5 tips to help make optimal use of Tomato on the Router

In the following article, we will show you the 5 most useful tips for Tomato, which help speed up your router and your work is done faster.

TipsMake.com - Tomato is a very powerful third-party firmware for routers, but not everyone knows how to make the most of its power. In the following article, we will show you the 5 most useful tips for Tomato, which will help speed up the router and your work is faster.

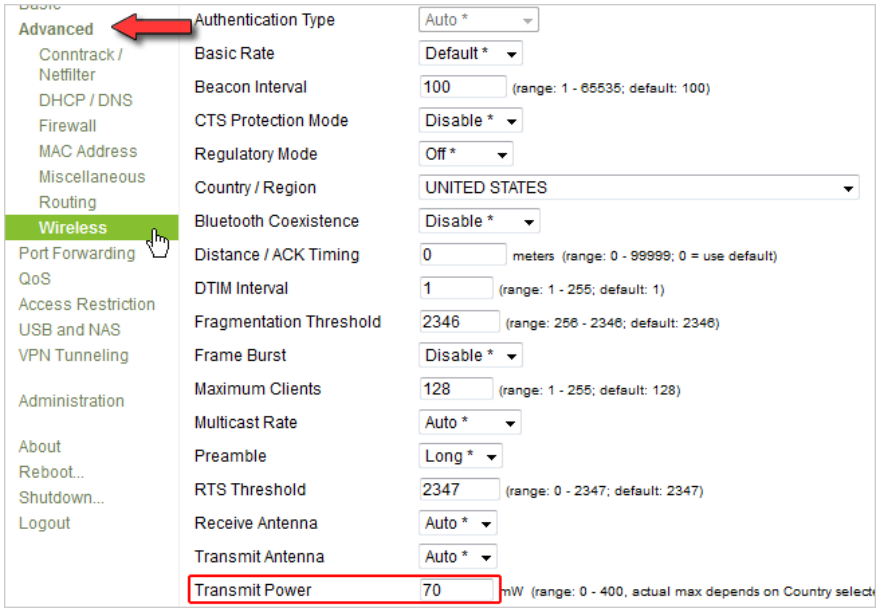
>>>**Increase network performance by installing Tomato on the Router**

In this tutorial we use **Tomato version 1.28** , *Linksys WRT54GL* router device.

1. Enhance the signal for your wireless network (Wireless)

Sometimes the wireless signal on your router is not strong enough to cover the entire area needed. In most cases, the most commonly used solution is to reposition the wireless router. But if this still doesn't work, you can fix this problem by strengthening the network signal in Tomato with a few basic steps.

Launch your browser and navigate to Tomato router. Click **Advanced** > **Wireless** in the left bar. At the right part, looking at the bottom of the page you will see the section ' **Transmit Power** '. Its default value in Tomato is **42mW** (milliwatts), and the maximum value Tomato supports is **251mW** . However, we recommend that you set it to **70mW** , because if it is higher, it will cause the router to heat up and the life expectancy will decrease.



2. Overclock the CPU for the router

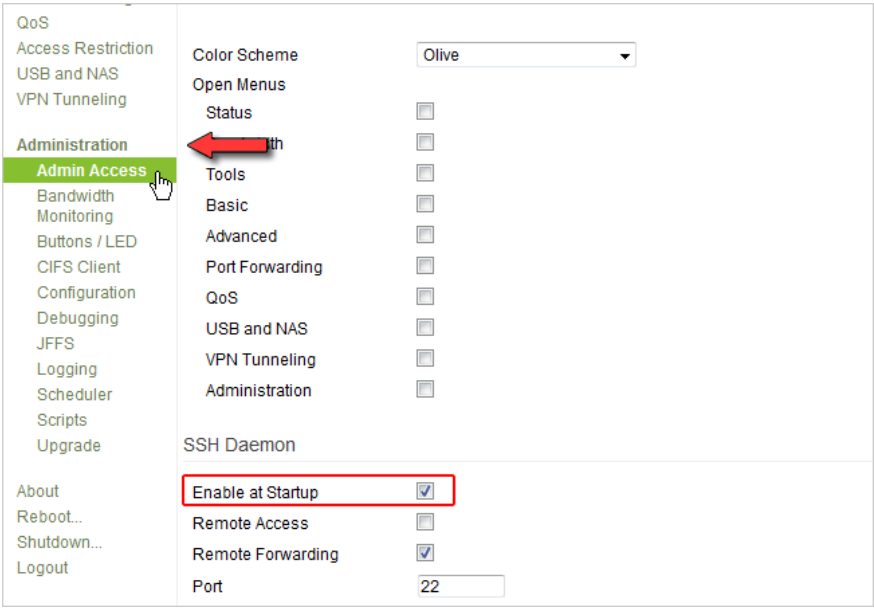
Note: Before doing this step you need to make sure that your router is stable, not too hot to avoid burning the router. In addition, it is necessary to follow the steps below to achieve the highest efficiency.

Overclocking the router has the advantages: faster web page response, faster download speed, and significantly reduced latency. Especially when overclocking the router's CPU will provide faster response time between LAN connections and the router itself. There is almost no risk (if done correctly) and you do not need to understand the multiplier or FSB relationship.

