# Contents

Introduction to the MSBTC Tech Team ........................................................................................................... 4

Tech Center Basics ........................................................................................................................................ 4

Tech Procedures ........................................................................................................................................... 4

Day to Day Procedures ............................................................................................................................... 4

Opening Procedures .................................................................................................................................. 4

Closing Procedures ...................................................................................................................................... 5

Different Software ....................................................................................................................................... 5

Cashier ......................................................................................................................................................... 5

EMS ............................................................................................................................................................ 5

Console One ............................................................................................................................................... 5

Wireless and Networks .............................................................................................................................. 5

How the Internet Works ............................................................................................................................. 5

Overview of SaxaNet and GuestNet .......................................................................................................... 5

SaxaNet Installation .................................................................................................................................. 6

Windows 7 / Vista ....................................................................................................................................... 6

Windows 8 .................................................................................................................................................. 9

Mac OSX .................................................................................................................................................... 9

iOS .............................................................................................................................................................. 10

Android ..................................................................................................................................................... 10

Troubleshooting for Wireless .................................................................................................................... 10

Windows .................................................................................................................................................... 11

Computer Management ............................................................................................................................ 17

Event Viewer ............................................................................................................................................ 18

Device Manager ......................................................................................................................................... 19

Disk Management ...................................................................................................................................... 20

Services ..................................................................................................................................................... 22

Malware ....................................................................................................................................................... 22

Viruses ....................................................................................................................................................... 22

Symptoms .................................................................................................................................................. 23

Spyware ...................................................................................................................................................... 23

Symptoms .................................................................................................................................................. 23

Rootkits ....................................................................................................................................................... 23
Mobile devices

Printing

Malware Procedures and Troubleshooting

Preventative Measures

Windows Firewall

Windows Update

Anti-Virus Software

Different Options for Day-to-Day Scanners

Microsoft Security Essentials (Windows 7), Windows Defender (Windows 8)

Spybot Search and Destroy

Malware Procedures

CCleaner

Malwarebytes Anti-Malware

Hitman Pro

Combofix

Viruses on Macs

Printing

Installation on PC

Installation on Mac OS

Printing Troubleshooting

Command Prompt

Mobile devices

Wireless

Setting up Georgetown email account

iPhone

Android

1. Open the Accounts & sync Settings screen on your device. You can do this in Contacts by pressing Menu and pressing Accounts, or directly in the Settings application.

Blackberry

NetStorage
Introduction to the MSBTC Tech Team

Tech Center Basics

Tech Procedures
In most cases, we can immediately help with simple problems, such as wireless problems or printer setup. However, if the issue is a bit more complicated, then there’s a certain set of procedures that are followed.

1. Check that they’re an MSB Student
2. Have them fill out a Tech Form
   a. Very important!
3. Explain the Liability Waiver
4. Sign Liability Waiver
5. Ask questions, Diagnose the problem
   a. Try yourself
   b. Ask coworkers around you
   c. Google!
   d. Ask FTS
   e. Call Manager
6. Explain what you’re doing
7. Relay info to coworkers

Day to Day Procedures

Opening Procedures
1. Make sure the front door is unlocked
2. Turn on the front desk computer
3. Bring the gate for the front desk up
4. Move the rolling chairs outside
5. Unlock the tech breakout rooms
6. Print out the room cards for the breakout rooms using EMS
7. Turn on the two giant monitors by the printer
Closing Procedures
1. Turn off all computers and monitors
2. Move the rolling chairs back into the tech center
3. Bring down the front desk gate
4. Lock the tech breakout rooms
5. Make sure everything is clean for the opening shift people the next day

Different Software

Cashier
Cashier is what we use to add money to a student’s printing account. If a student wants to add prints (it is $0.05 per page) to his/her account, open the cashier program, input the password and then simply put in their NetID and how much money they deposited.

EMS
EMS is used for looking at room reservations and printing out room cards.

Console One
Console One is used to reset passwords and unlock accounts. In addition, Console One can also be used to determine whether or not a student has an account with the business school.

Wireless and Networks

How the Internet Works
The process through which a computer connects to the internet is not too terribly complicated.

1. The PC connects to an internet service provider (ISP)
   a. ISP is NOT the same as a browser. An ISP is the company that provides the internet – for example, Verizon or Time Warner Cable. A browser is what program you use to view the internet – for example, Internet Explorer or Firefox
2. The ISP locates the website requested across the internet
   a. ISP uses the URL (website name) to locate the computer it resides on (webserver)
   b. Creates a pipeline between your PC and the server
3. Computer communicates with the web server
4. Connection is made and webpage is displayed

Overview of SaxaNet and GuestNet
SaxaNet is the wireless network for students. In order to access SaxaNet, the user must have a valid Georgetown NetID and password. SaxaNet is needed in order to print.

GuestNet is the unsecured wireless network for students and guests. In order to access GuestNet, the user simply needs to connect to the wireless network. In terms of speed, Guestnet and Saxanet are nearly identical. However, Guestnet DOES NOT allow printing. Most printing issues arise from not being connected to Saxanet.
Since Guestnet is an unsecured network, any traffic sent over this network is unencrypted and can be subject to interception. We strongly suggest avoiding the use of GuestNet for sensitive network sessions such as online banking.

**SaxaNet Installation**

**Windows 7 / Vista**

1. Open network icon on the taskbar and connect to “GU_WiFi_Setup”

2. After a connection is established, open a web browser and type in any address (it should automatically redirect to the setup page)
3. Click on the link labeled “SaxaNet”
4. The next page will require the user to type in a valid NetID and Password
5. Accept the terms and click the green “start” button

6. If a prompt appears, click “Accept” or “Run”

7. If the installer does not run automatically, choose the operating system from the list
8. When you run the installer, it will first prompt for a NetID and password
9. If any prompts come up for driver installs or anything else, click “Accept” or “Allow”

10. If everything worked, it should say “Successfully connected”
**Windows 8**
For users who have Windows 8, they do not have to go through the whole setup process. To connect to Saxanet, a Windows 8 user simply selects the network in the list and then, when the system prompts for a username, enter in their NetID and UIS password.

