



Welcome Manual

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Troubleshooting steps for:

Routers

1. **Reboot the router.** Rebooting the router is the first troubleshooting step when you lose Internet connection while using a router. Rebooting the router is just a matter of disconnecting the power from the back of the device so that the lights on the front turn off, and then powering it up again. A typical router will normally take about a minute to complete its boot-up process before it is ready to function again. Rebooting your router does not mean rebooting everything, or turning your power bar off; you only want to reboot the router alone so that the other associated devices are active while the router is restarting.
2. **Check for communication to the router.** If rebooting the router did not resolve the connectivity issue, then check to see that you have communication to the router. Communication to your router is independent from the Internet connection – this should still work, even if the Internet is disconnected. The best way to check for communication to your router is by trying to log into the device. You can login to your router by putting its address in the address bar where you input websites:



The address of your router likely begins with 192.168. and will be the gateway address that your computer is currently getting. The default addresses for popular router brands are:

- Dlink: 192.168.0.1 (user: admin password: *-leave blank-*)
- Netgear: 192.168.0.1 (user: admin password: password)
- Asus: 192.168.1.1 (user: admin password: admin)
- Linksys (Cisco): 192.168.1.1 (user: *-leave blank-* password: admin)

If you are able to view the login screen of your router, then you have communication to it.

3. **By-pass the router.** If you have made no changes to the router's configuration, and the reboot does help, you can try connecting the Internet (flat black cable) directly into your computer. You will first need to 'register' your computer to an IP address for Internet access, and your computer should be getting a 10.200.X.X type of IP for now. After you have connected your computer to the Internet line, attempt to open a webpage, and you should be redirected to the registration page (or you can navigate to myaccount.mcsnet.ca) from MCSNet which will ask for your email and password to assign an IP for your computer. Renew your IP or Reboot your computer after you have completed the registration screen to refresh the IP on your device.

Windows XP Troubleshooting Guide

Please start by rebooting the computer to solve most issues.

The process for troubleshooting connection problems on Windows XP involves using the **command prompt** and typing the command to **release and renew the IP address**.

The process for releasing and renewing the IP in Windows XP is:

1. Open a command prompt window, by clicking on **Start**, then **run**, and typing **cmd** and then hitting enter or clicking **OK**.
2. A black command prompt window will open, where you can type after the >

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\tech>
```

3. Type: **ipconfig /release** and then hit the enter key to execute the command

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\tech>ipconfig /release
```

this

command will release the IP address for all enabled network adapters on the computer

```
C:\Documents and Settings\tech>ipconfig /release
Windows IP Configuration
No operation can be performed on Local Area Connection 2 while it has its media
disconnected.
Ethernet adapter Local Area Connection 2:
    Media State . . . . . : Media disconnected
Ethernet adapter Local Area Connection:
    Connection-specific DNS Suffix . :
    IP Address . . . . . : 0.0.0.0
    Subnet Mask . . . . . : 0.0.0.0
    Default Gateway . . . . . :
C:\Documents and Settings\tech>
```

In this

example, the computer has 2 network adapters, "Ethernet adapter Local Area Connection 2", and "Ethernet adapter Local Area Connection." Connection 2 has no cable connected to it, so it shows "media disconnected." Local Area Connection has released the IP and shows 0.0.0.0 for the address confirming the release. Some common errors on this step include

- **"Media Disconnected"** – where the computer does not recognize a cable plugged in (or wireless is not connecting to the router),
- **no adapters listed** and it just shows "Windows IP Configuration" – where the computer does not recognize that it has an enabled network adapter, please make sure the adapter is installed and enabled properly
- error about **"not in the state permissible for this command"** – where the IP has been keyed into the computer instead of the default of allowing it to obtain it automatically.