However, each router will have a different clock frequency that the CPU can handle. Check out the **DD-WRT Wiki** for more information on the router's CPU and its speed. We use Linksys WRT54GL so by default the CPU clock speed will be 200 MHz. You can completely increase this clock to 50 MHz without damaging the device and without adding any additional cooling system.

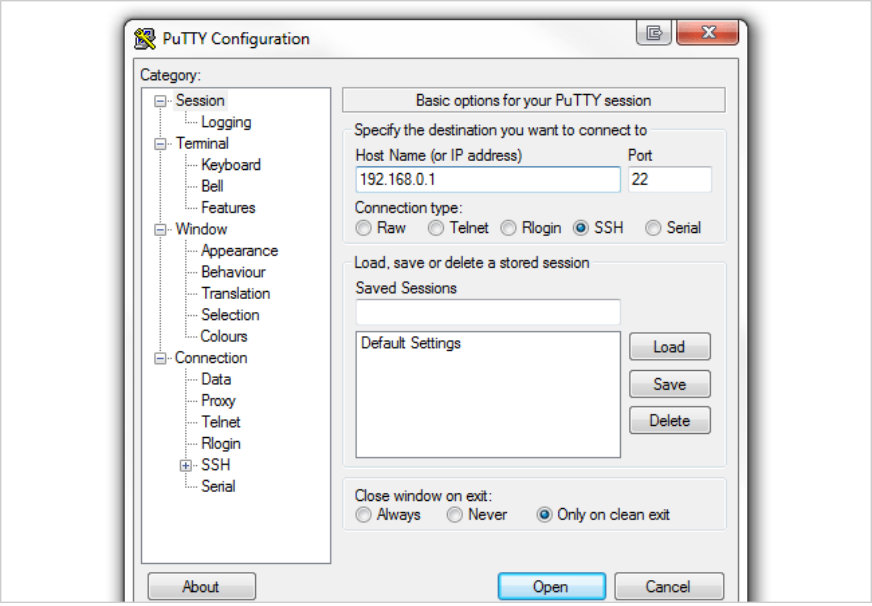
The frequencies that WRT54GL supports (in MHz): 183, 188, 197, 200, 206, 212, 216, 217, 225, 238, 240, and 250.

Next you need to allow SSH access on your router and run the following 3 simple commands. But first, log into your router, click on the **Administration** link on the left, scroll down below you will see the ' **SSH Daemon** ' entry. Make sure the ' **Enable at Startup** ' section is checked. Scroll down to see ' **Password** ' and enter SSH access password, click **Save** to save the settings.



Now that SSH is enabled on the router and we can access it, download a program that allows access to the router via SSH. Here we use **PuTTY** for Windows (for Mac or Linux users, we can use the built-in applications in Terminal).

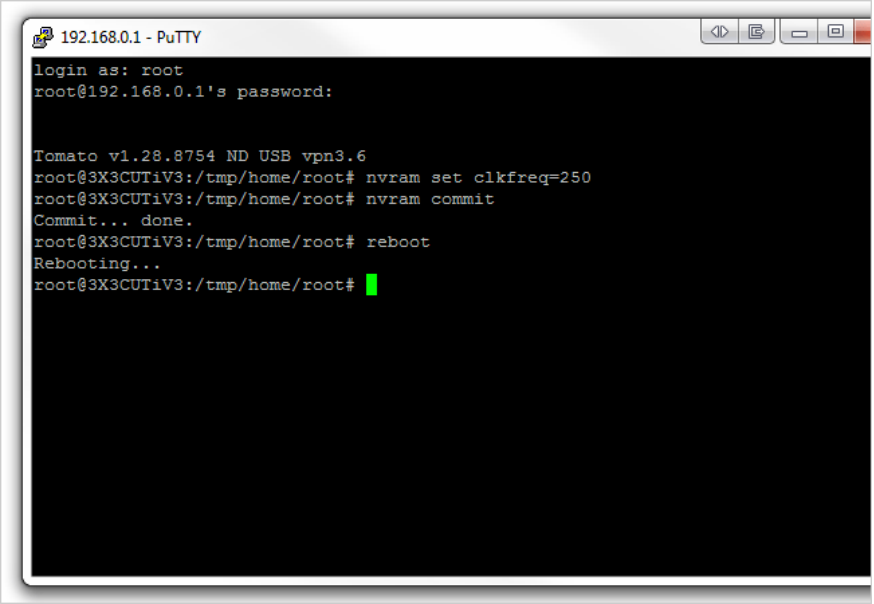
Enter the IP address of the router and select the SSH entry in the **Connection type** section. Click the **Open** button.



You will receive a login message, enter ' *root* ' with the username request, and press **Enter** , when asking for the password you enter the password set above. Next enter the following 3 lines of code (press **Enter** after each line), replace xxx by the frequency you want (only allowed in the range 183, 188, 197, 200, 206, 212, 216, 217, 225, 238 , 240, and 250). Absolutely do not type any other frequency.

nvram set clkfreq = xxx
nvram commit

reboot



Then the router will be restarted. When operating the CPU frequency will be changed as you just reset.