![Windows 8 Setup Process](image)

**Mac OSX**
1. Click the “Wireless” icon on the top right of the taskbar and connect to “SaxaNet”
2. Username is the user’s NetID and the password is the UIS password

Note: If the “SaxaNet” name does not show up you will have to add it manually.

1. Click the “Wireless” icon the top right of the taskbar and select “Join Other Network…”
2. Fill out the options exactly like the picture shows.
3. Important things to note are:
   a. Network name is SaxaNet
   b. Security is WPA2 Enterprise
   c. Username is the NetID
   d. Password is the UIS Password

4. After filling in everything correctly, click “join” and it should connect

**iOS**

1. Open the “Settings” application
2. Select “Wi-Fi”
3. Select SaxaNet
4. When prompted, enter login credentials
5. If asked, accept the certificate
6. Success! Your device should automatically connect to SaxaNet from now on

   NOTE: iOS sometimes refuses to connect to SaxaNet even when the entered information is correct. You might have to repeat the process a few times for the iOS device to connect.

**Android**

1. Open the “Settings” app
2. Select “Wireless & Networks”
3. Select “Wi-Fi Settings”
4. Under “Wi-Fi Networks”, select “SaxaNet”
5. Enter your login credentials
6. Success! Your device should automatically connect to SaxaNet from now on

**Troubleshooting for Wireless**

Wireless issues can result from a variety of problems. When troubleshooting wireless, the processes are a bit different for Macs and Windows computers.
Windows
There are many different things you can check if wireless is not working.

1. Check wireless switch
   a. Physical
   b. Keyboard combination
2. Check SaxaNet settings
   a. Go through GU_WiFi_Setup again
   b. Make sure you are using Window’s built-in wireless manager
3. Check devices in Network and Sharing Center, and make sure they are active
   a. Network and Sharing center can be accessed through the wireless icon in the Windows taskbar
4. Restart services
5. Check Drivers
6. Ping

Wireless Switch
There are two kinds of wireless switches – a physical kind and one that is associated with a keyboard combination. In many laptops, the physical switch is located along the side of the laptop and is usually located next to the wireless icon.

Check to ensure that the switch is set to the “on” position. Some laptops don’t have a physical switch, but instead a keyboard combination. This is usually a function (Fn) key plus a function key. For example, on most ThinkPads the combination is Fn + F5.

Check SaxaNet settings
First, the user should go through the GU_WiFi_Setup process again (there’s a section in this manual that goes over this). If that doesn’t work, then SaxaNet settings can be checked by going to the wireless network and right clicking and selecting “Properties”.

11
You want to make sure that the settings looks like the following screenshot:

If these settings are correct, then you can right click on the network and select “Status” instead. It will bring you to the first screen shown below. By clicking “Properties”, it will bring you to the second screen shown below. Finally, by going to the item labeled “Internet Protocol Version 4 (TCP/IPv4)” and clicking Properties, you can get to the third screen shown below. This is where the IP address is assigned. You want to make sure that the IP address is obtained automatically and that the DNS server address is obtained automatically.
Check devices in Network and Sharing Center

Network and Sharing center can be accessed through the wireless icon or through the control panel.

By clicking "Change adapter settings" on the left, you can access the settings for both wired and wireless adapters. You will come to the screen below.
Here, you can see that my wireless network connection for my wireless card, the Intel Centrino, is working. If it were disabled, it could be re-enabled by right clicking and selecting "enable". At the same time, you can also see that the Local Area Connection says Network Cable Unplugged (top right) since I do not have an ethernet cable plugged in.

**Restart services**
Sometimes a service that Windows needs to connect to the internet isn't started. To fix this, you can open up computer management (Windows Key + R, then type in compmgmt.msc) and select "Services" on the left hand side.
For Windows 7, it is imperative that the service “WLAN AutoConfig” is started. If it is not started, it can be started by right-clicking on the service and selecting “Start”. Additionally, if you right click and select Properties, you can set it to start automatically.

**Check Drivers**

It is also important to make sure that the drivers for the wireless card are working. Drivers can also be accessed through computer management, and then clicking on “Device Manager” on the left. Through this interface, look for the Network Adapters, find the wireless card and make sure that the driver is working. If the wireless card is missing or there’s a yellow exclamation mark by the icon, that means that the driver is not working, and you will most likely have to download the driver on another computer and manually move it and install it to the customer’s computer.
Ping and Traceroute

Pinging is just a way to see if a website is responding. If, for example, a computer wasn’t able to go to technology.msb.edu, and the pinging said that there was no response, that either means one of two things:

1. The wireless is not working
2. The website itself is down

Pinging google.com is always a safe bet, since that website is up almost all of the time. You can ping a website by opening up command prompt and typing in the command:

ping www.website.com

If everything goes well, the result should be like the screenshot below.
Traceroute operates similarly, but is slightly more sophisticated in that it lays out the Internet pathway between your computer and the address you specify, measured in “hops” from device to device.

In this way, you can diagnose for yourself where the connectivity issue lies. If your computer can’t reach any other device (0 hops), then the problem lies on your end. Otherwise, if you can reach the DNS (domain name server) but can’t go any further, then the connectivity issue is likely affecting all the customers that DNS serves. If this is the case, time to notify a higher-up if they don’t already know.

Open up command prompt and type in the command:

tracert www.website.com

The following is a successful traceroute output when attempting to reach neoseeker.com:

**Computer Management**

You can access computer management by pressing Windows + R to open the run menu and typing in compmgmt.msc. There are many things you can do in the Computer Management window, and the different options are listed to the left. Event Viewer is an especially important section of computer management since it provides an easy way to diagnose computer problems.
Event Viewer is a great way to diagnose errors. For example, if a computer keeps randomly shutting down, it will create error reports in Computer Management. You can then click on these error reports and see the specific error code behind the shutdown, which you can then look up on Google to diagnose the cause.
Like the example screenshot above shows, there were many critical errors that resulted from the system rebooting without shutting down first. Many times, the description under the “General” tab will tell you what the cause of the problem is and potential solutions.