4. Type: **ipconfig /renew** and hit the enter key to renew the IP address:

```
C:\Documents and Settings\tech>ipconfig /renew
Windows IP Configuration

No operation can be performed on Local Area Connection 2 while it has its media
disconnected.

Ethernet adapter Local Area Connection 2:

    Media State . . . . . : Media disconnected

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix . : mcsnet.ca
    IP Address . . . . . : 66.112.112.178
    Subnet Mask . . . . . : 255.255.255.192
    Default Gateway . . . . . : 66.112.112.129

C:\Documents and Settings\tech>
```

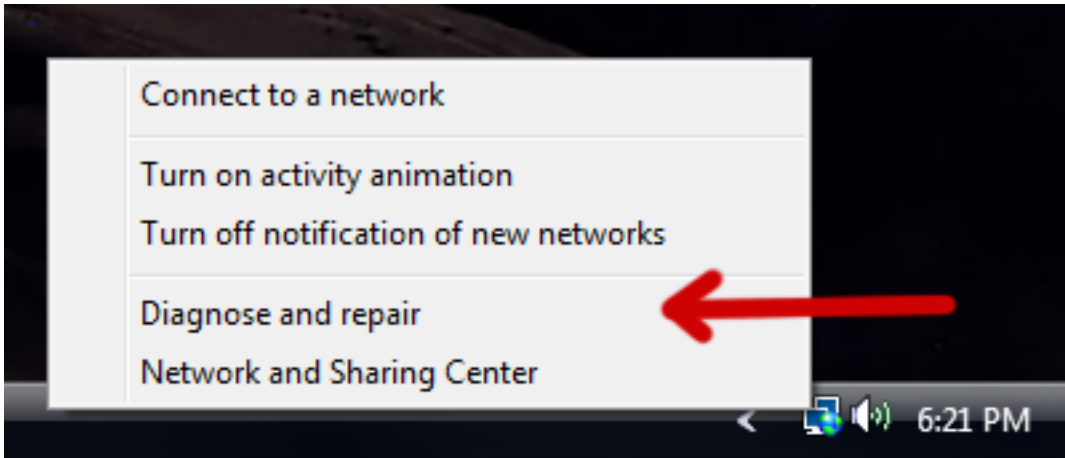
After a

couple of seconds, the adapter will show the IP information if everything is working properly, and if you have an IP you should be able to get online. If you are not using a router, your IP address will likely be similar to 169.254.1.2, and if you are using a router, your IP address will be similar to 192.168.1.2. If you are getting an IP but are unable to get online, the most common cause is a faulty antivirus program like Norton that will need to be uninstalled, but other causes are incorrect use of proxy server settings, the browser in offline mode, or the DNS settings are not set to automatic and entered incorrectly.

Windows Vista Troubleshooting

With the advent of the 'diagnose and repair' utility, the diagnostics for network issues is mostly automated.

Vista has a network icon that runs in the bottom right hand corner by the clock that looks like 2 computers (usually with a small globe in front when working). If you right click on this icon you can select the "Diagnose and Repair" option.




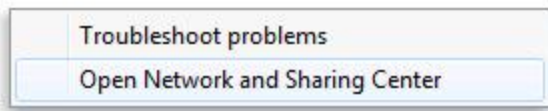
Diagnose and repair will normally help you to sort out computer issues; if it gives you the option to reset the network adapter please try this.

If you are familiar with using the command prompt to release and renew your IP address like with Windows XP, then you can also use this process in Vista:

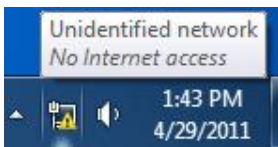
1. Click **start**
2. Type **Command** in the search field
3. **Right Click** on the **Command Prompt** result that should be at the top of the results with the little black box next to it, and select **run as administrator**.
4. Once the command window is open, please **maximize the window** by clicking the maximize button (square next to x in upper right) to expand the viewable area.
5. Next, please type **ipconfig /renew** and hit **enter** to execute the command
6. Please **ignore** any of the sections that start with "**Tunnel**". The important part that we are looking for is the **Ethernet adapter**. If you are using a router, your IP will commonly be 192.168.x.xxx. If you have no router it will be 169.254.1.xxx, and if you need to register the device for an IP it should be 10.200.x.x where it should redirect to the registration page (<http://myaccount.mcsnet.ca/>) when you try to open a website.

Windows 7 Troubleshooting Guide

Start by checking the Network icon located by your clock in the bottom right hand corner. If nothing is wrong then it will look like . Before going through any of the following steps, please **right click** on this network icon and select **“troubleshoot problems”**. This will fix most problems or help identify what is wrong.

