VPN connections from Linux systems (accessing the departmental internal network remotely)

There are several ways for members of the Department of Computer Science to access departmental IT resources whilst working from home: SSH (secure terminal access to Linux gateway systems), VPN (Virtual Privat Network – a secure tunnel to the departmental internal network), and Remote Desktop (secure access to departmental workstations)

This guide details how to set up a VPN connection from a home system running Linux.

Note that a similar provision is available at a University level – which is configured in a very different way (although the idea is essentially the same). Details of this can be found in CSD's *Knowledge Base* – go to <u>https://www.liverpool.ac.uk/csd/getting-help/</u>, select *browse the knowledge base* and search for "VPN".

Installation

Setting up a VPN connection on Linux relies on a couple of additional software packages. On a Debian, Ubuntu or similar system, run the commands:

sudo apt-get install network-manager-vpnc sudo apt-get install network-manager-vpnc-gnome

On a RedHat, Fedora or similar system, run the commands: sudo yum install NetworkManager-vpnc sudo yum install NetworkManager-vpnc-gnome

(These are also required for setting up the University-level VPN connection)

Configuration

Open Settings and select the entry Network Click the + in the section VPN to configure a new VPN connection.

	-		
v	F	21	v.
-	-		

Not set up

(It is perfectly possibly to set up multiple VPN connections, and choose which one(s) to activate)

Select the entry *Point to Point Tunnelling Protocol (PPTP)*



Provide a name to identify the connection (we suggest Comp Sci VPN), set the gateway to be **pub-vpn.csc.liv.ac.uk**, and enter your departmental username. This can either be given in the form intra\{username} (all in the User name field), or as a simple username here and the NT Domain field set to **INTRA**

<u>C</u> ancel		Add VPN	<u>A</u> dd
Identity IP	v4 IPv6		
<u>N</u> ame	CompSc	i VPN	
Gen	neral		
Ga	ateway p	ub-vpn.csc.liv.ac.uk)
Opt	tional		
Us	ser name	daves]
Pa	assword	•]
		□ Show password	
N	T Domain	INTRA]
		X Ad <u>v</u> anced]

You can either specify the password here (to be saved and applied automatically whenever this connection is activated), or this field can be left blank. In this case, you will be prompted for the password when you enable the VPN connection.

Then click the button Advanced

PPTP Advanced Options Authentication Allow the following authentication methods: PAP CHAR	Select the checkbox next to Use Point-to-Point Encryption (MPPE) and clear the checkbox next to MSCHAP (Note that the other authentication methods will become
	unavailable as soon as MPPE is selected)
Security and Compression Point-to-Point encryption (MPPE)	The other settings can be left as they stand.
Security: All Available (Default) 🗸	Then click OK
Allow stateful encryption	
Allow BSD data compression	
Allow Deflate data compression	
Subsection Use TCP header compression	
Echo	
Send PPP echo packets	
Misc	
□ Use custom unit number: 0 − +	
Cancel OK	

Select the tab **IPv4**, and enter the values as follows:

DNS	10.128.0.4, 10.128.0.	(separated by a comma)		
Routes	Address 10.128.0.0	Netmask 255.128.0.0	Gateway 0.0.0.0	
	Address 10.0.0.0	Netmask 255.248.0.0	Gateway 10.128.0.1	

and ensure the checkbox next to Use this connection only for resources on its network is selected

Cancel			CompSci V	PN VPN		Apply
Details	Identity	IPv4	IPv6			
IPv4	Method		O Automatic (DH	CP)) Link-Loca	l Only
		(🗆 Manual	C) Disable	
DNS					Automatic	ON
10.1	28.0.4, 10.	128.0.	5			
Separa	te IP addres	ses with	commas			
Rout	es				Automatic	ON
	Address		Netmask	Ga	teway	Metric
10.1	28.0.0		255.128.0.0	0.0.0.0		0
10.0	0.0		255.248.0.0	10.128.0	.1	8
						0

Then click the button Add (or Apply)

Note that if you wish to make changes to the configuration of this VPN session, you will also need to revisit the IPv4 tab, and re-enter the null Gateway (0.0.0.0) for the 10.128.0.0 routing entry before being able to click Apply

Activating the VPN

Once the VPN has been configured, clicking the network icon in the top bar will show an entry for VPN connections (initially displaying VPN off).

Clicking this will list the available VPN connections, which can be enabled or disabled as required.