**Device Manager**
Device manager is a way to see every device connected to your computer, whether it’s a new hard drive or a webcam. Device Manager is used to install drivers for unrecognized devices.
In the screenshot above, it shows that the drivers for my video card, a Nvidia 4200M, are working properly. By right clicking and selecting “properties” for a device, there are many options you can choose from, from installing a new driver to rolling back to the previous versions of the driver. In many cases, if a person plugs in a new peripheral device, the driver installs automatically. If it doesn't, you can use the “Device Manager” section of Computer Management to manually install the driver.

**Disk Management**
Disk Management is used to look at the status of the hard drives on a computer. It can also be used to look at the health of the hard drives.
Disk Management shows the hard drives connected to your computer and the partitions on them. In most cases, you won’t be using disk management much, but if a user wants to partition their hard drive on a Windows computer (for dual booting Windows and Linux, for example), the disk can be partitioned through Disk Management by right-clicking on the disk and selecting “Extend” or “Shrink” volume as needed.
The Services section shows which services are currently running on the computer. If there’s an error about a service not running, for example Print Spooler, it can be enabled or restarted from this section. In many troubleshooting solutions, the Services section is used to disable a faulty service. From this window, you can also choose whether or not a service starts up automatically or manually.

**Malware**

Malware is malicious software that is designed to damage, disrupt, and gain unauthorized access to system resources, among other abusive behaviors. Some malware takes control of computers and sends spam email – others steal passwords for email accounts and other sensitive information like credit cards or social security numbers. There are many symptoms of malware, and the list below is by no means completely inclusive.

**Viruses**

A computer virus is a type of malware that propagates by inserting a copy of itself into and becoming a part of another program. It spreads from computer to computer, leaving infections along the way. Almost all viruses are attached to an executable file (.exe extension), which means the virus may exist on a system but not be active or able to spread until the user runs or opens the malicious host file or program. Viruses spread when the software or document they are attached to is transferred from one computer to another using a network, a disk, file sharing, or infected email attachments.
Symptoms
- Computer freezes consistently
- Files and folders seem to disappear or will not open
- Windows does not start even though you have not made any system changes or you have not installed or removed any program
- Computer starts occasionally. However, at times, the computer stops responding before the desktop icons and the taskbar appear
- Computer runs very slowly, and the computer takes longer than usual to start
- Windows spontaneously restarts unexpectedly
- Programs that used to run stop responding frequently even after you remove and reinstall the programs
- You cannot start Windows Task Manager
- Unusual messages or displays on screen

Spyware
Spyware is software that installs itself on a computer in order to collect small pieces of information about users without their knowledge. Spyware can monitor or even take control over the computer. It can collect personal information such as internet surfing habits or change settings and install other software.

Symptoms
- Default or start-up homepage is changed without permission of the user
- Webpages get directed to strange sites when searches are performed
- There are excessive pop-ups that appear from nowhere that cannot be stopped
- There are strange icons and new shortcuts lurking in your taskbar
- There are an unusual amount of new favorites not made by the use
- There are lots of bounced back emails or there is evidence of emails being sent without your knowledge
- The browser is noticeably slower than normal

Rootkits
A rootkit is software that enables continued privileged access to a computer while actively hiding its presence from administrators. It seizes control over the operating systems and allows the attacker to act as administrators.

Symptoms
- Frequent OS crashes on systems that have usually been reliable
- Antivirus software automatically disables itself
- Standard security tools can’t find any malware. This is due to the fact that rootkits run in stealth mode with files hidden from view but still operating.

Worms
A worm is software that replicates functional copies of itself and can cause the same type of damages as viruses. In contrast to viruses, worms are standalone software that does not require a host program or human intervention to propagate. To spread, worms either exploit a vulnerable area in the target system or use some kind of social engineering to trick users into executing them. The worm then enters through the vulnerability in the system, and takes advantage of file-transport or information-transport features on the system, allowing it to travel unassisted.
Symptoms
- Account lockout policies being reset automatically
- Certain Microsoft Windows services such as Automatic Updates, Windows Defender, and Windows Error Reporting disabled.
- Websites related to antivirus software or Windows Update service becoming inaccessible.
- User accounts locked out

Trojans
A Trojan is a piece of software that infiltrates the system by disguising itself as legitimate material. Users are typically tricked into loading and executing it on their systems much like the tactic the Greeks used to infiltrate Troy. After the Trojans are activated, they can achieve a number of attacks on the host ranging from irritating the user by popping up windows or changing desktops to damaging the host by deleting files, stealing data, or activating and spreading other malware. Trojans are also known to create back door to give malicious users access to the system.

Symptoms:
- Usual messages appear that encourage the user to purchase a fake antivirus program (A quick Google search will show whether or not the antivirus program is legitimate)
- Computer screen flips upside down or inverts without user instruction
- Wallpaper or background settings change by themselves
- Documents or messages print on your printer by themselves
- Windows color settings change by themselves
- Screen saver settings change by themselves
- Mouse pointer disappears
- Mouse moves by itself or starts leaving trails
- Windows Start button disappears
- Computer starts reading the contents of your computer clipboard
- Task bar disappears

Ransomeware
Ransomware is a type of malware that restricts access to the infected computer system and demands a ransom paid to the creator of the malware in order for the restriction to be removed.
Most ransomware makes messages similar to the one shown above. The messages threaten the user with legal action, and usually includes an official seal, such as an FBI logo, or some other government agency.

**Malware Procedures and Troubleshooting**
The majority of malware procedures in this section is for computers that are running Windows. While many people like to believe that Apple computers are immune to infection, that’s simply not true. It is true that there are far fewer viruses written for Apple computers than there are written for Windows computers though, and this is largely related to the massive share of the PC market that Windows computers have. It is important to note that there have been recent Trojans that were written specifically for Mac OS X. There are still some procedures you can take to reduce the risk of viruses on Apple computers, which will be explained in a future section.

**Preventative Measures**
The best way to deal with malware is to prevent it from occurring in the first place. There are many ways you can take preventive measures against Malware.

