

# FAU Wireless Connectivity For Windows Vista

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FIGURE 1.1

1. Right-click on the Network Connections icon located in the System Tray. This is the area at the bottom, right corner of your desktop next to the clock. A popup window will appear (Figure 1.1). Click on Network and Sharing Center.









Wireless Network Connection 3 Properties				
Networking Sharing				
Connect using:				
Compact Wireless-G USB Network Adapter with SpeedBo				
Configure				
This connection uses the following items:				
<ul> <li>Client for Microsoft Networks</li> <li>QoS Packet Scheduler</li> <li>File and Printer Sharing for Microsoft Networks</li> <li>Internet Protocol Version 6 (TCP/IPv6)</li> <li>Internet Protocol Version 4 (TCP/IPv4)</li> <li>Internet Protocol Version 4 (TCP/IPv4)</li> <li>Internet Protocol Version 9 (TCP/IPv4)</li> </ul>				
Install Uninstall Properties				
Description TCP/IP version 6. The latest version of the internet protocol that provides communication across diverse interconnected networks.				
UK Cancel				

FIGURE 1.4

2. Disable TCP/IPv6. FAU is not currently utilizing TCP/IPv6. By default, this is enabled. We have found that deselecting this may improve your connectivity chances.

a. Right-click on the Network Connections icon in the System Tray (lower-right corner; next to the computer clock).

b. Click on Network and Sharing Center. Click on Manage Network Connections (Figure 1.2).

c. In the dropdown menu, click on Properties (Figure 1.3).

d. Uncheck Internet Protocol Version 6 (TCP/IPv6) (Figure 1.4).

e. Click OK when completed. Close the Network Connections window. This will return you to the Network and Sharing Center window.



#### FIGURE 1.5

3. In the Network and Sharing Center window (Figure 1.5), click on Manage Wireless Networks.



#### FIGURE 1.6

4. In the Manage Wireless Networks window (Figure 1.6), click on the Add button.



5. How do you want to add a network (Figure 1.7)? Click on "Manually create a network profile" (2<sup>nd</sup> choice).

🚱 🔬 Manually connect to a wire	eless network
Enter information for th	e wireless network you want to add
Network name:	fausecure
Security type:	802.1×
Encryption type:	WEP -
Security Key/Passphrase:	Display characters
V Start this connection au	tomatically
Connect even if the net	work is not broadcasting
Warning: If you select th	nis option, your computer's privacy might be at risk.
	Next Cancel
FIGURE 1.8	

6. Enter the wireless network information (Figure 1.8).

Network name: *fausecure* ((( This <u>must</u> be typed in lowercase. ))) Security type: 802.1x. Start this connection automatically: *checked* Connect even if the network is not broadcasting: *checked* 



FIGURE 1.9

7. Once the fausecure connection has been added successfully (Figure 1.9), choose "Change connection settings."

fausecure Wireless Network properties				
Connection Security				
Name:	fausecure			
SSID:	fausecure			
Network Type:	Access point			
Network Availability:	All users			
Connect automati	cally when this network is in range			
Connect to a more	e preferred network if available			
Connect even if th	ne network is not broadcasting			
	ОК	Cancel		

FIGURE 1.10

8. Under the Connection tab in the Wireless Network Properties window (Figure 1.10), be sure all 3 checkboxes ("Connect automatically when this network is in range", "Connect to a more preferred network if available", and "Connect even if the network is not broadcasting") are checked.

Connect automatically when this network is in range: *checked* Connect to a more preferred network if available: *checked* Connect even if the network is not broadcasting: *checked* 

fausecure Wireless Netv	work properties		×
Connection Security			
Security type:	802.1X	•	
Encryption type:	WEP	•	
Choose a network au	thentication method:		
Protected EAP (PEAF	») <b>~</b>	Settings	
Cache user inform	ation for subsequent con	nections	
to any network			
	C	K Canc	el

FIGURE 1.11

9. Under the Security tab in the Wireless Network Properties window (Figure 1.11), uncheck the single checkbox that appears ("Cache user information for subsequent connections to this network").

Cache user information for subsequent connections to this network: Unchecked

10. Click on the Settings button.

Protected EAP Properties	X
When connecting:	
Validate server certificate	
Connect to these servers:	
Trusted Poot Certification Authorities	
Class 3 Public Primary Certification Authority	
GlobalSign Root CA	
GTE CyberTrust Global Root	
Microsoft Root Authority	
Microsoft Root Certificate Authority	
Secure Server Certification Authority	
Thawte Timestamping CA	
Do not prompt user to authorize new servers or trusted certification authorities.	
Select Authentication Method:	
Secured password (EAP-MSCHAP v2)	e
Enable Fast Reconnect	
Enable Quarantine checks	
Disconnect if server does not present cryptobinding TLV	
OK Canc	el

FIGURE 1.12

11. In the Protected EAP Properties window (Figure 1.12), enter the information (below) in the corresponding fields. Click on the Configure button when done.

