#### **MS Windows**

#### Manually Connecting a Windows Laptop to a Wireless Network. (Utilising Domain User Credentials for 802.1x RADIUS Authentication)

🥦 🕨 Control Panel 🕨 All Control Panel Items 🕨 - 49 Adjust your computer's settings View by: Large Administrative Tools Biometric Devices Action Center AutoPlay Backup and Restore Date and Time Default Programs Desktop Gadgets Color Management Credential Manager 🚑 Device Manager Devices and Printers Display Base of Access Center Flash Player (32-bit) Folder Options HomeGroup 0 iCloud A Fonts Getting Started Intel(R) Graphics and Media Intel® PROSet/Wireless Internet Options A Indexing Options ବ Java (32-bit) Tools Location and Other Lenovo - Fingerprint Keyboard Mail (32-bit) Mouse Reader Sensors Network and Sharing Center Performance Information Notification Area Icons Mersonalization An Phone and Modem and Tools QuickTime (32-bit) Recovery Region and Language Power Options Programs and Features RemoteApp and Desktop Connections SmartAudio Sound Speech Recognition Sync Center Upgrade Windows Anytime System Taskbar and Start Menu Troubleshooting User Accounts Windows CardSpace Windows Mobility Center Windows Defender Windows Firewall Windows Update 100

From the Start Menu or Settings - Choose Control Panel / Classic Menu

Select Network and Sharing Center



# From within the Network and Sharing Center

🗸 😨 🕨 Control Panel 🕨	All Control Panel Items   Network and Sharing Center
Control Panel Home	View your basic network information and set up connections
Manage wireless networks Change adapter settings Change advanced sharing settings	PC042       BrymoreGuest       Internet         View your active networks       Connect or disconnect         Image: See full map       Connect or disconnect         Image: See full map       Internet         Image: See full map       Image: Imag
	<ul> <li>Connect to a network         Connect or reconnect to a wireless, wired, dial-up, or VPN network connection.</li> <li>Choose homegroup and sharing options         Access files and printers located on other network computers, or change sharing settings.</li> <li>Troubleshoot problems         Diagnose and repair network problems, or get troubleshooting information.</li> </ul>
See also HomeGroup iCloud Intel® PROSet/Wireless Tools Internet Ontions	

## Choose Set up a new connection or network

chunge j	our networking settings
-	Set up a new connection or network
-	Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point

Now choose 'Manually Connect to a Wireless Network'

Choo	se a connection option	
	Connect to the Internet Set up a wireless, broadband, or dial-up connection to the Internet.	
2	Set up a new network Configure a new router or access point.	
5	Manually connect to a wireless network Connect to a hidden network or create a new wireless profile.	
D	Connect to a workplace Set up a dial-up or VPN connection to your workplace.	
	Set up a dial-up connection Connect to the Internet using a dial-up connection.	

You will be prompted to Enter the Information for the wireless network.

Enter information	for the wireless network	you want to add	
Network name:	ſ		
Security type:	[Choose an option]	-	
Encryption type:		•	
Security Key:		Hide charact	ers
Start this conne	ction automatically		
Connect even if	the network is not broadcasting		
Warning: If you	select this option, your compute	r's privacy might be at risk	•

Enter information	for the wireless network you want to add	
Network name:	Wireless-SSID-Here	
Security type:	WPA2-Enterprise	
Encryption type:	AES	
Security Key:	Hide characters	
Start this connection	tion automatically	
🔲 Connect even if	the network is not broadcasting	
Warning: If you	select this option, your computer's privacy might be at risk.	

### Add the Broadcast SSID of the required Network in the 'St-Georges-Student' Box

Ensure the 'Security Type' drop down box is set to WPA2-Enterprise

Ensure the 'Encryption Type' drop down box is set to AES

Ensure the Tick Box for 'Start this connection automatically' is selected.

Click Next

Now choose to 'Change connection settings' as shown below:



The following properties dialogue box is shown. Choose the Security Tab.

Connection Security	
Name:	Example-SSID
SSID:	Example-SSID
Network type:	Access point
Network availability:	All users
Connect automat	ically when this network is in range
Connect to a mor	e preferred network if available
Connect even if t	he network is not broadcasting its name (SSID)
Enable Intel conn	ection settings
C	
Configure	

Ensure the Security and Encryption Type are set as shown.

Connection Security		
Security type:	WPA2-Enterprise	•
Encryption type:	AES	•
Microsoft: Protecte	d EAP (PEAP)	Settings
Remember my a time I'm logged a	redentials for this connection	each
Remember my cr time I'm logged o Advanced setting	redentials for this connection	each

'Network Authentication Method' must be set to 'Microsoft: Protected EAP (PEAP)' as shown.

Click on the PEAP 'Settings' Button next to the Drop Down. From 'Protected EAP Properties' as shown Ensure the 'Validate Server Certificate' Check Box is Un Ticked.