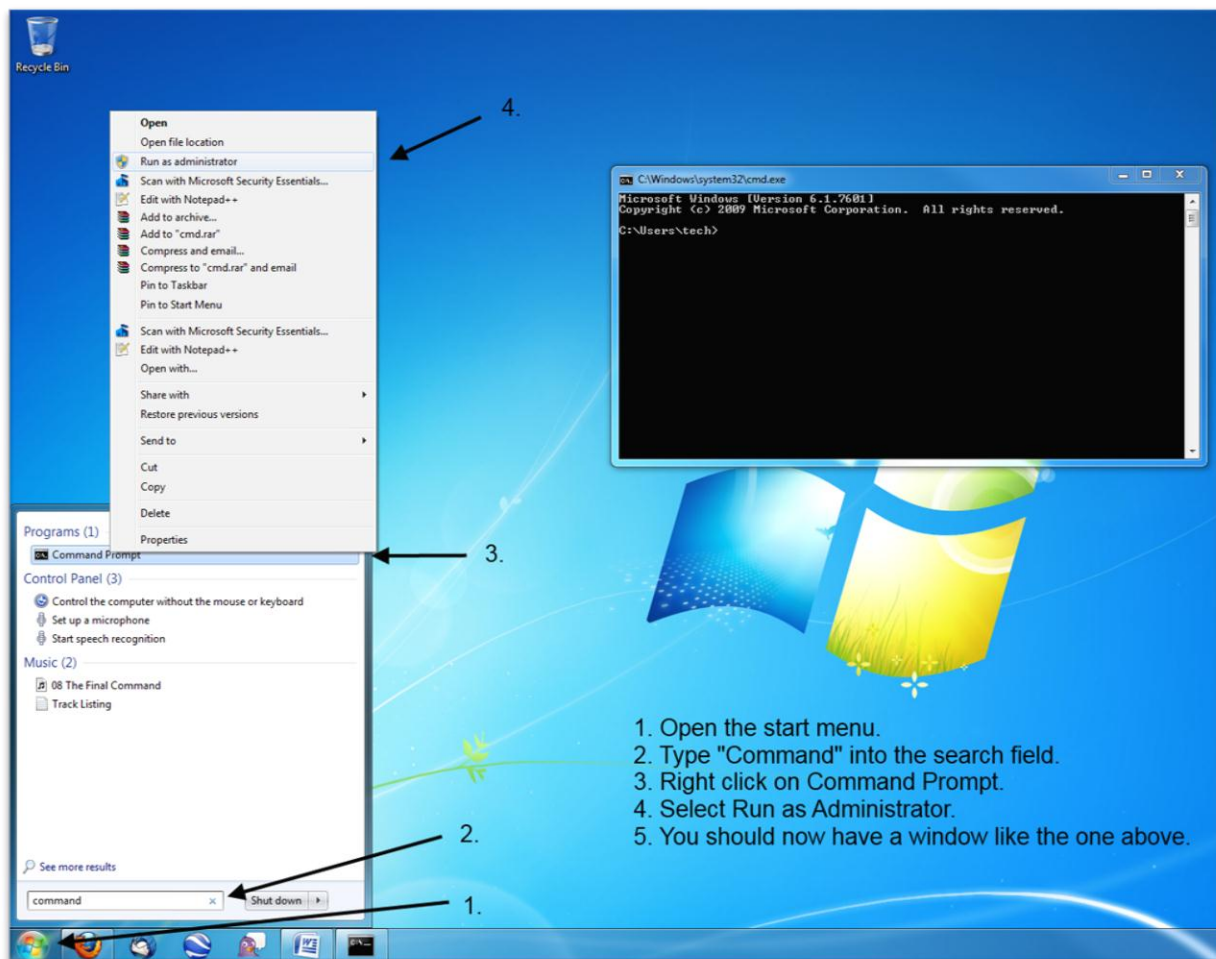


If you are getting a message or icon similar to this:



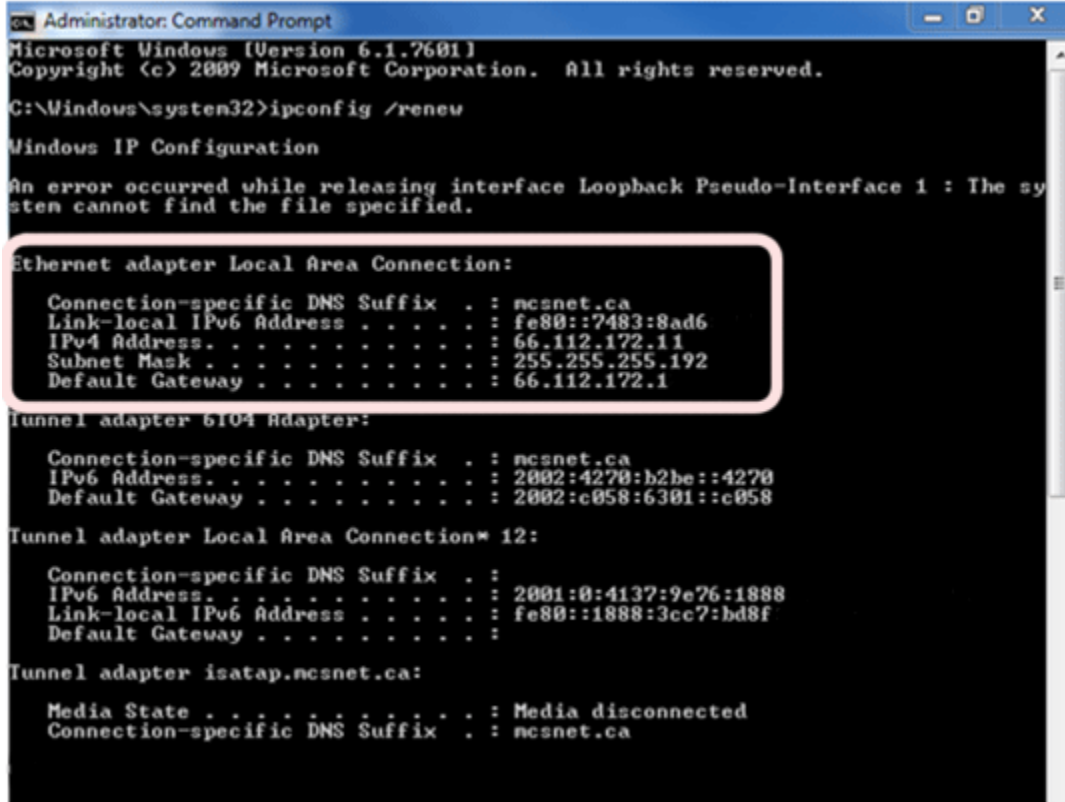
then the computer has not obtained an IP address necessary to get online. To fix this, please try using the **troubleshoot problems** step detailed above, or for more detailed instructions, use the **release and renew** in the command prompt from the guide below.

Using Command Prompt to Renew your IP



1. Click start
2. Type Command in the search field

3. Click on the Command Prompt result that should be at the top of the results with the little black box next to it.
4. Once the command window is open, please maximize the window by clicking the maximize button (square next to x in upper right) to expand the viewable area. Next, please type **ipconfig /renew** and hit **enter** to execute the command. It should now look like:



```
Administrator: Command Prompt
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Windows\system32>ipconfig /renew

Windows IP Configuration

An error occurred while releasing interface Loopback Pseudo-Interface 1 : The system cannot find the file specified.

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : mcsnet.ca
    Link-local IPv6 Address . . . . . : fe80::7483:8ad6
    IPv4 Address. . . . . : 66.112.172.11
    Subnet Mask . . . . . : 255.255.255.192
    Default Gateway . . . . . : 66.112.172.1

Tunnel adapter 6104 Adapter:

    Connection-specific DNS Suffix  . : mcsnet.ca
    IPv6 Address. . . . . : 2002:4270:b2be::4270
    Default Gateway . . . . . : 2002:c058:6301::c058

Tunnel adapter Local Area Connection* 12:

    Connection-specific DNS Suffix  . :
    IPv6 Address. . . . . : 2001:0:4137:9e76:1888
    Link-local IPv6 Address . . . . . : fe80::1888:3cc7:bd8f
    Default Gateway . . . . . :

Tunnel adapter isatap.mcsnet.ca:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : mcsnet.ca
```

Please **ignore** any of

the sections that start with “**Tunnel**”. The important part that we are looking for is the **Ethernet adapter**. In the example above, the IP address is 66.112.172.11 and the DNS suffix is mcsnet.ca. If you are using a router, your IP will commonly be 192.168.x.xxx. If you have no router it will be 169.254.1.xxx, and if you need to register the device for an IP it should be 10.200.x.x where it should redirect to the registration page (<http://myaccount.mcsnet.ca/>) when you try to open a website.



This icon means that the Ethernet cable is unplugged or that the NIC is disabled. If you right click on this icon and go “Troubleshoot problems” it will tell you exactly what is wrong. If the NIC was disabled, it will automatically enable it for you. If the Ethernet cable is unplugged, then please make sure that the cable is securely plugged into both your computer and the router.

