# Problems connecting to the wireless network at MIT

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## Overview

Here you can find some common recommendations for resolving wireless connection problems in the MIT residence halls and academic buildings.

## Self-Service Troubleshooting

### Updating Wireless Drivers

This is important especially for computers that have Intel wireless cards. Intel drivers prior to Fall 2009 do not function well with the wireless infrastructure installed at MIT.

If you have a computer running the Windows operating system, please check to see if you have Intel Wireless drivers. This can be found by going to:

- **Control Panel > System > Hardware > Device Manager**
- You can search for Device Manager in the control panel of Windows 7 and 10. In the search box on the taskbar, type Device Manager, then select from the menu.
- If you have an Intel wireless card, please update the drivers by going to http://www.intel.com/support/wireless/wlan/sb/cs-010623.htm
- Other wireless cards should be updated via the Vendors Support / Driver download page.



10/1/2020 Some devices may have wireless drivers that cannot see any 802.11AX (wifi 6) access points, the new wireless platform is 802.11AX. When these tickets come in please work with the users to update their wireless drivers to latest vendor allocated version. Once done they should be able to see & connect to the secure networks.

### Disable power savings mode for the wireless card

Some operating system/computer combinations are capable of throttling the power delivered to a wireless card when it is either not heavily used or when the computer is in sleep mode.  This can cause some connection problems or result is slower connectivity. If you're having trouble with the wireless network, please try to disable this feature.

### Radio hardware and software switches

Each wireless card and computer manufacturer has a different way of disabling the radio or wireless card antenna. If you are receiving very low or no signal strength from the MIT wireless networks please be sure that your radio is on. First look for a hardware switch on your device. Some devices implement a hardware switch using the "Fn" key. Hold down "Fn" and press the key with a radio tower. You should get a message telling you if you have just turned WiFi on or off. Refer your laptop manual for more information.

**Tip:**

- In MAC OS X, you can click the airport icon in your system tray and select **Turn Airport On**.
- With Windows, almost all devices use the Windows utility. Look for the WiFi icon on the right-hand side of the taskbar.

### Setup your preferred networks

Most operating systems allow for an order of priority that wireless networks will be connected to. If you notice that your computer is connecting to a wireless network that is not one of the recommended MIT wireless networks, or if you want to always prefer 5 Ghz connections, you should update the order of your preferred wireless networks: How to remove preferred or saved networks from your wireless settings. If you recently changed your Kerberos password and are having issues connecting to MITnet via wifi, forgetting saved networks may resolve the issue.

## Interference

In addition to active interference caused by other radio waves, wireless network signals can be disrupted by physical obstacles including some types of windows, building materials, furniture, and appliances. Often refrigerators placed in the line of sight or near a wireless device can cause serious degradation of signal. If you are noticing problems connecting to the wireless network, please keep these questions in mind:

- Do you have a cordless phone?
- Can you see or connect to networks not called "MIT"?
- How far away is the nearest access point?
- Are there any large appliances, doors, walls, metal objects or structures between where you work and where the closest access point is?

## Wireless access point antennas

Please **DO NOT** modify the antenna alignment.

The wireless antennas are aligned vertically by the Network Infrastructure group to provide faster connectivity. Modifying the antenna alignment may diminish the effectiveness of the access points. The correct alignment is the two top antennas facing straight up and the two bottom antennas facing straight down.

## Reporting a problem to IS&T

IS&T is committed to resolving problems and concerns that are reported on the wireless network. Since there are many different types of outages on the wireless network, IS&T needs some additional information to help resolve them and determine if there are any trends. Connection issues should be reported to the IS&T Helpdesk by email, phone or by filling out a help request.

### Necessary information when reporting an issue:

- Kerberos username of affected user
- Building and Room number
- MAC address(es), BSSID, SSID (network name)
    - Does the issue occur on multiple devices? For multiple users?
- Detailed description of the symptoms
    - Is it slow, intermittent or does it never work?
    - Does it work well in some places, not others?
    - Is the signal strength high or low?
    - Any other details you can think of
- Date and time that the problem occurred

### How to gather specific information (SSID, BSSID, MAC addresses)

To help IS&T assist could you provide the following information:

Building, room number, and approximate time that you attempted to connect the device to MIT wireless network.

What “network”/ SSID did you attempt to connect the device to?  (e.g. MIT Guest, MIT, MIT Secure)

It is important that you  provide the MAC address for the affected device.

To find your device's MAC address:

On Apple : To Find the MAC Address:
Open the Apple Menu -> System Preference -> Network -> Wi-Fi -> Advanced -> The MAC address is the Wi-Fi Address or Airport Address. ( On the Hardware tab.)

If Windows : Right-click on the Start button and select Command Prompt from the menu.
Type in "ipconfig /all" and press Enter. Your network configurations will display.
Scroll down to your network adapter and look for the values next to "Physical Address," which is your MAC address.

If Linux: As the root user (or user with appropriate permissions)  : Type "ifconfig -a” -> From the displayed information, find eth0 (this is the default first Ethernet adapter) -> Locate the number next to the HWaddr. This is your MAC address.

We look forward to assisting.

## See Also:

The Wireless Networks at MIT
How to connect to the MIT SECURE wireless network
Eduroam Landing Page
The MIT GUEST wireless network
Wireless RADIUS Server Certificate Fingerprints
Troubleshooting and reporting problems on the MIT wireless network
List of devices that can or can't connect to MIT SECURE