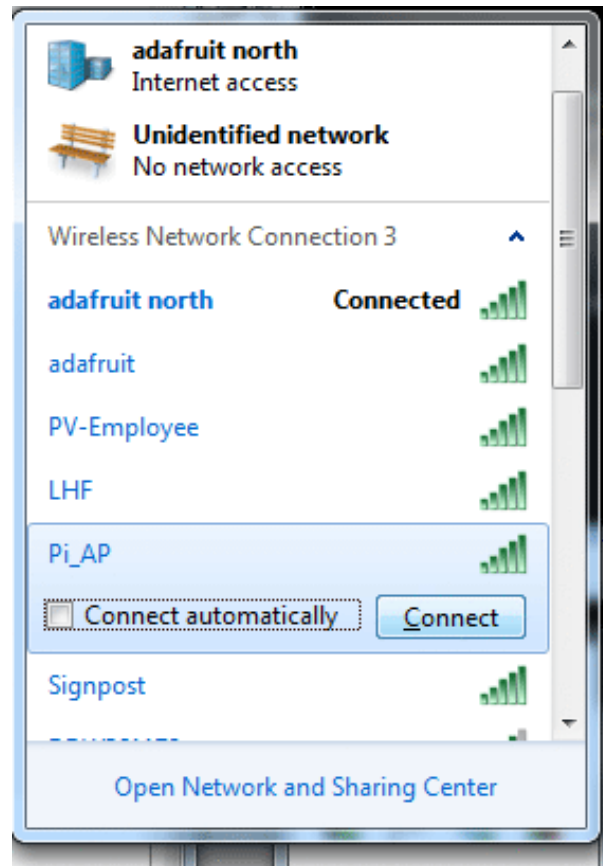


Connect and Test

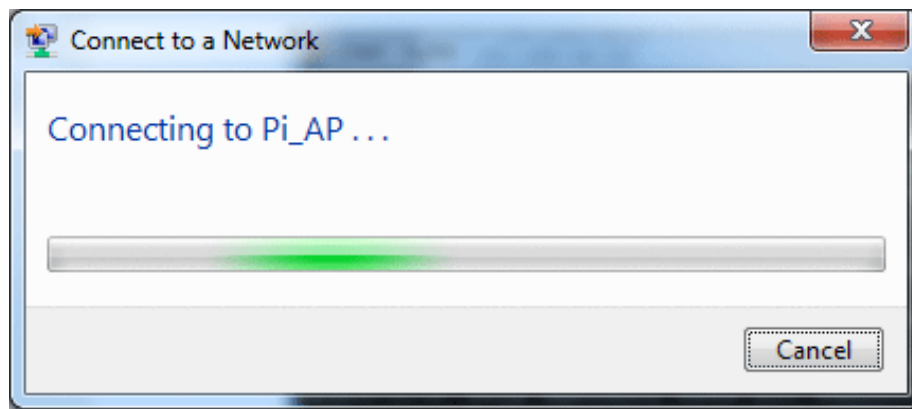
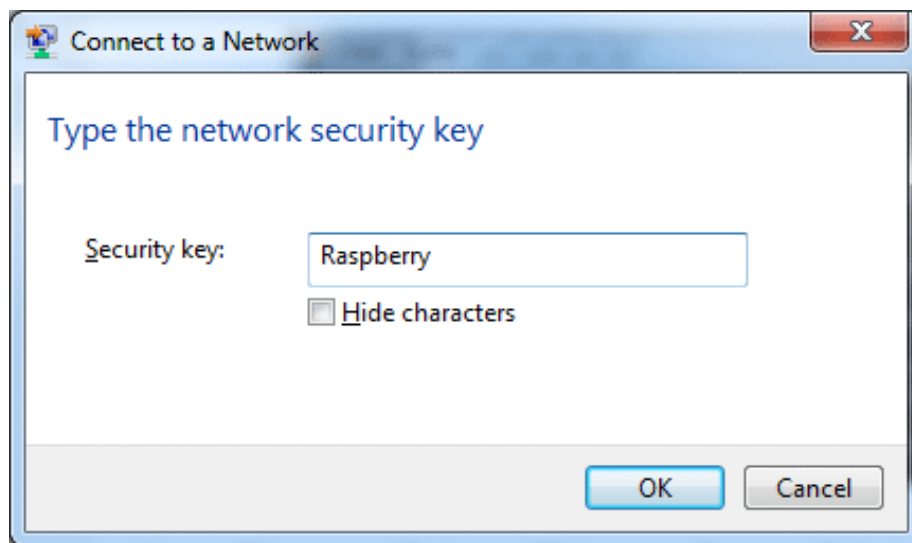
Now that we have the software installed on a Pi, it's time to connect to it and test the connection. I'm using a Windows computer but any kind should work fine

On the Pi, run the command **tail -f /var/log/syslog** to watch the system log data, handy for checking and debugging whats going on!