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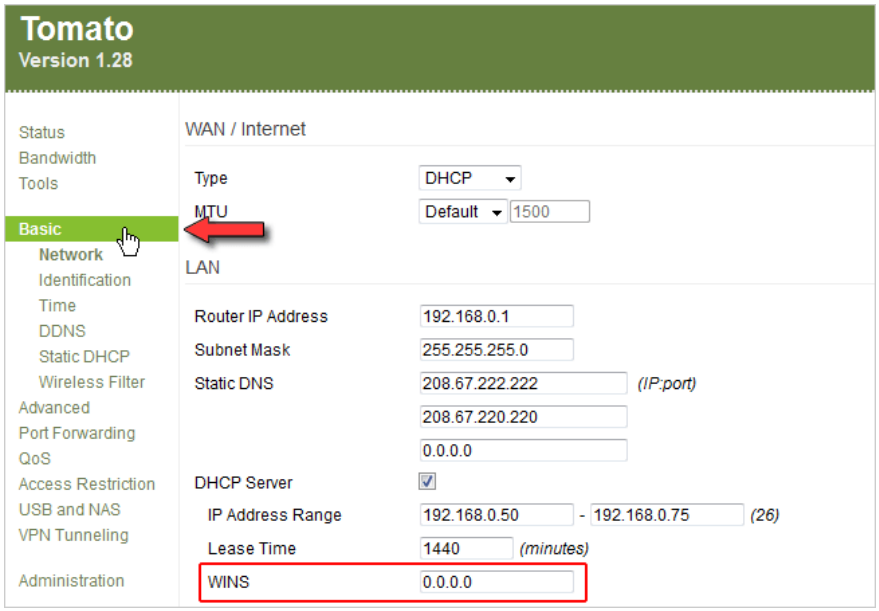
3. Speed ??up device detection in the network

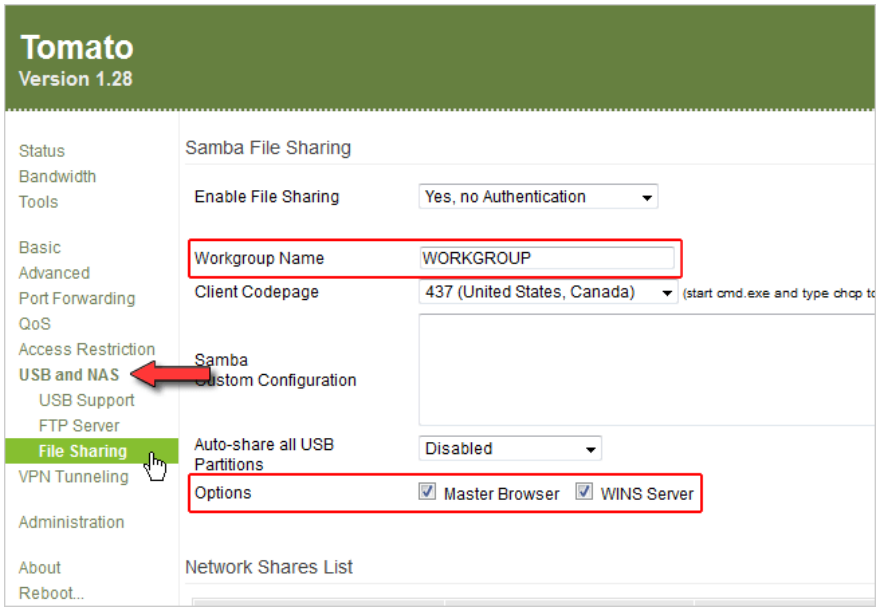
This little trick is only for Windows operating systems and requires computers to be in the same workgroup. By default Windows sets up a working group with the name *WORKGROUP* or *MSHOME* depending on whether your version is *professional* or *Home Edition* . You can leave the name as default or change it as you like, as long as each computer in the network belongs to this group.

This method will allow the Tomato router to act as a server, recording the appearance of each device on the network and this information will be served when required. The device detection process is done on the network, so there will be less errors.

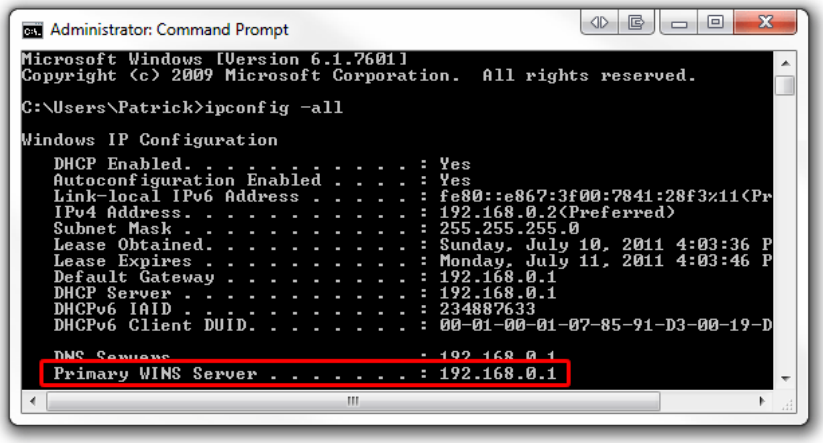
First, change the IP address of the **WINS** (Windows Internet Name Service) **server** in the **DHCP** menu. Click the **Basic** menu and scroll down to see the ' **DHCP Server** ' section. Here change the ' *WINS* ' address to **0.0.0.0** and then click **Save** .