Validate Server Certificate: Unchecked Select Authentication Method: Secured Password (EAP-MSCHAP v2) Enable Fast Reconnect: Unchecked

12. Click on the Configure button.



FIGURE 1.13

13. In the EAP MSCHAPv2 Properties window (Figure 1.13), uncheck the single checkbox ("Automatically Use My Windows Logon Name and Password (and Domain if Any).").

Automatically Use My Windows Logon Name and Password (and Domain if Any): Unchecked

14. In the EAP MSCHAPv2 Properties window, click the OK button.

15. In the Protected EAP Properties window, click the OK button.

16. In the Wireless Network Properties window, click the OK button.



FIGURE 1.14

17. Windows should begin communicating with FAU servers. You should get a balloon window ("Additional Information is Required to Connect to fausecure.") (Figure 1.14). Click on the balloon window.

Enter Credentials	x
User name:	
Password:	
Logon domain:	
Save this user name and password for future use	
OK Cancel	

FIGURE 1.15

18. This will open an Enter Credentials authentication window (Figure 1.15). Enter your FAUNetID (username) and your Network Access account password. Leave the Logon Domain field blank. Click the OK button when done.



19. Note the connection icon in the System Tray (lower right corner). The icon should change from having a red "X" (meaning no connection exists) to either a limited connection icon (yellow triangle with exclamation point) or computer only icon (partial connection exists) (Figure 1.16). Open a web browser such as Internet Explorer or FireFox at this time.

Connect to www.fau	.edu ? 🔀
The server www.fau requires a username	edu at FAU Wireless Authentication and password.
Warning: This server password be sent in without a secure con	is requesting that your username and an insecure manner (basic authentication nection).
User name:	<b>2</b>   •
Password:	
	Remember my password
	OK Cancel

FIGURE 1.17

20. An FAU Wireless Authentication window (Figure 1.17) should appear. Enter the same username/password pair you entered in Step 18.



21. Once the connection is made, the Network Connections icon in the System Tray will change (Figure 1.18) showing a globe. This means your computer is connected to the internet. You should see the web site based on the home page configured in your web browser.

### **2** Connect to fau



FIGURE 2.1

1. Right-click on the Network Connections icon located in the System Tray. This is the area at the bottom, right corner of your desktop next to the clock. A popup window will appear (Figure 2.1). Click on Network and Sharing Center.









🤑 Wireless Network Connection 3 Properties					
Networking Sharing					
Connect using:					
Compact Wireless-G USB Network Adapter with SpeedBo					
Configure					
✓ Intervention Microsoft Networks					
GOS Facket Scheduler      Gos Facket Sc					
□ → Internet Protocol Version 6 (TCP/IPv6)					
✓ → Internet Protocol Version 4 (TCP/IPv4)					
🗹 🔺 Link-Layer Topology Discovery Mapper I/O Driver					
🗹 🔺 Link-Layer Topology Discovery Responder					
Install Uninstall Properties					
Description					
TCP/IP version 6. The latest version of the internet protocol that provides communication across diverse interconnected networks.					
OK Cancel					

FIGURE 2.4

2. Disable TCP/IPv6. FAU is not currently utilizing TCP/IPv6. By default, this is enabled. We have found that deselecting this may improve your connectivity chances.

a. Right-click on the Network Connections icon in the System Tray (lower-right corner; next to the computer clock).

b. Click on Network and Sharing Center. Click on Manage Network Connections (Figure 2.2).

c. In the dropdown menu, click on Properties (Figure 2.3).

d. Uncheck Internet Protocol Version 6 (TCP/IPv6) (Figure 2.4).

e. Click OK when completed. Close the Network Connections window. This will return you to the Network and Sharing Center window.



FIGURE 2.5

3. In the Network and Sharing Center window (Figure 2.5), click on Manage Wireless Networks.



FIGURE 2.6

4. In the Manage Wireless Networks window (Figure 2.6), click on the Add button.



5. How do you want to add a network (Figure 2.7)? Click on "Manually create a network profile" (2<sup>nd</sup> choice).

G 🔐 Manually connect to a wir	eless network			
Enter information for the wireless network you want to add				
Network name:	fau			
Security type:	No authentication (Open)			
Encryption type:	None			
Security Key/Passphrase:	Display characters			
Start this connection automatically				
Connect even if the net	work is not broadcasting			
Warning: If you select t	his option, your computer's privacy might be at risk.			
	Next Cancel			

FIGURE 2.8

6. In the Manually Connect to a Wireless Network window (Figure 2.8), enter the information (below) in the corresponding fields. Click on the Next button when done.