Email server settings

Step by step email setup guides for a few different email programs are available in the support section of the <http://mcsnet.ca> website. MCSNet recommends using Thunderbird to manage your email.

The mail server settings when connecting to MCSNet and using a @mcsnet.ca email are:

Incoming Server Type: IMAP

Incoming Server Name: mail.mcsnet.ca

Encryption: none

Outgoing Server Name: mail.mcsnet.ca

Encryption: none

Authentication: none

The webmail on the MCSNet website is not intended for daily use, and it is better to set your email up in an email program like Thunderbird instead.

Warning about phishing scam emails

MCSNet will never send you an email asking for your password or other personal information. If you receive an email asking for secure information, do not reply. Emailing is not a completely secure source of communication, and no company should ask you to send private information that you would not want others to see.

The main danger of infections from emails is with opening attachments that might infect your computer. There is normally no danger to viewing an email, but caution must be exercised when opening attachments that could execute an unexpected program. Do not open any unexpected attachments.

Recommended browser, mail client, antivirus

MCSNet recommends using:

Mozilla Firefox for **browsing websites**: Firefox or Google Chrome have typically provided faster and more complete website rendering compared to the relatively popular Internet Explorer. The latest version of Internet Explorer, version 9, is recommended if it is to be used at all.

Mozilla Thunderbird for checking and managing **emails**: The MCSNet Webmail on the website is not intended for everyday use, for best performance, please set you email up in an email program like Thunderbird.

Microsoft Security Essentials for **Antivirus**: Most antivirus programs do not work well and are the source of many problems. Security Essentials is free, lightweight, and does a very good job.

These programs are free. For an easy way to download and install these, and other programs, please use the handy tools available at the ninite.com website.

Use 'My Account' to view account info

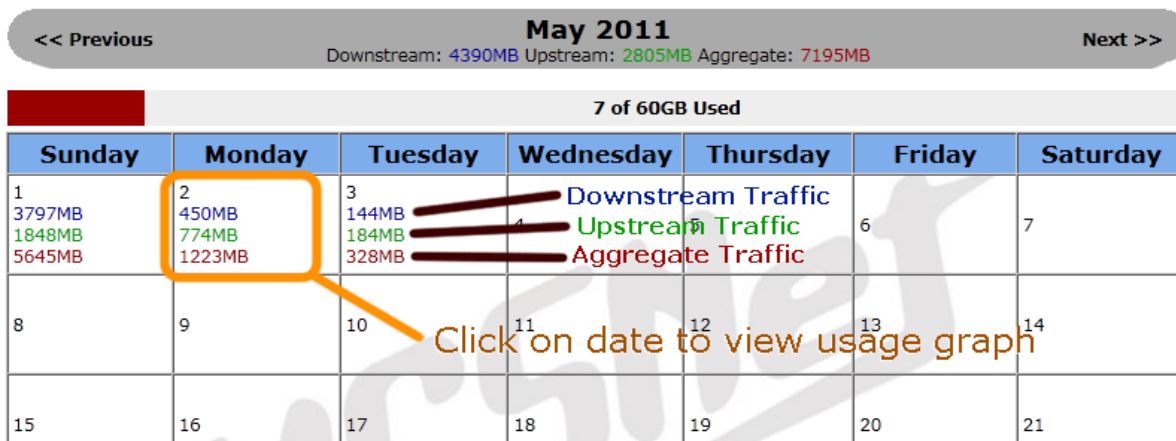
Your login to the 'my account' page of our website is normally setup at the time of installation, this may be an @mcsnet.ca email account, or a 3rd party email if one was specified for use at the time of installation.