Next, select **USB and NAS** in the left menu and choose **File Sharing** . Make sure your group name is placed with the group name of the entire device in the network. Then tick ' *Master Browser* ' and ' *WINS Server* ' in the **Options** section. Click **Save** to save.



Now make sure that the computers only use the WINS server you just set up by opening the command prompt dialog box and entering ' **ipconfig -all** '. You may need to scroll down to see your current network adapter, but when you see the ' **Primary WINS Sever** ' line, check if this is the router's IP address, otherwise try restarting the computer. and rerun the above command. (Sometimes the WINS server does not update the new IP address until it is redistributed from the DHCP server).

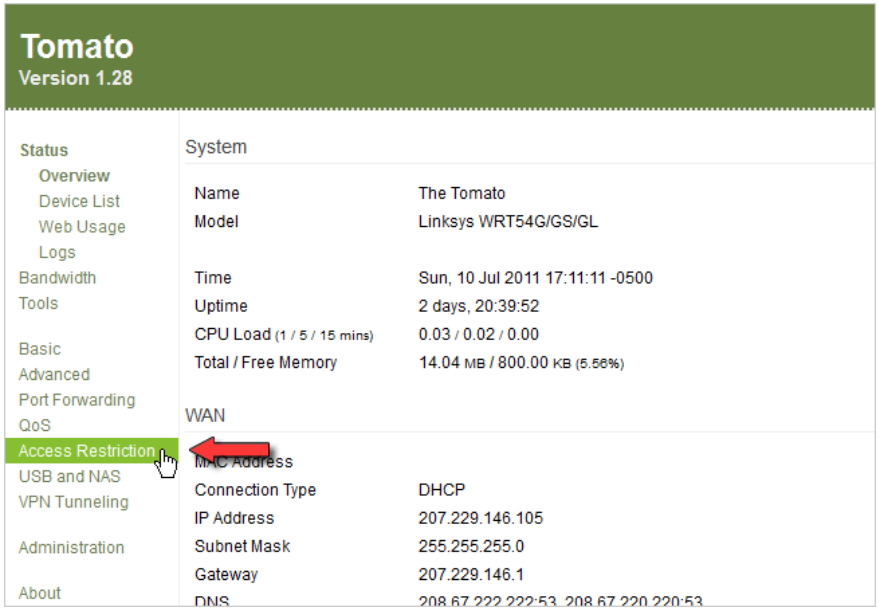


4. Set up Access Restriction for performance

Access Restriction is not recommended for regular use, but it is useful for restricting network access. Tomato's Access Restriction feature allows you, or an administrator, to create unique rules for your network.

In the example below we will set up access restrictions for certain websites from 6 PM to 10 PM during the week.

To start, log into the Tomato router and click the **Access Restriction** menu (left).



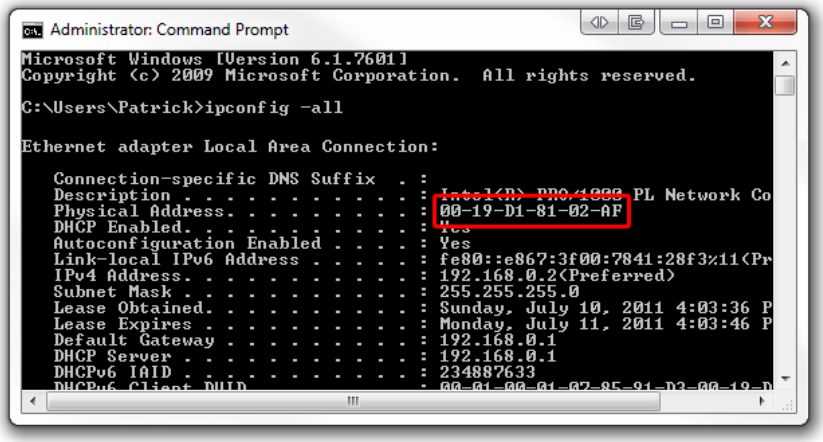
Here you will see a blank page with the ' **Add** ' button, click this button to move to another page and start setting up a new restriction rule.