Network name: *fau* ((( This <u>must</u> be typed in lowercase. ))) Security type: *No Authentication* (*Open*) Start this connection automatically: *Checked* Connect even if the network is not broadcasting: *Checked* 



FIGURE 2.9

7. In the Manually Connect to a Wireless Network window (Figure 2.9), click on "Connect To."

<b>@</b>	<u>ഷി</u> Manu	ually connect to a wireless	network		
	Select a	a network to connec	t to		
	Sho	All	•		47
	چ	fau	Connected with limited access		ألده
	2	fausecure	Security-enabled network		.ul
	چ	Unnamed Network	Unsecured network		<b>.</b> atl
	<u>Set up a c</u> Open Net	connection or network twork and Sharing Center			
				Connect	Cancel

FIGURE 2.10

8. In the Manually Connect to a Wireless Network window (Figure 2.10), click once to highlight the "fau" wireless connection. Then, click on the Connect button.



9. Note the connection icon in the System Tray (lower right corner). The icon should change from having a red "X" (meaning no connection exists) to either a limited connection icon (yellow triangle with exclamation point) or computer only icon (partial connection exists) (Figure 2.11). Open a web browser such as Internet Explorer or FireFox at this time.

Connect to www.fau	u.edu	? 🔀
The server www.fau requires a username Warning: This server password be sent in without a secure con	edu at FAU Wireless Ai and password. is requesting that your an insecure manner (ba prection).	uthentication username and isic authentication
User name:	1	•
Password:		
	Remember my pass	sword
	ОК	Cancel

FIGURE 2.12

10. An FAU Wireless Authentication window (Figure 2.12) should appear. Enter your FAUNetID (username) and your Network Access account password. Click the OK button when done.



11. Once the connection is made, the Network Connections icon in the System Tray will change (Figure 2.13) showing a globe. This means you're connected to the internet. You should see the web site based on the home page configured in your web browser.

### **3** Alternate Connection

This section shows an alternate way of connecting to our wireless network. Often, we use method to connect to "fau" when we are unable to make a clean connection to "fausecure."



#### FIGURE 3.1

1. Right-click on the Network Connections icon in the System Tray (lower right corner) (Figure 3.1).

2. Click on "Connect to a network."

<b>(</b>	👰 Connect to a	network			
	Select a netw	ork to connec	t to		
	Show All		-		<b>4</b> 7
	💐 faused	ure	Security-enabled network		dite.
	Junnar 🕹	ned Network	Unsecured network		.11
	Set up a connect	ion or network			
	Open Network ar	nd Sharing Center			
				Connect	Cancel

FIGURE 3.2

2. The SSID on either of FAU's wireless networks ("fau" and "fausecure") are not broadcasted. If your system does not recognize the signal it receives, then you will not see the SSID appear in the Connect to a Network window (Figure 3.2). Instead, you should see the unknown network displayed as "Unnamed Network

- Unsecured Network."

a. Click once to choose "Unnamed Network - Unsecured Network."

b. Click on the Connect button.

			×
0	🕎 Connect to a network		
	Type the network name (SSID) for the network		
	Ask the person who set up this network to give you the name		
	Network Name:		
	fau		
	Next	Canc	el

FIGURE 3.3

3. Enter "fau" into the Network Name box (Figure 3.3). Be sure to type this in lowercase.

4. Click the Next button when done.



FIGURE 3.4

5. A window will appear cautioning about "fau" being an unsecured network (Figure 3.4). Click on "Connect Anyway."

😋 👰 Connect to a network	
Successfully connected to fau	
Save this network	
Start this connection automatically	
	Close

FIGURE 3.5

6. Once a successful connection is made, check both boxes that appear (Figure 3.5).

Save this network: *checked* Start this connection automatically: *checked* 



FIGURE 3.6

7. Note the connection icon in the System Tray (lower right corner). The icon should change from having a red "X" (meaning no connection exists) to either a limited connection icon (yellow triangle with exclamation point) or computer only icon (partial connection exists) (Figure 3.6). Open a web browser such as Internet Explorer or FireFox at this time.

