave, just in case you lose your VNC desktop.

If you are done and would like to terminate your VNC server, left-click on the desktop:



In the *System* menu choose *Logout* to shutdown your VNC server and any applications you have running.