RUT9xx Firmware via The Bootloader Menu

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Summary

A Bootloader is a program that loads the operating system or some other system software for the router after completion of the power-on self-tests; it is the loader for the operating system itself. The **Bootloader menu** is the router's special state that can be achieved before the Bootloader loads up the router's OS. While the router is in this state you can use it to upgrade the router's Firmware and Bootloader version. This chapter is guide on how to upgrade a RUT9xx router's Firmware via the **Bootloader menu**.

Note: Using Legacy bootloader (*Template:Networking rutos manual latest fw* and lower), it is not possible to upgrade to RutOS RUT9 firmware (*RUT9_R_00.07.00* and higher).

Upgrade

Firmware upgrade process via bootloader requires only few simple steps:

1. power OFF the device;
2. set a **Static IP** on your PC, e.g. **192.168.1.50**;
3. press and hold the RESET button on the back-panel side of the router;
4. power ON the router and wait 3-4 seconds until **all LAN LEDs start blinking simultaneously**, then - release the RESET button;
5. to enter the bootloader's WebUI, open your browser (Chrome, Firefox, Opera) in Private mode and enter **http://192.168.1.1/index.html**;
6. once in bootloader's WebUI you can upgrade the firmware.

See the details below for more information on each of these steps.

Set up a static IP address for your PC

When the **Bootloader menu** becomes accessible, the router will not be working in its regular state,

i.e., all regular services will be disabled, including DHCP, that is why you will first need to setup a **Static IP address** on your PC to be able to reach the router.

The router's default address is **192.168.1.1**, therefore your PC's IP address should be in the first sub-net as well, for example: 192.168.1.**2**. The last number can be any number in the range of **2 - 254**, i.e., **192.168.1.2 - 192.168.1.254**. Your PC's IP can't be the same as the router's (192.168.1.1), it can't be **192.168.1.255** and **192.168.1.0** as well.

A short guide on how to set up a static IP address will be presented bellow.

Windows 10

To set up a static IP address on your PC using Windows 10, you must first go to the **Ethernet Settings** menu. In order to reach the **Ethernet Settings** window, enter "**Change Ethernet Settings**" in the Windows search field located next to **Start** in the bottom left corner of the screen and press **Enter**:

When in the **Ethernet Settings** window, click **Change adapter options** located under "**Related settings**":

When in the **Network connections** window, right-click on the Network connection associated with your Ethernet adapter and click **Properties**:

Next, click on **Internet Protocol Version 4 (TCP/IPv4)**:

Check **Use the following IP address** and enter a static IP for your PC (e.g., **192.168.1.2**); netmask - **255.255.255.0**; gateway - **192.168.1.1**:

To undo these changes, go back to the **Internet Protocol Version 4 (TCP/IPv4)** window and check **Obtain an IP address automatically**.

Linux

To set up a Static IP on a Linux OS, open the **Terminal** app and enter the **ifconfig** command. The **ifconfig** command provides information on network interfaces. Find the **Ethernet** interface and memorize its name, which should be located on the left side of the table:

Next, enter this command into the terminal:

sudo ifconfig **if_name ip_addr** up

Replace **if_name** with the name of your Ethernet interface and **ip_addr** with the IP address that you want. Following from the example above the full command would look like this:

sudo ifconfig eth0 192.168.1.2 up

After this you PC's IP address should have been changed. To check, enter the **ifconfig** command again and check to see if the Ethernet interface has the IP that you assigned:

To undo the changes use these two commands one after the other:

sudo dhclient **eth0** -r
sudo dhclient **eth0**

Replace **eth0** with the name of your Ethernet interface.

macOS

To set up a Static IP on a macOS follow the steps, you must first press **"Apple" logo** button in the top left corner and select "**System Preferences...**".

When in the **System Preferences** window, click **Network**:

Next, on the left side of Network settings window, right-click on the Network connection associated with your Ethernet adapter and on the right side of Network settings window select **Manually** in the **"Configure IPv4:"** option field:

Finally, enter a static IP for your PC (e.g., **192.168.1.1**) and Subnet mask - **255.255.255.0** then press **"Apply"** for saving the changes:

Bootloader menu

Next, you'll need to reach the router's **Bootloader menu**. To do so, unplug the router's Power Supply Unit (PSU) and leave only one LAN Ethernet port plugged in (for your computer). The other LAN ports and the WAN Ethernet port have to remain unplugged for the duration of the following procedure.

Press and hold the Reset button. Plug the Power Supply back in while holding the Reset button. After plugging in the Power Supply, hold the Reset button for 3-4 sec. After this, all LAN port LEDs should start blinking.

Now you can enter the Bootloader menu. Open your web browser and enter your router's IP address into the URl field and add /index.html at the end (192.168.1.1/index.html). This may not work if you have connected to the router's WebUI at least once before, since the URL's path may be cached. To solve this problem you can clear the browser's cache or, more simply, open the browser in a mode that doesn't cache browsing information. On **Google Chrome** it's called **Incognito** and can be reached by pressing **ctrl+shift+n**; on **Mozilla Firefox** it's called **Private Browsing** and can be reached by pressing **ctrl+shift+p**; on **Microsoft Edge** and **Internet Explorer** it's **InPrivate**, can be reached by pressing **ctrl+shift+p**.

Once you are in the Firmware upgrade window.

NOTE: There a two different version of bootloader available on the devices. The old and the new version. The old bootloader version only supports legacy firmware version, while the new bootloader version only support the RUTOS 7 and above firmware versions.

To tell which bootloader version your device has, you would need to look and compare the WebUI interfaces.

This is the way that the **OLD** bootloader WebUI looks like which supports only [legacy](#) firmware versions:

This is the way that the **NEW** bootloader WebUI looks like which supports only [RUTOS7](#) and above firmware versions:

To start the firmware update process upload the appropriate Firmware image and click the **Update firmware** button.

After starting to upload the firmware, you should be greeted with a window such as this:

This means that the upgrade has started and you can close the browser window. The update itself takes a few seconds but the router will restart afterwards. The entire process before the router becomes reachable again will take 2-3 minutes.

You can also update the router's Bootloader this way if needed. Instead of **/index.html**, the path for Bootloader is **/uboot.html**. You will find a guide on how to upgrade your Bootloader to a newer version **[here](#).** The same rules for bootloader updates apply as they do for the firmware updates.

IMPORTANT NOTE: don't forget to change back your PC's IP address because it might cause problems when connecting to other devices or no internet access if you haven't specified any DNS servers manually.

Firmware download

You can download RUT Firmwares from our wiki pages:

- [RUT900 Firmware Downloads](#)
- [RUT950 Firmware Downloads](#)
- [RUT955 Firmware Downloads](#)