Connect to www.fa	u.edu	? <mark>×</mark>			
The server www.fau.edu at FAU Wireless Authentication requires a username and password. Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication					
without a secure con	nection).				
User name:	2	-			
Password:					
	Remember my pass	sword			
	ОК	Cancel			

FIGURE 3.7

8. An FAU Wireless Authentication window (Figure 3.7) should appear. Enter your FAUNetID (username) and your Network Access account password. Click the OK button when done.



9. Once the connection is made, the Network Connections icon in the System Tray will change (Figure 3.8) showing a globe. This means you're connected to the internet. You should see the web site based on the home page configured in your web browser.

### **4** Troubleshooting

We have accumulated a number of tips through experience with older operating systems (particularly Windows XP), technical resources, and testing and evaluation. This section displays tips that have been implemented to successfully establish a client's communication with FAU's wireless network.



1. Open a Command Prompt window. This can be accomplished by clicking on the Command Prompt icon in the Start Menu. Or, you can type CMD in the Start Search box within the Start Menu (Figure 4.1). Hit the Enter key when done.



FIGURE 4.2



FIGURE 4.3

2. At the Command Prompt, type IPCONFIG and press the Enter key. If you successfully obtain an IP Address (beginning with 131.91.xxx.xxx) (Figure 4.2), then you are connected to the FAU network. If not, you will see an IP Address beginning with 169 (169.xxx.xxx), 0 (0.0.0.0), or your system will indicate that there is no network connection (Figure 4.3).

3. Windows Vista has proven to be somewhat clunky with its built-in wireless application. Here are some things you can try to try to obtain an IP Address.

- Restart the computer. Restarting the computer will restart the networking services and applications. Windows Vista has sometimes required multiple restarts to successfully communicate wirelessly to the FAU network.
- **IPCONFIG /RENEW.** At the Command Prompt, type IPCONFIG /RENEW. This does not typically produce positive results in Windows Vista as it has in past Windows operating systems. If it does work, you should see an IP Address (beginning with 131.91.xxx.xxx) almost immediately. If you see a delay, you can safely assume that your IP will not be renewed.
- Enable/Disable, Part 1. You can disable and re-enable wireless communication. Often, this will "trigger" the computer's networking services to get a valid IP Address. Most laptops manufactured around/after 2005 almost always have a built-in wireless chipset that allows the laptop to communicate wirelessly without the need of a wireless adaptor or card. The laptop will usually be built with an on/off wireless switch or button. The laptop's keyboard could also display

wireless functions (such as FUNC-F5) to toggle the laptop's radio on and off.

#### Tasks

View computers and devices Connect to a network Manage wireless networks Set up a connection or network <u>Manage network connections</u> Diagnose and repair

#### FIGURE 4.4



FIGURE 4.5

🤑 Wireless Network Connection 3 Properties					
Networking Sharing					
Connect using:					
Compact Wireless-G USB Network Adapter with SpeedBo					
Configure This connection uses the following items:					
<ul> <li>Client for Microsoft Networks</li> <li>QoS Packet Scheduler</li> <li>File and Printer Sharing for Microsoft Networks</li> <li>Internet Protocol Version 6 (TCP/IPv6)</li> <li>Internet Protocol Version 4 (TCP/IPv4)</li> </ul>					
Install Uninstall Properties					
Description TCP/IP version 6. The latest version of the internet protocol that provides communication across diverse interconnected networks.					
OK Cancel					

FIGURE 4.6

- Enable/Disable, Part 2. All wireless-capable computers (PC or laptops) will allow you to enable/disable wireless services through Windows Network Connections. To achieve this, right-click on the Network Connections icon in the System Tray (lower-right corner; next to the computer clock). Click on Network and Sharing Center. Click on Manage Network Connections (Figure 4.4). That will bring up your Network Connection Properties window (Figure 4.5). Click on Disable. Wait a few seconds, return to this menu, and click on Enable.
- TCP/IPv6. FAU is not currently utilizing TCP/IPv6. By default, this is enabled. We have found that deselecting this may improve your connectivity chances. Right-click on the Network Connections icon in the System Tray (lower-right corner; next to the computer clock). Click on Network and Sharing Center. Click on Manage Network Connections (Figure 4.4). In the dropdown menu, click on Properties (Figure 4.5). Uncheck Internet Protocol Version 6 (TCP/IPv6) (Figure 4.6). We

recommend that you restart the computer after making this change, though it is not required.