**Windows Firewall**
Ensure that Windows Firewall is working and enabled. You can do this through control panel under the “System and Security” category.
Adjust your computer’s settings

System and Security
- Review your computer's status
- Back up your computer
- Find and fix problems

User Accounts and Family Safety
- Add or remove user accounts
- Set up parental controls for any user

Network and Internet
- View network status and tasks
- Choose homegroup and sharing options

Appearance and Personalization
- Change the theme
- Change desktop background
- Adjust screen resolution

Hardware and Sound
- View devices and printers
- Add a device
- Connect to a projector
- Adjust commonly used mobility settings

Clock, Language, and Region
- Change keyboards or other input methods

Ease of Access
- Let Windows suggest settings
- Optimize visual display

Programs
- Uninstall a program
Windows Update
Malware typically relies on software exploits to install themselves on to machines. By keeping a computer regularly updated, security vulnerabilities can be fixed. Windows update is available through the control panel under the System and Security category.

Anti-Virus Software
Having an anti-virus system on your computer is extremely useful. Anti-virus programs typically offer real-time protection, which means the software will automatically detect harmful files if they are downloaded or installed.
Different Options for Day-to-Day Scanners

Microsoft Security Essentials (Windows 7), Windows Defender (Windows 8)

Microsoft Security Essentials and Windows Defender are the recommended anti-virus programs for Windows 7 and 8, respectively. MSE will not work on Windows 8 – instead, Windows Defender is the preferred anti-virus program.


Spybot Search and Destroy

Spybot Search and Destroy is another option for a regular scanner. It can be downloaded here:

http://www.safer-networking.org/

Malware Procedures
If you believe a computer is infected with Malware, you should restart the computer in safe mode and run the following programs in the order that they are listed.

1. CCleaner
2. Malwarebytes’ Anti-Malware
3. Hitman Pro
4. Combofix (Combofix is a LAST RESTORT method – ask a manager for permission before proceeding)

CCleaner
CCleaner finds and removes all temporary files in the machine – if a computer is running slowly and you suspect malware, first use CCleaner to clear all temp files. Chances are that the user hasn’t turned off his computer in a while, thereby preventing the temp folders from naturally clearing themselves.

There is additionally a chance that the malware in question was actually in the temp folder. In any case, run CCleaner, and follow up with Malwarebytes regardless of the computer’s functionality post-restart.
Malwarebytes Anti-Malware

Malwarebytes is the first program you should use to scan for viruses. It can be downloaded at:

http://www.malwarebytes.org/

Malwarebytes’ Anti-Malware is pretty straight-forward and easy to use. Click “Perform full scan” at the start screen and just follow the directions on the software. If Malwarebytes does not solve the problem, then use the program called “Hitman Pro”.

Hitman Pro
Hitman Pro can be downloaded at:

http://www.surfright.nl/en/hitmanpro/

Hitman Pro is what’s known as a “second option scanner”. Essentially, you want to use Hitman Pro if Malwarebytes isn’t able to solve the problem. This software is pretty easy to use too – if it gives the option to either install or just run, select the just run option. Follow the instructions on the screen.
**Combofix**

**Combofix is a last resort software.** Combofix will actually modify the registry and carries a chance of actually breaking the operating system. Therefore, only use this if Hitman Pro did not fix the issue, and ask a manager for permission before using Combofix.
Only run in safe mode

Here are the instructions: http://www.bleepingcomputer.com/combofix/how-to-use-combofix

**Viruses on Macs**
Viruses on Macs are rare, although they do happen. The best way to remain protected on a Mac is to download a free anti-virus software package called “Sophos Anti-Virus”, which is free for home personal use and can be found at the following link:


**Printing**

**Installation on PC**
Printing installation on a PC is relatively straightforward. As of now, printing works on Windows 7 and Windows 8.

Here are the steps:

1. Confirm computer is on SaxaNet
2. Visit this website:

http://print1.msb.edu/ipp

3. Click on the “Install iPrint Client” (circled in blue) towards the top
4. After the installer completes, close the browser completely
5. Open the browser again, and go to the website in step 2
6. Now click on “MSB Follow-You 7775” (circled in red)
7. The website will ask for NetID and password (note: this is the MSB password, separate from the password you use to log into blackboard and email!) when prompted
8. Confirm that printer is installed
   a. On Windows 7, go to Start Menu, then click on Devices and Printers and confirm that MSB Follow-You 7775 is on the list
   b. For Windows 8, open the search menu on the right and search “Devices and Printers”, then click on it and confirm that MSB Follow-You 7775 is shown
9. If the user desires, the printer can be set to the default by right clicking the printer in the Devices and Printers window and selecting “Set as default printer”
Installation on Mac OS

Printer installation on Mac OS is slightly more complicated. First, it is important to figure out what edition of Mac OS the user has. This can be accomplished by going to the top left Apple icon, clicking it and navigating to “About this Mac”.

If the OS is 10.6 or below:

1. Locate one of the black and orange flash drives that have printer drivers on them (ask a veteran staff where they are located)
2. Navigate to the folder “OSX Snow Leopard and below”.
3. Run the iPrint installation file as normal (should be named iprint506.dmg)
   a. Note: the iPrint installation file can also be found at this website: http://download.novell.com/Download?buildid=7DfQg_JXc3k~
4. After the iPrint installation is finished, run the Xerox driver install
   a. Xerox driver install is located on the black flash drive
   b. Xerox can also be found at: http://technology.msb.edu/7775mac.zip
      Only use the Xerox installation file from this zip file – NOT the iPrint installer!
5. After the driver is finished installing, confirm that computer is on SaxaNet
6. Open Firefox
   a. If customer does not have Firefox, Safari might work. If Safari does not work with the rest of the instructions, then try with Firefox
7. Navigate to this website: http://print1.msb.edu/ipp
8. Install the printer driver (circled in red, refer to the first screen shot)
9. Enter the customer’s NetID and MSB password (different from Blackboard password!) when prompted

If the OS is 10.7 or higher:

1. Confirm computer is on SaxaNet
2. Navigate to this website:
   http://technology.msb.edu/7775mac.zip
3. Open the downloaded file, 7775mac.zip
4. Install the iPrint client first
5. Install the Xerox drivers
6. After the driver is finished installing, confirm that computer is on SaxaNet
7. Open Firefox
   a. If customer does not have Firefox, Safari might work. If Safari does not work with the rest of the instructions, then try with Firefox
8. Navigate to this website:
   http://print1.msb.edu/ipp
9. Install the printer driver (circled in red, refer to the first screenshot)
10. Enter the customer’s NetID and MSB password (different from Blackboard password!) when prompted

To check if the printer is installed, go to the Apple logo on the top left, select “system preferences”, then click on “Printers”. If the printer was successfully installed, it should show up on the list. If it does not show up, that means it was not successfully installed.