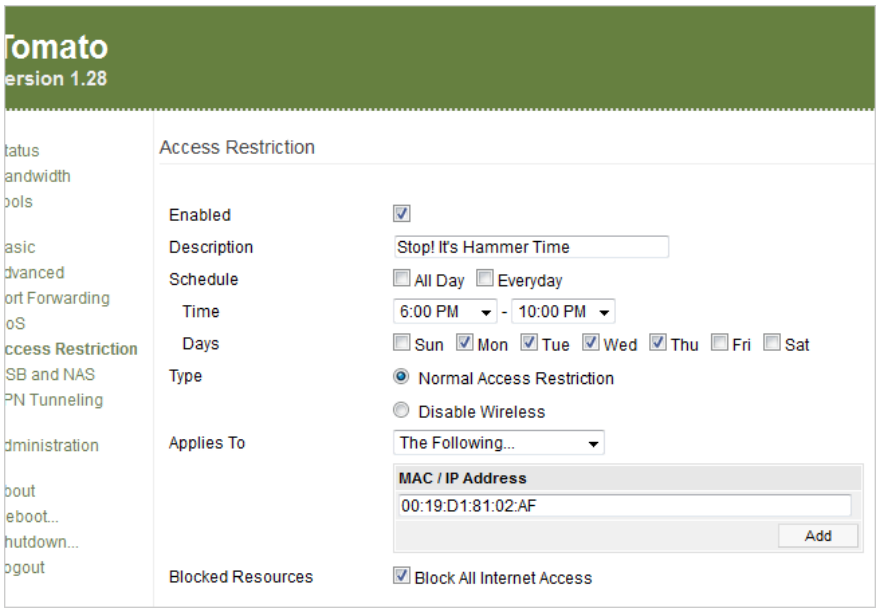
In the **description** field, enter the content to describe your rule (eg ' *Work Time* ').

Next click on the drop down menu of ' **Time** ', choose 6:00 PM and 10:00 PM.

Uncheck ' *Sun* ', ' *Fri* ', and ' *Sat* ' in the ' *Day* ' checkbox. Just near the ' **Type** ' section we select ' *Normal Access Restriction* '. Otherwise, if you choose ' *Disable Wireless* ' the router will disable the wireless feature during the specified time. Here we do not choose because we only want to restrict access to a computer, but do not want all other computers not to use Wi-Fi.

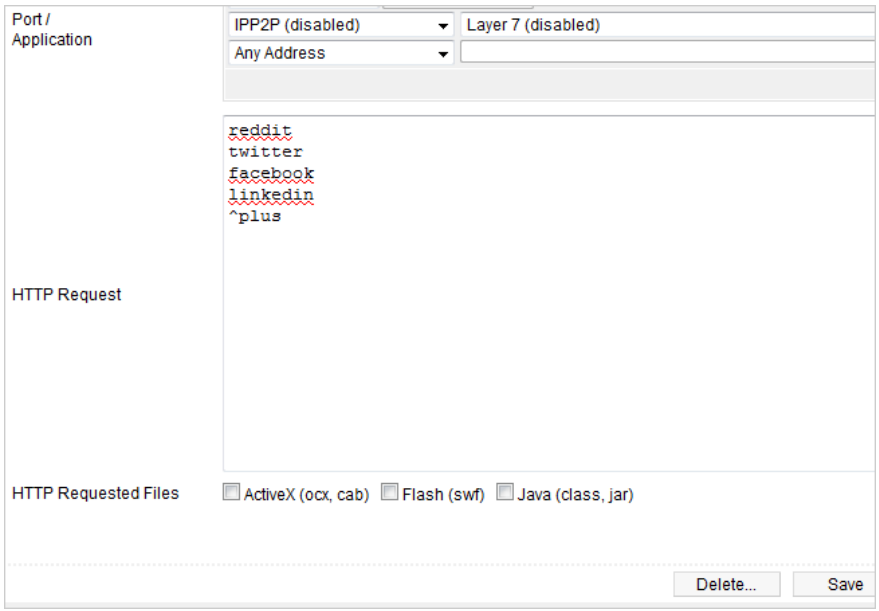
At the ' **Applies To** ' section click on the drop down menu and select ' **The Following** '. You will be asked by Tomato to request the MAC address or IP address of the machine that will apply this restriction rule. If the computer is not set to static IP, it is best to enter the MAC address. To find the MAC address in Windows, open the command prompt dialog box and enter ' ipconfig -all '. The 12 strings next to ' **Physical Address** ' are **the** machine's **MAC addresses** . Then just enter these 12 characters (no horizontal markers -; Tomato will automatically add a colon after every two characters). Finally click on the ' **Add** ' button below.





Note that if you check the ' *Block All Internet Accesss* ' section, your computer will not be able to access the Internet at all. So uncheck this section, then a new set of options will allow you to filter traffic based on protocols like **RDP** (Remote Desktop Protocol) or **ICMP** (Internet Control Message Protocol) .

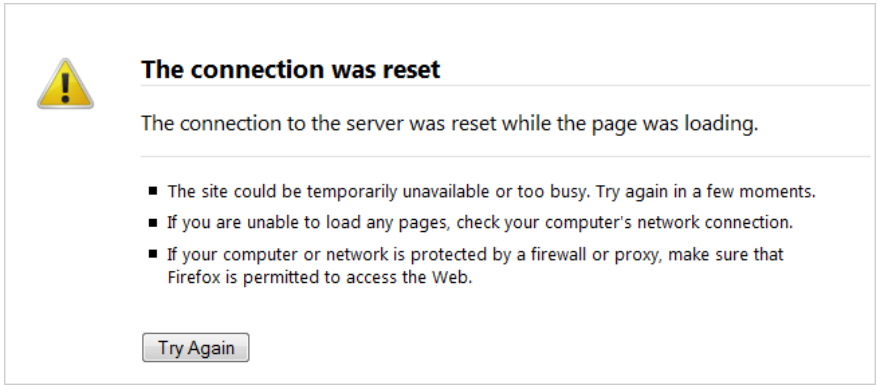
In this example we do not need to use protocols but simply block websites by entering their names in the ' **HTTP Request** ' text box.