Internet Protocol Version 4 (TCP/IPv4)	Prop	erties	;		? 🔀
General Alternate Configuration					
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.					
Obtain an IP address automatical	ly				
OUse the following IP address:					
IP address:					
Subnet mask:					
Default gateway;					
Obtain DNS server address autor	natica	lly			
© Use the following DNS server addresses:					
Preferred DNS server:					
Alternate DNS server:					
				Advar	nced
			ОК		Cancel

FIGURE 4.7

• DHCP. Your computer, especially laptops, must be configured for DHCP to operate on FAU's wireless network. DHCP allows FAU to assign (or lease out) a temporary IP Address. Some people will set up a wireless network at their homes and configure their computers with a Static IP Address.

To set up your computer for DHCP, right-click on the Network Connections icon in the System Tray (lower-right corner; next to the computer clock). Click on Network and Sharing Center. Click on Manage Network Connections (Figure 4.4). In the dropdown menu, click on Properties (Figure 4.5). Double-click on Internet Protocol Version 4 (TCP/IPv4). This will bring up the Internet Protocol Version 4 window (Figure 4.7). If your window looks like the one above, your computer is configured for DHCP.

Internet Protocol Version 4 (TCP/IPv4) P	ropertie	s		? 🗙
General Alternate Configuration				
If this computer is used on more than one network, enter the alternate IP settings below.				
Automatic private IP address				
O User configured				
IP address:				
Subnet mask:	1.1			
Default gateway:				
Preferred DNS server:				
Alternate DNS server:				
Preferred WINS server:				
Alternate WINS server:				
		OK		Cancel

FIGURE 4.8

If you have IP Address listed, then you should copy your settings onto a piece of paper, reconfigure for DHCP (Figure 4.7), click on the Alternate Configuration tab, and apply your configuration settings into Alternate Configuration (Figure 4.8).

- **Firewalls.** Almost all new systems have some security suite installed such as McAfee Security or Norton Internet Security. Try temporarily disabling the firewall to see if your results improve. Please consult with your software's Help files, documentation, or vendor's web site for assistance.
- Google Desktop and Toolbars. We have encountered a couple of cases where, after uninstalling Google Desktop and Google Toolbar, there was a clean wireless connection. By removing these utilities, your web browser reacts faster and tends not to time out when attempting to communicate with a wireless network. In fact, toolbars, in general, will slow down the overall performance of any web browser. Unless you utilize these

miniature applications, it is best to uninstall them. This can be done by going to your Start Menu, Control Panel, and Programs and Features. To uninstall, click once to highlight the application, and click REMOVE.

- Other Network Service Hogs. In the System Tray (lower-right corner; next to the computer clock), you will see icons to actively running services. We have encountered instances where shutting down those extracurricular services can improve (and sometimes correct) your wireless connectivity communications. These notorious services almost always relate to music services, which always look to communicate with external servers. Right-click on these System Tray icons, and choose Close or Exit in the dropdown menu. It is recommended that these services be disabled at start-up.
- Wireless Drivers. Drivers are software applications that allow the operating system and hardware to communicate. A number of software manufacturers have already created updates to their wireless drivers for Vista. Even Microsoft has released a number of software updates to improve communication with various popular wireless hardware components. We recommend that you check for updates through Microsoft and the vendor for your wireless software/hardware.
- Network Access account. This account allows you to access the FAU network and Internet. To determine your username/password pair, please visit <u>http://accounts.fau.edu</u>. If you are still unsure, submit a ticket through the Online Computing Support Center at <u>http://www.fau.edu/helpdesk</u>.
- Wireless Zones. FAU's wireless zones continue to grow and expand. However, hardware and software is not the same from one computer to the next. This can sometimes occur when you are in an area where some computer users can access the wireless network and others cannot. Some computers (especially laptops) will have wireless chipsets built into the motherboards. This means that the wireless radio (including antenna) is inside your laptop case. This, by default, will reduce the transmit/receive signal strength. Others have cards (which have built-in antennas) or external antennas that improve the overall signal strength. If your signal strength is poor to nil, try moving to another wireless zone on campus. Also, try restarting your computer in an effort to restart your networking services.

## 5

### **Personal Assistance**

Information Resource Management (IRM) is committed to helping its students, staff, and faculty members with wireless network connectivity.

#### IRM COMPUTER HELP DESK

Boca Raton Campus Computer Center (Bldg 22), Room 163 Monday to Friday, 8:00 a.m. to 5:00 p.m.

#### FAU OPEN LABS

The technician at the lab can assist you in configuring your laptop, especially outside the hours or location listed above.

For Open Lab locations and hours of operation, please visit <u>http://www.fau.edu/irm/labs/</u>.

#### 24/7 HELPDESK

You may submit a ticket requesting assistance through our Online Computing Support Center at <u>http://www.fau.edu/helpdesk</u>.