Monitor usage

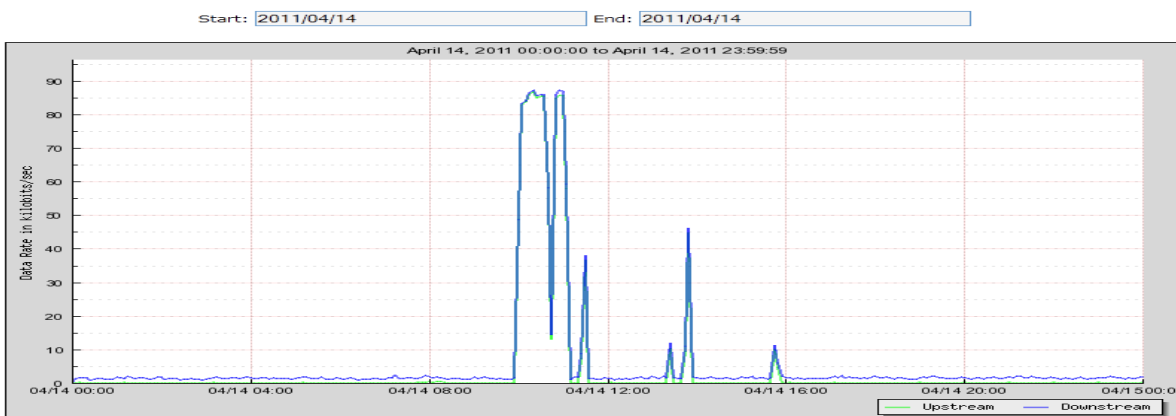
Usage is listed under the services section. Click on the amount for a calendar view for a more detailed view of the usage. While in calendar view, you can click on an individual day to view the graphical representation of the downstream and upstream traffic over that day.

The screenshot shows the MCSNet My Account interface. On the left is a navigation menu with links: My Home, My Services, Documents, Change Password, and Contact Information. The main content area displays service details for 'User, Example'. A table lists the service as 'Wireless Home Advanced' with a '1 month' billing interval. Below this, a 'Usage' section shows '7.03GB of 60GB' with a progress bar and 'Max Rates: 5200Kb Down, 1200Kb Up'. A red arrow points from the text 'click for calendar view' to the '7.03GB of 60GB' link.

Calendar View:



Usage Graph:



Change passwords

You can change the password for your MCSNet email accounts through the services section by clicking on edit for the email that you would like to adjust the password. You can also change the password for the current email used to login by using the change password section.

MCSNet.ca Standard Email

Email: new_email@mcsnet.ca

Edit

Remove

View previous invoices

Invoices for services are normally published on the 10th of the month and are viewed under the documents section. A PDF viewer is required to view these documents.

Router use

Your router is your property

Routers purchased from MCSNet are your property and responsibility to maintain. MCSNet does not provide detailed technical support for router configuration. Please consult the device documentation or the manufacturer for support with their device. Most common configurations can be investigated through a quick Google search.

Our support pages have some guides which might help for the major router brands:

- Asus: <http://support.mcsnet.ca/asus/>
- D-Link: <http://support.mcsnet.ca/dlink/>
- Linksys (Cisco): <http://support.mcsnet.ca/linksys/>
- Netgear: <http://support.mcsnet.ca/netgear/>

MCSNet provides a 90 day replacement for routers that are found to be defective, additional replacement coverage is usually found through the device manufacturer for a 1 year term after purchase.

Use a cable instead of wireless (Wi-Fi) where possible

Wireless networking between your computer and wireless router may be convenient, but it is also prone to more issues than wired networking. If you are experiencing issues with your wireless signal to your router, please try running a cable as a better alternative. Wired networking usually provides more bandwidth, far better latency, and won't drop off when you use your microwave.

Call us to toggle the NAT if adding or removing a router

If you are introducing or eliminating a router from your setup, please contact us so that we can change the NAT setting in the radio at your location. NAT is part of a process to help keep your computers protected. All routers provide NAT (except for Apple routers in their default configuration[®]), so if you have a router, we will disable the NAT in the radio. Please contact us if you are adding a router, as we will likely have to disable the NAT to ensure the router communication.

Importance of Grounding to Prevent Damage from Power Surges

Houses in rural areas are prone to power bumps and fluctuations in the power current, particularly during the spring and summer storm seasons. To avoid issues with the Internet and the devices you use with it, please **ensure that the grounding for your house is adequate** for the electrical surges that it may experience. A **quality surge suppressor** or UPS with line conditioning is recommended to avoid issues resulting from fluctuating power. The most common difficulty resulting from an electrical storm is the spikes in the power coming from the power lines, which can be very powerful in some rural locations.

Surge suppressors help to dissipate surges through the grounding in your home, so the effectiveness of a surge suppressor is only as good as the grounding it is attached to. Surge suppressors are rated by the amount of energy in Joules that they can handle, and speed in nanoseconds at which they shunt the stray voltage to ground. The higher the number of Joules and the smaller number of millisecond reaction time are good indicators of the suppressor's effectiveness.