		Σ
When connecting:		
Validate server certificat	te	
Connect to these serve	ers:	]
Trusted Root Certification	Authorities:	
AddTrust External CA	Root	*
America Online Root C	ertification Authority 1	
Baltimore CyberTrust F	Root	
Certum CA		
Class 3 Public Primary	Certification Authority	
Class 3 Public Primary	Certification Authority	
DigiCert Assured ID Ro	oot CA	-
•	m	+
Certification authorities. Select Authentication Method Secured password (EAP-MSC Center Description Content Enable Fast Reconnect Enforce Network Access F	l: CHAP v2) ▼ Protection	Configure
Certification authorities. Select Authentication Method Secured password (EAP-MSC Center of the Connect Enable Fast Reconnect Enforce Network Access F Disconnect if server does	I: CHAP v2)  v Protection not present cryptobinding T	Configure
certification authorities. Select Authentication Method Secured password (EAP-MSC Context Past Reconnect Enforce Network Access P Disconnect if server does Enable Identity Privacy	I: CHAP v2) ▼ Protection not present cryptobinding T	Configure

Ensure 'Select Authentication Method' is set to 'Secured Password (EAP-MSCHAP v2)' Choose the 'Authentication Method' 'Configure' Button next to the Drop Down.

When connecting: Automatically use my Windows logon name and password (and domain if any).	AP MSCHAPv2 Properties	
Automatically use my Windows logon name and password (and domain if any).	When connecting:	
password (and domain if any).		
	Automatically use my Wind	dows logon name an

Ensure That 'When Connecting Automatically use my Windows Logon name' is Un Ticked.

# Click OK to return to this 'Security' tab View

onnection Security	
Security type:	WPA2-Enterprise
Encryption type:	AES 💌
Microsott, Drotecte	JEAD (DEAD)
Remember my cr	redentials for this connection each
Remember my cr time I'm logged c	redentials for this connection each
Remember my cr time I'm logged c	redentials for this connection each
Remember my cr time I'm logged c	redentials for this connection each
Advanced setting	redentials for this connection each
Advanced setting	redentials for this connection each
Advanced setting	gs

Next choose the 'Advanced Settings' box.

Under Advanced Settings

Choose '802.1X settings' tab.

Ensure the Specify Authentication Mode Tick box is Ticked.

02.1X settings	802.11 settings	
Specify a	authentication mode:	
User au	thentication 🔹	Save credentials
[ Delet	e credentials for all users	
Enable si	ngle sign on for this network	
() Perfo	orm immediately before user lo	igon
O Perfo	orm immediately after user log	on
Maximun	n delay (seconds):	10
Allow sign of	additional dialogs to be displa	ayed during single
This r and u	network uses separate virtual user authentication	LANs for machine

From the 'Specify Authentication Mode' drop down box ensure 'User Authentication' is Selected.

Next Choose the 'Save Credentials' Button next to the drop down.

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: netwo	Connect	802.1X settings 802.11 settings	
king se	Connect	Specify authentication mode:	
w.con	Securi	i Save d'edenuais	
reless,	Fran	Delete credentials for all users	53
anet		Vindows Security	
recon		Save credentials	
, ccon		Saving your credentials allows your computer to connect to the netwo	ork
megro	Ch	when you're not logged on (for example, to download updates).	per co
and p	M		
ot pro		User name	
nd rep		Password	
		OK	el Close

In the box that appears type your normal Windows Domain Username and Password.

Click Ok to return to the Advanced Settings View.

Ensure 802.11 settings are as shown below.

02.1X settings 802.11 settings		
Fast roaming		
🕼 Enable Pairwise Master Key (PMK) caching		
PMK time to live (minutes):	720	
Number of entries in PMK cache:	128	-
This network uses pre-authentication		
Maximum pre-authentication attempts:	3	*
Enable Federal Information Processing Stand compliance for this network	lards (FIPS	)
Enable Federal Information Processing Stand compliance for this network	lards (FIPS	)
Enable Federal Information Processing Stand compliance for this network	lards (FIPS	0
Enable Federal Information Processing Stand compliance for this network	lards (FIPS	0
Enable Federal Information Processing Stand compliance for this network	lards (FIPS	0

Click OK to exit Advanced Settings. Click OK to complete the set up of the Wireless Network.

Now browse for available wireless networks, find the SSID you have been configuring and connect. You should now be joined to the wireless network.

Note. If after successfully joining the wireless network, the username or password is subsequently changed the saved credentials applied to the connection will need updating. Edit the network connection in the same fashion and from the 'Specify Authentication Mode' choose the 'Replace Credentials' Button next to the drop down.

302.1X settings	802.11 settings		
Specify a	uthentication mode:		
User aut	hentication	<b>▼</b>	Replace credentials
and a construction			