Connect with another computer to the AP you made in the previous step

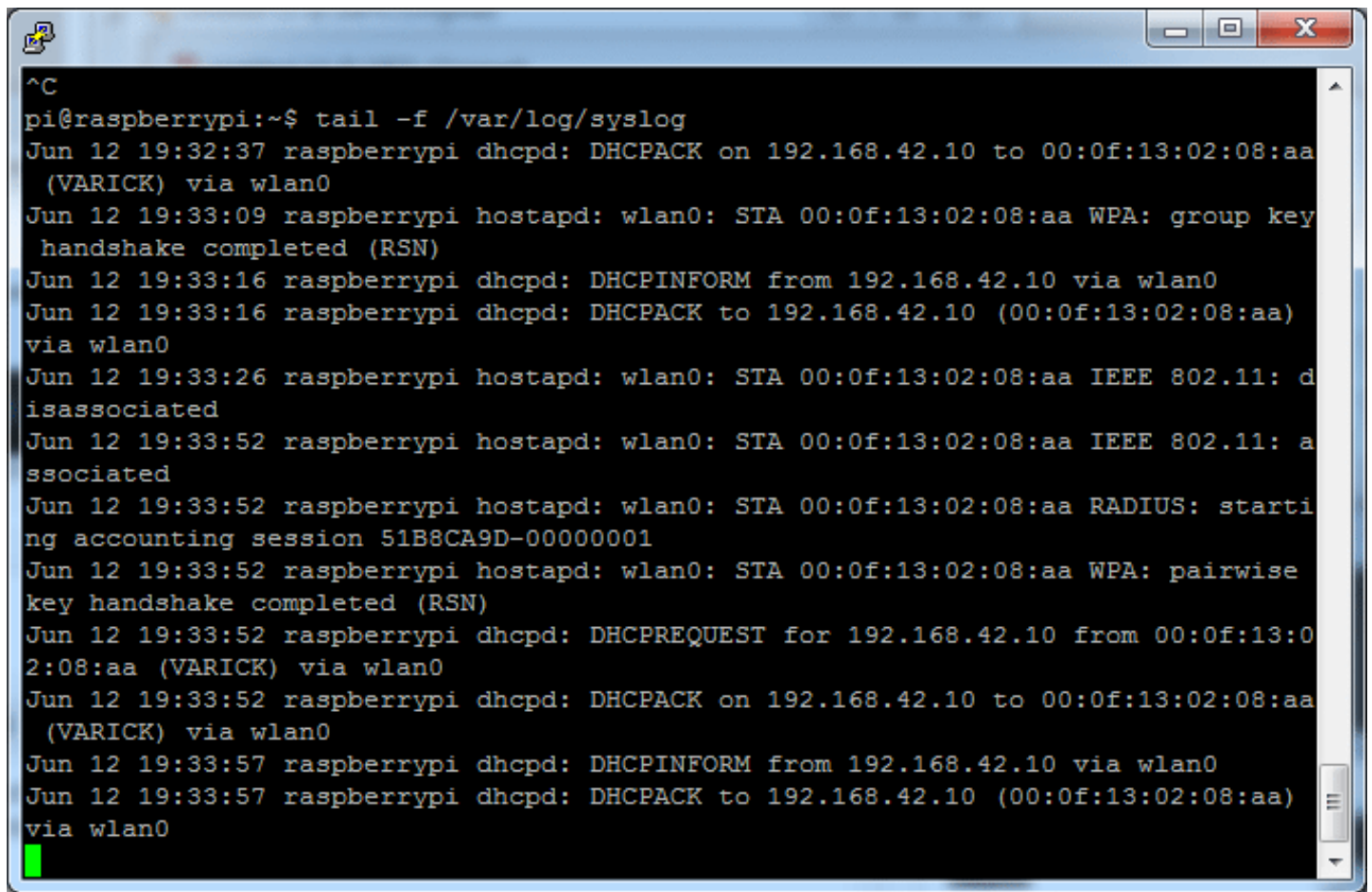


Enter the WPA key you specified in the previous step



In the Pi syslog you should see stuff like this! It indicates that a client connected, at what time and what IP address was given to them