**Printing Troubleshooting**
The most common issue when printing does not work is that the user is not connected to SaxaNet. Confirm this before anything else!

There are a few messages that can pop up. If the message says “Document was canceled”, that means the document successfully went through. If the message says “Document failed to print”, then there is something wrong with the computer.

Another issue that was more common earlier was that the driver for the old computer was installed. This can be fixed by simply going to control panel and deleting the old printer driver, and making sure the driver for the 7775 printer was there. Refer to the second screenshot.

On a mac computer, go to system preferences and select “Printers” (refer to the third screenshot) and make sure the 7775 printer is installed. If there is an old version of the printer, you can just click on the printer and click the “minus” button to delete it.

If all else fails, uninstalling and reinstalling the printer drivers should work in most cases.

A final step you can take is to ping the printing server. You would do this by opening a command prompt and typing in:

    ping print.msb.edu

If it says server not responding (and you are for sure connected to SaxaNet), that means the print server is down and you should contact the MSBTC.

**Command Prompt**
Command prompt is a way to make changes to files or folders by using Window’s built in command line program. You probably won’t use this method much, but it is still important to understand the basics and how it works, as well as a few specific commands. You can open command prompt by searching “cmd.exe” in the start menu then right clicking and selecting “Run as Administrator”, or by pressing the Windows Key + R and then typing in cmd.
The way that command prompt works is that you type in commands into the prompt window and it will run them.

Here are a few general tips, followed by some useful commands.

- File path – an address. Example: “C:\Users\David\Desktop\David Test”
- Directory – a folder.
- Always include extensions in cmd
- Put quotes around names with more than one word
- User tab to navigate the directories
  - To go back in tabbing: shift+tab

Useful commands:

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>help</td>
<td>Lists all commands built into the command prompt</td>
<td>cd /? (tells you what options you have with cd)</td>
</tr>
<tr>
<td>cd</td>
<td>Changes directories</td>
<td>cd directoryname</td>
</tr>
<tr>
<td>dir</td>
<td>Lists the files and directories contained in your current</td>
<td>dir</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
<td>Example</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>mkdir</td>
<td>Makes a new folder</td>
<td><code>mkdir &quot;Folder A&quot;</code></td>
</tr>
<tr>
<td>rmdir</td>
<td>Removes a directory</td>
<td><code>rmdir &quot;Folder A&quot;</code></td>
</tr>
<tr>
<td>ren</td>
<td>Rename</td>
<td><code>ren &quot;Folder A&quot; &quot;Folder B&quot;</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ren &quot;Doc 1.txt&quot; &quot;Doc 2.txt&quot;</code></td>
</tr>
<tr>
<td>del</td>
<td>Deletes a file</td>
<td><code>del &quot;Doc 2.txt&quot;</code></td>
</tr>
<tr>
<td>xcopy /i</td>
<td>Copies a directory and its contents from one location to another</td>
<td><code>xcopy &quot;Folder A&quot; c:\Users\Camilla\Desktop\Camilla Test\Folder B /s /i</code></td>
</tr>
<tr>
<td>type</td>
<td>Displays the contents of a text file</td>
<td><code>type</code></td>
</tr>
<tr>
<td>exit</td>
<td>Closes command prompt</td>
<td><code>exit</code></td>
</tr>
<tr>
<td>ipconfig</td>
<td>Views IP configurations</td>
<td><code>ipconfig /release</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ipconfig /renew</code></td>
</tr>
</tbody>
</table>

**Mobile devices**

**Wireless**

For smartphones, connecting to SaxaNet is not especially difficult. A person just has to connect to the network “SaxaNet” and a prompt should come up asking for a username or password – this is simply the user’s NetID and UIS password. If this does not work, the user can also connect to “GU_WiFi_Setup” and go through the same process as one would go through when connecting a computer.

To select a wireless network on an iPhone or Android, usually going to the “Settings” app and then clicking on “WiFi” should work.

**Setting up Georgetown email account**

Since Georgetown is now using Google apps, setting up a Georgetown email address is pretty simple. Official instructions can be found by going to [http://apps.georgetown.edu](http://apps.georgetown.edu) and clicking on the “Mobile” think.
The preferred method is to set up the account as an Exchange account. Here are the steps.

1. Open the Settings application on your device's home screen.
2. Open Mail, Contacts, Calendars.
3. Press Add Account....
4. Select Microsoft Exchange
5. In the Email field, enter your full Georgetown email address (i.e. netid@georgetown.edu)
6. Leave the Domain field blank.
7. Enter your full Georgetown email address as the Username.
8. Enter your NetID password as the Password.
9. Tap Next at the top of your screen.
10. When the new Server field appears, enter m.google.com.
11. Press Next at the top of your screen again. If you have provided the correct password, checkmarks will appear to the right of all fields
12. For the services that you wish to access through your iPhone, move the slider (next to the name of the service) to the 'On' position
   a. For Calendar: if you have a calendar stored only your iPhone, then select to 'Keep [Calendar] on My iPhone' when prompted
b. For Contacts: if you have Contacts stored only on your iPhone, then select to 'Keep [Contacts] on My iPhone' when prompted

**Android**

1. Open the Accounts & sync Settings screen on your device. You can do this in Contacts by pressing Menu and pressing Accounts, or directly in the Settings application.
2. The Accounts & sync settings screen displays your current sync settings and a list of your current accounts.
   