You can also use special characters for HTTP requests to further define your rule:

facebook.com $: block everything ending with facebook.com
^ facebook: block everything starting from facebook
^ photos.facebook.com $: correctly block the small domain photos.facebook.com

Click the ' **Save** ' button at the bottom, Tomato will download these rules, then start applying. When trying to access a blocked website, an error will appear:



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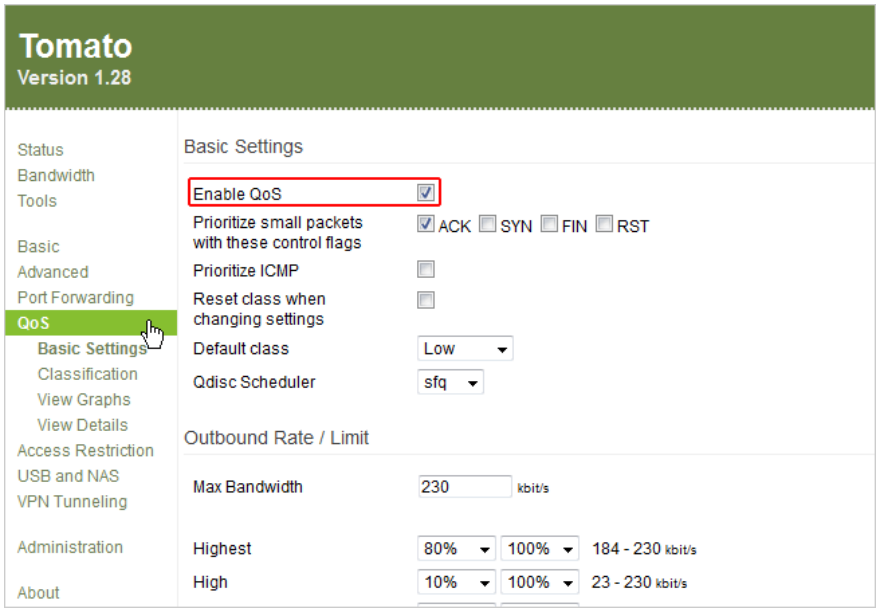
5. Setting up Quality of Service (QoS) rules

Quality of Service rules will prioritize ' *important* ' Internet traffic. It's like a traffic control system during peak hours, when vehicles are involved and have to move slowly due to congestion. Now if there is an important means that needs to move quickly, other means need to be rearranged to give way to it. In this case, it is the

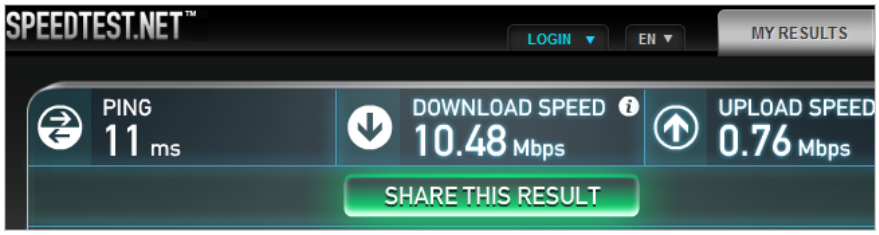
traffic that you consider to be the most important (Xbox Live), the rest of the vehicles will not be prioritized (BitTorrent traffic).

Now we will set up QoS on Tomato, but there are no rules that are correct, people will have different preferences such as protocols / traffic that are important to them. The following are the basic rules of QoS.

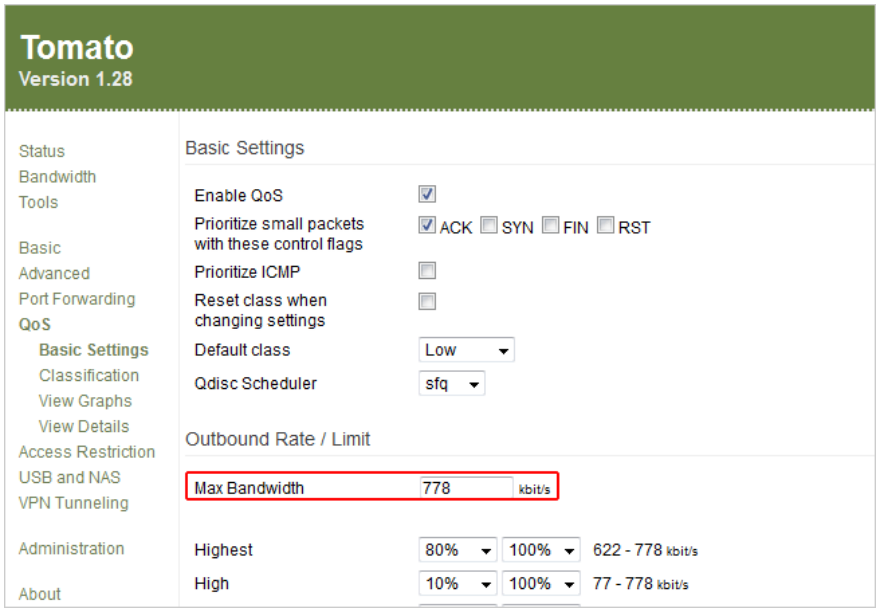
The first is to set the speed for the protocols / traffic and bandwidth for them. Set the **QoS** menu, click the **Basic Settings** menu below. Check ' **Enable QoS** ' to activate the options below.