If you can't connect at all, something is wrong with **hostapd**

A terminal window with a blue title bar and standard window controls. The background is black with white text. The text shows a sequence of network events on a Raspberry Pi, including DHCP and WPA handshakes. A green cursor is visible at the bottom left.

```
^C
pi@raspberrypi:~$ tail -f /var/log/syslog
Jun 12 19:32:37 raspberrypi dhcpd: DHCPACK on 192.168.42.10 to 00:0f:13:02:08:aa
(VARICK) via wlan0
Jun 12 19:33:09 raspberrypi hostapd: wlan0: STA 00:0f:13:02:08:aa WPA: group key
handshake completed (RSN)
Jun 12 19:33:16 raspberrypi dhcpd: DHCPINFORM from 192.168.42.10 via wlan0
Jun 12 19:33:16 raspberrypi dhcpd: DHCPACK to 192.168.42.10 (00:0f:13:02:08:aa)
via wlan0
Jun 12 19:33:26 raspberrypi hostapd: wlan0: STA 00:0f:13:02:08:aa IEEE 802.11: d
isassociated
Jun 12 19:33:52 raspberrypi hostapd: wlan0: STA 00:0f:13:02:08:aa IEEE 802.11: a
ssociated
Jun 12 19:33:52 raspberrypi hostapd: wlan0: STA 00:0f:13:02:08:aa RADIUS: starti
ng accounting session 51B8CA9D-00000001
Jun 12 19:33:52 raspberrypi hostapd: wlan0: STA 00:0f:13:02:08:aa WPA: pairwise
key handshake completed (RSN)
Jun 12 19:33:52 raspberrypi dhcpd: DHCPREQUEST for 192.168.42.10 from 00:0f:13:0
2:08:aa (VARICK) via wlan0
Jun 12 19:33:52 raspberrypi dhcpd: DHCPACK on 192.168.42.10 to 00:0f:13:02:08:aa
(VARICK) via wlan0
Jun 12 19:33:57 raspberrypi dhcpd: DHCPINFORM from 192.168.42.10 via wlan0
Jun 12 19:33:57 raspberrypi dhcpd: DHCPACK to 192.168.42.10 (00:0f:13:02:08:aa)
via wlan0
█
```

On your computer, open up a **Terminal** (mac/linux) or **Start->Run->cmd** to open up a command line

First check what **ifconfig** (mac/linux) or **ipconfig** (windows) says. You should have IP address in the 192.168.42.10-50 range

```
C:\Windows\system32\cmd.exe
C:\Users\ladyada>ipconfig

Windows IP Configuration

Wireless LAN adapter Wireless Network Connection 3:

    Connection-specific DNS Suffix  . : local
    Link-local IPv6 Address . . . . . : fe80::e9:e1c:1ef9:7a0b%30
    IPv4 Address. . . . . : 192.168.42.10
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.42.1

Ethernet adapter Local Area Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Ethernet adapter VirtualBox Host-Only Network:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::e91e:be0d:6eb9:b792%21
    IPv4 Address. . . . . : 192.168.56.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . :

Tunnel adapter isatap.{6E34487D-1AB2-46BD-A955-5D6945E39890}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Tunnel adapter isatap.{F52288E5-61A3-464B-92B6-20E0FA8E2152}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Tunnel adapter Teredo Tunneling Pseudo-Interface:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Tunnel adapter isatap.{A76BF87D-040E-4B0B-8099-A50EBA854757}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Tunnel adapter isatap.local:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : local

C:\Users\ladyada>
```

Try pinging the Pi, its address is 192.168.42.1 - on windows it will ping 3 times and quit. On mac/linux press Control-C to quit after a few pings. You should get successful pings as seen below

If that doesn't work, something is wrong with **hostapd** or **dhcpcd**(more likely)

```
C:\Windows\system32\cmd.exe
^C
C:\Users\ladyada>ping 192.168.42.1

Pinging 192.168.42.1 with 32 bytes of data:
Reply from 192.168.42.1: bytes=32 time=29ms TTL=64
Reply from 192.168.42.1: bytes=32 time=49ms TTL=64
Reply from 192.168.42.1: bytes=32 time=11ms TTL=64
Reply from 192.168.42.1: bytes=32 time=317ms TTL=64

Ping statistics for 192.168.42.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 317ms, Average = 101ms

C:\Users\ladyada>_
```

Next try pinging 8.8.8.8, if this doesn't work but the previous does, something is wrong with **dhcpcd** or the NAT configuration (more likely)

```
C:\Windows\system32\cmd.exe
^C
C:\Users\ladyada>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:
Reply from 8.8.8.8: bytes=32 time=167ms TTL=50
Reply from 8.8.8.8: bytes=32 time=142ms TTL=50
Reply from 8.8.8.8: bytes=32 time=327ms TTL=50

Ping statistics for 8.8.8.8:
    Packets: Sent = 3, Received = 3, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 142ms, Maximum = 327ms, Average = 212ms

Control-C
^C
C:\Users\ladyada>_
```

Finally, we'll check that DNS works, try pinging www.mit.edu. If this doesn't work, something is wrong with **dhcpcd**

If everything is good so far, try browsing the internet, sending email, etc. You are now using your Pi as a Wifi Router!

More!

Its possible to set up your router for open or WEP access, but we don't cover that here (and it's not as secure!) [You might want to search around for tutorials such as this one that cover hostapdoptions](#)