   ![Android Accounts & sync Settings](image)

3. Touch Add account.
4. Touch Google to add your Google Apps account.
5. Touch Sign in when prompted for your Google Account.
6. Enter your full Google Apps email address as your username, and then enter your password.
7. Select which services you’d like to sync

**Blackberry**

1. On your BlackBerry device, navigate to your home screen.
2. Select the icon that lets you set up email (this can be called Setup, Setup Wizard, Email Setup, BlackBerry Set-up, E-mail settings, or Personal Email Set-up).
3. Select 'Setup Internet Email Account'.
4. For the type of account, select 'Other'.
5. Provide your email address and password and press 'Continue'.
6. You will encounter a error stating 'We were unable to configure...'. Press 'OK'.
7. Select 'I will provide the settings' (located beneath the password field) to continue setup.
8. Provide the following information:
   1. Type: POP/IMAP
   2. Email Address: *(Enter your entire Georgetown email address, not just your NetID).*
   3. Email Server: imap.gmail.com
   4. Username: *(Enter your entire Georgetown email address as your username, not just your NetID.)*
**Note:** When setting up the new account and your password is rejected, look for a link that will allow you to manually configure settings. This is where you can provide the correct server, username, and password.

If the setup is successful, you should receive a confirmation message and a new mailbox icon should appear on your device's home screen, labeled with your GU email address.

**NetStorage**

NetStorage is an online resource for the MSB where students can download software and other things for classes. There is a link for NetStorage near the top of the MSB Technology Center website ([http://technology.msb.edu](http://technology.msb.edu)) or by going to the website directly:

[https://storage.msb.edu/NetStorage/](https://storage.msb.edu/NetStorage/)

The site will prompt for a username and password. This is the Novel password – different from UIS password! This is the same password that is used for printing.

On the left hand side, there will be a file directory structure. If a professor makes a file available for class, the file can be accessed by going to the respective directory.

A lot of software can be downloaded from this website as well by going to the following directory:

/NetStorage/DriveS@SHARE/MSBTC/MSBTC SOFTWARE

Here, things like Minitab and Decision Tools can be installed.
When installing software for others, it is still better to use the CD’s that we have at the tech center so we don’t have to wait to download any software. If users wanted to install the software themselves, NetStorage would be a good solution.

**Windows User Accounts**

The Windows User Accounts program can be accessed by clicking on the User’s picture on the start menu or by going through Control Panel. In this Window, you can make new accounts, change passwords, change the statuses of accounts or add a new picture. This window is relatively straight-forward – all the options are clearly labeled.

In many cases, staff members will ask that an account be created for a student worker. This simply involves clicking on “Manage another account” then “Create new account”.
How to Map Novel Network Drives

Partitioning and Bootcamping
Many required programs for business school classes will only run on Windows. Many students have Apple computers however, and so they need to undergo a process called “bootcamping” which will install a version of Windows alongside the Mac side on the same hard drive.

Instructions and Requirements
If a user wants to boot camp, then there are a few things the user should know:

- Bootcamping will take a long time, anywhere from 2 to 4 hours, and more if any errors come up
- The user will need to purchase a version of Windows, Office and any other associated software needed

Note: At the time of this writing (Fall 2013), the user will need to purchase a copy of Windows 8 Pro Student Upgrade and Office 365 University. Both can be found on the Microsoft store at www.microsoftstore.com. The user will need to create a Microsoft account in order to finish the purchase.

Once the user has purchased a copy of Windows 8 and Office University, the installation can begin. Here are the instructions:
1. Check to see the year and model of the Macbook. This can be done by going to the Apple logo on the top left and clicking “About” and then “More Info”. It should say something like “Macbook Pro Mid-2012” or something similar. If it doesn’t have a model or year, find the serial number (should be the screen that pops up after clicking “more info”) and put it into the Apple support website located at:

https://selfsolve.apple.com/agreementWarrantyDynamic.do

This should give you the year and model of the Macbook.

2. Locate the drivers for the Macbook. We have many drivers located on the front computer, and you can just put those drivers on to a USB.

   NOTE: If the drivers are not on the front computer (could be the case with the newer Macs), then ignore this step for now.

3. Insert the Windows 8 Professional x64 into a CD drive, either in the computer or in an external CD drive.

4. On the Mac, go to the Spotlight search icon on the top right, and search “Boot Camp Assistant”, then click the top result.

5. Go through the prompts. When it gets to the screen with the check boxes, be sure that only the last box is checked.

   NOTE: If you were unable to find drivers for the mac in step 2, then you want to check the box that says “Download Support Software”, which is usually the middle box. Make sure you have a USB in the computer – this will download drivers directly to the USB. If you were able to find drivers, then there is nothing else you need to do.

6. Make a partition for 40GB, make sure that the Windows disc is put in, and then follow the prompts. The computer will restart during this process.

7. After the computer reboots, go through the regular Windows install process. You will need to do a “Custom Installation” and then find the BOOTCAMP partition you created earlier and select that for installation.

   NOTE: If Windows says it is unable to install to that disk, you might need to reformat it. This involves clicking on the BOOTCAMP partition, clicking “Advanced Drive Options” and then “Format”. Make sure you click the right partition! It should have somewhere around 38GB of space.

8. Once Windows is done installing, open the “regedit” application by pressing Windows Key + R (the Windows key is remapped to the Control key on Macs) and then typing in regedit and pressing OK.

9. Navigate to “HKEY_LOCAL_MACHINE/Software/Microsoft/Windows/CurrentVersion/Setup/OOBE”, double click on “MediaBootInstall” and set DWORD value to “0”.

10. Open the command prompt by pressing Control Key + R and typing in cmd

11. Type in “slmgr /rearm” and then restart the computer

12. After this restart, install the Bootcamp drivers from the USB, connect to Saxanet and then run Windows Update.

13. Install any other programs the user asks for – Windows Office, Firefox, etc.
Next Steps

**Linux**

Linux can be accessed by a live CD, which means that the CD is put into the computer, the computer is turned off and then started again while the CD is in. Many computers have the default option set to boot from CD first. If this is not true, many computers have a “Boot Option” key that can be pressed to bring up a boot menu (F12 for ThinkPads) or the boot order can be changed in BIOS, which can usually be accessed by the F1 or F2 key while booting.