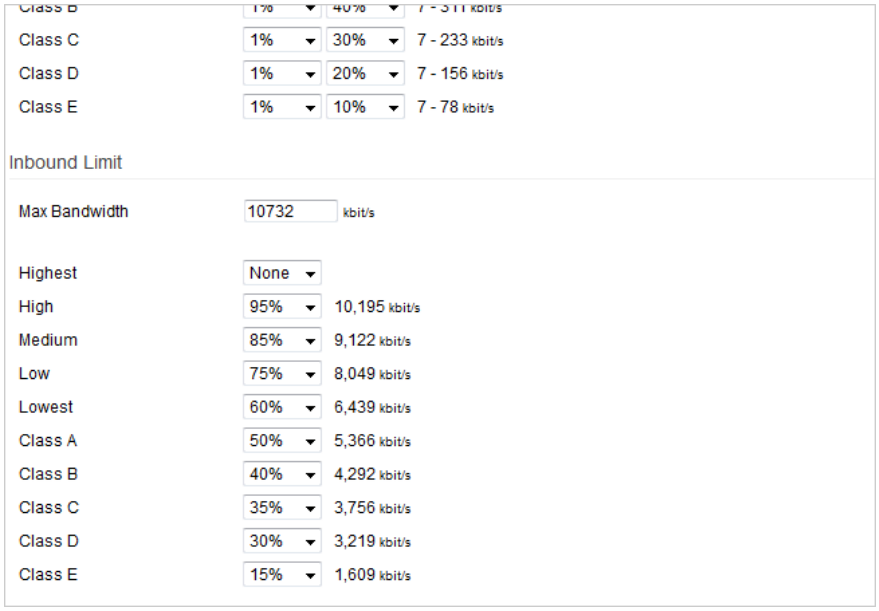
Next we will try to check the speed of the Internet connection to see its maximum bandwidth. Here we use Speedtest.net page. Find the location where the server is closest to you and start testing. Pay attention to your upload speed in kilobits per second (Kbps). If the result shows the speed in megabits per second (Mbps) you only need to multiply that number by 1024 to convert it to Kbps. For example, our upload speed is 0.76 Mbps, which is equivalent to 778 Kbps. If you do not feel that this result is consistent with the upload speed that ISP advertises, try again several times and get the average number.



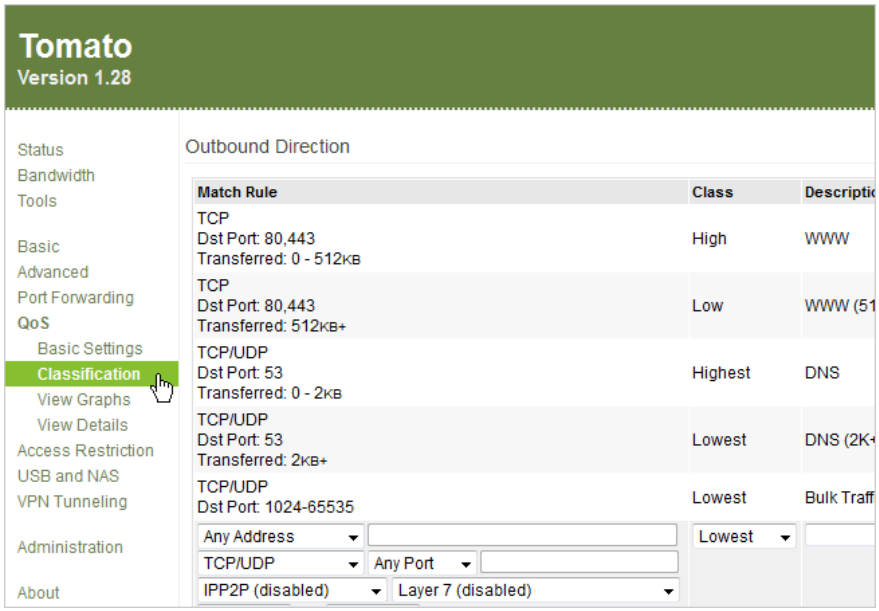
After knowing the maximum upload speed, enter this parameter in the ' **Max Bandwidth** ' section under the ' **Outbound Rate / Limit** ' section. Tomato will automatically adjust the related speed parameters below.