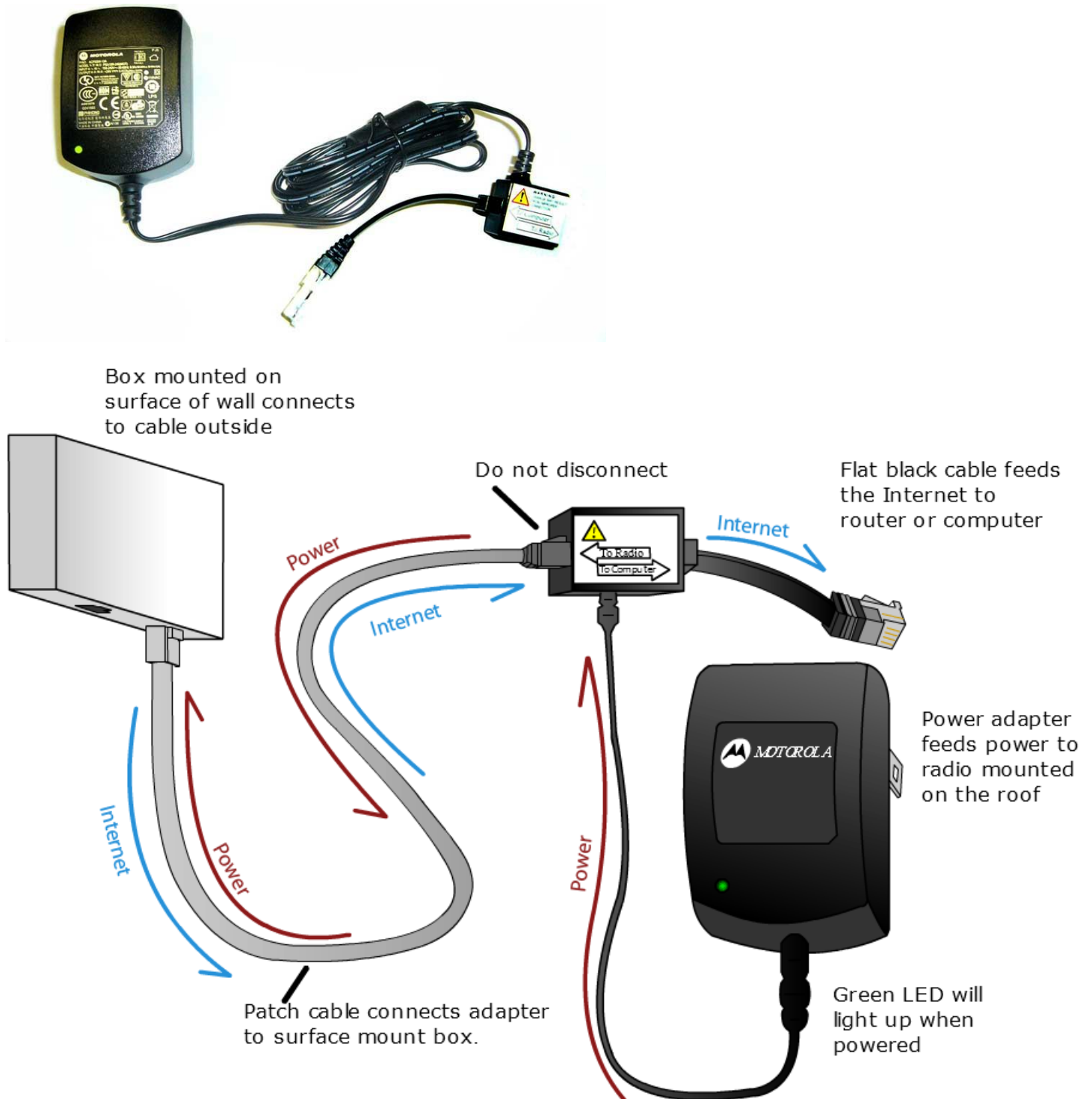
Surge suppressors are not lightning protection devices. When expecting thunderstorms with dangerous lightning, you should unplug all valuable equipment such as computers, including phone and internet cables. Do this before the storm comes since you do not want to be touching these wires when there may be a surge.

MCSNet recommends using a surge suppressor with plugins for the Internet lines (CAT5) to pass through to help protect the devices you have connecting to the Internet line.