![Example of the boot order menu in BIOS](image)

**Memory test**

Memory access can be accessed by this method:

- Turn On or Restart the system
- Choose to boot from CD
- Hold down Shift as Linux is booting to bring up the GRUB menu.
- Use the arrow keys to move to the entry labeled Ubuntu, memtest86+
- Press Enter. The test will run automatically, and continue until you end it by pressing the Escape key
- Allow the test to run for at least one full pass

Symptoms of problems with a system’s memory includes:

- Computer not booting at all or beeping endlessly during boot
- Distorted graphics on the screen – however, this could also be caused by video card issues
- System crashes during normal operations or during memory intensive tasks like running Photoshop or games
Backups
In the event that a computer won't boot up, Linux can also be used to view the data on a hard drive for backup purposes. This would just involve booting the computer into Ubuntu and moving files from the hard drive on to an external hard drive. For more information, refer to the “hard drives” section.

Software

Minitab, @Risk and all the software CD's in the tech center
We have various software on CD’s in the tech center. The installation instructions for these are relatively straight-forward. The software can be installed by putting the CD into a customer’s computer and running the installation file. If a person does not have a CD drive, then we have external CD drives available for use.

TRK and password recovery
TRK is a disk in the tech center that allows a user to recover a password for a Windows computer. If you want to use it, you have to get a Windows machine and boot from the CD, then follow the prompts on the CD to either delete the password or recover it.

CCleaner
CCleaner is a very versatile tool, its main purpose being keeping a computer from accumulating too many useless and junk files. By doing this, CCleaner can also help a computer run faster. CCleaner can be downloaded from its website:

http://www.piriform.com/ccleaner

Once CCleaner is installed, a user just needs to click “Analyze” then “Run Cleaner” to get rid of any junk files.
Hardware
All computers consist of a multitude of independent parts that function together as a cohesive whole. A computer requires a few standard components to function, and if one piece is missing, damaged, or malfunctioning then the computer won’t run at all. In addition to the required components, you will find that many computers come with extra hardware.

Core Components

Central Processing Unit (CPU)
The CPU is basically the brain of the computer. The CPU handles the millions of calculations that a computer makes every second. Without a CPU, a computer will not load at all. Most CPUs are connected to a heat-sink and a fan to keep it cool. If you look inside a computer to see the CPU it will most likely be obstructed by the heat-sink and fan.
Above is a standard heat-sink and fan. They come in many varieties and are required in order to cool the CPU. Other components in a computer may use a similar device for cooling.

**Random Access Memory (RAM)**

RAM is extremely fast memory which only stores data when the computer is turned on or put into sleep mode. RAM is where the computer stores data about running programs and information used by the operating system. This data is stored in RAM because RAM functions much faster than a hard drive and can be accessed almost instantaneously. Without RAM, a computer won’t start up at all. When the computer is not turned on, the data is stored on the hard drive. Sometimes the memory can become corrupted, which will lead to some serious errors. These errors can be diagnosed using memtest – refer to the Linux section for more information.
**Hard Drive**

There are two different kinds of hard drives – a hard disk drive (HDD) and a solid state drive (SSD). There are a few significant differences, which are explained below, but they operate the same. Essentially, all data that a computer uses, including programs and the operating system, is stored on the hard drive. A computer does not need a hard drive to boot – for example, you can use a Linux live-cd on a computer without a hard drive. Both hard drives have two main connections: a SATA data connection and a SATA power connection. Both of these are needed for the hard drive to run.

We have these two cables in the tech center. If a person’s computer is not working, the hard drive can be removed and plugged into another computer using the cables. This way, if the hard drive is still intact, data might be able to be recovered.

Here are a few pointers to keep in mind when replacing a hard drive:

- Hard drives can really only be replaced on PCs. Most modern Mac computers do not open easily
- Same process for HDD and SSDs
- Most hard drive covers are located on the button of a computer with a cylinder symbol
- If you are unsure of the hard drive location, you can Google the model number and hard drive location
- If data needs to be backed up, you will need the two cables – one for data, and one for power
Hard Disk Drive (HDD)

This is a picture of a HDD. A HDD uses spinning disks to store data, and is the most common type of hard drive because it has been in use for a long time and is relatively cheap. There are many moving parts, which makes this type of hard drive prone to failure if a user drops his or her computer or bumps into a wall.

Solid State Drive (SSD)

An SSD is the newest type of hard drive. SSDs work much like flash drives, and as a result they are much more efficient, run significantly faster and uses less power. Since there are no moving parts, an SSD is not prone to mechanical failure.

Power Supply Unit (PSU)

The PSU supplies power to a computer. A computer will not run at all without a PSU. If a computer will not turn on at all, see if the switch (if there is one) on the PSU is switched on.
Motherboard
The motherboard is the central component of any computer. Its job is to link all of the other pieces of hardware together. There are multiple components in a motherboard explained below. Without a motherboard a computer is just a pile of disconnected parts.

Case
The Case holds all components constituent of a computer, and often has multiple fans attached to the inside in order to provide cooling for the computer's various components. Good cooling is important for a computer to function. A case is not necessary for a computer to function, but only tech-writers and enthusiasts frequently go without one.
Above: A computer case displaying all of the components it keeps nestled in its warm belly. Note the spiral cable attached to the bottom of the motherboard, this connects the power and reset buttons, as well as the HDD lights.

**Optical Drive**
The Optical drive reads and burns disks. Blue Ray technology is at the forefront of optical drives and is the most expensive, but consumers can still purchase DVD drives and plain old CD drives if desired. Optical drives are connected to the motherboard via IDE or S-ATA cables (see More Information: The HDD).