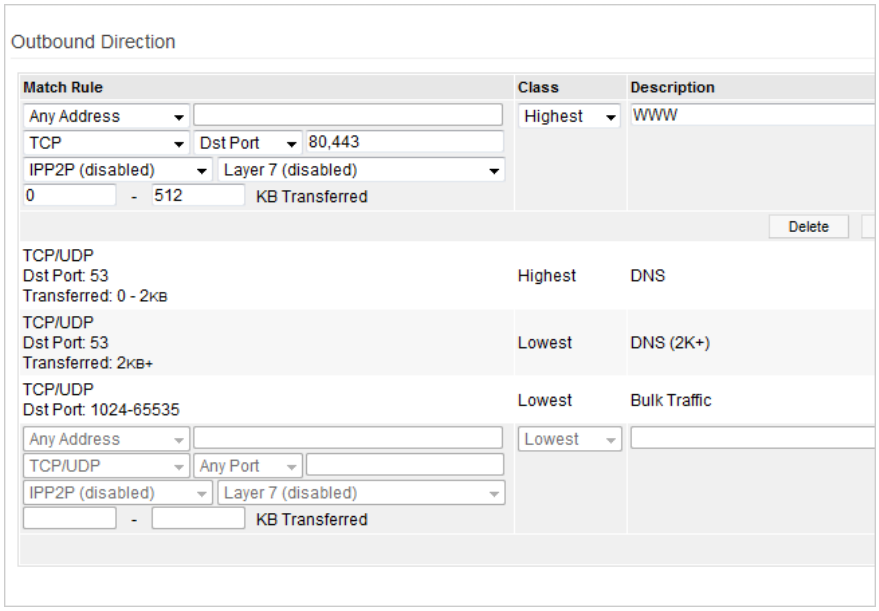
Next, in the ' **Inbound Limit' section** enter the download speed from the above test result into the ' **Max Bandwidth** ' box (in Kbps). The parameters below are not automatically adjusted by Tomato, so you need to fill it in manually. You can use speed parameters like us or configure it according to your needs. Finally click Save to save the settings.



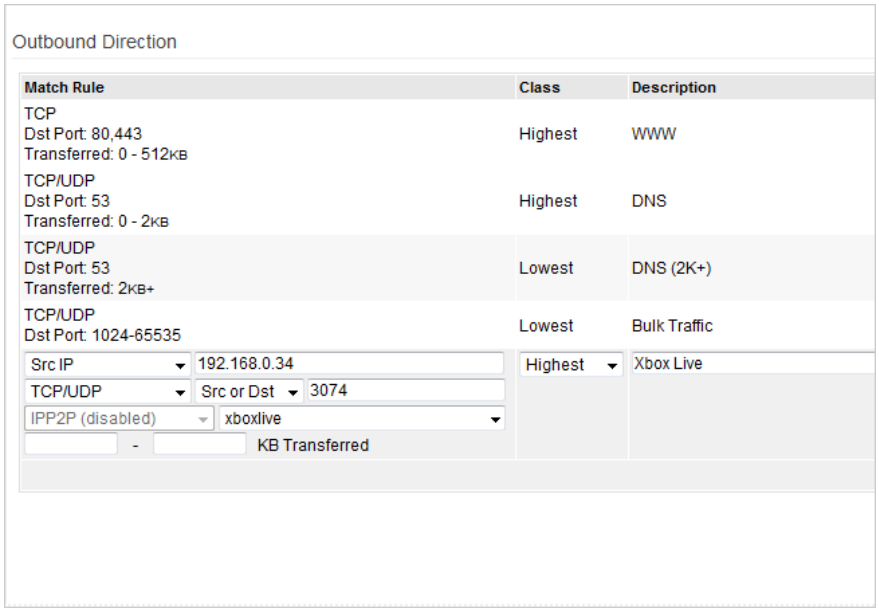
After setting up speed, the next thing to do is apply them to the protocols / traffic. Click the **Classification** menu under the **QoS** menu.



This step will seem more difficult because everyone has their own preferences about the amount of bandwidth for each protocol. You can set up QoS at your own discretion or follow our illustrations.
First and foremost, we will set up WWW traffic. Tomato does this rule very well by default, so we won't need to fix it much. This rule provides the highest priority (from 622 - 778 kbit / s) to send traffic through port 80 (HTTP) and (HTTPS). In order for the amount of traffic to pass through this layer, it must not exceed 512 KB of uploading data. This ensures that the uploaded files are very large (such as copying 4 GB .mkv video files to Dropbox) without going into this layer and blocking the bandwidth.



In this illustration we will set up on Xbox Live. First of all, set a static IP address from the Xbox console: *192.168.0.34* . Then go to traffic priority mode. The Xbox uses port *3074* so any traffic originating from *192.168.0.34:3074* will belong to this class. We set up **L7** (Layer 7) filter to ' *xboxlive* '. Note if adding too many L7 filters to the class will slow down your router.



The above are the most useful tips to enhance your router speed after installing the Tomato firmware. If the Internet connection speed is not satisfactory after setting up QoS, try again. It may take 3 to 4 times to be effective, but the results will be totally worth your effort.

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