Some manufacturers provide whole house surge arrestors which connect to your outside breaker box and direct surges down to a ground rod. Ratings are in joules and nanoseconds, and more expensive models will typically have better ratings. Installation for these devices is through a licensed electrician. Additional plug in or power strip suppressors should still be used inside the home

Please keep the radio power connected

The radio installed for the Internet requires power to be able to operate. The radio receives its power through the connection to the power adapter.



To ensure uninterrupted service, please keep the radio powered when possible. Software updates are periodically sent to the radio. If the power to the radio is disconnected for months at a time, it may miss a critical update which may require a scheduled on-site visit to resolve connectivity.

Local sources of interference may affect your Internet performance

MCSNet uses different wireless frequencies to bring the Internet to your home from the tower site. If you experience any issues with the quality of the service, please ensure that there are no local sources of Interference that may be impeding the Internet communication. The Internet connection may use frequencies in the 900 MHz, 2.4 GHz, and 5.7/5.8 GHz ranges.

Cordless phones transitioned to the DECT 6.0 version several years back to allow them to operate on a unique frequency of 1.9 GHz. If you have an older cordless phone on 900 MHz, 2.4 GHz, or 5.8 GHz, you should see an improvement with transitioning to a modern DECT (Digital Enhanced Cordless Telephone) cordless phone.

Wireless frequencies are also in use if you are using wireless networking with a wireless router. The main frequencies that wireless routers use are 2.4 GHz and (rarely) 5.0 GHz. Wireless networking (Wi-Fi) has been found to be susceptible to interference from the operation of microwave ovens and popcorn poppers in the near vicinity.

Monthly Usage Cap

The main difference between the packages offered is the monthly traffic allowance. The traffic cap is the amount of data that can be sent or received using the Internet connection per month. The current average usage for MCSNet subscribers is under 10 GB per month. Higher usage is usually found with the use of streaming video like Netflix and Youtube, as well as file sharing programs including the downloading of music and movies.

For a relative example of usage: the average size of a song is around 5 MB, so the Lite package (10 GB limit) would allow one to download a maximum of about 2,000 songs per month (there are about 1000 MB in a GB).

Options when you have reached the monthly cap

If usage reaches the maximum for the package, to restart the service you may either

1. Upgrade to a higher package if one is available
2. Slowdown Mode. On request, continue to use the Internet at a severely reduced speed of 100kbps for any activity beyond the monthly usage cap.
3. Purchase 10 GB for the current month for \$19.95 (one time)
4. Purchase additional traffic to add to the package on a monthly recurring basis (add 10 GB to your package for an additional \$14.95 per month)
5. Wait for the next month's cycle to commence.

Viewing usage, and common causes of higher usage

You can view your usage through the services section when you login to the 'My Account' page of our website. If you have usage that is beyond what you expect, this is usually caused by:

- Streaming video from services like Netflix and YouTube
- Peer to Peer file sharing programs, commonly used with the downloading of music and movies (bit torrent like uTorrent, etc.)
- Many hours of online gaming, especially if hosting a server
- Someone else connecting to your wireless router (please use a password with wireless routers to prevent this)
- Viruses and spyware

Usage is tabulated only as an amount. MCSNet does not track or log where you go on the Internet. If you are looking for help determining the source of unknown usage, MCSNet may not be able to help you with unknown computer or networking issues.

Expected speeds

Speeds are quoted as the top setting for that package, but the average speed will be lower. Speeds are expected to vary depending on tower and network load. Peak usage times (when more people are using the Internet) are normally in the evenings between 8pm and midnight, where you may see more of a variance in the speeds.

Slower speeds are expected for shots through trees and other obstacles where a 900 MHz radio is required.

The most common local source of speed issues is wireless networking (wireless connections between the computer and router are a common source for speed issues). Ensure strong signal strength, and try the connection with a cable for comparative diagnostics.

Heavy background activity on the Internet can cause your connection to behave slowly if most of the resources are in use already. If you find the Internet is running slower than normal, please investigate for background processes on your computer or others in your network that might be using a significant amount of bandwidth.

Use our speed test page for testing the speeds: <http://mcsnet.ca/speedtest/>

Additional Support and Contacting MCSNet

Additional support can be found through the support pages of the MCSNet website: <http://support.mcsnet.ca>

MCSNet technical support can be reached via email: support@mcsnet.ca

or via phone 24 hours a day: 866-390-3928