**Wireless Network Adapter**
The Wireless Network Adapter allows a computer to connect to wireless networks. Sometimes this hardware is integrated into the motherboard but more often than not it is a standalone piece of hardware connected via a AGP or PCI slot on the motherboard. There are several wireless technologies A/B/G/N, G is the most common technology with N being the latest and fastest. Newer wireless technologies are backwards compatible with older ones but only a network running all the same technology will run at maximum efficiency.

**Peripheral Devices**

**Monitor**
The Monitor is the device used to display the output information from a computer. There are many different technologies behind modern flat-panel LCD monitors. There are various cable technologies used to connect monitors to computers including: VGA, DVI, HDMI, and Display Port.
Above: 1. VGA (analog) 2. DVI (digital) 3. HDMI (digital+sound) 4. Display Port (digital+audio). HDMI is used to connect computers to most TV's and home theater devices.

**Hardware issues**

**Hard drive troubleshooting and replacement guide**

Hard drives act as the central storage location for a computer. If the hard drive is damaged, a user will not even be able to boot into the operating system, and could even completely lose all files and information on the hard drive. It is important to know what to do in the event of a hard drive failure.

Symptoms of a failing hard drive include an audible “clicking” noise as the computer runs. Other symptoms include a noticeable slowing of computer function even after regular troubleshooting, blue screens of death occurring during normal operation, or error messages indicating corrupted data.

The following instructions for replacing hard drives is mainly for PCs. Replacing a hard drive on a mac computer can be difficult, and even impossible in the case of the newer macs. Refer to a specialist to replace a hard drive on a mac computer.
Here is how to replace a hard drive on a PC:

1. Look for the location of the physical hard drive. Most are located on the bottom of the computer – look for the symbol that looks like a cylinder:

If you are still unsure of the hard drive location, you can use Google and look up the computer model number and hard drive location.

2. Once you locate the hard drive, the next step is to remove the hard drive. This is relatively straightforward.

3. If the data needs to be backed up, you need a hard drive power connector and data connector to connect the hard drive to another computer.
4. Once the old hard drive is taken care of, to install the new hard drive, simply follow the steps you took to remove the original hard drive in reverse order.

**RAM Installation and Memory Test**
Refer to the section on “Linux” for more information.

**Reformat**
A reformat is a clean system reinstall. Reformatting a computer means that the computer is essentially restored to factory settings. The hard drive is completely wiped so no programs or data will still be on the hard drive. The OS is also wiped, so after a reformat that will need to be reinstalled.

There are many reasons why a computer would need to be reformatted. If a new hard drive is being installed, then reformatting the computer will allow the hard drive to be usable. If there are critical system errors or severe malware infections, reformatting a computer will give it a “clean start”.

Since a reformat is essentially irreversible, it is very important that the customer signs the form and backs up data. In addition, permission is needed from a tech manager or full time staff before a reformat begins. Once a reformat is completed, the computer’s hard drive will be completely wiped – all programs, data, and product keys will be lost. All that will be left is an empty hard drive.

The key for Windows can be obtained through many different methods. If Microsoft Windows was purchased in a store or online, the key can be found on the retail packaging or in an Email that Microsoft sends after purchase. If the operating system came with the computer, there should be a label on the bottom of the computer with the CD Key. Sometimes the label is under the battery.

**Windows**

**Windows 8**
The user interface of Windows 8 is a bit different from Windows 7. Essentially, the start menu is gone, and in its place is a “metro” interface.
The most important thing to note is that there is now a “charms” menu. This can be activated by moving your mouse to the bottom right corner, then moving the mouse directly up.

From here, you can enter the “Start” menu, go to settings, or search for applications.
**Safe Mode**
Safe Mode lets a computer start up with only the most necessary drivers and restricts most other programs from running. This is a great troubleshooting tool, and should be the first step in a virus removal procedure.

**Msconfig**
Msconfig can be accessed by opening the “Run” (Windows Key + R) window and typing in “msconfig”. Msconfig can be used to configure what services and programs run on startup.
Add and remove programs

Add and remove programs is a way to get rid of any unwanted programs on a computer as well as look at recent Windows updates. Add and remove programs can be accessed through the control panel. Programs and updates can be uninstalled by right clicking and selecting “Uninstall”.
Control Panel

Control Panel is an extremely useful Windows tool. At the Control Panel, many Windows settings and options can be accessed.

System Restore
System Restore allows a Windows computer to revert back to a previous system restore point. System restore points are typically created whenever new software or drivers is installed. Typically, system restore is able to solve most problems, if it was a software install that caused something to go wrong.
By following this program through all the prompts, you can restore a computer back to a certain time period.

**Restore from backups**
Windows has a great built-in backup software. By searching the start-menu, you can find this tool. This tool can be used to both create restore points and restore from previous backups.

**Action center**
Action Center is a Windows 7 notification area that tracks problems caused by software, drivers, and Windows components, and is represented by a small, white flag on the task bar. The main action panel includes a list of color-coded Windows messages. Red messages are critical, and amber messages are important.
2 important messages

Find an antivirus program online (Important)
Set up Windows Update (Important)

Open Action Center

Review recent messages and resolve problems
Action Center has detected one or more issues for you to review.

Security

Virus protection (Important)
- Windows did not find antivirus software on this computer.
- Turn off messages about virus protection

Scan required
- Windows Defender needs to scan your computer.

Maintenance

If you don’t see your problem listed, try one of these:

Troubleshooting
- Find and fix problems

Recovery
- Restore your computer to an earlier time
The registry is rarely used. The registry is only used during a Windows 8 bootcamp. Otherwise, do not access the registry unless you know what you are doing! Editing wrong entries in the registry can easily lead to system corruption.

**Basic Input/Output System (BIOS)**

The BIOS is built into the PC and is the first code run by a PC when it is powered on. Each computer manufacturer has a slightly different BIOS, but the function of the BIOS is still the same. Through the BIOS, you can:

- Configure hardware
- Set the system block
- Enable or disable system components
- Select which devices to boot from (and in what order)
- Set various password prompts

The BIOS can be accessed on most machines by pressing F1 while booting. For other machines, you can find the key combination by searching online.